# *AMIGA*

## COMPUTING

**Gallery ● TruePrint ● Violent software ● Posh printers**

## REVEALED

**A4000:** The future of
the Amiga is here.
Exclusive first full test

**PLUS: Exclusive
A1200 preview**

**NO COVERDISK?**
UK reader without
a book?
See your newsagent!

**UNRIVALLED!**
DIGITA HOME
ACCOUNTS 2
Try it for three months, then
save over 50% on the RRP!

WORTH
£50

# Award winning innovative products from

# Award winning innovative products from Power Computing Ltd

## A2000 Hard Cards

### GVP Series 2 HD

- Up to 8MB SIMM RAM on-board
- Supports external SCSI devices
- 14MHz SCSI controller

| | | | |
|---|---|---|---|
| Bare | | | £129 |
| 400MB 0MB | £249 | 800MB 0MB | £349 |
| 400MB 2MB | £299 | 800MB 2MB | £399 |
| 400MB 4MB | £349 | 800MB 4MB | £449 |
| 400MB 8MB | £429 | 800MB 8MB | £539 |

### Nexus Hard Card

- Up to 8MB RAM on-board

| | | | |
|---|---|---|---|
| Bare | | | £129 |
| 400MB 0MB | £249 | 800MB 0MB | £349 |
| 400MB 2MB | £299 | 800MB 2MB | £399 |
| 400MB 4MB | £349 | 800MB 4MB | £449 |
| 400MB 8MB | £429 | 800MB 8MB | £539 |

### Bare SCSI Hard Drive

| | | | |
|---|---|---|---|
| 40 Quantum | £179 | 80 Quantum | £229 |

(Suitable for GVP G-Force, GVP HD or Nexus HC)
**Other sizes of HD available, please call**

### RAM Expansion

Aries A1500 / A2000 RAM

| | | | |
|---|---|---|---|
| 2MB | £129 | 8MB | £209 |
| 4MB | £169 | 8MB | £249 |

## Macintosh Emulator

*"This really is the best emulator we've seen for the Amiga. It behaves just as if you really were using a Mac"*
Amiga Format Sept 1992

### AMax-II Plus

- Amiga 1500 and above
- Runs Mac software
- Runs System 7
- Full support for all SCSI Mac peripherals and the ability to read Mac disks in your drives
- 68020/68030 compatible
- AppleTalk emulation
- Can use Amiga ECS
- Easy to install

| | |
|---|---|
| AMax-II Plus | £229 |

(Mac ROM chips required)

## 24-Bit Colour

### OpalVision

- 24-bit graphic card
- 16.8 million colours available
- Operates in all standard Amiga resolutions
- VLSI Microcode graphics co-processor
- Double buffered 24-bit and 15-bit animation is available in all resolutions
- 'Palette-mapped' design updates screen colours in real-time. Fade pictures in and out and change their palettes
- Equipped with 1.5MB of display RAM
- Auto-config for NTSC or PAL
- Available for all Amigas

### Software included

**OpalPaint**
- 24-bit painting and image processing

**OpalPresents**
- Presentation program
- Control OpalVision images, Amiga graphics and live video
- Includes fades, effects etc.
- Many more features

**King of Karate**
- 24-bit computer game
- Exciting karate competition
- Demonstrates OpalVision capabilities

| | |
|---|---|
| OpalVision | £699 |

**More information available**
OpalVision roaster chip available soon

## Monitors

*"For a monitor of this quality, the CM8833 is worth every penny"*
Amiga Format Sept 1992

*"The 4FG is an absolutely smashing monitor that beats every competitor"*
Amiga Format Sept 1992

### Philips CM8833 Mk2

- With cable
- Includes with Lotus Turbo Challenge 2
- On-site maintenance

| | |
|---|---|
| CM8833 Mk2 | £199 |

### NEC Multisync 4FG

- For use with Flicker Fixers
- Very high quality
- Built-in degausser
- 15" Screen

| | |
|---|---|
| NEC Multisync 4FG | £549 |

## Optical Hard Drive

- Manufactured by Power Computing
- 128MB on one optical disk
- Read and write optical disks
- 40ms running speed
- Built-in power supply
- High power cooling fan
- 25-way and 50-way SCSI ports
- Thru'port built-in
- SCSI ID switch
- Compatible with major SCSI controllers

| | |
|---|---|
| 128MB optical drive (Internal) | £729 |
| 128MB optical drive (External) | £999 |
| 128MB 3.5" optical disk | £39.95 each |

SCSI controller card
for A1500 / A2000 | £129
(Compatible with Amiga, PC, and Mac. A SCSI controller is required on the Amiga and PC)

## Commodore A1500

- 1MB of RAM
- Two 3.5 internal disk drives
- Fully expandable, accepting all A2000 peripherals
- Keyboard and mouse
- Software included
  The Works Platinum Edition
  Deluxe Paint III
  Home Accounts
  Puzznic game
  Toki game
  Elf game

| | |
|---|---|
| A1500 | £599 |

## Accelerator

### GVP G-Force

- 68030 accelerator board
- 68882 Maths co-processor
- DMA SCSI controller on-board
- 68000 fall-back mode
- Only CPU slot is used
- Internal and external SCSI connector
- Converts to hard card with Hard Drive mount kit
- 32-bit RAM as standard

| | |
|---|---|
| 25MHz 1MB RAM | £529 |
| 40MHz 4MB RAM | £759 |
| 50MHz 4MB RAM | £1249 |
| Hard drive mount kit | £35 |

Welcome to another issue of Britain's best Amiga magazine. Does that sound pompous? It probably does, but a quick look at the contents of this issue will confirm our continuing policy of offering the only complete coverage of the whole Amiga market.

For the ambitious owner we have a first look at GVP's exciting new A530 unit, there's Amos Pro (another first) for budding programmers, OpalVision for the technical artists out there, Blizzard Turbo for the budget-conscious user with an eye on acceleration, Gold Disk Office 2 for the home and small busi-

ness productivity fiends, Paint & Create for parents with educational interests, stunning drawing packages, and a full-blown comms special for beginners everywhere.

Top this off with another great CoverDisk, another instalment of our beginners' series, the latest games in Gamer, Amiga Market for buyers, and two competitions instead of the usual one, and we think you'll agree there's something for everyone.

Remember our motto – when you buy this mag, no other magazine is necessary. Everything you need can be found in one magazine – Amiga Computing.

Stevie

# FUTURE AMIGA

**The A4000 stretches the bounds of Amiga power and graphics. Walk right this way for the future of the Amiga**

## amiga almanac
**Nine pages of applications for the Amiga**

# CONTENTS

## THE COVERDISK

# Home Accounts 2

Try the best Amiga home budgeting package FREE and complete for three months, then take advantage of our unbeatable money-off offer

## PLUS...

### Tractor Beam
Frustrating, addictive, and mostly fun – a game not to be missed

### Power Utils
Three indispensible utilities to add power to your Amiga's sickly script files

Home Accounts 2
The latest, most comprehensive home productivity package

TRACTOR BEAM
A highly addictive arcade puzzle game will send your Amiga's processor into a spin!

POWERPACKER PATCH

Page 24

# BETTER GRAPHICS.
# BETTER SOUND.
# BETTER SOFTWARE.
# BETTER GET ONE.

Better take note. One CD inserted into the new Amiga CDTV stores the equivalent of up to 700 floppy discs. That's 550 megabytes of memory or 250,000 A4 pages of text.

CDTV also gives you access to over 3,000 Amiga titles and over 100 CDTV discs, covering everything from arcade quality games to education. And CDTV can be used as a regular audio CD player when connected to your stereo. The Amiga

CDTV Computer Pack, complete with qwerty keyboard, disc drive, mouse and infra red remote control can be yours for only £499.99 including our free Public Domain Collection disc. The Amiga CDTV Player Pack comes in even lower at only £399.99. All of which proves one thing.

When it comes to the ultimate in home entertainment, you won't find anything better than the Amiga CDTV.

From C= Commodore

**AMIGA CDTV**

THE WORLD'S MOST INTERACTIVE INTERACTIVE HOME ENTERTAINMENT SYSTEM

# NEWSLINE

### by John Butters

A NEW sub-£500 leisure Amiga featuring much improved graphics is in production at SCI's manufacturing plant in Scotland and will go on sale before Christmas.

Called the A1200, it is fitted with Advanced Graphics Architecture (AGA) enabling 256,000 colours to be shown on-screen from a palette of 16.7 million.

The computer runs from a Motorola 68020 processor, and with the return of the numeric keyboard looks similar to the A500. A slot is available for PCMCIA RAM cards.

Sound has not been improved. Although a Motorola Digital Signal Processor is not fitted on the motherboard, Commodore say they are "satisfied with the specs".

Unlike the A600 there will not be a hard drive option. Commodore boss Kelly Sumner said: "Initially there won't be two versions, but all models will be supplied with an IDE interface.

"Other countries such as France and Germany might sell them with a hard drive, and dealers will be able to add their own."

It could use the new Workbench 3 operating system which has many new features including a 256-colour window backdrop in any resolution up to 1,420 x 532 and built-in PC CrossDOS.

There is also a control for selecting screen colours and better control for PostScript printers.

Pre-production machines have been with top games houses for more than six months, and it is thought that up to 25 A1200-specific games could be released before Christmas.

However, none of the releases will be sold alongside the computer in a bundle. Commodore say the A1200 will sell as a

# New games Amiga confirmed as a corker

*An artist's impression of the A1200. Inside it has a faster processor and spectacular graphics capabilities*

standalone machine.

"I hope to get more than 25,000 machines before Christmas – any I can get I will sell," said Sumner.

Spokesman Andrew Ball added: "It's the most important Amiga since the A500. We are right to enthuse about this machine - it's a corker."

The giant say there will not be further price cuts in the A600 range when the A1200 is introduced.

## Compatibility

The new generation of Amigas are likely to be more less compatible with the existing range of machines than has been seen before when new models have been born.

Not only has the operating system been upgraded, but also the graphics chipset and processor. The AGA graphic chips have been designed to be compatible with the Enhanced Chip Set.

Many existing Amiga titles will be upwardly compatible but most programs written specifically for the new models are unlikely to be downwardly compatible.

With such a leap forward in technology such incompatibility problems are to a great extent inevitable, although programming to Commodore guidelines limits the difficulties.

## Fast RAM on card

THE first PCMCIA RAM cards for the A600, A600HD and A1200 have been launched simultaneously by Taurus Distribution and Silica Systems.

They are slightly smaller and a little thicker than an average credit card, and instantly upgrade the amount of fast RAM by 2Mb or 4Mb.

The cards are compatible with chip-based memory upgrades, enabling the Amiga to have a maximum of 6Mb of RAM – 2Mb chip and 4Mb fast memory.

In Taurus' Calibra range, the 2Mb card costs £129.99 and the 4Mb version is £199.99 – about one third of the cost of SRAM cards.

Available through Calculus Stores (0543 251275), the range will soon include a modem/fax card, Ethernet adaptor and SCSI/2 interface card.

Silica Systems (081-309 1111), have also released two cards. Manufactured by Amitek, the 2Mb version is priced at £119.95 while the 4Mb card costs £179.95.

## Mystery departure

MYSTERY surrounds the sudden departure of former Commodore UK managing director Steve Franklin, 44, from the manufacturer after more than five years of service.

Commodore would not comment except to confirm that Franklin was no longer employed by the firm. Industry sources suggest he left after a row with bosses in the US.

"He wasn't working for the UK company, so was not under my jurisdiction," said Commodore boss Kelly Sumner. "The corporate company will simply confirm he has left the firm."

Franklin arrived at Commodore as managing director in June 1987 and left the number one seat to head a European push for CDTV this summer.

## Now CDTV prices fall

CDTV prices have tumbled by £100 this month, as the Amiga trade-in offer ends and the Christmas buying period begins

Both CDTV packs have had their prices cut, with the CDTV Starter Pack now available for £399 and the Multimedia Pack supplied with keyboard and other peripherals dropping to £499.

Commodore UK boss Kelly Sumner says the cuts are to make the CD-ROM players good value for money. He said that with the recent A600 price drop the CDTV was a bit too distanced from it.

He also claimed that the current CD installed base of 20,000 will rise to 50,000 by the end of the year. Sumner basis the figure on 10,000 A570 drive and 20,000 CDTV sales.

"We know the market is now right for CD technology," added Commodore's Andrew Ball. "The users and software houses want it – we are moving to a format that can't be pirated."

*Sumner positions CDTV price closer to the A600*

## Hard drives for CDTV

HARD disk drives are now available for the CDTV.

They can be bought as an external drive for existing owners of the player or as an internal drive for those buying a new system.

The external disk is supplied with an Encore SCSI card which fits into the CDTV's expansion slot, and a 65Mb hard drive housed in a black case to match the player.

Professional CDTV includes a player fitted with an internal 65Mb drive, SCSI card and an external SCSI controller. Workbench 1.3 is installed on the drive.

Prices are £469.99 for the external version and £649.99 for the Professional CDTV pack. Call Calculus Stores on 0543 251275.

*CDTV players get 65Mb hard drives*

## Zone grows for dealers

ZONE Distribution (071-738 5444) have extended their catalogue of Amiga music software with the recent take over of Music Pro Imports UK, and will no longer be selling directly to end users.

Former MPI boss Stephan Israel has joined Zone as sales director and will be responsible for the presence of Zone's catalogue throughout the dealer network.

Among the products added at Zone are GMX 1, a low-cost general Midi-compatible desktop sequencer with an on-board serial port Midi interface for the Amiga.

It also features 16-bit PCM samples, 20-note polyphony and costs £235. Zone will continue to offer technical support users for end users.

## Colour added to Power

PICTURES can be scanned into many Amigas in up to 4,096 colours with Power Computing's (0234 843388) new hand-held scanner and PowerScan 3 software.

With resolutions between 50 and 400 dots per inch, the colour scanner has four modes – text, greyscale, colour halftone and colour.

PowerScan Professional 3 software supplied with the scanner includes a real-time "true feel" scan option in colour halftone mode.

Images are stored internally as 12-bit graphics and can be loaded from disk and edited using the software.

Other features are a view whole image function, crop image, clean up or darken image, variable zoom mode, scale/rotate/skew image and the option to draw freehand.

The package costs £239.99 and existing users of the mono Power Scanner can upgrade their software for £13. The colour scanner is not compatible with the A600.

## Autumn calls to be cheaper

MODEM users are among those who will benefit from cheaper telephone calls on Sundays during November and December.

Running between 3pm and midnight, the offer enables telephone callers to be connected to and from anywhere in the UK for the price of a local call – 84 pence an hour.

Said BT's Group Managing Director Michael Hepher, "We have taken this initiative as part of our commitment to give customers even better value for money.

"No matter where you call to in the UK – even if it's from Land's End to John o' Groats – it will only cost the price of a cheap rate local call."

ISDN lines, mobile phones and pay phones are excluded from the offer.

*Modem costs drop for autumn Sundays*

## Jumping in with Noddy

NODDY'S Playtime is the first program from education software house the Jumping Bean Company (0602 792838), expected for release next spring.

Featuring the popular children's cartoon character Noddy, the software will be covered in a joint promotion with the BBC's animation series due to be screened this autumn.

Youngsters aged between three and seven years old can drive with Noddy through Toytown, exploring the local area and visiting friends.

There are eight locations to visit, each with three levels of ability and its own game including recognition, memory, observation and counting. A junior art package is also available.

Among other things, the package aims to let children discover movement, teamwork and map reading. The Amiga version will cost £24.99.

## Wordworth prints better

FEATURES just added to the Digita International's (0395 270273) wordprocessing package Wordworth give users the ability to print at the highest resolution possible with their printer.

The program can now also scale fonts to over 800 point sizes and includes 17 Agfa scalable fonts.

Users of earlier versions can upgrade to Wordworth 2 and obtain clip art and colour fonts for £49.99, while the cost for newcomers is £129.99.

## Guide for assembly

WRITTEN as a tutorial to get Amiga owners into assembly language programming quickly and painlessly is Mastering Amiga Assembler, the latest guide from Bruce Smith Books.

The author, Paul Overaa, explains how to generate machine code from popular assemblers. Each is supported by program examples inside the 400-page book and on a support disk.

Topics covered include fundamental assembly language concepts, the 68000 processor and its important instructions and addressing modes and CLI/Shell and Workbench programming.

Pages are also devoted to the use of system header files and official Amiga documentation, working with Amiga libraries and low-level intuition and graphics programming.

Price – £24.95 (ISBN 1 873308 11 6).

## OpalVision goes to ZCL

TOP Amiga 24-bit graphics board and video expansion system OpalVision is to be distributed in Britain exclusively by ZCL and available through Calculus Stores (0543 251275).

Billed as giving "unbelievable performance" the board is accompanied by a software suite containing OpalPaint, a 24-bit paint package, a presentation system Opal Presents, and Opal Hotkey, which offers single-key video, graphics and image mixing.

Also included in the £762.57 bundle is King of Karate, the first 24-bit graphics computer game.

## Linking to the C64

AMIGA-64-LINK is an interface just developed by York Electronic Research (0904 610722) which allows former C64 owners to convert their old hardware to Amigas.

The manufacturer says the device can be used with any C64 peripheral and is supplied with disk file transfer software and drivers for many C64-compatible printers.

Price £35.25.

## Arnor in Amstrad link

OWNERS of the new Amstrad NC100 can swap data between their Amiga and the notepad computer using a file transfer system just developed by Arnor (0733 68909).

Lapcat can also be used for PC to PC transfer or PC to Amiga, and is a combined software and hardware package that communicates files through the parallel port.

A Ymodem feature enables users to add an entire directory to a second computer in a single operation. Price – £40 plus £10 for each additional computer.

NC100 owners will soon be able to increase their notepad's memory with RAM cards being developed by the Peterborough-based company.

*NC100 gets an Amiga link*

## Online with Citibank

INFORMATION on the global financial market is now available to modem users from Citibank through the CompuServe Information Service (0272 255111).

Global Report provides real-time foreign exchange and fixed income rates from major worldwide markets and political and financial news.

Also available are in-depth company profiles, country profiles and information on stocks, bonds, commodities and other markets.

The service carries a connect surcharge of $35 an hour, in addition to CompuServe's standard connect cost of $12.80 per hour.

## New graphics supported

ASDG (010 1 608 273 6585) have announced that the ADPro family of products supports Commodore's Advanced Graphics Architecture (AGA), now shipping in A4000s.

ADPro and animation and batch processor Fred have supported AGA for almost a year, but ASDG say they were unable to reveal the capability until Commodore's public release of the A4000's specifications.

The UK distributor for ASDG products is Silica Systems (081-309 1111).

## Power in the modem

POWER Computing (0234 843388) have just set up a bulletin board at their Bedford headquarters which enables modem users to access free software, technical help and discounts.

It covers three computer formats – Amiga, ST and PC-compatible – although the firm expect the Amiga section to be the most dominant.

There is unlimited technical advice on anything linked to the Amiga, and the latest public domain and shareware software will be available for downloading.

Discounts of between five and ten per cent will be given on selected Power Computing products and anyone taking a yearly subscription costing around £15 will be given extra discounts.

The firm's customers will be able to obtain software updates and order products for same day dispatch.

It operates from an A2000 fitted with a 68040 accelerator and 1.5 gigabyte hard drive and runs at all baud rates up to 16,800. Power BBS can be contacted on 0234 841503.

## Plotting graphs for documents

GRAPHS can now be designed for publication in documents such as technical reports and scientific papers with improved PostScript graph plotting software from SciTech Software (0372 275775).

Four types of graph are available in AMPlot 2 – line plots, scatter plots, bar charts and pie charts. Variations are allowed on the basic types.

Input starts at just two columns of numbers and an Ascii text editor can be used from within the program to create or edit data.

HPGL and the IFF-DR2D structured drawing format are supported, as well as PostScript and EPSF for importing into desktop publishing software.

Upgrades from the earlier version cost £12, while the price for newcomers is £60.

## Trying to be a legend

A NEW software house has been formed with the aim of being the friendliest Amiga games company around, and already has almost 60 freelance programmers developing software.

Black Legend Software are a subsidiary of Swiss firm Basicc International and their first release will be Addictive, described as the "cutest, silliest and most addictive game".

Anybody with ideas for new games or interested in programming for the company should write to Black Legend Software, PO Box 85, 8612 Uster, Switzerland. Tel: 010 41 1 941 7895.

●●●●●●●●●●●

## Sales boom for Brits

THE pound's weakness against the deutschmark meant a sales boom for British computer dealers attending the recent Computer Shopper Show in Cologne, Germany.

One eyewitness said the show resembled a "jumble sale" as thousands of Germans tried to grab bargains for their Amigas which firms from their own country could not out-price.

## Final Copy smoothes out

SOFTWOOD and Gordon Harwood Computers (0773 836781) have released Final Copy II, a program which it is claimed will revolutionise Amiga wordprocessing.

Billed as unique to Final Copy II is smooth outline "non-jaggy" font printing with any Workbench-supported graphic printer.

Using outline fonts for screen display and printer output, it produces the best quality print at the highest resolution of the printer.

Twenty outline typefaces are included, each scalable from four to 300 point.

An earlier version of the software which was never sold in Britain – Final Copy I – has become the best-selling Amiga wordprocessor in America.

The new version contains Collins British spelling and thesaurus dictionaries and requires two floppy drives or a hard disk. It costs £99.95.

# Rolf tunes in to Amiga cartoons

ROLF Harris found just how popular the Amiga is with Britain's kids when he asked viewers of his ITV television show to send in their animations.

Around 70 per cent of the submissions he received were on Amiga disks and the rest were on VHS or Super 8. Many of the cartoons were shown on Rolf's Cartoon Club.

Harris says: "Kids are really comfortable with computers,

and today's machines are amazing. You can create you own cartoon and then speed it up or slow it down at the flick of a switch."

The programme's animation tutor Pip Banyard adds: "The Amiga is very simple to operate and perfect for art and graphics.

"We were aware when we chose Amigas that thousands of youngsters already use them."

## Trio due from Microdeal

A LINE up of three Amiga products are due for release from Cornwall-based Microdeal (0726 68020) during the next few weeks.

The first, Videomaster, is a combined video digitiser and sound sampler claimed to be packed with innovative features in one unit.

It will handle screen resolutions of 320 x 256, 640 x 256, 320 x 512 and 640 x 512 in 16 levels of grey or up to 4,096 colours. Price – £69.95.

With a £149.95 price tag, Clarity 16 Sampler is described as a "sensible plotted" 16-bit sampler for the Amiga. It has two stereo inputs and two outputs to give 16-bit digitising and playback up to CD quality.

And completing the trio of releases is Rave Sampler, an 8-bit mono sampler containing all the features of the company's Master Sound including a sequencer. Price – £19.95.

## First Choice get second name

EXPANSION has led to computer dealer First Choice being renamed the First Computer Centre. They continue to trade at Unit 3, Armley Park Court, Armley, Leeds LS12 2AE. Tel: 0532 319444.

Zappo is new range of peripherals

## Zapping the peripherals

ZAPPO is the name of a new range of A600 peripherals including external floppy disk drives, hard drives and memory upgrades due for imminent release by Taurus Distribution (0543 414939).

The Zappo external floppy will cost £54.99, a 40Mb hard drive £299.99 and a 65Mb hard disk £349.99. Memory upgrades will be available from £29.99.

# Software seized in Poland

POLAND saw its first ever software piracy raid recently, with more than $500,000 worth of leisure and business software being seized from a Warsaw market.

If found guilty, the pirates face up to six years of imprisonment on charges of breach of copyright and tax evasion. Experts estimate that for every Amiga title sold legitimately in Poland there are ten pirate copies.

## Gear changes made easy

BUDDING racing car drivers can now enhance the reality of playing Microprose's Grand Prix F1 with a new electronic gearbox which has been designed to replace the Fire button combination.

It costs £5.99 from Mr C Higgins, 39 Green Lane, Stopsley, Luton LU2 8AT.

# Amiga gets new pilot

INPUT device manufacturer Logitech (0344 891313) are set to launch the next generation of the successful Pilot mouse, as the firm celebrate the production of 20 million mice.

Redesigned with ergonomics in mind and supplied in a new smaller and more ecological box, the Pilot mouse can be switched between Amiga and Atari ST operation and costs £24.68.

# Germans get golden railways

PASSENGERS travelling to and from German railway stations were able to keep up to date with the recent Olympic games by watching video walls powered by Amigas and Scala's InfoChannel.

Game results were supplied by a sports magazine and an agency put pages together on an Amiga, where a designer had prepared special Olympic background pictures.

Flags of all the world's nations had been scanned and placed in a special directory for quick and easy retrieval. Updated three times a day, the information was shown at ten stations and contained advertisements for Olympic sponsors.

"No other solution is so powerful with graphics of such high quality," claims Scala boss Jon Bohmer. "The German railways application was a unique opportunity for us to reach out to the largest market in Europe."

Amigas showed Olympic results at Frankfurt and nine other German railway stations

# Moving over to AGA

The Amiga 4000 was released in the U.S. to a generally favourable response at the end of September. American Amigans have generally been very impressed with the machine overall, except for power users who were (rightfully) upset about the inclusion of an IDE, rather than SCSI-2, hard drive interface.

Although the A4000's discounted price of about $2800 is still quite steep for the average computer enthusiast, for a machine of this power it's quite reasonable.

An interesting surprise with the A4000's release was the name change from AA (Advanced Amiga) to AGA (Advanced Graphics Architecture). A public relations person for a major U.S. software producer had a theory for the reasoning in changing the name that I'm surprised hadn't occurred to anyone before: AA, when pronounced ``A A'' instead of ``double-A,'' is the common abbreviations for the support group Alcoholics Anonymous.

We wouldn't want people running around thinking Amiga users are a bunch of lushes, would we?

## Cost cutting

If the rumor mill out there running is correct, a less-expensive machine using the AGA chip set may have been announced by the time you read this. Possibly called the Amiga 1200, this machine will have the same graphics capabilities as the A4000, but with a less powerful (and less expensive) microprocessor and less room for expansion, probably all shoved into an A500-style case.

At any rate, this month I'll be taking a look at some of the software that supports the new graphics modes available in the AGA chip set.

## ProWrite upgraded

The first graphics-based word processor for the Amiga continues to get better and better. The latest version of New Horizons' perennial favorite, ProWrite 3.3, now adds full support for AGA graphics modes, as well as a number of other new features.

Like every other product I'll mention this month, ProWrite 3.3 works fine on Original Chip Set (OCS) and Enhanced Chip Set (ECS) Amigas. But when run on AGA-based machines, ProWrite adds support for the new screen modes. Productivity mode, previously limited to just four colors out of 64, now support up to 256 colors while using ProWrite. (You can choose 2, 4, 8, 16, 32, 64, or 128 colors in any mode as well, for increased speed and memory savings.)

ProWrite uses AmigaDOS 3.0's new palette sharing scheme to represent pictures in colors very close to their original palettes. You can insert a number of 32-color pictures in a

document and, using a 256-color screen, they'll all look very close to their original appearance.

The package's graphic printing has been improved remarkably since earlier versions, and now uses the original palette instead of dithering the image into just a few colors. Colored text is still limited to the seven that ProWrite has always supported, but how often are you going to need to print, say, light mauve text anyway?

The program finally adds the ability to wrap text around graphics automatically — no more adjusting margins manually and hitting Return on every line just to get that picture of your cat in the letter home to Mum! In addition, you can now resize graphics by double-clicking on them and entering the percentage of the original size.

## Answer on the button

ASDG announced a ``retroactive upgrade'' to their Art Department Professional image-processing program. Essentially, if you own ADPro and you go out and buy an AGA-based Amiga, you can now consider your ADPro upgraded.

It turns out that ADPro has supported the AGA chip set for well over a year — Commodore even used the product in testing various preliminary versions of the chip set! If you've been wondering what that VGA button was for, now you know.

You can now render images in all the

new color modes, including HAM8. ADPro's very helpful if you're doing much work in the new graphics modes, as hi-res HAM8 images can take up 250K or more on disk, but can be compressed down to about 50 to 100K using ADPro's JPEG compression.

ASDG also announced that their new Morph Plus software supports AGA modes. The Fred batch processor included with both packages will also utilize AGA to provide better-looking preview pictures.

Denny Atkin reports on the latest developments in the USA

## The write stuff

Another program with AGA support, similar to that included in ProWrite 3.2, is SoftWood's Final Copy II word processor. This program produces the absolute best output you'll ever see on a non-PostScript laser printer, fully supports AGA screen modes and loading 256 color and HAM8 pictures, and has fine and box drawing tools so you can even print color backgrounds and boxes around your text.

Other Final Copy II features include style sheets, master pages, magnification, and automatic hyphenation. The thesaurus even has definitions. As ProWrite and Final Copy fight it out in a feature war, the Amiga user ends up the winner.

Other AGA supporting programs include ImageFX (nee Montage), PageStream 2.2, which supports 256 colors if opened on the Workbench screen, and AmigaVision Professional. Other programs such as SCALA, Professional Page, and Imagine will soon have AGA-compatible versions as well.

## Painting by big numbers

Electronic Arts should be shipping their latest version of DPaint, called Deluxe Paint IV AGA, around the time you read this. This revision isn't the rumored DPaint V, but rather an updated version of DPaint IV that supports all of the new AGA screen modes.

When you first start the program it brings up a list of all the screen modes you currently have enabled in your Devs/Monitors drawer. You can choose everything from 320x200 with 2 colors up through 1280x512 (plus overscan) using HAM8 and hundreds of thousands of colors.

The program hasn't been massively revamped, but rather tweaked quite a bit. New features include support for pressure-sensitive drawing tablets, automatic sensing of anims when loading files, more keyboard equivalents for commands, and support for 24-bit values in the palette editor.

The program now has an Operation on the Workbench screen; just drag a picture on to the icon to load it. You can even create animations by dragging multiple icons onto DPaint's AppIcon. You can load (but not save) 24-bit IFF pictures, and choose whether or not to have the system dither

them. The new dithering algorithms, combined with the 24-bit palette support, result in pictures that look much better when they're loaded in modes with fewer colors than with previous versions of DPaint.

Is DPaint IV AGA worth it if you don't have an AGA machine? Probably not, unless you want to work in the SuperHires or 800x600 Super72 modes supported by Workbench 2.1, or if you plan to upgrade to an AGA machine soon. Some functions are a bit faster with this version, too.

The upgrade in the U.S. is a reasonable $30 for DPaint IV owners, so you might consider it when looking toward the future. The program retails for $199, and requires AmigaDOS 2 or later.

As mentioned last month, Digital Creations is working on Brilliance, a new paint program written in 100% Assembly language that claims to do all DPaint does and more. It wasn't available for review at press time, but the beta version I tested at the World of Commodore Amiga show did look promising, and had full support of all AGA modes.

# AMIGA SUPER VALUE PACKS

## A600fd STANDARD FEATURES

★ ON SITE MAINTENANCE
★ 1MB RAM
★ 1MB DISK DRIVE
★ BUILT IN TV MODULATOR
★ 4096 COLOURS
★ SPEECH SYNTHESIS
★ MULTI-TASKING
★ 4 CHANNEL DIGITAL STEREO SOUND
★ MOUSE
★ WORKBENCH DISKS
★ COMPREHENSIVE MANUALS
★ ALL CONNECTING CABLES

### WANT 2MEG OF RAM?

UPGRADE YOUR A600 TO A MASSIVE
2MB OF RAM FOR ONLY

**£39.95**

WHEN YOU ORDER YOUR A600
(Normal RRP £59.95)

### WANT AN A500 PLUS V.2?

LOOK AT PAGE 3
UNDER SPECIAL PURCHASE

---

## A600fd BAD INFLUENCE PACK

**A600fd COMPUTER AS PER STANDARD SPECIFICATION**

**PLUS ASTRA TEN GAME PACK**

Datastorm..................19.95
Dungeon Quest............19.95
E-Motion....................19.95
Grand Monster Sam ....19.95
RVF Honda.................24.95
Driving Force..............24.99
Pipemania.................24.99
Rock 'n' Roll..............19.99
Skweek....................19.99
Tower Of Babel..........19.99

**PLUS BAD INFLUENCE GAMES**

WWF WRESTLING .....£29.99
A must for wrestlemania fans
FINAL FIGHT ...........£29.99
Arcade martial arts at its best
PITFIGHTER..............£29.99
Ringside fighting action

*This super value pack retails for over £650, but is available to you for only*

**PLUS ACCESSORY PACK**

2 MICROSWITCH JOYSTICKS ..£25.98
Not one but two quality joysticks
TAILOR MADE DUSTCOVER £12.99
Essential protection
HIGH QUALITY MOUSEPAD .£7.99
Keeps your mouse squeaky clean

**£299.99**

---

## A600fd GAMESMASTER PACK

**Incorporating Commodores 'THE WILD, THE WEIRD AND THE WICKED'**

**A600fd COMPUTER PLUS ALL ITEMS LISTED IN 'BAD INFLUENCE' PACK**

**PLUS WILD, WEIRD & WICKED**

DELUXE PAINT III .....£49.99
Essential painting package
GRAND PRIX .............£34.99
The best racing simulation ever!
PUSHOVER .................£29.99
Infuriatingly addictive puzzle game
PUTTY.......................£29.99
Brand new release from System3

**PLUS SPORTSTARS PACK**

KICK OFF ..................£29.99
The original and greatest football game
PRO TENNIS TOUR .....£29.99
Stunning gameplay & effects
GFL GOLF .................£29.99
Play a round in the comfort of home

*This super value pack retails for over £950, but is available to you for only*

**PLUS BASIC PACK**

GFA BASIC ................£49.99
Essential for Basic programming
PRECISION DISKS......£12.99
Ten branded disks to get you going
40 CAPACITY DISK BOX ....£9.99
Essential for storage

**£349.99**

---

## A600HD EPIC/LANGUAGE LAB PACK

**A600HD as standard with 20Mb Hard Disk built in**

**PLUS ALL ITEMS LISTED IN 'BAD INFLUENCE' PACK**

**PLUS EPIC/LANGUAGE PACK**

TRIVIAL PURSUIT .......£39.99
Super 3 language version
EPIC..........................£29.99
Space shoot-em-up
ROME.........................£29.99
Millenium classic
MYTH ........................£29.99
Arcade adventure

**PLUS BASIC PACK**

GFA BASIC ................£49.99
Essential for Basic programming
PRECISION DISKS......£12.99
Ten branded blank disks
40 CAPACITY DISK BOX ..£9.99
Essential for storage

*This super value pack retails for over £1140, but is available to you for only*

**PLUS PAINT PACK**

PHOTON PAINT 2 ...£89.95
One of the most comprehensive paint packages on the market.

**£499.99**

# the DISK

# Home Accounts 2

**Save money and keep that budget under control courtesy of Amiga Computing and Digita's excellent commercial accounts package**

Of all the home finance programs available at the moment, Digita's Home Accounts 2 is the most flexible, and by far the easiest to use.

The exclusive three-month demo version on this month's CoverDisk is a fully functioning Home Accounts 2 which will save to disk, print, and do anything the full version will, giving readers an unmissable opportunity to try out the best.

The only restriction is that as soon as your system clock shows the date to be 31 January 1993, Home Accounts 2 will cease to allow amendments, saving, or printing. Overseas users have an extra month to compensate for the longer delivery times to some parts of the world.

During the three month trial, users can make a thorough investigation of the program, and if they decide to buy it can do so at a special Amiga Computing reduced rate.

### De-archiving

To load Home Accounts 2, carry out the de-archiving process by double clicking on the Make-a-Disk icon in the CoverDisk's Home Accounts 2 drawer, then carry out the following procedure:

● Insert the Home Accounts 2 disk into the drive and wait for it to finish booting
● Double click the Home Accounts 2 disk icon
● Double click the Home Accounts 2 drawer
● Double click the HomeAcc2 icon to start Home Accounts 2

There are some sample files supplied on the disk for different scenarios – these are located in the sample drawer and may be accessed by choosing the Open file command from the Project menu.

The program is designed to be as easy to use as possible, however should you experience any difficulties Home Accounts 2 includes online Help which may be accessed by pressing the Help key.

### Overseas

All the functions that are available in the full version of Home Accounts 2 are available in this version, however the program is only designed to operate up to the 31 January 1993 for UK users, and 28 February 1993 for overseas readers.

This will give you a chance to try the program out with your own finances. Should you decide to buy the full version of the program then the information you have set up with this demonstration version will be compatible.

Before setting up your file you will need the following information:

● The start month and year
● A list of headings for your income and expenditure (Types). For example – salary, food, car expenses
● Details of your standing orders and direct debits ("regular transactions")
● Details of all the accounts you want to monitor (Accounts). For example – bank accounts, credit cards, or savings
● Details of any investments, such as unit trusts or shares

### Current date

Once you have entered this information you are ready to set up your file. Whenever you load Home Accounts 2, be sure to set the current date correctly.

Before using Home Accounts 2, you will need to have prepared a blank for-



matted disk. Give the file a meaningful name, and try to include the year in the filename so it can be easily located in the future: for example, Myfile91.

The following guidelines will help you in using the package. Produce reports, such as the Statement and Budget Progress, regularly, so any financial problems are illustrated early. Use the "Interest calculator" to estimate the interest due on credit card bills, loans and so on. This will help you plan your finances.

During the financial year you may wish to adjust your budget. Use the Budget

Progress Report as a guide. It illustrates the difference between your original budget and your actual expenditure to date. Experiment with what-if calculations on your budget figures. For example, if you are considering a hire purchase, before you sign the agreement, enter the figures into your budget and see how the repayments will affect your monthly disposable income.

### Transactions

When you receive a statement for an account – for example, a current account

bank statement – use one of the methods provided with Home Accounts 2 to reconcile the transactions and check that the statement is correct (banks can make mistakes!)

It's also a good idea to produce a statement of "unreconciled transactions" to make sure that a transaction is not taking an unreasonable time to clear (and to remind yourself of any payments you have made, but which have yet to clear).
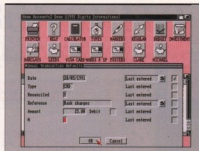
If your statement includes a charge or interes payment you will need to account for this by entering the amount as a separate Manual Transaction.

### Warning

Always monitor the Account Summary and Budget Progress reports, as these provide actual and predicted balances. It should provide a timely warning if you are getting into too much debt.

Use the Income and Expenditure report regularly. This will illustrate the total you are spending and receiving by Type. It provides a quick method of seeing if, for example, you are paying too high bank charges.

If you are tax (VAT) registered, produce a VAT report at the end of each VAT period. This should provide the totals to complete your VAT Return.

Most of all, remember that Home Accoouts 2 is an invaluable aid to controlling and monitoring all kinds of home and business finance. The user still, however, must supply "budgetary rectitude" as Mr Lamont calls it.

## Setting up Home Accounts 2

### Step 1

Once you have created your file, set up the following:

● Income and Expenditure Types (Transaction Types command in the Set Up menu)
● Accounts (Add Account command in the Set Up menu)
● Regular transactions (Regular Transactions command in the Set Up menu). Now set up your budget.

### Step 2

Make a list of the headings on which you regularly spend money (for example mortgage expenses, clothing, holidays). Remember to include any regular transactions (for example mortgage, for example).

Then make a sensible estimate of the monthly expenditure of each heading. Now enter this information into Home Accounts 2 using the Budget command (Set up menu).

Before going any further, save your file using the Save command (Project menu).

### Step 3

Before entering any transactions, go through the Preferences and customise them for your needs (Preferences, General command, Options menu).

### Step 4

Now open each Account window (by double clicking the Account icon) and configure the window headers for each Account. (Window Headers command, Set up menu.)

### Step 5

Set up the transaction defaults to the most suitable for your requirements. For example, if you are entering transactions on a daily basis, set the date to System Date (Set Defaults command, Trans menu).

## Tractor Beam

**Author: James Lean**

Tractor Beam is one of those games which can get really annoying quite quickly. The basic idea is to manoeuvre your droid ship from the left-hand side of the screen to the right, pick up a box with your tractor beam and carry it back again.

This sounds simple except for the fact that your tractor beam exhibits all the properties of a long strip of elastic, and so can rapidly become very difficult to control. Also, touching anything is fatal for you and the box.

You start each level floating in the left-hand pool of water, and the box starts in the right. Using the joystick you must move your droid so it is just above the box, and click fire to activate the beam.

Then – very gently – drag the box back to your pool and gently set it down, clicking Fire again to release the beam.

Once the box has settled you need only to land in the pool next to it to progress to the next level. Each level is a variation on the above screen setup, possessing different tractor-beam characteristics, gravity levels, thruster powers and so on.

Each level has its own password which appears on the statistics screen, allowing the levels to be accessed from the title screen by pushing the joystick up and pressing Fire.

Most levels also contain static and moving obstacles to get in your way, or just to make playing more interesting:

● **Arrows** – These red arrows propel your droid in the direction of the arrow,

often with more force than your thrusters can match. Be careful not to become caught in a line of arrows, as they will almost certainly smash you into the side of the screen.

● **Spikes** – These look like normal blocks, except that sharp spikes can suddenly stick out – fatal to your droid or box if you come into contact with them.

● **Patrol Droids** – These large droids can move up and down or left and right, and are fatal to your droid or box if touched.

### Thrusting

To control your droid just use the joystick, pushing in the direction which you want to move.

Be careful that you often need to slow down by thrusting in the other direction. On clicking and releasing the Fire button your tractor beam is activated, and on clicking the second time is it released.

Note that the tractor beam can only be activated when your distance from the block is below the maximum slack length of the beam, to avoid accidents. Setting the box down in the pool must be done gently, as too hard a splash-down will destroy the box.

Once a level has been completed you are given a bonus score depending on your efficiency. The bonus starts at a maximum of 5,000, and is decreased for each unit of fuel used, and every box breakage. The final bonus is then added to your score.

The title screen displays the score from the previous game, as well as the furthest level reached in that game. To continue from that level (with the score reset), pull the joystick down and press Fire. Simply pressing Fire on its own starts again from level 1.

### Tips on playing

Be gentle with the controls, especially when the tractor beam is in operation.

If you and the box just start bonging around (you will know what I mean after playing the game), try to match the box's upward velocity with the beam slack, then as you both start to fall, gently apply small amounts of thrust.

On some occasions you may have to slingshot the box through small gaps, so get plenty of box-control practice on the first level.

## AMIGA software

*Listed below is a sample from our vast range of software at competitive prices. If you need a product not listed simply phone us and we will be delighted to quote for your requirements.*

**word processors/publishing**

| | |
|---|---|
| Pen Pal V1.4 | £79.95 |
| Final Copy II V2.0 | £89.95 |
| Kindwords 3 | £39.95 |
| Wordworth V1.1 | £89.95 |
| Transwrite | £29.95 |
| Prowrite 3.3 | £79.95 |
| Pagestream V2.2 | £149.95 |
| Professional PageV3.0 | £129.95 |
| Pagesetter II | £44.95 |
| SoftClips Clip Art... | |
| Classic Clip Art | £39.95 |
| People Clip Art | £39.95 |
| Collectors Clip Art | £39.95 |
| Animal Clip Art | £39.95 |
| Electric Thesaurus | £29.95 |

**integrated titles**

| | |
|---|---|
| Mini Office | £44.95 |
| Gold Disk Office | £69.95 |

**databases**

| | |
|---|---|
| Homebase | £19.95 |
| Superbase 2 Personal | £29.95 |
| Gallery Pictorial Slide Show/DB | £39.95 |

**CAD & structured drawing**

| | |
|---|---|
| Intro CAD Plus | £79.95 |
| X-CAD 3000 | £269.95 |
| Professional Draw 3 | £89.95 |

**video**

| | |
|---|---|
| Scala 500 | £79.95 |
| Scala Professional | £199.95 |
| Broadcast Titler 2 | £179.95 |
| Pro Video Post | £169.95 |
| Video Studio V3 | £119.95 |

**animation and graphics**

| | |
|---|---|
| Deluxe Paint 4 | £64.95 |
| Real 3D Professional | |
| Turbo | £249.95 |
| Art Department | |
| Professional V2 | £144.95 |
| DCTV Composite Video | |
| 24-Bit Graphics | |
| System (PAL) | £279.95 |
| Imagine 2.0 | £189.95 |

**utilities & development**

| | |
|---|---|
| Disk Master 2 | £44.95 |
| Quarterback V5 | £44.95 |
| Quarterback Tools | £54.95 |
| Dos-2-Dos | £29.95 |
| Easy Amos | £24.95 |
| Amos The Creator | £29.95 |
| Amos Compiler | £23.95 |
| Amos 3D | £24.95 |
| New SAS Lattice C V6 | £219.95 |
| Devpac 3 | £54.95 |
| Directory Opus | £27.95 |

**miscellaneous**

| | |
|---|---|
| GB Route Plus | £39.95 |
| Professional Calc | £124.95 |

**games & entertainment**

Phone for access to our massive competitively priced range now!

### AMIGA accessories

**graphic & video**

| | |
|---|---|
| Digiview Media Station | £134.95 |
| Colour Pic Plus | £579.95 |
| Super Pic | £579.95 |
| Rombo Vidi 12 | £99.95 |
| Arms 2 Sound Sampler & Midi | |
| Interface inc.Microphone | £79.95 |
| Audio Engineer Plus | |
| Sound Sampler | £179.95 |
| Technosound Turbo | |
| Sound Sampler | £29.95 |
| Miracle keyboard music teaching | |
| system for the Amiga | £299.95 |
| Music X full version 1.1 whilst | |
| stocks last | £19.95 |
| Midi interface 5 port with two | |
| cables | £24.95 |
| Super Jam | £64.95 |
| Bars & Pipes Professional | £219.95 |
| Stereo Speakers with a | |
| separate power supply | £39.95 |
| Power Mono Hand | |
| Held Scanner | £98.95 |
| Power Colour Hand | |
| Held Scanner | £239.95 |
| Sharp JX 100 Colour | |
| Flatbed (A6 Paper size) | £549.95 |
| ProGen - Perfect high quality | |
| entry level true video signal | |
| genlock | £64.95 |
| Rendale Plus | £159.95 |
| Multi connection cable kit for | |
| all genlocks | £14.95 |
| HQ Microswitched mouse | £13.95 |
| HQ Microswitched mouse inc. | |
| Mouse Mat & Holder | £19.95 |
| Naksha Microswitched mouse | £24.95 |
| with Mat & Holder | £24.95 |
| High Quality microswitched | |
| Optical mouse | £28.95 |
| HQ Microswitched Trackball | £29.95 |
| Superb Automatic Mouse and | |
| Joystick Switcher | £17.95 |
| SCS Powerboard Plus 512K Ram | |
| RAM expansion with clock | |
| suitable for Amiga 500 | £39.95 |
| Now supports most hard drives! | |
| supplied without DOS | £194.95 |
| supplied with DOS 4.0 | £214.95 |
| 1500/2000/3000 adaptor | £19.95 |
| GVP 286 PC emulator card for | |
| A500 HD8 (530 (no DOS). Simply | |
| plugs into your GVP drive | £189.95 |
| Premier Control Centre & Monitor | |
| Plinth with shelf: | |
| For Amiga 500 | £39.95 |
| For Amiga A600 | £34.95 |
| Zipstick autofire | £11.95 |
| Competition Pro-Star autofire, | |
| burstfire & slow motion | £13.95 |
| Full range of Quickjoy and other | |
| makes stocked - call for prices | |

**AMIGA + - × ÷ a b c software easy learning**

ADI titles 11to12:
| | |
|---|---|
| micro maths - to GCSE standards | £18.95 |
| micro english - to GCSE standards | £18.95 |
| micro french - to GCSE standards | £18.95 |
| micro german - to GCSE standards | £18.95 |
| primary maths - 3to12's | £18.95 |
| mega maths - A level | £18.95 |
| reading and writing | £18.95 |
| course - over 3's | £18.95 |
| compendium six | £29.95 |
| fun school 4 software: | |
| choose - under 5's, 5to7's or 7to11's, only... | £19.95 |

ADI titles 11to12:
| | |
|---|---|
| maths | £18.95 |
| english | £18.95 |
| maths | £18.95 |
| ADI titles 12to13: | |
| maths | £18.95 |
| english | £18.95 |
| french | £18.95 |
| first shapes - 3to8 | £16.95 |
| puzzle story 3to8 | £16.95 |
| spell book - 4to9 | £16.95 |
| first letters and words - 3to8 | £16.95 |

*up to GCSE 'A' standards*

### AMIGA shop

| | |
|---|---|
| Amiga for Beginners | £12.95 |
| Getting the most from your Amiga | £12.95 |
| Amiga Machine Language | £14.95 |
| Amiga DOS inside and out | £21.95 |
| Amiga Hardware reference manual | £25.95 |
| Amiga C for beginners | £15.95 |
| Other Books: ...call us with your requirements | |

### AMIGA books

**DISKS BLANK**

| | |
|---|---|
| Sony 3.5" DS DD | £0.85 |
| 50 Sony 3.5" DS DD | £34.95 |
| Certified Bulk Disks with labels | |
| 10 with library case | £6.95 |
| 50 Disks - only... | £24.95 |
| 250 Disks - only... | £99.95 |
| 3.5" Disk Head Cleaner essential | |
| for reliable loading | £2.95 |

4

*Finance Facilities Available.*

*please contact us for your personal information pack.*

The Amiga 4000 is Commodore's first truly new Amiga computer since the Amiga 1000 was introduced way back in late 1985.

Sporting an incredibly fast 25MHz 68040, 32-bit memory, and the new Advanced Graphics Architecture chipset, the Amiga 4000 sets a new performance standard for personal computing. After just two weeks with an A4000, I decided I could never go back.

Rumours had been flying around magazines and BBS networks for almost a year about the A4000. If the rumours had all been true, the A4000 would have been powered by a $10,000 DEC Alpha RISC processor, supported 32-bit graphics in resolutions so high you could represent every individual in London on-screen in full detail, and had the London Symphony built in to provide hundreds of voices of sound – all for about £500.

While the real machine isn't quite that outrageous, it's the most powerful, versatile computer ever to come out of the Commodore factory, and should satisfy even the most power-hungry users. Its 16-million colour palette and break-neck animation speed will make animators and gamers alike drool with anticipation.

The Amiga 4000 doesn't look all that imposing. Its slimline case, about the size of the A3000 but a little taller, could by appearances hold an average PC clone.

But hidden within that innocuous case is a muscular multimedia machine which can do things computers twice its price can't handle.

We'll get into the new Advanced Graphics Architecture chipset later (to keep your anticipation level up!), but first let's take a look at the rest of the machine's specifications.

The first thing you'll notice about the case is that Commodore have put back the 5.25in drive bay, so you can now install an internal CD-ROM drive or tape backup.

Under the 5.25in bay is the A4000's high density floppy drive, which can read and write both original 880k disks and high-density 1.76Mb Amiga floppies. Below that is room for a slimline 3.5in hard drive. The stock 120Mb IDE hard drive is installed in a hidden drive bay in the back of the machine, and there's room for another slimline 3.25in hard drive there as well.

I'll talk more about the A4000's hard drive later, but suffice to say that drive expansion is a big improvement over the cramped Amiga 3000.

The A4000 gets its punch from a 25MHz Motorola 68040 microprocessor, an advanced chip which runs internally at 50MHz (like Intel's DX2/Overdrive chips for the PC) and has four 4k caches, one each for instructions and data. This combination ends up giving you about 30 times the pro-

cessing performance of a stock Amiga 600!

The 68040 is actually mounted on a plug-in card that fits in the computer's processor expansion slot – there's no microprocessor on the motherboard! This is actually the same board, the A3640, that Commodore sells for the Amiga 3000T.

A nameplate on the A4000 actually states that it's an Amiga 4000/040.

This seems to indicate that Commodore plans to release models based upon other microprocessors, such as the 68020 and 68030.
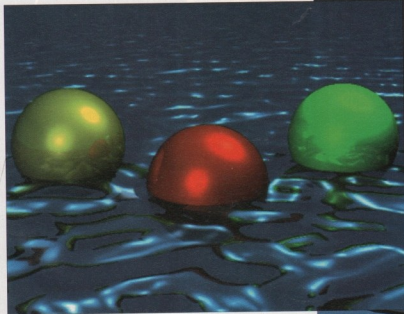
Changing processor would simply be a matter of substituting a different daughter board, a modification that could be made at the dealer level. Of course, this also means that when Motorola releases the 68060, Commodore will be ready.

Along with its processor slot, the A4000 also has four Zorro III slots mounted on a vertical card which plugs in perpendicular to the motherboard.

These are essentially the same fast 32-bit slots found in the Amiga 3000, but a few bugs have been fixed, such as the one that prevents GVP's PhonePak/VFX board from

## Amiga – the next generation

Commodore's blazingly-fast new A4000 takes the Amiga boldly where no personal computer has gone before. Denny Atkin reports

*The new HAM8 format is virtually 24-bit quality*

working in an A3000 unless you install slow 16-bit RAM in the system.

Of course, the Zorro III slots will also support older Zorro II cards, such as modems and network cards.

The A4000 has three ISA-standard IBM AT slots for use with a PC bridgeboard. These slots are in-line with the top three Zorro III slots, so each PC board you adds blocks an Amiga expansion slot.

A video slot is in-line with the bottom Zorro slot. This slot is compatible with the video slots on the A2000 and A3000, but has a second connector to pass through the additional lines needed to support 24-bit colour.

Initially, the A4000/040 ships with 2Mb of chip RAM and 4Mb of fast RAM. The fast memory can be upgraded to 16Mb on the motherboard, and further using Zorro II cards.

Memory expansion is a snap – literally – on this machine. Gone are the horribly difficult-to-install ZIP chips found on the A3000 – the A4000 uses standard 32-bit SIMM boards that just pop in to the little SIMM slots.

Curiously, a jumper on the A4000's motherboard marked as "chip RAM" can be switched from a 2Mb position to 8Mb. However, Commodore engineers state this jumper was put in early in the design stage when they still weren't sure if the chip RAM bus would be expanded, and that changing the jumper on current machines could potentially damage it.

The A4000's motherboard is actually very small, as it doesn't pass under the 150W power supply (this power supply uses standard PC voltages, so finding a replacement supply should be much easier than with previous Amigas).

The small size is achieved through the use of surface-mount technology (SMT) chips, which are soldered directly onto the motherboard.

While this precludes easily upgrading the graphics chips, like you can do on the A500 and A1500/2000, when you consider that the microprocessor module, expansion slots, and SIMM RAM can all be easily removed from the motherboard you'll realise that replacing the entire motherboard if Commodore ever updates the chipset wouldn't be an outrageous proposition.

Now what about that chipset? Say goodbye to our old girlfriends Agnus and Denise. They've been replaced by Alice and Lisa, who are a bit prettier, and a lot more perky.

Together with good old Paula – the only custom chip to remain relatively unchanged since the original A1000 – these chips form the AGA (Advanced Graphics Architecture) chipset.

Originally known during development as Pandora and AA, the 300,000-transistor AGA chipset brings Amiga graphics into the 1990s and beyond.

The biggest enhancement is the new 24-bit colour palette (actually, it's 25-bit, as there's also a genlock-support bit). No longer are you limited to 4,096 colours – a



*Once opened, the A4000 shows of its compact design. Note the lack of SCSI connector and the multi package 23 pin video port*

DPaint in HAM-8 mode!

AGA software, including a DPaint IV upgrade, looks set to impress





256-colour Workbench is beautiful, if a little slower than normal

mere 16 shades of each primary colour.

You now have access to a palette of 16,777,216 colours, 255 shades of each primary! Along with all earlier colour modes, such as 32 colours, Extra-HalfBrite, and HAM, the AGA chips add new 64, 128, and 256-colour modes, all of which draw colours from the 24-bit palette.

Most impressive, though, is the new HAM8 mode, which uses 64 base colour registers and the 24-bit palette to achieve incredible true-colour graphics.

Although Commodore rates this mode at 262,000 colours on-screen simultaneously – which is quite impressive in itself – the mode can actually support over 700,000 colours in the highest resolutions! And with 64 base colour registers, HAM fringing is a thing of the past. Screen reso-

lutions available in the new chipset are the same as you'll find with the ECS chips found in the A500 Plus and A600 under Workbench 2.1.

These range from 320 x 256 up through 1280 x 512 and 640 x 1,024 interlaced, and include the new 800 x 600 72Hz mode, in both 50Hz PAL and 60Hz NTSC resolutions.

The big difference, though, is the colour depth available in all of these resolutions. Under the original Amiga chips, the highest colour resolutions could only be achieved in lo-res, 320-pixel wide modes.

## De-interlaced

Under AGA, you can go into any supported colour mode in every resolution – so even 1,280 x 512, HAM8 mode is possible! Also, since the Productivity modes are no longer limited to four colours, you can open usable hi-res, de-interlaced 640 x 480 screens.

If you've seen how much a Workbench screen slows down on an ECS Amiga when you pop it up to 16 colours, you may fear that these new graphics modes are going to slow the A4000 to a crawl.

No fear, though – using the new graphics chips, a 16-colour hi-res Workbench screen uses the same amount of computing power as a lo-res, two-colour screen under the old graphics chips.

Commodore has increased the Chip RAM bus from 16 bits wide to 32 bits. This alone would double the speed at which the custom chips could access graphics memory, but there's more!

New RAM technologies allow the AGA chips to make two fetches from memory in one cycle, effectively giving you 64-bit

access to chip memory and quadrupling the graphics speed!

Are the new graphics fast? Absolutely. Combined with the new operating system double-buffering, the A4000 can swap display buffers over 2,000 times per second!

Of course, no monitor is going to be able to handle graphics updates that fast, but what it realistically means is that you can quite easily have 60 frames-per-second animation, even on an Intuition-draggable screen with over a quarter of a million colours on it!

The Blitter itself is no faster – a bit-blit takes just as much time as it used to. However, the Blitter is often fighting other custom chip functions for access to memory, and the new 4x memory bandwidth means that the Blitter often gets a chance to do its thing three more times in the same period of time that it used to just do one Blit.

## Super sprites

So while the A4000 doesn't blit faster, it does blit more often, giving a noticeable speed-up in many games and applications.

Another neat new feature of the AGA chipset is better sprite support. Sprites can now be up to 64 pixels wide, rather than just 16. Not only that, but sprites are no longer limited to lo-res pixels.

You can now have hi-res, or even super hi-res sprites. You can create ultra-detailed pointers, or just make them very small so that they won't get in your way.

The A4000 doesn't have a de-interlacer chip like the A3000 did. Instead, the machine relies on the new AGA graphics modes to provide software de-interlacing.

Along with the non-interlaced hi-res mode, AGA also has DoubleNTSC and DoublePAL modes that are essentially de-interlaced versions of the old interlaced modes.

Using a feature called Mode Promotion, toggleable in Preferences, you can tell the A4000 to apply all modes that would nor-

## Connecting to the world

Except for the missing SCSI connector, the A4000 has all the ports found on the A3000, including serial, parallel, floppy, monitor, audio and joystick ports.

The monitor port is a standard 23-pin port, and includes an adaptor for hooking up a 15-pin VGA monitor cable. To fully utilise the Amiga 4000's graphics capabilities, you'll need to purchase a multiscan monitor that can sync from 15kHz through 31.5kHz.

If you use a standard 15kHz monitor, such as the 1084, you won't be able to access the new de-interlaced modes. Unlike the A3000, you can't easily choose to use a VGA-style monitor that won't sync down to 15kHz.

Some programs that don't work with Mode Promotion, such as all bootable games, will trigger the monitor into 15kHz mode, resulting in a scrambled screen on a VGA monitor.

Even worse, some system savers, such as the boot screen and the guru screen, come up in 15kHz mode. So do yourself a

favour and get a monitor such as Commodore's 1960 which supports all the available scan rates.

The A4000's keyboard connector has been changed to a mini-DIN plug, so you can't use a keyboard designed for the A2000 or A3000 with it.

The joystick and mouse ports are now on the left side of the machine. With the A1000, A500, A2000, and A4000, the ports have now been on the right, rear, front, and left of the machine.

This only leaves Commodore, who seems to love to move these things, the choices of the top or bottom of the computer when they release the A1200!

Adding boards to the A4000 is very easy. Commodore finally designed a case that was easy to get into – just remove two screws from the back and pull the top off.

Hard drive replacement is equally simple – I was able to install a Quantum hard drive in less than five minutes.

mally be interlaced in the equivalent hires, non-interlaced modes.

For example, PageStream will open on a DoublePAL, 640 x 512 non-interlaced screen instead of the normal interlaced PAL screen. Also, you can force even 256-line screens to open at VGA scan rates, so that you don't have to look at ugly scan lines.

Mode Promotion works fairly well, except for a few programs that don't open their screens using the proper OS calls. These will open in their standard interlaced modes.

## AGA-compatible

An example of a program with this problem is DPaint IV, but Electronic Arts say they will have an AGA-compatible update available soon that will fix this problem.

All of these new AGA features are supported by the newest release of the Amiga operating system, Amiga OS 3.0. Although it looks very similar to AmigaDOS 2.04, 3.0 adds a number of new features.

It includes two KickStart 3.0 ROMs – the only socketed chips on the A4000's motherboard – and a new set of AmigaDOS disks.

First, AmigaDOS 3.0 adds all the features found in the AmigaDOS 2.1 update just released for OCS/ECS machines. Those include language localisation, a PostScript printer driver, sampled sounds for DisplayBeeps, better support of outline fonts, and an improved ASL file requester.

Like 2.1, AmigaDOS 3.0 includes a



Choose a colour, any colour...



When new software, such as ProWrite 3.3 begins to appear, the new chip set will really start to shine

licensed version of the CrossDOS MS-DOS file system. Using CrossDOS and the A4000's built-in floppy drive, you can not only read and write 720k IBM-format floppies, but hi-density 1.44Mb PC disks as well.

An addition specific to AmigaDOS 3.0 is MultiView, a file viewer that uses the new datatyped library. The version of MultiView that ships with the Amiga allows you to examine pictures, text files, sampled sounds, and AmigaGuide-format Hypertext files.

The neat thing about datatypes is that other programs can utilise them, and that new formats can be added. So if someone writes a GIF datatype and you install it on your system, MultiView will gain the capability to view GIF files, as will any other graphics-oriented programs that use datatypes. This feature should make file format conversion very painless in the future, as more programs begin to take advantage of it.

Preferences has been revamped to take advantage of the new features. Control now contains an option for turning mode promotion on and off, and ScreenMode lets

## Amiga range compatibility

With all these new features and a new operating system, you might expect the A4000 to have all sorts of compatibility problems with older software.

Luckily, Commodore did their homework and that's not the case at all. The only application I found that had trouble was Professional Page, whose menus became invisible (Gold Disk is about to release a fixed version).

PageStream, ProWrite, Imagine, ImageMaster, WordPerfect, WordWorth, Deluxe Paint, and other productivity programs I tried worked fine.

Some programs, including Art Department Professional, ProWrite 3.1, and Final Copy 2, even support the new graphics modes already.

Game compatibility was surprisingly good, considering that the graphics chips are markedly different, and considering how many game programmers seem unable to force themselves to open the Amiga ROM Kernel manuals to see what's legal and what's not. Many games, such

you bring up your Workbench in 256 colours.

WBPattern has a very impressive new feature – you can now use IFF pictures for your Workbench and window backdrops! This looks particularly impressive in 128 or 256-colour modes.

Also, the Palette Preferences editor now has an impressive-looking colour wheel for selecting colours. This colour wheel is actually one of a new class of BOOPSI (Basic Object-Oriented Programming System for Intuition) gadgets that can be utilised by other programs.

## White on black

Workbench itself has a couple of nice little improvements. The menus are now rendered as white on black by default, and you can use the Palette Preferences editor to choose colours of your own.

Amiga key and checkmark characters are now scaled to match the menu font in use. Also, calling up information on an icon no longer locks up Workbench until you're through.

Along with all the new features, the underlying code has been improved greatly too. The graphics library has been sped up considerably, so programs that use it extensively will seem much faster.

The layers library, which handles windows, has also been greatly optimised, and the difference is evident when moving things around the Workbench screen.

The incredible new 2,000-swaps-per-second Intuition double-buffering means creating animations on draggable screens is a snap.

MultiView is good for showing off a new feature of the operating system – pen sharing. If you open a number of 32-colour pictures on a 256-colour Workbench screen, you'll notice that they all look very good.

Kickstart 3.0 will allocate the proper colours for the picture using unused

as Sierra adventures, Shadow of the Beast III, Pinball Dreams, and SimEarth, worked fine with the AGA chips.

Commodore has made a provision in AGA for the rule-breakers. There's a bootup screen accessible by holding down both mouse buttons. On this screen you can toggle off the processor caches (which slows the machine a bit but fixes some illegal programming practices, especially common with copy-protected games), switch to PAL or NTSC, and select your chipset.

The AGA chips have an ECS compatibility mode that disables the new features of the chipset. Selecting this mode from the boot screen allowed me to get the programs that wouldn't work properly under AGA, such as Air Support, to work fine.

The only games I couldn't get to run on the A4000 were games that wouldn't work on the A3000 either – this means it was probably the 68040, rather than AGA, that caused the problems.

## Conclusion

The A4000 is an incredibly impressive machine. Commodore has managed to introduce tons of new features without introducing tons of incompatibilities – an extraordinary feat!

The new capabilities of the AGA chipset make it a dream machine for the artist, animator, desktop publisher, TV producer, or game nut. And although its £2,000 price is a bit steep for the average Joe, it's a bargain for a machine of this power.

The processor slot expandability and 32-bit Zorro slots mean it's a machine you won't outgrow for a long time. The only real downer is the IDE hard drive interface, which is passable but not up to what Commodore can do in a professional machine, but even that problem can be fixed by plugging in the A3090 SCSI card when it becomes available.

If the A4000 is out of your price range, Commodore is set to introduce the A1200, which will have all the features of the AGA chipset, but with less room for expansion and a less speedy microprocessor.

Once the A1200 hits the market, expect the AGA games publishers to take real note of the AGA Amiga. I personally can't wait to play my first 256-colour (or 262,000-colour!) game!

In the meantime, the A4000 provides all the power even the most demanding Amiga user could desire. Commodore has done an incredible job with the next generation Amiga. Ahead, warp speed!



Amiga: The Next Generation

## Price Blasters Pledge

Over the past year we have continually provided the best possible price coupled with the best possible service. That's why commencing this November we are introducing the Price Blasters Pledge.....

In the unlikely event you are able to purchase any advertised item cheaper elsewhere we will not only match that price but will also send you a £5 Gift Voucher with our compliments"

*Subject to terms and conditions of sale (see page 4)

# COMPUTERS

**GIFTS**

## CHECK OUT
## DIEGO'S TOP 10
## Christmas Supersavers

**1** **CHEETAH CHARACTERSTICK JOYSTICK**
The perfect gift, available as either:
★ Batman Returns ★ Terminator 2
★ Alien 3 ★ Bart Simpson
Complete in movie set gift pack! ONLY **£8.99**

**2** **TAILOR MADE
AMIGA 500 DUSTCOVER**
A steal at just... **£1.99**

**3** **DISK ACCESSORY PACK**
★ Box of 10 branded precision disks
★ 40 capacity lockable disk box
★ 3½" disk drive cleaner kit
ALL FOR ONLY **£8.99**

**4** **GFA BASIC** (RRP £49.95)
Essential for programming
**£3.99**

**5** **6mm QUALITY MOUSEPAD**
At this price you can't go wrong
**£1.29**

**6** **SEGA MEGADRIVE**
Basic console with joypads & p.s.u.
**£99.99**

**7** **ZIPSTICK SUPERPRO JOYSTICK**
Simply the best autofire joystick on the market
**£9.99**

**8** **ASTRA TEN GAME PACK**
★ Tatestorm ★ Dungeon Quest ★ E.Motion ★ Grand Monster Slam ★ Powerplay ★ RVF Honda
★ Shufflepuck Cafe ★ Soccer ★ Tower of babel
ALL 10 GAMES FOR ONLY **£14.99**

**9** **CARTOON CLASSICS GAME PACK**
★ Bart Simpson ★ Captain Planet ★ Lemmings
**£14.99**

**10** **AMIGA 1.3 BUSINESS PACK**
PRO WRITE 2.5 (Wordprocessor)
MAXIPLAN (Spreadsheet)
INFOFILE (Database)
ONLY **£24.99**

**WE GUARANTEE YOU CAN'T BUY CHEAPER THAN DYNAMITE—ORDER NOW**

**9am – 8pm ORDER HOTLINE...**

# 0234 214212

GO ON TREAT YOURSELF!

**4**

# SUBSCRIBE

Save time, save money. Make sure you get your copy every month. Get this complete editorial package delivered postage free direct to your door. You can also choose one of these great gifts, and you automatically enter our exclusive subscriber's draw. Also by choosing the Direct Debit option you can save an extra 50p off the cover price of each issue, by paying only £7.47 per quarter.

## 3 FREE MAGAZINES

What more could a devoted *Amiga Computing* reader want? You can have 15 issues for the price of 12.

## 5 FREE GAMES

AC and Infogrames have got together to give you 5 free games.

This package, High Energy 2, lets you travel at the speed of light in The Light Corridor, drive a Ferrari F40 in Crazy Cars 2, play air hockey in Shufflepuck Cafe, play Pinball Magic and face monsters in Mystical.

# EXCLUSIVE SUBSCRIBER'S DRAW

Every *Amiga Computing* subscriber automatically qualifies for our monthly draw.

Sponsored this month by *Special Reserve Games Club*

This month you can win hours of amusement with a great handheld Atari Lynx 2, RRP £84.99, 4096 colours, 64K Ram, 16Mhz Processor, 8 Meg game capacity, also the lucky winner also gets free membership to the Special Reserve Games Club, worth £6.99.

Special Reserve Games Club sell games and accessories at amazing prices for all types of machines. Members receive the club magazine NRG bi-monthly which contains news and reviews of all the latest games plus £30 worth of money off vouchers. For a free catalogue ring 0279 600204.

This months winners: Congratulations to the two lucky winners of October's draw. Domarks Championship Manager is on it's way. Well done Mr J R Jackson of New Duston, Northampton and Mr F Quinn of Woodthorpe, Notts.

# COMPUTAWORLD

## DESCRIPTION

The Amiga A1500 Pack

The NEW Commodore Amiga 1500 Pack features a 7.14MHz 68000 processor with 1Mb RAM as standard (expandable to 41Mb via expansion cards). It includes two 880K 3.5" floppy disk drives and can support PC emulation by an XT/AT bridgeboard or AT-once Plus. The Amiga 1500 contains 3 co-processors (Denise, Agnus, Paula) to enhance sound, graphics and animation. It also includes 9 internal expansion slots. Interfaces include: Parallel - Centronics, Serial - RS232, Video - RGB Analogue, RGB Digital and mono Composite, Right and Left Audio, 2 x Mouse/Joystick controller ports and an external drive port. It also includes a multi-tasking WIMP operating system, a colour palette of 4096 colours, high quality stereo sound with 4 channels and 9 octaves and text to voice synthesis. This package does not include a hard drive and is available with or without a monitor.

**Amiga A1500**

**Amiga 1500 Starter Pack** £499.00 Monitor not included

**Amiga 1500** £698.00 As shown with 1084 Stereo Colour Monitor

THERE ARE ONLY A FEW PRODUCTS IN STOCK. OUR PRICES ON ALL AMIGA PRODUCTS ENSURE YOU BUY, WE WILL NOT BE BEATEN

## DESCRIPTION

The new super compact Amiga 600 featuring:

- Smart new compact design with built-in TV modulator
- 1Mb chip RAM memory expandable to 2Mb chip RAM with 601, total memory capacity 10Mb RAM
- Industry standard smart card interface PCMCIA interface for memory and peripheral upgrades
- Integrated industry standard IDE (AT) interface, with optional 2.5" 20Mb hard drive
- New Workbench 2 with Kickstart 2.05 ROM
- 12 months on-site warranty for total peace of mind

**Amiga A600** £279.00

## FREE TURBO CHALLENGE WITH PHILIPS MONITOR

**TURBO**
CHALLENGE

## DESCRIPTION

Philips 8833 MKII 14" Colour Monitor

- 0.42mm Dot Pitch
- Analogue and RGB Inputs
- Controls for: Volume, Brightness, Contrast, Green Switch, Horizontal Shift, On/Off
- FREE Amiga cable included

**Philips Monitor** £199.00 For FREE next day delivery

## DESCRIPTION

Commodore 1084S 14" Stereo Colour Monitor

- 0.42mm Dot Pitch
- Analogue, RGB, Digital RGB & Composite Video Inputs
- Controls for: Centring, Height, Contrast, Brightness, Colour, Volume, On/Off
- Amiga Cables Supplied

**Commodore Monitor** £199.00 As shown with 1084 stereo colour monitor

# The Milky Way

The sky's the limit when it comes to Amiga animation, as Ravi Swami found out when he took a step into the world of the professional film makers

Apart from the obvious and pervasive video game applications, animation on the Amiga is really something that you are only aware of from the odd PD demo (there are actually quite a few of these) and possibly Rolf's Cartoon Club.

In the former case, this suggests real part-time animators sweating away in creating ILM/Warner Bros-quality sequences in their bedrooms, like the 8mm film moguls of 20 years ago, only better – in the latter case, school-kids who having been introduced to the capabilities of the Amiga as an animation tool, who may be the John Lasseters of tomorrow.

In either instance, it is more a case of hinting at the latent power of the Amiga as a media tool, and we have yet to see it being applied in a really serious way to producing films, programmes and the like.

## Distinctive

I recently discovered several Amigas being put to good use at Speedy Films Ltd, a company celebrating 20 years in the business of producing distinctive animation commercials and short films, both here and in the US, which is no mean feat when you consider the shifting state of the film industry here.

MD Paul Vester seems to have no reservations about using the Amiga wherever possible on a job – to assist in the production of a commercial, for instance.

An eye-catching recent example is the ad for Milky Way chocolate, which involved a computer-animated satellite character racing for a Milky Way bar against a hand-animated Asteroid person – a kind of update of the Hare and Tortoise fable.

The computer-generated segments were actually integrated to fit in with the overall look of the commercial, dictated by a comic book design theme, so you are never aware that it is computer animation, and rightly so.

This was a case of using the Amiga's 3D capabilities to do the time-consuming "drawing" (and animation) of something which is made of geometric forms, and meant to look mechanical, ie "straight lines", which animators abhor doing – believe me. This freed animation director

Barry Baker, who was responsible for implementing Amigas at Speedy, to get on with giving the animation the zip it required.

The design of the satellite made its construction (in VideoScape 3D) quite easy, since it was basically a faceted ball on an hemisphere with solar panels for "arms", the panels being deceptively simple rectangles. In fact, they have aerofoil cross sections!

One of the reasons you see spheres so often in PD demos of 3D work, incidentally, is probably because a sphere looks like a sphere just about any damn way you look at it – relieving the designer from trying to make a complex 3D object in a modelling program. They are also quick to render.

After producing a pencil test of the entire commercial using conventional

> *...show a floppy disk to a paint and trace artist and you are likely to be met with a blank stare...*

computer animation (called an "animatic"), the next stage was to reproduce the rough test in the Amiga using VideoScape 3D to generate the satellite – a common approach when dealing with computer animation due to its (usually) high cost.

You might think this odd, considering the ability of most computer systems to display animations in a basic wireframe form, which can be edited and refined prior to rendering.

In this particular instance however, due to the graphic style, large quantity of conventional animation, and economics, the animation of the satellite was done first on paper, to establish pacing and its relationship to the other characters.

Then Baker started to reproduce the animation, using VideoScape 3D and Hash Enterprises Animation Apprentice, using the pencil test as a basis. Baker's

next concern was transferring the Amiga graphics to an Amiga that could be handled in a conventional sense, like drawn animation – a process which involved, ultimately, painstaking matching of the computer material to its drawn counterpart. Who said computers make your life easy?

Once the animation of the character had been approved, some way had to be found to produce the separate frames in a form that could be treated like conventional animation ie on paper, or hard copy as it is called – in fact ,this term can be used to describe everything from printouts to 35mm slides.

Show a floppy disk to a paint and trace artist – the people who transfer the animators' drawings onto acetate for colouring and eventual filming – and you are likely to be met with a blank stare.

The transfer of the satellite to paper hard copy could have a practical purpose, however

– not only is it easier to treat it like familiar animation, it would allow for the matching of the other 2D animated elements, since the printouts could be "peg-registered" and used like drawn animation.

Baker opted for using a standard printer to image the frames, giving the images a drawn quality, and although there are many ways to out put graphics, this method proved to be the most direct and cost-effective.

You may wonder why the animation was not simply rendered in the Amiga first, as full 3D animation. Well, iµ was to the extent of using lighting to suggest volume and shading, but the look of fully-rendered 3D did not fit with the design of commercial.

The computer animation did not, in this case, set a precedent for the overall look, which had already been determined.

The next stage involved photocopying the animation, by now simply another element along with the other drawn animation elements, onto acetate, where it was coloured, and also enhanced with hand-drawn detail to bring it in line with the "look".

## Convincing

The net result is something which looks very much drawn, but moves in a convincingly real way. Of course, in an ad like this, reality is not an issue – however, there are some things whose movements tell you a lot about their physical nature, and the satellite was a case in point.

The use of the Amiga did not stop here however – the ad featured planets, too. Planets are spheres, and 3D programs

can do spheres very well.

In this case the spheres had faces, which were ultimately texture-mapped drawn animation, and are gradually revealed as the camera swings past them – an effect which would have been difficult to do in the usual way, and would certainly have required many tests to get right.

A feature of the Amiga is the ability to preview animations, depending upon the software and memory constraints you may have, and this aspect makes things a little easier to evaluate, even in software like DPaint.

In between all this, Baker also managed to write a small program which enabled him to print out "doge sheets", or camera charts for shooting the many levels of animation, with data typed in on the Amiga.

Camera charts are a necessary part of the whole process, but involve very painstaking filling out of charts by hand by the animator, and since many levels of artwork can be involved, they can become quite complex.

Baker's program is not perfect – as he is quick to admit – but it does take some of the pain out of it.

The final result of all this is an entertaining commercial with a look that owes more to the work of an illustrator, than, say, the flat colour/outline, "earthbound" look of more conventional animation.

It was achieved with a minimal amount of programming knowledge – the "doge sheet" program was written in Basic, which says a lot for the user-friendly approach taken by the Amiga graphics programmers.

Speedy's most recent Amiga application, in graphic terms, exploits the lo-res quality, brash colours and immediacy of computer graphics to create off-the-wall animated links for their showreel, to be aired on Liquid Television (BBC2 – 7.25pm, Mondays) in the not too distant future.

The segment, designed by recent Royal College graduate Tony Lee, whose distinctive style is suggestive of the graffiti left behind by some extinct techno-culture, has evolved from his work with

the Apple Mac. Fitting in with and taking a cue from Tony Lees' style of working and designs, the sequence was first storyboarded to determine what exactly was to happen.

The broad theme was "Heads" – a series of bizarre mutating faces against a patchwork of computer-generated colours and shapes.

Using the most available and ubiquitous software, DPaint, and also DigiPaint from NewTek, and fitting into the budgetary scheme of things, the job was divided up between Lee and Barry Baker.

Used normally to working with the Mac, Lee was unfamiliar with the Amiga – in this case an upgraded A1500, brought in especially for purpose – and feels the sequence could have been created on just about any computer, but is ready to admit the Amiga's price advantage over its competitors, and the availability/diversity of Amiga software.

It becomes obvious when doing any large-scale animation work on the Amiga that figuring out exactly how to proceed is essential, to avoid the inevitable "grazing of elbows" phenomenon – especially, as in the previous case, you have a collision of two distinctly different styles of working.

## Backgrounds

Once the sequence had been designed, Lee set about producing the various backgrounds (totalling about 30), and providing start and end position designs of the heads, since it had been determined that the heads would be hand-animated (by Barry Baker) to convey a sense of fluidity that would be difficult to achieve any other way.

In doing so, Baker's brief was to keep in character as much as possible, so the in-between stages of the transformations are as bizarre as Lee's key designs!

The final, approved animation was handed back to Lee, who then re-drew it

with a heavy black line, which could be picked up by a video camera for digitising in a package like DigiView.

The digitised frames were then taken into the relevant paint program for rendering and compositing – a task which was split between Lee and Baker – and employing the same basic procedures, within the program, to keep a sense of

> *...as you might expect, the Americans have been using the Amiga for serious broadcast work for quite some time...*

flow to the production. Since only the backgrounds were static, a number of different techniques were employed to provide the necessary detail and richness.

A number of powerful capabilities exist within DigiPaint, both for rendering and also compositing images, which Baker made use of to streamline the compositing process.

In fact, once it was set up, the Amiga was left to chug through layering the heads and backgrounds, along with a dropped shadow, by itself.

DigiPaint allows the user to set up user-definable macros of all the functions you would normally access via the user-interface and also define some unique functions that cannot be found in among the standard paint options

The whole sequence took several weeks to produce, and was essentially experi-

mental in nature, in the hope that it would lead to a commission in the future. And it worked – Speedy have actually been commissioned to do some work for MTV (US) based upon the sequence.

Once the rendering was complete, some way had to be found to transfer completed frames on to either video or film reasonably cheaply.

I have mentioned in a previous article that it is possible to transfer Amiga animations to tape with excellent results – some facilities, like Triangle TV, are geared up to do this from the Amiga.

This was in fact the route taken by Speedy, and the animation was shot on Low Band U-Matic tape.

## Reproduction

The examples, decorously displayed on the pages of this article, are derived from prints which were produced by shooting the Amiga monitor, and show how good the reproduction can be if you take the care at the photography stage.

Although the end result was shot on non-broadcast tape, the quality still holds up, at least to the untrained eye.

Lee hopes to work more in the realm of 24-bit, having seen the shortcomings of lo-res on the Amiga, in common with Barry Baker, who intends purchasing a DCTV board for one of the three Amiga Speedy currently use.

The advantages of 24-bit are the higher resolution – more colours, less jaggies – however we will have to see if there is a machine that can chug through animations as fast as the current Amigas, even with the shortcomings of lo-res. Maybe that machine is the new A4000.

The two examples shown indicate just what you can achieve with the basic Amiga setup and a little animation know-how thrown in for good measure. When the hardware is pushed to the limit it can come up with some spectacular results.

# COMPETITION

## Superb simulation software

*AC* and Microprose have got together to bring you this scintillating simulator competition. Gunship 2000, the brilliant successor of the original multi–copter classic Gunship, is up for grabs. We've got 20 copies to give away. And who knows – for the cost of a stamp you might be one of the lucky winners!

In Gunship 2000, the player can choose up to three types of helicopter from the army's arsenal of seven, and take up to five on any mission.

The helicopters are the technologically advanced machines the US Army will be relying on throughout the 1990s and into the 21st century.

Action will occur in Central Europe and the Persian Gulf and players can designate their preferred mission. Options include training, single and multiple helicopter missions, and the campaign game, including a map showing the ebb and flow of battle.

The simulation also offers a "mission builder" which allows the player to design, edit and save missions.

**UP FOR GRABS**
Hundreds of £££s worth of giveaways

### ENTRY FORM

**Question**

*All you have to do is answer the question, and give your name and address. Easy!*

Which of the following places in Gunship 2000 does action not occur in?

a. Central Europe ☐
b. Persian Gulf ☐
c. Coronation Street ☐

The tie breaker is: I want to win lots of games because

Name

Address

Postcode _____ Daytime Telephone

Entries to be in by December 15 1992

Send to: Amiga Computing December Microprose Competition, Database Direct, Junction 8 Business Centre, Rosscliffe Road, Ellesmere Port, South Wirral L65 3BN

Please tick this box if you do not wish to receive promotional material from other companies ☐

# AMIGA Update

AC continues its mission to bring you the very latest developments as they happen

## WordWorth v2

In the last few years Amiga wordprocessing has come a long way from the crude but efficient PC clones that formerly dominated the machine's approach to WP.

At the forefront of this new breed of Amiga-specific software is Wordworth - a program that's become a firm favourite with countless Amiga writers thanks in part to its stylish approach which combines the basic elements of a word engine with the added whistles and bells of a pseudo-DTP platform.

The mixture of PostScript output via a selection of dedicated fonts plus an array of power features such as a thesaurus, spell checker, glossary and of course the option to import graphics has won it many friends with amateur and professionals alike.

### New features

Now Digita, the creators of the original program, have taken this basic framework and added over a 100 new features which they claim make Wordworth 2 the ultimate in Amiga-based wordprocessing.

Whether this claim is justified will be explored in next month's AC, as Wordworth 2 goes up against a new contender for the WP crown in the form of FinalCopy 2. But before then we'll run down some of the new features of Digita's latest creation.

In an attempt to strengthen the program's aspirations as a WP/DTP platform, one of the strongest selling points is the implementation of the new Intellifonts technology which allows the software to display extremely smooth "jaggie free" text on-screen.

Because the software comes with 17 genuine Agfa Compugraphic fonts as

standard, hard copy is equally as impressive on paper as its on-screen counterparts suggest.

Even the printing process has been enhanced with the option to print by simply clicking on the print icon within the enhanced Tool bar, which now holds a whole host of options in addition to instant printing. All of which formerly resided in the program's pull down menus.

In addition to the included Agfa fonts the program also supports Workbench 2

outlined fonts, Colorfonts, bitmapped fonts, PostScript and the essential internal printer fonts.

Alongside the obvious graphic enhancements the new program holds an impressive array of more subtle additions. Yet another DTP trick is added to the repertoire in the form of column printing and indexing.

Table of contents and list options are also available plus full support for hot links, end notes, improved mailmerge and enhanced file support.

### Overhaul

New bookmark and text sorting have also been added while the original search and replace option has had a complete overhaul.

For the professional and artistic types, Digita have really come good with much improved graphic support in the form of PCX, BMP, IFF, HAM and perhaps best of all EPS graphics all available for importation.

As you can probably see from the screenshots, auto-flow of text around graphics has been added – even round ones - something which even such illustrious titles as ProPage can't easily manage.

For the corporate types, the addition of a mailmerging option has to be one of the high points with available file formats

*A first glimpse at the new Intellifont technology as used by Wordworth 2. As the on-screen text says, 'after all , looks are every thing '. Yes folks, it's finally time to kiss the 'jaggies' goodbye*

*Yet more enhancements thanks to a whole host of font formats which Wordworth 2 accepts with open arms. As you can see even Colorfonts can now play their part in the printing process*

*Thanks to the new improved Tool bar, a massive selection of style and format commands are only a mouse click away. Wordprocessing and pseudo DTP at the touch of a button!*

*Wordworth 2 starts to show its hand as a power application with instant index creation*

including SuperBase, DIF, Mailshot Plus and Ascii all on hand.

Above all else, the best news for countless tired hacks has to be the much improved handling of assorted file formats.

In short, it's a sub editor's dream come true, thanks to support for IFF, MSWrite, RTF, ProWrite, Protext, MSWord, Kindwords 2/3, Wordperfect PC/Amiga and of course the old favourite Ascii.

I'm sure you'll agree that the improvements and the attendant screenshots speak for themselves, and when they're added to a reasonable £39.95 upgrade price it's unlikely many Wordworth fans will wander lonely into another package.

Alas for new users things aren't quite as



*Yet more professional muscle in the form of an automatically generated table of contents. Eat your heart out PC clones, this is a power package in action*

appetising with the impressive FinalCopy 2 waiting in the wings and when this is added to the full asking price of £129.99 for Wordworth 2 many a would-be Wagpaloke might be wise to invest in next month's *AC* for the big WP head to head.

## Understanding Image 2.0

As literature goes the title of this new accompaniment to the Imagine ray tracing package is perhaps as self explanatory as they come.

Unlike the usual software change or hardware addition this update takes the form of a third-party reference manual to what is widely regarded as one of the most powerful and certainly the most complex ray tracing packages on any machine.

As any Imagine user will tell you the manual that comes as part of the original package is a curious beast indeed. It's not fair to say the aforesaid volume is a bad example of this particular genre but it certainly takes a rather unusual approach to the problem of explaining the intricacies of Imagine 2.0.

One of the main gripes often levelled is the meandering style and a fondness for dropping assorted bombshells along the lines of: "OK, that's the basics and with a little experimentation I sure you'll discover lots more."

Although friendly and extremely readable in relation to other manuals, a vague "suck it and see" approach is not what many would-be ray tracers are looking for from their only friend in an alien environment.

Basically 'the whole approach is one of admitting defeat and encouraging the user to discover the program's hidden talent with the aid of a few basic pointers.

This was exactly the same approach chosen with the program's predecessor which also soon found solace in a third-party manual.

Another peculiarity of the original manual is a complete absence of sectioning in regard to particular program functions.

For example, if your looking for the answer to specific problem the index simply indicates where in the manual that particular phrase has appeared.

The end result is countless trogs through pages of useless information in a vain attempt to locate the phrase in question in the context you require.

## Complexity

As mentioned earlier, as a read the manual is extremely entertaining considering the complexity of the subject, but as a reference manual it's a nightmare.

Enter *Understanding Image 2.0* the answer to any Imagine 2.0 fan's dreams. Like the original manual this new guide doesn't tread the usual manual path of straightforward tutorials.

Admittedly my first reaction was "here we go again – more rambling". But after a couple of minutes it soon became clear that although void of specific examples the infamous Imagine learning curve has been vastly reduced.

As you might expect, the program has been sub-divided into the various Editors with detailed coverage of the various elements within each. In addition, chapters have been added entitled Common problems, Fun Tricks, Tips and ideas, Strategies For Success, Textures, F/X, Brushmap Mathematics, Other Programs and Hardware, Command References and lastly the incredibly handy Useful

Attributes.

As the title suggests, just about every Imagine stone is thoroughly turned, although apart from the extra advisory chapters the format may appeal worryingly similar to the original manual. Fortunately the writing style is a lot more approachable from the beginner's point of view.

## Layman's terms

As you'd expect, each element within the various Editors is dealt with individually, explaining in layman's terms what the particular feature is designed for and how best to employ its options.

This explanation of how best to implement a particular feature is perhaps one of the strongest selling points of the product as the author regularly peppers the text with statements along the lines of "purpose you want to do X, well this is ideal" at which point a brief real-world experience is supplied as an example.

Another inspired touch is the accompanying margin notes which regularly appear alongside assorted paragraphs.

Although initially this appears to be a



strange addition, the aforesaid notes provide extremely handy pointers which explain where other potentially related topics can be found - instantly removing the need for constant trips to the index.

In short, *Understanding Imagine 2.0* does exactly as the name suggest providing an intuitive, accessible and most important of all fast reference around one of the Amiga's most complex packages.

Perhaps the best testament I can offer is that it offers the kind of knowledge which otherwise would take months if not years to amass under your own steam.

My only reservation with this and in fact any other third-party reference guide is their appeal for any would-be pirates.

In the time-honoured tradition of the immortal AC conclusion it's safe to say that any Imagine fan would be mad to be without what is an essential add-on. In short, it's the best £23.50 you'll ever spend.

● *Alternative Image, 6 Lothair Road, Aylestone, Leicester LE2 7QB Tel: 0533 440041*

OK, so fiddling about with little 9-pin dot matrix printers is one thing, but where can you go from there? Phil South rounds up some of the current front-runners

# A better breed of printer

**W**hen you first buy your computer the last thing on your mind is a printer.

"Hah!" you think, "why on earth would I want to print out anything? It's all on the screen, and besides I thought this was supposed to be a blimmin' paperless office?"

You're both right and wrong, because very soon you can usually be found with your nose against the window of the local computer shop making eyes at the nearest printer in your price range.

At first you figure you'll get the cheapest you can afford, and these tend to be 9-pin printers. Because you've never printed out anything before, these look great for a while.

Soon you're happily filling your paperless office to the picture rail with gleaming piles of Croxley script, full of neatly printed letter-quality text and smudgy graphics.

The feeling soon wears off. You hate the fat resolution and the smudginess, and when you use a colour ribbon it all blends together.

No, what you need is a real 24-pin printer, that'll be the best. So you sell the old 9-pin and move up to a 24-pin. But that soon palls so you're back to the shop for an inkjet.

This is the best, you say, as you marvel at how 360dpi makes your DTP documents look like someone faxed you a magazine page.

Two months later you're doing the old Access card some damage yet again; getting a non-PostScript laser printer. This is the best quality, you say for the fourth time, and you're wrong yet again.

What happens next is you see the output from a PostScript program and realise that this is what you needed all along. So you sell the house, the cat and the missus and toddle off down the shop with a few grand and a comical mixture of resignation and delight on your face.

There is a lesson in this, I think. If you don't know what you want, you'll end up with something you don't need, which in the case of printers is an expensive mistake. So in the next four pages we'll look at a range of excellent printers beyond the constraints of humble 9-pin jobs.

## Citizen Swift 240C (mono 249.95)
### Gordon Harwood, £269.95

The Swift 240C is a development of the old Swift 24, one of the highest quality printers on sale, and one I actually bought. Anyone who knows me will tell you I don't part with money unless someone's holding a gun to my head, so that's praise indeed.

The printer can also be bought with a black ribbon, and then it can be augmented with a colour kit to make it up to 240C spec.

The machine has an impressive 14 fonts (including two scalable fonts) to its name, and a very neat little LCD control screen, which are the two main things which set it apart from its ancestors.

The look is much the same, although it's been smoothed off to make it a little bit more 90s. The fonts are a bit spindly compared to the ones you find on lasers and inkers, but for a dot matrix they are very good quality.

The unit is very sturdy but light – an odd combination. It feels very solid in operation, and yet when you pick it up you nearly throw it at the ceiling.

It's reasonably quiet in operation, although it still makes a racket if you are used to bubblejets, or lasers. Being objective, the noise is actually very well damped, and there's an even quieter "quiet mode", which tries to slow things down a bit and make the impacts on the paper a bit less grating. The noise is more sort of "zeee zeee" rather than "brrratt brrratt".

Where the 240C really shines is when used with the Citizen Print Manager program, whereby the output is optimised for use with a colour printer.

Blacks come out black, and the colours are really clear and smudge-free. Looking at the output, it's all down to a lightening of the colours and very careful dithering. It's very impressive and this really makes the Citizen the tops for DTP and wordprocessing.

| | |
|---|---|
| Ease of use | 9 |
| Graphics handling | 9 |
| Text | 7 |
| Value for money | 0 |
| Overall | 0 |

## Star XB24-200
### Gordon Harwood, £369.95

This is a huge lunking great beast of a printer, in design one of the old school where size wasn't important, and you could have any size as long as it was humungous!

Old fashioned is what I thought, and to a certain extent I was right. Yes it is a little bit big, clunky and noisy, but it does have an upside, and that is that being so big it is very sturdy and can take a lot of punishment.

It can take a lot of output and still come up smiling whereas a lot of other printers will rag after a few thousand.

It does have Super Letter Quality fonts which are easily the highest quality you can go for with resorting to scalable font technology, but then if you have a DTP program or word publisher like Softwood's Final Copy II then this isn't going to be too much of a problem.

It shakes the table when it prints, but it's fast (at least in draft mode) and so you can put up with a little bit of vibration.

It's not a good looking printer, that much is certain, although even 1970s hacker retro look will appeal to those of us who yearn for the days of line printers and punch cards.

I can't say I took much of a shine to this monster, but it has to be said the quality and strength of the thing are there to be seen.

There are no dedicated drivers for the machine, as like so many manufacturers these days Star refuse to accept that anyone will want to run a printer on anything as low tech as an Amiga!

Why on earth should anyone want to run a colour printer on a colour computer, eh? You can get a reasonable output with the Star LC10 driver with Protext, but this doesn't allow you access to all areas of the printers functions, which can be a little bit annoying.

| | |
|---|---|
| Ease of use | 6 |
| Graphics handling | 5 |
| Fonts | 6 |
| Value for money | 5 |
| Overall | 5 |

## Epson LQ-100
### Power Computing, £209

The new Epson 24-pin printer is a bit of a dark horse, and I don't mean that literally.

Beneath the slimline casing lies the heart of a real power printer, with scalable font technology, and sparkling dot matrix letter quality.

The really neat thing about the Epson, besides the price and the quality, is the size. As well as being very small lying flat, it does a remarkable impression of the Canon BJ10/20 machines by standing on its back in an upright position to take up the least possible space on your desk.

The integral cut sheet feeder makes it an attractive proposition to those of us who hate tractor feed paper, and also hate feeding in single sheets one after the blimmin' other for about 64 pages!

Argh! This is an innovation unique to Epson's LQ and LX-100 models. The font quality is excellent, particularly the scalable fonts, but these are currently inaccessible unless you own some

kind of IBM emulator with Windows 3.0 running.

There is of course the possibility of writing your own driver, and all the details are in the excellent manual, in case you feel like it. Obviously Protext drivers are easy to write, and these will be the best bet.

The same range of fonts available on most printers designed for a business environment are here: Roman, Sans Serif, Courier, Prestige, Script, Draft and Draft Condensed.

The main rival to the LQ-100 is the BJ10ex which also has a sheet feeder, prints at a higher resolution, and manages to somehow be smaller too!

Since the BJ20 came out, the price of the BJ10 has dropped. In the face of all that the LQ-100 is still a good proposition, and if you don't want the hassle or expense of an inkjet, this could be your best bet.

| | |
|---|---|
| Ease of use | 8 |
| Graphics handling | 6 |
| Fonts | 7 |
| Value for money | 7 |
| Overall | 7 |

## Epson EPL-4300
### Power Computing, £799

Most of things I said about the Ricoh also apply to the Epson laser, since the major difference is the Epson is a top notch HP LaserJet clone and it does all the things the HP does, like have the facility for HP cartridges.

This means that the machine can emulate PostScript using an optional cartridge, and this puts it in a bracket of its own.

OK so the Amiga isn't really a PostScript machine as such, but as far as DTP goes it does help.

Halftones – the dotted effect on pictures in magazines and newspapers – are only really rendered properly using PostScript, and if you intend to reproduce from your laser originals then PostScript really is a must.

If you just want a stonking good laser printer, and inkjets get you down because the ink washes off if you get a drop of water on it, then you have a choice between this and the LP1200.

It's only a little bit more pricey than the Ricoh, and the option

of PostScript is a big bonus, and even with the extra cart it's still cheaper than a full PostScript laser.

Real cheapskates might be interested to note that the Post 1.7 PostScript interpreter program by Adrian Aylward works best if you run it out to a HP LaserJet or clone. This makes both laser printers shown here a good option.

The EPL-4300 does ooze high quality and service though, something which the Ricoh tries hard to emulate but fails.

If you get an Epson you know you've got a quality item, and the unusualy for a name item, the name comes free. Not a great deal has been slapped on top just for having those five letters on the nameplate. Excellent.

| | |
|---|---|
| Ease of use | 7 |
| Graphics handling | 9 |
| Fonts | 9 |
| Value for money | 10 |
| Overall | 10 |

## Canon BJ10ex
### Gordon Harwood, £245 (sheet feeder £54.95)

When I bought my BJ10ex it was the same price as the new BJ20 but without the sheet feeder. More fool me, I say, but how was I to know they were going to bring out a miles better one only a slim year later? Ah well, the pace of technology eh?

The BJ10 is almost identical to the BJ20 in size and shape and function, with the lack of any of the fonts, although the draft and LQ fonts in the BJ and Epson modes are different.

The biggest difference is that the BJ10 doesn't do any form of italics except in Epson LQ mode. Not that this will worry you when you're outputting DTP documents at an astonishing 360 dpi.

A very good printer, and now at an unbeatable price.

| | |
|---|---|
| Ease of use | 8 |
| Graphics handling | 0 |
| Fonts | 3 |
| Value for money | 9 |
| Overall | 7 |

## Canon BJ20
### Gordon Harwood, £319.95 with sheet feeder

The BJ20 is a development from the old BJ10e, a super-duper BJ10e you might say. If you've used a BJ before it'll be strangely familiar.

The laptop-like lid still flips up to reveal the printer, but it's all been redesigned, so the lid is square rather than tapered, and the buttons are big and round rather than long and thin, and there are more of them.

The sheet feeder comes with the machine rather than being an optional extra but for the same price (damn, and I bought my BJ10 before they did that isn't it always the way, eh?).

As well as these cosmetic differences, there are now seven fonts accessible through the front panel, and you can also switch between BJ and Epson mode using a combination of panel switches, rather than opening the unit and moving DIP switches with a Biro.

The fonts are pleasing at first, but remind me too much of the kind of fonts you get on an electric golfball typewriter (and I can't think of a use for them).

Why not have scalable fonts like the HP DeskJets do? That's just my opinion. If you'll be using your printer mainly for printing let-

ters or other documents meant to be read by others, then the fonts will be perfect – just because I don't like them doesn't mean they won't make a big impression.

The pages aren't collated when they pop out of your BJ20's sheet feeder, but if you use a clever wordprocessor it can do all that for you, so you don't have to reorganise all the pages.

The BJ's small size precludes the use of a hopper of some kind to catch the paper, and although the pile of pages coming out of the front of the unit gets a little untidy at times, it's not too hard to scoop them all up and sort them out yourself.

Given all that, I actually think the BJ20 is a very good value and high quality printer, and if I didn't already own a BJ10 I'd be seriously considering buying one.

My reservations about the fonts pale into insignificance when you start printing out DTP documents using ProPage or PageStream. The combination of low cost and high quality 360dpi wins hands down, and the sheer dense black micro-pixelled charm of the thing makes it better than any dot matrix.

The car in front might be a Toyota, but the little grey space ahead of the Toyota is a Canon BJ20!

| | |
|---|---|
| Ease of use | 8 |
| Graphics handling | 8 |
| Fonts | 3 |
| Value for money | 7 |
| Overall | 7 |

## Ricoh LP1200
### Silica Systems, £703.83

Although you might at first think a non-PostScript laser printer is a bit of a rum deal, you would be wrong as far as this little laser is concerned.

You don't really need PostScript as an Amiga user, so few programs use PostScript as yet, and besides who needs to download fonts when you can use Compugraphics right off the bat without any faffing about?

There's a certain amount of truth in the fact that PostScript is high quality – more about that in a second – but you don't really need it.

The printer is small and light – when compared with other sorts of laser – and gives a very high quality finish to your text.

The on-board fonts are easy to access, and some varieties of driver – the Protext one for example – are able to switch fonts for you, although with some glitches where for example selecting Helvetica gives you a small Times font.

This isn't either product's fault, but a simple difference of opinion between the real HP LaserJet and the emulated version.

The Ricoh is soon to become a better deal still, as not only is it cheap, it will soon have a specially written driver for Amiga, giving users of Professional Page 3 and other DTP programs access to 400dpi laser printing, using the special FIAL system, which I assume is some kind of overprinting mode.

If the quality is up to it knocks other types of expensive laser devices flat on their toner carts.

| | |
|---|---|
| Ease of use | 7 |
| Graphics handling | 9 |
| Fonts | 0 |
| Value for money | 9 |
| Overall | 9 |

# CIAL ANNOUNCEMENTS

**1. Epson EPL-4300**
A very, very nice printer, and the PostScript option is there if you want to pay for it making this the king of the posh printers.

**2. Ricoh LP1200**
A nice printer and a nice price. Shame about the lack of PostScript as an option, but them's the breaks. DTPers will love it.

**3. Canon BJ20**
The best price/power/size ratio of any printer on the market. The finest quality under £300.

**4. Citizen Swift 240C**
The best colour printer in the marketplace, and no slouch in the mono department either.

**5. Canon BJ10eStill** selling well after all this time, and still better than most of the opposition.

**6. Epson LQ-100**
Nice idea, but needs to be placed against 24-pin printers rather than the higher quality Bubblejets.

**7. Star XB24-200**
A monster but high quality. More for business than home use due to its size and price.

## All the buzz words explained

### Buffer

Most printers have a print buffer, a few memory chips in the printer which enables a number of pages to be sent to the printer at once while the computer gets on with something else.

### CPS

Short for characters per second. The speed of a printer is usually given in these terms, with one cps figure for draft and one for letter quality mode. Draft modes are fast because they provide less detail.

### Dot matrix

This covers all 9 and 24-pin printers, where the image on the page is made by tiny hammers called pins banging onto the page thorough an inked cloth strip called a ribbon. Inkjets are simply a more advanced form of dot matrix printer.

### DPI

Dots per inch, another figure bandied about by people trying to sell you printers. This is the resolution of the printer, and the more dots, the more detail!

### Draft quality

A quick printing mode to see how everything's shaping up, but sacrificing quality for speed.

### Drivers

Before your Amiga can use any kind of printer you need a print driver for it. This can be found either on the master disks which came with your Amiga, or in the PD or from bulletin board systems like CIX in London. Some of the more enlightened manufacturers, for example Citizen and Canon, release print drivers for all their machines themselves.

### Emulation

Most printers have their own print drivers, but some programs won't use Prefs printers. This is the reason that most printers emulate an Epson LQ or FX type printer, or if it's a laser it'll do some kind of HP LaserJet emulation. Imitating other printers can be very useful, especially with difficult software!

### Fonts

Some printers have a number of fonts or typefaces. This means that the letters on the page will be different styles, depending on which font you use.

Obviously having a lot of fonts is very good, but not if you can't access them with any program that you use. Digita's Wordworth and Amor's Protext are very clever at matching to printers with a lot of fonts.

### Inkjet

Like a dot matrix printer except that instead of hammers and a ribbon, the printer uses a number of fine jets which spray the ink onto the page from very close.

The resolution you can get from this kind of printer is astonishing, almost laser quality, apart from the fact the ink spreads a little on contact. Use of special coated papers minimalises this effect.

### LaserJet emulation

The LaserJet range from Hewlett Packard have become the industry standard for non-PostScript laser printers, and so any laser worth the money has this type of laser emulated somewhere inside.

### Laser printer

A printer which works on the same principle as a photocopier. The image of the page is scanned onto a drum by a solid state laser. The powdered toner ink sticks to the charged parts of the drum ,and then this image is rolled onto the paper. The paper is then heated and the toner is fused to the paper.

### Letter quality

A special mode in modern printers which goes over each letter a few times to improve the definition. It takes longer to do, but enables you to have the quality of text you could use in a letter. Also called coresponsdence quality.

### Parallel interface

Printers need to get their information from the computer somehow, and by and large this is done using the parallel interface on the back of your computer. Parallel means side by side, meaning the port can send bits of information simultaneously rather than one at a time (see Serial).

### PostScript

A page description language used in high-end printers. Designed by John Warnock in 1981 as the Interpress language, which later became PostScript in 1985, as the flagship product of Warnock's new company, Adobe. It wasn't until PostScript was installed in the fledgling Apple Mac LaserWriter that it really took off though.

### Print head

The business end of any printer, the bit which touches the paper to make the marks.

### Ribbon

An inked strip of material is a cartridge which enables the pins in a dot matrix printer to make their marks on a piece of paper.

### Serial interface

Some printers have a serial interface, some laser printers for example. This is distinct from the parallel interface in that the information is sent to the printer serially, that is to say one bit at a time, or one after the other.

## Ezra Surf's Postbag

Got something to say through the pages of AC? Ezra Surf is our mailman, dedicated to sitting in a corner reading your letters and selecting the most interesting for publication.

Drop him a line at:

Ezra Surf's Postbag, Amiga Computing,
Europa House, Adlington Park,
Macclesfield SK10 4NP.

Please don't enclose saes as Ezra just hasn't got enough paper to reply personally. He might also have to shorten your letters, so don't be offended if you end up getting the chop.

## Packed pain

In the never-ending war against the virus, I was pleased to see that *Amiga Computing* had issued Virus Checker v6.15 on the October disk. However, I was a bit disappointed to find that the file was crunched.

This of course isn't a bad thing in itself since it allows you to cram the CoverDisk full with goodies, but for a hard drive user a crunched version of an essential tool adds an annoying few seconds to the boot-up time, which tends to defeat the main reason for using a hard drive: speed.

Are there any plans to include a decruncher on a future CoverDisk, or would it be possible to obtain an uncrunched version?

*John Stuart, Ayr*

As you point out, the overriding concern for disk compilers is the necessity of stuffing the disks as full as possible, and to this end we now employ PowerPacker v4.0.

The unfortunate side effect is that the crunched files cannot be decrunched using the shareware versions of this popular packer.

We hope in the future to be able to rem-

edy the situation, but for the moment we don't have a PD decruncher for PowerPacker 4.0 files, and we are loathe to return to less effective crunchers.

Archiving is one possibility, but brings with it a host of complications, as WB1.3 users recently discovered with the Quadrix archive.

The more letters we receive on the subject the better, so let us know whether you would accept fewer programs on the disk, or would be prepared to go through the de-archiving process for more and more CoverDisk programs.

Meanwhile, probably the best solution for those desperate to decrunch their CoverDisk programs, especially hard drive users, is to buy PowerPacker 4.0 from Europress Direct, who advertise in every issue of AC.

This will set you back £14.95, but for that price you get the best cruncher/decruncher around.

## Eastern promise

This morning I received my third replacement disk for the August issue of *Amiga Computing*. As with the other two, it contained a virus (Saddam, I think). Coming

from a reputable magazine like AC I think that's very shoddy treatment, don't you? I got the first duff disk back in June and immediately informed AC customer services.

After several phone calls to both Macclesfield and the Wirral, I was asked to send the disk to Stevie Kennedy direct. Result? No reply.

More phone calls later I was informed that it was indeed an infected disk and that a new one was on the way. None arrived, but after more phone calls to the Wirral I was assured that a new one was on the way. To cut a long story short, what the hell is going on? Is AC still sending out faulty disks?

Have other readers had similar problems, and how much damage has been done by infected disks popping through the letter box? As a long time subscriber to AC I am worried and annoyed at this situation. Please help!

*B Southworth, Bolton*

To set the scene for you, imagine me standing on a soap box, pounding my fist in the air, red-faced, and shouting at the top of my voice "there is no virus on the August issue's CoverDisk!" There! Now that I've got that off my chest, I refer you to a recent letter from

## Award seeker

Please could you help me find a program that I have been after for ages? The program is called Award Maker Plus.

It is an award making/printing program and consist of 12 disks. I saw someone with a pirate copy once, but it was full of bugs and they didn't know where to get hold of the original.

Please help me to find this fantastic program as I am a regular subscriber to your wonderful magazine (creep! creep!).

*L/Cpl R A Till, 200 Signal Sqn, BFPO 41*

I'm sorry to say that I haven't a clue and have never heard of Award Maker Plus. However, we've printed your full BFPO address in the hope that someone out there knows something of the package and can contact you with the details. Good luck - especially if you end up in the middle of Bosnia.

someone who thought they too had Saddam on the August disk.

They had been using the inferior quality Nuke virus killer, which suffered a bit of a nervous breakdown when it encountered the August disk.

This is because our duplicators that month, TIB of Bradford, use a duplicating process which Nuke for some reason doesn't care for.

Had you checked your disk with any other killer, including Virus Checker, you would have found nothing on the disk. Had you checked the disk-validator using a hex editor, you would have found it to be perfectly normal, thus ruling out the possibility that Saddam was on the disk. I

apologise for the to-ing and fro-ing you seem to have gone through in your attempts to get a replacement disk, but please be assured that our customer services people do their best and that the August disk was squeaky clean.

## A paucity of PD

I am writing to air a grievance concerning PD which has annoyed me ever since I first ordered any, namely that of paying hard-earned cash for disks which turn out to be less than 50 per cent full.

People complain about overpriced commercial software, but this situation is even worse as PD is supposedly free, whereas commercial software is made for profit.

One disk I recently ordered, PD Copy v3.0, was 0.81 per cent full! Would it be too much trouble for someone somewhere down the line to make a compilation? Wouldn't it be in the interests of a PD library to be able to state that "all our disks are guaranteed 90 per cent full"?

The service from PD libraries I have dealt with has been perfect, but many now charge £3 per disk, which is unjustifiable given that others charge 99p for the same or similar programs.

Having said all this, I'd like to express my gratitude to everyone who has helped make PD what it is today – the authors and programmers. Keep up the good work!

*Philip Bitis, London*

Your gripe with some PD libraries is one which many readers must

share. Despite the fact that it takes little more effort to fill a disk than it does to leave it half empty, and nothing more in the way of duplication and postage costs, most libraries nowadays sell disks with only one or two specific programs on them, whereas in the past the emphasis was on compilation disks.

The problem is probably that of a scarcity of good PD. A few dozen compilation disks can be made to stretch over a sizeable library of a couple of hundred if the programs are separated onto their own disks, and when faced with a competing library boasting a larger selection of disks, the temptation to water down the existing collection must be strong.

I think you'll find if you browse the PD ads closely that one or two libraries presently do advertise disks guaranteed to be at least mostly full, and if the public reacts by purchasing only those disks which it feels are better value for money, the libraries will have to respond by releasing more compilations.

Keep an eye out for the better compilation disks such as T-BAG, Fred Fish and so on if you want a chock-a-bloc floppy.

## Pirate hunter

I am currently doing an SCE Higher Computing investigation about computer crime and I would like to know more about

# ESP

## More confusion

I am considering buying an Amiga (do it! - Ed), and have spoken to friends about which one to go for. I have been advised to buy the A500 Plus, but as these have been taken off the market I can't find a computer shop which has one in stock.

Is it worth getting an A600, or should I wait until later in the year for the new range? Are these machines going to be in the same price range and better than the A500 Plus/A600 series?

*Ben Bloodworth, Skegness*

*Don't wait for Commodore to release the new mid-range Amigas unless you have fairly serious requirements for your computer time. The new machines will have a superior chip set, but will cost several hundred pounds more than the entry level Amigas.*

*You could try to find a second hand Amiga through our Amiga Market Classifieds section, but if you want a new Amiga complete with warranty you'll have to buy the A600.*

## PC not winning

In reply to PD Pickett in the September issue, I recently undertook some research of my own. From pure observation of several computer and games shops in my own town of Swindon and on a trip to the city of Bristol, I found that in all cases Amiga games were in plentiful supply and always in the most prominent position.

I struck up a conversation with the staff in shops and asked for advice on buying a computer and games. Once I said I wanted a computer, all talk of consoles ended and in most cases the Amiga was recommended. Interestingly most could demonstrate the games on an Amiga.

When I asked about a PC, I was told to forget it unless I had the budget to buy either a genuine IBM or one of the better

---

it. Could you please send me some information about FAST (Federation Against Software Theft) and the ways that companies are trying to stop computer piracy?

*B Anderson, Dundee*

*With pleasure. FAST's phone number is 0628 660377, and Bob Hay will I'm sure be pleased to provide as much information as you need.*

*If you have a friend who has been a regular reader, we covered piracy in some depth in our October 1991 issue. As that issue is over six months old, it won't be available through our back issues service, but a small ad in our classifieds might net you a copy from a friendly fellow reader.*

---

clones as the cheaper machines could not be guaranteed to run games. This is an interesting thought for the "my computer's better than yours" brigade.

When I asked about piracy I was told that it was a problem but that it was often an excuse to cover up a poor product.

One went so far as to say that PC games may sell more copies, but in truth PC piracy is rife. He even gave me an example of a company that had pirate games on its PC network for the staff to play!

On the question of falling sales, nobody would give me a hard answer for commercial reasons, though all said that the recession was tough news for everybody and that a good game well promoted and discounted would still sell well. In

---

words, people will still spend if the product and price are right. I think this may be a message for the software and retail industry.

*Jim Strutton, Swindon*

*There's a great deal of difference between the predictions of market pundits in their leather office armchairs and the experiences of retailers and the buying public in the high street.*

*From your observations, it is clear that the Amiga is far from struggling in the shops, a fact confirmed by present sales of the A600 (60,000 at the last count) despite that machine's initial bad start.*

*The PC is gaining a wider audience in the games world, but as yet very few machines have been sold simply as games platforms, and the majority of leisure sales seem still to be going to existing users who are gradually waking up to the VGA-based PC's potential for fun.*

*The still significant cost of a games PC (£1,000 or so when sound card, speakers, and so on are added) will restrict the PC games market enough to ensure it doesn't catch up with the Amiga, while consoles seem doomed to an early grave if the vicious, low profit margin sales war continues for much longer.*

*In the meantime, Amiga games are still the best overall, and seem likely to improve vastly as non-piratable CD-ROM titles become more popular and the new Advanced Graphics Architecture chips (hitherto called the AA chip set) blows away all opposition in terms of colours, speed, and animation.*

*Competition from consoles and the PC market will continue to worry the Amiga market for some time, but developments over the past three months have dispelled much of the gloomy atmosphere prevalent at the beginning of the year.*

*As long as Commodore can develop the new Amigas quickly enough and market them properly (and we're talking nothing for granted in this office), the average Amiga owner needn't be too concerned about the future of his or her favourite machine.*

## Desperate plea

Please print this! I am a new, very enthusiastic adventure and role playing addict trying to get hold of stuff from a few years back when I bought my old Amiga 500.

In particular, I'm looking for the add-on disks to Alternate Reality (ie the Wilderness Arena) and would like to hear from those who have completed it. Can they give me hints on how to complete or win the game? Please help!

*Carmen Brulez, Ilford*

*Does anyone out there remember this old game or have anything to help Mrs Brulez out of her predicament? To prompt readers to send what help they can, the full address for emergency relief is:*

Mrs Carmen Brulez, 43 Chester Road
Ilford, Essex 1G3 8PT

*Get your helpful heads on and come to the rescue of a fellow Amiga enthusiast. You know it makes sense.*

## School chum

Many congratulations to the Amiga Computing team on producing such an interesting and varied magazine with such consistency.

It really is a shame that most other Amiga magazines are lopsided in their approach to the Amiga, a remarkably versatile machine capable of a wide range of applications (enough toadying, the fiver's in the post – Ed).

From virtually any type of game through to almost the top end of business software, many diverse programs may be found in the Amiga's PD sector.

It is a shame, though, that the Amiga's potential as an educational tool has not been realised. Surely it is time we stepped into the 90s and left the antiquated BBC and Nimbus behind?

Just think how much affordable power would be gained. Goodbye to programs such as Word, Paint, and Worm, and hello to Protext, DPaint, and Kick Off 2.

Still, may Amiga Computing continue to lead the way in communicating to the masses the virtues of the machine (OK, let's call it a tenner – Ed).

*Lyle de Souza, Enfield*

*If schools had the resources to update their computer equipment on a regular basis, we might have waved goodbye to the BBC dinosaur a long time ago.*

*Unfortunately, the average school has little or no money for paper and books, let alone computers, and must make do with what it's got, even if this means the kids leave school without having once been shown round a thoroughly modern machine.*

*Some schools, particularly the larger high schools, have taken steps to introduce new technology, and a battle royal has been fought between the PC, the ST, the Archimedes (who? – Ed), and the Amiga for the education market.*

*It is unclear at the moment who is winning, but the Amiga is certainly finding its way into many more classrooms than was the case two or three years ago.*

*Reflecting this is the growing number of superb educational packages which we receive on a regular basis, as you may have noticed over the past few months. Let's hope this level of software development continues.*

AC brings you the first in a whole series of articles explaining how to get the best from WorkStation 2, the disk dedicated to new breed of Amiga

# WorkStation 2 support

After the amazing success of the original disk and countless requests from new users and those who've upgraded to 2.04 machines, WorkStation 2's release was only a matter of time.

On booting WorkStation 2 perhaps the biggest surprise is the new look of the interface. The most obvious example of styling has to be the AC image which dominates the Workbench backdrop.

But that's just the start of the disk's new styling options which allow anyone to make WorkStation 2 all their own.

For example, when you activate one of the many programs via the Shortcut menu or icon you will see the new AC animated busy pointer.

In addition, if like me you tend to leave your machine on while doing other things, the blanker option is an invaluable tool which when configured will automatically kick into action whenever the machine is left unattended.

Apart from being an attractive addition to the Workbench environment it also has a serious side. If a monitor is left with a static image on-screen for long periods it inevitably results in screen burn, which in time will permanently imprint the static onto the screen, damaging the tube and degrading image quality permanently.

Although both the backdrop image and animated pointer are fairly superficial additions, they do allow total customisation. After all if you spend a lot of time on your machine it's important that it's to your liking and not designed around the tastes of some faceless programmer.

With customisation available it's the obvious place to start before we delve into the host of programs and utilities which lurk within WorkStation 2.

Although a beautiful and timeless piece of art work in its own right I can see that the AC image isn't perhaps to everyone's taste.

If so, here's how to change it. First boot up trusty old DPaint, or in fact any suitable paint package. Set the screen format to eight colour med-res, hit OK and the rest is up to you.

Once your masterpiece is complete and safely saved onto a copy of the WorkStation 2 disk you're ready to re-configure the WBpicture utility which you'll find within the Prefs draw on WorkStation 2.

If your new picture is larger than the original backdrop image it may be necessary to create the extra space by removing an existing utility from the WorkStation 2 disk.

If you're a little uneasy about deleting things at this early stage it might be wise to simplify the picture or perhaps reduce the amount of colour information by cutting out the image as a brush, scaling it down and pasting back onto the page.

A second option would be to produce an image smaller than full screen, cut this out and save it as a brush. You can then employ the tile option within the WBpicture tool.

As the name suggests, this will paste a whole series of images across the backdrop rather than one full screen image.

If your image is to be full screen and does save out below the size of the original, it's possible to select the new backdrop without any adjustment to the WBpicture tool.

Simply save your new image with the same filename as the original backdrop – AC4.IFF – and reboot the machine. Once the startup-sequence is complete your new image will automatically replace the original as a permanent feature of the WorkStation 2 environment.

Although in our particular case we've employed an eight-colour backdrop it's possible to employ up to 16 colours if used in conjunction with interlace. To use this option you must first open the ScreenMode Tool and adjust the number of colours – and of course activate the interlace option.

If you do intend to use the 16-colour option with or without interlace it's very likely that you'll need to make additional storage space on-disk.

Keep this in mind before you make your selection. Again space can be saved by using the tile option as opposed to a full-screen graphic.

## Building a busy pointer

Why not create your own designer animated busy pointer? Like WB picture design, the assistance of a paint package is recommended.

Once again DPaint is perfect choice as it directly supports animated brushes which are the essential ingredients of any busy pointer.

Before you head straight for DPaint, though, it's worth opening the BusyPointer tool to see the size of brushes required for the pointer.

While there you'll notice that the number of frames which make up the animation is strictly up to you. If you don't want to employ DPaint to create the various frames you can ignore the DPaint route altogether and simply draw the frames one by one using the slider to cycle through the pointer.

At this point you can activate or remove the guess pointer option which simply replaces designer pointers when using additional software boasting animated pointers of its own.

Unless you're particularly addicted to your new pointer it's wise to leave this option inactive as incompatibility can lead to rather curious results.

When you've exhausted the various tinkering options within the tool, it's time to either save your latest masterpiece or boot up DPaint and create a new animation from scratch.

As usual, space doesn't allow for a full description of anim-brush creation, but as every Amiga in recent years has come with DPaint as part of the Commodore bundle, I'll leave you in the safe hands of the excellent DPaint manual.

To activate the new anim-brush, simply save the sequence into the WorkStation 2 presets draw, re-open the busy pointer tool and select the new anim with the Open option from the pull-down menu.



## BusyPointer Preferences

*Nicksprit's BusyPointer program can be used to create all sorts of custom pointers*

## Drop us a line!

If you have any ideas, comments or problems don't hesitate to drop us a line at WorkStation 2 Support, Amiga Computing, Europa House, Adlington Park, Macclesfield SK10 4NP

# ABSOLUTE
## beginners
### PART 9

Stevie Kennedy uses this month's CoverDisk to add some real power to simple AmigaDOS scripts

As we've already discovered, AmigaDOS's inherent simplicity is both its strength and its Achille's heel. The first time user can quickly grasp enough of the language to carry out useful tasks, but the advanced user runs rapidly up against the limitations imposed by a lack of more flexible commands.

The MB Press and MultiBox utilities on this month's disk have been designed by their authors to augment the poor input/output options available through the standard language, and it is these we will concentrate on in an attempt to give our scripts some real bite.

Last month, as you'll remember, we looked at how – given a little thought – the environment variable commands can be used to shuffle a user's responses back and forth between the screen and a script. These methods, though ingenious, are rather clumsy and inappropriate for many tasks.

Let's take a look at MB Press first. Unfortunately for owners of older machines, MB Press is a Workbench 2.0x utility and will not work under Workbench 1.3, but the AmigaDOS techniques used should prove educational.

MB Press works by examining the mouse port when it is run to see if a button or combination of buttons is being pressed. If so, the "return code" will be set to a particular number depending on which button was pressed. These are as follows

| | |
|---|---|
| No mouse button | 0 |
| Left mouse button | 1 |
| Right mouse button | 2 |
| Middle mouse button | 4 |

The last value is for users of three-button

## Boolean brainteaser

If we remember that a binary number is made up of ones and zeroes, it becomes a little easier to see how the ampersand operator works.

Take an example where the user needs to discover whether the third box was clicked in the MultiBox selection. By using the ampersand operator, we get:

```
(5)   (4)   (0)
 1     0     0
 1  &  1  =  1
 1     0     0
```

As you can see, the result of five ampersand 4 is four, so when the AmigaDOS line "IF 4 EQ 3Answer & 4" checks the result it will indeed find that the number four, and hence the third box choice, was present.

mice and so won't be of use to most of us. When more than one button is pressed, the resulting return code is reached by simply adding the value of the two buttons. Left and right buttons together thus make a return code of three.

A script to check for button presses can be inserted in the startup-sequence to enable the user to make automatic choices on every bootup. For example:

```
MBPRESS
SET ANSWER $RC
IF 2 $ANSWER EQ 2
CD SYS:MITANK
RUN TANK
ENDIF
```

This entry would be ideal for the game-loving hard drive user who wanted to go straight to his or her favourite sim. If the right mouse button is pressed throughout the boot sequence, MB Press will eventually detect the return code 2 and go straight to M1 Tank Platoon. If not, the startup-sequence will carry on as normal.

Note the use of the variable RC. This is the standard AmigaDOS return code variable and is used by most CLI/Shell commands to tell the system that they executed without problem.

Its value is therefore passed immediately on to another variable, in this case the Answer variable, because RC can change at any time due to the operation of another AmigaDOS command.

For a larger variety of choice, the script can be extended to check for left button presses and both buttons being pressed at once, though users will have to avoid pressing both buttons as soon as the machine is booted.

This will bring up the Kickstart 2.0x boot menu before startup ever begins. The major limitation of MB Press is that it executes immediately and doesn't wait for the user to make a choice. For this you'll need MultiBox.

MultiBox is a more complex and flexible command because it enables the user to issue a simple script command which will pop a requester on-screen until the user chooses an option.

The requester's title, question, and multiple boxed options – hence the name – can all be set from within a single command line.

Syntax for the MultiBox command is a little longwinded, but simple when you try it for yourself a few times:

```
MULTIBOX [HAIL "hailstring"] TITLE
titlestring BOXES box1[box2] ...
```

The HAIL command puts the optional "hailstring" in the requester's drag bar, while TITLE sets out the question the user will be asked. BOXES simply points toward a list of choices which the user is given.

Each of these is represented on the final box as a series of toggle boxes with the string entered by the user on the left-hand

side. As an example:

```
MULTIBOX TITLE "Choose a piccie" BOXES
pic1.iff|pic2.iff|pic3.iff
```

would result in the MultiBox requester shown in Figure I.

It's not as simple as this, however. The supporting script file in which MultiBox functions must set the proper conditions if the utility is to work. Load the Example file from this month's CoverDisk by typing:

```
MORE CoverDisk30:Utilities/MultiBox/example
```

at the Shell and we'll go through the script line by line.

First of all, Failat is used to set fail level to 65537 because if the Cancel button is pressed the program returns a value of 65536. If Fail wasn't set so high and the user pressed cancel rather than select an option, the whole script would break down.

### Return code

Next, the MultiBox command is issued and the line "set answer $RC" passes the value to a local variable. The following three lines set up and initialise three local variables which will be used to record the return code from the user's MultiBox reply.

Variables should always be set up in this way to ensure that they are blank before the rest of the script begins to work on them.

The next chunk of script consists of a series of IF ... Endif statements which use the "ampersand" operator (the & symbol) to check MultiBox's return code.

The ampersand operator logically ANDs the binary value of the chosen number with the return code, and if the chosen number forms part of the return code it will be stripped out.

In other words, if the user chooses box one and box three (return values one and

four making a grand total of five), the ampersand operator will be able to suss out that the final return code includes any individual box selection.

The subject is a tricky Boolean logic problem, but as long as you keep in mind that to check whether or not a number occurs as part of a sum total, simply ampersand that number with the sum total.

The last two lines use AmigaDOS's ability to use variables directly within normal commands to substitute the options for the format command, then format the disk to the user's specifications. Astute readers will quickly find many more uses for this powerful little AmigaDOS utility.

## See? It's easy!

Figure 1

## Script problems

I am a 29-year-old computer geriatric, who after many glorious years with my trusty C64 decided to upgrade to the 500 Plus. I thought that one way to fill the twilight years would be to learn AmigaDOS, and that is where my story begins.

After several weeks of frustration my only tangible link with reality was through your Beginners' Guide series. I took up the challenge of linking the series together in the form of a script file to create self-booting disks, and ended up with a file called "Diskboot". I have however encountered the following problems, which I am hoping you can help me with.

1. The script file was initially created on my Workbench 2.04 disk where there was a RAM disk for it to use. But the new disk has no RAM disk, so where does it come from?

2. If I try to execute Diskboot with the disk write-protected I get the strange message "Cant open Work-file :T/Command-0-T01" that appears in the icons window.

Yet with the write-protection off, no problems are encountered. It is almost that something is being written to the disk, but I have tried to find it, without much success.

3. I used your feature on the Alias command to include a couple in my Shell-startup file on my Workbench 2.04 disk. I even managed to put a list of the Alias commands using the Echo command into the shell-startup, but this list scrolls off the screen quite quickly, and the only way to get it back is to use Newcli.

Is it possible to create a small window on the screen in which can be displayed a list of my Alias commands but which will have no effect on the Shell and that can be removed from the screen when Shell is closed? I can achieve the desired effect using two CLI windows, but a dedicated window is what I am after.

4. Finally, I have made INSTALL, MAKEDIR, and COPY, resident. So why is it that when executing the file, it takes three disk swaps, after putting in the formatted disk so that the drive can read the relevant commands from the C dir?

I hope you can manage to help out an old codger with his problems before it sends him around the bend. One final question – where do the BRUN and WINSIZE commands come from, and am I infringing copyright by using them?

**Steven Penn**

---

The AmigaDOS RAM disk needs a device handler, called RAM-handler, from the L: directory before it will appear in the device list.

As long as RAM-handler is available, the first command which attempts to use RAM: will kick the RAM disk into life. If you want to access a RAM disk on an auto-booting floppy, simply ensure that RAM-handler is in the appropriate directory.

Your second enquiry is linked to the RAM disk in that it concerns a temporary work file opened by all script files, including the startup-

sequence. This file, called Command-0-Txx (where xx is the number of the file) is created and stored in the T: directory.

A normal startup-sequence will include the lines:

```
MAKEDIR RAM:T
ASSIGN T: RAM:T
```

This sets up the temporary drawer where temporary files are stored, and if T: doesn't exist, the file will be stored on disk.

If your disk is write-protected and the startup-sequence doesn't make T: available in RAM:, the result will be the message you describe.

On to the third question, and by far the most productive and the easiest way to keep track of Aliases used by the system would be to write them all down on a piece of paper and keep it handy.

If you insist on listing them, use the Alias command with no parameters. This will list all the aliases on screen, and you can shrink the Shell window to an appropriate size in the corner of your screen for future reference.

As for disk swaps, you must have forgotten to place some of the required files in the RAM: disk at the beginning of your script file.

To check this, go through the file with a fine-toothed comb, and if a command used later in the script has not already been copied to the RAM: disk, remedy this with the relevant command.

Please remember to type Resident to check the list of commands which are built into your Kickstart 2.04 chip.

## Comms conundrum

I recently purchased a Supra Fax Modem Plus and a copy of The Works! Platinum edition. I have tried using the telecommunications module supplied with The Works! to log onto a few bulletin board systems, but with no joy.

I have followed the beginners' tutorial in the manual, but when it comes to using the phone book to dial a number, the number dials all right, but it doesn't seem to go any further.

After 20 seconds or so, the phone book window closes and the phrase "no carrier" is displayed on the screen. Sometimes it just returns unreadable garbage.

I have an A500 expanded to 2Mb, two external floppies, the Supra modem, and a Star LC24-200 printer. Could you please shed some light on where I might be going wrong? It would be very helpful if you could advise me how to set up the modem.

Do I do this in the serial port prefer-

---

---

## American drives

I am an A500 Plus owner in the market for a hard drive and I have just about made up my mind to choose a GVP HD8+.

However, having discovered that GVP is an American company, I wonder if you could advise me, as I am going to America in December.

Would an American drive be compatible with my machine and is there any difference between NTSC and PAL? Also, if I purchase any software or games, will these be compatible with my machine?

**Neil Frost, Leeds**

Go ahead and buy an HD8+ in the US if you can find one at a good price. The drive unit itself is happy in any country, and the power supply will function just as well in the UK so you should have no problems.

As for games software, you should check with the vendor. Most NTSC software works perfectly on UK machines, especially the A500 Plus with its NTSC/PAL-sensitive Agnus chip, but you should be wary all the same.

The Yanks still don't have many Super Denise machines around and some software will come unstuck on the Plus.

ences as I am very green in the area of comms.

*Stephen Wilkinson,
Ballymena, Co Antrim*

When a comms package dials through to a BBS and the result is "no carrier", the cause can be difficult to discern. The most common problem is that the dialler has contacted the number requested but encountered nothing that resembles a carrier signal.

Carrier signals are the long beeps which precede the cacophony of noise which is a 2,400 baud transfer of data. If a modem fails to find this signal, or is otherwise confused by what it meets at the other end of a phone line, it will cop out with "no carrier".

If, on the other hand, an engaged tone is the only answer, the comms software should return a "busy" signal. In addition, when the BBS connected to has settings different to the comms software which is attempting to access it, the garbage you describe in your letter will be the result.

Try the following settings when first contacting a BBS – 2,400 baud, parity none, data bits eight, stop bits one. This is usually referred to as 2400 8-N-1, the most common base-level comms setup, and should afford you access to the majority of bulletin boards.

On top of this, you should ensure that your comms software is properly set up for the Supra modem.

Check with the user manual, which should include details of what codes are used to initialise the modem and so on, then go to the relevant modem preferences option in your comms program to ensure that the software is sending the correct codes to the modem when it first "clears the lines".

If all these parameters are set – and they will probably only need to be set once – you should find that getting online is easy. Take a look at last month's beginners' guide to comms for further information.

## Expansive A500

I have an A500 Plus with Microbotics VXL-30 and Power Computing PC88OB. It took me quite a few years of looking at computers for me to decide on the A500 and I have high expectations for it.

At first it was just for games, but now that I have began reading your magazine I have realised the Amiga is much more than a games machine

(and so say all of us – Ed).

As value for money and quality are my main concerns, I have noticed that peripherals for the A2000 are cheaper than those for my machine. I have been products advertised in American magazines and here in Britain that convert an A500 into something resembling an A2000.

What I want to know is, what is the difference between a Bodega Bay unit and a HiQ tower? Let me conclude by saying that you have an excellent magazine, and if I had not been stationed here from the United States I would never have known as much about the Amiga.

*Dimitri Tolden (USAF), Ipswich*

Both units you mention are designed to give the A500 Zorro II slots as used in the A1500 and A2000 models, but recent market developments have rendered them obsolete as straightforward upgrade options.

The Bodega Bay in particular, at £400, is almost as expensive as a base level A2000, and the HiQ is best looked upon as a system designed for those who need to tailor the A500 (or A2000 for that matter) to specific high-level purposes.

For the A500 owner looking to expand, either accepting the present level of A500 peripherals, or selling the machine to partly finance the purchase of an A2000 is the only practical alternative.

---

I have two questions which have so far gone unanswered by the many dealers and high street shops that I have visited.

1. Is it possible to connect my Amiga 500 to a Commodore 1930 II VGA monitor? If the answer is yes, where can I get the necessary cable?

2. I have been given a bare Quantum 105AT hard drive. Is it possible to replace the existing Western Digital drive which came with my A590 with the Quantum, and where would I get the necessary diagnostic disks?

Please help, as I have a monitor and drive which are idle at present. If the answers to my questions are "no", do you know anyone who would like to buy a brand spanking new monitor and a 105Mb hard drive?

*J K Nelson, Edmonton*

Connecting the VGA monitor to your A500 is a matter of either buying a flicker fixer or upgrading to the ECS chip set. The best flicker fixer available is the Commodore Display Enhancer (phone Silica on 081-309 1111), or the ICD AdFFV (phone Power Computing on 0234 843388), but the cheapest is the Microway unit (from ZCL on 0543 414817).

A cheaper route would be to buy Kickstart 2.04 and the Super Denise chip. The official upgrade costs £80 to £90 from most dealers and the Super Denise costs a further £40.

You will also need a 23-pin to 15-pin cable adaptor, which should be available from Commodore. Try the Commodore spare parts people, CPC, on 0772 555014.

The AT drive will fit in your A590 casing as long as there's enough space – more than likely – and you have an older A590 with an AT/IDE interface.

If the unit is past warranty, you can check this by opening it up and counting the connections on the ribbon cable going from the motherboard to the drive unit. If they total 40, it's an IDE, and if there are 50 it's a SCSI.

Easier by far would be to check with a PD system info utility such as SysInfo. As for software, the original A590 setup and formatting software will work with any drive which you connect to the A590 interface.

---

I have an A500 Plus with 2Mb of chip RAM, and whenever I load up Workbench then load a program like Memacs I cannot get the UK keymap. I have added the line:

```
SYS:SYSTEM/SETMAP GB
```

in the startup-sequence, and put the Setmap command in the system directory, but although this appears to set the keymap I keep getting different symbols from the keys, such as the hash (#) character from the inverted commas (") key.

I correctly installed the keymap file into DEVS:keymaps when I first booted from my Workbench disk. Please help me, as I am getting very annoyed!

*Peter Hicks, St Albans*

The first thing you should do is check whether the GB keymap is actually in the keymaps drawer by typing:

```
LIST DEVS:KEYMAPS/GB
```

If the file cannot be found it should be copied into the correct drawer from your future disk.

If the keymap file is present and the startup-sequence is issuing the proper commands which, from your description, it seems to be doing, then you may have a problem with your keyboard.

This is unlikely, but it is a sad fact that some mail order firms have in the past resorted to buying machine on the continent in order to offer the lowest priced Amiga possible.

If you can't make your Amiga respond to British keymaps, return it to the company from whom you bought it and demand a replacement.

---

# Calling all Programmers

**Devpac 3** *The New Standard*

# Seditious sprites?

**Stevie Kennedy asks whether software violence is beginning to leave its cartoon ancestry behind**

Only the most pedantic of people would claim that cartoon violence of the type exhibited by Tom and Jerry is harmful to children.

Let's face it, the constant barrage of frying pans, lead pipes, tennis racquets and burning fur can hardly be further from everyday situations. This sort of on-screen violence, unlike the average Arnie film, has no relation to real life.

For years, the same has been true of computer software. Blasting nondescript alien sprites or chopping up a few unconvincing dungeon monsters doesn't turn today's 14-year-olds into potential lunatics, nor does it encourage them to see violence as a means to an end.

However, the past few years have seen software developments which on closer inspection begin to threaten this comfortable view.

## Mutilating

Games involving the player as a very human-looking character beating up and mutilating other humans as the chief method for progressing through the levels have become increasingly popular and increasingly violent. The first such game I can remember raising my eyebrows at was Final Fight.

In this fairly standard beat-'em-up, the player stomps, slashes, and kicks his or her way through an American city scene, disposing of vast numbers of gangland opponents in the process.

Nothing new there, but one inter-level scene which had to be completed before the player could go on demanded the trashing of an expensive car using an iron bar.

No enemies, no tricky puzzles, just a race against the clock to smash a car to pieces and pick up those bonus points. More worrying perhaps was that this section was far and away the most fun part of the whole game, at least for me anyway.

Games released since then have continued the trend towards ever more gory scenes. Knightmare, which is simply a

blood-bath of extreme proportions, makes an effort to involve the player in as much blood-letting as possible to the accompaniment of a series of grunts, snorts, and screams.

Elvira includes scenes which would make many parents think twice about slipping the game into little Johnnie's Christmas stocking, and Special Forces enables the player to sneak up on the opponent and slit his throat in graphic detail.

The game designer's obvious intent in making an effort to include such slick gameplay elements is to emphasise the violence as a way of increasing a game's appeal to the buying public, and that has to be a worrying situation.

Of course, given the level of graphical development in these games, it is difficult to assert that they contain anything other than the sort of cartoon-style high jinks enjoyed by every Tom and Jerry fan. Difficult, but not impossible.

## Outrage

Had these games involved, rather than smashing up a car or slitting the throat of an armed opponent, raping or assaulting a female computer-controlled character, they would have caused an outrage and would have been removed from the shelves in a trice despite the fact that it could also have been argued that the graphics were not realistic enough to be anything other than of cartoon standard. Why the discrepancy in our attitudes?

If this points to the already established view that simple violence is acceptable in modern society whereas sexual or racial watch computer leisure software take on board every malaise of our other media?

Violence is commonly the most prominent crowd-puller in cinemas and late night TV, but the levels of violence have steadily worsened.

The popular Sweeney programme of the 70s was a hard-hitting police thriller at the time, but could hardly assuage the bloodlust of today's audiences, and would look rather quaint and old-fashioned if compared to present day films

and TV dramas.

Will tomorrow's software make today's cartoon killers look like nursery school entrants?

Given the launch of newer, faster, and more graphically powerful machines and the predicted explosion in CD technology, it would take rather less than a Nostradamus-like penchant for prediction to claim that violence between sprites could soon be replaced with digitised film footage under the control of a frenzied teenager. What do we do when Claude van Damme becomes the gloating schoolboy's computerised alter ego in a welter of ruptured kidneys and lacerated jugulars?

The unique difference between computerised media and others, as has already been stated in this magazine, is that there is involvement rather than escapism.

The young gamesplayer cannot sit back and watch the hero murder his way through the plot, but must take control and guide that flick-knife-wielding psycho's actions. This, it could be argued, makes computer software much more likely to pass on its prejudices.

The number of times the air in the Amiga Computing offices has turned blue during a games session is ample testament to this.

In a more developed computer world with increasingly violent and realistic games, can it be long before the label "cartoon violence" is no longer applicable?

## Dismissive

Not a million years ago, the suggestion that violence on TV screens and in the cinema could be a contributory factor in the growing level of violence in today's society would have elicited nothing but dismissive laughter, yet today there are psychologists the world over who treat the matter with enough respect to devote a great deal of time and money to studying its effects.

So far, the computer software world has taken little notice of the social effects of its products, but it surely can't ignore the dangers for long.

In perspective, few would argue that the current crop of games pose much of a danger. However, to treat the subject of software violence as a pointless or oversensitive reaction to what is merely a child's toy is to invite complacency and a dangerously laissez-faire attitude.

An area which has come to dominate the lives of so many children and teenagers over the past decade deserves much more serious attention than it is presently being given.

## AMIGA A600  THE WILD, THE WEIRD AND THE WICKED PA...

**12 MONTHS AT HOME SERVICE**

Once again Commodore have put together a winning theme pack to complement the already popular Amiga A600.
The Wild, the Weird and the Wicked Pack is an ideal starter pack containing a considered mix of software making the most of the Amiga's amazing capabilities.
To make this pack a perfect gift INDI have added a further four award winning games and a staggering list of valuable extras totally FREE of charge. Also included at no extra cost to you are the latest 'Zapzac' carry case and Zappo T-shirt. Crucial Amiga accessories. Impressed. Who wouldn't be.

- Amiga A600 single drive
- Built in TV Modulator
- 1Mb memory
- Push Over      Silly Putty
- Grand Prix     Deluxe Paint III
- Mouse and Manuals

**FREE**

### INDI VALUE ADDED FREE

| | |
|---|---|
| Micro Switch Joystick | £9.99 |
| Lockable Disk Box | £9.99 |
| Disk Wallet | £12.99 |
| 10 Blank Disks | £5.99 |
| Kick off 2      Pipemania | |
| Space Ace      Populous | £122.52 |
| Zapsac Carry Case | £12.99 |
| Zappo T-Shirt | £8.99 |
| TOTAL | £183.46 |

### INDI PRICE £339.99

## AMIGA A600 HD  (HARD DISK) EPIC PACK

**12 MONTHS AT HOME SERVICE**

EPIC pack... definitely by content. Commodore's talent for pack creation has never been better. The software included in this pack: EPIC, Rome, and Myth totally exploit the stunning features of the Amiga A600. Add to this Trivial Pursuits language lab edition (playable in 3 languages), Amiga Text (Wordpro) and the now standard graphics package: Deluxe Paint III for serious educational applications and you'll start to realise just how dynamic this pack is. As with all products supplied by INDI, we have added an extra dimension to an already incredible offer (see below for INDI Value Added Pack totally free of charge)

- Amiga A600HD (Hard Disk)
- Built in TV Modulator
- Mouse and Manuals      1Mb Memory
- EPIC, Rome, Myth, Trivial Pursuits (language lab edition), Amiga Text, Deluxe Paint III.

**FREE**

### INDI VALUE ADDED FREE

| | |
|---|---|
| Microswitched Joystick | £9.99 |
| Lockable Disk Box | £9.99 |
| Disk Wallet | £12.99 |
| 10 Blank Disks | £5.99 |
| Kickoff 2      Pipemania | |
| Space Ace      Populous | £122.52 |
| Zapsac Carry Case | £12.99 |
| Zappo T-Shirt | £8.99 |
| TOTAL | £183.46 |

### INDI PRICE £489.99

## AMIGA A600

### A600 Single Drive
**PACK INCLUDES**
- D. Paint III + Mystery Game
- Kickoff 2 + Pipemania
- Space Ace + Populous
- Zapsac Carry Case
- Zappo T Shirt

### INDI PRICE £289.00

WHILE STOCKS LAST.

## 1084S COLOUR/STEREO MONITO...

Commodore's own Amiga Monitor. Designed solely for use with the Amiga range of computers. With its ergonomic design, Hi-res graphics display and stereo sound capabilities, the 1084S will really bring your Amiga to life.

Apart from offering this product at a very competitive price INDI are including two great software products totally free of charge

### INDI VALUE ADDED FREE

| | |
|---|---|
| Days of Thunder | £19.99 |
| (Driving Simulation) | |
| Night Breed (or alternative | £19.99 |
| exciting game) | |

### INDI PRICE £189.99

- Zapsac Carry Case
- Zappo T-Shirt

## AMIGA A1500 — DEALS

The A1500 is the ultimate home computer for the whole family and is designed to cover every computing requirement.
INDI are able to offer you exclusive deals on this outstanding product in various configurations and bundles (see options on opposite page).
All configurations come complete with the following software and accessories:

**FEATURES:**
- Fully functional keyboard with numeric pad separate from CPU
- Includes 2 × 3½" disk drives as standard with 5¼" Disk Bay.
- Integral memory and card expansion capabilities (most cost effective expansion route)
- Work bench 2.00 and Kickstart 2.04.

**CONTENTS:**
- Keyboard, mouse, reference manual, Puzznic, Toki, Elf (Games), D Paint III (Graphics Package), Home Accounts, The Works (Platinum edition: Wordpro, Spreadsheet, Database) Joystick

**AMIGA A1500 FEATURED**
(see photograph above)
- 52 Mb SCSI Hard Disk
- 1084 S Monitor & Panasonic KX-P2123 24 pin colour printer.

**INCLUDED FREE**
Amiga Vision, Nightbreed, Days of Thunder, Wordworth Worth £268.99

**EXCLUSIVE!**

**INDI PRICE FROM £499.99**
(See panel opposite)

---

## Panasonic *Quiet* Colour Printing

We researched the colour printer market in great depth to find a colour printer good enough to cope with Amiga's powerful graphic output, yet at an affordable price.
We found the perfect printer in the Panasonic KX-P2180 + KX-P2123 quiet printers.
We then considered that if you were going to buy a Panasonic printer, you would probably need a quality word processing package to use with it. We found that too, in 'Wordworth' yet at a retail price of £129.99 we thought that might be a little too expensive on top of your printer purchase! So together with Panasonic we decided to give a copy of 'Wordworth' free with every Panasonic printer. How's that for added value?

### PANASONIC KX-P2180

The new Panasonic KX-P2180 9 pin quiet colour printer.
Produces crisp clear text in mono or in 7 glorious colours with new quiet technology. The new KX-P2180 is typically 15dBA quieter in operation, than the competition.
- **Fast Printing Speeds** 192CPS Draft and 38 CPS NLQ
- **Colour Printing** 7 colour palette (blue, red, green, yellow, violet, magenta and black)
- **QuietPrinting** Super quiet 45-48dBa sound level (most matrix printers are typically in excess of 60dBA)
- **6 Resident Fonts** Over 6,100 type styles using Courier, Prestige, Bold PS, Roman, Script and Sans Serif Fonts
- **3 Paper Paths** Paper handling from bottom, top and rear for total flexibility
- **1 Year Warranty** For total peace of mind

**INDI PRICE £199.99**

### PANASONIC KX-P2123

The new high performance Panasonic KX-P2123 24 pin. Quiet colour printer offers leading edge quiet printing technology at an affordable price.
- **Fast Printing Speeds** 192 CPS draft, 64 CPS LQ and 32 CP SLQ.
- **Colour Printing** 7 colour palette (blue, red, green, yellow, violet, magenta and black)
- **QuietPrinting** Super quiet 43.5-46dBA sound level (most matrix printers are typically in excess of 60dBA)
- **7 Resident Fonts** Over 152,000 type styles using Super LQ, Courier Prestige, Bold PS, Roman, Script and Sans Serif Fonts
- **24 Pin Diamond Printhead** High performance and high quality output
- **1 Year Warranty** for total peace of mind.

**INDI PRICE £239.99**

The release of CDTV, well over a year before the planned launch of CD-I, was in hindsight a bold move. Though many wondered what market the device would appeal to and whether consumers would understand what CDTV was about, Commodore went ahead with its launch as a purely consumer product.

Styled in a VCR case and sold through high street stores such as Dixons, CDTV was flagged as a revolutionary family education and information tool which could also be great fun.

Initial Commodore instructions about CDTV's marketing were so adamant about the machine's severance from computers that they specified a distance of at least four feet be kept between the machine and any Amigas being sold in the same shop.

The tactic failed. First year sales of CDTV topped little more than 15,000 units (now standing at 20,000), a figure which though forming a solid base for today's CDTV developers can in no way be touted as a mass market consumer success.

It's not clear if the failure was due to a marketing blunder or an unready public, but Commodore weren't slow to get the message.

## Separatist

A brand name was needed, and it wasn't long before the hitherto separatist CDTV was proudly sporting the name Amiga CDTV, at first in Commodore's press statements, then as a badge and a marketing policy.

Amiga is a name synonymous with consumer electronics, known by millions of people across the UK, and those who considered Commodore barking mad not to have taken advantage of this from the outset were given the grudging pleasure of joining the chorus of "told you so" merchants.

Industry bad mouthing is far from uncommon in the computer world, but CDTV has suffered from more than its usual share.

The situation at its launch was akin to the fresh-faced new boy at high school disappearing under a crowd of yelling, spitting third-year thugs.

Unfortunately, in the hard world of consumer electronics, it simply isn't possible to say "I'll get my big brother to smash your teeth in", so CDTV had to sit back and take it.

The machine wasn't faster, had no new chips, no hard drive, and looked nothing like a computer. Hardly surprising, then, that the Amiga press took some time to get used to CDTV, but why the sneering insults, contemptuous plays on the CDTV initials (my personal favourite was Cold Dead Turkey Vision), and airy dismissals of its future potential?

Possibly the answer lies in the Amiga world's possessiveness and near-fanatical cynicism over just about anything Commodore gets up to.

Amiga enthusiasts in general, and the press in particular, have a sizeable personal stake in the machine (we at AC make our living from it, after all), and this can often lead to over-sensitive reactions.

Commodore's seemingly one-tracked development of CDTV when there were no new Amigas in the pipeline, long delays in the appearance of the A570, and initially very poor software didn't help the situation, but attitudes look set to change.

The new Amiga CDTV packs, complete ➤

# Coming of age

The runt of the Amiga litter, CDTV, looks set at last to blossom. Stevie Kennedy takes another look



Learning French is just one eductional use for CDTV

## Expansion limits

One worry about CDTV which many Amiga users have expressed is that of expansion. Since its release, CDTV has enjoyed little in the way of peripheral support, but the situation is slowly changing.

The unit for this article was supplied by Calculus as the Professional CDTV pack equipped with the Commodore keyboard, mouse, and floppy drive. In addition, however, there is a 65Mb hard drive and 2Mb chip RAM upgrade inside the CDTV casing.

With such expansion, the price of the Professional CDTV pack reaches £649.99 though this could rise once the introductory period expires.

Benefits for the multimedia user are obvious, as CDTV in this configuration becomes much more powerful as an Amiga system rather than as a floppy drive-equipped CD-ROM unit.

The much delayed release of the Advanced Video Mode card in November will add a new graphical dimension to CDTV software, and developments in A600 PCMCIA smart card technology will be available to CDTV owners through their own standard PCMCIA slots. The result is a CDTV unit with real power and a lot more punter pulling power.

Commodore's hopes lie in the A570, which it is hoped will boost the CD-Rom side of Amiga

with floppy drive, keyboard, and mouse, better software, and improving expansion options are making CDTV more attractive.

With more software in the pipeline and a much larger potential user base of A570 owners or those who take advantage of the trade-in deal, CDTV should be a much more significant player in next year's Amiga market.

Paradoxically, software piracy could play a major positive role in the machine's revival of fortunes.

Protection, both on-disk and in manual form, has proved lamentably incapable of fighting piracy, leading most software houses to hike their prices, and forcing others to retreat in part or in whole from the Amiga scene. CD-ROM discs, however, are virtually unpirateable.

So much data is squeezed on to one disc that to pirate even a single CDTV game in floppy form is impossible. In addition, the

## Obvious

If the new Advanced Graphics Architecture chips found in the A4000 and A1200 prompt a flurry of better, more colourful games, the choice between one of the new machines and a CDTV system would look obvious, especially as Commodore plan to retain internal CD-ROM drives for the new range.

CDTV's ace-in-the-hole could be the Advanced Video Mode hardware based around DCTV true video technology and involving the MPEG (Motion Picture Expert Group) data compression chips.

## The A570 factor

CDTV was desperately in need of a shot in the arm this summer or, using the alternative Commodore marketing spiel, was nearing the second phase in its development. This came in the form of the Amiga badge link and the release of the A570 CD-ROM drive.

Sales of the original CDTV unit have reached only 20,000 so far, but Commodore are predicting total sales of 50,000 before the end of 1992, over 20 per cent of which is expected to be in the form of A570 drives. Obviously, with more than a million A500s in UK circulation, the potential market for the A570 is vast.

One flaw in the argument is the drive's running requirements. Only A500 Plus owners and a few dedicated owners of

disk – but these are likely to be expensive products and may prove to be nothing more than a gimmick.

Commodore, on the other hand, are waiting for software developers to produce titles for the AVM card (due for release in November).

Further still in the future is the release of the MPEG chips for CDTV. Philips have already made these available as an add-on for CD-I, but software is non-existent at the moment.

As with every other development, Commodore are taking the approach that it is best to restrict new technology to developers and software houses until such times as a decent number of titles can be released with the hardware.

No date has been set for MPEG's appearance on the machine, but pundits are hoping

older Amigas have the 1Mb chip RAM and Kickstart 2.04 needed by the drive before it will work, a fact which will prompt some to suspect Commodore released the A500 Plus solely as a platform for the A570.

Between 200,000 and 300,000 A500 Plus sales in the UK guarantee a sound base for the CD-ROM drive, but Commodore will still have to convince users to part with £299.

Given the company's much repeated 100 per cent support for the Amiga's CD future and a killer of a game bundle this Christmas, we might just see the majority of Amiga software appearing on CD-ROM as well as floppies before summer next year.

for a summer 1993 debut.

CDTV has come a long way since the first machines appeared with a few dodgy encyclopedia discs and inferior games. True CDTV software is beginning to reach the streets, developed over the last 18 months, which takes full advantage of the machine's unique talents, and which should encourage more sales.

If you doubt that CDTV has a future, just take a quick look at the Sherlock Holmes game due for release soon. Five minutes with this and even the most hardened CD-ROM cynic will be clamouring for more.

## Slow software

The nature of CDTV software, with its 650Mb discs and intensive sound and graphics, makes development of new titles a slow job.

The first CDTV releases were, let's face it, pretty awful, but over the last year there have been improvements in design, quality, and use of the machine's features.

Only now however, 18 months after the machine's launch, are true CDTV games beginning to filter through the lengthy development system.

More and more are using CDXL, the quarter-screen HAM animation format, to bring pseudo-video effects and digitised film to such discs as the NASA history of space flight and Sherlock Holmes Consulting Detective.

In short, the machine is finally being used properly by the software rather than as a CD-based platform onto which standard Amiga games can be ported.

We can relate this situation to the early Amiga games, such as Interceptor and Starglider, which were the first to make full use of the machine, showing how quickly software improves.

If Sherlock Holmes is to CDTV what Starglider was to the Amiga, we can only drool with anticipation at what should be seeing a year from now.

Both Commodore and Philips plan to install these chips to boost their respective CD units' capabilities with full motion full screen video (FMV).

Using the lightning-fast decompression offered by MPEG chips and the 650Mb storage of one CD disc, CDTV could offer completely animated games with incredibly realistic graphics.

Philips are presently developing feature films with alternative endings – up to 72 minutes of digital video can be stored on one

Art, music, and more from the better software titles

# GO MOUSE MAD

## WITH AMIGA COMPUTING

## OctaMED Pro 4 – PD version
### Amiganuts

OctaMED Pro is the latest, most versatile version of a near-legendary music program which has been the staple choice for Amiga musicians for quite a while.

Its strength lies in its ability to kid your Amiga into thinking that it has eight channels of sound instead of four, by cleverly letting samples share channels.

Obviously something has to give, and that something is the edge from the quality sound, but this is more than made up for by the versatility such an ingenious bit of programming offers the musician.

This version is save dependant, which means that you can mess around with it to your heart's content but not save to disk anything that you write, but for £22.50 (no manual supplied) or £30 (manual too) you can order the full version.

Should you be attempting to write a soundtrack for a game, demo or animation, or just wish to utilise the sound features of your Amiga to the full, then this is pretty much an essential package, and a PD version allowing you to ensure it's what you want before shelling out the cash is a great idea.

## Super Skoda's Revenge
### Deja Vu Software
### L/105

This type of driving-around-a-track-zapping-a-friend's-car game seems to be developing into a bit of a cult thing, with loads of different variations on the same theme being written.

Basically, you control a tiny Skoda on a train-set-style road set-up (ie circular with added bits) and attempt to zap your opponent(s) before they zap you.

It's a game that positively demands more than one human, and this version can handle up to four, which would bring for some pretty hectic and heated driving, but when we played it with two people there was quite enough tension as we each drove around our half of the screen, grappling with the rather fiddly control method and trying to avoid primitive white bombs from being fired up our rears.

Should you be a convert to this kind of thing –

you know, the kind of person who positively buzzes from seeing all the complex calculations leading to your score at the end of the game – then you'll like this one. Conversely if you haven't got a game of this type, this is a good as any.

## Solitaire
### Anglia PD, G6032

I remember spending hours playing this on an IBM – a version comes free with Windows for that computer. This Amiga version looks like it has been based totally on that one, which is anything but a bad thing, as it's colourful, competently presented and highly addictive.

Solitaire, for those of you who can seriously claim not to know, is a card game played by one person where you have to sort the cards into their suits in four piles, starting from the ace and moving upwards.

The cards are set out in a certain way, there are only certain set moves you can make, and it's sometimes impossible, but there is a very real sense of satisfaction when you complete a game.

This is one of those games that doesn't need to be on a computer at all – a pack of cards would do just as well – but a computer offers convenience without detracting from the fun of the game.

All the options familiar to Windows users are there – you can choose which deck of cards to play with (which basically alters the patterns on the back of the cards, ranging from Batman to psychedelia), and there a full set of game options such as the ability to

choose whether you wish to turn one or three cards over from the pack at once.

You can even cheat, by selecting any stack of cards to look at, or undoing mistake moves after you have made them.

This is an absolutely classic one-phone game, and the computer version adds extreme convenience while leaving playability and addictiveness intact. Good.

## Philo v1.12
### Startronics, CLR,
### P G Drake

This program is flagged as the simplest, easiest to use database available. I'm afraid I've got to add that it is also one of the most dull.

It can handle 260 fields, works from disk not memory (meaning that it takes its time every time you attempt to do anything with your data) and is, admittedly, simple to use.

However, using Ascii characters such as dashes to divide up your fields and to lend some kind of clarity to the display is not my idea of an attractive user interface, and lends a highly basic feel to the whole package.

It has all the usual print/save and search/edit options, and, rather bizarrely for such a simple program, the ability to

Phil Morse boots up this month's wide range of PD software – from help for crossword addicts to eco-friendly dolphins, it's all here!



Amiga Solitaire          Game Time: 43 secs.

mess around with the screen colours – but there are much better databases available in the public domain, I'm afraid.

## PC to Amiga
### 17 Bit, 2210, K Kirk

This is flagged as the ultimate PC/Amiga conversion utility. Although it does not arrive as the first of its kind – MessyDOS with SID and MultiDOS (recently given away on the AC CoverDisk) both do the same thing – this utility shines due to the large number of supporting utilities provided.

Once I'd got past the over-zealous activities of the virus checker which does its stuff first on booting, I discovered a comprehensive set of programs, from the straightforward conversion utilities to a very useful Iha/Izh file archiver/dearchiver.

The program will automatically append converted files with the appropriate PC suffix, and the full instruction file provided warns you of the pitfalls, such as the fact that some machines will crash if you attempt to name a PC file with more than eight letters.

Good advice accompanying a useful utilities disk which will appeal to anyone who wishes to work between an office PC and a home Amiga, not to mention freelancers who wish to submit work on an

industry-standard disk instead of an Amiga formatted one.

## Olempiad
### 17 Bit, 2209A/B

It's those Lemmings! Similar enough to be recognisable, not well drawn enough to cause legal difficulties for the author, this game starts with the lemmings in a bad way.

Unemployment and recession have dealt a savage blow to Lemming-land, and a very stupid animation shows a fallen-from-grace lemming being chased by what looks like a mole in a policeman's outfit.

After all this tomfoolery, we are led on to a sports game – apparently this is the brainstroke that will keep the vagrant lemmings happy.

It's basically a joystick waggler aficionado's effort, except you press both mouse buttons in quick succession instead of waggling your joystick. It's not the perfect control method, but it works OK.

Only one player can play, the computer operating the other two (two!) competitor lemmings, and races include the 200 metres, javelin and something which looks remarkably like

skateboarding. It's good fun for the originality of the concept, or rather the strange hybrid of existing concepts that it engenders – you temporarily forget that this isn't a graphical masterpiece with gameplay to rival the best of such games.

As far as such games go, this is entertaining and reasonably addictive.

# Dangerous demos

Welcome to the corner of chaos, that part of the PD page where we put a disk into the drive, sit back, and hand our senses and thoughts over to that hardy bunch of programmers who dedicate their time to entertaining us without our having to lift as much as an index finger to a mouse button.

Unfortunately, many demos are about as entertaining as French Fields, and a reviewer's fingers get used to the almost rhythmic reaching for the off button as another cube spins into sight.

However there are always those disks that make all the power-switch battering worth it. So without further ado, let's get stuck in.

I make no apologies for starting with a techno/hardcore demo, this one from the not-so-subtly titled LSD crew (*LSD demo, 17 Bit, 2144A/B*).

Spread across two disks, this is hardcore mixed and rejigged to keep interest levels high and feet tapping all the way through.

Some of the samples are, erm, familiar, but the music is rough, powerful and up to date. If any-one likes the stuff pumped out in fields all around the south by the likes of Bedlam

and Spiral Tribe, this'll be right up your street.

Moving from hi-tech back to the infinitely more subtle world of nature brings us to Dolphin Dream (*17 Bit, 2172*). This is not strictly a demo, more four still pieces of Amiga artwork and a short animation, but the quality really does have to be seen to be believed.

Created with Imagine v2.0 and viewed with Michael Hartman's View v3.2, these pictures are all that's good about computer art – very finely detailed and artistically sculpted but utilising to the full

the freeing of the reins on the imagination offered by a hi-tech medium.

And so the dolphins are put in space, painted in dark, apocalyptic colours, all creating a serene and compellingly futuristic feel. The animation is admittedly a little jumpy, but this is a highly recommended example of what is possible with some talent, imagination and the graphics capabilities of the Amiga.

On to the more traditional select-from-a-menu musical type of thing, and Aural Illusions (*17 Bit, 2168*) written by the Genocide team is a very well presented demo, even if the actual music is bland computer guitar-sampled soundtrack stuff.

The user interface shows a man in front of a bank of TVs, rental shop-style, with some serious hi-fi speakers on either side of him.

He has a remote control with which he (you!) selects the desired song (there are several) and each song causes a simple animation to appear on the TV screens, while the speakers literally pump out the music.

If you "switch channels" (change songs

using the TV remote control) you get scratchy pictures on the TV and white noise as the computer "tunes in" (sorry). It's all mildly amusing stuff.

Finally, let's end where we came in – loudly. I've left the best until last, the best this month being another techno demon called Fusion by MC Matrix.

The elusive Mr Matrix certainly knows his dance tunes, and has assembled all the right sounds, some great (if monotonous) acid graphics and four incredibly well mixed tunes to listen to.

Fog-horns and crowds pepper up the mixes, and samples stolen, in true hardcore tradition, from all over the place are the finishing touch to a great disk.

Keep 'em coming, keep trying different things, and remember, if you wanna get in the Dangerous Demos column, you'll have to learn how to play with knives. Or something like that.

# PUBLIC SECTOR

## Texas Chainsaw Massacre – The Game

### 17 Bit, 2192

"What happened is true – now the computer game that's just as real!"

Sick city Arizona! This is just arguably, I'm sorry, but running around with a chainsaw, Alien Breed-style, seeking and chopping up innocent residents of the leafy suburban district the game is set in, is not my idea of mind-improving computer entertainment.

It's animated smoothly, the chainsaw noises are so sick they're amusing, and the splatting noise when you kill someone suitably realistic (as is the blood), but really! In the words of the song, "we don't need that any more". Avoid.



## Calling all PD libraries

There are few things that are worth anything in life, when it comes down to it. Material wealth? Nah, never has bought happiness, that one.

Inspiration, creativity, love, respect – there are the real achievements. So if you lot out there in PD library land have booted up something from the morning's post and thought "Wow, this is marvellous!" when you played/looked at/otherwise enjoyed the program, why not spread that inner spark of joy all over Amiga land by sending it to me?

I don't want yer rubbish, just the truly brilliant. Oh all right, send the rubbish too. You know the address, or you will in a minute - it's Phil Morse, PD, Amiga Computing, Adlington Park, Macclesfield SK10 4NP.

## Gameboy Tetris

### Virus Free PD

This "Gameboy simulator" (ahem) claims to faithfully reproduce the Gameboy version of Tetris. To duplicate the LCD display, the actual game is played on a graphical "Gameboy" with greyish graphics – and it doesn't work well at all.

It's flat and dull, and the reason the Gameboy version is worth playing – that seminal tune that gets in your brain and plays havoc with your logical faculties – is nowhere to be heard.

It's slow, what sound effects there are are rubbish, and with Tetris being the definitive PD game, this is shown up even more for the poor effort it is.



# Free education?



Now I know that this is the biggest misnomer currently lingering on from past days of ethically acceptable social security, and that any parent with a child at a state school will tell you just how "free" education really is, but things aren't all bad.

They're not going to change our "training not education, learning not thinking" excuse for a national policy towards education, but free PD programs show that enthusiasm and genuine interest in a subject can still be all the impetus required to go ahead and offer knowledge and information to the masses just for the sake of the good it could do.

Ahem. I digress. What I'm saying is that PD education stuff is cheap, often very good and always worth at least a peek. And this month's two offerings are no different...

## The History Book

### Asgard PD Software

This is a very interesting and – if it doesn't send you scrambling for the latest kill-a-sprite deathfest – worthy offering, which takes the multimedia/interactive power currently being championed by CDTV and uses it to bring the horrors of the Second World War to life.

Written with Gold Disk's multimedia creation program Hyperbook, it opens with a Workbench-style list of topics covered, complete with scroll bars for selection.

Selecting a topic, such as the Battle for Berlin, brings up maps, explanatory text and information, and curiosities like the last known picture of Hitler alive, and on a more horrific note, details of casualties in the various battles and bombings covered.

Topics, key words and associated information are all linked, so it is possible to research a certain topic by letting the pro-

gram guide you intelligently through all the information it has about whatever it is you are researching.

You can load and save projects, print information out in order to work from hard copies (always a good idea - ever tried typing and reading off screen at the same time?).

And barring the pauses for disk access and the lack of CDTV's more advanced features (not too surprising really), this is a very useful and well presented interactive encyclopedia which will find fans in education as well as among those who wish to educate themselves in a painless way about this very important period in Europe's history. Highly recommended.

## Pictures and Letters

### 17 Bit, 2216, Neil Tassell

The opening screen of this young children's education program shows umbrella-ing lemmings, and is followed by a badly synthesised voice which speaks to the child, asking his or her name, and then calling him or her by whatever name is inputted all the way through - a nice

touch. Once you've selected whether or not you want music, and chosen whether you're going to use the keyboard or the mouse to control things, you're presented with an on-screen keyboard.

Clicking on/pressing any letter of the alphabet brings up a graphic illustrating that letter - Q brings up a picture of a queen, for instance.

Another option replaces pictures with sounds – each letter has a different sound. Quite how this could be educational I don't know, bar the possibility that a child just learning the alphabet may associate his or her favourite sounds with certain letters thus learning the alphabet by suggestion, but I'm no educationalist.

Suffice to say that it is reasonably well presented, and will keep children amused for a short while. It's let down by slow disk accessing, which will possibly allow the user to become bored, and the fact that it is a rather basic program.



But then again, I suppose I'd be forced to start worrying about my mental health if I started finding children's programs overly complicated!

And if the program itself bores kids, Kylie Minogue's I Should Be So Lucky as the soundtrack might well keep them singing and occupied, if not learning!

# Tapping and typing

## Two tutorial program to help you master Morse Code and touch typing

### Morse Code Tutor v2.2
#### Deja Vu Software, L/101

After a classy opening screen, this tutor leads you in to a program which everyone from yachtsmen training for proficiency exams to amateur radio enthusiasts to English language students may find useful – a tutor to help you master the basics of Morse Code.

Its highly comprehensive features include control over the pitch, speed and volume of your dots and dashes, the ability to select which combinations of letters/numbers you wish to be tested on (Morse Code combinations can be arranged into groups for easy learning) and full reports on your progress.

You can load and save your preferred configurations for the tutor, so if a number of you were learning with the same program, you could all have files containing information regarding the speed you have reached and so on to save you manually reconfiguring the program every time you boot it up.

If you want to learn the system that started radio communication off and is still going strong in these days of satellites, Vodaphones and video, then you won't go far wrong with this.

### Touch Typing Tutor
#### CLR, Eddie Dewhurst, CLU03

As a journalist, touch typing is a completely alien concept to me. However, there are some groups of people who, for some strange reason which I can't quite fathom, wish to be able to hit the right key every time, to build up a decent speed without typing total gobbledygook, and to be able to look at the screen to see what they are typing. Can' I understand it, personally.

Anyway, should the idea of speedier text entry appeal to you, you'll be pleased with this program. It is colourfully and clearly presented, has comprehensive menu support including features such as error statistics, 19 different exercises to load and master, the ability to switch audio clicking on and off when you press keys, automatic highlighting and so on.

Whereas you'd pay quite a lot of money for a custom-built little machine running similar software, doing it on your home computer costs you very little and is equally effective.

As an example of the versatility of the Amiga, this program is good. As a typing tutor, it appears to be pretty excellent. Should anyone actually learn to type using this I'd be pleased to hear from you, because lesson two was as far as I got before I felt distressingly like I might actually learn something, and stopped.

### E-Type II

The sequel to the much-lauded E-Type, an asteroids clone which had the PD pages from here to Mongolia singing its praises, is here, and rather, erm, similar is too.

This time you are splatting aliens who are dotted around in-between the asteroids, and who pulsate in a caterpillar walking kind of way.

Basically it's a very simple concept that was covered to satisfaction by the original game. If you've already got E-Type, give it a miss, but if you haven't, this is a competent variation on the theme.

### WordFinder Plus
#### CLR register, WF+A/B

Containing 42,000 words, three methods of searching this database, and hard disk installation capabilities, this is the crossword/word puzzle addict's dream come true.

Installation on to hard disk, if you have one, is highly recommended, as the program takes a very long time to load through 42,000 words off a floppy!

You can search for a word in one of three ways. Ordinary Search allows you to include wildcards (unknown letters) – it doesn't take a genius to work out the benefits this could have for crossword solvers.

Anagram Search does just that, while Word Search can look for a word from within another word, phrase or string. You can add to the dictionary and so customise it to reflect the vocabulary you come across when puzzling, too.

All in all this is a well thought through and executed program. Now, six letters, an "S" in position four... sorry, I've just got one more clue to find and I've cheated the whole Sun crossword...

## Where to get 'em

# GAMER

## curse of ENCHANTIA

### Charmed I'm sure

Plus...

...THE UNSTOPPABLE GAMES MACHINE...

# ONword

## Yes yes, ohh yes

Thank Crunchy. Dark seed is finally knocking on our door. If you haven't heard about it then you've been living in a very small and sound proof cardboard box.

For the uninitiated, I will explain. It's an interactive adventure role-playing game which has been on the cards for about six years.

The graphics have all been supervised by our mate H R Giger, the surrealist artist who brought you the Alien and the various beasties from the Poltergeist movies.

We've got a preview this month to stop Ben rocking back and forth in his chair and dribbling.

## Whooo schwing, babe-titious and so on

Accolade will soon be releasing Wayne's World, The Computer Game. The company have bought the licensing rights from Capstone who are the original owners of the film. Wayne's World is just one in a long line of film-game conversion from Capstone, who were also responsible for Home Alone.

Apparently the next game to expect from them is LA Law. It's still lost somewhere in the production process but it's definitely winding its way toward us.

## With wings

If there is anybody out there who uses a PC (spit, spit) as well as an Amiga, then you'll be glad to know that Wing Commander is soon to emerge on the Amiga.

For those who have never played Wing Commander, I shall explain. Its an interactive sort of adventure game stroke Elite-type fighter frenzy kill everything game.

The one thing that set Wing Commander apart from the rest when it came out was the intelligent character generated by the computer to fly the various missions with you.

The ultimate aim of the game is to progress through the various levels of the military to the top. Out soon.

## THE CHARTS

| This month | Last month | | | |
|---|---|---|---|---|
| 1 ▲ NE | | Zool | Gremlin | £25.99 |
| 2 ▼ 1 | | Sensible Soccer | Renegade | £25.99 |
| 3 ▲ 4 | | Seuck | GBH | £9.99 |
| 4 ▲ 5 | | James Pond | GBH | £7.99 |
| 5 ▼ 2 | | Civilization | Microprose | £34.99 |
| 6 ▲ 9 | | Monkey Island II | US GOLD | £37.99 |
| 7 ▲ 8 | | Lotus Turbo Challenge | GBH | £9.99 |
| 8 ▼ 7 | | F16 Combat Pollot | Action 16 | £9.99 |
| 9 ▼ 7 | | Super Cars II | GBH | £9.99 |
| 10 ▲ NE | | Falcon | Action 16 | £14.99 |

| This month | Last month | | | |
|---|---|---|---|---|
| 11 ▲ NE | | Premiere | Core Design | £30.99 |
| 12 ▲ NE | | Dizzy: Prince of the Yolkfolk | Code Masters | £7.99 |
| 13 ▲ 14 | | Formula One Grand Prix | Microprose | £34.99 |
| 14 ▼ 11 | | Panza Kick Boxing | KIXX | £9.99 |
| 15 ▲ NE | | Captain Dynamo | Code Masters | £7.99 |
| 16 ▼ 13 | | First Division Manager | Code Masters | £7.99 |
| 17 ▼ 12 | | Fire and Ice | Renegade | £25.99 |
| 18 ▼ 6 | | Magic Land Dizzy | Code Masters | £7.99 |
| 19 ▲ NE | | Jack Nicklaus Golf | Hit Squad | £7.99 |
| 20 ▼ 18 | | Graham Taylor's Soccer Challenge | Krisalis | £25.99 |

## I'm quite average really

After nine years of waiting, the masters of procrastination Braben and Co have finally got round to doing a sequel to the space trading shoot-em-up Elite, which they have originally titled Elite II.

The graphics on the new game have been hailed as being among "some of the most stunning screenshots you'll ever see".

The sequel will give a whole new depth to the game, offering you different starting points and the opportunity to fly with a bunch of pirates. It also boasts that it will "let you do everything the book said you could do".

It's still an office favourite as we found out last week when somebody brought their copy in, so you're lucky to be reading this mag at all this month.

## Drool World

I'm really sorry, I just had to do it. Coming soon from Ocean is the game of Cool World and it gives me an absolutely indelible excuse to print a picture of a cartoon Kim Basinger.

If you can think of some witty caption for this picture, you could win one of the games reviewed in this issue. Usual address!

The programmes are the UC Building, Demolition, Pacification and Ethnic Harmony, and the lads vary from province to province.

What this basically means is that in each province you have to construct buildings to meet the urgent needs of the population (hospitals and so on), demolish buildings that are a threat, eliminate a certain number of CSR military units (tanks and so on) and get the support of different ethnic groups.

Right, before I get any further with this review, let me explain something. Ashes of Empire is a very big game with loads and loads of features.

In fact it's got far too many to put in this review, and to be completely honest at first it looks very complicated, but – and this is a very nice but – it's got a lovely easy to read manual and video on how to play the game.

After reading the manual and watching the video you'll know everything you need to know, thus making it a lot easier on the old brain cells.

As well as being big (as in packed with loads of features) it's also big as in playing area. You can travel all over the CSR. There are, in fact, 2.8 million square miles to travel in.

Now that's a lot of land and you're not going to get very far if you use your legs, so at your disposal there is a whole plethora of vehicles to use.

You can travel in either air, sea (under and over water) or land. Vehicles range from cargo planes to bombers to barges to mini-subs to snowmobiles to motorcycles to tanks to rocket launchers

Have you ever switched on the national news and watched all the reports? You know, not the reports about the Royal Family and famous celebs, but the reports on wars, death, destruction, refugees, hostages, famine and so on.

Have you then thought to yourself that the whole world must be going completely mad, because I know I have.

After more than 40 years of global confrontation between East and West, the Cold War ends. The Iron Curtain is now suffering from terminal rust, the Eastern Bloc has crumbled, the Berlin Wall has been torn down and East and West Germany has re-united.

In countries such as Poland, Hungary, Bulgaria, East Germany and Romania, the communist regimes have lost their grip on power.

With the Cold War now over things should be getting better, but they're not. Nationalism begins to assert itself again throughout Eastern Europe and beyond.

Civil war breaks out in Yugoslavia, as Slovenia and then Croatia declare independence and defy the attempts of the Serbian-dominated federal army to force them back into the fold.

In the CIS there is more conflict – this time it's between Azerbaijan and Armenia, also in Nargorny–Karabakh there is more fighting.

There is even more fighting in Yugoslavia

as ethnic conflict breaks out between the Serb, Croat and Muslim communities of Bosnia–Herzegovina.

More and more innocent people are made homeless and highless by the constant barrage of war, so they take to the roads of Europe as refugees.

Probably the most worrying and frightening thing is that nobody actually knows who should control the nuclear weapons of the old USSR. All the time, civil unrest and ethnic tension continues to rise.

What we really need is someone to come and bring peace to the world. Sounds pretty impossible, doesn't it? Well, here comes Ashes of Empire by Mirage and even though peace will probably never be worldwide, you can at least play out the fantasy in the game.

In Ashes of Empire, you play a major part in the peace process. All you have to do is bring peace and harmony to the entire CSR, a vast, multi-national, nuclear armed superstate where central authority no longer exists and where the danger of ethnic conflict and civil war looms large.

The creator of the game is a geezer who goes by the name of Mike Singleton who was responsible for both the Midwinter games.

To achieve peace in the CSR, you have to pacify each of the five republics contained in the CSR – Ossia, Ruzakhstan, Belokraine, Moldenia and Servonia. Each republic has one capital province and up to eight other provinces within its borders. There are two ways to pacify a republic – either pacify the capital province and at least two other provinces in the republic, or pacify all the provinces in the republic except the capital.

Pacifying a province

is not an easy task – you must successfully complete four different United Community programmes in the province.

to tricycles. Well all right, maybe not tricycles, but there are plenty more vehicles than those I've just mentioned. Each vehicle is packed with missiles and a nice big cannon or gun, so that should please some of our more violent readers. Oh and you can also walk and run about, but you don't tend to do that very often.

During your mission you will meet numerous people, both ordinary citizens and professional personnel.

**Power to the people...**

# ASHES of

Martínez knows where to find Group Commander Maoriv. Martínez will set over: all CSR troops within 30 km. Martínez will give you 26 assault groups, 26 companies of Scoops and

Commandant Joaquin Martínez Nieto...

There are in fact over 6,000 characters in the game, so you'll meet one sooner rather than later.

Every single building and installation in the CSR has an ordinary citizen in charge of it. What you've got to do is try and recruit the citizen and if you manage to do so you will gain control of the building and its additional resources.

As well as ordinary citizens, there are 665 professional personnel who you can recruit. Unlike the ordinary citizens, the professionals move from town to town and are a lot harder to track down. Recruits can, err, be recruited either by bartering or by persuading them to contribute to your cause. Bartering will cost

you resources, but loses you no time, whereas conversation loses you time, but doesn't cost you any resources.

Remember, every citizen has his/her own distinct personality, so every time you meet someone new you have to think about what you're going to do. Deciding to do the wrong thing could be disastrous!

Of course, the game just doesn't involve flying around and chatting to people – there's much much more to it than that – but there just isn't the space in Gamer to explain it all.

If you liked Mike Singleton's Midwinter games then you are guaranteed to fall head over heels in love with Ashes of Empire. The surprising thing is that it actually feels as if you are trying to bring peace to a whole nation and if you don't succeed then you feel really guilty.

You start walking around babbling things like, "Oh no all those refugees and I've condemned them to a life of starvation and misery and it's all my fault." and then when the news comes on the television and you see pic-

tures of civil wars you start crying buckets.

All this emotion is due to the fact that the game is so damn realistic, especially when you consider the status of places like Yugoslavia and how close its situation is to the scenario in Ashes of Empire.

I can't really think of a major bad point, but this type of game might not appeal to a lot of gameplayers and it might be worth seeing a friend's copy before you decide to buy, especially as it's more expensive than a normal game.

Graphically Ashes is quite impressive, especially the map and the people's faces. The action bit is very similar to the graphics used in Midwinter, but that's a good point and not a bad one.

There is a good soundtrack which plays constantly in the background, but after a few hours it could get on your nerves and you might have to reach for the volume switch.

The game will take you ages and ages to complete simply because it is so huge. It's had a lot of effort put into it and it shows. Even though I'm not really a fan of this type of game I would heartily recommend this to anyone. Peace, I'm outta here.

*Jonathan*



**08:29**    **The Pump Head at Krustol**

Francesine, the charge hand, stands by the valve of the water pump. She says she will join your side if you deliver a palette of food.



VISION
Good graphics throughout the game.

AUDIO
Dramatic soundtrack, but could have you reaching for the volume switch.

PLAYABILITY
Nice mix of action and strategy. Might not appeal to some gameplayers though.

ADDICTION
Fans of Midwinter will be addicted for months on end.

# EMPIRE

**88%**

Has anyone seen the rest of my clothes?



...AND THE WINNER IS LECHERUS!

Hang about. Isn't that the Devil?

It wasn't built in a day you know

# ROME AD92: PATHWAY TO POWER

**MILLENIUM ▪ £29.99 ▪ 1 meg ▪ Mouse ▪ Out November**

So what do we know about the Romans then? Well, they're Italian, which can't be a good start. They built straight roads, which sadly today see much less of hurtling chariots pulled by fiery steed than they do sad blokes in knee-length jumpers and cagoules carrying a Karrimor rucksack and a flask of chicken soup.

Enough of these inconsequentialities though, what about our Rome, and all this "pathway to power" business?

As you may or may not be aware – and since the intelligence of the average reader of this mag exceeds my own by approximately 400 percent, you probably are – the Romans of old were a very different bunch from the leather trouser brigade inhabiting the Italian capital today. For a start ye olde Romans weren't afraid to stand and fight. In fact they loved a good scrap, and none of this girly punch and kick business either.

If a Roman boy hadn't ripped out the throats of a dozen peasants by the time he was nine, he was considered effeminate and banished to a life of digging irrigation channels on the banks of the river Euphrates, where his ancestors would later form the armies of genial dictator Saddam Husein. Yes indeed, they were a bit on the violent side were the Romans.

As you may have gathered, the story is set in AD92 – you are Hector, a humble and lowly slave, going about your humble and lowly business in the land of Herculaneum.

Your aspirations are great however – you envisage a day in the future when lavatory cleaning and cockroach squishing will seem but a distant memory.

You forsee a time when all society will revere your name and bow down in awe and reverence at your noble feet moaning 'Hector... Hector...'

One day... soon... you will be Emperor of Rome! Well that's the theory anyway, but there's a long way to go before then.

Life on Herculaneum is getting a little too hot to handle. The volcano overlooking the town is beginning to bubble and it's probably best that you get before it blows its top.

Rome's not far as the crow flies, but the only way there is by sea, and who's going to let a smelly low-life such as yourself on board their majestic vessel?

What to do then? Well, you could always build a one-man raft out of sandal straps and discarded matchsticks, or hollow out a mountain sheep and fill it with helium... or swim. Or something.

Unfortunately these options aren't available, so somewhat worryingly, a little bit of brainpower is required if you intend to avoid ending up as a trainee fossil underneath several billion tons of lava.

The graphics are presented in Populous-like fashion, ie a 3D angled square showing Hector's immediate vicinity, with a map of the whole area just a mouse-click away.

Click on an area of the map screen and Hector will make his way straight there, eliminating the laborious



Now then, where's the sandal emporium?



I'll give you twelve lire and a bunch of grapes, mate

"So tell me – what's it like living here?"   "It's not baa-aaad"



Hey Gabriel, look at that little guy down there. Let's squash him!

stop/start procedure on the play screen that I undertook for at least an hour (well it was Friday).

Everyone in the game, at Millenium proudly point out, has a mind of their own, and there're little blokes and girlies running about hither and yon all over the place.

Any one of these may have items or information that will come in useful, so why not loosen the old sandals and socialize a while?

Gameplay is very simple – the basic idea is to ask questions, eavesdrop on conversations and generally find out what's what.

Unlike most games of this genre, you don't necessarily have to relentlessly badger everyone to obtain information. Some kindly folk will offer words of wisdom out of the goodness of their hearts.

On the other hand though, some gentlefolk may approach you openly, all smiles and neatly pressed togas, and proceed to hack you to bits with long handled daggers or other such period instruments. Nice.

Another thing worth remembering, especially in the later levels, is that



Don't eat that apple – it'll turn your hair green

you'll need plenty of cash – after all, no-one's going to respect a budding emperor-to-be if he's wearing Jesus creepers and begs for crusts of bread.

I mean you don't see the Queen rooting in bins do you? Mind you, have you seen the state of her palace then?

If and when you muster your way out of Herculaneum, it's over to Rome for more of the same. The game has six levels in total, and it's a matter of buying or blagging whatever you need to keep you in with the nobs.

As I've mentioned, everyone has a mind of their own, one of the best features of the game are the muttered comments or dubious snippets of conversation you can hear (well read, actually) as Hector passes by.

"I must remember to buy some grapes for the orgy."

"Come and buy some flesh... nubile young girls..."

Sound like your kind of game? It's OK, the wife's downstairs with the kids – she thinks you're 'working' in the attic – go on you sad man, treat yourself!

I wasn't particularly enamoured by



Get off my shirt or I'll nick your helmet!

the graphics at first – admittedly there is plenty of colour, but all the sprites are very small and there's little variety in movement.

However, this isn't a teeny platform romp – if I wanted stunning visuals with plenty of quacks, hoots and wibbles I'd be playing Zool (which I do, frequently, but that's not the point).

So what is the point then Paul? Well, the point is this – there's so much going on in the actual game that graphics in this situation aren't that important.

Besides, the digitised pics within the game (not just stills either) are good enough to keep even a moaner like me happy. And anyway, I've decided that I do like the graphics now after all.

Now the sound is another matter. Twice I've asked Ben to check the audio leads, and I've even put my glasses on to make sure it's an Amiga and not an ST I'm using.

Spot effects are reasonably good, but are just too few and far between to make an impact on the game. The intro tune is very... erm, Roman, but again is in no real danger of bringing a tear to the eye.

So would I buy it then? No. I can play it here for free so I'd have to be daft wouldn't I? So should you buy it then?

Well it's not for me to say, but if you're an RPG fan who wishes the programmers wouldn't get so serious, or an adventurer/shoot-'em-upper

looking for something that little bit more challenging but which preferably won't take a degree in physics and a fortnight studying the manual to get into, then you'll be dead chuffed with Rome. Probably.

Paul

Lock up your grandmothers, it's...

# CAPTAIN DYNAMO

**CODEMASTERS ■ £7.99 ■ ½ meg ■ Joystick ■ Out now**

Now then, what's all this? Oh, it's a platform game – good heavens above, haven't seen one of those in a while, honest. Who's the hero then? A spikey-haired hedgehog perhaps? A muscle-bound cape clad hunk? A three-legged axe-wielding Peruvian antelope?

No - it's 75-year-old Ernest P "Captain" Dynamo – fresh out of retirement and eager to restore peace and harmony to our humble planet. Or something.

The star of the show may differ from the norm in that he's as old as a Mcdonald's teacake and doesn't actually have any special powers to speak of (unless you count the ability to make those strange clicking sounds with his false teeth that would frighten off even the most fearsome of foes), but let's face it – the scenario doesn't exactly appear to break new ground, does it?

Oh dear, it appears to be a budget game to make matters worse. Doesn't bode well, chums. Well read on, games-playing-type people, you might be surprised.

Here's the brief. Austen Van Flyswatter, mad scientist and would-be world dictator, is fed up. He's 72, penniless, and without a suitable pension scheme to see him comfortably through his twilight years.

Lady Phillis Uppenhoofen on the other hand, a most definitely not fed up. She might be 81, but she owns the world's largest diamond collection, so she's laughing. But not for long!

The dastardly Flyswatter steals said diamonds, intending to take them with him to his hiding place on the moon, travelling in his custom-built rocket (of course!).

For reasons unspecified, this is unacceptable to the entire human race, and it's up to you, Captain Dynamo, to prevent this impending catastrophe.

Beginning at the bottom of the launch station, or whatever it's called, Captain Dynamo must vertically scroll his way


Platform tips number 76 – how not to complete the level


'Cor, think I'll blag these stones and sod this Superhero marlarkey for good!'

through six levels of the usual conveyors, fireballs et al, in order to reach Flyswatter before he becomes moonbound.

Old Cappers looks pretty good in his helmet and cape (are those carpet slippers on his feet?), belying his crustiness with a fluidity of movement that even a... er, that even a very fluid mover would be proud of.

His can jump, jump higher, duck (not very low mind, due to a bit of a dodgy back), and run in a typical old-man-doesn't-want-to-lose-his-false-teeth type fashion.

Graphically, Dynamo stands bald head and stooped shoulders above the vast majority of budget offerings. Everything is well detailed, if a little samey – the scrolling is good and the joystick controls responsive (steady on, I'm beginning to sound like a proper reviewer).

One little quibble is that there's not really enough going on in the early levels to get you riled up – mind you, having said that, it

wasn't long before I was sad enough to phone the Codies begging for a cheat (which incidentally they were kind enough to provide – but you'll have to buy next month's issue to find out what it is. Ha!).

The sound isn't up to much – one tune playing incessantly throughout the game and nothing at all in the way of FX are the only reminders that the good Captain hails from Budget City.

So there you have it. Dodge the crushers, vault the spikes, avoid random bolts of electricity and the odd psychedelic earthworm, collecting diamonds aplenty on your way to ultimate confrontation with a geriatric madman.

A fun, challenging, tongue-in-cheek-em-up that at less than a tenner makes a lot of more expensive software look daft.

**Paul**


Oooh! I do not believe you wanted to do that


Steady on mate – you'll end up putting your back out!

**VISION**
Colourful and bright, but more variation would've been nice

**AUDIO**
Piddly little tune. No FX.

**PLAYABILITY**
Jump 'n' run, and jump. Jump 'n' run.

**ADDICTION**
You'll always want more. I do.

# 76%

¡MENUDO!

HITS THE STREETS ON NOVEMBER 19TH

BAD INFLUENCE!

Oh no, Putty has just got shot by Arnold Schwarzencarrot!


It's a Scouse sausage because they do 'dat don't 'dey!

## Plasticine pantomine?

# PUTTY

SYSTEM 3 ■ £25.99 ■ ½ meg ■ Joystick ■ Out now

**W**hen I was a small child, there was nothing I'd like better than to play with some Plasticine, and by golly what fun it was too. You'd get your mum or your dad to buy you some and you'd be really excited taking it home to unwrap it.

On unwrapping Plasticine, the first thing that hits you is the smell of the stuff – it's totally indescribable. After smelling it, it's time to make something, so for some ideas you'd look at the handy leaflet included in the pack and all the models would look absolutely brilliant.

A whole range of colourful and cheerful models begging to be made! After reading the leaflet, problems rear their ugly little heads.

For safety's sake, you decide to make

something simple, like a snake. That can't be too hard, can it? A long green body, stick a couple of eyes on it, place a red forked tongue at the front and Bob's your Aunty.

Easy really, so you decide to make something a little bit harder, like a colourful little parrot. A round blue head with a couple of white eyes on it – er oh dear I haven't got any white, hmm. I'll have to use some yellow.

An orange beak, a blue body, yellow feet and some green wings. Whoops I used all my green for my snake, damn. Right take my snake apart, er, no the green's got loads of red bits in it how.

I'll have to pick all the red bits out, damn I haven't got a lot of

green left. This can only leave me with a parrot with small wings and no beak to boot. It looks deformed too. Boo hoo. So you try and try to make more models, but unfortunately you run out of loads of colours, so you try mixing colours to make new ones and whichever combination you try to mix, it always ends up puce.

All you can make then is puce blobs, which to be perfectly honest are a bit useless, but hey you can't complain because here comes Putty, a pliable platform game from System 3, and it's guaranteed not to turn puce.

Originally it was called Silly Putty, but due to some problems they changed it to Putty. Right, it's time to start practicing for that Jackanory spot because it's story time.

In a galaxy far away there is a place called Putty Moon. Putty Moon is a small world that orbits around the planet Zid and is home to a race of squishy, pliable, squelchy beings called Putties.

Life used to be so peaceful and still on Putty Moon – that was until the evil and downright cheesy Wizard Dazzledaze and his cat Dweezil turned up in their flying saucer and ruined it

all. Dazzledaze and Dweezil captured all the peaceful Putties and brought them to earth, selling them as chewing gum and making tons of money which they spent on toys and sweets.

Hey, this story is a bit sad and depressing, what's going on? But, wait – a single lone Putty had watched with tears in his/her/its eyes as all its chums were taken away by the evil wizard.

Normally this bad ass Putty would get revenge against the evil wizard, but it had a bad dose of the sniffles at the time, and so stayed in bed.

Many months passed, and slowly but surely new arrivals had started, err arriving on the Putty Moon. These were naughty babies from Earth which had been kidnapped by Dazzledaze and Dweezil and


See, the bogeyman is real, well sort of. OK it's just a guy picking his nose


Yowsers, it's Uncle Ted. Say what's this? It's got a good beat!


You won't like it when Putty gets angry


I bet even Paul Daniels couldn't do that trick

were magically being transformed into horrid creatures of all shapes and sizes.

Suddenly there were more arrivals. This time it was a load of robots from the planet Zid who were exploring the Putty Moon. Dazzledaze spied the Bots through his telescope and fearing that they would do harm, froze them into blocks of ice.

Putty can help free its chums from the evil clutches of Dazzledaze and Dweezil if he can get help from the Bots. So Putty must smash the ice blocks and get the Bots back to their flying saucers, returning with them to the planet Zid.

Once on Zid, the Bots will build a skyscraper big enough to reach Putty Moon. Putty must help with the building by rescuing as many Bots as possible to help with the construction.

Once it reaches the moon, Putty must do away with Dazzledaze and Dweezil and bring peace, love and happiness to the whole world, or something like that.

Putty might look like a straightforward platform game, but it isn't. It's wild and wacky and even a bit bizarre in places. The main reason why it's so different from 'normal' platform games is that the main character, Putty, is so controllable, and can do so many different things.

Putty can bounce, stretch, melt, absorb, slither, inflate, explode, mould, jab and even make coffee (jeh?). Putty is so well animated that it really is quite brilliant to watch it slither and stretch all over the place.

The game has a very high humour content especially where the enemies are involved. There are guys who pick their noses and drop their bogeys on you, guys who blow bubbles in the bath if you know what I mean, sumo wrestlers, Frankenstein, a carrot with serious Schwarzenegger influences who shouts 'Uzi nine centimetre', a Scouse sausage and many more.

The idea behind the game is simple – collect the Bots by absorbing them and then take them to the exit. However, it's surprisingly difficult – but not too difficult that you lose interest. The Putty has to keep its plaus-

ity level topped up at all times – if it doesn't it starts losing lives and then it'll be game over.

As well as collecting food to keep its pliability up, Putty can also collect icons to help collect the Bots.

There's a pocket watch which will give you extra time, a trashcan which will let Putty carry more than one Bot at once and Dweezil power which will give Putty invulnerability.

By far the funniest power up is Uncle Ted, which is a little guy who sits at an organ and plays a ridiculous tune which


Now come on, stretch, up and down, one two, one two. Putty gets physical with the help of Jane Fonda's workout video


Come on, spot the Putty!


GAMER GOLD

make the nasties dance uncontrollably for 30 seconds thus distracting them from their job.

Right that's enough background information, I bet you're wondering what the game is actually like. Well with hand on heart I can honestly say that Putty is absolutely brilliant

– a platform game that is totally original in almost every way.

The graphics are pretty wonderful – take a look at the screenshots. The sound is brill as well with loads and loads of samples.

Once you've learned the controls they become second nature, so no problems there. Plus Putty is quite possibly one of the funniest games ever – it certainly caused people to have a laugh and a giggle in our office.

Putty is a worthy winner of a Gamer Gold if ever I saw one. Big hand claps go to System 3 for this one, plus with a data disk already on the way it seems as though the whole gaming world is about to go Putty mad.

*Jonathan*

Time to take a break at Bob's Milk Bar. Err I'll have a B please, Bob. Whoops, wrong Bob!


All the king's horses and all the king's men, shot Putty to bits and couldn't be bothered to put him together again, or something

They've saved the best for last. Following the phenomenal success of Lotus 1 and Lotus 2, the best selling racing game trilogy is now complete. And we've got ten to give away.

Lotus III incorporates the awesome power of RECS TM, a revolutionary concept giving you the power to generate a virtually infinite number of unique racing scenarios.

- Seven huge superb levels
- Sizzling sonix
- Incredible gameplay
- Full screen parallax scrolling

# COMPETITION

- Creates over three trillion different tracks using RECS TM
- Larger sprites and roadside objects than Lotus 1 and 2
- Music selection via on-screen CD interface
- Select between the Esprit, Elan or futuristic M200 concept car
- Thirteen different scenarios including mountains, roadworks and futuristic levels
- 64 pre-defined circuits to race
- Full or split screen action

Sent down to earth on a mission of discovery, our pint-sized hero suddenly finds himself in a world full of danger. Can Zool do whatever he was sent down to earth to do, or will he just end up another ex–ninja from the "Nth" dimension? Enter this competition and you could be one of the ten lucky winners to find out.

Let's do the time warp...

GAMER GOLD

# Curse of ENCHANTIA

CORE DESIGN ▪ £34.99 ▪ 1 meg ▪ Mouse ▪ Out now



Baby, I'm electrifying

Now correct me if I'm wrong, but have you ever been quietly walking along, you know just simply minding your own business and then BLAMMO!, you are suddenly zapped into another dimension?

I mean it doesn't happen very often does it? I'll probably get loads of letters now from loads of people who have had loads of inter-dimensional experiences.

"Yes, there I was Mr Gamer writer, I'd just watched Bullseye with that fantastic Mr Bowen and I fancied a walk before my tea and as soon as I'd put one foot outside my door, ZAPPO!

"I found myself whizzing through another dimension, millions of colours and strange sights flashed before my eyes.

"A weird bass sound was buzzing through my head and before you could say "smashing" I was back in my house. Surprised? I certainly was!"

You're probably wondering why I'm going on about other dimensions. Well the hero of Curse of Enchantia, a delightful little chap called Brad, has a very bizarre inter-dimensional problem.

There he was, playing baseball with his sister in a field, not realising that the field was possessed. And how did this field come to be possessed?

Well, it's a long story, but I'll tell it anyway – you never know, your lives might be enlightened by it.

In a land far, far away in another space, time and dimension, there lived a whole load of wicked witches. Not just any witches, but the baddest, meanest, dirtiest, evil witches the world or indeed the universe has ever known.

They ruled the land of Zeloria and went around committing terrible deeds without any reason whatsoever. They would walk around forcing people watch Eldorado, and make the citizens of Zeloria laugh at unfunny comedians turned gameshow hosts like Les Dennis.

Now there was one particular evil witch who was that little bit meaner and more wicked than the others. This witch shall remain nameless, simply because she hasn't got a name (makes sense – Ed), but hey, let's call her Mabel just for the hell of it.

Mable had just one wish in the whole wide world and that was to keep young and beautiful for all of eternity. Seeing as though see has got a face like a bulldog chewing a wasp, this could be a bit of a problem.

Now Mabel had, just by chance, found a spell to make her young and beautiful for all of eternity, but she was having major problems in trying to find all the ingredients that she needed to complete the spell.

The main ingredient was a live male child. She knew where to get one from, but didn't know how because male children lived in another time and dimension, plus she wasn't that well catered for in the power department.

Mabel set about tricking some more witches into lending her their power in return for making them young again. So, packed to the nines with evil power, she sent two witches through a portal to Earth

What they didn't know was that they had enough power to get there, but not back. Mabel unleashed a wicked spell on them which consumed them and dispersed their essence and souls over the field in which they were standing.

From all the way back in Zeloria the evil witch was heard to sa:y "From this day on there will forever be communication between this field and Zeloria."

In the few years that passed in Zeloria many hundreds passed in our

➤



This looks like a good 'plug' for the game, ho ho I kill me





Look at the quality of workmanship on those graphics, sexy or what

# Curse of ENCHANTIA



Cor, it's my local rock trader. Eh, isn't life exciting?



Now there's something you don't see every day...



There's mud in your eye!

She's a babe...not!

Make a wish and all your dreams will come true or perhaps they won't

world. A great city had been built around the possessed field in this time.

The field had never been built upon due to the strange happenings and odd experiences that had happened there. However the local children often played baseball in the field.

Aha, I've got to the point at last, because along came poor helpless Brad and it just so happens that Mabel, our infamous witch, was looking into the field through the portal.

Excitedly she cast a summoning spell and before you could say 'Debbie McGee', Brad was magically wicked away to the world of Zeloria. With a gasp, a gosh and a gusp, Brad's adventure had begun.

Right as you may or may not know, Curse of Enchantia is an interactive adventure very much in the vein of the Monkey Island series, but missus it's not Monkey Island, oh no no.

You control Brad, who's got brown hair with a rather splendid quiff at the front of it. Now Brad is only a small lad, not some big muscle-bound superhero, so in Curse of Enchantia he has to use his brain more than his brawn.

The control method is simple, in fact so simple even I could quite happily whizz along the controls without

any bother at all. The whole game is controlled via the mouse and involves a small bar of icons which appear whenever the right mouse button is pressed. Via these you can make Brad pick up objects, jump, fight, throw objects and loads of other things which are too numerous to mention.

If there is an object nearby which you can utilise, clicking on the 'eye' will make it/them appear on the icon bar.

There isn't really much more I can tell you about the game because I'll spoil it for you, but it does involve Brad going around the world of Zeloria trying to complete certain tasks

For instance, when the game starts you find Brad upside down and chained to the wall and obviously you've somehow got to escape, but how do you do it? Well that would be telling, but I can say that some of the puzzles aren't exactly logical.

I suppose all you grumpy readers are grumbling about how I haven't mentioned how good or bad the game is. Well bar ye not, ye varlets, the bard of the games world is here, hurrah!

Curse of Enchantia is absolutely brilliant! If I could give more than one Gamer Gold to a game then I'd give at least six to Curse of Enchantia. If

I can definitely see a sort of squishy head versus hard rock situation arising here...

you're a Monkey Island fan then you are going to bust your britches for this. The graphics, as you can see from the screenshots, are amazing to say the least. They are, in fact, real works of art and could probably worry a few of PC owners out there – that's saying something.

I can't really say that it's better than Monkey Island 2 because they are both brilliant in their own right. Ha, talk about sitting on the fence, there could have been a war if I'd said that one was better than the other.

Curse of Enchantia has excellent playability, graphics, sound and is addictive as something that's quite addictive indeedy.

In fact, Curse of Enchantia is downright bloody enchanting. Buy it today because if you don't you will more than likely commit suicide, it's that good.

One thing is for sure – I wouldn't like to pick the adventure game of the year. Core Design have come up with easily their greatest and most impressive game yet.

Jonathan

# The Gamer guide to

# MYTH

In my estimation Myth is the best thing since relish burgers. Many an hour has been wasted on this, spilling guts and coffee while hurling the Amiga from one end of the room to the other.
But it ain't easy! However, because of the geniuses that we are, we can bring to you the full solution – with wings.

**1** Beat up as many skeletons as you can and you will get a sword. Chop one of the bird-like things and get the fireballs.

**2** Go across the top of the screen to the skeleton hanging from the roof, chop the chain and jump after him.

**3** When you are at the edge of the firepit, chop the head off a skeleton so that it goes into the pit. Then your old mate Beelzebub will put in an appearance and unleash one of his minions upon you.

**4** Shoot the devilly thing until he disappears and you get the pitch fork.

**5** Go to the left-hand side of the screen and bung the pitch fork at the big nasty beastie. Once he's dead, make your way to the top right-hand corner of the screen.

**6** Make your way across the screen jumping over the baddies until you reach the sexy women in the nightdress (kyuk kyuk). Don't go too near or she really does turn into a man eater.

**7** Carry on going until you see a big statue of a bloke with a sword and a shield. This is Achilles, so stab his heel a few times until he falls over then get the shield. Use the shield and all the baddies think you are a god so they bow in front of you, but whack a few anyway just to show them what a power-crazed nutter you really are.

**8** Jump your way across the screen until you get to the platform just out of Medusa's reach. Jump next to Medusa using the shield to deflect the shots.

**9** Lop her head off using the sword and pick it up.

**10** Jump across the screen until you get to the dragon. Using the Medusa's head, shoot at the heads of the dragon until they explode.

**11** Beat up all the Vikings you can possibly with your hands around. I find that Bill's Nordic Personal ages Emporium always has a good choice of Vikings. Eventually one will drop an axe which you can use to hack the others up with.

**12** Once you have killed enough of them kill the bird at the far end of the boat will begin to fly up and down. You have to chop it out of the sky to gain a token.

**13** Chop the little goblin on the floor and get the daggers before the ogre gets to you. Keep shooting the ogres and killing the goblin until you get to another sexy woman, tied to a post this time.

**14** Grab the torch and stab the ghouls that are flying around. To thank you, the woman turns into a magic sword (I wonder what Freud would have made of that, eh?).

**15** Grab the sword and continue shooting ogres and killing goblins until you get to the dragon.

**16** Select the magic sword and chop a hole in the dragon's shoulder, then retreat and throw daggers into the wound. The dragon will eventually die.



000066080



000066080

**17** Make your way up to the drawbridge on the left-hand side of the screen. Approach it and shoot the guy who comes out with daggers. Do the same for the drawbridge above.

**18** Thor will now come down and take you to Odin. Kill little dragons with the axe and collect the daggers.

**19** Thor will then come down and shoot at you like the rest of the unpleasant characters in this tale of blood, guts and greased hamsters – there ain't no Sally Army 'ere mate. Anyway, shoot his feet by standing on platforms lower than the ones that he stands on and he will eventually go away.

**20** After he's gone you have to fight the big guy himself, Odin, with the dagger. Shoot him in the eyes while avoiding the thunderbolts. He will eventually die.

**21** Kill the snakes with your sword and jump on to the middle platform on the level – a door will open behind you. Go to the right and avoid the swinging axes and so on. Collect the eye of Horus and get out the way you came.

Jump to the left and across and another door will open and you will be in a chamber similar to the one you have just been in.

As before, work your way across to the right until you get to the end. At one point it will look like you have reached a dead end but a door will open for you – do not fear.

**22** Select the sword and run to the right. Kill one of the guards to get the Ankh. Jump over the rest of the nasties or you'll be there all night. Break the PA Cup (sort of thing and pick up the extra energy then carry on to the right.

Fall down the first hole, go left and collect the two pots inside the trophy things and go right. Jump over the spikes and you will find another trophy.

**23** Go back to the hole that you fell down



000066080

and climb back up past the middle floor. Select the eye as your weapon and wait for the guard with the helmet, shoot him and get his helmet.

Go to the right and get the final trophy. Climb down to the middle floor and head back to the start. Select the Ankh, stand in front of the Ankh symbol on the wall and your energy will be replenished.

**24** Run all the way over to the right and kill the guard using the eye. Duck down under the Ankh symbol on the wall and select the Ankh. When Anubis has fired, stand up, select the eye and fire. After Anubis is dead, pick up the treasure and jump up to the next level.

**25** Get the four pots and place them as follows:

> Blue – top left
> Green – bottom left
> Anubis – bottom right
> Pharaoh – top right

When you've done this properly all the pots will be on fire, so you can go to the right. When you reach the pharaoh don't panic when the laser beam fires, because it won't hit you.

You can fly now so all you have to do is shoot behind the eyeballs while avoiding the fireballs. Eventually it will explode – you have finished Myth.



000066080



000066080

# the source

# 1

# GUNSHIP 2000

Jonathan Maddock grabs his helmet and gets to grips with his chopper

**F**our years ago, Microprose released the original multi-copter classic Gunship. Gunship was a simulation of the AH-64A Apache attack helicopter which incidentally won tons of game awards and sold well over one million copies worldwide.

Being the clever people that they are, Microprose suddenly thought: 'Wait a minute, if Gunship sold over a million copies four years ago, think what a sequel could sell for, especially with today's technology.'

So without further ado they set their programming team on the job. Every day and night the programmers slaved away at Microprose's Gunship 2000. After many months, Gunship 2000 was finished and everyone involved in the project stood around grinning inanely.

Rightly so too, because it looks as though it could be the definitive helicopter simulation. In Gunship 2000 the player can choose up to three types of helicopter from the army's arsenal and take up to five on any mission.

The helicopters are the most technologically advanced machines the US Army will be relying on throughout the 1990s and into the 21st century. Just think, you'll actually be able to fly the ultra powerful helicopters into combat before an actual helicopter pilot does.

Action will occur in and around central Europe and the Persian Gulf and players can designate their preferred mission. There are tons of options to choose from which include training, single and multiple helicopter missions, and the campaign game, including a map showing the ebb and flow of battle.

The simulation also offers a 'mission builder' which allows the player to design, edit and save missions.

Now some flight sims fall at the first hurdle due to the pathetic or simplistic state of their graphics. This is not so with Gunship 2000.

It has a realistic landscape which has been created by a new development called Topographical 3D graphics, which generates terrain with depressions (no, that doesn't mean the terrain mopes around listening to Morrissey records and plans to top itself any minute – it simply means depressions in river banks and valleys).

From what I've seen of the game, it looks very impressive indeed. The actual helicopter is dead easy to fly – well put it this way, even I could quite happily fly it around without crashing which is a bit of a first.

This is one of the smoothest flight simulators I've seen in a long time

and at this moment in time I'm looking forward to when it comes out next month in time for Christmas – but don't expect it to cost less than £30.

Gunship 2000 – put it on your Crimbo list now and if you don't get it, go and kill Santa and poison his reindeers.

Let me fill you in. You are Aarbron, and as a child were enslaved by the evil minions of the Beast Lord, who subjected you to hideous treatments that rendered you virtually devoid of your humanity (same thing happened to Timmy Mallet, incidentally).

You performed your duties obediently and numbly, until one day, an amber sacrifice was herded to the altar of the Beast Lord and, well... sacrificed, you recognised the tortured face as that of your father.

This would come as a bit of a shock to any lad, as you would imagine, but it seems to be just what you needed – bit drastic if you ask me.

As a flicker of your former humanity stirs within you, instantly you vow to avenge your dad's untimely end and bring down the empire of the Beast Lord, killing loads of nasties as you go, no doubt.

Several nasties are already gonners (buy Beasts 1 and 2 for further details), but there's plenty more vengeance to be had yet, so here you are.

The game begins with a dead smart intro sequence – dark, moody graphics, great sound (even though the beginning does sound suspiciously like 'Our Tune') and everything.

Aarbron is sitting comfortably in front of a glowing fire when for no apparent reason a plane appears. He boards the pilotless contraption and heads off in the general direction of the Beast chap. Very convenient.

On arriving in the north region of Kara-Moon, you are given a choice of two levels from which to start this platform adventure (there are four levels in all, which isn't enough by any means, but more of this later).

Your sprite looks alarmingly similar to that rather more famous adventurer, Indiana Jones, right down to the once fashionable hat.

Initially armed only with Shurikens – lethal metal star-shaped throwing objects – you will come across various other weapons to aid you on your quest.

Progress is in the standard left-to-right-and-occasionally-up-and-down form. Old Aarbron moves well, although he does seem to have a bit of trouble when it comes to climbing ladders. Good job he's only a game character and not a window cleaner I suppose.

It's a fairly violent game to say the least – you won't get very far at all unless you're willing and able to stab to death any number of beasties in various appalling ways.

A nice touch, if nice is the correct term, is during the cannibal attack – whizz two or three shurikens at the slobbering flesh fiends and laugh your ruddy head off as they fall apart limb from limb. Barely two minutes go by without bloodshed of some sort or another.

Not all of the gameplay involves running, jumping and killing though – there's a substantial puzzle

## Sequential beastliness

# SHADOW OF THE BEAST III

PSYGNOSIS ▪ £34.99 ▪ 1 meg ▪ Joystick ▪ Out now


Must have been a good match!

## Cashing in?

Whatever else it may be, this is one of those games that suffers from the highly contagious and seemingly vaccine-less computer game disease – Numerical Suffix-itis. In other words, it's another sequel.

Now I don't have anything against sequels per se – the Lotus offerings from Gremlin for example are all equally good, and Accolade's second Elvira was certainly not to be sniffed at. But did they offer us anything new?

I mean, I'm a relative newcomer to the wacky – and often weird – world of computer software, but a very quick glance at one of the above mentioned games is enough to assure me that any proud owner of, say, Lotus I or Elvira I would be very hard pushed to find a reason for buying one of the follow-ups.

They're just not different enough, and if I was a cynical man I'd suggest that perhaps – gasp! – such games are little more than money-making tools for programmers and publishers cashing in on liked and established titles.

But I'm not a cynical man, so I won't suggest that. Perhaps you have your own views, and perhaps, just perhaps, one dark and rainy night when the telly's bust, the grass is as high as it's going to get and the paint on every wall is completely dry, you'll put pen to paper and share those views with your humble Gamer chums?

element to the game, as there was with its predecessors.

Beast 2 was supposedly criticised for the difficulty of its puzzles – the talky bit in the manual tells us that this criticism was duly noted and that the puzzles in this game begin quite simple, becoming progressively harder as you slog through the levels (yes, all four of them).

Look out for gold on your quest – you will need to have collected all the gold on a particular level before you can progress. Look in every nook and cranny not only for gold, but also for any of the several items

that will help you on your way.

Despite the lack of levels, Beast 3 is not a game that is likely to be completed at the first attempt – at £35 it's a damn good job too, is what I say! The puzzly bits will frustrate you for sure, and the nasties are nasty enough to keep you cussing for a good few days.

Sadly, the obligatory end-of-level monster dudes let the side down – they're massive and look ready to chew some serious ass, but just a few paltry hits from the weapon of your choice will see them flicker feebly and, er... die, basically.

Throughout the game the tunes are great. You won't find a thumping ballad, or even a moderately uptempo beat among them, but they convey just the right atmosphere. The effects could have been better, it has to be said, but don't fret – the game hardly suffers because of it.

The graphics are nice. Did I mention they were dark? Well they are – but the details of things such as trees and the rock walls is great – and besides, you're trekking through a dark and forbidding land full of danger. If it's an explosion in a clown's wardrobe you're after, buy yourself a bleeding Megadrive.

My favourite bit is the parallax in the Forest of Zeakros – really gives you the impression that Aarbron's running fast, it does.

It there's one little thing that lets the game down at all, it's the actual sprite, Aarbron. He's big enough, and is just about as detailed as any other computer game superhero you'll come across, but a couple of tweaks here and there would have been nice.

For example, when pushing an object such as a barrel or rock, he tends to use his head! I'm not saying this spoils or impairs the


Flintstones, meet the Flintstones!


Sad ball joke opportunity goes begging

It's all maaf and no traasers – a couple of hits and it's bye bye devil dude


What decent chaps Psygnosis are. You can even choose where you start

actual gameplay in any way, but the game has obviously had some thought put into it, and a bit of realism in the old sprite department would have been nice.

But I'm an old moaner – you know, the kind of person who finds gristle in an Uncle Ben's pie mix, and to satisfy me is to solve the collective problems of the Third World and Yugoslavia (erm... yes).

In short, Beast 3 is a really good all-round platformer that should appeal to the odd person who likes to use his or her brain.

Indeed, I even think that Beast 3 may be just different enough from the prequels to tempt a few Beasts 1 and 2 owners.

Paul


Bloody hell, that's the last time I go for an X-ray!


Limbs asunder as another of Hannibal Lecter's chums bites the dust

## VISION
Dark moody graphics for a dark moody game.

## AUDIO
Really good tunes. FX are OK, but more please.

## PLAYABILITY
It's a platformer. What could be simpler?

## ADDICTION
Four levels are tricky enough, but two or three more would have kept you going for eons.

# 80%

# A blast from the past

In this new section we're going to take you down memory lane to the great monoliths of gameplay which we've looked at in years gone by.

We're bound to be biased because these are games which we really believe are strokes of genius by the programmers, but we will cover all types from strategy to platform.

If there are any games you especially want to look at we will check out your selection and pick those which we deem fit for review.

## Elite

When Elite eventually graduated from the BBC to the Spectrum and the other 8-bit machines of the time, the magazines practically had an orgasm over it, with Your Sinclair dedicating almost a whole issue to it.

And rightly so – it remains one of the outstanding and unbeatable games of all time. The amount of depth in Elite is quite astounding.

Basically, it's a space trading game with lots of frills. You begin with a bog standard ship with bog standard weapons and bugger all money.

To work your way around the various planets you hyperspace between them and dock at the space stations. But don't think that you are going to be able to cover all the planets in a hurry.

There are 2,000 planets spread across eight galaxies, each with its own inhabitants, government, population, industrial structure – you get my drift, it's slightly immense.

You can work your way up by trading the various commodities or you can go out bounty hunting by flying without trading and killing the ships that attack you without provocation, but that's not advised until you have some better weapons.

The trading posts are situated in space stations a few miles above the planet surfaces, and you have to enter them through a door on one of the sides.

The ultimate goal is to reach the status of Elite which you do by killing things. Whether you do it legally or illegally is up to you, but it depends on how many things you kill and let me tell you it takes a fair few.

Do yourself a favour – go and play it for at least two solid days.

## Stunt Car Racer

Yes it's the first of the racing car games to appear in Blast from the Past. But it is no ordinary racing game – it's one of the few interesting concepts for a car game in the last few years.

You race against an opponent on a track – nothing special there, granted – but the track is in relief to its surroundings so the bumps go way up (about 400 feet in some cases) in comparison to where the spectators would be.

To get to it you have to be air lifted and dropped onto the track by helicopter, so you can imagine what happens when you fly off the edge. Incorporated into this mad scenery are huge jumps and gaps in the track that you have to bridge using the speed.

At first stunt car racer is a very tricky game to play, but unlike other racing games that use the same controls and driving view, it has a handling technique that really clicks and every thing seems easy.

The first few times I played it I loathed it because it was so tricky, but with some perseverance it came to me.

Another feature of the game which really does make it a scorcher is the up link capability. It is possible to play the game by linking up two Amigas.

This enables you to race directly against your opponent but on a separate machine. If you're so unpopular you don't have a friend, you can race in a league against the computer-generated racers which, for a change, aren't all experts.

As far as I know, Stunt Car Racer is now out as a budget game. Forget Lotus – for thrills get SCR and stuff your mate off a 300 foot wall.

**Ben**

# 2
# DARK SEED

J About six years ago, Dark Seed was a much talked about game. Then the stories stopped filtering through and the industry thought that Dark Seed had died.

About the same time Aliens, the sequel to the hit film Alien and Poltergeist, had just hit the cinema. The only thing these films had in common was that the horrible nasties in the film such as the Alien and the Vomit

The monsters were designed by a relatively unheard of surrealist artist called H R Giger. As it happens, all of these films achieved almost cult status and Mr Giger became somewhat of an underground star with his artwork popping up in the unlikeliest of places.

The team at Cyberdreams got wind of Mr Giger's work and decided to get his help on their new game. So after years of waiting, Dark Seed is finally out.

You play the role of science-fiction writer Mike Dawson, who has bought a new house in a quiet village to get some peace so he can work.

But you awaken on the first day in your new house after having a raging nightmare, and just to top it off you have a bad headache.

In the dream you were snatched off into a dying alien world where beasts of nightmare proportions tore open your skull and implanted the hibernating seed of the Aliens – the Dark Seed.

You have three days to get yourself into the alien world and destroy them before the Dark Seed hatches and you

become the gateway for the Aliens to our world.

You have over 70 locations to get through which are spread over two worlds – the alien world and the normal world. You have three days to complete your task.

Like any normal person you have to go to sleep at night, but make sure you are in your own bed and not outside of the house. Every night when you go to sleep you will be plagued by nightmares again, premonitions of what is to come if you don't hurry.

Time runs sort of in real time. If you have nothing to do, and you are at loss, time will run fast but if you are busy, time will run a little slower, almost at real time.

Ooh, I'm getting all excited. Graphically the game is something I dream about when I go to bed at night – it's pretty stunning.

The opening sequence is pretty revolting, I wouldn't be surprised if they actually put an age limit on this game. Graphics-wise , it uses original digitised

tecniques which are pretty bloody gruesome, such as the baby in the package morphing into a nasty monster.

The overall effect of the graphics is quite chilling. Sitting in a dark room playing it is just as good as any horror movie.

Controlling Dawson is relatively easy – I found it easiest to use the mouse but if you're that way inclined you can use the joystick or keys.

The cursor you have on-screen has three different modes – one to pick up, one to investigate and one to operate/use. It's quite handy this because if there is something hidden in the screen you can just whizz round with the cursor.

When the cursor lands on the object it will change. When you examine things the objects are shown up close, no clues are given away to easily, you will have to find them in the screen or on the thing that you are examining.

Last but not least is the sound. There are two main tunes in the game – the creepy one where you are exploring the house and the lovely uplifting tune when your walking round outside.

But Cyberdreams haven't just stopped there – there is digitised speech and creaking floorboards galore to add to the creepiness.

Keep an eye on On Word for updates, with a bit of luck we'll have it for the next issue but we can't promise.

BEN

# MARCAM
LIMITED

**THE GENLOCK PEOPLE**

Do you want to overlay computer graphics or titles onto your videos? If so, you will need a Genlock. Rendale Genlocks are built to a very high standard, and are used widely in the professional environment.

62 Tenter Road,
Moulton Park
Business Centre,
Northampton,
NN3 1AX,
England.
Tel: (0604) 790466
Fax: (0604) 647403

## RENDALE 8802 £139 –

The Rendale range of Amiga Genlocks begins with the 8802. This is a Genlock, which, when attached to an Amiga computer and a suitable video system, will allow you to mix video and computer graphics. It offers all the functions that you need, such as:
* RGB feed through, allowing for a preview monitor.
* High quality output video, which in default mode provides video with overlaid computer graphics.

## RENDALE 8802 FMC £178 –

It can be supplied with a device which will allow you to fade between computer graphics and the video source, and also a mode control unit so that you can move between Amiga only, video only, background mode and keyhole modes 1 & 2.

## RENDALE SUPER-8802 £499 –

The Rendale Super-8802 is a development of the basic 8802 unit, it performs the same functions, but has the added capability of also working with Super-VHS signals. The unit will allow the user to cross fade between the Amiga and video signal. In addition, some basic wipe patterns are provided, and also a fade to black option. Mode control is also provided via hardware.

## NEW! RENDALE FMC £45–fitted

**8802 FMC Unit**

This is a brand new piece of kit which will improve the capabilities of the popular Rendale 8802 Genlock. This unit allows you to cross fade between the Amiga and video signals, so that you can gently fade computer titles in and out. Also, the ability to switch between the various modes offered by the 8802 is provided. The required mode is selected by a push switch, giving smooth, flicker free transformations.

The FMC unit does need to be soldered into the 8802, we can do this at our factory if required.

## 8802 UPGRADES £45 – £400 –

**UPGRADE PATHS**

Rendale Genlocks are designed to be flexible, and the ability of your Genlock to grow with your system was deemed to be of paramount importance in our design process.

As a consequence, existing 8802 users can follow one of two upgrade paths. The fade and mode control unit (FMC unit) can be purchased independently, and fitted to your 8802 genlock by our engineer. We would only require your unit for around two days.

The other upgrade path is the move from a purely composite 8802 to the Super-8802. This can also be done simply, although we do have to perform the upgrade work at our factory. We would only require your unit for around two days.

**PRICES INCLUDE VAT AND DELIVERY. ACCESS AND MASTERCARD ACCEPTED.**

# amiga almanac

## ARexx
**144**
Alex Gian starts to put our hard-learned theory to practical use with a program to manipulate system structures

## DTV
**147**
With the Amiga 4000 imminent, Paul Austin looks at how Commodore's new machine could revolutionise DTV

## PROGRAMMING
**149**
Bored with eight, colour limited sprites?
*Margaret Stanger shows you how to create countless impish icons*

## MUSIC
**151**
Ribbon Soundworks attempt to consolidate Bars & Pipes Pro's position in the sequencing world with a whole range of add-ons

## COMMS
**153**
Etiquette is everything on bulletin boards. Pat Winstanley offers a few pointers to conscientious use of BBSs

## AMOS
**155**
One of Amos's most useful features is its versatile sprite control options.
*Phil South delves a little deeper*

## DTP
**157**
Ben Pointer with some practical advice on how to calculate scaling percentages using traditional cut-and-past methods

## MULTIMEDIA
**159**
Who will win the CD-ROM battle? Will CDTV become another Betamax? Aaron Water looks at both systems

---

# Accessing

Alex Gian begins to put some of our learning into practice

Last time we looked at how messages are passed around the ARexx ports, and we also started looking at how the system structures can be controlled from within ARexx. We will now start a series of programs to put these ideas into practice.

Obviously some programming experience is assumed, even if only at the most elementary level. Some of the material here relates to general programming, rather than specific ARexx techniques, but it is necessary to include it for clarity's sake.

We will now look at a simple program that manipulates a system structure to allow a change in the normal behaviour of AmigaDOS. Specifically it will add a new feature to the usual wildcard definitions.

When this is done, you will be able to use * as a wildcard character corresponding to the regular AmigaDOS characters #?. The reason for doing this is that the asterisk is by far the more accepted character internationally – it is used on just about all systems from MS-DOS to Unix, and many users are happier with it.

## Similar

This option only exists under AmigaDOS/Workbench 2.x (sorry 1.3 users, but study the example anyway, as we will use a similar idea for our Preferences controller in the next issue).

Incidentally, this option is quite popular, and I have seen a number of PD programs, both in C and assembler, that do the job. Now you can do it with ARexx without a compiler or assembler in sight!

The program is extremely simple, since all that is involved is the toggling of just one single bit in an AmigaDOS structure. It will therefore serve to illustrate the basic principles very clearly before we try something more ambitious.

The bit that we have to toggle is known as the RNF_WILDSTAR bit, and is in a field called rm_Flags, in the dl_Root structure. There is a pointer to this structure in the DOS library Base

structure, so we should be able to get to it without too much difficulty. Figure 1 illustrates this.

Here is the procedure we follow to access the four bytes of the rm_Flags field. First we open the DOS library, which (under the standard Amiga convention) will return a pointer to the address of the DOS Library Base.

## Offset

We then add 34 bytes to this address. This offset will take us to the pointer to the dl_Root structure. We then read this value (which is the address of the dl_Root structure), and this time we add an offset of 54 bytes to get to the address of the rm_Flags field. We then read in all four bytes of this field before doing anything to it.

All the above information is available in the ROM Kernel Manuals and in the system "include" files. If you plan to do any system programming, in whatever language, you will need this information. By the way, books can be expensive, so before you buy anything, make sure it covers Workbench 2.0.

ARexx does not have a built-in method for opening libraries, so we are going to use a special third-party library to do the job. This library is rxgen.library, which is freely distributable on Fred Fish disk 459 – although you won't have to look that far, as there is a copy on the CoverDisk.

We have at times mentioned this library, as it is probably one of the most useful ARexx extras around. Even though it has only three functions, it can open and use any Amiga shared library.

In other words, any Amiga shared library can be used from ARexx with rxgen. Top marks to the French Amiga coding group, the Software Winery, who have created some first class Amiga programs.

## Libraries

I have personally found that rxgen.library and apig.library – which we will look at next time – are the only libraries I ever need for system programming from ARexx. Apig.library supplies all the basic graphics and windowing functions, while rxgen.library lets me use all those fancy requester libraries.

The combination forms an excellent environment for trying out ideas and prototyping. This "quick and dirty" approach is extremely time saving and practical, although it may not always be suitable for a final presentation.

Take some time to study the documentation for this library. It may initially seem a bit confusing, but it is quite easy once you grasp the concept, and is certainly worth it.

Basically all you have to do is create a special rxgen function definition (ndf) file for the library's functions, and include the ones you will require at

---

## The ARexx Library
### Calling all ARexx programmers...

If you've recently written an ARexx masterpiece and want the world to know about it, send it in to *AC*. Continuing to support ARexx is a high priority and as a result we are opening the *AC* ARexx Library.

This new source of ARexx software will be redistributed free of charge on the *AC* CoverDisk every month.

If you want to play your part in the ARexx explosion, send your scripts and additional programs to: *AC ARexx Library, Amiga Computing, Europa House, Adlington Park, Macclesfield, SK10 4NP*

# system structures

**The Dos Library Base Structure**

Library structure (34)
Pointer to di Root (40)
other fields

**The di_Root Structure**

Various fields of the di_Root structure

(54 bytes)
rn_Flags (4 bytes)

| | | | | | | | IX | Byte 2 | Byte 3 | Byte 4 |

▲ **This is the bit we have to toggle**

Figure 1

the beginning of your program.

In fact the ndd files for most system libraries can be created automatically by the supplied script from the Basic fd files. If you do not have the fd files on disk you will have to get them from the ROM Kernel manuals or a friendly WB 1.3 user.

Other libraries should have their fd files available as part of the distribution, or at least some sort of description to allow you to figure them out.

Once you have the ndd files, all you have to do is specify how you will give the arguments.

Don't worry if you don't understand everything, we will look at it in more detail next time. This time we do not even use any functions from the DOS library that we have opened (all we needed was the pointer to its address).

The supplied example program works even if you do not understand all the technicalities, and will serve as a good starting point from which to learn.

Listing 1 shows the basics of the program. A fully commented version, which you can run and study, is on the CoverDisk. Remember to copy rxgen.library to your libs: before you run the program.

If you are going to use rxgen.library a lot you might want to add the following line to your startup to install it so that it is always present:

```
rslib rxgen.library 0 -30 0
```

In any case the first IF statement in the program

makes sure that the library is linked up. Remember, it MUST be in libs.

The values LIB5.xxxx and LIB5.xxxx.OPEN-COUNT are set by the calls to rxgen.library. Any function definitions required would also be placed at the start of the program. See rxgen.library documentation for full details.

The next six lines take the pointers, add the necessary offset values and so on, until we get the value of rn_Flags. Note that quite a few transfor-

mations are made on the variables – eg they are converted from four-byte to decimal format. These operations are documented in detail in the commented version of the program on the CoverDisk.

Once we know the value in our m_Flags field, we can toggle the appropriate bit by XORing. We cannot go into the full details of bitwise logic operations here, but in a nutshell, XORing two bytes together will return 1 for all those bits where one, and only one, of the two possible bits is already 1.

In other words, XORing 10011011 and 01010101 gives 11001110. You should be able to see from this that XOR works like a toggle. The ARexx function for XORing is bitxor(). Once the value is toggled, it is poked back into the m_Flags field using export.

Finally to report back on our setting we use the bitwise AND function, bitand(). AND returns 1 where both bits are already 1. So ANDing

```
         10011011
         01010101
gives
         00010001
```

You can see that AND serves as a "mask", which we use in our program to check if the RNF_WILDSTAR bit is ON or OFF. That's all there is to it.

Every time the program is run, it changes the current setting. Be careful if you use it though – you do not want to type  delete dh0:*  by mistake!

```
/* wildstar.rexx  toggle use of "*" wildcard
*/

/* (shell) uses rxgen.library */
THEN addlib('rxgen.library',0,-30,0)

/* Global values  set by rxgen.library calls
*/
LIB5.dos = '0000 0000'x
LIB5.dos.OPENCOUNT = 0
call GenOpenLib('dos',0)

di_Root_DosalPtr  = (c2d(LIB5.dos) + 56 )
di_Base_Ptr  = '00'x || d(c(di_Root_DosalPtr)
di_Root = import(di_Root_Ptr,4)

rn_Flags_DosalPtr = (c2d(di_Root) + 52 )
rn_Flags_Ptr = '00'x || d(c(rn_Flags_DosalPtr)
rn_Flags = import(rn_Flags_Ptr,4)

IF bitand(rn_Flags,'0100 0000'x) = '0100 0000'x
THEN flag = "ON" ; OLSE flag = 'OFF'
say "The Wildstar (*) flag is now 'flag'"
exit
```

Listing 1

# Big bang theories

Paul Austin explores a few of the possibilities that the Amiga 4000 will bring to the world of DTV

A
fter almost a year of solid speculation, the A4000 has finally made its long awaited entrance. The rumours and counter rumours have been bouncing around claiming and then instantly discounting almost every feature in the book.

Now that the truth is out it appears that many of the more optimistic claims were pretty close to the truth, especially concerning the machine's added videographic potential.

For we videophiles there's one particular area that's set to revolutionise Amiga-based animation and general art for ever. The new era of Ham8 has arrived.

When I first heard rumours of a new Ham format capable of 262,000 colours on-screen at any time, I was a little sceptical to say the least.

Nevertheless it's all true and the new machine will indeed display pseudo-24-bit images as standard, from a full 24-bit palette of 16.7 million colours.

In real terms this means a image quality almost 64 times better than a normal Ham. As a result, dithering may well become an option rather than an essential, while gradients will be the norm rather than something to be avoided at all cost.

It's true that even with 262,000 colours on-screen, the new machine will only manager just over half the available range from a true 24-bit display running in maximum overscan. But having said that, very few 24-bit images ever come even remotely close to using their full potential of any pixel, any colour.

### Little difference

Because of this, initial reports from the States indicate there's often little perceivable difference between a 24-bit and Ham8 display. This alone is sure to seriously slow down the explosion of 24-bit boards which has dominated the Amiga scene over the last 18 months.

Although the static quality of the new Ham8 format is impressive, it's the animating potential of the new machine that will be the real revolution for Amiga-generated DTV.

In the past, animation has been the stumbling block of high-end graphics. Systems such as Digital Creations' DCTV have made a valiant attempt at transferring 24-bit imagery onto tape,

admittedly with a reasonable degree of success, by employing a pseudo composite format, which although excellent does sacrifice a degree of image quality in comparison to a true 24-bit image.

In addition, DCTV can never achieve full frame, 25 FPS interlaced updates necessary to compete directly with still frame systems due to the decoding required prior to display.

On the other side of the coin there are the true 24-bit images which on average run to approximately half a megabyte each – at least.

Although ideal as statics, such large amounts of data are impossible to store in RAM in sufficient quantities for viable animation, and even if this could be achieved transfer times would still make life very difficult and the target of 25 FPS impossible, especially if some form of virtual memory system – hard disk – was employed as the storage medium.

Because of all of the above problems the only way to achieve true 24-bit animation has been to use expensive still-frame recording equipment – that's way out of reach for the average user.

Now that's set to change and the A4000 with its super fast Advanced Graphics Architecture or AVA –

formally known as the AA chipset – is the reason why.

As the new machine takes the Amiga world by the throat, peace yourself for a flood of updates to cater for the new format. Several companies have already seen the light such as ASDG with ADPro, a package which already boasts full support for both 256 colours, which is now available in all screen resolutions, and of course the 262,000 colours of Ham8.

Digital Creations also haven't been slow to seize the potential of the new machine and especially Ham8 by releasing Brilliance, a program which according our American correspondent has everything DPaint IV can offer and much more, while boasting full support for Ham8, and that still remains much faster especially when animating and working with Ham images.

### DPaint V

It's unlikely that Digital Creations will have it all their own way for long, as Electronic Arts have already hinted that DPaint V is on the way with of course full support for Ham8.

No doubt all the major art and ray tracing packages will follow suit along with a whole host of DTP programs and assorted software all itching for additional colour and resolution which matches the ECS maximum of 1,280 x 512 with optional overscan.

It's clear that a new era of Amiga art and animation is about to dawn. As yet it's not known exactly when the new machine will start shipping in the UK but when it does the best estimates on price seem to point to the region from £2,000 to £2,500.

If this is a little rich for your blood, don't despair – Commodore have confirmed that the new chipset will be carried throughout a new range of machines which will vary in speed and price. As a result Ham8 should be within everyone's reach within a year.

The all new A4000 making it's debute in the states, but it could be in the UK before christmas

## Coming alive

Aside from pure image quality, the new machine can animate using Ham8 images at an amazing 50 FPS which will translate to the 25 FPS usually employed for full motion video.

Even if there is a perceivable difference between true 24-bit images and Ham8 within higher screen resolutions, once animated any irregularities between the two will almost certainly vanish.

As a result, the finished product should be indistinguishable among even the most expensive creations of the Soho-based videographic giants.

Such companies are responsible for everything from Smarties to animated teapots, and regularly quote £1,000 per second for commercial computer animations – and that's just the basic rate.

# Missile command

Controlling virtual sprites is the subject of Margaret Stanger's continuing look at advanced Amiga programming

There are only normally eight hardware sprites available, and the colours are limited. The Amiga library has routines to make many more tastefully coloured imaginary sprites visible on the screen.

Hardware sprites are small graphic elements 16 pixels wide, two bitplanes deep, and any height. Each sprite has a data list of data word pairs which include the pixel data.

The first two sprites use colours 16 to 19, the next two 20 to 23, the next 24 to 27 and the last two 28 to 31. The first colour of a sprite is always transparent.

A pixel will be the second colour if a bit is set in the first pixel data word, and the corresponding bit in the second pixel data word is clear; the third colour if the bit is clear in the first pixel data word and set in the second; and the fourth colour if both bits are set.

The September and October issues of Amiga Computing the subject of hardware sprites in more detail.

## Copper

The custom chips handle screen display, sound generation, disk access and other input and output. The Copper, or co-processor, can change the contents of some of the chip registers at certain vertical screen positions using a Copper list which is stored in memory and executed command by command, at the same time as the main processing.

The sprite data is copied into chip memory, and the address of the start of each sprite's data is written into the appropriate SPRPT registers when creating the Copper list.

There are only eight sprite registers, and hence only eight hardware sprites. During a screen refresh, when a sprite has been displayed – and the video beam has gone past the last line of the sprite – the sprite register and its corresponding hardware sprite can be used again.

The Copper list carry instructions to place a sprite at a certain vertical position, loading the sprite data into the first sprite register, and changing the colours that the sprite is going to use (colours 16 to 19).

When the video beam has gone past this sprite, another set of sprite data can be loaded into the sprite register by the Copper list, and colours 16 to 19 changed again. Both sprites will be visible on the screen, as the video beam travels down the screen so quickly.

The effect is like a taking a long time exposure photograph of a moving object – several images can be seen at once. The sprites are known as Virtual Sprites (or VSprites) as they exist in a virtual reality of their own.

Each VSprite should have its own slot in the Copper list, depending on its vertical position on the screen. The Copper list will need instructions to load the sprite data into a sprite register, and to change its colours.

At any given vertical position on the screen, some sprite registers and some sets of colours may already be in use. The Amiga library has software to keep the VSprites in order and update the Copper list.

The system can remember which colours were last used and keep track of which sprites are available on the next line. Each VSprite has a data structure, these structures form a linked list.

## Initialised

There is a GelsInfo (Graphics ELementS INFOrmation) structure to control the linked list of VSprites. Some of its fields need to be initialised by the program.

The sprRsrvd field is a mask that has a bit set for each available hardware sprite. If all sprites are available, this field should be set to 0xff, otherwise the corresponding bit for each unavailable sprite should be cleared.

The nextLine field should point to a declared array of eight words, to store information on which sprites are available on the next line.

The lastColor field should point to an array of eight word pointers to store information on the last colours used. The GelsInfo structure is initialised with a declared dummy VSprite permanently at the beginning of the linked list, and a similar VSprite for the end of the list. The GelsInfo structure can then be initialised to the required RastPort.

Each VSprite structure needs to be initialised with its sizes, flags, and position pointers to its colours and sprite data. The structure also has some fields that are only used if the VSprite is

## The program

The demo program on the CoverDisk contains a C source module, vsprite.c, which can be compiled and linked in the normal way. The source module includes a header file vsprite.h containing sprite data.

Although the demo program was written in C, the Amiga library routines are available to assembler programmers. The object module, vsprite, opens a Screen, and a Window on a Screen. Virtual sprites are displayed, they move in a straight line unless a key or mouse button is pressed.

The vsprites will continue to move in the same direction until they bounce off one of the borders of the window. The picture is displayed on the screen until the user closes the Window, or clicks a mouse button.

The sprites are freed, the Window and Screen closed, and the program exits.

attached to a bob (or Blitter Object), some only used if collision routines are set up, and some fields that the system uses.

When the VSprite is initialised it can be added to the current RastPort and Gels list using the AddVSprite() routine. To display the VSprites, the SortGList() command will sort the VSprites into a linked list into the vertical position order.

DrawGList will make a Copper list with each VSprite colours and data in the right position. To refresh the screen using the new copper list, use MakeScreen() and RethinkDisplay() with Intuition Screens and Windows, and MrgCop() and LoadView() with Graphics Primitives.

## Playfield

VSprites can move fairly quickly – they are displayed using the hardware sprite system rather than being drawn in the playfield. This means no masking or double buffering is necessary.

They are not quite as fast as hardware sprites because there is more system software needed to move them about. If there are more than eight VSprites on any horizontal line, only the first eight will be displayed.

If a five bitplane display has VSprites, some of the playfield colours may fluctuate. Even with these limitations, VSprites make excellent missiles in game programs.

> ● Coming soon — the next programming page will include a routine to read sprite data from an IFF file.

## Becoming attached

If you want a Simple Sprite wider than 16 bits, two sprites can be joined together by setting the SPRITE_ATTACHED flag in the second word of the sprite data of the Top Sprite.

For assembler programmers the attach control bit is bit 7 in the second control word. This is only effective for odd numbered sprites – set the SPRITE_ATTACHED flag (or attach control bit) in sprite 1 to join it to sprite 0, etc.

If you move sprite 1, sprite 0 will move with it automatically, but if you move sprite 0 without moving sprite 1,they will separate.

If two sprites are combined, their data positions should match. If they are side by side, they can look and move like a 32 bit wide sprite. If they are in the same position, each colour can behave like a 16-colour sprite.

# Piped music

**A**s existing Bars & Pipes Pro users will be well aware, the program boasts expandability as one of its major selling points. This is achieved via the built-in Accessories option which as you can see from the screenshot allows additional modules to be incorporated directly into the Bars & Pipes Pro and SuperJam environments.

With a closer inspection of the screenshot you should be able to pick out the first of the add-ons, nestled in among the normal array of windows. The Patchmeister, as the name suggests, is Blue Ribbon's long awaited attempt at an integrated Midi Librarian which can also be employed as a standalone package, if and when required.

Such software is far from original but in the past librarians have been the source of countless horror stories, lost banks, over-written patches and general musical misery.

As a result, Blue Ribbon have done what they do best and made an impressive attempt at transforming a notoriously tricky business into a point and click spectacular.

As you'd expect, Blue Ribbon have done their best to make the Patchmeister as versatile as possible by not only adding 30 drivers as standard but also by including a driver generation section which with a little effort will provide a designer driver for any synth or module on the market.

## Less painful

With the myriad of synths on the market, a selection of the top 30 drivers obviously won't cover for all possible situations. As a result, driver creation is a high priority and is far less painful than many of its predecessors.

Ease of use has obviously been the priority when designing the entire package and nothing reflects this more than the built-in online help which can be called upon at any point with a Help key and mouse click combination.

Again, to hammer the ease of use factor home, it's possible to add comments to files and employ a search key to access any patch you require.

As you might expect from any self-respecting librarian, Patchmeister boasts very flexible Midi setup options including snapshot, setup files and

*After picking up a sizeable share of the Amiga sequencer market with Bars and Pipes Pro, Blue Ribbon Soundworks have launched a whole range of add-ons. Paul Austin investigates*

system-exclusive-attachments.

Once installed you're given the option to use the Amiga keyboard to try out the available patches while the auto audition option allows instant feedback as you edit.

Along with the new software, Blue Ribbon have also diversified into hardware with two new products. The first of these is Triple Play Plus.

This new release provides a simple answer to the infuriating limit of just 16 available Midi channels desperately trying to cater for an almost limitless number of potential sound sources.

The new interface offers three separately addressable Midi-outs, providing a full 48 channels which can of course be addressed simultaneously. In addition to the outs the unit also offers a single Midi In and one Midi Thru.

To operate the unit, all Bars & Pipes Pro users will receive an additional Midi Out tools which allow users to address any one of the available channels with the track of their choice by simply dropping the tool into the pipeline and adjusting output settings.

In addition the unit also works in conjunction

### Sweetening for SuperJam

When SuperJam first hit the streets, Blue Ribbon were already boasting about imminent support for their version of Band in a Box. For those who missed the review, SuperJam employs a band of virtual musicians who accompany their human band leader by playing an ever-changing backing track in the style of your choice.

Although the original SuperJam came with an impressive array of styles for your band to improvise around, Blue Ribbon have finally kept their promise and issued another three disks full of new styles.

Each disk contains at least ten styles plus additional chord progressions and demos. According to Blue Ribbon all the new disks have been created by a professional arranger.

Disk one is devoted to rock and pop with the second aimed at the classical market, while the third goes under the curious title of the Cutting Edge disk, covering a whole spectrum of musical styles from funk to punkarama – whatever that is

with SuperJam and Patchmeister when the aforesaid software is loaded as an accessory within the Bars & Pipes Pro environment.

The final hardware add-on to the Blue Ribbon range is SyncPro. Unlike the rest of the new releases, SyncPro has perhaps as much appeal to the world of DTV as it does to dedicated muso – no doubt inspired by the association between Bars & Pipes Pro and the SunRize 12 and 16-bit sampling boards.

### Sychronising

Both of these boards lean heavily toward video and film, providing a means of synchronising soundtracks and effects with video footage via a combination of Bars & Pipes Pro and SMPTE timecode. With the introduction of SyncPro the circle is complete.

The box provides the essential source of SMPTE timecode in 24, 25, 30 and 30 drop frame formats plus the invaluable option to convert SMPTE to Midi timecode. It's also possible to duplicate recorded SMPTE stripes and recover from tape dropout via a special synchronisation feature.

As well as locking any software that listens to SMPTE or Midi timecode, the unit can also synchronise any software that will receive Song Pointer/Midi timing information.

Alas I'm still waiting for the arrival of Triple Play Plus, SyncPro and the new SuperJam updates, but rest assured AC will be returning to this impressive selection of additional hardware and software as and when it arrives.

*Driver design made simple with clear icons and on-line help*

For more information on the entire range of Blue Ribbon hardware and software contact Zone instruments on 081-766 6564

*Patchmeister integrated seemlessly into the Bars and Pipes Pro interface*

# The Mix Factory

> It's a sad fact that 90 per cent of BBS callers seem to think that a BBS is just a place to download files from. But since you – and the other comms columnists in other mags – have started mentioning Fido and mail, more people have shown an interest in actually reading the mail.
>
> Ian Mugridge – Sysop, The Demo Factory

## Mix and match is the name of the game in comms, where you're positively encouraged to spread it around! Pat Winstanley explains all

The Demo Factory is typical of the many Amiga-based and dedicated boards to be found all over the country. Ian Mugridge, like most sysops, is a friendly chap, and very proud of his board.

From talking to Ian, and may other sysops, the same sort of comment crops up time and time again. When asked what users actually do when they log onto the board, Ian echoed the general feeling.

If there's one thing that really annoys sysops, it is people who simply log on, download files, then log off again without even leaving a message of thanks.

Most boards have an upload/download ratio, where users may download files in limited numbers or size, but must upload something in return before they can get more files down.

When you think about it, this is pretty poor any way, since the user is not paying anything

towards the sysop's costs such as a dedicated phone line, giant hard drive for storage and so on.

Now uploading to keep the sysop sweet is fine in theory, but what if you don't have anything suitable, or find that a board already has everything you do?

### Passing around

One answer to this is to use several boards regularly. It's quite likely that the selections of files will be slightly different so you should be able to grab a file from each, and upload to each. In this way, you share the cost of passing files around, and you're not leaving it all to the sysops.

Incidentally, users with slow modems may find the cost of uploading lots of files prohibitive. In this case most boards will be happy to receive your offerings on disk by post, and sort them out for you.

You will still receive upload credits, and save on phone bills. I wouldn't recommend asking for the service in reverse though!

If you really can't find any suitable files to upload or send in, why not get involved in the message areas? Most boards carry both local and

national "echoes", and both are well worth joining.

The local message areas will give you the opportunity to chat to other local users, and perhaps even meet up with them face-to-face. The more messages you put up, the more there is for other users to read, and the more they will be able to reply to.

National echoes are also useful to sysops, as every message leaving a board carries the name and number of that board with it. This, combined with your extremely interesting messages, will advertise the fact that the board exists, and also encourage other people to call in and see what's special about it.

Be careful though, as the sysop of your board is responsible for all messages leaving his system, so don't swear, or libel others, or ask for hacking/pirating/adult "pen pals". Courtesy in the echoes is everything.



The log-in screen in glorious ANSI colour

The Demo Factory, on seeing the name of this BBS I assumed that demos and pictures would be the main aim of the board. Certainly a visit showed areas for these, but not to an overwhelming degree. So I asked Ian how the board got its name.

"There is no real main interest area. The board mirrors my interest in the Amiga over the last few years.

"I started putting the board together in the last quarter of 1990. At that time I was interested in demos and pictures, and had written a few demos advertising BBS's for those of the public that came from the name that I used for writing demos.

"Over the course



Not just demos!



The Graffiti Wall is a local chat area where you are encouraged to play and contribute



The list of file areas shows how many interests are catered for on The Demo Factory

of the last 18 months, I have developed more of an interest in programming utilities (first in Aum and now in C), so I don't tend to download that many demos from other places any more.

"As well as writing the phone book viewer for MComm, I wrote the utilities that produce a lot of the bulletins on the board.

"To give you a short (and more usable) answer – the board is dedicated to providing all Amiga owners with PD, shareware and messages, whatever their area of interest is."

● Contact The Demo Factory on 0892-516304 24hrs – and tell Ian I sent you!

Plenty of files down in the demo area to impress your friends



Top uploaders and downloaders – the good, the bad and the evidence!

# Be objective

**Phil South chases some objects around the screen and asks them, "where are you going, O little brightly coloured thingies?"**

Almost every text written about Amos bangs on for quite some time about sprites and bobs, and now it's my turn. Of course, one of the things which makes Amos so brilliant is its ability to slap objects on the screen and whizz them about as fast as you like. Normal Basic just doesn't cut it.

There are bobs and there are sprites. Sprites are limited in size, and their palette can only be the last 16 colours of a 32 colour display. So if the sprite's palette takes some of its colours from the first 16, those colours will change with different backgrounds.

Great care is needed in the creation of sprites. Bobs make use of the blitter chip in the Amiga, capable of copying images to the screen at rates close to a million pixels per second.

Bobs are just like sprites, but instead of being limited in amount or size, they're unlimited. They can have any colours and resolutions, and you can use as you like on-screen.

Obviously the more bobs you have on screen the more stress you put on memory and processing time, but don't worry about that. Bear in mind, though, that bobs are slower than sprites and use up more memory.

As a rule of thumb, use sprites for slow moving and big shapes, and use sprites for fast moving small shapes – that's a fair division of labour. One other thing is that sprites can be made to be bigger than the limit of 16 pixels, by using what they call in Amos "computed sprites".

The computer automatically sticks sprites together to make bigger sprites. You can only have up to 128 pixels in width, as there are only eight hardware sprites.

The biggest mistake people make when using sprites or bobs is to instantly use AMAL when in fact they are going to compile the program anyway.

The sprite and bob commands in Amos are so flexible you can ignore it except for the most mundane tasks, and then once you've compiled the program, provided your code is reasonably sensible and well ordered that is, the sprite will whizz around like nobody's business.

Once you've mastered the basics of sprite movement, which should take you about ten minutes to suss, you face the prospect of all manner of objects whizzing about missing each other and providing no information about their position or any entertainment value whatsoever. Which is where this month's program comes in.

Obviously the sprites are from the excellent Sprite 600 set, available from your Amos disks or via one of the various Amos PD coders.

In this example, the spaceship meekly waits at the end of the screen, and you can't move it at all. The alien ship comes from the right of the screen, and when the ship is touched by the alien it explodes beautifully. First, all the usual setup stuff.

```
Screen Open 0,320,200,16,Lowres
Curs Off : Flash Off : Hide : Cls 0
```

OK, so far so good. All the image information

for the explosions etc are in the sprite files, and like other examples which use the example sprite files, the sprites are loaded one after the other into the same sprite bank.

```
Load "df0:sprite_600/aliens/alien1.abk"
Load "df0:sprite_600/space/ship3.abk",1 *
```

If you wanted to make this program a little bit easier to handle – and cut out the wait for the sprites to load from disk – you should load them in direct mode and save them off with the program.

To be really kind you could load the sprite files into the bank, merging them by adding the positive number to the end of the filename, and then save off the bank to disk as a new ABK file.

```
Get Sprite Palette
Double Buffer
```

Once we have loaded the sprites we've set up DOUBLE BUFFER to prevent any flickering of the sprites, and GET SPRITE PALETTE will make sure our sprites are the same colours as they should be.

In this case, the sprites are from the same set so they are all the same colours. If your sprites are of different palettes, you may have to re-edit them and alter the palettes to fit.

```
Bob 1,0,80,1
Bob 2,320,80,1
Shared N
N=320
```

Next we set up the initial positions of the bobs, and then define a variable as shared for the position of the bob in the proc called _ALIENMOVE.

The reason this variable is shared is that the proc is called each time the bob is moved, and so the variable has to be defined outside the Proc.

If the variable isn't shared then it is always 0, as it never gets defined according to the Proc. In this case this means that the sprite would suddenly turn up in the same position as the ship and explode the ship right away, rather than travelling across the screen.

It's an early bug in this routine, which is how come I know about it! Next we loop.

```
Do
  _ALIENMOVE
  If Bob Col(1) Then _YOUREDEAD
Loop
```

The main loop of the program is the DO LOOP, which will go on forever until the CTRL-C combo is pressed. The loop runs through the main parts

of the program, calling procs and then looping back to the start again.

Each time it calls the _ALIENMOVE proc the alien moves to the left. Each time the _SHIPANIM proc is called the ship's sail frame animates.

This is an example of animation without using AMAL. At the bottom of the proc we have the collision detect routine which will trigger the Proc called _YOUREDEAD when the alien makes contact with the ship. So add the procs:

```
Procedure _ALIENMOVE
  N=N-5
  Bob 2,N,80,1
End Proc

Procedure _SHIPANIM
  For I=18 To 21
    Bob 1,,,I
    Wait Vbl
    Next I
End Proc

Procedure _YOUREDEAD
  Boom
  For N=55 To 45
    Bob 1,0,80,N
    Wait 6
  Next N
  Pen 6 : Paper 0 : Centre "Kerbooo! Yup, you're dead!"
  Wait Key
End Proc
```

And that's that. The _YOUREDEAD proc makes a boom noise and then animates the explosion sequence from the sprite bank. This won't work if the sprites are any others than the ones specified, as they have specific images in the bank which do certain jobs.

The sprite movement is a little jerky, even with double buffering. But you can pep this up a little bit with careful program structure. As usual, with any kind of coding planning is everything, and you have to carefully trace all your procs and loops to make sure that nothing is happening out of turn and every routine is working efficiently.

Obviously all these problems vanish to a certain extent when you compile a program.

● *Phil South is the author of the book Mastering Amiga Amos out this Autumn from Bruce Smith Books*

# Using photographs

**Ben Pointer describes how to calculate scaling percentages when using traditional cut-and-paste**

So you've got this smashing photograph and you want to include it in your publication. The trouble is it's a large print and you want to publish it much smaller. What do you do?

Well, you could use your hand scanner to scan, save and import it on to the page as an IFF-ILBM graphic and scale it to the required size.

Ah, but the part of the photograph you are interested in is wider than the head of the hand scanner, which means you'll have to do it in two strips and then attempt to "glue" them together. You've played this game before and it takes ages to get it right. And the printed results aren't all that hot either.

Sigh, if only you had a 24-bit A4 flatbed scanner. One day maybe, when the Pools comes up....

In the meantime, the solution is to use the traditional "cut-and-paste" method – leave a hole on your desktop published page that is the exact size you want to publish the photograph, and then paste the picture into place later.

## Black dots

Now, before the page goes off for mass reproduction this photograph will have to be "screened", a process whereby the image is photographed through a fine mesh in order to convert the picture into an image that consists strictly of black dots – no solid greys or colours.

Viewed from reading distance these patterns of dots produce the impression of solid levels of grey. You see this technique in action every day in your newspapers. Most High Street copy shops should be able to screen photographs for you.

While the photograph is being screened, it is a simple job to reduce or enlarge it. So the problem of getting the big print to fit into the smaller space is solved. But in order to plan layouts that contain scaled photographs you need to know how much space they are going to occupy. That's what we're

going to learn how to do.

The materials required are the photograph (of course), some tracing paper, a soft and fairly sharp pencil (HB will do), and a ruler with millimetres marked on it.

Look at Figure I. Place the tracing paper over the photograph and use some paper clips to prevent the tracing paper from slipping – use a photocopy of the photograph if you are worried that you might damage it.

Draw the lines AB and AC – that's from point A to point B all the way down the left of the photograph and from A to point C all the way along the bottom of the photograph.

Now draw the diagonal line BF – from the bottom left-hand corner to the top right-hand corner of the photograph.

At this point you need to know what width you intend publishing the illustration. For the sake of argument let's say the width is 90mm.

In Figure I this width is marked as *{Titalics}* x *{normal}* So measure 90mm along the bottom line (BC) and draw a vertical line up from that point (DE).

The point at which the diagonal BF crosses the vertical DE is the height the illustration will be if it is reduced to 90mm wide. So now you know what size hole to leave on your desktop published page.



Figure I: To find the height of a rectangular illustration when reduced to a given width (x)

The scaling figure will be expressed as a percentage of the original. It's a calculation that can be done on any pocket calculator. For example, let's say that the original is 127mm wide and we are reducing to 90mm.

The calculation is NewWidth divided by OriginalWidth, times 100. So that's 90 divided by 127, times 100, which equals 71 per cent to the nearest whole percent.

We're using millimetres here, but you can use any measurement system you like – just stick to the "NewWidth divided by OriginalWidth, times 100" formula.

Reducing from 7in to 2in, for example, calculates to 2 divided by 7 times 100, which equals 29 per cent to the nearest whole percent.

## Cropping and scaling

Of course you may want to crop the picture as well as scale it, and the same principle as that detailed in the main article applies.

Look at Figure II. Draw a rectangle on your tracing paper that is the exact size of the area to be filled on the desktop published page (ABCH).

Extend the bottom line (BC) out to the right beyond the rectangle, and extend the left-hand line (BA) up beyond the rectangle.

Now draw a diagonal line from B going through H, and again extend it beyond the rectangle. Lay the tracing paper exactly over the part of the photograph you want to publish so that the left and bottom lines are where you would crop the picture.

Select the point on the right of the picture at which you want to crop and draw a verti-

cal line that joins the bottom line to the diagonal (IJ).

Now draw a horizontal line that joins the left-hand line AB to point J on the diagonal. The rectangle BJK marks the area that has to be cropped to fit the area ABCH when reduced.

The reducing percentage figure is arrived at the same way as before, using the width of the picture after cropping as the OriginalWidth figure.

If the illustration is irregular in shape – for example let's say you are stripping out a head and shoulders from a photo by cutting carefully around the outline of the figure – then you can scale in exactly the same way by simply drawing a rectangle on a piece of tracing paper around the extremities of the image.



Figure II: To scale and crop an illustration to its at a given area

# Desert island discs?

Either CD-I or CDTV will be left stranded as the battle of the multimedia giants hots up. Aaron Water compares the features of these rival systems

The Philips CD-I has been available for a short time now and is starting to gain momentum. When it was originally launched there were several reviews comparing CD-I to CDTV.

Unfortunately, while Philips and their PR team made sure the reviewers were very aware of the benefits of CD-I, Commodore didn't and as such CDTV invariably lost out.

Since then, however, there have been a number of developments on both sides and I believe it is now time for a new comparison.

Rather than take the traditional approach of comparing the technical merits of each system, I'm going to adopt a different strategy – one of testing the two systems for the use for which they are designed and seeing which is better suited as an interactive home entertainment system.

## Software

For the test we must consider three facts. One, the quality, volume and diversity of software available. There are far fewer CD-I titles available, and those that I looked at were typically of a poorer quality than those on the CDTV.

Test criteria I set for judging quality included ease of use and enjoyability – the application should not only be a fun program in concept, such as a game, but must also be enjoyable to use.

The user interface must be simple, respond quickly to commands and be obvious. The CDTV with its Amiga graphical operating system would seem to be better able to handle this kind of "fun" interface or the CDTV programmers were more in tune with what I classified as a "fun" interface.

It's not really surprising that CDTV has more software and more of a wider variety given the fact that it's been available for longer. However the fact remains that right now this is the case and as such the CDTV is one up!

Given that both systems are intended for family enjoyment and thus are inherently more thus just games systems, the next criteria is what options exist for other areas of entertainment.

Both CDTV and CD-I can be used as CD players. For educational purposes, CDTV with the availability of a keyboard, Midi interface and sound sampling hardware wins.

However, CD-I with its potential to handle "Full Motion Video" and Kodak Photo-CD technology (a concept set to become a huge high-street winner in the next 18 months) definitely has the upper hand in this section.

FMV means that the CDTV/CD-I players will be able to display video quality moving images on-screen, ie films. Although it is known that Commodore are working on FMV technology, no-one at Commodore was able to confirm its existence at the time of writing.

While CDTV will have some form of moving video capability it looks set to being only available in one-third-of-a-screen chunks for a while and as such is not true FMV. Philips on the other hand were more positive and as such win this round.

I had both machines for two days. Having put them through the above hell hole of scrutiny I let rip the worst test any claimed entertainment system could go through. I unleashed a friend's children and spotty teenagers on them and asked which they found more enjoyable and entertaining.

The children ranged in age from six to 15 years old. Tastes ranged from slime jelly to Sonic the Hedgehog and Lethal Weapon 3.

Obviously the CDTV having more software would have had an immediate advantage, so I limited both systems to an equal amount of titles.

The outcome was unexpected and also interesting. After five hours I entered the room, expecting to see one unit discarded in a corner whilst the other was being pulled at from all directions.

What actually greeted me was two units in a corner with the testers huddled around the video watching Alien!

The older children were most helpful with the explanation that neither system provided anything they hadn't already seen. And this, I believe, explains why neither system has yet to sell in quantity.

## Nothing new

Users – you and me, who are likely to buy one of these systems, are the same type of person who will have already bought a CD player, a computer and possibly a games console. So far, neither CD-I or CDTV offers such users anything that we haven't already seen or got.

Both these units, while being portrayed as home entertainment systems and multimedia consumer products, have yet to get any applications which really provide this.

In short, if these systems are to be successful the manufacturers have to start courting the world's developers. Some new, interesting applications that while not necessarily new in concept need to fully utilise the resources they have available – and thus be original – have to be written.

Let's face it, if you've got hundreds of megabytes of storage, 24-bit graphics and a multi-tasking operating system available, you'd be pushed to write something that had been seen before!

## Moribund marketing

Like many Amiga users I've watched Commodore's progress in promoting the CDTV and CD-ROM based technology. So far, while the technology employed has been good, their marketing has been sadly lacking.

For instance, Amiga dealers were first told they wouldn't be aloud to sell it, then they could but it must not be placed near or described as an Amiga.

Finally, to really rub salt into the wounds, Commodore decided that the CDTV was actually an Amiga and told dealers to sell it as such. This Commodore had the nerve to say was a planned marketing program!

Surprisingly there are still a lot of dealers selling the Amiga – would you after that kind of treatment? – and there is a very strong community of users and developers.

# Pro-Punter 2

**Pro-Punter II** is a remarkable piece of software that gives you a much higher than average chance of winning on the horses.

Officially proven to the racing press and other magazines by sending time and date franked letters by Post Office mail, *Pro-Punter* has shown that it can predict winners with remarkable accuracy.

The NEW second generation *Pro-Punter* is

**Pro-Punter**

**NEW**

written to professional standards and is attractive and easy to use. It features full editing and review of race data entered and also a unique low-maintenance database that does not need constant updating.

International users please note that, in addition to UK features, *Pro-Punter II* contains unique course/going/class editors and will configure to metric weights/ distances, thus allowing configuration for racing anywhere outside the UK where relevant data is available.

---

## The Ultimate Programming Tool for Your Amiga

AMOS Professional has arrived! The 50,000 selling AMOS development package has complete overhaul by its publishers, Europress Software.

AMOS Professional features:

- 700 Commands
- Brand New Editor
- 900 Page Manual
- 7 New Accessories (fonts, sprites, icons, sample bank editor, resource bank editor and built-in animation)
- Two Example Discs
- A selection of completely new highly finished programs

**CU Amiga 97%**
"AMOS Professional is faultless"

**Amiga Format 97%**
Highest EVER review awarded ... to any product in Amiga Format

The result is a package which will more than satisfy both home and professional AMOS users, It's fun to use, there's lots to learn – and it's the essential package for the Amiga.

**AMOS professional**

**Save over £14 on RRP**

**europress SOFTWARE**

### Also available

*first steps to* **PROGRAMMING**

**EASY AMOS**

**AMOS**

**AMOS THE CREATOR**

**AMOS COMPILER**

**AMOS 3D**

shop window

the locator

# AMIGA MARKET

## THE ULTIMATE BUYERS' GUIDE

- Gallery database
- CrossDos v5.0
- TruePrint 24
- Giga Mem

...and lots more

classifieds

**A-Z OF VFM**

# CONTENTS

# How much?

N ice machine, shame about the price point. This was the general conclusion among many industry observers when the A3000 was released at its ridiculously high price of almost £3,000. The new A4000, selling to business users for about £2,000, should hopefully avoid the same response.

As a machine selling to the high-end corporate user with top quality presentation or multimedia needs in mind, the A4000 is a very attractive buy.

As a punter product, however, forget it. The machine's only significance to the vast majority of us is as a platform on which the latest Amiga technology can be tested.

New mid-range machines should soon be announced, and will probably have been given their official debut by the time you read this column.

It these machines, be they the fabled A1200, A2200, or A800, which the masses (you and me) will see as the real alternative to the A500 and A600.

The last year has seen the Amiga range grow and spread into new areas with the release of the Amiga CDTV, A600, and now the A4000, and the constant flak Commodore have drawn from confused punters and bitter developers should soon abate.

What has become clear is that the Amiga range now offers more choice and caters for more budgets than ever before.

Starting at £300 for the basic A600, the cheapest Amiga ever, rising through the newly discounted A1500/2000 and A3000 machines to the A4000, the range needs only the new mid-range machine to be complete.

Add to this the CDTV options and you have infinitely more to choose from than Amiga owners of two years ago.

Commodore recently dropped the price of the A3000 to something approaching realistic levels when it became clear that few people wanted to buy the machine, and even fewer would as the A4000's release loomed ever closer.

Why pay £2,500 or more for a machine with apparently lower spec than a 486 PC costing half as much?

If Commodore can apply the same thinking to the A1200, and bring an AA chipset machine with separate keyboard, hard drive, and at least limited expansion capabilities to the general enthusiast market for less than £1,000, the Amiga's future as Britain's most popular home computer is assured. No other machine, despite Atari's hopeful claims

for the Falcon, could compete. In addition, those considering the move to PCs will be forced to think again, and if the vague rumours of a sub-£1,000 AA chipset games machine are true, the 1993 Amiga games market could quickly become the most vibrant around. Given the right conditions, the next year or two could be the best of the Amiga's life.

Of course, existing owners will feel left out, a fact which is not helped by Commodore's refusal so far to discuss AA chip upgrades for older machines.

However, the company have on several occasions offered trade-in deals, such as the current CDTV offer, which could ease the transition for A500 owners to the new machines. With a sensible upgrade policy such as this, there is no reason to fear the fragmentation of the Amiga market into old and new.

Thanks to the AA chipset, the Amiga's future in productivity areas such as DTP and video has never looked more promising. Full colour DTP capability and near-broadcast quality graphics in a standard machine could make the AA-equipped Amiga a viable alternative to the even more expensive Apple Macintosh and boost the machine's already solid image in the video world.

Commodore have never appeared too bothered with the semi-pro and amateur enthusiast market, but the larger retailers are beginning to realise that there is life between the games player and the corporate executive.

More bundles, better marketing, and a maturing Amiga audience should in combination ensure that 1993 turns out to be a good year for everyone interested in the Amiga as a

## Is Commodore's Grand Pricing Plan beginning to make sense?

computer rather than a games console.

Let's just hope Commodore see things that way. We should have the official announcement of any new Amiga released before Christmas in the next issue of *Amiga Computing*.

Our predictions are for a machine in a thin "pizza box"-style casing running from a 68020 or 68030 with IDE hard drive support exactly like the A600.

The AA chips will be present, and the machine will have 1Mb chip RAM with SIMM sockets on the motherboard for the direct installation of another 1Mb chip RAM and up to 16Mb fast RAM.

PCMCIA smart card technology will be used (Commodore are pushing this heavily at the moment), but there will be at most two Zorro slots in the case and, if some reports are true, there might be none at all.

If this is the case, some users (and a great many pundits) will complain about the machine's expandability.

However, earlier rumours about a second desktop-cased machine with more expandability might pan out. This approach would give users the choice of sticking with a cheaper machine or paying more for expandability.

In effect, the level of punter choice will be vastly greater than it was in the old days when the A500 and the A2000 were the only machines within the public's price bracket.

## Gallery

If the word database fills you with the kind excitement usually reserved for painting banisters and hanging wallpaper, the following spotlight on Gallery – the all-new database from Helios Software – could inspire even the most anarchic Amiga user to bring a little order into a turbulent world.

If truth be told, no matter how amazing a database may be, it's applications that count. On the whole the average database is a dull beast with only the high-end packages offering the kind of designer websites and bells capable of producing even the slightest glimmer of excitement in the form of interactive sound and graphic support.

Many of the mid-range packages such as Prodata offer unbeatable number crunching power but fall woefully short as far as



looks and flexibility are concerned. Gallery on the other hand has all the looks you could ever want but does sacrifice a little of the pure power provided by its ugly but efficient counterparts

As you can probably tell from the screenshots, Gallery is very much a personal database/organiser rather than a business application.

If you have graphics, sounds and tidbits of text which need either to be stored separately or appended together, it's ideal.

This is illustrated perfectly by the example database that comes as part of the package. In this particular index a series of British birds have been compiled employing all of the program's available options.

Initially you are presented with the basic information on a particular record with a selection of the standard fields.

Below the fields lurk the sound, text, view and tag options which toggle between Review, which obviously activates the particular option, Attach which allows you to append new text, graphics or sound, and finally Remove which obviously deletes

# Shop Window

*As ever, Amiga Market brings you the very latest in the world of hardware and software as it happens*

the element of your choice. To apply either the Review, Attach or Remove options, all you do is toggle the button and click on a particular choice. Moving, copying, cutting and the addition of new records is equally simplistic, as indeed are all of the program's controls.

The beauty of the system is this constant adhesion to a user friendly design. Actually using the software wouldn't be beyond the average five year old but it must be said the pleasure if rather juvenile look of the interface does drive the user friendly approach of your new "caring sharing database" a little too firmly home.

Although this doesn't affect the performance I can't help feeling a slightly more business-like look have attracted a few more serious punters.

Although not blessed with the filter options of the SuperBase range, the handling is reasonably well catered for with searching, sorting and tagging options all catered for within dedicated setup screens.

Aside from simply viewing the various components of a database from the comfort of the main screen, it's also possible to view all the elements of the record as part of an combined slideshow with samples, text and graphics all playing their part in the action. Designer preferences can be appended to the

## PC speak

Talking to other machines has always been a necessary evil with the majority of businesses adopting the archaic PC as the centrepiece of their operations.

Due to this sad state of affairs, PC communication has always been a part of the Amiga scene. Unfortunately in the past this usually meant investment in expensive additional hardware.

If full emulation wasn't require things weren't quite as bad thanks to a whole host of Amiga to PC file conversion programs available as both commercial and PD/shareware releases.

Rather than allowing emulation, these programs merely allow the Amiga to read, write, copy and format MS-DOS disks. As a result, any blank Amiga floppy can be re-formatted as an MS-DOS disk and, in the case of CrossDos, ST disks as well.

These can then be filled with Amiga data in a PC/ST readable format and transported to an appropriate machine with ease.

Although available for a long time as an unofficial option on the Amiga, Commodore have only recently decided to take this up and implement the CrossDos option within Workbench 2.1 and above.

With this new version of Workbench defining a floppy as a PC drive is simply a matter of dropping the appropriate driver into the Devs/DosDrives draw on the

new Workbench.

As a result, whenever a PC disk is inserted into the specified drive it will be recognised and ready to write Amiga files in a PC format or offer PC files to the Amiga.

Unfortunately for the creators of CrossDos v5, Commodore's sudden interest in file transfer is a little unfortunate. But even with the introduction of the new Workbench all is not lost as of course any would-be users have to make the upgrade to Workbench 2.1 when it becomes available.

Secondly, the new Consultron release not only provides CrossDos but also boasts CrossPC as part of the package.

As mentioned earlier, PC emulation usually requires additional hard-



ware but in the case of CrossPC emulation is provided by software with no additional hardware necessary.

Obviously software emulation doesn't offer all the features of specialised hardware but even so the benefits can still be impressive. Once installed – preferably on a hard disk – CrossPC allows IBM PC-XT software to run on a standard machine.

Although power applications are still way out of reach numerous PC programs will still run on a system equipped with the CrossPC while still maintaining full multitasking with existing Amiga software.

It's possible to boot from a MS-DOS hard drive partition and thanks to an optimised version the package is perfectly happy running on 68020/30/40 machines.

Once active the program will provide emulation for CVA video, mono display, partitioning of hard disks, use of floppies, access to parallel and serial ports, keyboard and

software with definable screen layouts and default files loaded on boot-up. Printing again is well catered for with a whole host of options including label printing and full control over page layout and type style.

With all of the above screaming the praises of the Gallery it seems that Gallery is a must for an Amiga owner who longs for a little organisation.

Also there's one area in which Gallery is unbelievably bad! The hard drive install script is nothing short of laughable. In fact to call the aforementioned file an installation script is something of a misnomer. The script itself simply informs you to copy all the necessary files manually and of course add all your own assigns while you're at it.

In addition, the suggested assigns mean that all your system files are assigned to the new ones created within the Gallery directory.

As a result, whenever you quit the program your machine will still assume that such vital directories as C will reside solely within the Gallery directory.

Because of this clumsy oversight, whenever you try to employ programs that reside within the real system directories no end of problems can ensue – especially on 1.3 machines. This lack of the basics of AmigaDOS is a common



mouse emulation plus access to 704k of memory.

If you want to emulate full 8088 emulation you'll require a copy of the MS-DOS operating system which as you're probably guessed doesn't come as part of the package.

Unlike previous attempts at emulation and file transfer systems, the CrossDos and CrossPC package is very simple to install and appears to incorporate seamlessly into the Workbench environment.

A perfect example is floppy access, which remains transparent to both systems. As a result, even when a floppy is configured to recognise PC disks it's still operates perfectly as an Amiga drive just as before.

Obviously such software has its limitations but if you're looking for a way to work and communicate with the world of the PC without a huge investment in PC hardware this new compilation is perhaps the perfect way to take your work home with you without having to re-mortgage the place in the process.

problem for programmers who code in a dedicated language – in this case Helios Forth.

With the ever-expanding number of hard drive users out there, a decent HDinstall script is essential. This particular problem has to be addressed before I could honestly recommend this otherwise excellent product to anyone with a hard disk at the centre of their system.

## GigaMem

Virtual reality is and has been the biggest buzzword for longer than many of us would care to recall. But it's not the only virtual option in the computing world.

In fact virtual memory, although less well known in the media, is becoming more and more popular especially on the Amiga, primarily because of the 24-bit graphics explosion which has engulfed the machine.

Several power image processing and paint packages such as ImageFX and OpalPaint already make extensive use of virtual memory.

But perhaps the heaviest users of virtual memory are the growing band of direct-to-disk sample recording systems. Software and hardware combinations such as the SunRize industries Studio 12 and Studio 16 rely entirely on virtual memory to store the huge samples created by the hardware.

In simple terms, virtual memory simply replaces or supple-

ments RAM by creating an area on disk which the machine then considers to be part of available RAM.

Unfortunately until the release of GigaMem virtual memory has only been available to specific programs with the option built in as standard.

Now 85C Software hope to bring the virtual world of almost limitless RAM to us all.

This new program will allow up to 1 gigabyte of virtual memory space on either a hard drive partition or Swap file. On the hardware side you'll need a suitably sizeable hard disk housed within a machine boasting a 68020, -030 or -040 CPU with a built-in memory management unit (MMU).

If any one of the above elements are missing, GigaMem will not work. If your machine is fitted with an accelerator, it's essential that you check that an MMU is present, as it is vital to GigaMem operation.

You can check this by either consulting the manual or alternatively running system checking software such as SysInfo or AIB84.

Both of the these programs have been featured on our CoverDisk and are widely available within the public domain.

Once the software is installed on your system a separate

preferences program allows you to specify where the virtual memory store is to be, its size, the accompanying buffer size and the programs that will make use of it.

As mentioned earlier, the storage area can either be a swap file or an entire partition. Given the choice the partition option is definitely the more preferable of the two.

As you might imagine, any virtual memory system means a lot of data is constantly being written to the disk and as a result errors and crashes are a real risk.

If for example a validation, checksum or any other such problem appears, all that will be lost within a dedicated partition will be the data present in VRam.

If however problems arise within a swap file, the whole hard disk or partition of which it is a part may need to be re-formatted.

I'm not implying that GigaMem is prone to such problems but it only requires one error using the swap file system and a lot of valuable data may be lost.

Although GigaMem may seem like a dream come true to those among you who are thoroughly sick of out of memory messages, it's not all plain sailing.

For example, setting up the system can be a tricky business as more often than not the software requires you to make alterations to the partition masks on all the hard drives within your system. Once active, the software insists that all devices must have a zero in the first digit of their mask.

In order to make such chances you must load up the partitioning software compatible with each hard disk and make the necessary alterations to the mask manually. If you're not partic-

ularly well versed in AmigaDos and hard drive installation I'd seriously think about some expert advice before attempting such alterations.

The creators of GigaMem claim compatibility with all existing hard drive controllers, although I did encounter a few problems with a controller on an ageing TrumpCard in the office.

I also installed the software on an Amiga 3000. Although it seemed happy to show the addition memory in the Workbench title bar, it displayed a distinct dislike when it came to employing it.

In short, GigaMem is the kind of software that requires a certain amount of time to tinker and come to terms with. If you're new to the machine, a good old fashioned hard-wired RAM upgrade would be a better choice, especially if your memory needs aren't likely to stretch into double figures.

*Supplier: HB Marketing*
*Tel: 0753 686000*
*Price: TBA*

## TruePrint24

If there's one area of computing that causes more heartache than any other it's printing, and if there's one area of this dreaded pastime that causes more anguish than most its the printing of graphics.

In the past, graphic printing via Workbench preferences has been a hit and miss exercise at best. The main cause of less than spectacular results has been the built-in limitation of just 16 shades of grey when printing greyscale images.

This previously unavailable limitation is caused by the Workbench's maximum of just four bitplanes per primary colour. A similar problem occurs when dealing with colour output, which via preferences is limited to just 12 bits.

Obviously with the Amiga 24-bit graphics explosion of recent times, image quality has become all important. With the addition of TruePrint24, the real potential of the Amiga as a printing environment is revealed.

For example, when printing greyscale images the use of eight bits per primary colour as opposed to four means 256 levels of greyscale rather than 16.

Even on daisywheel printers, output is improved immensely and offers 32 greyscales on machines designed specifically for text only applications.

The same degree of improvement also applies to colour images. Obviously the improved colour quality is pretty difficult to relate on a mono page but to give you an idea the difference is akin to that between a Ham and a 24-bit on-screen graphic.

Aside from a basic improvement in print quality, TruePrint24

## Tin boxes

Adverts for pieces of hardware similar to this are always tucked away in the back of the magazine because they are not accepted as "proper" peripherals.

But we endeavour to bring a stop to such ignorance so we've done the decent thing and got some desk/machine organisers in for a closer look. First we'll deal with the box that houses the A500 variant.

I unplug everything and slip in the A500, replacing the monitor on the shelf provided, plug everything back in and boot up.

Then all of a sudden a shadow falls over the AC office, the bent and twisted forms of the editorial team recoil in hor-

ror from a thing that has never existed in the office before, a thing so alien that it strikes terror into the hearts of the AC staff – that thing called Tidy...

The actual Physical make-up of the box is pretty boring. It's one continuous sheet of metal that has a lip to hold the front of the Amiga steady.

The sheet goes right under the machine and curls back over the top leaving a gap of about 1.5in to let the machine breath.

The actual box is coated with a plastic-looking substance which fortunately is the same colour as you Amiga. The flat surface on the top allows you to place your telly or monitor directly on top of the machine – this really does conserve space.

All in all, it's a simple but effective answer to the sticky wicket of computer

cleanliness. If you've got a yearning for a tidy desktop, this is just about the perfect peripheral.

Next up is the A600 box. It looks slightly better, mostly for having some plastic edging designed to stop the box sliding around.

And of course thanks to the lack of the A500's numeric keypad there's a fair amount of space saved in relation to its ageing counterpart.

Instead of being one continuous sheet like the A500 it's actual been built up from various parts. And the variation in design doesn't stop there as there are a couple of vents on the side of the casing to stop the machine from overheating.

The A500 box supports the monitor by a metal beam that runs the width of the box. This exerts pressure on the top of the machine. It's unlikely that this does

the machine any harm but I still would rather have the monitor supported independently and without it pressing on the machine like the 600 box.

Another aspect of the 600 box I liked was the little shelf just above the machine – it's perfect for storing disks you use regularly, or for a place to stick your Mars Bar at short notice.

A500 box
Supplier: Kontax Computers
Tel: 0628-773212
Price: £34.95 delivered

A600 box
Supplier: RSD Connections
Tel: 0992 584205
Price: £34.95

# Shop Window



also provides the ability to print poster-sized prints on a standard printer. This is achieved by defining the size of poster required and then splitting the image of the number of separate pages required to print the desired image.

Using this process it's possible to print images that measure up to an almost unbelievable 999 x 999in. The various component pages can then be joined together billboard style and posted.

This billboard approach is at its best when applied to 24-bit files as implied by the program's title. If you're willing to make

the necessary investment in colour cartridges the effect can be amazing, especially when you consider the four-colour, non-Postscript source.

The software itself, unlike many printing utilties, is very simple to use and once your preferences are set the main screen can be closed down. This leaves you with what's called an Applcon which happily sits on the Workbench screen.

With a double click the full TruePrint24 screen reappears, but even better still if you happen to have an image ready for printing all you do is pick it up and drop it into the Applcon which instantly initiates the printing process with the pre-

defined settings. In simple terms, it's an instant pseudo-trashcan that prints instead of bins its contents.

As you might expect, a whole host of dithering options are available with Floyd Steinberg – two variants of halftone, ordered, horizontal, vertical and so on. There's even an Ascii print option which older readers may remember uses the Ascii character set to emulate tonal differences within the image – ideal for saving ink on large poster prints.

Obviously the basics are also catered for with vertical and horizontal orientation, keep or ignore aspect, print offsets, ruler formats plus a selection of additional options which allow colour, contrast and Gamma levels to be adjusted prior to printing.

## Bitmapped

Although the title implies that 24-bit images are the basic food stuff of the software, it's equally at home with bitmapped graphics and will happily print any IFF image when necessary.

As a quality image printing environment, TruePrint is unrivalled among the ever-growing band of non-Postscript printing utilities.

If ASDG do the decent thing and add an option to print Postscript files it would be the icing on an already mouth-watering confection. ASDG could find themselves sitting on a gold mine.

It's true that the very latest power DTP packages such as ProPage3.0 and PageStream2.2 support tiled printing as standard but for users with lesser or perhaps older versions tiling is still out of the question. If TruePrint24 could fill this gap in the market ASDG are sure to win a lot of additional sales.

Still, even without Postscript support TruePrint24 is quite simply an essential for any Amiga artist who needs to produce quality hard copy of their creations but doesn't want the expense of investing in a Postscript-compatible printer. Highly recommended.

Supplier: Silica Systems
Tel: 081-309 1111
Price: £59.95

# Software spotlight

**Firmly and assuredly sorting the wheat from the chaff, this month we turn our critical gaze on wordprocessors**

> If you can beat these prices, give us a ring

## Protext 5.5

For long the Amiga's premier wordprocessor, Protext is still the most powerful, though lacking many of the features found in wysiwyg packages.

Protext is fast, contains a powerful built-in macro and command language, can produce invoices using its line drawing mode, and has many of the features you'll only otherwise find in a PC package, such as auto numbering and self-incrementing variables. For business users it is the only choice.

Disadvantages include its limited display (definitely not wysiwyg), its less than completely friendly interface, lack of graphics support, and overall complexity, so it is perhaps not the ideal choice for home users.

> **Arnor**
> 0733 68909
> £80

## Wordworth 1.1

Wordworth is a smooth, user-friendly wordprocessor with fewer power features than Protext but superb document design options and a finished output that's better than most.

The program has full PostScript support and is supplied with the Adobe 35 font set. It also comes complete with support for 140 individual printers, enabling full control of built-in printer fonts from within a document.

The spell checker and thesaurus used is the Collins Linguibase (as used by Protext), so British spellings are the order of the day. Both work very well.

The program's disadvantages are that it can be memory hungry, offers no macro facility, and can sometimes run very slowly when memory is tight.

The best WP for the office, Wordworth 1.1 is better suited to the production of high quality PostScript documents including graphics.

> **Digita**
> 0395 270273
> £129.99

## Scribble

Scribble is one of the Amiga's golden oldies and is usually supplied as part of the Works Platinum home office package. It is a basic, non-wysiwyg wordprocessor and has few, if any, whistles and bells.

Most of the standard options are there including search/replace, spell checker, and word count, but its features are usually in the most basic form.

Its dull looking interface, with no gadgets and all options restricted to menus rather like Protext 5.5, doesn't score highly in these days of prettified software, but thousands of staunch users would no doubt agree that this leads to an easy-on-the-eye environment for bashing out text.

> **HB Marketing**
> (0753 68600)

## ProWrite 3.2

Having recently been price-slashed, ProWrite is a rather attractive buy for those in need of a general purpose WP. The problem with ProWrite is that it is just that – general purpose.

It is similar to Wordworth in that it is a full wysiwyg package with direct PostScript support and a lot of icons for standard functions.

However, the PostScript isn't as neatly implemented as the Digita offering, the program doesn't support built-in printer fonts, and it is slower, especially when graphics are included in a document.

Having said all this, ProWrite is a perfectly usable package, and has the advantage of its ten user-definable macros which can be very useful with a bit of thought on the user's part.

Like Wordworth, it has a good, though American, spell checker and word count, but it will also carry out calculations and automatically sort a list of words in alphabetical order.

> **Silica Systems**
> 081-309 1111
> £79.99

## Pen Pal

Pen Pal is one of the friendliest WPs available and probably the best when it comes to the manipulation of graphics within documents.

It is supplied with a simple database program as an added extra and has excellent online help, but is certainly not for the business user.

Graphics are the program's forte, as it will allow irregular text flow around pictures, and is very fast when moving, relocating, and generally messing around with them. However, its

text features are nothing special. There's no PostScript option, no special printer drivers, and no custom fonts, so output on paper is nothing to write home about either.

> **Gordon Harwood**
> 0773 836781
> £79.95

## Kindwords 2 and 3

Kindwords 2 was a seemingly revolutionary product on its release, as it was one of the first Amiga packages to offer wysiwyg, custom fonts for high quality printing, graphics in documents, and many other features now taken for granted in later WPs.

The reality, however, is that it was very slow, likely to crash on a 512k machine, and plagued by bugs. Recommended only for those with masochistic tendencies, Kindwords 2 should relay be allowed to die while it still has some dignity.

The coup de grâce should come in the form of Kindwords 3, a totally new product from the programmer of Wordworth.

In effect, Kindwords 3 is Wordworth without the PostScript support, custom printer fonts, and many other advanced features.

What the programmers left in makes Kindwords 3 a friendly, very usable WP available for a decent price. It has all the style and functionality of Wordworth even if it lacks the power features, and would serve most general home uses very well.

> **The Disc Company**
> 0926 815855
> £49.99

## excellence!

excellence! is a huge sprawling package including a 140,000 word dictionary complete with definitions, a thesaurus, grammar checker, and PostScript support.

It sounds like great value for money, and in some ways it is, but excellence! is in many ways over the top and suffers in the basic areas as a result.

Advanced features include the ability to use up to four columns of text in a document, PostScript support using its own versions of popular fonts, automatic contents generation (of the others, only Protext does this), and graphic support. However, text scrolling speed is poor and the program uses a lot of memory.

> **Silica Systems**
> 081-309 1111
> £99.95

## New stars

Wordprocessors to look out for in the coming months are Wordworth 2.0 and Final Copy 2, which should soon be battling it out in the pages of AC for the crown of the WP world.

Both have DTP-like features, offering PostScript, column printing, text wraparound, and even box rotation.

# Hard Times

*Taking a second look at popular peripherals, Hard Times this month covers floppy drives*

## Roclite RF382C

If speed and style is what you're looking for from a floppy the Roclite is the drive of your dreams. The unit itself is by far the smallest and slimmest and fastest drive we had on test.

The drive itself is roughly twice the speed of the standard Commodore internal barely making a sound in the process. Unlike all the other drives the Roclite comes in a selection of either CDTV black or the usual vanilla of a normal Amiga.

Unlike several other drives the Roclite comes with both anti-click and anti-virus which when added to its pure elegance and speed make it a very attractive buy.

If you're looking for a stylish slim-line drive that can out pace the opposition and still retail at a respectable price Roclite is the answer.

**Phoenix**
0532 311932
£57.99

## Golden Image 3A-1D

If you're the sort who wants a little style along with near silent operation plus a fair amount of blatant gimmickry the Golden Image drive is perhaps the perfect combination of all three.

Although by no means the smallest drive on the market the 3A-1D has a style all its own provided by a designer casing dominated by an LED display on the left-hand side of the drive which displays the track read/right status during operation.

In theory the LED is provided to monitor any virus which may attempt to right to the disk. In my opinion although handy it's much wiser to put your software in the safe hands of a decent virus checker.

No doubt because of the LED and additional anti-click hardware the 3A-1D is certainly the largest single drive around. If you're a space conscious type this could be a problem but in my opinion the looks, low noise level and overall quality of the drive more than make up for the additional space it occupies.

If you're the sort who like fury dice and aren't ashamed to admit it the 3A-1D is definitely the drive for you.

**Evesham Micros**
0386 7655000
£59.99

## Power PC880B

Now here's a drive that's fit to burst with additional features. Aside from working as a standard drive the unit also boasts an anti-virus mode which immediately write protects all the your floppies by completely disabling the write-to option. The next feature is a slightly dubious addition which takes the form of a software/hardware copying system entitled Blitz copy.

As you might have guessed this isn't meant for normal AmigaDOS copying tasks and that's about a far as we should go with this particular line of thought.

Although rather long the drive still remains surprisingly thin considering the amount of hardware crammed inside. As an all purpose driver the PC880B has to be one of the best buys on the market especially when its obvious flexibility is combined with a very reasonable asking price. Available in both black and vanilla.

**Power Computing**
0234 843388
£65

## Zydec

If you're repelled by the designer label look of the Golden Image drive the Zydec offering provides the minimalist look and space conscious design that any environmental friendly Amiga user would happily swap his or her 2CV for.

Although small and amazingly quiet considering the lack of any anti-click hardware the Zydec does have a few faults in comparison to its more bulky and feature packed counterparts. Because of the extremely slim design Zydec have been forced to add vents on the top and to the rear of the drive. Although this may seem a perfectly acceptable design, in the cold light of day and more precisely thanks to the cold cold cup of coffee the nature of the problem could soon rear its ugly head.

In my personal experience floppy drives invariably see more coffee cups than the average coaster. As a result, one minor spill could soon become a major disaster.

If you're looking for a basic but efficient drive the Zydec is fine but considering the extra features on much of the opposition I must admit it wouldn't be my first choice unless desk space was extremely tight.

**Evesham Micros**
0386 7655000
£59.99

## Cumana

Cumana drives have been around as long the Amiga and to their credit I'd be surprised if the very first unit out of the factory isn't still going strong.

Strong, sturdy, reliable, boring, noisy... in fact we're talking the computing equivalent of the Volkswagen Beetle.

If you're not after the whistles and bells of more modern drives but simply want a drive that will last longer than you will the Cumana is the perfect choice.

**Gordon Harwood**
0773 836781
£52.95

## Power Dual Drive

As the name suggests the second offering from Power Computing is a twin drive unit comprising two PC880B drives in one amazingly small case.

Like Power's single drive both the drives within the Dual Drive unit offer the anti-click, anti-virus and of course the Blitz copying option.

The drives themselves are totally independent as far as the Amiga is concerned and like all the others thru-ports and on/off switches are provided.

Unlike the others, however, the Dual Drive also boasts a separate power supply – an extremely useful addition if you're machine is already heavily laden with additional hardware.

It's worth stressing that the anti-virus option does not actually check for a viral presence. Both the single and dual drives simply disable the machine's ability to write information to disk whether that be the Power drive or the internal.

Because of this it's still essential that your disks are write protected where possible. The anti-virus option wouldn't know a virus if it ran up with a box of chocolates and a bunch of flower, it simply disables the ability to write data.

If you're in the market for a twin external system the Dual Drive offers a compact, economical and feature packed answer that avoids the power problems often encountered on heavily expanded system.

**Power Computing**
0234 843388
£125

# Locator

**Y**our at-a-glance guide to shopping through the pages of AC. All our advertisers, all their products, and all in an

| COMPANY | Page |
|---|---|
| 1st Choice Computers | 66 |
| 17-bit Software | 110 |
| Accelerators | 169 |
| ACS | 182 |
| Amivision | 158 |
| Amor | 143 |
| ASDG Inc | 18C |
| Ashcom | 78 |
| Astrocals | 178 |
| Audition Computer Services | 97 |
| AZ Software | 104 |
| Battleaxe PD | 104 |
| Bio Con | 146 |
| Bitcon Devices | 156 |
| Calculus | 55 |
| Checkmate | 74 |
| Commodore UK | 12 |
| Computermates | 68 |
| Computerworld | 46 |
| Core Design | 121 |
| Cumana | 62 |
| Database Direct | 148,160 |
| Dataplex Computers | 156 |
| Delta Pi | 100 |
| Deltrax PD | 183 |
| Dial a Disk | 110 |
| DMS Ltd | 86 |
| Dynamite Computers | 38 |
| Eagle Software | 135 |
| EM Computergraphic | 158 |
| Evropress Software | 139, 154 |
| Evesham Micros | 76 |
| Fairwinds PD | 142 |
| Ferguson Smith | 27 |
| Firecrest | 142 |
| Five Star PD | 176 |
| Font Shop | 196 |
| Fun Factory | 131 |
| Futureworld Computers | 19 |
| G & S Software | |
| Gasteiner | 81 |
| Genlock | 173 |
| GJS | 176 |
| Gold Star | 94 |
| Gordon Harwood | 22, 28, 59 |
| Ground Zero PD | 182 |
| GTS | 142 |
| Hawkwell Electronics | 66 |
| HB Marketing | 175 |
| Highland PD | 178 |
| HiQ | 60 |
| HiSoft | 88 |

easy to find format. Your Amiga Market Locator makes finding that bargain infinitely easier.

# Locator

AMIGAS · PRINTERS · PERIPHERALS · SOFTWARE · MISC

| COMPANY | Page |
|---|---|
| Hobbyte | 10 |
| Homebased Business | 86 |
| Indie | 90 |
| Kew=II | 142 |
| Kosmos Software | 164 |
| Ladbroke | 112 |
| LCL | 158 |
| Livewire PD | 168 |
| Mail Order Express | 87 |
| Mailbyte | 173 |
| Marcam | 141 |
| Matrix Computer Services | 178 |
| MD Office Supplies | 86 |
| Merlin | 17 |
| Micro Disk | 182 |
| Microdeal | 44 |
| Millenium Micros | 178 |
| Mindscape | 82 |
| MJC Supplies | 150 |
| New Image Videos | 164 |
| Orion PD | 175 |
| Owl Associates | 173 |
| Pathfinder PD | 142 |
| PD Direct | 54 |
| PD Soft | 178 |
| Phoenix | 51 |
| Power Computing | IFC |
| Premier mail order | 186 |
| Quaitsoft | 178 |
| Reflex Technology | 108 |
| Rombo | OBC |
| Sector Software | 100 |
| Silica Systems | 65, 71, 85, 107 |
| Siren Software | 111 |
| SoftLogik | 35 |
| Special Reserve | 8 |
| Stanhouse Ent | 45 |
| Startronics | 169 |
| Strictly PD | 152 |
| Superior Software | 131 |
| Software Supreme | 127 |
| Sysons Associates | 72 |
| Systec PD | 175 |
| The Disc Company | 37 |
| The PD Parlour | 178 |
| Triple R Education | 109 |
| Videoware | 86 |
| Virus Free PD | 101 |
| West Midland Computers | 80 |
| White Knight Technology | 166 |
| York Electronic Res. | 173 |

# Classifieds

◆ Amiga 500 1 meg upgrade and GVP hard disk.52 meg, Monkey 2 Heimdall, £500, boxed Tel 081 998 5667.

◆ Amiga contacts wanted 93.25% reply, helps if you love football

◆ Electron 3.5in drive tape player. Rombox disks, tapes, and books, View £100 and postage. Contact Derek Tel 0354 78466.

◆ A500 plus Cartoon Classics, pack never used, unwanted gift, brand new - buyer collects, £300. Tel 0734 573489.

◆ Olivetti DM105 colour printer, Epson/IBM emulation, ribbons and leads, fully boxed as new. Tel 0329 326431.

◆ Hitachi GP-6M, colour video camera, as new for digitising, with case, £100, York 421968 evenings.

◆ Amiga games from £5 including Monkey Island, Another World, Trivial Pursuit, ETC Romsey, Tel 0794 516462.

◆ Microbotics VXLO30 25MHZ with 68881, installed £300 O.N.O Tel Jordan 60477 71888.

◆ Amiga contacts wanted, write to Gary, 29 Finch Close, Woodville, Swsoncote, Derbyshire, DE11 7QN.

◆ Action Replay MKIII, A500 version, new, £40. Robert Alexander, 86 Lampitts, Hoddeddon ,Herts EN11 8ET.

◆ Wanted, P.D and pen pal contacts, 100%, reply to Isaac 33204 c/Suarez valdes 20, I Gison, Spain.

◆ Graphic artists. Musicians required. Send example of work to: Mark, 59 Highbridge Road, Aylesbury, Bucks, HP21 7RX.

◆ Pace Linnet modem V21/23 Hayes, unwanted gift, still boxed costing £150, Tel 081 314 0842, will post free

◆ Espana Games 92 - £18, Carl Lewis Challenge £12, boxed. Contact Mark, 0482 564775.

◆ PD swappers wanted, send lists to Nick, 103 Woodland Way, Winchmore Hill, London, N21 3PY.

◆ For sale, various Amiga software, plus complete Commodore, 64 System with software, worth £700+ Write: Adam Wright, 33 Great Holme Court, Thorplands, NORTHAMPTON, NN3 8XZ.

◆ Hard drive for sale, Fujitsu 182MB SCSI 3.5in high, Tel Vijay 071 263 8646, after 6pm.

◆ 2MB A500 + Commodore HPS 1230 printer, power dual drive, power hand scanner, Pen Pal, Superplan, GB Route and D Paint 3 Manuals and books, Amiga mags and disks, mint condition, £700 Tel 0935 76404, after 6PM.

◆ Wanted – your old adventure games, Manic Mansion, etc state, price required Ken, Tel 0492 641369.

◆ CBM, high quality inkjet, with 5 sealed cartridges, box, leads, manual. £200.00 Tel 0789 764039, buyer collects.

◆ Amos programmers, contracts available, for more information write to: Alan Carter, 57 Greta Road, Skelton, Cleveland

◆ Amiga games for sale, all perfect condition, includes recent games, plus oldies, Tel 0744 894422.

◆ Amiga contacts wanted, send disk only to 4 Orme Road, Poolfields, Newcastle, Staffs, ST5 2NT

◆ Wanted CDTV keyboard, and any CD software. Tel 0442 233968

◆ Amiga 500, 1Mb, upgrade joysticks, Mice workbench manuals, DPaint and some games, all boxed as new!, £275 ONO. Tel 0442 61356

◆ A500, 2 MEG A500 2 MEG 1084S monitor, external floppy drives, package , or will split £450 Tel 081 530 1501

◆ A500 1MB 1.3ROM joystick games, P.D modulator, boxed UGC, £230 ONO, Tel 0264 353022

◆ Elite, Frantic, Castles, Eye of Beholder, F15 Strike Eagle II, Phonton Paint II, Powermonger, £10 each, showmaker, £90, Tel 443 201731, after 6PM.

◆ Will pay any amount of cash.for "Little Computer People" - Amiga Version, Tel 0443 201731, after 6PM.

◆ Amiga A500, WB1.3, 1MB chip, 1MB fast extra drive, complete colour solution, joysticks, software, all boxed with instructions, £500 ONO. Also high speed Sony camcorder, many accessories, £650. Contact Mark

◆ Amiga 1500, monitor, accessories, ICD AD SCSI hard drive, controller + 2 Mb RAM. Loads of extras - games, business applications, programming and reference, books also, still boxed and guaranteed, £850, ONO Tel 0294 56473.

◆ Supra fax modem, V32 bis, 14.4 K, 2 months old, 5 year warranty, immaculate. Tel 0491 873882, £245.

◆ Amiga contacts wanted to swap games, PD, serious stuff, ETC, Tel Andrew 0446 744003.

◆ Wanted hard drive controller, for Amiga A500, Ring Andrew, Tel 0446 744003. May consider complete unit

◆ Mega midget racer 25MHZ, 33MHZ 68881 2, 4 megs 32 bit, ram ECO, Tel 0235 848412, after 7PM.

◆ SAS-C, V5-10, £85 , Tel Dave Strange on 0865 58531.

◆ Wanted PD swapper your list, for mine, 100% reply send to swapper, Gensnesai, Amington, Tamworth B77 4EL.

◆ CDTV discs, very cheap prices, also spare, new caddies call for list, Tel 0734 472010.

◆ Wanted A500, will swap for my game gear, worth £400 new Tel 449 6680.

◆ Wanted Cut Throats original, write to 8 Cranfield Walk, Clipston, Nottingham NG11 8AP

◆ Amiga contacts wanted anywhere will reply, 100%, send for list, Jon 11 Cleves Close, WEYMOUTH, Dorset.

◆ Chaos strikes back, editor wanted for Amiga, send to Shane 76A Princess Drive

◆ Deluxe music construction set. £25!! (£55 New) notation. Handles

midi and samples, boxed, manuals. Tel 0252 725529.

◆ Amiga contacts wanted, send list by return, PO Box 10, 3800 St Truiden 2 Belgium, 100% Reply.

◆ CBM A590 hard drive, 1MB Ram installed, boxed as new £200. CBM 1084 colour monitor excellent condition £190 Vortex Atonce PC emulator board. Boxed £150 ONO. Tel 0908 503202.

◆ A500, A590 and 2 meg, KCS board, Minigen genlock, Rombo digtiser and splitter, also video equipment. Tel 0294 214250, after 7 PM.

◆ A320 Airbus £15. The Manager £12. Gold disk outline fonts £35. Tel 0736 752982.

◆ Amiga contact wanted to meet/swap tips especially role playing games - Carmen. Tel 081 599 6013.

◆ ICD Adspeed 14.3 MHZ accelerator £110. Telephone 0908 316025. After 6.30 PM.

◆ P.D contacts wanted write to Ian Walsh 27 SPA Road Preston LANCS PR1 8SL.

◆ Amiga and PC software wanted, swap for videos (VHS) 3 Moorend Avenue, C/Wood, Birmingham, B37 5SO.

◆ £12 each, originals Utopia, Megiomania, Falcon, Metal Mutant, Hudson Hawk. Tel 0926 316800.

◆ Amiga 500 Plus Commodore with Philips colour monitor, leads, manual. 44 tape inc introductory game. All brand new unwanted gift, £700. Phone Adam Whittaker 071 255 3939.

◆ Wanted CDTV software. Tel 0442 233968.

◆ Amos and easy Amos - £50, can be bought separately. Tel Asif on 0533 519908.

◆ Shadow of the Beast II, Back to the Future II. Tel 021-561 4712, £10.

◆ Amiga 1500 WB1.3 with 1 meg chip. Contact Pam 0362 698570. £400.

◆ Amstrad PC1512 and software £150 O.N.O. Tel 0484 533678 (Huddersfield).

◆ P.D discs £1.00 each, send S.A.E for catalogue to Cheryl 5 Westbourne Road, Marsh, Huddersfield HA1 4LQ.

◆ 300 cheats £3.00. Mr Storey, 52 Skipsea View SUNDERLAND SR3 0BX.

◆ Amstrad CPC 6128 colour monitor. T.V modulator, game magazine, joystick manuals £80. Tel 0516 251346.

◆ Quarte the digital music machine.

| | |
|---|---|
| A-Train* | 22.99 |
| Addams Family | 16.99 |
| Afterburner | 6.99 |
| **Airbus** | **22.99** |
| Air, Land, Sea | 24.99 |
| Air Support | 16.99 |
| Alien 3 | 16.99 |
| Altered Beast | 6.99 |
| Amos | 29.99 |
| Amos 3D | 24.99 |
| Amos Compiler | 19.99 |
| Another World | 19.99 |
| Aquatic Games* | 16.99 |
| Archer Macleans Pool* | 16.99 |
| Arkanoid 2 | 6.99 |
| Arsenal FC* | 16.99 |
| Ashes of Empire | 22.99 |
| Assassin | 16.99 |
| Assault on Alcatraz | 16.99 |
| Award Winners | 16.99 |
| B17 Flying Fortress (1 Meg) | 22.99 |
| Bat 2 (1 Meg) | 20.99 |
| Batman Caped Crusader | 6.99 |
| Batman the Movie | 6.99 |
| Battlesquadron | 6.99 |
| Billy the Kid* | 16.99 |
| Birds of Prey (1 Meg) | 22.99 |
| Black Crypt | 16.99 |
| Blues Brothers | 16.99 |
| Board Genius | 19.99 |
| Bonanza Bros | 16.99 |
| Bubble Bobble | 6.99 |
| Bubble Dizzy | 6.99 |
| Bubba'n Stix* | 16.99 |
| Budokan | 6.99 |
| Cadaver | 6.99 |
| California Games | 6.99 |
| California Games 2 | 16.99 |
| Carl Lewis Challenge | 16.99 |
| Campaign* | 22.99 |
| Castles | 16.99 |
| Centurion | 9.99 |
| Championship Manager (1 Meg) | 16.99 |
| Chaos Engine* | 16.99 |
| Cheat no* | 9.99 |
| Chuck Rock 2* | 16.99 |
| **Chillisation (1 Meg)** | **22.99** |
| Conan the Cimmerian* | 19.99 |
| Cool Croc Twins | 16.99 |
| Covert Action (1 Meg) | 22.99 |
| **Crazy Cars 3** | **16.99** |
| Cruise for a Corpse | 19.99 |
| Curse of Enchantia* | 19.99 |
| Daley Thompson Challenge | 6.99 |
| Dark Sun: Shattered Lands* | 21.99 |
| Death Knights of Krynn (1 Meg) | 19.99 |
| Deluxe Paint 4 | 54.99 |
| Demoniagate* | 22.99 |
| Dizzy Collection | 16.99 |
| Double Dragon 2 | 6.99 |
| Double Dragon 3 | 8.99 |
| Double Dragon 3 | 16.99 |
| Dragon Ninja | 6.99 |
| Dreadnought | 16.99 |
| Dune | 19.99 |
| **Dynablaster** | **19.99** |
| Elvira 2 (1 Meg) | 24.99 |
| Epic | 19.99 |
| Euro Football Champ | 16.99 |
| Eye of the Beholder (1 Meg) | 21.99 |
| Eye of the Beholder 2 (1 Meg) | 21.99 |
| Eye of the Storm* | 19.99 |
| F15 Strike Eagle 2 (1 Meg) | 22.99 |
| F16 Combat Pilot | 6.99 |
| F19 Stealth Fighter | 16.99 |
| Falcon 3* | 24.99 |
| Final Fight | 16.99 |
| Fire and Ice | 16.99 |
| Fireforce* | 16.99 |
| First Samurai + Mega-Lo-Mania | 19.99 |
| Flight of the Intruder | 7.99 |
| Flood | 6.99 |
| Football Crazy | 16.99 |
| **Formula One Grand Prix** | **22.99** |
| Fun School 2 | 8.99 |
| Fun School 3 | 16.99 |
| Fun School 4 | 16.99 |
| **Games 92 - Espana** | **19.99** |
| Ghostbusters 2 | 6.99 |

| | |
|---|---|
| Ghouls and Ghosts | 6.99 |
| G 0106 | 16.99 |
| Godfather Action | 19.99 |
| Godfather Adventure | 24.99 |
| Gods | 6.99 |
| Golden Axe | 6.99 |
| Graham Gooch* | 19.99 |
| Graham Taylor | 16.99 |
| Gruzeme* | 16.99 |
| Gunship 2000 (1 Meg)* | 22.99 |
| Guy Spy* | 19.99 |
| Hagar | 16.99 |
| Hanequin | 16.99 |
| Harpoon | 19.99 |
| Harpoon Battleset 2 | 8.99 |
| Harpoon Battleset 3 | 8.99 |
| Harpoon Battleset 4 | 13.99 |
| Harpoon Scenario Editor | 13.99 |
| Head over Heels | 6.99 |
| Heart of China (1 Meg) | 22.99 |
| Heimdall (1 Meg) | 19.99 |
| Hitchikers Guide | 7.99 |
| Hook | 16.99 |
| Hook | 16.99 |
| Hunter | 16.99 |
| Ian Botham | 6.99 |
| Indy Jones - Atlantis Action* | 16.99 |
| Indy Jones - Atlantis Adv. (1 Meg)* | 24.99 |
| Int Sports Challenge | 19.99 |
| Ishar | 19.99 |
| Jack Nicklaus Clip Art | 8.99 |
| Jack Nicklaus Extra Courses | 9.99 |
| Jack Nicklaus Golf | 12.99 |
| Jack Nicklaus Unlimited Golf (1Meg) | 19.99 |
| Jaguar XJ220 (1 Meg) | 16.99 |
| Jimmy Whites Snooker | 19.99 |
| John Barnes (1 Meg) | 16.99 |
| John Madden | 16.99 |
| Keys to Maramon* | 19.99 |
| Kick Off 2 (1 Meg) | 12.99 |
| Kick Off 3* | 16.99 |
| Kick Off 3* | 16.99 |
| Kings Quest 5 (1 Meg) | 22.99 |
| **Knights of the Sky (1 Meg)** | **22.99** |
| K O 2 - Final Whistle | 9.99 |
| K O 2 - Giants of Europe | 7.99 |
| K O 2 - Return to Europe | 7.99 |
| K O 2 - Winning Tactics | 5.99 |
| Laser Squad 2* | 16.99 |
| Last Ninja 2 | 6.99 |
| Leander | 6.99 |
| Leather Goddess | 7.99 |
| Leather Goddess | 7.99 |
| **Legend** | **19.99** |
| Leisure Suit Larry 5 (1 Meg) | 26.99 |
| Lemmings | 16.99 |
| Lemmings Construction Kit* | 16.99 |
| Lemmings Data Disk | 13.99 |
| Links | 19.99 |
| Lombard Rally | 6.99 |
| Lure of the Temptress | 19.99 |
| M1 Tank Platoon | 16.99 |
| Magic Pockets | 16.99 |
| Man Utd. Europe | 16.99 |
| Match of the Day* | 16.99 |
| Mega Fortress (1 Meg) | 22.99 |
| Mega Sports | 19.99 |
| Mega Traveller 1 (1 Meg) | 19.99 |
| Mega Traveller 2 (1 Meg) | 19.99 |
| Mega Traveller 2 (1 Meg) | 19.99 |
| Microprose Golf | 22.99 |
| Microprose Soccer | 6.99 |
| Midnight Resistance | 6.99 |
| Midwinter 2 (1 Meg) | 22.99 |
| Might & Magic 3 (1 Meg) | 22.99 |
| Moonstone (1 Meg) | 19.99 |
| New Zealand Story | 6.99 |
| Nigel Mansell World Champ* | 16.99 |
| Operation Harrier* | 16.99 |
| Operation Thunderbolt | 6.99 |
| Operation Wolf | 6.99 |
| Orik | 19.99 |
| Outrun | 6.99 |
| Pang | 6.99 |
| Paperboy 2 | 16.99 |
| Parasol Stars | 16.99 |

| | |
|---|---|
| PGA Golf Courses | 9.99 |
| PGA Tour Golf | 16.99 |
| **Pinball Dreams** | **16.99** |
| Plan 9 from Outer Space | 16.99 |
| Pool | 6.99 |
| Pool of Radiance (1 Meg) | 19.99 |
| Pools of Darkness (1 Meg) | 19.99 |
| Populous | 6.99 |
| **Populous 2 (1 Meg)** | **19.99** |
| Powerdrift | 8.99 |
| Powermonger | 19.99 |
| Powermonger Data Disk 1 | 9.99 |
| **Premiere (1 Meg)** | **19.99** |
| Predator | 6.99 |
| R-Type | 6.99 |
| Railroad Tycoon (1 Meg) | 22.99 |
| Rainbow Collection | 13.99 |
| Rainbow Islands | 6.99 |
| Rambo 3 | 6.99 |
| Rampart | 16.99 |
| Reach for the Skies* | 22.99 |
| Realms (1 Meg) | 19.99 |
| Red Heat | 6.99 |
| Red Zone | 16.99 |
| Rise of the Dragon (1 Meg) | 22.99 |
| Risky Woods | 16.99 |
| Road Rash* | 19.99 |
| Robin Hood | 16.99 |
| Robocod | 16.99 |
| Robocop | 6.99 |
| Robocop 2 | 6.99 |
| Robocop 3 | 16.99 |
| Rocksport* | 19.99 |
| Rock Star ate my Hamster | 4.99 |
| Rome AD9 | 16.99 |
| R-Type 2 | 16.99 |
| Second Samurai* | 16.99 |
| **Secret Monkey Island 2** | **24.99** |
| **Sensible Soccer** | **16.99** |
| **Shadow Lands** | **19.99** |
| Shadow of Beast 3 | 19.99 |
| Shadow Warriors | 6.99 |
| Shinobi | 6.99 |
| Shoot Em Up Con Kit | 19.99 |
| Shuttle* | 24.99 |
| Silent Service 2 (1 Meg) | 22.99 |
| Silkworm | 6.99 |
| Sim Ant* | 22.99 |
| Sim City + Populous | 19.99 |
| Sim Earth* | 19.99 |
| **Space Crusade** | **16.99** |
| Space Crusade Data Disk | 9.99 |
| Speedball 2 | 16.99 |
| Streetfighter 2* | 16.99 |
| Strider | 6.99 |
| Strider (1 Meg) | 16.99 |
| Strip Poker 2 + Data | 8.99 |
| Stunt Car Racer | 6.99 |
| Super Hang On | 6.99 |
| Super Tetris | 16.99 |
| Switchblade | 6.99 |
| Switchblade 2 | 16.99 |
| Team Yankee | 19.99 |
| Team Yankee 2 (1 Meg) | 19.99 |
| Teenage Mutant Turtles 2 | 16.99 |
| Terminator 2 | 16.99 |
| The Immortal (1 Meg) | 16.99 |
| **The Manager** | **19.99** |
| Their Finest Hour (1 Meg) | 19.99 |
| Thunderhawk | 19.99 |
| Toki | 16.99 |
| Trivial Pursuit | 6.99 |
| Turbo Challenge | 16.99 |
| Turbo Challenge 2 | 16.99 |
| Turbo Challenge 3* | 16.99 |
| Turbo Outrun | 6.99 |
| Turrican 2 | 6.99 |
| TV Sports Baseball* | 16.99 |
| Ultima 6 (1 Meg) | 19.99 |
| Utopia + Data Disk | 19.99 |
| Vikings* | 16.99 |
| Wing Commander (1 Meg) | 16.99 |
| Wizkid | 16.99 |
| Wolf Child | 16.99 |
| Zool-Station | 16.99 |

VISION, SOUND AND ANIMATION
FROM ROMBO
THE WORLDS BIGGEST AND BEST

## MEGAMIX MASTER — SOUND SAMPLER

### Real Time Digital Effects

**OVERVIEW**

MEGAMIX master is a high specification, low cost digital effects cartridge that plugs into your printer port. Special stereo effects such as echo can be added in real time. You will find Megamix Master's performance and ease of use unmatched by any rival. Just plug it in and go...

**Some of the Features include:**
- Thru port for printer or digitiser.
- Fully multi-tasking.
- Intigrated 3.5mm jack plug and lead.
- 3D Animated Icons.
- Compatible with Workbench 2.0.
- Both Mono and Stereo samples.

**Real Time Digital Effects include:**
- ECHO-Adds echo to incoming sound.
- PHASER-Applies space age phase shift.
- SYNTH-Adds user definable effects.
- DIRECT-Plays incoming sound direct.
- VIBRATO-Rapidly varies frequency.
- STEREO ECHO-Adds digital delay between L & R speakers.

**Other Menu's include:**
- REMIX (with many sampling features).
- EDIT (for sample manipulation).
- DISK (for saving and loading etc).

Workbench 2.00 Compatible.

### £39.95 Inc.
JUST LOOK AT THE SPEC.

## VIDI AMIGA 12 — IMAGE CAPTURE

### 4096 Colour Images

**OVERVIEW**

Vidi-Amiga 12 is the ultimate low cost colour digitiser for Amiga. There are no filters and no separate RGB splitter. Colour images can be captured in less than a second. Mono images are grabbed in real time. Fully compatible with any video source.

**Some of the features include:**
- Multi-tasking software.
- Advanced error diffusion stippling.
- Cut and Paste with masking.
- Capture into a user definable stencil.
- Load and save IFF ILBM and ANIM files.
- Grab frames flipped on a X or Y axis.
- Multi frame store with animated playback.
- Composite or S-Video input.

**Display in the following resolutions:**

| PAL | NTSC |
|---|---|
| 320 x 256 | 320 x 200 |
| 320 x 512 | 320 x 400 |
| 640 x 256 | 640 x 200 |
| 640 x 512 | 640 x 400 |

**Supports several screen modes:**
- 4096 HAM Mode.
- 64 EHS mode.
- 32 colours.
- 16 colours.
- 16/8/4/2 shade mode.
- 262000 HAM-E mode.
- 256 colour EREG mode.
- Overscan/Interlace/Hi-Res.

**Image Processing and Enhancement:**
Sharpen/Smooth/Negative/Quantise
Thresholding/Solarization/Mosaic
Edge Detection/Brush selected area.

Workbench 2.00 Compatible.

### COLOUR IMAGE CAPTURE FOR ONLY
### £99.95 Inc.

Rombo Ltd., Kirkton Campus, Livingston
SCOTLAND EH54 7AZ
Tel: (44) 0506-414631 Fax: (44) 0506-414634
Sales Hotline: (44) 0506-466601

## TAKE 2 — ANIMATION

### Professional Animation with Optional Image Capture

**OVERVIEW**

Take 2, as used in "Rolfs Cartoon Club" is the ultimate multi-level animation package. Offering up to 6 levels of animation and 4 levels of sound. Images are drawn within your favourite art package then loaded into Take 2 as IFF files. If you own Vidi-Amiga you can digitise your drawings within Take 2. We believe its much easier to draw with a pencil than with a mouse.

**Some of the features include:**
- Compatibility with all Amigas.
- Supports 2, 4, 8, 16 and HAM colour.
- Loads or saves IFF or ANIM files.
- Traditional animators dope sheet.
- Play back up to 25 frames per second.
- Dubbing or simulated onion skin.

...and lots more !!!

**Applications:**
- Traditional animation.
- Storyboards.
- Product presentation.
- Line tester.
- Stop frame animation.
- Cartoon productions.
- Education.
- 3D object animation.
- Video production.

Workbench 2.00 Compatible.

### £49.95 Inc.
AS SEEN ON TV

---