Issue 152 • 5th October 1991 • £1.50

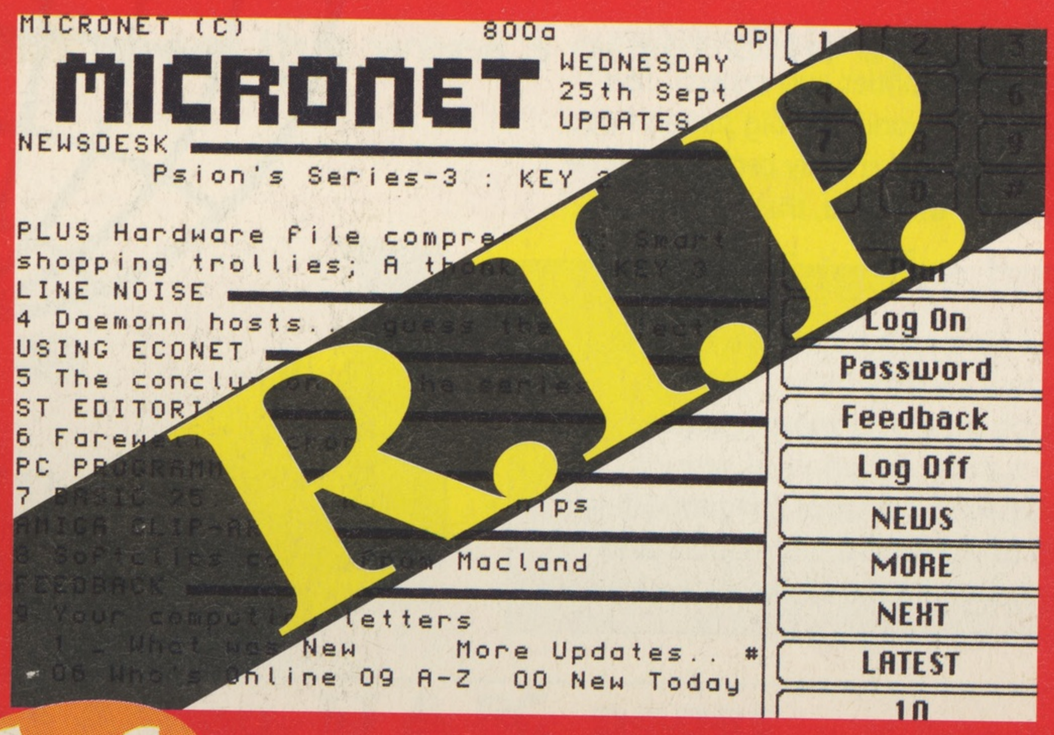
NOW WITH PACKED DISK! FOR YOUR
- AMIGA
- ST, &
- PC

It's crammed so tight...

NEW COMPUTER EXPRESS

FIRST NEWS • FIRST REVIEWS • BEST BUYS • YOUR WEEKLY GUIDE

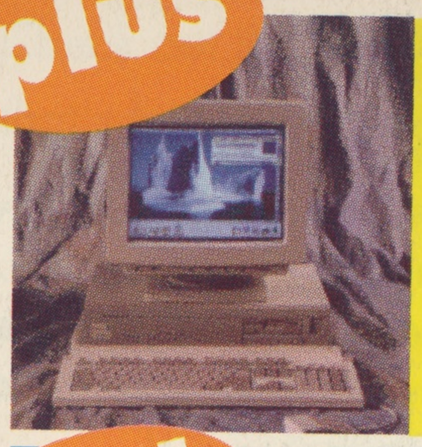
MICRONET KILLED OFF!



So what should you do if you're one of its 12,000 subscribers?

– Telecom suggests you sign up with its biggest rival!

plus

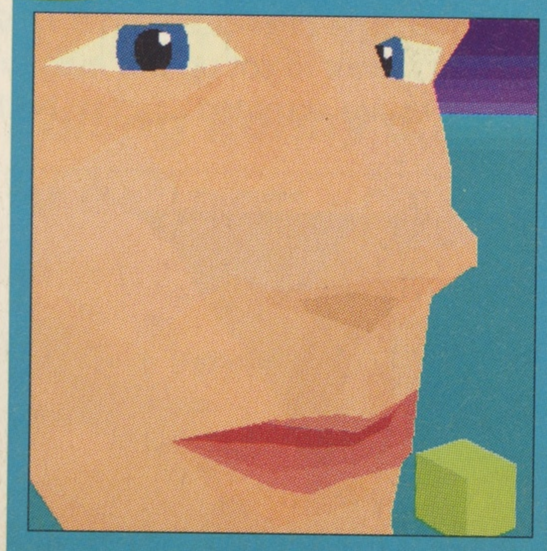


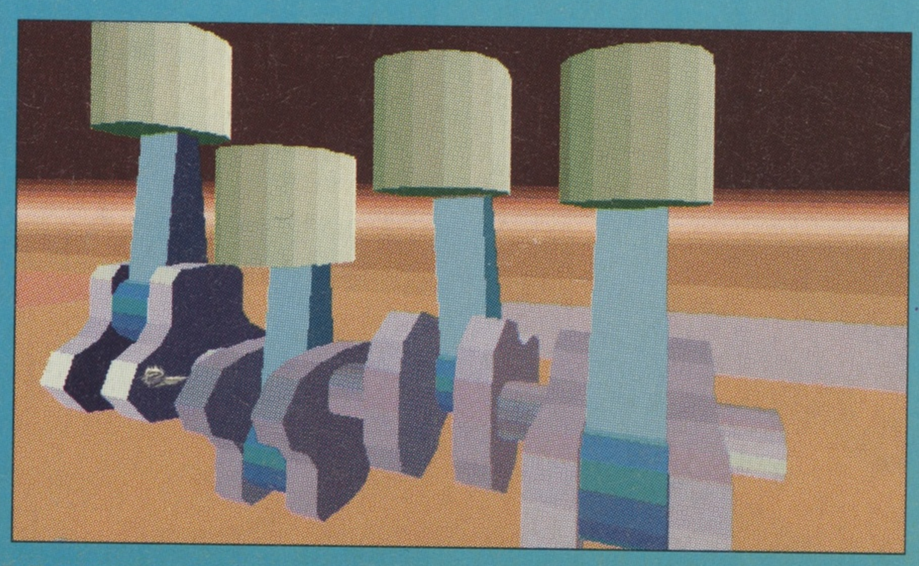
ACORN'S NEW A5000

– A stonking bit of kit, shame about the price?

and

VIRTUAL





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ST

• ANI ST

The animation package that adds new life to your graphics

PC

• SMARTART

82 essential clip art images to jazz up your DTP creations

Inside: all you need to know to get up and running!

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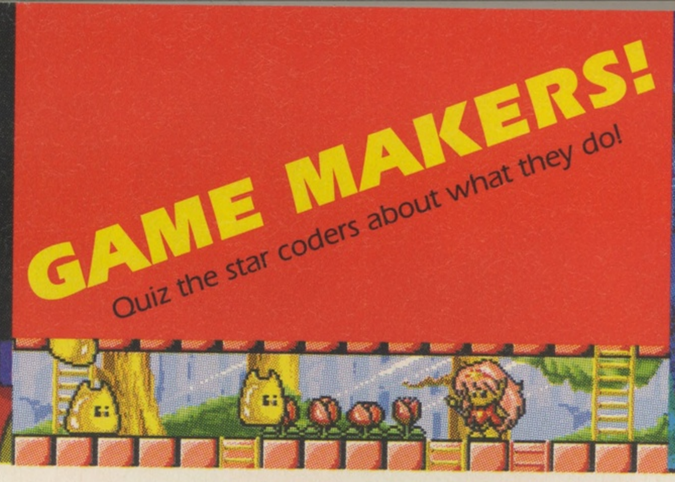



Discover the Amiga at its best!

Amiga Format presents the greatest computer show this year. Earl's Court II, November 15-17 1991: be there!

Just look at what there is!

Christmas hits Ocean, Psygnosis, Mindscape, Electronic Arts, Virgin, Microprose, Gremlin, Mirrorsoft: all the leading software houses will be at the Show, with massive stands. This'll be your chance to see and **play the year's biggest games** – exclusive to the Show.

CDTV City what is CDTV? What can you do with it? What software can you buy? Discover what **the future of computing** holds in the Show's unique CDTV City.

Christmas Shopping Mall All the best games bargains are here!

Multimedia Theatre Commodore has attracted some of the biggest names in computing to **demonstrate their stuff**. See what the Amiga is *really* capable of!

Games Arcade Set your **eyes on boggle mode**: you won't believe how many incredible games you'll be able to play.

The game makers Imagine hearing direct from the leading games' programmers: just how do they do what they do?

And also... Fistfuls of competitions. Hosts of celebrities and experts. Jaw-droppingly wonderful big screen video. Virtual Reality (virtually certain). Creche. And a **lot of noise**, that's for certain...

Faxbox

Where Earl's Court II,
When November 15-17 1991
Times 9am-5.30pm November 15-16; 9am-4pm November 17
Cost Adults £6, under 14s £4
(see the special Early Booker Offer)

Who'll be there? Commodore, New Computer Express, Amiga Format, Amiga Power, Amiga Shopper, all the major games producers, a myriad of serious publishers, loads of bargain-offerers, lots of hardware developers and everyone into the world of Commodore.

AMIGA FORMAT presents

World of Commodore

15 - 17 November 1991

Commodore

EARLY BOOKER OFFER: SAVE TIME, SAVE MONEY

Be smart. You know this **World of Commodore** will attract tens of thousands of people. And you know what that means: queue City. So avoid all the foot-shuffling, hanging-around-for-ages start to the Show by booking your tickets early.
And you'll even **save money**! Bit of a barg, really. Do it now, otherwise you'll only forget and then regret it later when you're really cold and you can't wait to get inside and – (Snip! - Ed)

YES I would like to have my tickets early, avoid all the queues and save £1.05 on every ticket, please.

Name .....

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.....**Postcode**.....

Number of tickets .....Adult (at £4.95 each)

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Total payment

Method of Payment (please circle) Access Visa Cheque PO

Credit Card number .....Expiry date.....

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Please make all cheques payable to **WORLD OF COMMODORE**

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PO BOX 2, Ellesmere Port
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WARNING: This offer closes on 8.11.91
If you don't want to cut up this magazine, photocopies are accepted. **NCE**

You'll think Christmas has come early!



NEW COMPUTER EXPRESS

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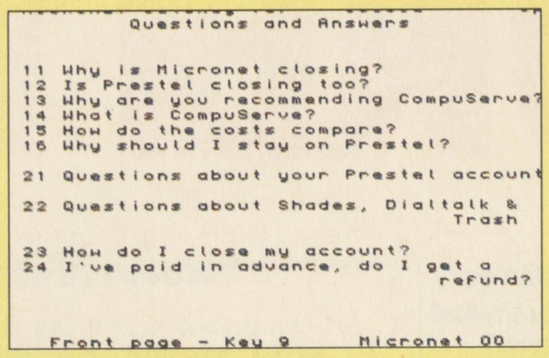

Pulling the plug to go off-line forever

After nearly a decade, the UK pioneer of electronic publishing, BT's Micronet, is to fold. So what should you do if you're one of its subscribers – page 4 & 5

• The end of an era for modem users as Micronet announces its death

THIS WEEK

News: All the latest updates – page 4-7

What's New

A 386SX notebook, a 486SX desktop, security software for both and a 24-pin printer – page 8



• The first relational databse for Windows is here – yes, PC owners, *WindowBase* has arrived!

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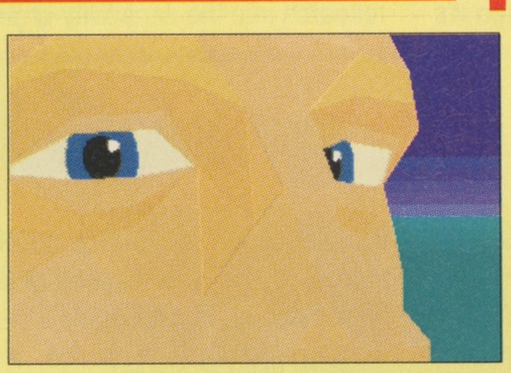
Express software: Page 10 is where you should turn to get this week's great disk up and running...



THE EXPRESS FEATURE



Pushing the high frontiers of VR

Just how far does the Virtual Reality Toolkit push the limits of future PC graphics? – pages 14 &15

• Fancy a bit of this action? - then turn to page 14 or have £15k ready

INSIDE INFORMATION

The Amiga, ST & PC pages

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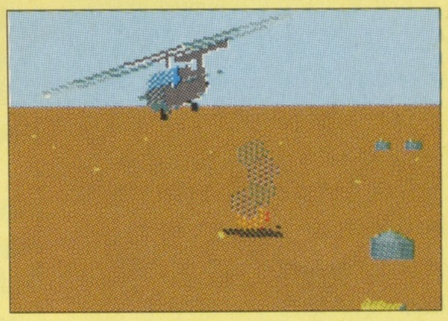

• Thunderhawk for the ST: the best 3D graphics yet?

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EXPRESS...

A CD ROM disk featuring 60 complete Sherlock Holmes stories and over 250 full colour illustrations is now available from Optech. *Illustrated Sherlock Holmes* costs £29.99 and is compatible with PC CD ROM drives and CDTV. Phone 0252 714340.

...SNIPPET

US accuses Japanese of blocking sales

Japanese semiconductor manufacturers are blocking and delaying sales of components to US companies, placing them at a serious disadvantage in the world market, according to a US Government report.

Details of more than 40 examples of Japanese companies witholding equipment and materials are given in the report, which follows an 18-month investigation by the US General Accounting Office (GAO).

It also claims that Japanese companies have forced US firms to buy unwanted goods in order to obtain the products they wanted, a practice which is illegal under US antitrust laws.

The report does not give details of any of the companies involved, at the request of the American companies which are fearful of reprisals. ■

EXPRESS...

Japanese company Fujitsu claims to have launched the world's smallest printer for personal computers. The Joy Writer weighs just 1.1kg and has a footprint of just 12x 3 inches, yet can still print out A4 pages. If that weren't enough, it even folds in half when you want to carry it.

...SNIPPET

Daily on-line service and computer magazine blames

MICRONET'S

After nearly a decade of electronic publishing, Micronet, the daily on-line service and computer magazine published on BT's Prestel videotex service, is to close for good on 31 October.

The service's 12,000 subscribers are being offered a special introductory membership to join CompuServe, the giant American system set up in the UK in 1990, and, ironically, one of Micronet's biggest rivals.

The announcement, made on-line last Tuesday evening, will come as a shock to Micronet users, many of whom believed the service was well-supported and had a secure future ahead of it.

NO NEW CUSTOMERS

BT claims the impending closure follows a strategic decision to concentrate on providing business services on Prestel. Micronet's editorial readily admits, though, that the decision stems from the service's inability to recruit new customers and thereby maintain profits.

"Home users now form a relatively small proportion of our customer base", argued their on-line statement, "and usage by these customers is not at a high enough level to make a major contribution to our costs. We have an obligation to both our customers and shareholders to run an effcient, profitable and cost effective service" .

CUTTING COSTS

Alternatives such as cutting costs by reducing the level of service or significantly raising charges were perceived as being unacceptable to users. BT also considered selling off the service, but no buyers could be found. The future of two other popular areas on Micronet, the on-line multi-user games *Shades* and *Trash*, looks slightly brighter. The service providers behind them could both continue independently, although it's too early to say whether this will be the case.

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          Questions and Answers

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21 Questions about your Prestel account

22 Questions about Shades, Dialtalk &
                                  Trash

23 How do I close my account?
24 I've paid in advance, do I get a
                                  refund?
```

• Micronet users first heard the news when they logged on last Tuesday evening. The closure had obviously been planned for some time since the Compuserve offer and in-depth questions and answers pages were already prepared

Commenting on the decision, Paul Needs, Micronet's Executive Editor, told *Express*: "I guess it's a combination of the recession in general and a fall of interest by enthusiasts in using computers for other things apart from games. The magazine, news areas and free software were extremely popular but since 1988, when membership peaked at 21,000, there's been a steady decline."

Asked whether the closure could have been avoided by putting up on-line charges, he added: "We've conducted extensive market research into the sensitivity of pricing – we found our current charges to

Apple launches new scanner and printers

Apple is launching two new high-performance PostScript laser printers and a new version of the Apple Scanner.

Both products were revealed at the Seybold publishing conference this week. The new Apple OneScanner, is a 256 greyscale, 300 dots per inch (dpi) device – the original Apple Scanner could only scan up to 16 grey levels.

The main innovation, though, is the inclusion of the *Ofoto* scanning software. This uses a system of artificial intelligence to optimise scans for the output device used, and produces excellent results.

According to Clive Girling, Apple's Product Manager, the *Ofoto* software means that, "scanning is a one-click operation. There's no more fiddling about with lots of different parameters – the scanner does it all for you."

Apple's OneScanner is expected to cost just over £1,400, although a firm UK price has not yet been decided.

DOUBLE SPEED

Along with the scanner, Apple has produced two new high-speed PostScript laser printers, the LaserWriter IIf and LaserWriter IIg. Based on a 20MHz 68030 processor, the IIf is claimed to be up to twice as fast as Apple's current top-of-the-range device, the IINTX. This is partly due to an upgraded processor, and also the fact that the printer contains PostScript Level 2 – a major revision to the original language.

AT THE TOP END

The LaserWriter IIg is the new top-end device, and is again based on a 68030 processor – this time running at 25MHz. This means that it should run 2.5 times as fast as the IINTX. It comes with 5Mb of RAM as standard, and built-in Ethernet for high-speed networking. It also incorporates Apple's new PhotoGrade technology, which produces exceptionally high quality text and graphics – scanned grey scale images are remarkably clear when output, and are a great improvement on the results from normal laser printers.

Again, firm UK pricing is still undecided, but the LaserWriter IIf should retail for around £3,300, while the IIg will be around £4,230. Dial 100 and ask for Freefone Apple.

Dial a Dizzy password

Budget software house Codemasters is to release a PC version of *Fantasy World Dizzy* into the Public Domain, but if you want to play the whole game then there's a catch.

You can only play the game for five minutes, at which point it freezes and you have to phone an 0898 number to find out the pass code to progress further. Once you have connected you have to tap in a four digit authorisation code which you have been given by the game. You are then told the access code.

The same thing happens 15, 30 and 60 minutes into the game, so a keen player could run up a sizeable phone bill.

However, Codemasters' MD David Darling, says: "We tried to make it work out so that someone who plays the game extensively won't pay more than if we'd sold it through the normal software channels."

Codemasters decided to try this experiment because although *Fantasy World Dizzy* has sold 600,000 copies in other 8 and 16-bit formats, the company reckons the PC budget market is not sufficiently developed to make a normal release viable.

Codemasters has used 0898 numbers before to provide 'Tiplines' for its games, and they have proved lucrative. If this experiment is successful, it could release other PC games into the Public Domain. ■



• *Fantasy World Dizzy*: five minutes into the Public Domain version and you'll have to pick up the phone

PC accounting on the cheap

***TAS Books* is a new PC accountancy package which is being marketed in an unusual way.**

Instead of paying for a full-priced version at £640 (single user), £940 (two to four users) or £1,240 (five users plus), manufacturer Megatech is offering a £100 version. This contains the full working software and documentation, but the user cannot insert their name and address until they have sent Megatech the remaining money and licence.

Megatech says the software is ideal for small companies making their first computerised accountancy purchase: "It's very easy to use, and guides the user through the problems of generating their first set of automated accounts," says Theo Van Dort, Megatech's MD. Call 081-874 6511. ■

closure on its inability to attract new customers

LAST DAYS

COVER STORY

```
        Why is Micronet closing?

We have never been able to recruit
enough customers to fully cover the
costs of providing the service.

With 12,000 registered users Micronet
is easily the largest on-line service
in the UK specialising in
microcomputing. However this number is
still not sufficient to maintain a cost
effective and profitable service
designed principally for home users.

The alternative options of cutting
costs by reducing the level of service
or significantly raising tariffs were
not considered acceptable for our
customers.
```

• The terse announcement explaining the reasons for closure – 12,000 subscribers just isn't enough. How many monthly users would it have needed to stay afloat? 25-30000 according to a BT spokesman. At £10 a month per subscriber, you can work out the annual running costs yourself

be at the optimum level."

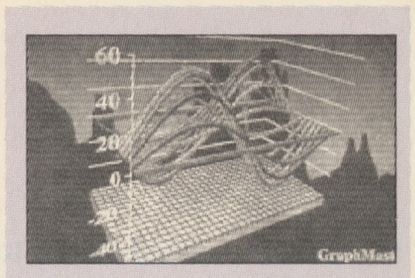
Needs remains convinced, that there is still demand for such a service: "There's still plenty of room for developments in on-line publishing, perhaps our best achivement was to show how a good electronic news service could be provided on a day-to-day basis. Unfortunately though, BT can't continue to operate it given its infrastructure costs and the views of its shareholders." ■

WHAT IS COMPUSERVE?

CompuServe is the world's largest provider of on-line services for personal computer users with 835,000 members worldwide. Offering a similar range of services to Micronet, it costs approximately £3.60 per hour, depending on what speed you access at, and a further £2.70 per hour if you live outside the London local call area. This compares to th e Micronet subscription rate of £30 a quarter including unlimited off peak use. Neverthess, Micronet believes it is the best alternative for many of its members – presumably those members living in London who spend less than three hours a month on-line. Existing Micronet subscribers not wishing to take up the CompuServe offer are entitled to a refund. Call CompuServe on 0800 298458 or Micronet on 0442 237385

THE COMPUSERVE OFFER

The proposal being made to subscribers to join CompuServe is regarded by Micronet as an attractive one which ' allows them to have a good look at what CompuServe has to offer at little cost.' Though it adds that if its members are interested in business and financial services they should stay on Prestel whether or not they decide to join CompuServe. What the deal involves is a free introductory membership worth £22.95, free usage credit of about £20, free telephone support, a free monthly magazine and free connect time to use the special Micronet meeting areas in CompuServe's UK computing forum during October.



• *Graphmaster*: You can work in 3-D and rotate graphs to get an easier view of the results

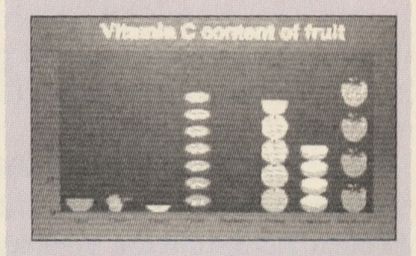
Apple charting

***Graphmaster* is powerful chart and graph creation package for the Mac which takes full advantage of System 7.0's capabilities, according to its designer Visual Business System (VBS).**

It can create charts in 2D or 3D and provides on-screen rotation, perspective and re-sizing controls. It has a palette of 120 colours and 32 different patterns fo creating further shades. It can import data from a wide variety of spreadsheets and databases and the resulting graphs can be fed into desktop publishing packages.

Despite its advance features, it is very easy to use, claims VBS. All functions are accessed through pop-up drawing tools and pull down menus. If you're still stuck, it provides on-line balloon help.

***Graphmaster costs* £195. VBS is on 0753 821234. ■**



• *Graphmaster's* unique Pictogram editor enables you to create charts using pictures imported from outside the program

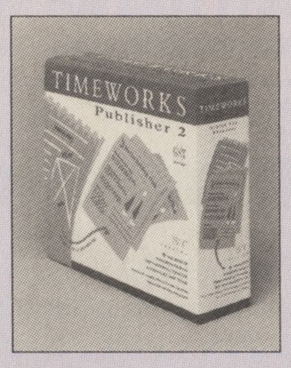
Timely publishing

For budding ST fanzine editors and newsletter writers GST has launched an upgraded version of its popular *Timeworks Publisher ST* desktop publishing (DTP) package.

Version 2 features a new range of bitmapped fonts in a variety of point sizes and styles, automatic text flow, text wrap around irregular graphics and customisable page sizes. To make the program easier and quicker to use GST has included a simplified installation program and keyboard shortcuts.

The program will run on the Atari ST, STE, Mega ST and TT. Text can be imported from most other leading DTP packages including *WordPerfect*, *WordStar* and *WordWriter*. Files created in the program are interchangeable with the PC version of the program.

***TimeWorks Publisher ST 2.0* will cost £129. Contact Electric Distribution, on 0480 496666. ■**



• *TimeWorks*: a low-cost, but fully featured DTP package, ideal for the home user

Classic scrolling adventure games

Three classic Magnetic Scrolls adventure games are now available in one compilation pack from Virgin.

Available for the PC, ST, Archimedes and Amiga and The *Magnetic Scrolls Collection Volume 1* features *Fish*, *Corruption* and *The Guild of Thieves*.

Each games works in a full multi-tasking Windows environment, can be played with the minimum of typing and feature extensive on-screen help and animation.

The compilation comes with a free colour Fish identifier, a Guild of Thieves map and a Corruption audio tape packed with clues.

Prices range from £29.99 to £34.99 depending on the version and all are out now. ■

Wordstar for Windows launched at Business Show

Two prominent word processors for Windows were among the products on show at the *Daily Telegraph*-sponsored Business Computing Show.

A spokeswoman for the organisers said that 30,000 visitors attended the show, which opened on 17 September at Earls Court – 9,000 up on last year. Over 300 companies were exhibiting.

The show saw the official launch of *WordStar for Windows,* the latest version of the best-selling word processor package, *WordStar*. The program supports full font rotation, all major graphics formats and printing in 16.7 million colours. Requiring 2Mb of RAM, the package costs £399. Existing users can upgrade for £99.

Asked how it compares with *WordPerfect for Windows*, a company spokesman retorted: "It's available now! "

WordPerfect for Windows did put in an appearance, however. WordPerfect held a presentation hosted by none other than Captain James Kirk of the Starship Enterprise. Like *WordStar for Windows* it looks more like a fully-fledged DTP package than a humble word processor, and although it currently needs 2Mb of RAM, the company is hoping to get this down to 1Mb. It is due out at the end of October.

A Hampshire-based company, Business Computing Consultants, was exhibiting its 'Office in a Briefcase'. This includes a 386/SX Notebook Computer with 40Mb hard disk, 2Mb RAM, MS-DOS 5.0, VGA, bubble-jet printer, business software, a pocket modem and an in-built power supply. All this in a case weighing a mere 16lb and retailing for under £3,000.

The Show also saw the first public viewing of a new Canon colour bubble-jet printer. It is not due until early next year and meantwhile, Canon is working on full driver support for all major software applications. The printer can be used on coated and recycled paper and on A3 lightweight card. It prints in over 16 million colours and supports all fonts – all for only £1,995.

Other presentations of note included the Royal Bank of Scotland's new Home and Office Banking Service and the Data Protection Registrar, whose job has mushroomed since the 1984 Data Protection Act. It was handing out no less than eight guidelines reminding people of their responsibilities and rights under the act.

Contact WordStar International on 081-643 8866, Canon on 081-773 3173 and Business Computing Consultants on 0962 732070. ■



• *WordStar for Windows* had its official UK launch at the Business show, beating its rival, *WordPerfect*

Chaotic computer

A Japanese scientist claims to have achieved a major step towards true thinking machines with the development of a new concept in neurocomputing based on Chaos Theory.

Professor Inoue of Kagashima University has equipped his neurocomputer with a software-based 'Chaos Oscillator'. Chaos Theory is based on the idea of order within disorder. The Chaos Oscillator continually compares two mathematical formulas to reach a conclusion. This enables it to operate more like the human brain, claims the Professor.

He is planning to incorporate the Chaos Oscillator at chip level at which point it should become crucial in the development of artificial intelligence. ■

EXPRESS...

Commodore is sponsoring a section of the London Philharmonic Orchestra's international series of concerts to the tune of £120,000. The Series runs from 25 January to 25 February 1992 and will include Bach's St Matthew's Passion and Simpson's 9th Symphony.

...SNIPPET

Mint Mac conditions

Symantec has launched a System 7.0-compatible version of its data recovery disk management utilities package for the Macintosh.

SUM II version 2.1 features utilities such as *Disk Clinic, Shield, Recover, Back-Up, TuneUp, Partition, Encryption* and *QuickCopy,* all designed to help maintain Mac hard disks in peak working order.

Priced at £99, or £30 for an upgrade for existing SUM II users, SUM II 2.1 is available now. Contact Symantec on 0628 776343. ■

Acorn launches the most powerful personal computer ever

FASTER, CHEAPER, BETTER: THE A5000

Acorn has launched a new 32-bit home computer, the Acorn A5000 which it aims to sell to schools, 'power home-users' and specialist niche markets such as publishing, training and imaging.

At only £1,499 it includes a 40Mb IDE hard disk, 2Mb of RAM (expandable to 4Mb) and a super-VGA multi-scan monitor. It also has a new operating system (OS), RISC OS 3, which offers considerable improvements on the original RISC OS 2.

The A5000 is significantly cheaper than the machine it replaces, the A440/1 (£2,044 with multi-sync monitor) while offering a much greater speed and the new OS.

IMPROVED IMAGES

The new machine runs at 13 MIPS (Million Instructions Per Second) using the go-faster ARM3 version of its proprietary RISC processor. The ARM3 processor offers a three-fold speed enhancement and the A5000 comes with new hardware to improve the screen image of the previously slightly blurry outline fonts. The overall impression is a machine which is much clearer and faster than the Archimedes. Significantly, that name and logo have been dropped – the new machine is an Acorn A5000 with an Acorn logo.



• The Acorn A5000 contains a new operating system, RISC OS 3, with more than 300 enhancements

The new operating system offers around 300 enhancements. One called Squash enables files to be compressed as they are saved to disk and expanded as they are loaded. The whole process is automatic and transparent to the user.

The OS will also format, read and write from PC and Atari format disks so that data can be transferred more easily to and from the Archimedes format. High density 2Mb floppies can be used in all formats.

One of the main problems with Acorn machines which do not have a hard disk, is that the operating system has to load various modules such as C-library routines and fonts from a system disk. This means disks keep on having to be swapped. The new OS keeps all these modules and three basic outline fonts in ROM so that disk-swapping should be a thing of the past.

AT WHAT PRICE?

The new OS ROMs will be available only for the A5000 for the time being, though there will be an upgrade for existing Archimedes users in "the first quarter of 1992". No price has been fixed, but the four 2Megabit ROMS will not be cheap.

The price of the new machine makes the remainder of Acorn's range look more inflated than ever. But since the arrival of the A5000, the top of the range A540, which also has ARM3, has been cut by £500 to £2,495.

Acorn computers will not be reducing the price of the A3000 home computer to compete with the Amiga and Atari ST either. It will stay fixed at £599 plus monitor until after Christmas at the earliest. ■

DFI puts the PC in the home



• Rather like Amstrad and its new 'Games PC', DFI reckons that its NetPC is going to make the 286 PC more popular as a home computer

DFI reckons that it is putting 286 PC technology within the reach of most home users with the launch of its NetPC range.

For £349 you get a 16MHz 286 processor, 1Mb of RAM and an 80-key keyboard, but no hard disk or monitor. For a 40Mb hard disk version you will have to pay £519, and £90 if you want a mono VGA monitor. A model specially designed for networks is also available.

All models feature a 16-bit expansion slot, two serial ports, one parallel port, a mouse port and a 3.5-inch disk drive. They are all compact and come with their own carrying cases.

"The price of the NetPC will see home usage of PCs increasing dramatically," says Sherman Lai, MD of the Taiwanese company, adding: "The NetPC runs at 16MHz so it provides high performance which meets the requirements of

Revolutionary motherboard

Compaq is launching a new family of PCs which use a revolutionary form of motherboard construction.

All the computers in the Deskpro/M series have all their major components – the processor, video graphics controller, memory expansion, etc, – placed on separate boards as opposed to all being on one board as with traditional motherboard design.

Compaq calls it Intelligent Modularity and says the advantage of this approach is that each element can be easily upgraded or replaced. It also claims that any user who wants to upgrade their processor will receive credit if they return their old processor.

The computers also feature a custom designed memory controller which will automatically adjust to new processor speeds.

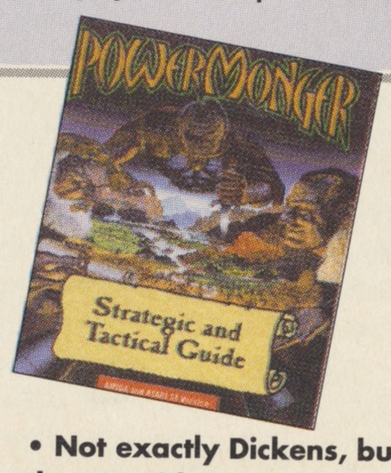
They are available in four processor modules: 25MHz 80386, 16MHz 486SX, 25MHz 486 and 33MHz 486. Prices range from £3,280 to £4,930.

For more information contact Compaq on 081 332 3000. ■

Novel gaming guide

If your having problems battling your way through *Powermonger*, then what you need is the *Powermonger Strategic and Tactical Guide* from Electronic Arts.

Priced at £7.50 (just 49p less than it would cost you to buy the game's predecessor, *Populous*) the book contains 80 sepia-tinted pages. Rather than being full of dull charts and tables, the book is written in the form of a novel, though strangely no author is credited. It will be in the shops by mid October. ■



• Not exactly Dickens, but then *David Copperfield* wouldn't help you beat marauding enemy armies

EXPRESS...

NCR shareholders have given their approval to the company's merger with AT&T. 82.2 per cent voted in favour of the proposal according to the company. NCR shareholders will receive 2,893 shares of AT&T stock for each NCR share they hold.

...SNIPPET

IS THE MARKET READY FOR A GAMES PC?

This Christmas, Amstrad aims to take a considerable slice out of the Amiga market by tempting shoppers with its new PC5286 Games Pack. Amstrad's marketing manager, Malcolm Miller, tells Dave Roberts why the company is taking this gamble

In a climate where PCs are increasingly being touted by the industry as the games machines of the future, Amstrad has leapt in with a 286-based PC aimed squarely at the home market.

The PC5286, with a 40Mb hard drive and 1Mb of RAM, will come in a bundle with a 14-inch colour monitor, a joystick, a mouse, two external speakers and three games – *Prince of Persia*, *Links Golf* and *F-15 II* – and will cost £899 (plus VAT).

The move is a considerable gamble for the company, especially as its previous foray into this market, with the PC200, was not successful. Amstrad's marketing manager Malcolm Miller reveals why the company is more confident this time around.

NCE: People in the trade are talking about a games PC as a new concept but, of course, Amstrad tried it before in 1988 with the PC200. What went wrong?

Malcolm Miller (MM): The problems were the timing, the machine's capabilities, the non-availability of software and the lack of readiness in the market.

NCE: So what gave you the confidence to try again?

MM: I think about nine months ago, we felt there was an opportunity that wasn't being explored. When you think about the number of games available on the PC and the penetration of PCs in the home in America, and then you look at what's happened in the European market where everything seems to have stopped with the Amiga, it suggests that it is time to move on.

NCE: It sounds as if you think things have become stagnant, to the detriment of the UK market.

MM: Absolutely, the Amiga is an excellent games machine, but it just doesn't go any further than that.

NCE: So do you think that you have launched a new leisure machine?

MM: No, it's a PC first, but it plays games as well – better than any PC before. But it is a PC, not a games PC. Young adults will be buying it as a serious machine that plays games, not a games PC that also happens to be a business machine.

NCE: So were you not tempted to shy away from calling it the Games Pack and perhaps include some utility software?

MM: I think there's enough utility software around – we don't need to start bundling it. I think we have to describe it to the trade as a games machine to grab their attention, but to the public it will always appear as a PC.

NCE: When you were planning the project, did you ever consider using a 386 chip?

MM: No, if we used a 386 chip it would make it too expensive.

NCE: Did you look at bundling a CD drive?

MM: We will do later.

NCE: So we'll see a CD PC Games Pack?

MM: Yes, I think you will.

NCE: Any idea when?

MM: Next year sometime.

NCE: And it will be a similar idea, but with a CD drive instead of a hard drive?

MM: Maybe with both.

NCE: And some bundled CD games?

MM: Maybe, yes.

NCE: One of the key elements of the current offering is the price. Is £899 the absolute cheapest you can put out this sort of bundle?

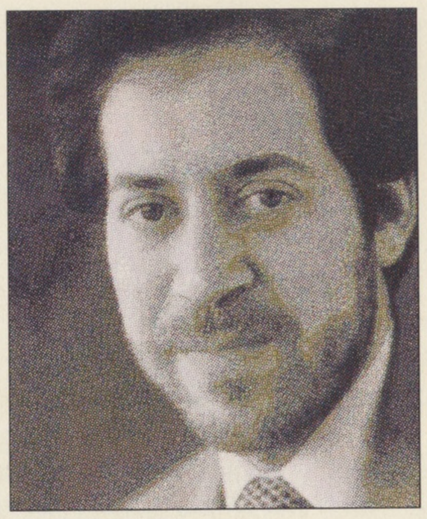
MM: The only way you can get it any cheaper is if you want to lose money on it.

NCE: Some people do believe that you need to get the price closer to the Amiga.

"...the Amiga is just a games chip, it doesn't do anything else..."

MM: The Amiga is priced without a monitor anyway, the Amiga is just a games chip, it doesn't do anything else, it doesn't have a hard drive. It does what it does very well, but it has limitations.

The PC5286 Games Pack has no limitations – it's a very fast PC, a big hard drive, a very good screen. It is not a dressed up Amiga. The Amiga can never do what this can do. This can easily do all what the Amiga does – and more. I actually think that the Amiga is an expensive luxury, a costly toy. The PC5286 Games Pack is a business machine on which you can play great games.



• Malcolm Miller: "I think that all businesses and entertainment products will eventually be based around 286 and 386 chips"

NCE: You obviously see the Amiga as your main target.

MM: I do think that we'll take a slice of the Amiga. People will still buy Amigas, but, yes, the Amiga is the main rival, not other PC manufacturers, although they will emulate us – they always do.

NCE: What sort of sales figures are you predicting?

MM: I can't tell you that.

NCE: But you do see it as a mass market product. The machine that you see as its nearest rival, the Amiga, is now looking at sales of a million.

MM: We won't do that many this year.



• Unlike the entry level Amiga and ST bundles, the PC5286 Games Pack comes complete with a monitor and a joystick

NCE: So who is your target audience?

MM: I think, perhaps surprisingly, a lot of parents are now buying PCs for the home, rather than buying a new audio system, TV or video. And parents know that kids do not use Amigas at school, they use PCs. We are in the age of great economic reality and every purchase has to be justified. The Amiga just satisfies the games player, it's not right for the 90s.

NCE: You sound very confident.

MM: Well, we're not going to suddenly wipe out the Amiga. We'll take a percentage. But I do think that this is the right step and a bold step and one which no other PC manufacturer has dared to take – yet. And I do like the idea of our competitors all jumping in. It's good for our business.

NCE: But surely, this Christmas kids are going to be nagging their parents for Amigas and they're going to be tempted to spend £399 rather than £899?

MM: When kids are driving parents mad and parents are thinking about spending £400 and letting them use one of the TVs, they can quite easily find a good reason to buy a PC, with a monitor, and with enough games to keep the kids happy. The extra use it will get from all the family can justify the expense.

I also think that all business and entertainment products will eventually be based around 286 and 386 chips. There are some things that I know about – and I can't say what they are – that seem to suggest that the whole area of games and entertainment will be dominated by DOS.

And when you think about it, it makes no sense at all to have all these different standards. I think that there will obviously be low-end console products, but generally I think we are entering a process of standardisation. Certainly if you look at other markets, after a bit of a battle, you end up with a standard. ■

WHAT'S NEW

Are you hooked on hardware or even seduced by software? Whatever it is that takes your fancy, it's right here, right now...



•Taran reckons that its 386SX/20 notebook PC offers "all the features of most desk-bound designs"

Take note of Taran

PRODUCT: 386SX Notebook
NAME: The Taran 386SX/20
COMPATIBILITY: PC

Trying to pack as much power into as small a space as possible is a major pre-occupation of all PC manufacturers.

The latest craze is 386SX notebooks which, manufacturers claim, are just like miniature versions of real desktop 386 machines. And Taran is no exception – it claims its new launch, the Taran 386SX/20 is just this. As well as a 20MHz 386SX processor, 40Mb hard disk and VGA graphics, its 100-pin AT bus port means that, 'virtually any expansion device can be used as if this were an ordinary desk-bound 386.' Which is a pretty good boast for a machine that weighs just 2.9kg (around 6.6lbs).

It also includes a 9-pin serial port, a parallel port, a 25-pin connector for a floppy drive and external monitor output. The Taran 386SX/20 can either be run from the mains or an internal battery which lasts up to three hours on one charge.

Price: £1,895
Availability: Now
Target users: Corporate market
Contact: Taran Technologies Ltd: 081-336 1282
Perceived competition: Toshiba, and other producers of quality notebooks.

Printing for all occasions

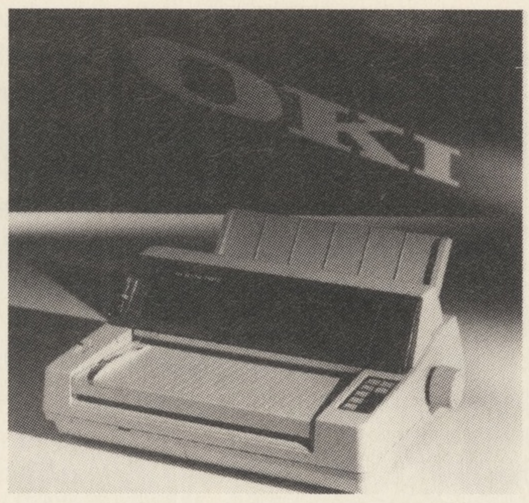
PRODUCT: 24-pin dot matrix printer
NAME: 390-FB
COMPATIBILITY: PC/ST/Amiga

OKI's latest printer, the 390-FB, can handle everything from envelopes and postcards to bank cheques, transparencies and shop receipts, thanks to its adjustable head gap. Luckily, it can handle more mundane things like A4 and A3 paper as well.

This makes it ideal for just about any printing application, from ordinary, everyday word processing to hotel reception areas and airport book-in counters.

The 390-FB has automatic sheet insertion and both forward and reverse feed which means that you can feed in and retrieve paper from the same side. It has a print speed of 75 characters per second (cps) in letter quality mode and 225cps in draft mode. A4 paper can be fed in either landscape or portrait format.

Weighing in at 12kg, it emulates the Epson LQ and IBM Proprinter XL.



• The G90-FB printer from OKI is prepared for anything, that is so long as it involves printing!

Price: £749
Availability: Now
Target users: Anyone who needs high quality printing
Contact: OKI Systems (UK) Ltd: 0800 525585
Perceived competition: Star XB24-15, Epson LQ 860, Brother 1924 & 2524 and other mid range dot matrix printers.

Colour power

PRODUCT: Colour laptop
NAME: ProSpeed 486SX/C
COMPATIBILITY: PC

A combination of a state-of-the-art 80486SX processor and a specially-developed Thin Film Transistor (TFT) screen means that the ProSpeed 486SX/C laptop PC can produce colour graphics of near photographic quality, according to manufacturer NEC.

Its screen can support up to 256 colours out of a palette of 4,096 at VGA resolution and has a viewing angle of nearly 180 degrees.

While a laptop, the machine is not a portable as it has to be operated from the mains; there is no internal battery.

The machine features a 20MHz processor and 2Mb of on-board RAM, expandable to 20Mb. As it's aimed at a graphics-orientated market, it is also supplied with a massive 120Mb hard disk for storing all those graphics files.

Price: £6,000
Availability: Now
Target users: Corporate market, especially businesses using CAD.
Contact: NEC (UK) Ltd: (081) 992 7161
Perceived competition: Sharp PC-8500

Managing Windows

PRODUCT: Relational database for Windows
NAME: WindowBase
COMPATIBILITY: PC

WindowBase **is a relational database management system for Microsoft Windows 3.0 designed to appeal to everyone from the PC novice who just needs to feed in a few figures to the experienced hack who wants to adapt it easily for their own needs.**

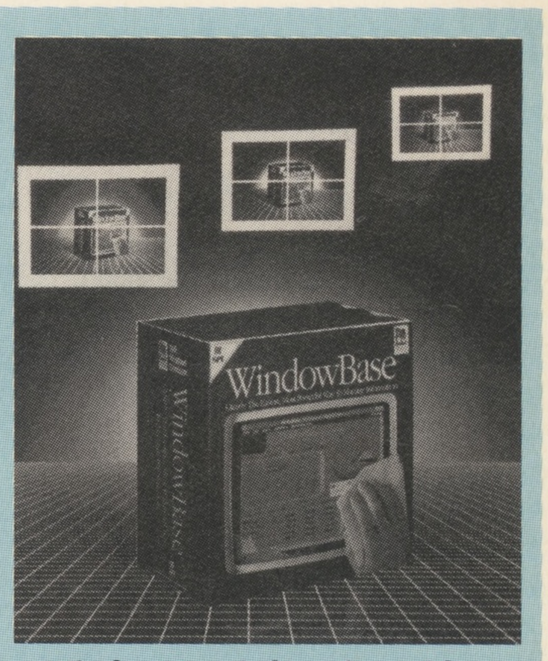
Its comprehensive range of features includes Form Design for developing print outs that resemble forms currently in use, Table Design for customising, viewing or creating database tables and Report design to incorporate database figures into professional-looking layouts for reports. All are accessed from an easy-to-use graphical user interface (GUI) incorporating scroll bars, buttons and customisable pull-down menus.

Dynamic Data Exchange (DDE) enables *WindowBase* users to exchange data with other leading Windows applications such as *Excel* and *Word for Windows*. It also enables the import of graphical images as metafiles, which can then be clipped scaled down or shown full-sized in *WindowBase*.

WindowBase **requires 640K RAM to run (though 2Mb is recommended) and supports all printers supported by Windows 3.0 or higher.**

Soon to be released is an application developers kit which includes a complete set of C and C++ developer tools.

Price: £395
Availability: Now
Target users: All businesses using PCs



• ***WindowBase*** **is bursting with features which it ideal for the single user or as part of a network**

Contact: Software Products International (SPI): (0734) 844081
Perceived competition: None, according to SPI, it fills a gap in the market.

Safe and secure

PRODUCT: PC security system
NAME: PC Guardian Plus
COMPATIBILITY: PC

PC Guardian Plus is more than just a system which stops unregistered users accessing a PC. It comprises magnetic cards, a card reader unit, a board which has to be installed internally and software. The reader unit connects to the serial socket, but enables other peripherals that require that port to be plugged in as well.

Once the system is installed it can be used to lock off either the whole PC or selected areas to unauthorised users. If you want to get to them, then you have to run your card through the card reader. You also use the software and card reader to program the magnetic cards. Additional security may be added by requiring users to type in a PIN number as well.

The system will automatically clear the screen if the keyboard has not been touched for some time, and users will have to run their cards through the reader to start it up again. It can also be used to automatically open up applications or files. Plus a full log of users, and failed attempts to use the PC is also kept on file.

Price: £264
Availability: Now
Target users: All PC users
Contact: Nighthawk Electronics Ltd: 0799 40881
Perceived competition: This is the first of its kind available directly for the consumer.



• **Keep your files hidden from prying eyes with the help of PC Guardian Plus**

CITIZEN

ALWAYS A GOOD IDEA

Silica presents some great offers on the award winning range of high quality matrix printers from Citizen. Each Citizen printer is built in the UK to exacting standards, ensuring superb reliability and output. Our confidence in Citizen's quality is such that we are pleased to include a 2 year guarantee with every printer. Plus, if you buy a Citizen printer from us, we will give you the Silica Systems Printer Starter Kit (worth £29.38), *FREE OF CHARGE!*

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WINDOWS 3.0
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Included with the Silica Starter Kit.

FREE COLOUR KITS
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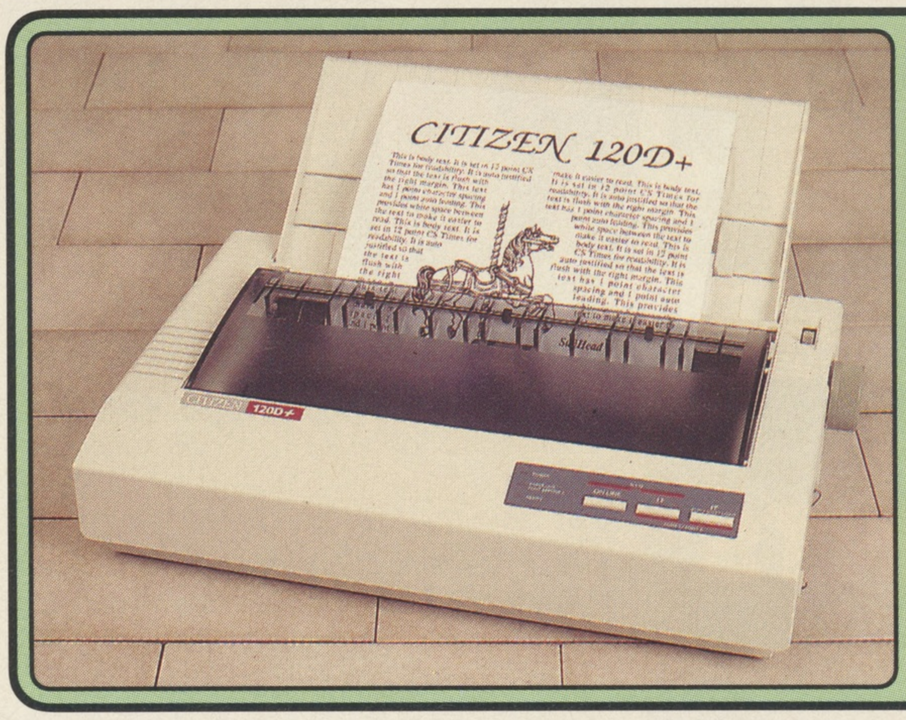
FREE HELPLINE
Technical support helpline open during office hours.

MADE IN THE UK
Citizen printers are manufactured to high standards.

DOT MATRIX & NOTEBOOK PRINTERS



9 PIN PRINTER

144 CPS **80** COLUMN

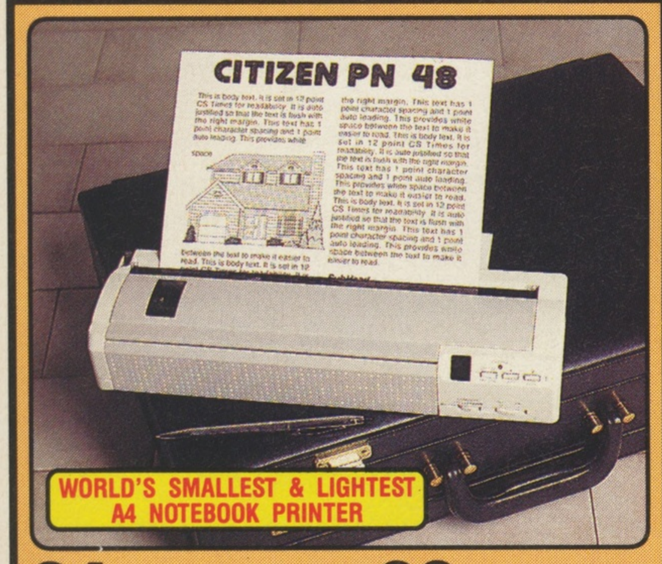
- *Citizen 120D+ - 9 pin - 80 column*
- *144cps Draft, 30cps NLQ*
- *4K Printer Buffer + 2 Fonts*
- *Parallel or Serial Interface*
- *Graphics Resolution: 240×240dpi*
- *Epson and IBM Emulation*
- *Pull tractor & bottom feed*
- *FREE Silica Printer Starter Kit*

RRP: £199
STARTER KIT £25
TOTAL RRP: £224
SAVING: £95
SILICA PRICE: £129

The 120D is supplied with a parallel interface. If you require a serial interface instead, please state when placing your order.

£129
+VAT=£151.58 ref: PRI 2120

NOTEBOOK PRINTER



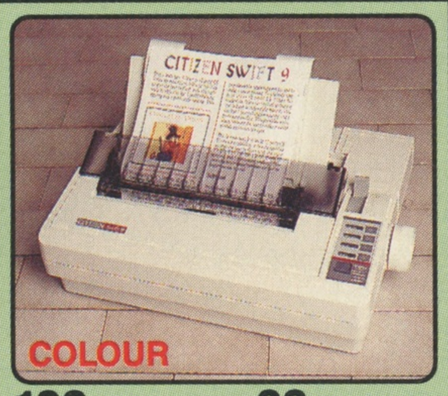
64 CPS **80** COLUMN

- *Citizen PN48 Notebook Printer*
- *Non-impact Printing on Plain Paper*
- *LASER QUALITY - 64cps*
- *4K Printer Buffer + 2 Fonts*
- *Rear and Bottom Paper Loading*
- *Parallel Interface*
- *Graphics Resolution: 360×360dpi*
- *Epson, IBM, NEC P6 & Citizen Emulations*
- *Powered From Mains, Battery or Car Adaptor*
- *FREE Silica Printer Starter Kit*

RRP: £325
STARTER KIT £25
TOTAL RRP: £350
SAVING: £101
SILICA PRICE: £249

£249
+VAT=£292.58 ref: PRI 2100

9 PIN PRINTERS

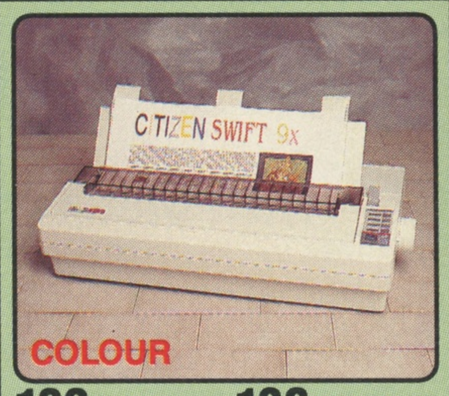


192 CPS **80** COLUMN

- *Citizen Swift 9 - 9 pin - 80 column*
- *192cps Draft, 48cps NLQ*
- *8K Printer Buffer + 3 Fonts*
- *Parallel Interface*
- *Graphics Resolution: 240×240dpi*
- *Epson and IBM Emulation*
- *FREE Colour Kit*
- *FREE Silica Printer Starter Kit*

RRP: £239
COLOUR KIT £38
STARTER KIT £25
TOTAL RRP: £302
SAVING: £113
SILICA PRICE: £189

£189
+VAT=£222.08 ref: PRI 2209



192 CPS **136** COLUMN

- *Citizen Swift 9x - 9 pin - 136 column*
- *192cps Draft, 48cps NLQ*
- *8K Printer Buffer + 3 Fonts*
- *Parallel Interface*
- *Graphics Resolution: 240×240dpi*
- *Epson and IBM Emulation*
- *A3 landscape printing - FREE Colour Kit*
- *FREE Silica Printer Starter Kit*

RRP: £329
COLOUR KIT £41
STARTER KIT £25
TOTAL RRP: £395
SAVING: £146
SILICA PRICE: £249

£249
+VAT=£292.58 ref: PRI 2309

24 PIN PRINTERS

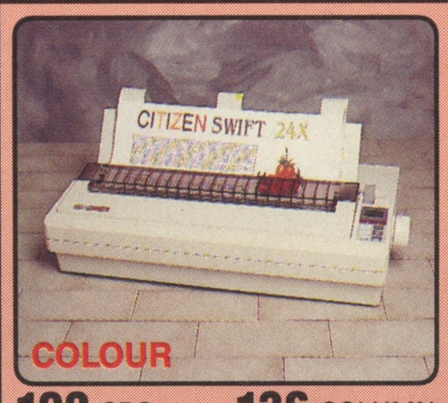


192 CPS **80** COLUMN

- *Citizen Swift 24 - 24 pin - 80 column*
- *192cps Draft, 64cps LQ*
- *8K Printer Buffer + 4 Fonts*
- *Parallel Interface*
- *Graphics Resolution: 360×360dpi*
- *Epson and IBM Emulation*
- *FREE Colour Kit*
- *FREE Silica Printer Starter Kit*

RRP: £365
COLOUR KIT £38
STARTER KIT £25
TOTAL RRP: £428
SAVING: £169
SILICA PRICE: £259

£259
+VAT=£304.33 ref: PRI 2524



192 CPS **136** COLUMN

- *Citizen Swift 24x - 24 pin - 136 column*
- *192cps Draft, 64cps LQ*
- *8K Printer Buffer + 4 Fonts*
- *Parallel Interface*
- *Graphics Resolution: 360×360dpi*
- *Epson, IBM and NEC P6 Emulation*
- *A3 landscape printing - FREE Colour Kit*
- *FREE Silica Printer Starter Kit*

RRP: £489
COLOUR KIT £41
STARTER KIT £25
TOTAL RRP: £555
SAVING: £206
SILICA PRICE: £349

£349
+VAT=£410.08 ref: PRI 2574

24 PIN PRINTER



144 CPS **80** COLUMN

- *Citizen 124D - 24 pin - 80 column*
- *144cps Draft, 48cps LQ*
- *8K Printer Buffer + 2 Fonts*
- *Parallel Interface*
- *Graphics Resolution: 360×360dpi*
- *Epson and IBM Emulation*
- *FREE Semi Automatic Cut Sheet Feeder*
- *FREE Silica Printer Starter Kit*

RRP: £249
CUT SHEET FEEDER .. £40
STARTER KIT £25
TOTAL RRP: £314
SAVING: £145
SILICA PRICE: £169

£169
+VAT=£198.58 ref: PRI 2474

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PRA1200 **120D** £71.38
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PRA1189 **120D+** £56.45
PRA1209 **Swift 9/124D** £32.25
PRA1709 **Swift 24** £26.38

32K MEMORY EXPN
PRA1753 **124D/Swift 24** £13.10

PRINTER STAND
PRA1242 **124D/Swift 9/24** £24.03
PRA1274 **Swift 9x/24x** £30.66

ORIGINAL RIBBONS
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RIB 3949 **Swift 9x Black** £7.15
RIB 3924 **124D/Swift 24 Black** . £4.70
RIB 3936 **Swift 9/24 Colour** ... £15.63
RIB 3248 **PN48 Single Strike** ... £4.11
RIB 3348 **PN48 Multi Strike** £4.11

COLOUR KITS
PRA1236 **Swift 9/24** £39.65
PRA1240 **Swift 9x/24x** £44.18

PN48 ACCESSORIES
PRA 1148 **PN48 Battery** £51.70
PRA 1155 **PN48 Cable Extn** .... £ TBC
PRA 1162 **PN48 Car Adaptor** ... £ TBC

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- ***3½" Disk - Drivers for Windows 3***
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- ***200 Sheets of Continuous Paper***
- ***100 Continuous Address Labels***
- ***5 Continuous Envelopes***

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WORTH: £25 +VAT = £29.38

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- ***BUSINESS + EDUCATION + GOVERNMENT:*** Volume discounts available for large orders.
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- ***FREE CATALOGUES:*** Will be mailed to you with offers and software/peripheral details.
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To: Silica Systems, Dept NCE-1091 -55, 1-4 The Mews, Hatherley Rd, Sidcup, Kent, DA14 4DX

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Company Name (if applicable): .....

Which computer(s), if any, do you own? 55B

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COVER DISK 5

COVER DISK 5



Excite your aural and visual senses with this week's *Express* Cover Disk!

After spending the last two week's airborne with *Air Warrior*, this week the *Express* Cover Disk goes for something a bit more productive, but nevertheless almost as exciting.

Sight and sound are the names of the game, and we attempt to stretch your machines to the limits of their capabilities. We exercise the Amiga aurally with *Protracker,* animate your Atari ST with *Ani ST*, and brighten up your PC's desktop publishing (DTP) documents with a large selection of *SmartArt* clip art images.

TRI-FORMAT TECHNOLOGY

We are able to provide software for the three most popular 16-bit computers – the Amiga, ST and PC – on a single 3.5-inch floppy disk due to the special disk format developed for *Express* by Rob Northen Computing. Not only can we fit all these programs on one disk, but we can also vary the amount of disk space we dedicate to each machine.

DECISIONS, DECISIONS

How do we decide what to put on the disk? Well, that's what we'd like you to try and help us with. While we do get a wide range of software that we can put on the disk, the type of programs we include – whether they're applications, utilities or games – change from week to week.

If you've got an idea of a type of program you'd like to see on the disk, or if you've got any comments or criticisms to make, even about the general type of software on the disk, then write in and tell us!

Send this information to: Cover Disk Feedback, *New Computer Express*, 30 Monmouth Street, Bath BA1 2BW.

COVER DISK PROBLEMS

During the period that the *Express* Cover Disk has been available, we've received a number of returned disks back at the *Express* office.

Some readers have got confused between returning the disks and what they do if they have a problem with the programs on them.

Firstly, if you have a problem with the disk – in that it's broken, your machine has never been able to load it, or something else is seriously wrong with it – then send it along with an SAE to: *New Computer Express* Cover Disk Returns, Disk 5, Disk Copy Labs, Unit A, Westmarch, London Road, Daventry, Northants NN11 4SA. A replacement disk will be headed your way soon after – just don't forget the SAE!

Secondly, if you have a problem with the software on the disk, then send a letter explaining what happened into us here at: Cover Disk Problems, *New Computer Express*, 30 Monmouth Street, Bath BA1 2BW. And if you've found a problem and have managed to solve it, then send us a solution if you can, just so we can help someone who's had the same problem.

Telephone enquiries regarding the *Express* Cover Disk should only be made on Fridays between 9.30 am and 1.30 pm. Because *New Computer Express* is a weekly magazine, there is simply no time to answer your calls outside those hours.

CONTRIBUTIONS

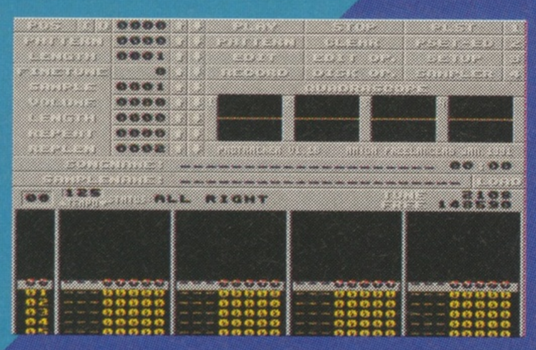
We're always on the lookout for software to go on the Cover Disk. If you've written a program that you think other *Express* readers may find useful, interesting or just plain fun then send it in!

Fill in the form that's on the bottom of this page, and send us a copy of the program along with as much information about it as possible. And if we use the program, we'll pay for it: up to a whopping £1,000!

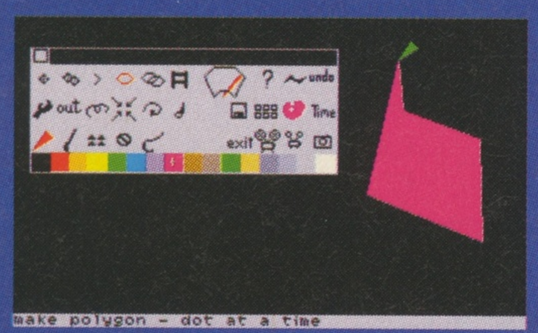
EXPRESS DISCLAIMER

While we strive to ensure that the Cover Disk is free of all viruses and that the programs on it work properly, *New Computer Express* does in no way accept any liability for any problems that may arise from using the disk or the programs on it.

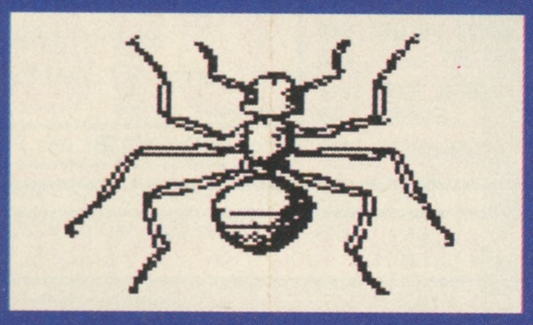
DISK CONTENTS



AMIGA
Protracker



ST
Ani ST



PC
SmartArt Clip Art

INTERESTED?

If you are a software house or run a Public Domain/shareware company and are interested in contributing software to be used on the *Express* Cover Disk, we'd like to hear from you now! Call Tim Howell, Cover Disk editor, on 0225 442244.

EARN UP TO £1,000

We need your programs for the *Express* Cover Disk, whether they are utilities, games, applications or demos for any of the three supported formats.

If you think you've written something that other *Express* readers would find useful, interesting or just plain fun, then send it in! We're on the look out for any software for the Amiga, ST and PC, and if we use it, we'll pay for it – up to a maximum of £1,000!

As you all know, *Express* is a weekly magazine which means it comes out at least four times more often than the monthlies. So now you've got that many more chances to contribute your creation, earn some money and see your name in print.

GUIDELINES TO FOLLOW

1 Please document the software as much as possible. We'll be getting heaps of programs and to have to work out how to use them all will take up what little time we have to put together a great disk.

2 Check for big mistakes in the program such as (any) bugs, errors, or file corruptions. If you find any, fix them and send the program in some other time. Just think: if it works, then we might even use it.

3 Check for little mistakes in the program such as misspelled words. This may take a little extra time, but it will look that much more professional.

4 Test everything before you send it in. If it's a duff disk then we won't be able to do anything with it, will we?

5 In the case of PC software, try to use CGA as well as EGA and VGA graphics, and even MDA (monochrome) if possible. Also, if the program uses a mouse, try to make it so that it is an option and not an absolute necessity. Basically, try to accommodate as many PC users as possible.

NB: Unfortunately we won't be able to return any disks sent in to us. Not even if you include a SAE. The monthly magazines can do that, but because we put out a disk every week there is simply no time to arrange anything along those lines.

Once you've done all that and filled in the form on page 11, send all your contributions to: Cover Disk Contributions, *New Computer Express*, 30 Monmouth Street, Bath BA1 2BW.

AMIGA

COVER DISK 5

AMIGA INFORMATION

PROGRAM: Protracker
DESCRIPTION: Music utility
DIRECTORY: -
FILE (S): Protracker, PROP, PT-CIAPlay.s, PT-PLAY.s, PT.config-00, PT.Effects.txt, PT.FileFormat.txt, PT.help, PT.ReadMe!, PT.TempoCalc.txt, PT11b-CIAPlay.s.pp, PT11b-Play.s

PROTRACKER

One of the most stunning features of most Amiga games and demos is their amazing music. While this music does sound as if it would be difficult to do – and without taking any credit away from the talented musicians out there, it is – *Protracker* is a program that will enable you, with a bit of effort, to stretch your Amiga's sound chip to the limits.

This program is a variation of the popular *Soundtracker* and *Noisetracker* music tools that are commonly used for creating Amiga music.

LOADING PROTRACKER

Before you do anything with it though, make a back-up copy of the disk using the instructions in Amiga Back-up Copy box found elsewhere on this page.

Once you have made the back-up, loading *Protracker* is no problem. After you insert your disk, and the welcome message pops up, *Protracker* will automatically load. Before *Protracker* comes up on-screen, you will be prompted to Insert ST-00: into your drive – don't worry, just click on cancel. The reason *Protracker* does this is that many of the *Soundtracker*-type programs use a disk labelled ST-00: as the main music/module disk. *Protracker* doesn't need this as it can load from and save to any Amiga disk.

USING PROTRACKER

Full documentation for using *Protracker* is provided within the program itself – press HELP to display its functions.

The best way of seeing what *Protracker* can do is to load up a music module for it to play. There is a module on the disk, for you to see, hear and play around with.

To load the module click on the DISK OP. function, found in the top part of the screen, and then on LOAD MODULE. It will ask you again to insert ST-00:. Click on cancel again, and move the cursor to where it says MODULENAME. Change ST-00:MODULES so that it reads DF0:MODULES. You will see a filename appear in the main window, called BASS. Click on the name to load it.

Once the module has loaded, you will be returned to the main screen. If you want to hear the module, click on PLAY and to stop it playing, click on STOP.

At the bottom of the screen you can see four columns of numbers – these represent the four Amiga sound channels.

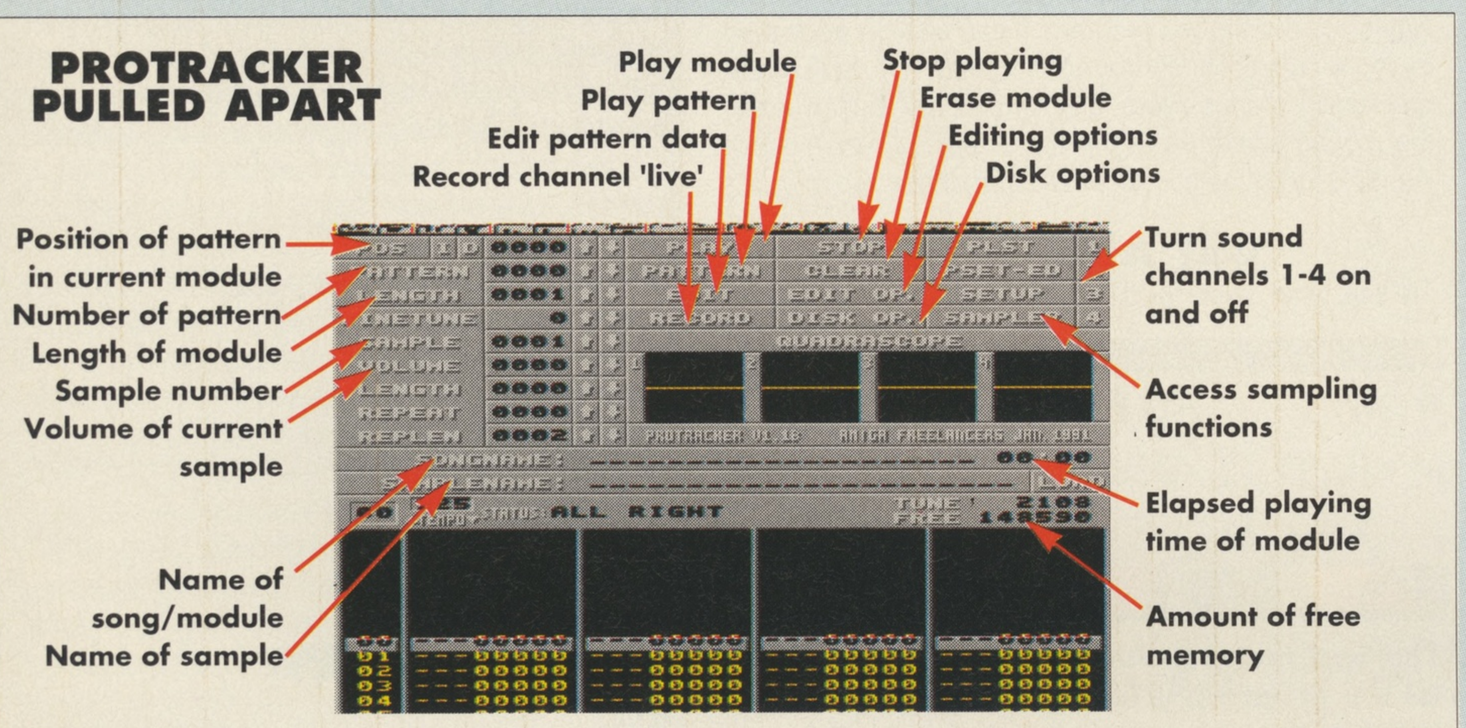
As the module plays, these columns of numbers scroll upwards. These are the musical notes of the samples the module uses. *Protracker,* and indeed other similar music programs, works by stringing together lots of smaller samples, making them into a longer tune.

To change between the different samples the module uses, click on the arrows next to the SAMPLE option at the left of the screen to increase and decrease the number of the sample you want to play.

The names of the samples are listed by SAMPLENAME near the middle of the screen.Select a sample and then press a key on the keyboard to hear it. The QWERTY keyboard effectively acts as a piano keyboard, with the pitch of the sample increasing as you move further to the right of the keyboard.

For more details, look at Making Music, below, or *Protracker's* built-in documentation.

PROTRACKER PULLED APART



MAKING MUSIC

If you want to have a go at creating a piece of music, using the samples the supplied module uses, follow these steps:

1. Load the module (if you haven't already).
2. Select a sample that you want to use – use the arrow icons by the SAMPLE option to change them. See SAMPLENAME a bit further down the screen to see the name of the sample.
3. Click on the EDIT icon – the mouse pointer will change colour.
4. Use the cursor keys to move to the channel you want to edit. To edit the channel, move the cursor to each position you want a note to be played. Or, alternatively, click on RECORD and play the notes 'live'. You can edit them later if need be.
5. To change sound channels, move the cursor to the next channel you want to edit and repeat 5.
6. During editing you can click on PATTERN to hear the pattern.
7. To change patterns, click on the arrows next to the PATTERN option, this time, at the side of the screen. Once you have a series of patterns you want to make a song out of, go to the POSITION prompt and set POSITION 0, for example, to the number of the pattern that your piece starts. Before long you'll have written your own masterpiece!

AMIGA BACK-UP COPY

1 Start your Amiga with your Workbench disk.

2 Take a blank disk and initialise it (instructions in your user manual).

3 Now enter the CLI, by double clicking on the CLI icon that is in your System draw on a standard Workbench disk.

4 Then enter the following CLI commands to set up our working environment (remember to press <RETURN> after each. NB The '|' character is found at the top right of the Amiga's keyboard, next to the Backspace key. Press SHIFT / to get the character):

```
MAKEDIR RAM:C
COPY C:COPY|DIR|DELETE RAM:C
COPY C:MAKEDIR|INSTALL RAM:C
PATH RAM:C ADD
PROTECT RAM:C RWE
PROTECT RAM:C/COPY RWE
PROTECT RAM:C/DIR RWE
PROTECT RAM:C/DELETE RWE
PROTECT RAM:C/MAKEDIR RWE
PROTECT RAM:C/INSTALL RWE
```

5 Once you have entered the commands and the drive light has gone out, take out your Workbench disk and put your *New Computer Express* Cover Disk in the internal drive (DF0:). To start copying, enter the following CLI command:

```
COPY DF0:#? RAM:
```

6 During copying, the machine will display a list of the files being copied. Once copying has finished, remove your Cover Disk and insert your newly formatted disk into the internal drive and enter the following commands:

```
COPY RAM:#? DF0:
DELETE RAM:#?
```

7 That's the first part of the Cover Disk copied. The next step is a bit more tricky.

Firstly, remove your copy disk and insert the Cover Disk into the internal drive. Enter the following:

```
DIR DF0: OPT D
```

The Amiga should then display a list of all the directories on your Cover Disk which will looking something like the following:

```
c (dir)
devs (dir)
l (dir)
libs (dir)
s (dir)
```

Write down this list onto a piece of paper (the '(dir)' extension is not needed).

8 With your Cover Disk in the internal drive, each directory that was listed has to be copied individually from the Cover Disk onto your copy disk.

So, as an example, to copy the c directory you would enter:

```
COPY DF0:c ALL RAM:
```

9 Now, remove the Cover Disk and insert your copy disk and type:

```
MAKEDIR DF0:c
COPY RAM: ALL DF0:c
DELETE RAM:#? ALL
```

Now repeat stage 8 for all the directories on the Cover Disk master. (So, in the CLI commands above, replace each instance of 'c' with the name of the directory to be copied). Once all the directories have been copied you will have a successful copy of the Cover Disk.

10 The final step in backing up the Cover Disk is to install it to make it bootable:

```
INSTALL DF0:
```

SOFTWARE

COVER DISK 5

ST

ANI ST

Graphics and art programs may be useful, but to push your computer even further an animation package is really the next step.This week we feature *Ani ST*, a highly regarded animation package for the ST.

Ani ST was once a commercial package called *Aegis Animator* which was released by the American company Aegis Developments. The rights of the original program have recently fallen back to the original programmer, Jim Kent, who has released a slightly improved version of the program as shareware. A smile is the suggested contribution.

LOADING ANI ST

Before you do anything with the Cover Disk make a copy of it – see the ST Back-up Copy box elsewhere on this page for instructions on how to do this.

Set your ST to low resolution (if it not already in that mode) by going to the Set Preferences command in the Options menu. Then, once you have done that, and using your back-up copy, open the ST folder by clicking on it, then click on the ANIST.PRG icon to load and run the program.

FILE TYPES

Included on the Cover Disk are a variety of demo files for you to see how *Ani ST* works. What follows here is an explanation of the types of files used by the program, distinguished by their different file suffixes:

SCR – These files are complete animation scripts which tell *Ani ST* what files to use for animations.

NEO – This is the graphic screen used as a background to the animations. Most popular graphics programs, such as *Neochrome,* can output files in this format.

PI1 – This is a low resolution picture in *Degas* format, another popular graphic type for the ST.

CEL – A rectangular piece of a picture which can be loaded and moved but not metamorphically transformed.

MSK – A rectangular piece of a picture reduced to a single colour. It is slightly faster than a CEL and uses less memory.

POL – A single polygon.

COL – A colour palette.

STR – An animation script used as a single object when loaded. These enable you to build up animations in pieces and then merge them together.



This is a screen from one of *Ani ST's* sample animations on the Cover Disk, LITTLESEA.SCR. All the fish on the screen are animated, as are some of the underwater plants.

USING ANI ST

There is full documentation for *Ani ST* included on the Cover Disk – see the file ANIST.DOC. To view this file, set your machine to medium resolution and then click on the file and then SHOW to display it on-screen.

Ani ST functions as, in animation terms, a 'tweener', using metamorphic polygon animation. What this means is that the program lets you draw an initial shape and the shape that you want the animation to end up as, and the computer will generate the frames in between the two different shapes.

When *Ani ST* first loads, a black screen appears with a small icon-driven menu positioned in the top left corner of the screen. This is the Fast menu and is one way of controlling the program: it can also be controlled by more conventional drop-down menus. To access the drop-down menus press the right mouse button when the mouse pointer is at the top of the screen. Most of *Ani ST*'s functions are accessed from these two menus.

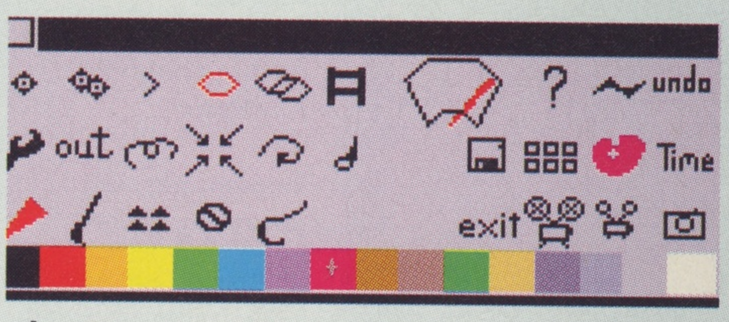
GET ANIMATED

To see what some of the demonstrations included on the disk are like, when the program first loads click on the icon in the Fast menu box that looks like a disk. This brings up a selection of files, all of which have the suffix .SCR.

There are three such files on the disk, all of which are listed at the left of the box: FLUER, FRAGS and LITTLESEA. All of these are different animations, with LITTLESEA being the most impressive.

To load one of these, select the file you want and then click on LOAD. Once the file is loaded, exit the file box to bring you back to the Fast menu selection screen. Click on the icon that looks like a film projector (the bigger one which is to the right of the Exit icon).

The animation will then be displayed on-screen.



The Fast menu in *Ani ST* comes up as soon as the program is loaded. It gives access to most of the program's functions quickly and easily, with each icon performing functions that would normally be only available from drop-down menus

ST INFORMATION

PROGRAM: Ani ST
DESCRIPTION: Animation package
FOLDER: ST/ANIST
FILE(S): ANIST.DOC, ANIST.PRG, CPSCR.TTP, EEL.STR, FISHLOOP.STR, FLUER.SCR, FRAGS.SCR, LITTLESE.SCR, PLANTLOO.STR, PLTLOOP2.STR, REEF1.NEO, TETRA.STR

ST BACK-UP COPY

1 Format at least one blank disk.

2 Write protect the original *Express* Cover Disk (with the notch open so you can see the hole through the disk) and insert it into the drive. If you've got two drives, insert the Cover Disk into drive B. Double click on the drive B icon to open a window showing the contents of the Cover Disk. If you've only got a single drive a message appears asking you to put disk B in drive A. Just click on OK.

3 Insert one of the blank formatted disks into drive A (removing the Cover Disk if you only have one drive). Double click on the drive A icon and open up another window. You may be asked to insert disk A in drive A - you already have, so do nothing and just click on OK.

4 Highlight the ST folder in the drive B Cover Disk window and drag it into the drive A window.

5 If you only have one drive, you're asked to insert disk A and disk B at regular intervals. Be careful not to mix the two disks up! Remember, Disk B is the original Cover Disk and disk A is the newly formatted blank disk.

6 Don't try to use the standard Atari disk copy (dragging floppy A onto floppy B) function as it won't work.

FANCY CONTRIBUTING? THEN FILL IN THIS FORM

NAME: .....

ADDRESS: .....

.....

TELEPHONE: ..... (day) ..... (night)

COMPUTER: Amiga Atari ST PC The name of the program is:

SIZE OF FILE(S): ☐ K

TYPE OF SOFTWARE:
☐ Business application ☐ Technical utility
☐ Game ☐ Art program
☐ Music program ☐ Educational
☐ Novelty ☐ Other

BRIEF DESCRIPTION: .....

.....

CHECKLIST:
☐ README.DOC file included on disk
☐ Printout of README.DOC (if possible)
☐ Disk is labelled with your name, address, phone number
☐ Disk is certified virus free

DECLARATION: This program is submitted for publication by *New Computer Express*. I have totally written it myself, and I agree to indemnify Future Publishing against any legal action that may arise due to copyright problems.

SIGNED: .....

DATE: .....

PC

PC INFORMATION

PROGRAM: SmartArt Clip Art
DIRECTORY: PC
DESCRIPTION: Graphic images
FILE(S): CLIPART.LZH, LHARC.EXE, LHARC.MAN

NOTE: MS-DOS must be loaded on your system before you use the Cover Disk

SMARTART CLIP ART

While desktop publishing (DTP) packages can make a document look more professional, the fact that some of these pages consist of only text makes them look boring. Wouldn't it be great if you could incorporate small pictures into your documents to make them look a bit more exciting? Well now you can!

On the Cover Disk this week we have a selection of *SmartArt* clip art images from Panthersoft. Clip art images are small pictures which can be incorporated into DTP documents to add a graphical touch.

These images are in the .PCX format, used by most popular DTP and graphics packages on the PC.

TO USE THE CLIP ART

Before you do anything with the Cover Disk you must do two things. Firstly, write protect the disk by moving the notch in the top right corner of the disk so that you can see a hole through it. And after that, make a copy of the disk using the instructions in the PC Back-up copy box elsewhere on this page.

Once you've made a back-up of the disk, the clip art file (it is a single archived file made up of quite a few images) has to be copied to another blank disk. If you go to the PC directory on the Cover Disk (type A: or B: depending on which device your 3.5-inch drive has been assigned as) you will see three main files: CLIPART.LZH, LHARC.EXE and LHARC.MAN. These files need to be copied to either your blank formatted disk or your hard drive.

HARD DRIVE INSTRUCTIONS

To make a directory on the hard disk to copy the files to, enter C:\ to change to your hard disk and type MD CLIPART to create a directory called CLIPART.

Now, go back to the drive you have put the Cover Disk in and copy the files from the disk to your hard drive. To do this, type CD PC (if you're not already in the PC directory). Then enter: COPY CLIPART.LZH C:\CLIPART.

Repeat the commands to copy LHARC.EXE and LHARC.MAN, by replacing the CLIPART.LZH filename in the above instructions with LHARC.EXE and then LHARC.MAN.

FLOPPY DISK INSTRUCTIONS

To copy the files to another floppy disk, insert the Cover Disk and go to the A:\ drive (or B:\ depending on which drive your 3.5-inch drive is). To copy the file, enter CD PC to change to the PC directory. Then type COPY CLIPART.LZH B:.

Repeat the commands to copy LHARC.EXE and LHARC.MAN, but replace the CLIPART.LZH filename with LHARC.EXE and then LHARC.MAN.

DEARCHIVING

Once you have made a copy of the disk, the CLIPART.LZH file needs to be dearchived. In basic terms archiving turns a number of separate files into a single file which is smaller than all the separate files put together.

Before you extract the file, format a blank disk to save the dearchived files to. See your MS-DOS manual for instructions on how to do this. Next, insert your back-up copy of the Cover Disk in your internal drive. Change to that drive if you are not already accessing it.

To dearchive the file, enter: LHARC X CLIPART.LZH B:. This will extract the file to the other floppy drive, if you have two drives, or it will ask you to insert a disk for the computer to treat as drive B:. You will be asked to swap disks a number of times, so be patient. The programs will be extracting each time you swap disks.

If you have a hard drive, you can either extract from the floppy disk you copied the Cover Disk files to, or the directory on the hard disk they were copied to.

To extract from the hard disk, change to the directory you copied the files to, for example: CD CLIPART. Then, enter: LHARC X CLIPART.LZH C:\CLIPART.

To extract from the floppy disk, first make a directory to save the files to on your hard drive: MD CLIPART, then CD C:\CLIPART. Then, change to the drive the floppy disk is in (A: or B:) and enter: LHARC X CLIPART.LZH C:.

The CLIPART.LZH file will then be broken up into a large number of smaller clip art images.

IMPROVE YOUR IMAGES

To use the clip art images, load up a DTP, graphics or paint package and import the clip art images as .PCX files to use in your documents. To see how to do this, look at your program's manual.

WANT MORE?

The *SmartArt* clip art images included on this week's Cover Disk are but an example of those available from Panthersoft. To find out what other images the company produces, contact Panthersoft at: 2 Riverway Gardens, The Meadows, Nottingham NG2 3LL. Telephone 0602 860664.

PC BACK-UP COPY

1 If you've only got a floppy drive-based system, format at least one blank disk. Otherwise use your hard drive.

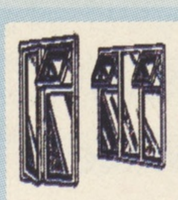
2 Write protect the original *Express* Cover Disk (with the notch open so you can see the hole through the disk).

3 Use the XCOPY command to make the backup. If you have only one floppy drive, load XCOPY from the system disk from drive A:\ with the /S option to copy the files across. So, to copy the files across type: XCOPY A:\PC*.* B: /S.Then it is just a matter of swapping disks in and out of the drive until the Cover Disk is copied. Don't worry if you think you must have two drives – the XCOPY command will treat your single drive as both, or it will copy to the B:\ drive if, in fact, you do have two drives.

4 If you have a hard drive, put the Cover Disk in drive A:\, then type: XCOPY A:\PC*.* C: /S to copy all the subdirectories to the hard drive.


ANT.PCX


BIRD01.PCX


BUILD016.PC


CAR003.PCX


CARROT1.PCX

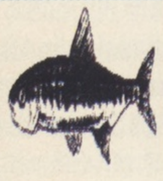

CAT1.PCX


COBRA03.PCX


CROWN1.PCX


DOG1.PCX


EAGLE2.PCX


FISH1.PCX


FROG2.PCX


FURN001.PCX


HELICOP1.PCX


MONSTER3.PCX

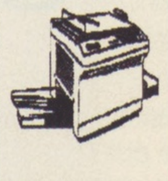


OFF003.PCX


OFF007.PCX


OFF008.PCX


OFF009.PCX


OFF011.PCX


OFF012.PCX


OFF014.PCX


OFF016.PCX


OFF017.PCX


PANCAP07.PCX


PANCAP43.PCX


PEOPLE3.PCX


PEOPLE6.PCX


PEOPLE9.PCX


PEOPLE13.PCX


PRINCE.PCX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SNAIL.PCX


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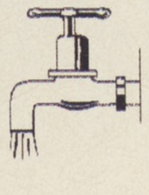
VAR002.PCX


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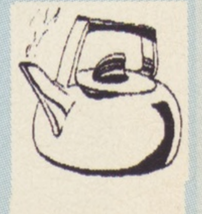
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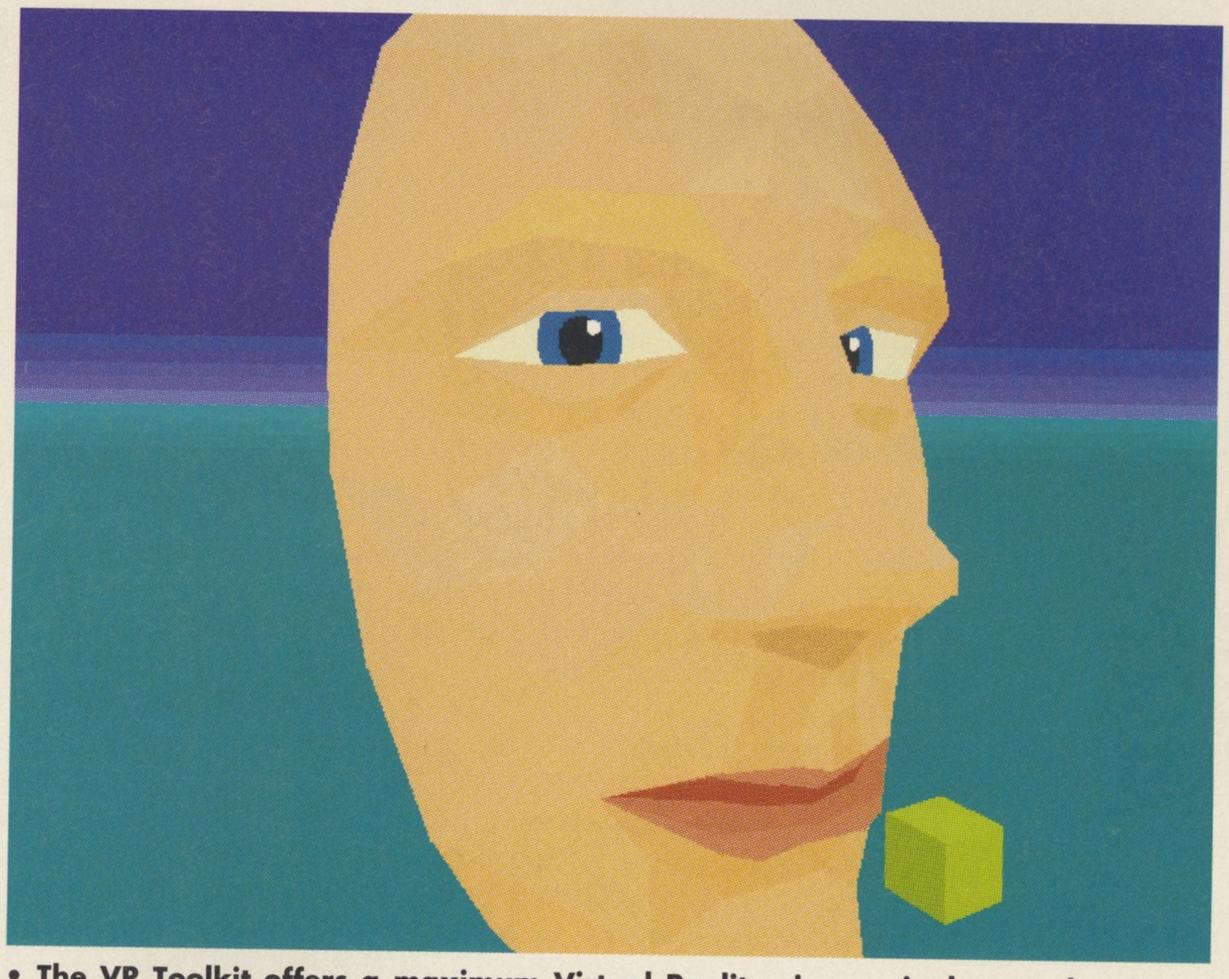
VR TOOLKIT



• The VR Toolkit offers a maximum Virtual Reality size equivalent to the size of the British Isles with 1mm accuracy, so there's plenty of room to manoeuvre

PUSHING BACK THE FRONTIERS

Dimension International's Virtual Reality Toolkit pushes VR development beyond the industry's wildest expectations. Jason Holborn meets the men behind the imaginary worlds...

Virtual Reality is one of those applications that is still very hard to define. Like multimedia, VR's capabilities are changing so rapidly that it's almost impossible to keep up with developments.

As soon as one developer pushes back the boundaries of VR, another is already hard at work pushing those boundaries still further. Aldermaston in Berkshire may seem like a rather unlikely place to find VR development, but look hard enough and you'll find a company that is not only at the forefront of developments, but could easily be credited as one of VR's originators.

BORN OUT OF SUCCESS

In many respects, Dimension International is a new company, but it has the kind of pedigree behind it that very few other VR companies could even hope to match. Set up by Ian Andrew, the company was born out of the success of Incentive, a games development company which virtually defined the standards of 3D games in the late 80s.

Even today, Incentive's products continue to receive rave reviews from all quarters of the computer industry. Such games as *Castle Master*, *Total Eclipse*, *Darkside* and most recently its *3D Construction Kit* have earned the company money and recognition, allowing it to plough resources into its latest product, a leading edge VR system called the Virtual Reality Toolkit.

Based around a powerful 486 PC running at 33 MHz, the system Dimension International now uses for its VR development is a far cry from the 8 and 16-bit micros which still generate so much money for the company.

But with technology advancing at such a rate, it's only a matter of time before such systems become readily available to the computer user. Indeed, Dimension's system is only a taster of the kind of computers we will all be using in a few years time.

GREAT S-SCAPE

The development of its 8 and 16-bit game titles have been instrumental in the development of the VR Toolkit, but the Toolkit is by no means just a port of Incentive's existing FreeScape System.

To gain maximum flexibility, Ian and his team of programmers developed a totally new VR system called SuperScape. Obviously much of what they had learned from FreeScape was brought over, but SuperScape is a far more modular system allowing its designers to enhance SuperScape with ease.

Many of the big names at Incentive have slaved away for three years to develop SuperScape. These include Sean Ellis (of Graphic Adventure Creator fame), Chris Andrew (author of Incentive's FreeScape system and Ian's brother), Paul Gregory and Eugene Messina (incidentally, winner of last year's Edinburgh Festival animation competition).

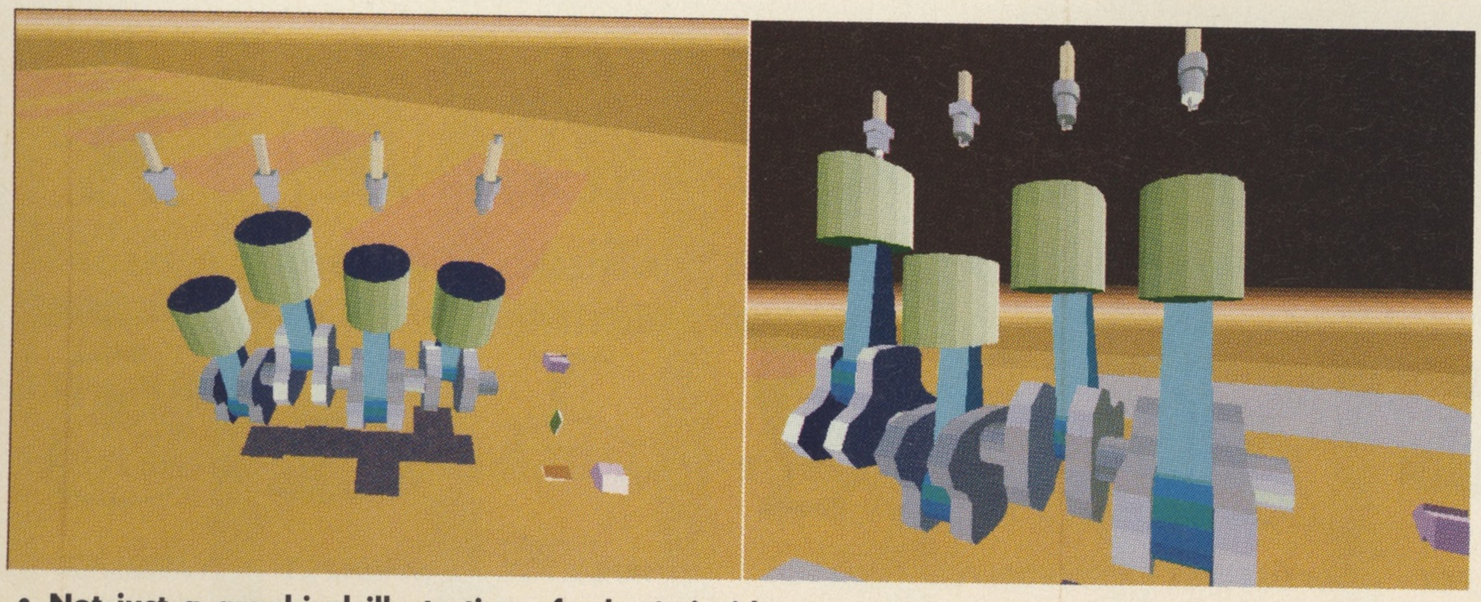
SUPER SYSTEM

The system itself runs on a powerful 486 PC compatible backed up by some impressive hardware. For starters, the 256-colour display is handled by a SPEA FGA graphics board with a TMS34020 video processor with the output from this silicon beauty being piped to a 20-inch SPEA high resolution monitor. This replaces the headset found in most other VR systems. With crisp and colourful images (which don't flicker like headset-based systems!), this combination allows for some of the most impressive VR scenes you're ever likely to see.

Perhaps the most unusual part of the system is its controller. Although a mouse is also employed, most of the interaction between the user and his VR world is carried out via an expensive trackerball-like device called a SpaceBall costing (would you believe?) £1,000!

Designed specifically for VR applications, the SpaceBall offers six axis of movement (12 directions), allowing for complete proportional freedom of movement in your 3D world. Although it initially takes some getting used to, using the SpaceBall eventually becomes second nature.

The current release of the VR Toolkit only supports the SpaceBall and a mouse, but Dimension fully intend to build in support for such VR wonders as the DataGlove and perhaps even the headset. Aslan Andrew is keen to point out that implementing support for these devices should be very easy, thanks to the system's modular design. All that would be required is a driver which could be easily installed by an existing user.



• Not just a graphical illustration of what's inside your car – the crankshaft, pistons and spark plugs in this image actually move to demonstrate how a engine's design works in practice

SNIP INTO SNAPSHOT

The VR Toolkit consists of three distinct modules, all of which are needed to construct and then use your 3D worlds. The first is the Visualiser, which is used to actually 'run' your VR world. The current release of the visualiser does nothing more than run VR applications,

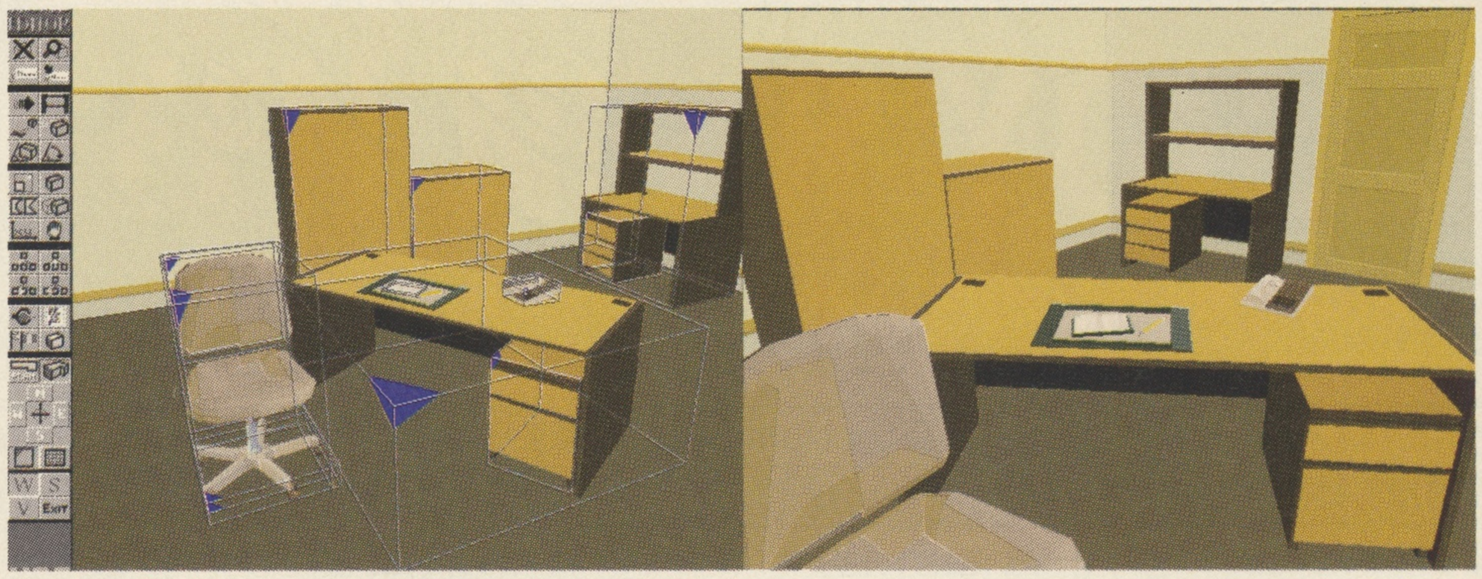
but Dimension has big plans for the future. For starters, a 'snapshot' mode may well be built into a future release which will allow a ray traced image to be generated from a user specified frame. This would be particularly useful to a client who requires a photo-realistic copy of a particular scene. Other future enhancements include light source shading and perhaps even texture mapping.

FUZZY DISTINCTIONS

As you can already start to appreciate, the addition of such features will make Dimension's VR system even more realistic, making the distinction between VR and the real world even fuzzier. Whilst the Visualiser is runtime only, the next two modules permit you to build your own 3D worlds. These are the World Editor and the Shape Editor. As the name suggests, the Shape Editor is used to construct objects to inhabit your 3D world.

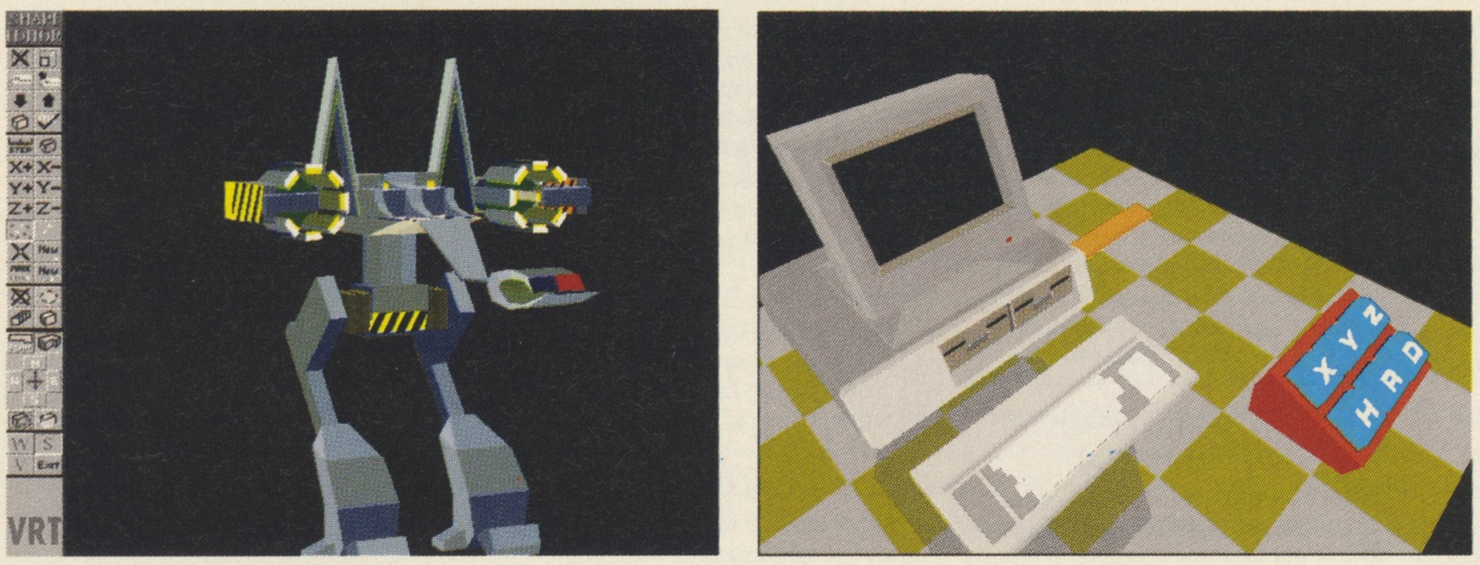
Running from a friendly icon-based front end, objects are created either graphically or by entering a series of numbers as co-ordinates. Although more complex objects can contain hundreds of individual facets (polygons), entering each as a series of numbers allows greater precision. Real life objects can be keyed into the system and used in your 3D world as if they were actually there. These objects can also be stored within a library, allowing you to import the object and use it in any 3D world.

Objects needn't remain static either. Using the Shape Editor's powerful animation facilities, single or multiple objects can be brought to life. To make things even more realistic, various aspects of the animation can be controlled dynamically. These include fuel (the lifespan of the animation), speed and acceleration.



• Once objects are created in the shape editor they can then be placed into a virtual world model using the world editor. The chair in this picture can be moved and the desk drawers and cupboard doors opened

Objects can also be literally 'programmed' using a sophisticated scripting language so that they behave in a specified manner when subjected to various events such as real life forces. For example, gravity and momentum can be built into an object, causing it to behave as it would in the real world. Objects can also affect each other, a chair thrown at a window would cause it to smash and so on.



• Using the shape editor's powerful animation facilities objects can be brought to life, reacting to forces such as gravity and momentum, behaving as they would in the real world

Once you've created all your objects, the next step is to bring them all together within your 3D world. The VR Toolkit offers a maximum VR size equivalent to the size of the British Isles with 1mm accuracy, so there's plenty of room to manoeuvre. Objects can either be placed by co-ordinates or by moving them manually using the mouse.

Although the VR Toolkit is still undergoing final testing, several beta test sites are already using the system. Among these is Nottingham University which is using it to examine perception, orientation and control issues, to study Virtual Reality as feedback in remote control tasks, the training of children with learning difficulties in the carrying out of simple psycho-motor or decision-making tasks and other high-brow projects along these lines.

The Americans too have been very quick to take notice of the VR Toolkit. Dimension has already been approached by several major US-based Virtual Reality hardware developers. Although the Americans lead the way in VR hardware development, the company is keen to point out that they lack the software tools necessary to take full advantage of that hardware.

VISUAL BENEFITS

Dimension also sees the system being of particular use to the construction industry, enabling architects and designers to visualise how buildings will look. Models had previously been used for this task, but the benefits of VR will allow architects to walk around the building as if it were real, opening doors and viewing the building from any angle.

The system can also be used for planning security systems (the layout of video cameras, for example), interior design, interactive advertising, film and TV production, garden and park landscaping and much more besides. Indeed, there are so many different applications for a system like the VR Toolkit that the only limitation is the user. Clichéd maybe, but nevertheless true.

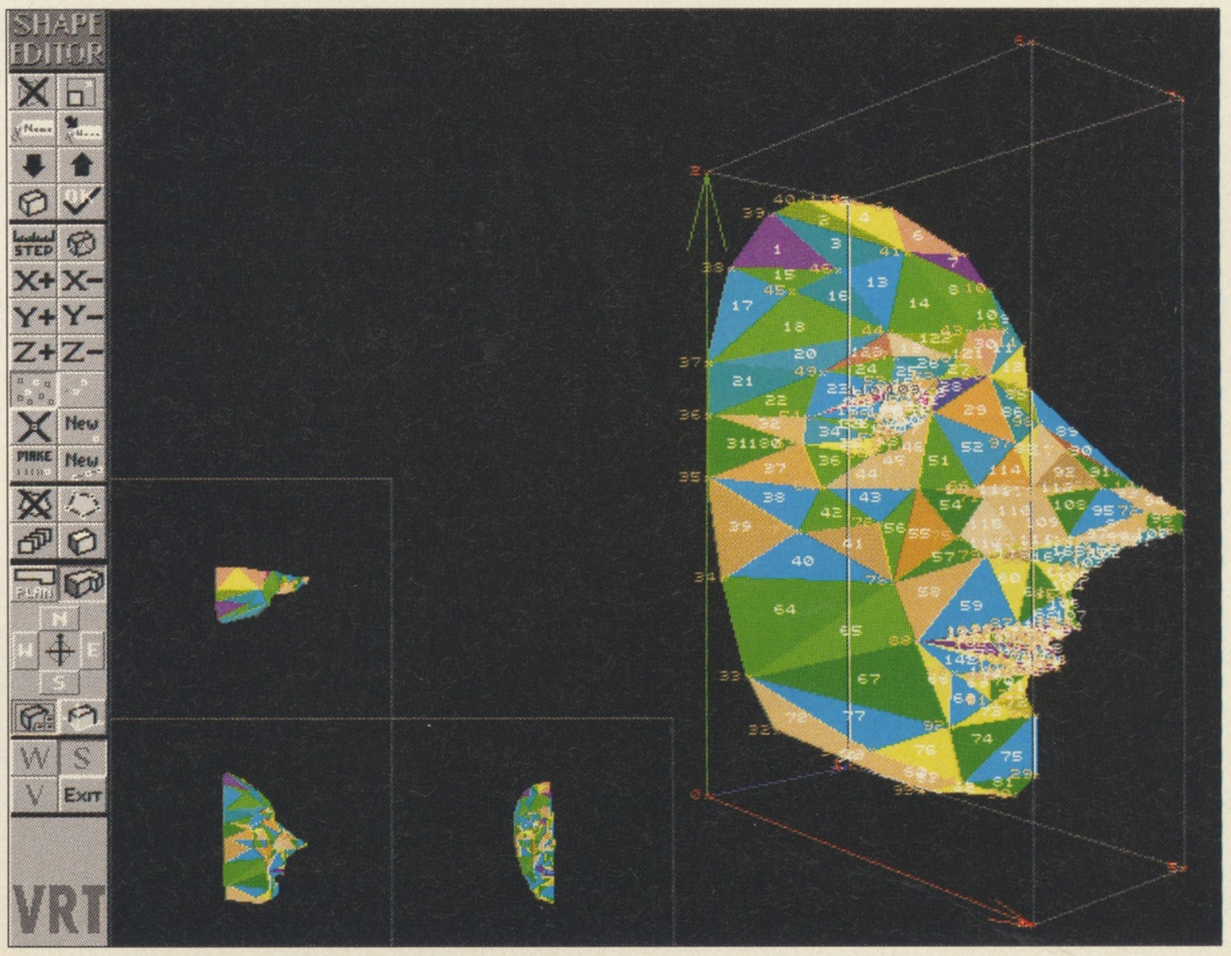
Being able to visualise just about anything in true 3D and interact with it as if it were in the real world is simply stunning, especially when it is so quick and easy to construct. ■

WHAT PRICE VR?

Although the hardware requirements stay the same, the VR Toolkit is available in several configurations. For those don't want to create their own VR worlds, Dimension sells a turnkey system called Desktop VR. This consists of all the VR hardware (CPU, monitor, graphics board and Spaceball) and the SuperScape Visualiser software (which is basically a runtime system for VR worlds constructed within the VR Toolkit).

How much for this beauty? Well, even this basic system is going to set you back almost £15,000. Obviously the basic Desktop VR system won't enable you to create your own VR worlds, but it's an ideal system for installation within museums, etc. The VR worlds can be created to order by Dimension International, saving the customer the cost of the complete system. No price is quoted for this service, so you'll have to phone the company yourself to obtain a quote.

If you fancy taking on the task of creating 3D worlds yourself, then you'll have to part with another cheque for a further £12,337. This buys you the rest of the SuperScape software which includes all the tools you need to create your VR World. It may seem like rather a lot of money to fork out for a couple of disks, but don' t forget that Dimension's VR Toolkit is leading edge stuff!



• Running from an icon-based front end, objects are created graphically or by entering numbers as co-ordinates. Complex objects like this one can contain hundreds of polygons

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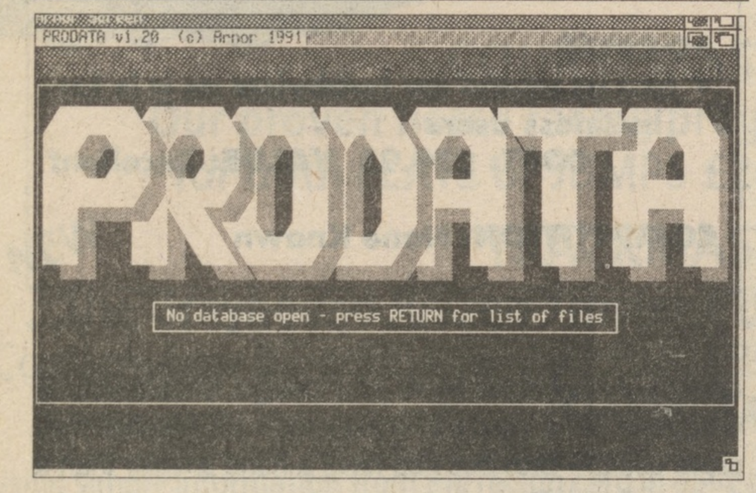

• Manage all those facts and figures with *ProData 1.2*

The Amiga has never been treated as a serious contender within the corporate market, despite some quite heavyweight business packages now being available. With spreadsheets, word processors and databases available aplenty, the Amiga still remains in the shadow of the PC.

The latest business-orientated release for the Amiga is *ProData 1.2*, a major upgrade to Arnor's existing *ProData* database system. Running on a bog standard A500, *ProData* offers many powerful features previously only found in PC-based databases. You can create records containing up to 300 fields with dynamic field length adjustment. Files can have up to five indexes which may use supplementary sortfields, instant switching of indexes to change sorting method and a lot more besides.

ProData 1.2's improved user interface now fully supports Intuition pull-down menus making it far easier to use. Other enhancements include improved label printing (you can now print two labels on a single sheet), instantaneous filtering, automatic record numbering and the ability to merge two databases together. When creating forms, you can enter details into fields in any order, giving the user the flexibility to go back and edit any field without having to flick back through previous fields. *ProData* is by no means a *SuperBase Pro 4* killer, but it's a powerful system nonetheless. If you require a no nonsense database which is powerful enough to tackle the toughest jobs, yet is easy enough to use for beginners, then *ProData 1.2* is worth checking out. ■

A POWERFUL PRODUCT?

FOR
▲ Easy to use
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AGAINST
▼ User interface is still a little basic
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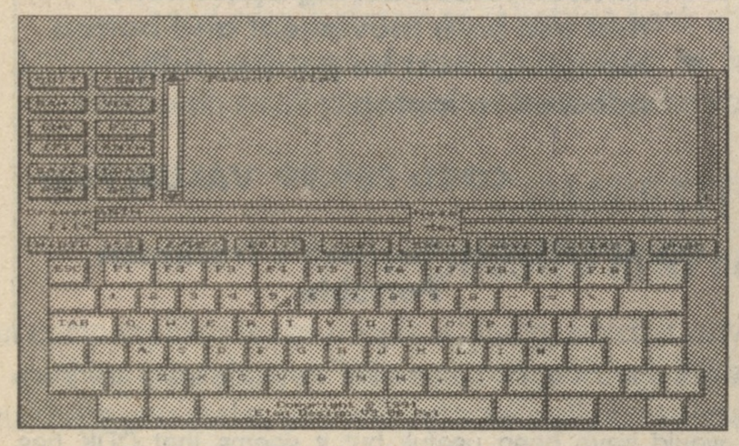

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Invision Plus has been available Stateside for a while now, but us poor UK Amiga users have only just got our hands on it. Comprising of a plug in card for the Amiga 1500 upwards and some fancy software, Invision is a professional standard video effects system based on A-Squared's brilliant real time video digitiser *Live!*.

With Invision Plus installed inside your machine, you can create weird and wonderful video effects by connecting a standard composite video signal to the back of your Amiga. Invision Plus works by processing the incoming signal in realtime, adding effects as it goes. It can be used for a variety of applications including music videos, film and television work.

You can add strobes, wild colours, mirrors and shadows. What's more, you can even create your own effects. The program consists of three modules – the environment screen, the preset screen and production mode. The Environment Screen enables you to assign video effects to keys. Each key holds colours and various mouse controlled effects. The real fun starts when you move to the Preset screen which enables you to create effects yourself. You can modify colours, deciding what effect will be enacted when you click a mouse button, and set up keys to capture and playback frames or mix imagery. In Production mode, you press keys to apply effects to the incoming video, controlling them with the mouse. Since there are no menus or graphics on the screen, the output can be recorded directly to video tape for video post production use.

InvisionPlus is by no means a budget Video Toaster, but it gets pretty close. When used with a genlock and a decent video source, some astounding effects can be created. Highly recommended. ■

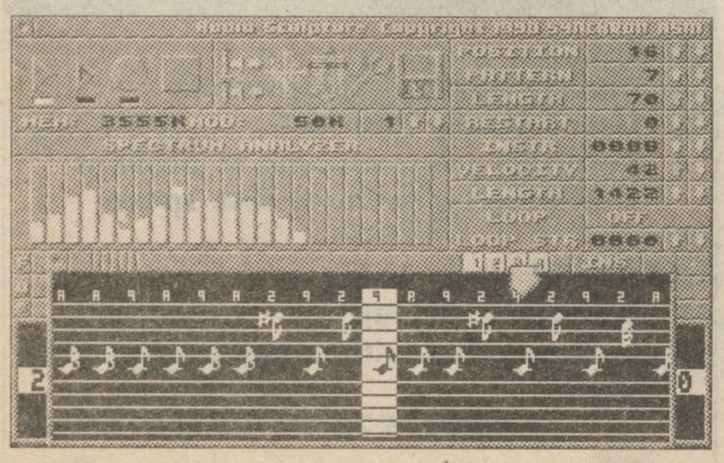
CREATIVE COSTS

FOR
▲ Very powerful video effects system
▲ Works in realtime
▲ Very easy to use

AGAINST
▼ Effects are only let down by the resolution of the Amiga itself

COST: £579 **VALUE:** Good
COMPETITION: Video Toaster

PRODUCT: Audio Sculpture
COMPATIBILITY: ST/STE
FROM: Software Management Group
CONTACT: 0274 566155



• With *Audio Sculpture* you can create songs in minutes and then add a variety of effects

Most non-MIDI music sequencing software falls into two categories: easy-to-use, but inflexible; or versatile, yet bewildering. *Audio Sculpture* is the first we've seen that falls halfway between the two – it's versatile and handy too.

It's also multi-talented. As well as acting as a four-track pattern sequencer, it can also take and edit samples, print the current instrument's stave (even while it's playing), create robotic speech from typed-in words, and show the frequency distribution on a real-time spectrum analyser. *Audio Sculpture* is mouse-controlled, but you can control the recording of notes using the ST's keyboard, or you can input MIDI data from a controlling MIDI keyboard. Using MIDI is a great advantage because programming in step-time with the ST's layout is a bit clumsy.

Although the poorly-translated manual doesn't help much, you can create songs within minutes. Sample waveforms can be created by drawing them on screen, or loading them from disk or sampling cartridge (*ST Replay, Mastersound* and *STOS Maestro* cartridges can all be accessed directly). Then you can add fades, filter the waveshape and change the volume levels before linking them together in the main pattern editor.

Audio Sculpture can hold up to 64 patterns, each containing up to 64 notes. Patterns can later be linked with the sequencer to play in any order. Up to 128 links can be stored, with options to restart the tune in different places as it loops. By far the most usable of all the lower-budget music packages, *Audio Sculpture* is certain to 'turn on' ST musicians and demo-makers. ■

HOW DOES THAT SOUND?

FOR
▲ Packed with features
▲ Works with most sampler systems

AGAINST
▼ Poor manual translated from French

COST: £49.99 **VALUE:** Excellent
COMPETITION: *MasterSound 2, ST Replay, Stereo Replay, MPH Monster Sound Cartridge, Quartet, TCB Tracker, NoiseTracker*

REVIEWS

PRODUCT: Hotwire
COMPATIBILITY: ST
FROM: System Solutions
CONTACT: 0753 832212



• **Why waste time hunting for lost files and folders when you can leave the job to *Hotwire*? It can get things going at the touch of a button**

Even with GEM or other window, icon and menu environments, accessing your favourite files can be a pain – you've still got to search through the folders before you can double-click on the file you need.

Hotwire, from American utility-software company CodeHead, can change all that. By running a simple set-up procedure, you can tell your ST to remember single-keypress commands and use them to run files automatically. All you need to do is remember the keys you have selected and then press the one which corresponds to the program you want executed.

But Hotwire isn't just a program-launcher – it can keep all sorts of statistics about the programs you run. Each time you run a program a timer is started. When you leave the program, you can find out how long you spent working with it – useful if you need to account for the time you spend on each job. Hotwire also has eight alarms to remind you of important things. Each alarm can be configured to display a text message of your choice to interrupt your current job, or sound an alarm.

Hotwire interfaces well with CodeHead's other software. HotSaver, a screen saver, talks to Hotwire when it blanks the screen, so that the elapsed-time ledger doesn't include time spent with the monitor disabled as 'work time'. Hotwire also works with MultiDesk and can be configured to automatically select chosen desk accessories to be loaded with programs – again at the touch of a single key.

For the casual user, Hotwire is a good way of customising your ST to speed up your regular use. For the professional or business user, Hotwire is a powerful tool which can save you time and help you keep track of your money. You can even protect your private programs with passwords if you need to.

For its price, Hotwire offers a great deal of power and flexibility. If you're serious about your ST, take time out to save some time – it's too good to miss out on. ■

HOW HOT IS IT?

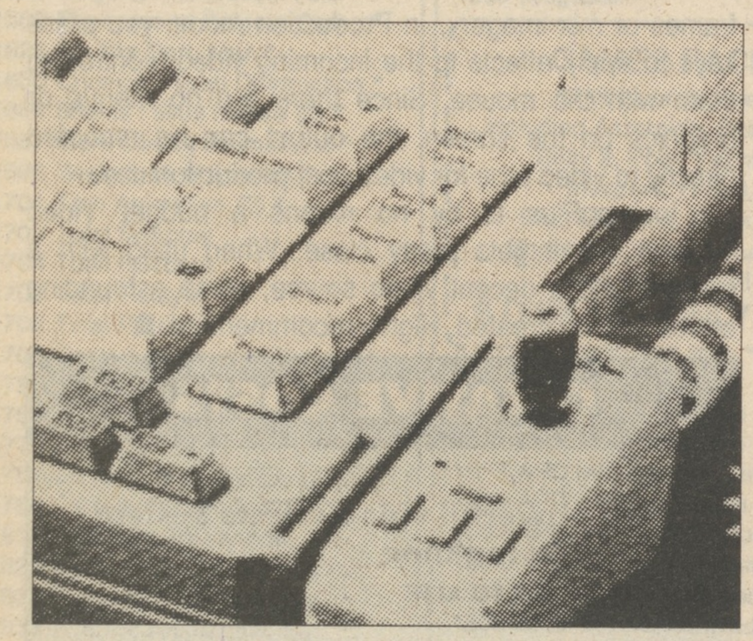
FOR
▲ **Holds shortcuts for 400 programs**
▲ **Lots of useful extras**

AGAINST
▼ **Not as useful for hobbyists as it is for business users**

COST: £29.95 VALUE: Excellent

COMPETITION: None Known

PRODUCT: ICONtroller
COMPATIBILITY: PC
FROM: Suncom Technologies
CONTACT: 0453 753565



• **Suncom Technologies brings you a mouse to use on the move – the ICONtroller**

These days, every man and his dog are trying to convince the laptop users of the world that they need a mouse. This may well be true, what with the popularity of Windows and simplified mouse driven programs. But to use a mouse you need a flat surface to work on. So unless one of your legs have been deformed by a tragic road accident, you'll have to do without one – right?

Wrong. ICONtroller is a 'mouse' that sticks to the side of your laptop. Instead of the traditional mouse that is used on a table, ICONtroller resembles a mini-joystick. Each of the mouse motions are found along the bottom of this stick with rubber buttons that used to be found gracing the Sinclair Spectrum.

An additional single button is on the top of the stick and this can act as one of the three buttons below. You can set the switch to the left, middle or right, depending on which button you use most often (if you use the left button most, the switch is placed on the far left).

All mouse actions are the taken over by the new joystick. Although at first this sounds attractive, this device does not serve its purpose. The buttons are ill placed and operations that involve using joystick and buttons proves near impossible.

The ICONtroller is an attractive package with all the accessories included, (carrying bag and extension cable) but is let down by its poor design. Should you be desperate for a portable mouse then ICONtroller may prove useful – provided you have a hand smaller than a three-year-old. ■

SHOULD YOU BUY IT?

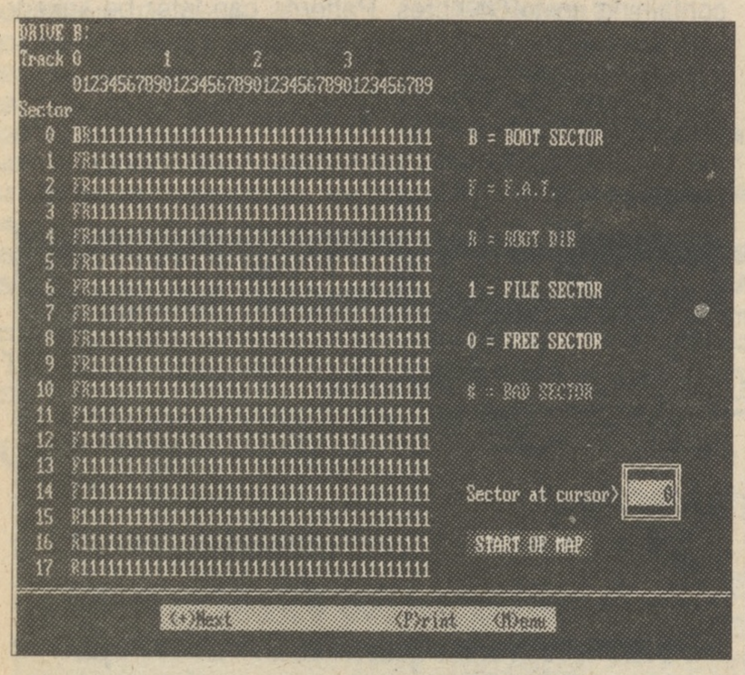
FOR
▲ **Easy connectivity to laptops**
▲ **Compatible with both mouse systems and Microsoft drivers**

AGAINST
▼ **Poor design**
▼ **Difficult to use during operations that use both movement and button**
▼ **Mounting must be permanently adhered to laptop**

COST: £69.99 VALUE: Poor

COMPETITION: Logitech's Trackman Portable

PRODUCT: DDK Toolkit
COMPATIBILITY: ST
FROM: Kuma
CONTACT: 0734 844335



• **Kuma's DDK Toolkit could be excellent for experts, but beginners should be wary**

When developing an application, the programmer needs to know more about his/her disks than provided by the basic {standard courier protocol} DIR {norm} and {standard courier protocol} CHKDSK {norm} commands available in DOS and this is where DDK toolkit steps in.

DDK is a small execution file that can easily find a home in a PC's utility directory. It provides a quick and easy way of retrieving information and could prove useful to programmers who need information on write sectors, file allocation tables and bad sectors on a disk. DDK's interface is spartan, only implementing the extended ASCII character set, but this does little to detract from the program, more over it enhances it.

DDK is compatible with the older generation of PC's and so it could be used for serious programming by someone who has not as yet upgraded their display.

All options found within DDK are accessed by single key presses. Although this means that there is no mouse option, the operation is simplified and prevents the user from making inadvertent changes to the delicate boot sector of a disk.

In some ways, the design of displaying information could have been better thought through. Anyone who has little experience with FAT's, write errors and start sectors, will feel that all they have been presented with are a number of coloured spreadsheets that only use the numbers 1 or 0. This is where an on-line help facility would have been useful, but it seems that DDK has been designed by and for an expert. Even though the manual covers a great deal of ground, there is over use of jargon that will soon baffle the novice.

Some problems may well be encountered with this package. The intructions state that DDK may not operate with systems using DOS prior to version 4 and above. However, this program would not inspect my hard drive, even though it operates with MS-DOS 5.0. But it may well prove an invaluable aid to programmers that like to tinker with their program disks. ■

DOES IT DO THE JOB?

FOR
▲ **Clearly displays information**
▲ **User friendly interface**
▲ **Compact programming to prevent cluttering up to much disk space**

AGAINST
▼ **Too much jargon**
▼ **Incompatible with some versions of DOS**

COST: £23.99 VALUE: Good

COMPETITION: None known



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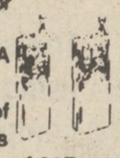

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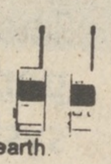

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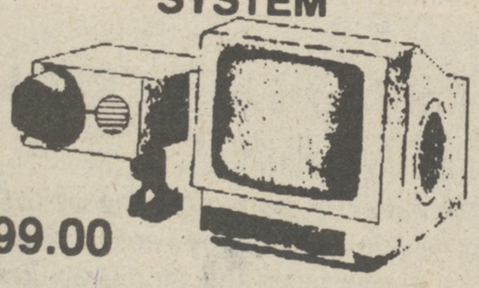

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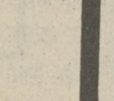

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EXPRESS MAIL

This week *Express*'s Editor, Andy Storer, takes over the letters pages and dives straight into the controversy over Amstrad's new games PC, Atari's marketing image, soft porn and *that* cover disk...

Sugar's game

With regards to *Are PC games taking over?* in *Express* 149 I would like to make a few points.

You have to remember that the majority of games made for the PC are made in USA. Therefore these games are written for their standard machine. Most of the games are aimed at the minimum 286 machines of at least 12MHz with minimum CGA graphics. As time goes on we are getting more and more to the stage where the majority of new PC games need a 386 machine with VGA graphics.

Here in the UK there are still quite a lot of 8086 type machines being purchased. These can be now bought at quite reasonable prices, but are no good to play many of the PC games on the market because they are too slow But the 386 machines are out of most peoples reach just to play games on.

In the UK there are few PCs in the home, with an even lower number of 386 machines. Since the majority of game players are home users I cannot see how PC games are taking over.

The machines themselves can be made to be marvellous games machines. You could design great games for 486 SVGA with stereo sound, like the Ad lib card. The top and bottom of it is that the machines are certainly capable of being a serious games machine but the price of them is too high for them to make any serious impact.

Maybe in a few years time if the prices of these fast PCs with VGA, etc, fall enough, then it could be possible for PC games to make a more serious impact on the games market.

Graham Parkin, Gateshead

I TAKE YOUR points Graham, but the figures we published in *Express* 150 tend to lead us to assume that the PC games sales explosion has already begun.

The point is that the PC is easily the most upgradeable machine on the market – and for that very reason one of the most future-proof to boot. As such it's quite easy to pick up VGA cards for around a £100 and thereby transform your PC overnight. And I think this is what's been happening – en masse. Next up it will be cheap 386 upgrades.

Given that there are nearly as many PCs in the home as there are STs and Amigas (about half a million of each), PC games sales will overtake those of both these sooner rather than later.



• Re-printed solely in the interests of engendering informed debate, this American ad for the Neo Geo console takes computer marketing to new depths. 24-bit colour copies of this unmitigated filth are available from 'Andy Storer's pension fund', *NCE*, 30 Monmouth St, Bath BA1 2BW for only £49.99 including post, packaging and magnifying glass.

Sex sells

British software houses are often accused of sexism in their adverts (with some due cause I must say), but if you thought that the infamous Psycho Pigs UXB advert was rock bottom then take a look at this piece of trans-Atlantic doggy doo.

Yet another example of the computer world throwing back the sheets and inviting womankind in for the fun (ooer!).

Found in a recent American film mag, it seems that the Yanks perceive their customers as being male only, furtive self manipulators. It's bad enough that every so often, some shrink or other insinuates that all techno freaks are emotionally retarded, without the industry spending lots of dosh confirming that they are right.

Tony Pressley, Worksop, Notts

THANKS FOR THE AD TONY – it certainly takes some beating in the soft porn sales stakes. I wonder what Clare Anthony would make of the particularly furtive pose adopted by the male? Now rip this page out and throw it in the bin!

Atari's name

Despite what the critics say, Atari has finally got it right. It has realised exactly who it is trying to sell to. It is a fact that most computers are sold by the High Street chains to parents who know nothing about computers.

Put yourself in their position; you walk into Dixons and the sales assistant tells you they have two models on offer:
1) The Commodore Amiga which is great for games and comes packaged with 'Yet Another Shoot-'em-up' and 'Massacretron'; or
2) The Atari STE packaged with educational software suited to the age of the user.

The only reason parents are buying a computer is on the pretence that the child will use it for 'school work'. The choice from the parents' point of view, is obvious.

On the down side, Atari really needs to get something going on the STE software front. So far it is selling a machine which is superior to the ST, but with nothing to show for it. Just one really good STE game packaged with the machine would help.

Nial Grimes, Llanelli, Dyfed

I AGREE WITH you Nial that the STE is sadly under-promoted. So far, no games have been released that really show off its capabilities. Which is an inexplicable shame.

However, my spies tell me this is because Atari just won't give out STEs to developers – preferring to encourage work on the Lynx and Falcon console projects instead.

The Amiga has got so far ahead though in new machine sales that I guess a parent would be pretty hard pushed to deny their kid an Amiga this Christmas for fear of appearing mean and miserly.

Diskcontent?

...EDITED HIGHLIGHTS FROM THE NEW TRI-FORMAT COVER-MOUNTED DISK DEBATE...

...Splitting a 750K disk three ways doesn't leave much room for any format.

What fits into 250K these days?

Stewart Russell via Cix

...All that happens is that you get a small bit of code for each machine, which short changes all machine owners. And what of your readers who don't happen to own an Amiga, Atari, or PC ?

Dave via Cix

Pedant's Point

(strictly not a point but a subset of two-dimensional space)

To throw a Crowbar in the wheel of the bicycle of this discussion (don't you just love well-contrived metaphors?), can I point out that infinity could equal 0, or something very much like it? No? Oh Well, I'm going to try.

Suppose you have a very long piece of string – this stretches from an infinite distance away, passes past your eyes, and continues out for an infinite distance. It's an infinite length, OK? Now, producing your trust WH Smith scissors, you cut it at the point in front of you, so you have two pieces of string, each stretching out to infinity. You throw one of these away (for the sake of coherence, I'm not going to start talking about where you can throw it). Now, you started with an infinitely long piece of string, you cut off and threw away an infinitely long piece of string, and you still have the same amount left. The only number that you can substract from itself and still have the original number left is 0. Therefore infinity = O

There is almost definitely a flaw in that somewhere, but it's a good enough reason not to serialise Geoff Winkless's calculations over 10 weeks.

Daniel Barlow, The Rectory, Northampton

ON THE COUCH



This week's willing inner realms voyager ready for a spot of pro-active psychological modelling is the one and only MIKE CHITTENDEN of FAVERSHAM. Mike reckoned our resident shrink, Dr Clare Anthony, was his fave software, but scrubbed this bit out. But you could be braver just by sending in the name of the machine you own, your favourite software and the machine you'd most like to own. Put them all in an envelope and send them to Leather Couch Clare, *NCE*, 30 Monmouth Street, Bath BA1 2BW. Then sit back and wait for stardom.

OK Mike – just lie down, think of England and reeeeeellllaaaaaaxxxxxx!

- MACHINE OWNED: Atari ST
- FAVE SOFTWARE: *LLamatron* and all fractal generators
- DESIRED MACHINE: Atari TT

Dearie, dearie, dearie me. *Llamatron*, if I remember correctly, is the 'greatest shareware extravaganza ever to appear in recent times'. And it's well weird. Its author, Jeff Minter, requires a whole Leather Couch special session, but for the moment I'll just say this. Jeff – when the deserts freeze over and the camels come skating home I'll be waiting for you with open arms. Holding a shotgun.

Now Mike, these fractal generators, you know what we Freudians say about these don't you? Yes, they're exceptionally useful in treating advanced schizophrenic delusions. But why should this be?

Well, reality is indeed composed of fractal elements; absolute numbers don't exist in any form other than pure mathematical theory and as such absolute sanity is a misnomer. We are all fractally schizophrenic.

Once you've appreciated this simple truth, all psychological conditions become relative to a misconceived notion of normality. And nutters, like yourself, no longer exist. In fact they merely transpose themselves into their objects of desire. Some people fall in love with and become Napoleon. Some people fall in love with and become an Atari TT. It takes all sorts.

PROGNOSIS: Do whatever it takes to get hold of a TT. Then, using a still video camera, import everything you come across into a fractal generator. You will shortly realise, that like *Llamatron*, everyday reality is endlessly weird, but unlike *Llamatron*, can't be turned off.

....A better idea would have been to give your readers a choice and publish the magazine in two formats – one with the cover disk at £1.50 and the magazine by itself at the old price of 88p.

Then everybody would be happy. I am not complaining myself, but I can predict that a lot of readers will complain.

H D Twiddle ,Hull

NEW COMPUTER EXPRESS R.I.P. I'll give you two months at the new price and then the demise of another good Weekly Mag.

So long *New Computer Express*.

Jim North via Aspects

Like the new magazine format, but not the new price. But if we get a free disk every week it might be worth it.

The trouble is I'm up to my ears in software. I've got three PASCAL compilers, two assemblersa and a MODULA-2 compiler (all shareware) that I haven't even looked at yet.

Al Baron via Aspects

Many people read *NCE* as their 'newspaper' of the computer world and generally like its overview of many different machines and subjects.

There may be a substantial amount of readers who see the addition of a cover disk as an added attraction, of which I am one.

But I am of the opinion that it is getting to the stage where you cannot pick up a computer related magazine without a disk or tape of some sort stuck to the cover, and therefore am opposed to this extra.

And NCE as the 'newspaper' of the computing world does not need this additional extra since it adds to the cost of developing, packaging, shipping of the magazine which is passed to us, the buyer, as a 70 per cent price increase.

I am not about to cancel my newsagents order in protest as I enjoy reading *Express* and look forward to reading it every week so. Many of us readers will continue buying *Express* just as normal except that it is 62p dearer.

But then again some useful software (or good game) just might be on that disk next week.

Paul Gregg, Co. Antrim

Keep up the good work, the magazine is excellent and the new addition of the cover disk is a great idea and well worth the money, especially for me as I own both an Amiga and PC.

CR May, Manchester

My intention, as Editor, is to use the disk as a means of offering readers the best in PD and shareware along with demos

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of new 'serious' software, utilities and games. I don't see how this can be short-changing anyone. And I think it's worth paying an extra 62p a week for.

I also reckon we can bring you the best cover disk material available on any magazine in 250K of code each week – after all we can always split programs into sections or put out a disk one week that has 500K of Amiga code and only 125K each of ST and PC programs.

But to be truly successful, the cover disk relies on software publishers across the board perceiving it to be a worthwhile medium – one that is both visible and viable. We reckon we're doing a good job of convincing them – but of course these things take time.

So, I hope the disk will take off as a 'news device' and not a dump for non-sellers. *Express* has always been a news magazine and I want the disk to reflect that. And you can help us in this by suggesting the kind of material you'd like to see on the disk each week.

I'd like to see commercial demos, graphics animations, clip art, tutorials, databases and screenshots to go with reviews. But what do you want to see?

Just write in to 'Yo! Pace', *NCE*, 30 Monmouth St, Bath BA12BW and I'll send you a tenner for the best ideas.

Meanwhile, we'll continue to do what we do best – bring you the hottest news just as soon as it's announced. Cover disk or not, we won't be changing that! ■

Write Now

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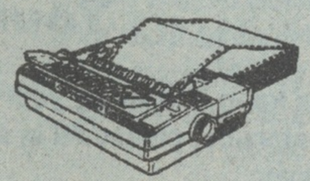

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Amiga 8833 MkII Lead	£12.99
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A501 512K Ram Upgrade with Clock

We are proud to announce that we have further stocks of the genuine Commodore A501 512K Ram Expansion, which we are now offering at the even better, ultra low price of :

NEW LOW PRICE

A501 512K Ram with clock £29.99

PROTAR
Amiga Hard Drives

At last ... high quality hard disk drives for the Amiga A500. The new PROTAR range of A500 hard disks are destined to become THE hard disk drive for the Amiga A500. These high quality hard disks are available in sizes ranging from 20MB to 160MB ... and just look at the specifications ...

* Perfect fitting to the A500
* Colour matched to the A500
* 5 times faster than the A590
* 1MB, 2MB, 4MB or 8MB internal ram expansion facility
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* Sub 24 millisecond access time
* Hard disk management software
* Seperate PSU available when ram expansion is fitted
* High quality – made in Germany

Protar 20Mb Hard Disk	£279.00
Protar 30Mb Hard Disk	£349.00
Protar 50Mb Hard Disk	£429.00
Protar 50Mb with Cache	£529.00
Protar 60Mb Hard Disk	£542.00
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Protar 100Mb with Cache	£639.00
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Ram expansions for all Amiga Protar hard disk drives :

Protar 1MB internal ram	£58.00
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Protar 4MB internal ram	£245.00
Protar 8MB internal ram	£490.00
PSU for when ram fitted	£34.00

Cartoon Classics software pack

We have limited stocks of the software pack which comes with the A500 Cartoon Classics. We are offering this excellent pack at the very low price of only £49.99. This is what you get :

* Deluxe Paint 3
* The Simpsons
* Captain Planet
* Lemmings

only **£49.99** inclusive

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BEST PRICES - AS RECOMMENDED IN THE ST FORMAT BUYERS GUIDE - OCT 91

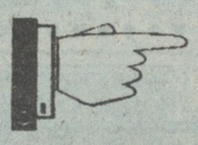
ATARI STE PACKS

ALL ATARI STE PRICES INCLUDE VAT AND UK DELIVERY. ALL PRODUCTS CARRY A FULL 12 MONTH WARRANTY. PLEASE RING US BEFORE ORDERING TO CHECK STOCKS AND CURRENT PRICES.

	512k	1mb	2mb	4mb
ATARI STE STANDARD PACK. consists of the computer with mouse, tv lead, manual and all connecting leads etc. The Standard Pack is supplied with NO software.	£289.00	£319.00	£349.00	£429.00
ATARI STE DISCOVERY 1. consists of the Standard Pack and STOS, First Basic, NeoChrome and 4 games (Carrier Command, Space Harrier, Outrun, Bomb Jack)	£299.00	£329.00	£359.00	£439.00
ATARI STE DISCOVERY 2. consists of the Standard Pack and First Basic, ST Tour, NeoChrome and 4 games (Dragons Breath, Super Cycle, Indiana Jones, Anarchy)	£299.00	£329.00	£359.00	£439.00
ATARI STE TURBO. consists of Standard Pack and STOS, Hyperpaint II, Music Maker II, First Basic and 8 games (Indiana Jones, Dragons Breath, Blood Money, Impossible Mission II, HKM, Anarchy, Outrun and Supercycle).	£309.00	£339.00	£369.00	£449.00
ATARI STE TENSTAR. consists of Standard Pack and Asterix, Chess Player 2150, Drivin Force, Live + Let Die, Onslaught, Pipemania, Rick Dangerous, Rock n Roll, Skweek and Trivial Pursuit II.	£309.00	£339.00	£369.00	£449.00
ATARI STE POWER. consists of Standard Pack and also 20 top selling arcade games. Due to lack of space, it is not possible to list the games. Please phone for details.	£309.00	£339.00	£369.00	£449.00
ATARI STE KUMA BUSINESS. consists of Standard Pack and word processor K-Word 2 (incl. K-Spell Checker), K-Data database, K-Spreadsheet, K-Graph business graphics and Metacomco Basic Language.	£319.00	£349.00	£379.00	£459.00
ATARI STE CURRICULUM. consists of Standard Pack and also 3 levels of educational software (from 5 yrs to 50 yrs !!!), a word processor, a spreadsheet, a database, HyperPaint and Music Maker II software.	X N/A	£369.00	£399.00	£479.00

AMIGA PACKS

ALL AMIGA PRICES INCLUDE VAT AND UK DELIVERY. ALL PRODUCTS ARE UK STOCK AND CARRY A FULL 12 MONTH COMMODORE WARRANTY. PLEASE RING US BEFORE ORDERING TO CHECK STOCKS AND CURRENT PRICES.



ALL OF OUR 1MB A500 PACKS NOW COME WITH THE GENUINE COMMODORE A501 RAM EXPANSION WITH BUILT IN CLOCK.

AMIGA A500 BASE A500 computer, mouse, tv modulator, manuals, Workbench software, all connecting leads etc. The A500 Base Packs are supplied 'bare' with no games software.	£299.00
AMIGA A500 BASE 1MB A500 computer supplied with genuine Commodore A501 512K ram expansion, mouse, tv modulator, manuals, Workbench software, etc supplied 'bare' with no games software.	£325.00
AMIGA A500 ASTRA A500 512k computer, mouse, tv modulator, manuals, Workbench, etc supplied with 10 great software titles (see A500 1MB ASTRA pack below for details)	£325.00
AMIGA A500 1MB ASTRA Amiga A500 computer, A501 512K Ram expansion with clock and battery back-up, mouse, tv modulator, manuals, Workbench etc disks, plus the ASTRA 10 games pack including the following games : Datastorm, Dungeon Quest, E Motion, Grand Monster Slam, Kid Gloves, Powerplay, RVF Honda, Shuffle Puck Cafe, Soccer and Tower of Babel	£350.00
AMIGA A500 1MB CARTOON CLASSICS Amiga A500 computer, A501 512K Ram expansion with clock and battery back-up, mouse, tv modulator, manuals, Workbench etc disks, plus the following top selling software titles : Lemmings, The Simpsons, Captain Planet and Deluxe Paint 3	£359.00
AMIGA A1500 BASE A1500 computer with 1MB ram, detachable keyboard, 2 x 3.5" 880k disk drives built in, mouse and all manuals. The Amiga A1500 accepts A2000 peripherals. The A1500 base pack is supplied with no software. Please note that the A1500 does NOT have a modulator.	£599.00
AMIGA A1500 SOFTWARE consists of A1500 base pack and and the following software : Platinum Works, Deluxe Paint Version 3, Populous, Simm City, Battle Chess, Their Finest Hour (Battle of Britain) and 2 books	£655.00

IF YOU WISH TO ORDER WITH US, THEN PLEASE SEND YOUR CHEQUES, BANKERS DRAFTS, POSTAL ORDERS, CASH ETC TO OUR MAIL ORDER ADDRESS (PLEASE MAKE CHEQUES PAYABLE TO BEST PRICES) OR RING OUR MAIL ORDER HOTLINE ANY TIME BETWEEN 10.00AM AND 12 MIDNIGHT, 7 DAYS A WEEK, AND USE YOUR ACCESS OR VISA CARDS. OR ALTERNATIVELY PAY A VISIT TO OUR SHOP, CHIPS COMPUTER CENTRE, AND SEE OUR WIDE RANGE OF COMPUTER GOODS AND SOFTWARE.

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MACHINE SPECIFICS

MACINTOSH

- **Apple joins leading anti-piracy association**
- **First UK-manufactured Mac clone hits the market**
- **Where to get the weirdest CD-ROMs imaginable**

APPLETALK

Apple US has recently joined the Software Publishers Association (SPA) Copyright Protection Fund. This is a fund which pays for software manufacturers to take legal action against companies which pirate their software. Companies like Claris, Lotus, Microsoft and WordPerfect are already members of the Fund, but it's taken Apple some time to make the decision to join. According to on-line information service NewsBytes, Apple will sponsor a number of anti-piracy projects, including the translation and duplication of French and Spanish versions of the SPA video.

Apple has announced that it will build a new Apple USA Customer Support Centre in Austin, Texas. The site should house over 300 workers by the end of next year, and will contain some of Apple's service and technical support divisions. However, the decision isn't final yet: Apple will only finally agree on the site if Austin City Council and the City Commissioners Court grant the company some tax concessions.

FREE SOFTWARE

Callhaven has announced a special, limited time deal: if you buy any of a range of software which includes *Norton Utilities* for the Macintosh, *GreatWorks*, any of Symantec's programming languages (Think C or Think Pascal), you will get a copy of *More II* (an outliner/personal productivity program) or *Symantec Utilities for the Macintosh* (SUM) free of charge. Sounds like a good deal to me – it's certainly worth checking Symantec's prices out if you want one of the specified programs and wouldn't mind a freebie too.

☎ Call the company on 071-410 9191.

Callhaven is also participating in something which it calls Apple's 'Bring out your dead' offer for educational users: trade in any old computer you have – from a broken ZX80 to a VAX mainframe – and you'll get £150 off the price of an LC 4/40 or 4/80. And the company is combining this offer with its own already reasonably-priced education deals, so if you qualify you should at least get on the phone and find out more.

UK MAC CLONE

BlueMAQ, a UK company, has announced the launch of a 100 per cent Apple Macintosh-compatible computer which is manufactured in this country.

The BlueMAQ Hs II (catchy name) has, according to the company, been,

POSTCARD FROM AMERICA

One of the themes wildly promoted at the last Boston MacWorld Expo was the Space Shuttle Atlantis. This was not a spontaneous reaction to the space program, although everyone I know is wild about the *Star Trek: Next Generation* show, but an attempt to ride on the public relations mouse-tail of the Mac Portable carried onboard.

The Mac was used for a number of things. They tested different cursor control devices that will be used in future missions and perhaps on a space station. The astronauts would send and receive electronic mail using the AppleLink software and network. The computer was also used to record other medical test results, and mission notes. MacSpOC (Shuttle Portable Computer) was an application that provided a real-time display of the shuttle's orbital position against a world map along with with day and night cycles, tracking stations, and emergency re-entry information. For all the dough that the space shuttle costs, you'd think that it would come with this feature built-in. I bet it comes with a cheap AM/FM radio, and no cassette deck.

The portable had to be modified for the trip into orbit. For some reason it was fitted with a special fuse to prevent accidental turn-on during ascent – perhaps they didn't bring a spare set of batteries? The trackball had to be modified so that the ball wouldn't float out of its socket in zero gravity

The very first e-mail message from space doesn't have quite the emotional resonance of Neil Armstrong's words as he hit the lunar dust. "Hello Earth! Greetings from the STS-43 Crew. This is the first AppleLink from space. Having a __GREAT__ time, wish you were here,... send cryo, and RCS! Have a nice day... Hasta la vista, baby,... we'll be back!"

Translated into the vernacular, cryo means cryogenics, fuel for life support and air, while RCS is Reaction Control System, fuel for maneuvering/control. It's the old wire-home-for-more-cash routine!

David Morgenstern

FEED YOUR ST!

HCS Computer Peripheral Supplies

2 year guarantee on memory!
14 day money back guarantee!

MEMORY UPGRADES

HCS STE MEMORY UPGRADE KITS

STE kits come as either SIMM or SIP type modules. SIMM modules have edge connectors, SIP have pins. All types plug into 4 sockets under the top of the case. SIMM are the most common and are supplied by default, these will be swapped if necessary. Trade in is paid as a refund after you have upgraded your computer. All kits come C/W illustrated Instructions. 2+4 Mb come C/W FREE multitasking software.

STE KITS	NORMAL PRICE	WITH 512K TRADE IN	WITH 1024K TRADE IN
512K TO 1024K	£22.00	-	-
2 MEGABYTE	£80.00	£70.00	£60.00
4 MEGABYTE	£150.00	£140.00	£130.00

STF(M) MEMORY UPGRADE KITS

There are two basic types of upgrade. The low cost solder-in type which comes complete with sockets, capacitors, resistors and instructions, or, the much easier to install Xtraram Deluxe Kit which fits inside the computer to allow upgrading to 4Mb using simms like the STE uses.

Solder-in upgrade Kit to 1Mb.....£30.00

Xtraram *Deluxe* Quality SIMM UPGRADING SYSTEM
Populated to ½ Mb £65.00
Populated to 2Mb.....☞ £110.00
Populated to 4Mb.....☞ £159.00
Fitting for above (exclusive of post).....£20.00

CHIPS

16 x 256K x 1 Dram Chips.....£24.00
16 x 1Mb x1 Dram Chips £70.00

PC EMULATORS

PC Emulators sit on top of the microprocessor of the ST. When in use, they take over control of the processor. This allows Speed and a high degree of compatibility. PC Speed runs 4 times faster than a PC. The AT Speed 8.3 times. The AT Speed co-processor socket allows the extra chip to accelerate numerical calculations 5000% (five thousand!).

AT SPEED SUPPLIED.....£220.00 FITTED.....£245.00
PC SPEED SUPPLIED.....£90.00 FITTED.....£120.00
AT SPEED STE ADAPTOR SUPPLIED.....£25.00

MACINTOSH EMULATORS

Spectre GCR allows the ST to emulate the MAC using the ST's own processor (as used in the Macintosh). It simply plugs into the cartridge slot and the disk drive port. (It also has a through port to allow a second drive). It will run up to system 6. The version supplied will be the most up to date, supplied by GADGETS.

SPECTRE GCR SUPPLIED.....£250.00
128K ROMS SUPPLIED.....£70.00

DISK DRIVES

The double sided disk drive kit replaces the internal single sided drive in the STFM. The PROTAR hard drives supplied are of the highest quality and are ST Format GOLD winners of 1991.

DOUBLE SIDED DISK DRIVE UPGRADE.....£47.00
40MB PROTAR HARD DRIVE.....£335.00
80MB PROTAR HARD DRIVE.....£485.00

HOW TO ORDER

PRICES INCLUDE VAT

Telephone orders and enquiries welcome on Tel/Fax 081 777 0751. Please make cheques/P.O's payable to:

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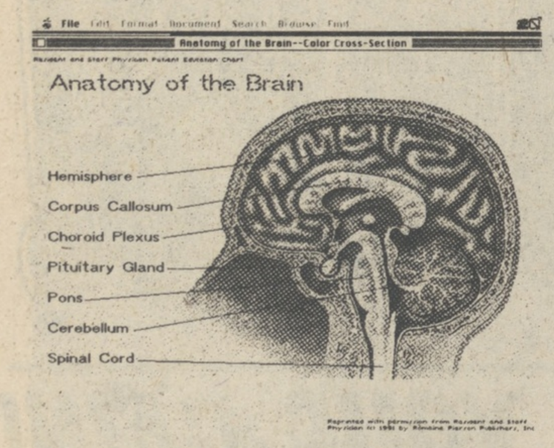
Goods normally despatched within 2 days of receipt. Trade-in paid as a refund E &OE

CPC

- **All the golf you could ever wish for in *Multimixx 1***
- **How to cheat at *Narc*, *Loopz* and *Hero Quest***
- **Ubi Soft gains air/sea *Supremacy* in Xmas battle**



• Just one of the colour images from The *Family Doctor*, part of a vast range of CD-ROMs sold by KimTec UK.

"specifically designed to match the needs and requirements of the 'power users' within the Mac community."

The Hs II is said to be the first of a complete range of Mac compatibles and peripherals to be manufactured in the United Kingdom.

The Hs II is built around the 68030 processor, running at 25MHz, and comes with an 85Mb hard disk, 4Mb of RAM and a 15-inch grey scale monitor. It will cost £3,995.

According to BlueMAQ, "The Hs II gives enhanced Mac IIfx performance by using a proprietory adaptation of genuine Apple motherboards and ROMs."

☎ For more details, phone BlueMAQ on 091-461 0336.

CD-ROMS GALORE

The latest edition of KimTec UK's KimStacks catalogue thudded through the door the other day. This catalogue has been appearing at regular intervals for two years now, and is packed full of Macintosh- and PC-compatible CD-ROMs. The catalogue is presented more like a newsletter, with an editorial from Kim, the MD, and an article on how to install a CD-ROM drive on both the Mac and the PC. (Actually, that makes interesting reading in itself – one paragraph on how to do it on the Mac, the rest of the page for the PC!)

As well as 'standard' CD-ROMs such as PD and shareware collections, KimTec always seems to manage to find some of the most incredible CD-ROMs you've ever heard of. How about, for instance:

- *Officer's Bookcase*, a CD-ROM which contains thousands of NATO and Soviet military terms and acronyms, and which is designed for US Desk Officers of foreign command posts? Yours for only £95.
- *Terrorist Group Profiles* – full of information on some of the nastiest groups of people in the world, and a mere £49.50.
- For the medical among you, *Renal Tumours of Children*, which contains "nearly 250 full colour images" – how nice.

KimTec also sells CD-ROM players and other assorted hardware, as well as some floppy-disk based games and utilities. If you have – or are thinking of getting – a CD-ROM player, I'd strongly recommend that you give KimTec a call on ☎ 0202 888873 and ask to be put on the mailing list.

Ian Wrigley

PRINTS CHARMING!

It's pretty difficult to get excited about printers. I mean, you rather take them for granted, don't you?

Well you do until you need to buy one, and it's then you have to get into all this stuff about cps, NLQ, Epson emulation, dpi, pl1 leads and what-have-you...

So if you're in the market for a new printer, make sure you take a look at the Fujitsu DL900 24-pin job. (I should be an ad copywriter!)

Seriously, though, this machine is really good. For a start, it's tall rather than deep, which means it's desktop footprint is really quite small. That footprint is all the more amazing when you find out that it accepts A4 paper sideways. In other words, it's a wide-carriage printer. (Most wide-carriage machines tend to be about the size of a dinner table.)

Print quality is excellent – as you'd expect from a 24-pin printer – but the Fujitsu is also pretty fast, at 180 characters per second (so that's what cps stands for) in draft mode and 60cps in NLQ (Near Letter Quality, gwtting good at this aren't I?), and it's quite quiet during operation too.

The best news of all, though, is the price – a shade under £300. Shop around a bit and you should be able to get it for less than that.

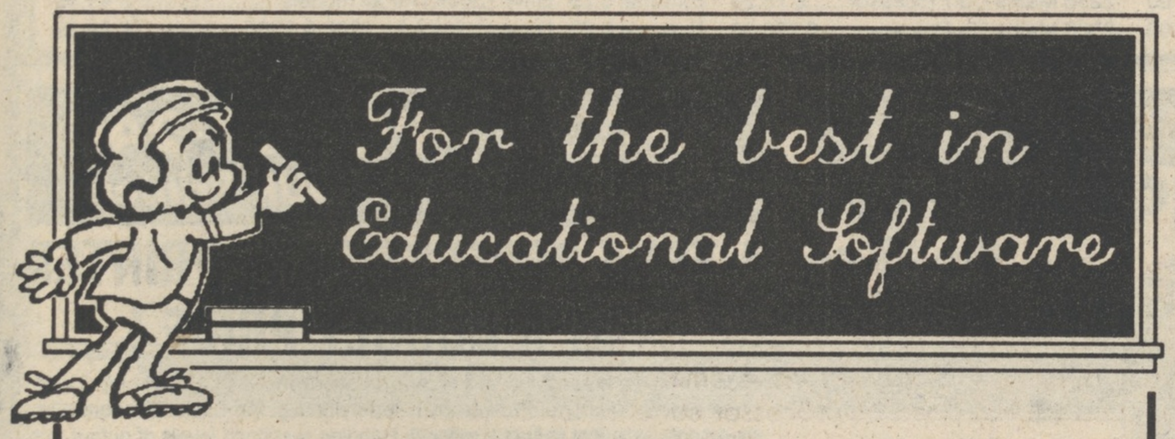
24-pin printers do seem to be getting really affordable these days. The Fujitsu is the best I've seen yet at that price. If you can't find a machine down at your local dealers, you can call Fujitsu on ☎ 081 573 4444.

MULTIMIXX 1

Codemasters started it all, turning out four-game budget-priced compilations under the Quattro banner, and now Kixx, US Gold's budget label, is getting in on the act with the *Multimixx* series.

With the *Multimixx* compilations, though, you don't get four games – you only get three. Still, with each *Multimixx* costing £4.99, that's still a mere £1.66

Continued on next page ➤



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1 Meg And 10 Games .....only £345!
Amiga Cartoon Classics Xtra .....only £390!
Amiga 1500 (inc £395 worth of software) .....only £650!

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suitable for ST and Amiga

ATARI STE

STE Discovery (with ST Basic, 1st Basic, 1st Word, ST Tour Super Cycle, Anarchy, Starwrek, Dragon's Breath, Indiana Jones, Neochrome, Hotel Accommodation, Joystick, etc) **only £299!**
STE Discovery Xtra (as above, with Art Tutor, Asterix, Trivial Pursuit, Pipe Mania, Live & Let Die, Onslaught, Driving Force, Rock & Roll, Rick Dangerous, Squeak, Chess Player) **Only £325!**

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VGA MONO	(254.47) 299.00	(424.68) 499.00
VGA COLOUR	(339.57) 399.00	(509.79) 599.00

Full specification Amstrad 2086 models, featuring 640K RAM, with MS-DOS 3.3, mouse and all manuals supplied. Prices indicated within brackets are excluding VAT.

'286 VGA COLOUR FOR ONLY £699 inc. VAT

Full specification PC2286 & PC2386 models, including MS-DOS 4.011, mouse and all manuals. All Colour Models are shipped with Hi-Res Colour monitors (0.29mm dot pitch). 2286 features 12MHz 80286 & 1Mb RAM; 2386 has 20MHz 80386DX & 4Mb RAM.

	PC2286 HD40	PC2386 HD65
VGA MONO	(509.78) 599.00	(899.00) 1056.32
VGA HI-RES COLOUR	(594.89) 699.00	(999.00) 1173.82

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2286 Maths Co-Processor .....£ 75.20
2386 Maths Co-Processor ....£ 190.35
External 5.25" Drive (360K) for all models .....£ 49.95
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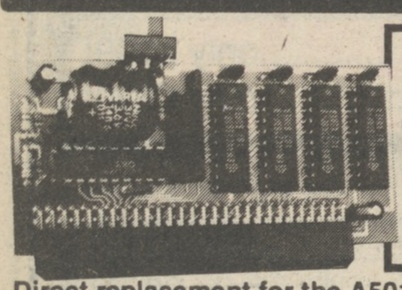

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A500 1.5MB RAM EXPANSION (requires Kickstart 1.3)... **ONLY £79.00**

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Amstrad PC1386 HD90 with 14" HRCD VGA Colour Monitor	£999	N
Amstrad PC2286 DD with Mono.Monitor & 1 year on-site warranty	£449	S
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Philips CM8833 Colour Monitor (with ST or Amiga cable)	£189	S
Samsung MCH4335 VGA Colour Monitor	£225	S
Olivetti CWP-1 Complete Wordprocessing System	£269	N
9-Pin Printers (Mono & Colour)	from £50 to £120	S
24-Pin Printers (Mono & Colour)	from £125 to £240	S
Accounts Master (Accounting) [Dual Media]	£19.99	N
Paymaster (Payroll) [Dual Media]	£14.99	N
Infomaster (Database) [Dual Media]	£14.99	N
Supercalc 3.21 (Spreadsheet) [Dual Media]	£19.99	N

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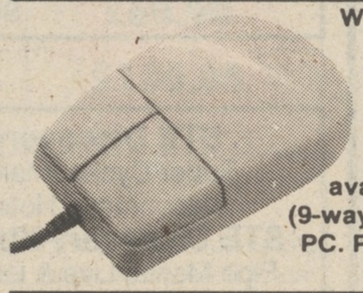
Compatible with the ST or AMIGA

Very quiet ● Slimline design ● Cooling Vents ● Sleek, high quality metal casing ● Suits any Amiga or Atari ST ● Full 1Mb Unformatted Capacity ● Quality Sony / Citizen Drive Mechanism ● Convenient On / Off switch on rear of drive ● Long reach connection cable for location either side of computer

AMIGA VERSION ONLY **£51.99**

ATARI ST VERSION ONLY **£54.95**

TRUEMOUSE FOR THE ST, PC or AMIGA



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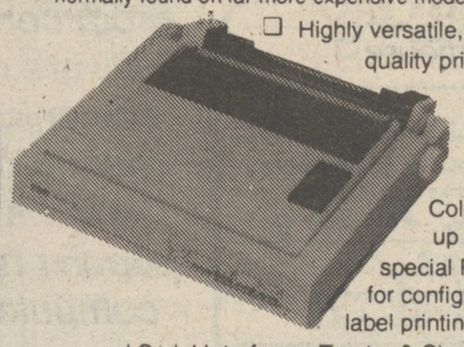

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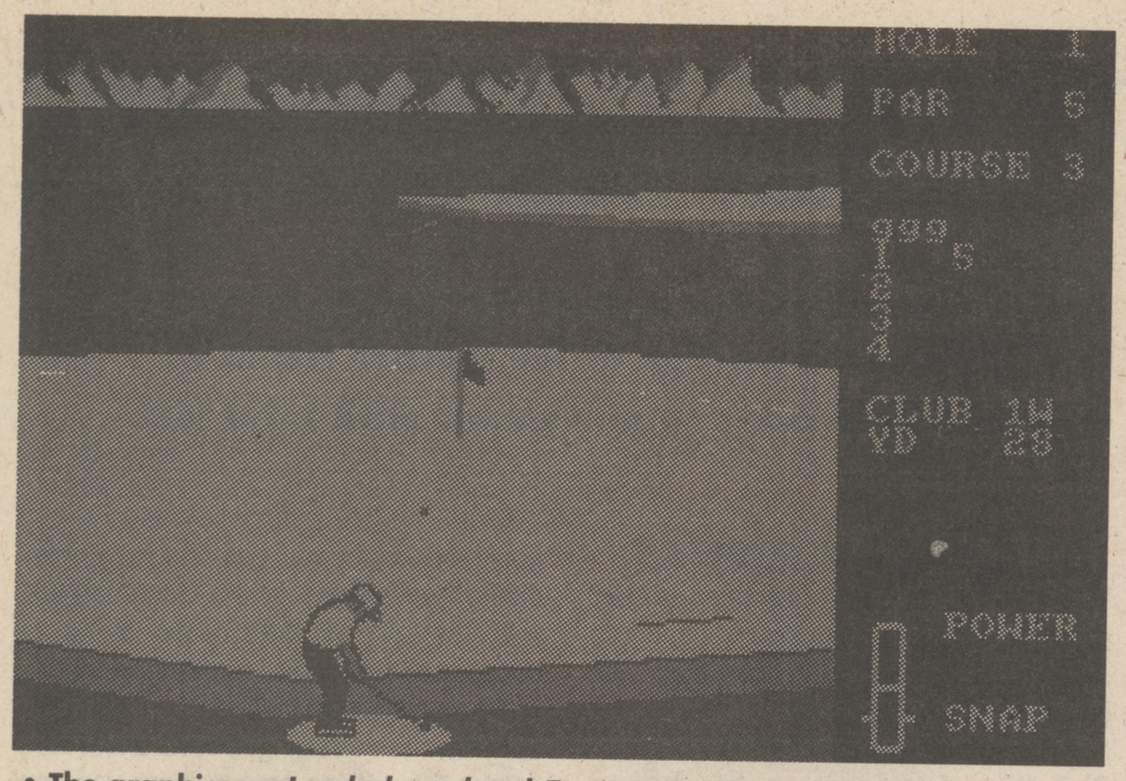

• The graphics on *Leaderboard* and *Tournament Leaderboard* are a bit, er crude... but the game itself is great.



• *World Class Leaderboard* has much better graphics. My God... there are trees! Control and playability are up to the same high standards as the original.

◀ per game.

Multimixx 1 is a collection of classic golfing games, all from the US Gold stable. These are *Leaderboard*, *Tournament Leaderboard* and *World Class Leaderboard*.

Leaderboard is the game that started it all. Looking at it now, you'd wonder that it started anything. The graphics are positively prehistoric, with landscapes composed of blocks the size of entire counties. However, it does still play extremely well.

Tournament Leaderboard is more of the same. Another four courses, to be exact. The graphics are still entirely uninspiring, but if you don't mind that, there's some serious one and two-player fun to be had.

World Class Leaderboard is another kettle of fish entirely. The graphics are completely new, and feature recognisable scenic details like trees, and water, and bunkers. The price you pay for all this graphic splendour is the need to load each hole in separately. But it really doesn't take more than a moment, so the hassle factor is practically zero.

All three games share the now-standard computer golf control method of (a) selecting your club, (b) aiming and (c) judging when to let go of the Fire button while watching the on-screen Power/Snap meter. It's easy to grasp, but not always easy to do, especially since getting the Snap wrong sends your ball slicing off course.

Multimixx 1 is a real golfing feast. You get loads of courses for your money, so the only thing to worry about is whether you've got the energy to complete them all. If you've already got one of these games, then don't bother. If you haven't, you can't really go wrong.

IS A-OK OK? (EH?)

Paul Escott, editor of *A-OK* fanzine, has just sent me his latest issue, plus details of a special offer for the following one...

Issue four, the one I've got here, is pretty well packed to the gills with information. There are listings, letters, articles (this issue has one on comms, for example), reviews and comment.

The only problem is the print quality – I think you need to find a better photocopier, Paul! Also, it looks to me as if some of the pages were put together by different people – the mag's design is not entirely consistent.

Still, those are only minor gripes. If you want to see a copy of *A-OK*, send £1 to: *A-OK* Fanzine, 31 Colebrook Road,

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MACHINE SPECIFICS

UBI SOFT'S MILITARY MIGHT...

French company Ubi Soft will be attacking the Christmas market with a new compilation called *Air/Sea Supremacy*. Well, the title may be new, but there are some familiar old chestnuts in there – not bad 'uns, mind:

- *Silent Service*
- *Carrier Command*
- *P-47 Thunderbolt*
- *Gunship*
- *F-15 Strike Eagle*

Since between them they cover just about every nautical/aerial contingency, you should be well covered!

Air/Sea Supremacy should be out by mid-November, and will cost £15.99 on tape, £20.99 on disk. You'd better start saving.

Shirley, Solihull, West Midlands B90 2LB. If you're impressed, you can take out an annual subscription for £6.

And next issue's special offer? Send 70p and you'll get a cassette containing, 'an exclusive 20-location demo of *The Smirking Horror* by Jason Davis'. *The Smirking Horror* is a rather good home-brew adventure game.

Rod Lawton

Rod Lawton is the editor of Amstrad Action, the UK's leading magazine dedicated to the Amstrad CPC, and Plus machines.

CHEAT CITY!

● *NARC* – Richard Harris of Hemel Hempstead says that to get infinite lives in the Ocean game Narc, all you have to do to attain infinite lives is redefine the keys as G,R,U,N,T,S.

● *LOOPZ* – Simon Warford Craig Davis have come up with the passwords for Audiogenic's *Loopz*:

5 – EASY	30 – POLL
10 – ARTY	35 – ZUIS
15 – FOXY	40 – VEST
20 – CRAS	45 – EMßMA
25 – WHET	

HERO QUEST – Ian Williams of Nazeing has some tips for *Hero Quest* to give you good health, riches and weaponry:

1) At the beginning of each quest save all the characters

2) Begin another quest, but do not leave the room with the stairs

3) Using the healing spells, heal any ailing characters

4) Search the room

5) Exit the room via the stairs

6) If necessary buy weapons or armour

7) Repeat step 1

8) If necessary repeat from step 2 (any number of times)

C64

- **Civil War action throughout the *North and South***
- ***ZZAP!64* gone – a sign of the modern times ?**
- ***Total Eclipse* made totally simple with total fun**

AMERICAN ANTICS

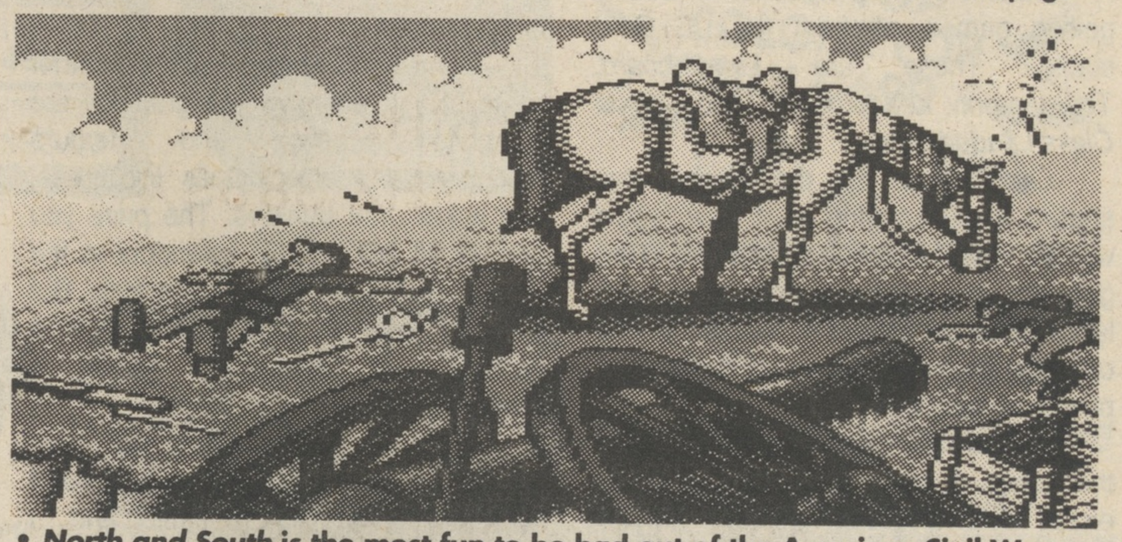
Yes, I know the game has been out for some time now, but my review copy has only just arrived – not that I'm complaining, mind you.

The game is based on the American Civil War, and owes a lot to 'Les Tuniques Bleues', an off-the-wall Belgian comic. The game is suprisingly entertaining despite it's strategy label.

Gameplay is reasonably straightforward; you can choose to play either the Yankees or the Confederates, with the aim of both sides being to occupy all available territory. And it's really as simple as that.

After the amusing 'Deliverance' intro comes the options screen; here you can choose your side, the three different strengths of both armies, arcade/strategy mode, additional hazards (indians and

Continued on next page ➤



• ***North and South* is the most fun to be had out of the American Civil War.**

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MACHINE SPECIFICS



• A fine example of the superb graphics you'll find in Infogramme's highly enjoyable *North and South*.

◀ bad weather), foreign aid and the starting date. This is all nicely covered by a superb icon system, probably the best I have encountered, and once you've chosen your set-up, a photographer records it all on film... a nice touch.

The game centres on a map of America, very much like the board in a board game, and here your soldiers (each representing a battalion) can be moved from state to state. The more troops on your side, the better your chances of winning the war, and you can only increase your troop quota with loadsamoney. So, it's up to you to occupy areas with railways running through them in order to secure the loot.

The arcade mode is ultimately the most enjoyable, and has some amazing animated sequences. There are some neat touches, such as the indians throwing axes at your men, and a sub game set inside enemy forts also adds to the entertainment.

Strategy mode cuts out the animated bits, as well as much of the decision-making – this lessens the amount of disk access, but games become VERY dull.

The game comes into its own in two player mode, and is the most fun to be had out of the Civil War. The graphics are the highlight, with some colourful and beautifully animated scenes, and everything fits together wonderfully. The music and jingles by Jeroen Tel are also superb, and really add to the atmosphere.

If you're after a bit of historical fun, give *North & South* a whirl – it's amazingly refreshing.

TOTAL ENJOYMENT

It's Freescape listing time again folks, this time a superb hack for infinite water, infinite health, infinite time, *and* infinite ankhs in *Total Eclipse*. You know the score – enter the lisitng, SAVE it, then RUN for a much easier game (cheers once more to Marin Pugh).

```
0 REM *TOTAL ECLIPSE TAPE CHEAT*
1 FOR X=533 TO 603:READ Y:C=C+Y:
  POKE X,Y:NEXT
2 IC C=8170 THEN POKE 157,128:
  SYS533
3 PRINT"DATA ERROR"
4 DATA 169,34,141,40,3,169,2,141,
  41,3,32,86
5 DATA 245,169,11,141,206,1,96,72,77,
  80,169,173
6 DATA 141,9,111,141,96,111,141,55,
  111,141,37,111
7 DATA 141,236,112,141,91,102,141,180,
  123,169,5,141
8 DATA 167,108,169,142,141,168,108,
  169,162,141,171
9 DATA 108,169,0,141,172,108,141,176,
```

THE LAST ZZAP

At the eleventh hour, I received word that Newsfield, publisher of *ZZAP!64*, *Crash*, *Raze* and several other titles, had gone into voluntary liquidation – which means that the said publications probably won't see the light of day again.

Although recently the magazine's quality had floundered, *ZZAP!* was once one of the most respected computer publications around. Sad indeed, leaving only two dedicated C64 magazines on the market.

Another worrying aspect is Newsfield's software house *Thalamus* with some superb titles such as *Winter Camp*, *Creatures 2* and *Nobby the Aardvark* in development, let's hope that the company doesn't meet the same fate as it's parent. The industry waits with bated breath.

RAINBOW TIPS

If the *Rainbow Collection*, featured in *Express* 149, is giving you a few hassles, why not try the following reset POKEs:

- *Bubble Bobble* – POKE 1240,189:SYS 58518
- *Rainbow Islands* – POKE 29535,189:SYS 2061
- *New Zealand Story* – POKE 3215,173:SYS2306

3D BLUNDER

Oops! If you cast your mind back to *Express* 145, you may possibly recall my *3-D Construction Kit* review. In my haste I neglected to mention the prices, so here they are; cassette £24.99, disk £24.99 – and that includes the superb tutorial video (making the package incredible value for money).

☎ For further information, contact Domark on 081-780-2222.

Andrew Roberts

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- **Experience very cheap thrills with *Trail Racer***
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- **The innermost secrets of the Spectrum revealed**

ANOTHER PD BARGAIN

The best things in life are usually pretty expensive so it's a nice surprise when you can get something for next to nothing, without having to collect 67 tokens and pay £2.99 for postage and packaging, especially when it turns out to be very good. Yep, I'm on about that wonderous Public Domain place again, a mystical land where software can be freely copied, ever plentiful and best of all, dead cheap.

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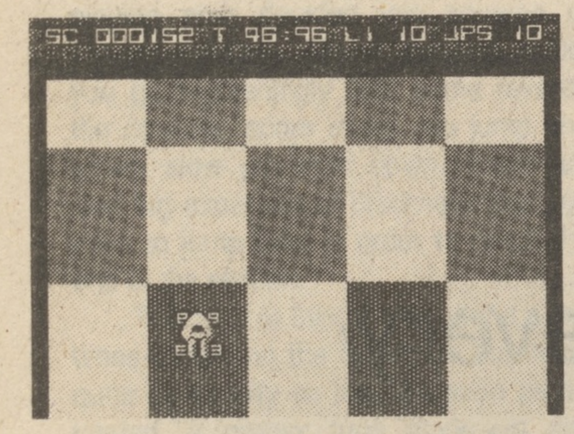
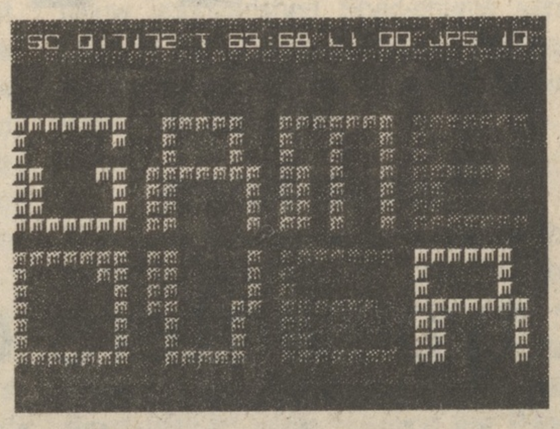
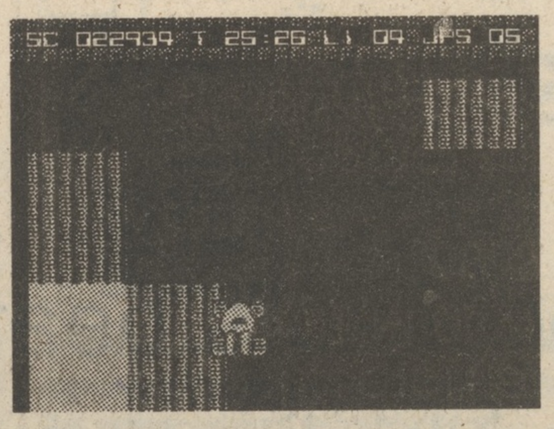
"To access Amstrad's built-in test mode on the Plus 3 and Plus 2 hold down BREAK while pressing the Reset button. A testcard should appear on screen. Then press down Q, A, Z and P, L, M simultaneously. Your Speccy will then be put through a series of gruelling tests. Make sure you don't leave any important disks in the Plus 3's drive."

ZX81 LIVES!

I suppose it's just possible that in our midst are some traitorous, two-timing types who own a Speccy and another computer as well. As repellant as that is, I mention such things because of various Sinclair-related software available for the







• When you get a program from the Public Domain the last thing you expect is superb graphics and great, funky tunes. But that's exactly what you get with *Trail Racer* – if you excuse the Kermit with a bow tie sprite, that is!

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- **Updated R-Type blasts right on to PC Engine**
- **Sequels for the Game Boy *Castlemania* and *Nemesis***

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MEGA-CD RELEASE

Sega's Mega-CD, their CD-ROM expansion unit, will be officially released in Japan on 1 Dec for a cut price of 49800 yen (approx. £217).

A machine is as good as the software, and the two games that should be available for the CD system will be a great looking arcade action game called *Ernest Evans* by Wolfteam, and a graphic adventure game called *Detonator* featuring lots of animation sequences. Although, as the latter is all in Japanese, it won't be easy to play unless you know the language!



● **Make sure you brush up on your Japanese before you go delving into the action-packed adventures of *Detonator***

US OFFERS

Over in America, the Super NES (the US version of the SuperFamicom) is now available at Toys 'R' Us stores at $199.95, bundled with *Super Mario World* game.

Also available are three titles for the machine, all from Nintendo – *Pilotwings*, *F-Zero* and *SimCity*.

As for the *Turbo-Grafx-16* (the US version of the PC Engine), NEC are

PCKID BONUS

Here's a simple tip for Hudson's hilarious arcade adventure *PCKID 2*. On the Mode Select screen, hold down button II and press RUN on the first option to enter the Bonus level select screen.

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MACHINE SPECIFICS

giving away a music CD with every CD-ROM bought. The CD (which includes graphics – CD-G) contains 13 tracks from Jimmy Hendrix to Fleetwood Mac, plus a bit of modern art as graphics.

This is a good ploy by NEC to sell the CD-ROM as a machine that can play CD-Gs, as it's cheaper than normal CD-G players.

R-TYPE RETURNS

PC Engine owners who have a CD-ROM and missed out on Hudson's excellent conversion of R-Type will be able to get the game on CD-ROM from Irem under the title of 'R-Type Complete CD', which should be available around December.

As yet, no information on whether the CD will contain addition levels, or other options.

A Beast of a game Psygnosis' *Shadow of the Beast* will appear on your Megadrive some time in December on 4 megabit cartridge from Victor Musical Industries, and it looks very much like the Amiga version.

However, the game looks to be more colourful and even brighter...well, you'd expect so, as it can display more colours than the Amiga.

It also features some great special effects when you warp around. We'll just have to wait and see how it plays and if it animated better!

FOOTBALL CRAZY

Strangely enough, Megadrive owners have been starved of a decent football game for their machine... but that will soon change in December, as Sims Co. are to convert Tecmo's coin-op footie game – *World Cup '90* to the MD, under the title of 'World Cup '91 MD' (provisional title).

If it plays as well as the coin-op, it should be worth investigating – but it'll only be on a 2 megabit cartridge!!

MEGADRIVE CHALLENGE

Here's a challenge for all you *Sonic the Hedgehog* owners on your Megadrive. Try to complete the first stage in 29 seconds for a 50,000 point bonus! You have to be fast!!

ANOTHER SHOOT-'EM-UP

At least a couple of weeks ago, I mentioned that the first shoot-'em-up to be released for the Mega-CD will be *Super Aleste*. Well, the game will also be converted to the Super Famicom by Toho Co. on 8 megabit cartridge, and very promising it looks too, although it won't appear until next year.

Game Gear owners will also have their own version of the game under the very original title of *GG Aleste*, although GG actually stands for Galvanic Gunner. The game will be programmed by the original producers of the game – Compile, and should be available in November.

KONAMI ACES

As I reported in my first column, Konami have now released sequels to *Castlevania* and *Nemesis* for the Game Boy. Both game are excellent, and great improvements on the originals.

The main trouble with the original *Castlevania* was that it was too difficult, requiring pixel perfect jumps and the game is rather slow.

However, Konami has solved these problems by making this version highly playable, and with improvements in the audio and video departments, and new challenges, *Castlevania II* is certainly worth checking out...

As fun as Capcom's *RockmanWorld*. *Nemesis II* again,



•The Game Boy gets two great games – *Castlevania* and *Nemesis*

features some superb animation sequences, lots of varied enemy attacks, and generally tougher than before. As shoot'em ups go, it's certainly one of the best on the Game Boy and a must if you're a fan! ■

Onn Lee

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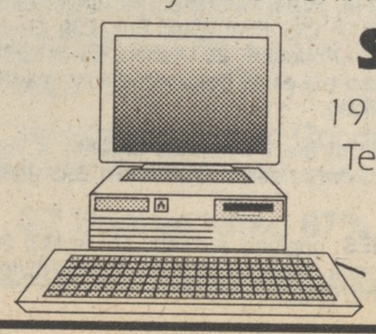

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TECH TIPS

Does your text lose its style when it's transferred? Does your printer crash your machine? Want to know how to keep your programs secret? Read on...

Format failure

I think there is something wrong with my Amstrad 1640HD's floppy disk. The computer seems to work fine, but when I use FORMAT to prepare a disk, it comes up "Command or filename not found". What can I do?

Jonathan Kegg, Plymouth

THERE'S NOTHING WRONG with your floppy disk, Jonathan, and the problem is easily fixed.

The key to the problem is that not all MS-DOS's commands are built into MS-DOS itself; there are too many of them and they would take up too much memory in the PC. Instead some of the less common commands are stored on disk, effectively as programs.

FORMAT is one of these, and is in fact a program on your hard disk called FORMAT.COM. Your problem is that when you type FORMAT MS-DOS can't find the FORMAT.COM program. This is because it is almost certainly stored in a directory on your hard disk called "DOS" or something similar, while you are typing FORMAT while in another directory.

There are two ways around this. The direct method is to include the full "path" of the FORMAT command – the path is the exact position of the program on your hard disk. Thus,if FORMAT.COM is in the DOS directory typing:]

```
\DOS\FORMAT A:
```

will do the trick. The more elegant solution, however, is to instruct MS-DOS to always check in the \DOS directory to see if the command you want is in there. This is done using the PATH command. You use this command by typing PATH followed by a list of directories to search, each separated by semicolons. So the command you want will be:

```
PATH C:\DOS
```

assuming again that the directory with the MS-DOS files is called DOS.

Ideally you should work out a list of the directories you always want MS-DOS to search and put the appropriate command in your AUTOEXEC.BAT file so it is activated every time you switch the machine on

No mouse hole

I want to fit a mouse to my Tandon PC, but unlike my friend's Amstrad, there's no socket marked mouse. Does this mean I have to fit an expansion card?

Paul Kaye, Huddersfield

YOU SHOULDN'T NEED an extra card. Most mice work by attaching to the serial port (labelled SER or COM on the PC). As long as you don't need that port for a modem or other device, you'll be OK.

And most PCs these days come with two serial ports (COM1 and COM2) anyway. If you do need an extra serial port (you can have up to four if you need them), an expansion card will cost only £15 or so – check the ads in *Shopping Express*.

Terminal emulation

I have heard vague mutterings about being able to attach a terminal to the serial port of an Amiga for debugging purposes, but never any details. Is this indeed possible and, if so, is there any software that can be used to run a terminal under normal, that is 'non crash', circumstances?

Thinking somewhat laterally to all this, is there any way that I could use my old, but oh so loved, Speccie 128 as such a terminal? It has an RS232 port (of sorts) on its side and I guess this would be the means of physically connecting the two computers.

Given this, can you recommend anywhere where I could get a Spectrum RS232 to Amiga serial port cable made up?

Finally, is there any terminal emulation software available for the Spectrum that would be suitable for these purposes?

I would be very interested to read your ideas, comments, howls of laughter on the above.

Nicholas Murray, London

YES, IT IS POSSIBLE. The software to do this is held in the Amiga's ROM, and is really only of use for debugging purposes. For more general terminal emulation, just about any comms package you care to mention will suffice. I would recommend the public domain program NComm, on Fish Disk 356.

I'm sure you could use your Spectrum as a terminal. As far as getting an RS232 cable made up, Trilogic (telephone 0274 691115) is probably the best firm to approach. I'm afraid I don't know of any terminal software for the Spectrum. I suggest you keep your eyes open for some comms software.

Text transfer

I've been struggling to get text with formatting like tabs and centring out of my word processor and into my DTP package. I could do it fine as raw text, but the DTP system doesn't read Works' WPS files.

Then I discovered 'RTF'. By using the Convert option in Works I can change my Works files into RTF ones and the DTP program reads them no problems at all, with all the formatting intact!

Guy Burtles, London E4

YOU CAN ALSO USE RTF (which stands for Rich Text Format) for moving files between word processors. And it's extremely handy for shifting files by modem, or between different types of machine, as all the formatting is stored as text, not tricky binary files.

Vanishing disks

I need help, and fast. I bought a new Amiga 500 a few months ago, having graduated from the C64. I bought the software package *Quartet* two and a half months ago, and found that the sample disk was empty. The whole package was returned to Microdeal, who replaced it immediately with a new one.

In the last two months I have received five sample disks, all empty. I received the fifth one yesterday.The program disk is full and loads without problems. Microdeal is sending the disks out with samples on them, but when I receive them they are empty. Does the problem lie with the Post Office, and is anyone else having the same trouble?

Mrs F Fuller, London

RATHER A STRANGE ONE, THIS. It may be that the Post Office has been X-raying the disks and so blanking them, but this seems unlikely, especially since your program disk is intact.

The only other possibility that comes to mind is that the samples are there, but you haven't been able to find them. As you know, most programs and items of data on the Amiga appear as icons. However, it is possible to save things on the disk without icons, therefore making them invisible from the Workbench. The way to check is to open the Shell (click on the Shell icon on the Workbench disk) and type:

```
dir ?
```

The computer will respond with

```
'DIR,OPT/K,ALL/S,DIR/S,FILES/S,
INTER/S:'
```

At this point, remove your Workbench disk and put in your samples disk. Then press [Return]. You will get a list of all of the files on the disk. If it really is empty, then I suggest you start making a fuss with Microdeal. Otherwise, you should

GA blues

I'm completely confused by all the acronyms for graphics on the PC. I've seen VGA, CGA, EGA, and in PC Format this month they mention XVGA. Please explain what they mean.

Peter Foot, Berkhamsted

WELL FIRST OFF, XVGA doesn't exist, which probably explains some of your confusion; it's probably a misprint for XGA. So what do they mean? Well the definitions are complex, but in broad brush terms the systems, in increasing order of quality are:

MDA – Monochrome Graphics Adapter. Text only, no graphics, but very sharp and clear.

CGA – Colour Graphics Adapter. Low resolution and only four hideous colours. Obsolete.

EGA – Enhanced Graphics Adapter. Much higher resolution and 16 colours to choose from. Cheap, but outdated.

VGA – Video Graphics Array. Higher resolution again, and 256 colours selected from a huge range. The modern standard.

SVGA – Super VGA. Various manufacturers produce different systems which offer higher resolution.

XGA – EXtended Graphics Array. IBM's new system which will undoubtedly become the new standard in time.

These systems were originally developed by IBM itself, but there is one which wasn't, Hercules. This is a black and white system which offers the same kind of resolution as VGA. It's becoming less common, but it's still the cheapest high resolution graphics system, with a monitor and card costing around £100.

be able to load these files into Quartet with the load requester.

Constant Crashes

I have a constant problem with my 520STFM set-up, with Panasonic KXP1181 printer whilst using First Word Plus. The problem arises if I am trying to save a file with an underline character in the name (_). I need this character as I produce a lot of files which need to be numbered, and the underline creates a handy space between the filename and the version number. The program will always crash if I do this. I have to save a file and then rename it from the desktop afterwards. Have I got a faulty version of the program, it is version no. 3.10 (UK)?

THIS IS IN FACT A BUG in the ROMs of older STs. There should be no problem with the later versions of TOS. The easiest way to overcome this problem is to use one of the replacement file selectors available from a PD library, such as FSELECT6 or FSELECT7 or the Little Green Footballs file selector.

These programs have been written to overcome this problem. The file selector is simply placed in the AUTO folder of your boot disk and once installed all calls to the GEM file selector are redirected to the new program, without taking up too much memory. All good ST PD libraries can supply these programs, Goodman PDL are on 0782-335650.

Secure programs

I have a small tip which some people may care to try. If you wish to disable a program so that nobody else can use your copy of it, then simply change the file extender from .PRG to something else, such as .KEY or .LOK. Then you have to edit the desktop.inf file of your boot disk so that your ST will recognise the program file as executable. Do not edit the desktop.inf file of your program disk, as this rather defeats the object of the exercise.

Always work on a BACK UP COPY of your boot disk, you can lose data if you are not careful!

First load the desktop.inf file into a text editor or a word processor and look for the lines as follows:

```
#F FF 04 @ *.*@
#D FF 01 @ *.*@
#G 03 FF *.APP@ @
#G 03 FF *.PRG@ @
#F 03 04 *.TOS@ @
#P 03 04 *.TTP@ @
```

Now you have to add an extra line after the line ending *.PRG as follows:

```
#G 03 FF *.KEY@ @
```

Ensure that you copy the line exactly except for the new file extender. Now save the edited desktop.inf file back to your boot disk, remembering to save it as an ASCII file. Now as long as you boot from the disk with the new file, you can run any program that has a .KEY file extender. The program will not run on any other ST unless it too has been booted from your boot disk.

In this way you can prevent any accidental loss of files caused by unauthorised people loading up your programs. Of course, any extender you please can be added to the file.

J Harris, Southend, Essex

Devpac 2 – a good read?

I have just bought *Devpac 2* for the Atari ST and I was wondering if you could recommend a good book about the basics, that someone who has never programmed in 68000 assembly language can understand.

Could you also tell me if there is a book about sprite routines and screen manipulation in 68000 for sale anywhere?

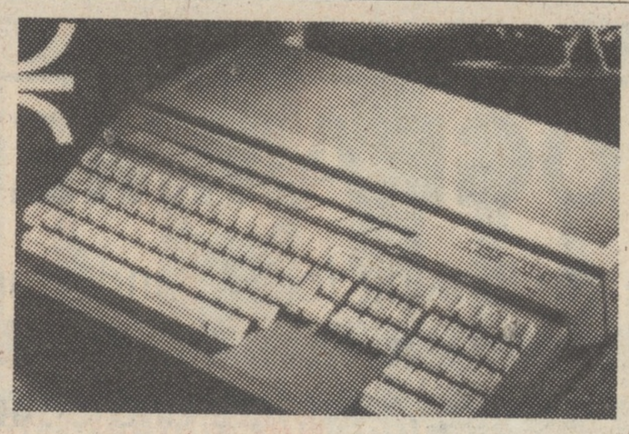
Anthony Richardson, Cambridge

I THINK THAT THE BEST SOLUTION to your problem is to obtain *Introducing Atari ST Machine Code* from zzSoft. As well as providing a book, a disk is supplied containing all the examples in the book, a symbolic debugger, a .RSC editor, an assembler and linker. There are also good sections on GEM, GDOS and using 68000 from GFA Basic in over 400 pages. This is very good value for £21.

You may find it advisable to purchase a more general book on 68000 as well that is not ST specific, as you may find the descriptions of the opcodes more detailed. An excellent book is *Programming the 68000* by Steve Williams, ISBN 0-89588-133-0. zzSoft can be contacted on 0422 845528.

I am not aware of any books that deal specifically with ST screen and sprite routines in 68000. However Budgie UK, the Licenseware game producers, have released a disk full of their machine code routines which include sprites, screen handling, sound, scrolling, joystick, mouse, etc.

The disk costs £3.95 and is available from The ST Club, disk no BPR.01: The Budgie UK Programmers' Library. The ST Club are at 49 Stoney Street, Nottingham, NG1 1LX. Tel 0602 410241.



•To make the most out of programming on your ST, a good read is what you need

Power Problems

The power supply on my 520STFM has packed up and I am desperate to get it fixed, although I am rather short of the readies at the moment. None of the computer stores where I live seem to be able to help, as they all seem to be sales outlets only. Do you know where I can get a replacement that I could install myself?

I am an electrician, so it would not be a great problem for me to install, as the connections look quite straightforward.

David Knight, Norwich.

UNFORTUNATELY, the ST's internal power supply is quite an expensive piece of kit, the recommended list price is one hundred pounds! As you said, it is quite simple to install the replacement as long as you know what you are doing, but are you sure that it is the power supply that is the problem? If you buy a new one and it still does not work then you are no better off than you were before.

Your best option is to contact an ST repair centre and get them to sort it out for you. Evesham Micros have a fixed repair rate of £65 for STs, as long as they have not been tampered with by unskilled amateurs. They also supply power supplies separately for £55, or for £35 on a service exchange basis. You can contact them on 0386 446441. ▩

Logical listings?

I bought AMOS a couple of months ago, thinking that I would teach myself to program. Sadly, it's turned out to be a lot more hassle than I ever imagined. For the last week or so I've been banging my head against the proverbial brick wall, trying to get my quadratic equation program to work.

I've enclosed a listing – can you please tell me what's going wrong before I fall into despair! If I can't write this, what chance my glorious plans for writing a word processor package?

George Scott, Egremont, Cumbria

DON'T PANIC. There were actually only a couple of errors in your listing. All numeric variables in AMOS are integer, unless you specify them as real (ie, as being able to hold numbers with fractional parts) by appending a '#' character to their names. Omitting this means that any divisions or square roots that you do return only integer results, and are hence not entirely right.

The other problem with your listing was that you had a plus sign where there should have been a minus. I suspect this was a typing error rather than a fundamental misunderstanding.

Your program as it stands can be quite easily modified to take into account imaginary roots (those which involve trying to find the square root of a negative number). The program below will find the roots of ANY quadratic equation:

```
Rem Quadratic equations
Rem A program to solve equations of the
form:
Rem ax^2+bx+c=0
Rem using the time-honoured formula:
Rem x=(-b-(b^2-4ac)^0.5)/2a
Input "Enter your value for a ";A#
Input "And b ";B#
Input "And c ";C#
Rem first compute bit to be square rooted
S#=B#^2-4*A#*C#
I=0 : Rem set to 1 if roots are imaginary
If S#<0
   I=1
   S#=-S#
End If
S#=Sqr(S#)
Print "Roots are x = ";
If I=0
   Print(-B#+S#)/(2*A#)
   Print "or x = ";
   Print(-B#-S#)/(2*A#)
Else
   Print -B#/(2*A#);" + ";S#/(2*A#);" i"
   Print "or x = ";
   Print -B#/(2*A#);" - ";S#/(2*A#);" i"
End If
```

As you probably know, trying to find the square root of a negative number results in an error. Yet certain quadratic equations require just that. The way around this is to make use of imaginary numbers, the most basic of which is known as 'i' and is defined as the square root of -1 (minus one). So i*i=+1.

To find the square root of a negative number, simply find the square root of the equivalent positive number and multiply it by i. (Bear in mind that i has no REAL value – that's why it's called 'imaginary'.) In this way, the roots to any quadratic can be calculated. Notice the nested 'IF' statement that has to be used to take account of this, and the variable 'i' which is used to remember whether or not the results are imaginary.

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● THE SMOKE BBS - 071 737 2457, 9pm-6am, V21/V22 bis

● 01 FOR AMIGA - Call 071 377 1358. v21/22/22b/23

Bulletin Boards

A

Aardvark	0284 767118	2400/8N1
A–Board	0375 23201	2400, 8/N/1
Above Board	0254 682862	HST
Absolute Zero Q	081-741 7233	V21/22/22b/23
Advance (Opus) Hull	0482 586285	Up to 2400
Agnus	061-976 1559	V21/V22/V22bis
Alchemist	0666 504597	
Alternate Reality	0352 856626	V21/22/22b/23
Alternative Viewdata	081-761 8220	V21/23/23v
Almac PC Board	0324 665371	300–2400MNP5
	0324 665460	HST
	0324 665449	Hayes V 9600
Amiga II	0619 626377	
Amiga Board	0268 510495	V22/22b/23
Amiga Connection	081-981 9289	V21/23
Amiga Shack	0737 361178	V21/22/22b/23
Amiga South East	0293 28464	V21/22/22b/23
Amtech Support	0202 294716	V21/22/22b
Andrew's BBS	0384 296964	V21/V22/V22bis.
Andromeda Galaxy	0243 379430	V21/22/22b/23
Angus	061 976 1559	V21/V22/V22bis
Apparition	0268 289105	
Apricot Tech Sup	021-456 2402	V21/22/22b/23
	021-456 2401	V21/22/22b
Arcade Fantasy	0533 376056	300-2400
Arena	0625 539063	V21/22/22b/23
Aspects	061-792 0260	V21/22/22b/23
ASTon-line	081-847 5389	
Attic	081-308 0466	V22/22b

B

Babbs Tower	0394 276306	V21/22/22b/23
Barney's Rubble	021-441 1801	V21/22/22b/23
Bart Simpson BBS	0241 89261	up to 1200
Bay	0843 225669	V22 Bis/MNP5
Beyond Belief	0642 787898	V21/23
Blitter BBS	0292 671638	300-2400.
Body Matters	071-603 7581	V21/22/22b/23
Bona Board	081 675 7549	2400
Brunel BBS	0272 584352	V21/22/23
Budget	021 311 1068	Up to V22bis
Buz Board	081-202 9175	V21/22/22b

C

Cargo BBS	0420 475462	V21/22/22bis
Campus Ros	0223 357445	V21/22/22b/23
Canonbury	071-704 2535	V22/V22bis
Castle BBS	0276 691872	V21/22/22b/23
Cats Board	0628 824852	Hst
Central BBS	021-711 1451	V21/22/22b/23
Chipboard	0532 320225	V21/23/23v
Chichester	021-770 6937	Up to 2400bps
Chronos' Lair	021-744 5561	V21/22/22b/23
The City BBS	021 352 1237	300-2400
CIX	081-399 5252	V21/22/22b/23
Clapham Junction	0234 64261	V21/22/22b/23
Cliff's Corner	0502 518274	V21/22/22b/23
Connections	081-903 1309	V21/V23/V22/V22bis
Compass!!	0942 896661	
Computers 4 Christ	0926 428294	V21/22/22b/23
Connections	081-903 1309	V21/23/23v
Connex	071-431 3922	Hst
Cp/m User Group	0753 868196	V21/22/22b/23
Crown Green	071-245 1512	V21/22/22b/23
Crystal Junction	0384 441929	V21/V22/V22bis/HST
Crystal Tower	081-886 2813	V21/22/22b/23
Cure	0604 27865	Hst
Cv Database Bb	0427 810211	V22/22b
Cybernet	071-978 8595	up to 2400 + Mn8
Cyberspace Amiga	0295 275045.	V21/V22/V22bis
Cynotel	081-346 2816	V23v

D

DIE	061-434 9907	V21/22/22b/23
Dabblers' Lair	0270 624248.	
Dambusters	0203 333195	V21
Dark Crystal	081-207 2989	Hst
Dark Halo	0392 434477	Hst
Dark Side	0446 33729	V21
Darkhaven	0604 413716	V21/22/22b/23
Data Network	081-478 5464	V21/22/22b/23
Datanet	0245 323693	Up to 14.4kbps
Datasel/wanderland	081-680 5330	V23
Datasoft Opus BBS	0460 54615	V21/22/22b/23
Datatrade Q	0536 725180	Hst
Dbase User Group	0532 842213	V21/22/22b
Delta	0252546269	
The Demo Factory	0892 516304	300-14.4K/HST/V32
Diamond Opus	0791 86504	Hst/v32
Digital Matrix	021-705 5187	V21/22/22b/23
Direct Access	0935 79760	up to 2400
Direct-line 1	081-841 1847	V21/22/22b/23
Direct-line 2	081-842 2030	V21/22/22b
The Dock	091 454 6978	300 to 2400
Domain BBS	081-773 2422	V22/22b
Dragon's Tower	081-202 0709	V21/22/22b
D-TEL Viewdata	0325 332117	V23
Dunedin Blackhole	031-669 2974	
Dwarfen Realm	0376 501036	V23v

E

Edinburgh Castle	031 334 7043	HST
Empire BBS	0473 683215	V21/V22/V22bis
Empirical Research	0543675158	V21/22/22b/23
Empyrion	0792 580781	V21/22/22b/23
Engineers Workbench	051-327 7036	V21/22/22b
Equaliser	0232 454097	V21/V22b/V23
Eureka II	081-683 0629	V21/22/22b/23
Exchange S/w	0767 5051	V21/22/22b/23
Eye-2	0525 715789	V21/22/22b/23

F

Fal Opus	0736 794827	V21/23
Falcon BBS	081-527 4165	V21/22/22b/23
Family Skeletons	0480 812097	V22b
Fatter Angus	0703 420118	V21/V22/V22bis
Fido UK1	0734 713909	V22/22b
Flight Path	081-759 1957	V22/22b
Focus International	0905 795002	
Focus Tbbs	0303 42690	Hst
Focus Uk	0905 774477	V21/22/22b/23
Folkestone BBS	0303 45203	V21/V23/V22/bis
Forth View	031 660 6680	V21/22/22b/23
Fourth Dimension	0202 600305	V21/V22/V22bis/V23
Foundation	0473 688183	12/2400
Free For All	0763 261624	V21/22/bis/23

G

Gallery QBBS	081-847 2795 •	V21/22/22b
Game Over	0752 848070	V21/22/22b/23
Games Online	0273 699200	
Ger's Lair	071 436 5749	300-2400
Gnome At Home	081-888 8894	V23v
Gods	081-994 9119	V21/23
Golly!	0734 320812	V21/22/22b/23
Good Life	081-541 0187	Hst
Gosh BBS	0257 267186	V21/V22/V23
Gourmet	0474 536654	V21/22/22b
Grainstore	0905 770198	V21/22/22b
Grenadier	0825 762803	V21/22/22b
Guersey Island	0481 48393	300/1200/2400

H

Harlequin	061-945 3612	V21/22/22b/23
Hastings BBS	0424 717919	V21/22/22b/23
Hawk's Castle.	0344 411621	Hst
Hawk's Realm	081-863 8751	300-2400
Hazzard	071-737 0505	V21/22/22b/23
Hilary's Board	0277 233468	V21/23
Humberside East Coast Systems	0964 614524	300, 1200, 2400

I

Ichthus (trinity 3)	0734 461466	V21/22/22b/23
	0903 700771	V21/22/22b/23
Industrial Archaeologists Diggings BBS	0517 331135	300 to 2400

J

Jersey BBS	0534 37779	V21/22/22b/23
Jersey Opus	0534 39389	V21/22/22b/23
Jocks Away!	031-225 5368	V21/22/22b/23
Jolly Fisherman	0754 67796	V21/22/22b/23
Jolly Roger	081-742 1640	V21/22/22b/23

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K

Kirklees Opus	0484 665415	V21/22/22b/23
King Of The Castle	0233 620228	V21/22/23
Komputer Knldge	0844 274066	V21/22/22b/23

L

Labyrinth	051-724 4458	V21/23
Lamplight Qbbs	0705 811531	V21/22/22b/23
Laser Tbbs	0532 438430	V21/22/22b
Lau's Ql Bb	081-751 6096	V23v
Level 9	0926 889208	300-2400
Lightfinger's Place	0202 485723	V21/22/22b/23
Linelight	0580 212043	V23v
Linx BBS	0522 511277	V21/22/22b/23
Nova-net	0274 370760	V22
Liverpool Mailbox	051-428 8924	V21/22/22b/23
Liverpool Ros	051-931 4271	V21/22/23
Loch lomond	0389 55762	V22/v22bis
Loft	0442 230461	V21/22/22b/23
Logical BBS	0772 623167	300-2400
London City Mag	081-468 7648	V21/23/23v
London Connexion	081-667 1313	V21/22/22b/23
London Embassy	081-366 1778	Hst
London Mail Centre	081-534 1200	V21/22/22b/23
London Metropolis	081-519 1055	V21/22/22b/23
Loony Bin	0703 787489	V21/23

M

Mach II BBS	0242 260 685	V21/22/22bis
Mactel Metro	081-543 8017	V21/22/22b/23
Mactel Phoenix	0473 610139	V21/22/22b/23
Madness BBS	0603 300947	V21/22/22b/23
Magic Castle BBS	021-430 3761	V21/22/22b/23
Magic Mushroom	0361 83641	V21/22/22b
Magnum	0274 547006	V21/22/22b/23
Magrathea	0376 24402	V23v
Malvern BBS	0684 892904	up to 2400
Manor	0980 863031	V21/22/22b/23
Marctel	081-346 7150	V21/23/23v
Matrix	051-255 0225	V21/22/22b/23

Max BBS V21/V22/V22bis/V24/V32/V42/V42bis/9600/14K4/MNP and LAPM. Numbers as follow:

0905 52536	Alien Node
0905 57822	We/ve Got A Hot One Here
0905 58030	Throbnet Node
0905 56610	So You Like Spam Node
0905 57112	Dirty Lines Node
0905 56335	Amiga Node
0905 58042	Troffers Node
0905 754151	For All Software Troffers
0905 754127	Live and Kicking Dawn Raid

Maximum	0905 429595	
Mbbs Mitcham Ilc	081-648 0018	V21/23
Medway	0634 280031	V21/22/22b
Merlin	0443 834179	V21/22/22b/23
MetNet Train System	0482 473871/442251/449028	V22bis/V23 and faster
Micro Live	081-567 6500	V21
Micro Update	081-877 1529	V21/22/22b/23
Microdeal	0726 65422	V21/22/22b/23
Microlog	0422 71921	V21/22/22b/23
Midget Gem	0748 834836	V21/23
Mind Boggles	0362 762868	V21/22/22b/23
Miridian	0273 588924	up to 2400.
Mininet 3	0642 672813	V21/22/22b/23
Miracom Support	0473 232540	Hst
Mirage	061-652 1242	V21/22/22b/23
Mirror II	0628 810889	V21/22/22b/23
Mirrorworld/quest 1	0883 844044	V23
Mission Impossible	0602 654329	Hst
Mk Board	0908 671289	V21/22/22b/23
Movie BBS	0703 650037	V21/V22/V22bis
Multi BBS	041-649 9043	V21/22/22b/23
My Little Phoney	0793 849044	V21/V22/V22bis/V32/HST

N

Network 23	0274 482021	V23v
New Wave	061-839 5381	V21/V23/V32/HST.
Night Hawk	0329 45384	300/1200/2400
Nite Life	071-976 6807	V21/22/22b
No.1 BBS	081-958 1689	V21/22/22b
Noah BBS	0272 572322	300-2400
North Wales BBS	0978 88372	V21/22/22b
Northern Lights	0768 773685	V22/22b
Norwich Onion BBS	0603 423305	V21/22/22b/23
Nova	0455 553371	V21/22/22b

O

Odd-ball	081-679 2583	V21/22/22b/23
Odyssey	0482 870919.	
On The Beach	0273 600996	V21/V22/V22bis/HST
On-Line Entertainment Ltd	081-539 67638-N-1/V22/V22bis/V23	
Open Access	081-427 3974	
Optix	0482 872294	V21/22/22b/23

P

Palm Beach	0303 265979	V21/22/22b/23
The Paradise Club	V21/V22/ V22bis/V23	081-871 4300
Pazaz Viewdata	0383 620259	V23v
PC Access	071-608 0081	V21/22/22b/23
PC-Amiga Link	04023 84914	up to 2400
PC Forum	0322 335348	V21/22/22b/23
PC Link	0375 674046	V21/V22/V22bis/V32
PC Serve Shop	081-864 2633	V21/22/22b/23
PC Serve Softnet	0895 420164	V21/22/22b/23
PC Serve Storehouse	0494 728094	V21/22/22b/23
PC-VAX Opus	081-800-3549	V21/22/22b/23
PC/Amiga BBS	0602 735119	V22/22b
Peacenet West	0895 448998	V23v
Pegasus	0905 755085	V21/V22/V22bis/HST 14.4/V42/V42bis.
Phacs SW UK	0752 361291	V21/V22/V23/V22bis
Phantom	0226 340425	V21v/22v/23
Phoenix	0249 817704	Hst
Pleasure Island	0628 472996	2400 to14,400bps
Project BBS	0384 401770	V21/22/22b/23
Prometheus	081-300 7177	V23v
Proximity	0793 480028	V21/22/22b/23
Publishing Shop	091-261 5228	V21/22/22b/23
Public House	022-665 907	V21/22/22
Purely PC	0232 645942	V21/22/22b
Pyroto Mountain	0895 59071	V21/22/22b

Q

Quantum	021 707 0681	V21/V22V22bis
Quasar	0846 693067	V21/22/22b

R

Random Access	0282 817379	V21/V22/V22bis/9600/HST/V32
Really Interesting	0582 414991	
Reflex BBS	0703 685527	V21/22/22b/23
Regency BBS	0542 33050	V21/22/23
Road Runner	061-483 4105	V21/22/22b/23
Royalink Uk	0962 66807	V21/22/22b

S

SAC BBS	0242 260685	V21/22/23/22b
Sanctuary	0329 236612	V21/V22/V22bis/HST
Scabbs	0909 479080	up to 2400
Scary Monster	0734 320297	Hst
The Schizophrenic Wolf	0772 456526	V21/V22/V22bis
Scottish Opus	041-880 7863	V21/22/22b/23
Scottish Wildcat	0674 671141	V21/22/22b/23
Sentinel Bb	0628 781429	V21/22/22b/23
SES Databoard	0622 630240	V21/V22/V22bis
Sherwood Forest	0602 397113	V21/22/22b/23
Short Circuit	0273 462967	Hst
Sigma IV	081 330 7738	
Sirius	081-542 3772	V21/22/22b/23
Sirius II	0494 778425	V21/22/22b
Six And Five Eights	0273 688888	V22/V22bis
Skull	0379 740972	V22/V22bis
Skull's Tower	081-943 1194	V21/22/22b/23
Sleepy Town	0234 267231	V21/V22/ V22bis
Sphere BBS	0294 221350	V21/22/23/22b
Spud's Xanadu	0203 686819	V21/V22, V23, V23b
Sputnik Spitfire	0501 31754	V21/22/22b
St London BBS	081-443 2432	V21/23
Stabb	0793 855176	V21/22/23/22b
Steve and Jackie	0703 650037	V21/V22/V22b/V23
Strange Brew!	081-665 5038	V22/22b
Style QBBS	0442 381164	300–14.4K (HST)
Superbase BBS	081 339 0096	300-14.4K/HST/V32
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T

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Taecomm	0994 6709	V21/23
Taff's Retreat	0834 4562	V21/22/22b/23
Tardis	0772 27236	V21
Trinity I	0392 410210	V21/22/22b/23
Trinity II	0367 22764	V21/22/22b/23
Tug II	0905 775191	V21/22/22b/23
Twilight Zone	081-788 0884	V21/22/22b/23
Twilight Zone II	071-608 1485	Hst

U

Unauthorised Access UK	0636 708063	1200/2400

V

Valente'S BBS	071-978 2078	Hst
Vector System	0329 45824	Hst
Viking East Anglia	0255 503048	V23v
Village	081-464 2516	V21/22/22b/23
Village Fayre	081-841 5971	V23
Voyager BBS	061-725 9580	V21/22/22b/23

W

Wally's Board	0506 440582	V21/V22/V22bis/V23
West Norfolk	0553 761290	1200/2400
White Lightning	0635 37259	V22/22b
Wizard	0703 702427	up to 2400/MNP
Wolverhampton ROS	0902 745337	V21/22/22b/23
Womble Base	081-979 9606	V23
Woodgreen BBS	081-889 5624	V21/23

Y

Yugo BBS	0734 753648	V21/22/22b/23

Z

Zeus BBS	0487 710487	V21/22

THE PLACES TO BE . . .

WHAT'S ON GUIDE

Making the Difference
Now – Tue 31 Dec
Science Museum, Kensington, London. Info: 071-938 8080

All Formats Computer Fair
Sun 6 Oct
The Brunel Centre, Bristol. Info: 0225 868100.

Effective Management of Information Technology Security Conference
Mon 7 – Tue 8 Oct
Forte Crest Regents Park Hotel, London. Info: 071-587 1117.

Design Engineering Show 1991
Mon 7 - Thurs 10 Oct
Hall 5, NEC Birmingham. For info: 091 416 4570

Computers Count
Tue 8 – Thu 10 Oct
Totnes Civic Hall.Info: 0803 863821.

Business Communications Awards
Thu 10 Oct
Savoy Hotel.Info: 0800 800 847.

Charles Babbage's Impact on Modern Computing
Wed 23 Oct
The Science Museum, London at 17.30. Info: 071-938 8196.

Image Processing '91
Tue 29 – Thu 31 Oct
Birmingham NEC. Info: 081-868 4466.

System Builder
Wed 30 – Thu 31 Oct
Sandown Exhibition Centre, Esher, Surrey. Info: 0822 614671.

Computer Animation Festival
Thu 31 October – Fri 1 Nov
To accompany the Computer Graphics '91 Conference, this festival acknowledges work of outstanding creative and technical excellence in visualisation, research and development; features and shorts, best title; best on-screen presentation; idents and stings, programme and content and student. Marble Arch Odeon (rescheduled from 5 November owing to a screening of the epic film *Spartacus*). Info: 081-868 4466.

Computer Graphics '91
Tue 5 – Thu 7 Nov
The Alexandra Palace, London. Developments in technology, software and applications. Topics include graphics: a world perspective; design; modelling natural phenomena; computer animation; Virtual Reality and visualisation. Info: 081-868 4466.

Desktop Cad '91
Tue 5 – Thu 7 Nov
As above.

Open Systems '91
Wed 6 – Fri 8 Nov
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Tue 12 – Thu 14 Nov
The Barbican Centre, London. Info: 081 868 4466.

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Fri 15 – Sun 17 Nov
A show for all things Commodore, , presented by the *Amiga Format* team. At Earls Court, London. Info: 0462 420785.

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AMIGA

- Is an Amiga portable on the way?
- More delays as Commodore puts back the release of its A690 CDROM drive
- Commodore CDTV still keyboardless, but LightWave comes up with the answer
- PC software on your Amiga for the price of a disk!

AMIGA MOVES ON

The gossip channels are alight with talk of an Amiga portable from Commodore.

Although the company itself still insists that an Amiga portable is not planned for the foreseeable future, several sources in both Europe and the States are claiming otherwise.

For starters, recently published style guides for programmers advise developers that programs should look good and be useable on a mono screen. Such a request may seem strange when you consider that very few users would even contemplate using a mono screen on their colourful Amiga, but it seems that Commodore may well be covering itself for future developments.

No one can say for sure whether this is true, due mainly to the fact that the company has been promising Amiga users a high resolution mono monitor for DTP work for a couple of years now, in the shape of the A2098 (which is basically a rebadged Viking monitor).

However, several respected developers think that this is not the only reason. If Commodore were to produce a portable Amiga, it would almost certainly have to plump for a mono LCD display in preference to the newer colour displays that portables now offer.

Such a move would ensure that the price of the new portable is kept to a minimum, allowing the kind of people that really want to own it to buy the thing.

Don't expect it to be cheap though – even the ST portable costs almost £2000, so an Amiga portable will probably be more expensive than this.

Another piece of evidence which points to Commodore is the news that German developer GigaTron had ceased development of its own portable Amiga.

Although the system had been in development for several years, the project mysteriously stopped. GigaTron blamed it on financial considerations, but could the truth be somewhat different?

Did Commodore put in its corporate boot? Only GigaTron can really confirm this and it's keeping uncharacteristically tight-lipped.

If a portable Amiga was to appear, I'm not entirely sure whether it would be a success. Many of us would love to own one, but unless Commodore could knock the thing out for no more than £800, I can hardly see it selling. Well, rich poseur Amigans would no doubt rush out and buy one, but who else? Commodore will no doubt push it as a portable video and multimedia workstation, but I'm not entirely convinced.

Are Commodore planning to release a portable Amiga? Sources close to the company certainly seem to think so.

CDTV KEYBOARD LAUNCH



• Commodore - pipped at the post

Whilst everyone else is still waiting for Commodore to launch its official CDTV Keyboard, LightWave has launched an adaptor that will bridge the gap. The device, which plugs into the keyboard connector of the CDTV, will allow users to directly connect a B2000 keyboard.

No price has yet been fixed, but you can find out more on 0756 790554.

MORE A500 DELAYS

Users looking forward to the October launch of the A500 A690 CDROM drive are in for a disappointment.

According to Commodore MD Steve Franklin, the company had hoped to get the drive out in time for a Christmas launch, but it now seems that we won't actually see it until around February.

Although the drive is ready for mass production in the States, Commodore Users are having problems ensuring supplies for a Christmas launch.

The new drive will allow A500 owners to use CD-based software designed for the CDTV, opening up another market for CDTV developers.

There is still no news of a CDROM drive for Commodore's other machines, the A1500, 2000 and 3000, although a drive for those machines should be on its way. According to a European developer, the new drive will fit inside these machines, giving A1500 owners a one-box solution.

Staying at Commodore, it seems that the company intends to up the standard specification of the basic A500.

Although the company is already selling the A500 with a half Mb RAM expansion, the new A500s will have the extra RAM soldered onto the A500 board.

Recent A500s already have this facility and Commodore have said to existing owners that it is capable of taking the extra RAM. They will be able to upgrade.

However, there is one big problem with this upgrade. According to several users who have already had the upgrade carried out by HRS (Commodore's parts supplier), the upgrade renders the trapdoor unusable.

As a result, such things as third party RAM expansions and even the KCS Power PC Board cannot be used.

Amiga users should also be able to upgrade their machines with the new enhanced chip set (ECS) but – once again – no firm dates or prices have been released, although sources close to the company believe that the upgrade should be available early next year.

Jason Holborn

WHERE TO FIND A PD PC EMULATOR AT A CRAZY PRICE!

If you're after a PC emulator but can't quite stretch to the price of something like Silica's ATOnce or the KCS Power PC Board, then you may well be interested in a new PD PC Emulator just launched by Office Choice PD.

Written by prolific PD author Mark Tomlinson from New Zealand, the emulator was previously only available for use on 68020 equipped Amigas.

However, Mark has now produced a version which works on all 1Mb Amigas – even the A500!

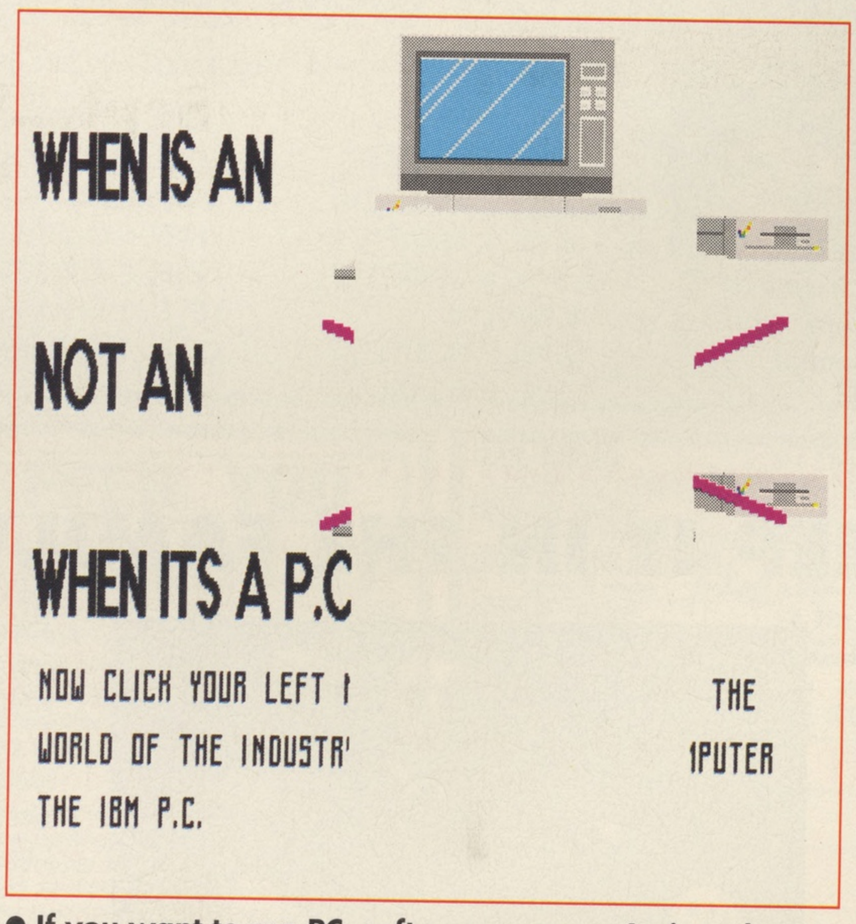
The emulator fully emulates an 8088-based IBM XT with CGA 16-colour graphics.

What's more, it has one major advantage over Commodore's rather naff Transformer system – it multitasks.

Running under AmigaDOS, the emulator will allow you to run both Amiga and PC programs concurrently. Indeed, this is something that even the KCS Power PC Board will not do, although ATOnce does.

In its current form, the emulator does not directly support reading and writing of PC-format floppies.

Thankfully, Mark has fixed this too by including the PD MSDOS filesystem reader MessyDOS, although you can substitute this with Consultron's CrossDOS.



• If you want to run PC software on your Amiga, then you need IBem!

The overall standard of emulation is surprisingly good, although the emulator still runs at snail pace. It's nowhere near the speed of ATO nce or even Commodore's own XT Bridgeboard for the 2000, but it compares favourably to Commodore's own Bridgeboard.

I managed to get such packages as *dBASE III*, *WordStar* and *Lotus* running without problems, although screen update is sometimes painfully slow.

In an attempt to reap some reward from his work, the version of IBeM that Mark has placed into the PD is only a demo. Although it is fully functional, it only allows you to use the program for 15 minutes before it locks up.

If you wish to obtain a fully unrestricted version, it will cost $30 (Australian). Even at this price, I'm sure you'll agree that IBeM is still one hell of a bargain. By no means a serious alternative to a commercial PC emulator like ATonce, but it does do the job.

If you need to occasionally run PC software, then something like IBeM could be for you.

Find out more by phoning Office Supplies on 0236 737901.

INSIDE INFO

THIS WEEK

ST

- **Is *Thunderhawk* the next step in flight sims?**
- **You don't have to worry about the latest bug**
- **Create all the samples you'll ever need by editing them direct with *Virtual Wave***

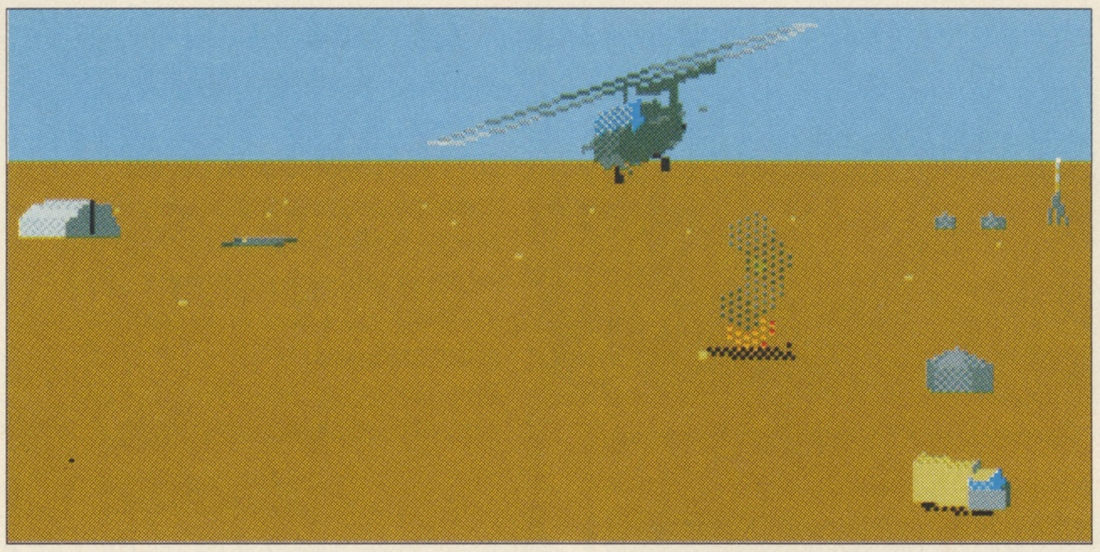
Have you got three tenners lying around doing nothing? Then put them to good use and get your mitts on a copy of *Thunderhawk AH-73M*. This is the new helicopter flight sim from Core Design and it's the best thing the company has done for a long time, if not ever.

The *Thunderhawk* is a fictional design, packing maximum firepower and a wicked turn of speed. You, as its pilot, are a member of MERLIN, an American international peace-keeping force. Your job is to visit various trouble spots around the world and quash small-scale disputes between various nations before they become large-scale and potentially world-threatening ones.

There are six of these troublespots in the game: South and Central America, Alaska, the Middle East, Europe and South East Asia. Each may be easy, medium or hard, and they're all split into many smaller missions.

Before you set out on your mission of mercy (ahem) you're briefed on the overall situation and the specifics for this mission. You might, for example, have to take out a communications network first, followed by defensive weaponry and finally a central headquarters. Then you get to arm your chopper from an impressive array of weaponry: manual and automatic guided missiles, a cannon, bombs and even a runway cratering system (like the ones used during the Gulf War). This can even be done automatically for you if you can't be bothered.

The really stunning part comes when you first lift off in your chopper. The smoothness of the 3-D graphics surpasses anything previously seen in a flight sim for the ST, though to achieve this there's a certain lack of detail in the landscape. As you strafe the enemy encampments and bombard their convoys with missiles, you can see everything in detail from the external view which offers an almost unlimited number of angles. The controls are a little tricky at first, but they're much simpler than a real helicopter's would be, so the whole gunship can be controlled with the mouse alone.



• *Thunderhawk* is a stonking chopper sim that blows the opposition off the face of the map with its smooth graphics, detailed gameplay and excellent presentation. Travel and save the trouble-spots of the world

Although it's great fun to play, the game is also accurate. At night you can't see anything at all except the lights in the buildings and the pretty stream of flak whizzing by your window – unless you switch on your night sights, that is. Even then nothing is visible in the map or external views. Crashed or destroyed vehicles lie in smoking ruins on the ground, ships sink when you bomb them and your gunfire actually obeys the laws of gravity.

As well as all this there's a wonderful animated intro sequence with cartoon-style animation and digitised graphics and sound, and even a simulator so you can practice flying without getting killed,

Thunderhawk really is a top quality game and for once is worth the £30.99 asking price. If you think six missions sounds measly, think again, because there are enough sub-missions to keep you busy for a long while. Even a beginner should find it easy to get started and complete at least one mission.

Core Design lives at Tradewinds House, 69/71A Ashbourne Road, Derby DE3 3FS. ☎ 0332 297797.

A NEW BUG

As if the world needed it, Cheetah has launched another joystick, with the rather worrying name of The Bug.

It was actually launched during the ECES by Fred Harris, "star of stage and screen", (no expense spared there, obviously) amid much silliness with go-karts and suchlike. Cheetah seems to be taking it very seriously, though, with posters, T-shirts, stickers and badges all bandied about – it'll be launching new colours of floppy disks next.

Unfortunately Cheetah has forgotten to say very much about the darn thing at all, except that it's got a hand-held shape, autofire, microswitches and a metal shaft. A bit like 95 per cent of all the other makes of joystick, really. Anyway, it's £14.95 and available from Cheetah on 0222 867777.

LIKE, VIRTUAL, MAN

Yet another MIDI program is about to be unleashed for the ST. *Virtual Wave* (for that is its moniker) is a software synthesis program which produces MIDI sample dumps to various samplers, which basically means it's a sample creator.

The program includes important-sounding features like Waveform Interpolation Synthesis (lets you create smooth transitions in waveshape) and – wait for it – Free Fundamental Additive Synthesis, which means you can use an algorithm to create an almost endless number of waveshapes.

There's also Pitch and Amplitude enveloping, which is a boon in reproducing the sound of real instruments; an effects section (a bit like those gimmicks – sorry, features – you get on cheap hi-fis) which make your sample sound like a chorus and suchlike; and the standard wave manipulation tools for splicing, pasting and smoothing your bits of sample.

Virtual Wave currently supports the MIDI Sample Dump Standard, the Akai S900/950 and the Ensoniq EPS range, though more support is continually being added. It works on any ST (even on a 520 you can produce samples of over 1Mb in size) though you will need a monochrome monitor.

Virtual Wave costs £99.95 and is available from Resotek, 681 Wimbourne Road, Bournemouth, Dorset BH9 2AT. ☎ 0202 519216. **Ed Ricketts**

Ed Ricketts is a games reviewer on* ST Format*, now officially the UK's biggest selling monthly magazine for the ST.

BRAT BUSTED WIDE OPEN



• Instant access to all levels of *Brat* with these essential passcodes.

Here are the level codes to Imageworks' anti-cute game

- *Toyland*
  - LEVEL 1: BIGHIGMO
  - LEVEL 2: MIHEMOTO
  - LEVEL 3: SASUTOZO
  - LEVEL 4: SUMATZEE
- *Parkland*
  - LEVEL 1: NOKITAGO
  - LEVEL 2: ITSANONO
  - LEVEL 3: MOZIMATO
  - LEVEL 4: HOZITOMO
- *Moonbase*
  - LEVEL 1: MOKITEMO
  - LEVEL 2: ZUMOHATO
  - LEVEL 3: CHANASTU
  - LEVEL 4: NAGAITSU

KEEP IT IN THE FAMILY

What could be US Gold's first decent licence (I just know I'm going to get into trouble for saying that) is nearing completion. *The Godfather – The Action Game* takes scenes from all three *Godfather* films and puts them into one big action game (hence, as they say, the name). It's been in development since November last year and is going to be one huge game.

Creative Materials is handling the game and the graphics are being done by veteran graphic artist Pete Lyon. The game will feature at least four levels, with many sub-levels, each including digitised sound and some beautifully-drawn backgrounds.

Although it is mainly arcade-based, there are adventure elements (certain objects have to be found for you to progress) and some decision/interaction sections making use of icons.



• Ho ho! Another hilarious scene from the rollicking family comedy *The Godfather*.

The settings for each level range from 1940s New York in level one, to Havana in the 1960s in level three and a motor launch in Miami in the 1970s for level four.

Details on other levels and gameplay are still quite sketchy, but suffice it to say that it looks as though *The Godfather* will be a main contender for the top seller this Christmas (if it's finished by then).

Of course, you may think (like me) that the whole idea of glamourising the Mafia in this way (who, after all, are nothing more than extortionists, cowards and murderers) stinks somewhat. Unfortunately the Mafia already has a larger than life image which distances it from what it actually does: kill people who get in their way. If the game had you playing a Nazi during the Second World War, would you buy it?



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PC

- **New products bonanza for Lotus *1-2-3* users**
- **Make your graphics come alive with *PC Animate Plus***
- **Exclusive pics from Ocean's next big flight sim**
- **Intel to flood the market with new 486 machines**

There is a whole host of Lotus *1-2-3* for Windows add-ons due from the States in the near future:

- Intex Solutions' *CFO Spreadsheet Applications* is a collection of templates that covers many common financial calculations. *CFO Spreadsheet* is priced at $99.95 for a six-template module and $299.95 for the full set.
- Individual Software's *Power Macros for the 1-2-3 User* is a collection of more than 150 macros. The $49.95 *Power Macros* includes a tutorial for using macros and the capability to store macros in a library.
- First Byte's *Monologue for Windows* is a $149 voice synthesis package that can read aloud rows, columns, and formulas through the internal PC speaker or any audio peripheral.
- Arkay Technologies will also offer a voice synthesis product for *1-2-3* for Windows. Its *PC-Sound* works with the *PC-Recorder* to digitally record voice and sound effects for playback through the *PC-Soundport* amplified speaker. The *PC-Soundport* speaker installs directly into the printer port, eliminating the need for opening up the computer. *PC-Sound* and *PC-Soundport* are available for an introductory price of $98. *PC-Recorder* is $198.
- Anderson Soft-Teach is releasing *Video Training for 1-2-3 for Windows* for $995.

In addition to announcing the array of add-in products, Lotus also unveiled its *1-2-3 for Windows Add-In Development Kit*. The $249 kit includes tools that let developers create custom applications that work directly with *1-2-3 for Windows*.

WINDOWS NT

Alpha copies of Windows NT have, apparently, been released by Microsoft to a few select developers for testing. The developer's kit of the 32-bit operating system is scheduled to ship by year end. Alpha users praised the early code, and said it supports new 32-bit Windows calls but does not yet run 16-bit applications.

☎ Contact Microsoft on 0734 500741.

NEW 486S

Intel has expanded its line of 486SX processors with the addition of 16MHz and 25MHz versions to complement the original 20MHz version introduced earlier this year.

It appears that Intel's strategy is to flood the market with 486 designs at different price/performance levels. This could accelerate the industry's move from the 386 to the 486. Intel also tweaked the design of its 487SX math coprocessor, enabling it to run at 16MHz, 20MHz, or 25MHz.

CHIPS AND CHIPS

Chips & Technologies will join the Intel-compatible 386SX and 386DX chip markets later this month with four microprocessors, a move that should give buyers more system choices and lower prices.

C&T will unveil its Super386 38600DX and 38605DX lines with processing speeds ranging from 25MHz to 40MHz as well as the 38600SX and 38605SX chips with speeds ranging from 16MHz to 25MHz on September 30.

The four product lines, all of which use C&T's new Chip System Architecture, are divided into pin compatible and extended-pin compatible families. The 38600SX and 38600DX are pin-for-pin replacements and provide a 10 per cent speed boost over the current 386 architecture, and the 38605SX and 38605DX chips have an extended pin-out configuration to give developers a 40 per cent speed gain.

The Super386 38605SX and 38605DX processors add an integrated 512 byte instruction cache and on-chip logic that helps to work 40 per cent faster than existing 386s. The company is also expected to demonstrate a 40MHz Super 386 38605 that is capable of processing at a speed of 11 million instructions per second.

As part of the rollout, the company will unveil the PC/Chip, a single 14MHz 8086-compatible processor, with IBM-XT equivalent logic, a Colour Graphics Array-compatible flat panel/CRT controller, a serial port, and built-in power management. C&T believes PC/Chip will enable vendors to build extremely low-cost notebook and palmtop systems, as well as embedded controller systems.

Samples of the 386 clones will be available in October, and production versions will be ready in the first quarter of next year.

DOS 5 CORNER

● The problem: You've just installed DOS 5. However, using Windows 3.0 causes your PC to freeze.

● The cause: Could be a conflict with your video memory

● The solution: Try, if you are using EMM386.EXE, to have the `x=' parameter on the command line to allocate your video board a particular `address' for its own memory (ie, x=C000-C800). Check out the DOS 5 manuals to find a usable address for your board.

ACCU-PICTURE

***AccuDraw 2.1*, from American software house AccuSoft, supports *WordPerfect*'s extended character sets, ruler scale setting, and measurement for CAD (Computer Aided Design) functions. The $195 software includes a built-in pixel editor, export of CGM and PCX files, full-screen drawing, an information window, and bit-map support. Upgrades are $49.95.**

☎ Contact AccuSoft on 0101 508 898 2770.

A JOURNO WRITES

If you would like to write to liddle ol'me to tell all about new products, pass on a hint or three, moan or praise a new product or game, then address your prose to Paul Rigby, *New Computer Express*, Future Publishing, 30 Monmouth Street, Bath BA1 2BW.

RING MY CEL

Presidio Software has announced *PC Animate Plus*, a $199.95 8-bit two-dimensional animation and paint program. *PC Animator Plus* is intended to go head-to-head with Autodesk's *Animator* program, according to Brown-Waugh, the product's distributor.

The software supports Creative Labs' *Sound Blaster*, a PC MIDI-capable sound card, and a range of pixel resolutions. The built-in drawing and paint tools can use a palette of 256 colours at VGA resolution. Animation techniques are grouped into four categories: frame, pixel, sound, and palette. Effects include frame rotation for a 3-D look, pixel manipulation, and various textures.

Its features, which include zoom editing and animated cel capability, can be accessed via pull-down menus, pop-up dialogue boxes, buttons, and slide bars.

PC Animator Plus uses a proprietary format but can import the GIF, TIFF and PCX formats used by most paint programs, and includes a converter for *Animator*'s FLI format.

PC Animate Plus is distributed by Brown-Waugh as part of its *Multimedia Recipe*, a suite of related mixed-media products that includes the Sound Blaster board.

☎ Presidio Software is on 0101 415 474 6437.

Paul Rigby

TAKING COMMAND OF A STRIKING GAME





In *Strike Commander* you battle on behalf of your country commanding Stern's elite Wilcats engaging third-world dictators, neo-nazis and the armies of the IRS – all in the course of duty!

From Origin, hot on the heels of the very wonderful *Wing Commander II* is *Strike Commander*. Set in a near future scenario, where the IRS (the American tax department) has taken over the government you fly in a rebel force against it. A thoroughly worthy and moralistic cause for a game if ever there was one.

Strike Commander promises to become another massive game requiring a basic 2Mb of RAM plus 15-20Mb of hard disk space to run. However, with the new in-game models created using *Autodesk 3D* (see game shots) covered in sparkling bit-maps, is it any wonder?

To be published by Mindscape in the UK, *Strike Commander* should be out sometime during January 1992.

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THE PD COLUMN

Need to nuke any viruses that dare to damage your hard disk? This week James Leach brings you the king of virus killers, plus games, education software and utilities for your machine

The wacky, fun-loving world of Public Domain permanently has one dark cloud over it. Catching a virus. There can't be anyone with a home computer who isn't aware of the dangers of viruses, but every time you slot a disk into your machine, you run the risk of putting one of these nasty, destructive programs into your machine's memory.

The safest way to deal with them is to turn off your computer for at least 30 seconds after inserting any disks you consider to be vaguely dodgy. It's impossible for a virus to remain resident in the memory of a computer once it's been switched off for more than a few seconds, so you'll be safe. And while we're on the subject, remember to write protect all your disks. Nothing nasty can creep into a disk that's been write protected in this way.

DON'T DIE OF IGNORANCE

The PD world is also doing its bit to stop the spread of viruses. NBS Public Domain has recently released a utility disk called ***The Beginners Guide To Virus Hunting***. It's for any Amiga, and NBS has recognised that killing viruses isn't as easy as it should be. To this end they are worried that "There are probably more disks destroyed by the incorrect use of a virus killer than by the viruses themselves".

Most virus killers check the boot sector of the disk (where viruses reside). If there is anything slightly out of the ordinary in the boot sector, the virus killer jumps up and down on it until it is dead. This is fine, unless the disk is *supposed* to have that modified boot sector. If this is the case, you might just have unwittingly trashed a perfectly usable and virus free disk! What ***The Beginners Guide To Virus Hunting*** does is check the computer's memory after the disk has been used. If it finds anything, it will confirm that there is a virus, tell you what sort it is and try to remove it. If anything goes wrong, the disk itself will remain unharmed.

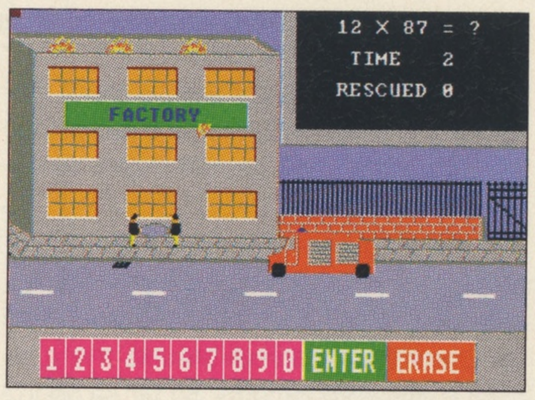
The ***Beginners Guide*** disk contains two virus-hunting programs. The first is a brand new version of ***Vectacheck*** (which hunts through the memory of the computer) and ***Nuke***, which will destroy most known viruses, including the latest and extremely nasty 'Saddam Hussein' strain.

Also included on the disk is a pretty comprehensive summary of what a virus is, how and where they operate and even a database of dozens of known viruses with details of where they were found and what they do to your system if they get a chance.

I wholeheartedly recommend ***The Beginners Guide To Virus Hunting***, and anything which educates users about viruses and protects their systems at the same time has got to be worth getting hold of.

VECTOR VICTORS

Also from NBS PD are three classy demos for the Amiga. ***Voyage*** sees you zipping around a vector landscape, narrowly avoiding all sorts of light sourced vector objects as you fly between the various sections of the demo. It's fast, it's fun and it isn't polluted by too many scrolly messages.



• **Teach your child to do sums by using dangerous fictional situations**



• **It's that annoying Sega talking TV, now appearing on your Amiga**

Labyrinth is from a French crew called the Devils. It's another vector job and includes all kinds of weird 3D fractal trees and so on. There's a rather nice 3D Starship Enterprise viewed from three angles simultaneously, and a great soundtrack.

Also from the Devils is ***No Reality***. More vectors, tons of graphical effects you didn't think were possible on the Amiga and even some Julia and Mandelbrot sets to keep the Chaos-fans happy. Demos are definitely improving, and if they ever dispense with the scrolly text altogether I'll be a fan for life.

NBS has an interesting collection of animations as well as demos. Two of the best are ***Yet More Classy Animations 5*** for the Amiga, and ***ATF Agility (Another Stealthy Manoeuvre)***.

YMCA 5 is the last in the ***Yet More Classy Animations*** series. The best thing on the disk has got to be ***Chuck's Revenge 2***. This sees Chuck (your average cartoon character) managing to gain his vengeance and destroy a stealth bomber. Why he wants to do this isn't altogether clear, but it's fun to watch. Chuck (created by ace artist Steve Packer) also appears on another animation on the disk.

ATF Agility is just as strange, and also features aircraft. A miserable, grumpy bomber called, says NBS, Cyril gains the unwanted attentions of a young fighter. The upstart is soon put in his place, and you come away from the animation a sadder and wiser person.

Certainly more sensible is a release on the Amiga from PD Soft of an educational program called ***Maths***. It has a wide array of graphics and is obviously designed to encourage small children to do subtractions, multiplications, addition and division quickly and accurately. Various everyday scenes are displayed, all with a maths-related problem. For example, there's a fire at a building and whether the trapped occupants can leap to safety in a fireman's net depends on whether you are able to do the sums before they are engulfed in the flames. It's tastefully done, though. Again, ***Maths*** is licenceware, and requires a small payment to PD Soft (which is passed on to the programmer) before it'll send you a copy.

PD Soft also has ***VMK*** for the Amiga. It's another highly rated virus killer. It isn't quite as easy to use as ***The Beginners Guide To Viruses***, but if you use it carefully, it does the job swiftly and efficiently. Ideally, you could both virus killers in your armoury.

And finally from PD Soft is a demo of the **Sega** advertisement on TV. In the unlikely event that you've fallen in love with that talking, multi-coloured TV, you could see him (or it) all the time on your Amiga with this remarkably accurate version. Things to make demos about must be quite thin on the ground at the moment.

SWIMMING IN THE BIG POOL OF INFORMATION

Merton PD is another rapidly growing ST library. The company has sent in their catalogue disk which, as well as giving information about the range of programs, also includes a rather playable little number called *8 Ball Pool. Jimmy White's Whirlwind Snooker* it ain't, but it is a lot of fun, and is certainly an incentive to get hold of the catalogue disk from Merton.

Merton also differs from many PD libraries in that it keeps all the utility programs separate and the customer can choose up to five different ones to be copied on to one disk at no extra cost. So you only get the software you want. Two single-sided disks may be compiled on to one double-sided disk by Merton for only 50p, too, so whichever format you use, there'll be something for you.

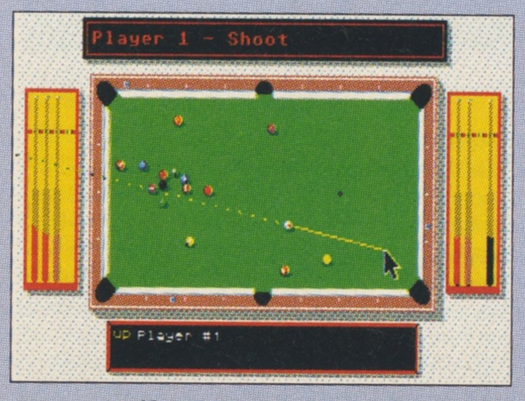
All disks are dispatched the same day as the orders arrive, and they're sent first class (at no extra cost). The catalogue disk (with *8 Ball Pool* on it) only costs a quid, too.

Merton also provide useful back-up programs for floppy disks. It's a bit of a dodgy area, this, but piracy notwithstanding, there is of course a sound reason for backing up all your disks, PD or otherwise. The programs are *CopyPro, Offbeat's Duplicator v1.2* and *Xcopy v 1.3*. Each has a user-friendly front end and you just follow the instructions for (hopefully) perfect results every time. So you need never lose important data again.

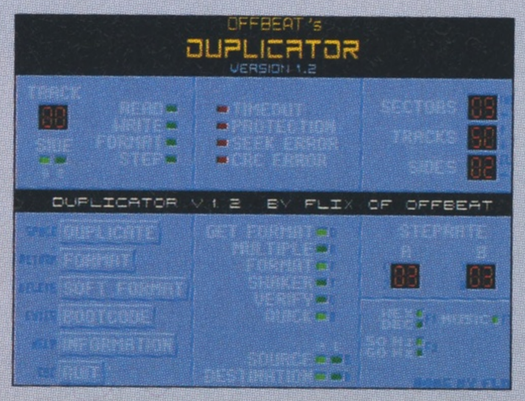
Nightshift PD has launched into a nostalgia trip back to the days when everybody was into Thrash metal. The disk is called, predictably, *Thrash It*, and has three demos of varying, erm, interest to fans. The programmers are a knitting circle called The Slaytanic Cult and it only runs on the STE.



• ***X Copy*** **also features hip and trendy Jean Michel Jarre music**



• **Can't afford a pool table? *8-ball Pool* from Merton is the answer**



• **Backing up your most important disks is made easy with *Duplicator***

PUBLIC DOMAIN

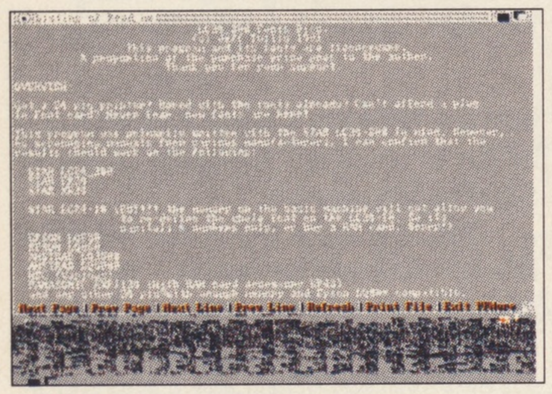
SOFTWARE

GAMES WITHOUT FRONT EARS

Games which fall into the category 'not-to-be-taken-too-seriously' from NBS (all for the Amiga) include ***Super Skoda Challenge*** (which runs in 1Mb). The screen is split into four and four players simultaneously drive their Eastern European cars around, shooting each other (having first selected their armaments).

Each player only sees the area immediately around his car, but of course can cheat by looking at the other players' screens. There are ten different screen layouts and you also get a map editor so you can, if the urge takes you, produce more. It's a lot of fun (if you have three unfussy pals).

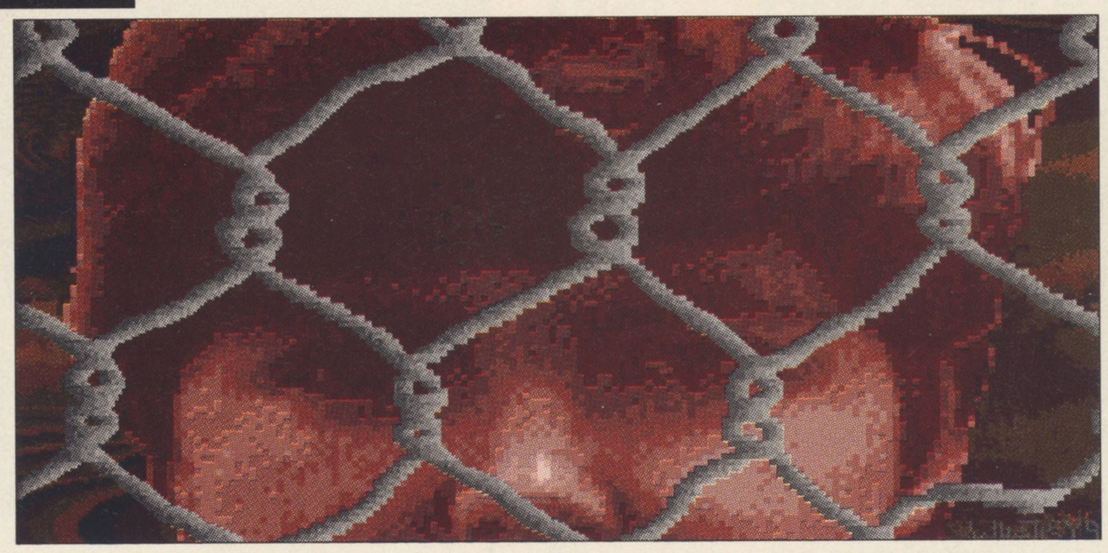
Worms also runs in 1Mb. It's that old fave, ***Tron*** again. But here you can have up to four players on the light-cycles, and the trails left by them aren't fixed (as in all the other Tron clones I've seen) but start off short and gradually grow longer as you move around the screen. There's a fun soundtrack, and with more than two people it gets really rather exciting.



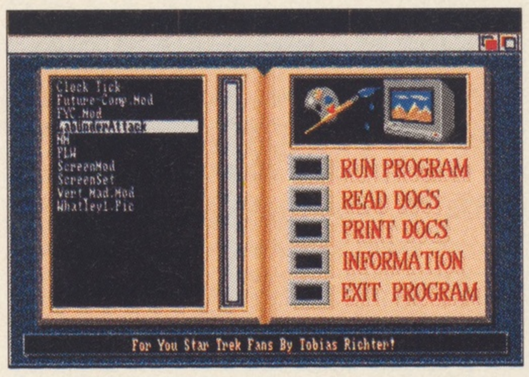
• Plenty of different fonts for the 24-pin printer are available from NBS on one disk

Running on any Amiga, ***Battle Cars*** gives you a solid 3D arena and an armoured car. You must chase the computer controlled car around, trying to blast it with your cannon. So far so good, but the real excitement comes when you link up another Amiga using a null modem cable, so you are actually fighting your pal. A good idea, that. There aren't enough PD games which use the fixed links of modem cables to allow two players to compete on separate machines, so it really should be encouraged.

Finally from NBS comes a licenceware release of fonts for all the 24 pin printers I can think of. The disk costs £3.50, but is well worth it. Amstrad, Epson and Star printers are among those catered for, and there are 11 fonts per printer, plus a useful font designer which will let you print symbols (such as a telephone or arrows) just through one keypress. It's also useful for foreign alphabets.



A bit depressing, but nice graphics nonetheless. And it's on Tbag 58



Fun, friendly and easy to use. Tbag is packed withnutritional goodness.

Licenceware is usually about £5, so this disk is cheap and as it comes with full, easy-to-follow documentation, 24-pin printer owners should ignore it at their peril.

JUST YOUR CUP OF T

Amiganuts, as prolific as ever, has released ***TBag*** number 58. For those not familiar with ***TBag***, it's another magazine on disk, but this time available to all those who subscribe to Amiganuts before it goes on general release.

On ***TBag 58*** are a selection of utilities such as a phone call monitoring program, and some workbench programs which should make life easier with your Amiga. Graphics of all sorts are represented as well, and everything is rounded off with a neat menu screen and easy-access system.

TBag 58 will be available to Amiganuts subscribers on the 1 November and to everyone else on the 1 December.

If video pictures are your thing, then Amiganuts has a varied collection of those as well. Disks 1178 and 1179 have a lorry-load of NASA space satellite pictures for your to gawp at.

PD WANTED

If you run a PD library and you haven't had coverage from *New Computer Express*, rectify this immediately by sending in any PD you'd like reviewed to James Leach's PD Column, *NCE*, 30 Monmouth St, Bath, Avon BA1 2BW.

Just enclose the disks, details of what the programs do and which machine they're for, and who you are. You'd better get into the PD Column because all your rivals are.

PD LIBRARIES A-Z

You've read the column, so now you want to know where you can get hold of the software. That's where the *Express* PD library listing steps in...

8-BIT PUBLIC DOMAIN – Spectrum, BBC, Amstrad CPC and ZX81 public domain software. Stamp and 10p for list.: 1 Northolme Cl, Grays, Essex, RM16 2NX.
17-BIT SOFTWARE – PO Box 97, Wakefield, West Yorks WF1 1XX. Tel: 0924 366982.
ADES PD LIBRARY – All PD is less than £1. Some free. SAE for great details. Address 15 Deanes Close Dovercourt Essex C012 4SH.
ADPD – For the cheapest Amiga PD around, some even free. Send SAE for details or disk for lists. 15 Deanes Close, Dovercourt, Essex CO12 4JH.
ADVANTAGE – 54 Bath Road, Cheltenham, GL53 7HJ. Tel: 0242 224340.
AKORE SHAREWARE – 7 Fishergate Point, Lower Parliament Street, Nottingham NG1 1GD. Tel: 0800 252221.
ALDRO AMIGA PD SWAP CLUB SAE and blank disk for details. Lists growing every day. Send to: 24 Water Meadow, Quepgeley, Gloucester GL2 6XR[4]
AMIGA ANSWERS – Integrated programmers PD library and problem solving service £1.50 for cat and programmers utility disk. 11 Mill Hill Rd, Norwich.
AMIGA NON-RIP OFF PD – For good Demos send disks+ postage to Mark, 50 Victoria Ave, Sleaford, Lincolnshire NG34 7LN.
AMIGA PD BREAKTHROUGH – You've tried the rest, now try the best! PD from 18p per disk. Swift dispatch of all orders. Contact Darryl, 12 Kent Avenue, Ross-on-Wye, HFDS HR9 5AQ, NOW!!
AMIGANUTS UNITED – 169 Dale Valley Rd, Hollybrook, Southampton SO1 6QX.
AMOS PD – 0942 495261.
ANDRIKKOS PC LIBRARY – PC Megapack: 14Mb compacted Shareware, £16 . Cheque/PO or SAE for list : Andy Kyriacou, 17 Parkhurst Rd, London N22 4JQ.
ANGLO AMERICAN SHAREWARE – £1 a disk. Over 2,000Mb of top Anglo-American titles. Send two first class stamps for menu driven catalogue disk to 37 Deven Place, Newport, Gwent. Tel 0633 259847.
ARCH ANGEL PD – Over 230 disks of Archimedes software. Send 75p for catalogue/demo disk to 9 Chancel Court, Pinhoe, Exeter, EX4 8QE.
ARCH PD – 200+ disks of Archimedes PD. Send £1 or SAE and disk to Arch, PO 109, Ferry Rd, Hullbridge, Essex, S55 6EL.
ATARI ST DEMO SPECIALIST – Range of POV , megademos,singles, music modules, slideshows, uilities. £1 for catalogue disk. Unit 1, Johnson's Shopping Centre, 29/31 Bond St, Blackpool FY4 1QB.[3]
BASOFT PD – Original PD plus the best of the rest. SAE to BASOFT, 357 Church Rd, Basildon, Essex SS14 2EV. £1 per disk. New disk catalogue in exchange for blank disk.
BEGINNERS' PD – ST PD starter disks. Two available. Over ten programs. £3 the lot. Write to James Thoroughgood, 114 Sandrigham Way, Frimley, Surrey, GU16 5YF. Also send suitable SAE.No cheques.
BBB (BIG BAD BRIAN'S) PD library. 3.5-inch only from £1. Send formatted disk and SAE for catalogue to BBB, 35 Grangeside Ave, Hull HU6 8LP.
BENETECH – PC PD. 21 Loughborough Road, Leicester LE4 5JL.
THE BEST PD at best prices. Checked and virus free. £1.50 for demo disk, cat, and membership card. Chris Bayliss, 38 Grantham Dr, Bury, Lancashire BL8 1XW
BOOT UP PUBLIC DOMAIN – Amiga Public Domain. Only £1 per disk Send 75p for catalogue disk to Carol Wellington, 30 Sunnings Lane, Upminster, Essex RM14 2DQ.
BROADSWORD PUBLIC DOMAIN – Atari ST PD. 70p per disk. Send disk plus SAE to Flat 4, Moreton Court, 212 Dover Road, Walmer, Deal, Kent CT14 7NB. Over 350 disks.[2]
BUDGIE UK – 5 Minster Close, Rayleigh, Essex SS6 8SF
BURMAN'S PD – Amiga PD for 40p. For a cat diosk, demos and a game send stamp + disk : Burman's PD, 41 Pinner Park Gdns, Harrow, Middlesex, MA2 6LQ
BYTEBACK – 6 Mumby Close, Newark, Notts NG24 1JE. Tel: 0636 79097
C˜S PD LIBRARY Sam Coupe PD Software. Send SAE and disk (or 80p) for disk catalogue to: CMS PDL, Donald Drive, Chadwell Heath, Romford, Essex[4]
CALEDONIA PDL – 250 Oldtown Rd, Hilton, Inverness IV2 4PT. Tel: 0463 225736.
CAPRICORN COMPUTERS – 35 Warwick Rd, Olton, Solihull, West Midlands B92 7HS.
CHEZRON SOFTWARE – 605 Loughborough Rd, Birstall, Leicester LE4 4NJ.
CHRISTIAN COMPUTER CONCEPTS – Christian PD/shareware. 5.25-inch. Ian Hurst, 7 Perrybrook Walk, Ashton in Makerfield, Wigan WN4 8TR.
CIRCULAR PD LIBRARY – 14 Morrison Drive, Lennoxtown, Glasgow G65 7BA
COLONIA PDL – PD swap shop! Amiga and ST. Over 350 titles. One for one. Swap free. For list write to 4 Eastfield Street, Lincoln LN2 5ES.[2]
CRAZY DIAMOND PD – For the ST. Send SAE and blank disk for catalogue and free PD to 58 Hillside Rd, Sudbury, Suffolk CO10 6SA.[2]
DATA PD – For Amigas and Amstrad CPCs. For disk-based catalogue and sample programs send £1 (Amiga) or £2.50 (CPC). Cheques/POs to T Kingsmill, 202 Park St Lane, Park St, St Albans, Herts AL2 2AQ.[3]
DELTA C64/128 PUBLIC DOMAIN –SAE: Delta PD, 39 Station Rd, Claydon, Ipswich, Suffolk IP6 OHS.[2]
DELUXE AMIGA – Exclusive review of Terminator 2 in issue 1. Send a £1 cheque/PO to Antony Grace, 2, Furzefield Crescent, Reigate, Surrey RHZ 7HQ.
DISCOVERY PD – Coming soon. For Atari ST. Wide selection and excellent after sales help. Disks £1-1.50. Disk catalogue 50p. Write to J Thoroughgood, 114 Sandringham Way, Frimley, Surrey GU76 [2]
DIGITAL APPLICATIONS - have changed their name to Essex Computer Systems, 118 Middle Crockerford, Basildon, Essex SS16 4JAGENERAL AMIGA - A comprehensive Amiga PD Library. All disks. Only £1. Monthly catalogue/magazine £1.50. Cheque or P.O. General Amiga, 19 Earn Court, Alloa. FK10 1PT4
THE DISK – Stephen Lord, 6 Stubbington Brink, Hebden Bridge, West Yorkshire HX7 6LR.
DRAGON PD – Programmers wanted for Amstrad, CPC 6128 PD library. For more info, write to: Dragon Road, 415 (flat) Whitehall Road, Bristol, BS5 73P.
DYNAMIX PD – PC, Amiga and C64 Public Domain. All new and best titles. For free detals contact 132 Springwood, Llanedeyrn, Cardiff CF2 6UF. (SAE)
EAST MIDLAND PUBLIC DOMAIN LIBRARY – 54 Watnall Road, Hucknall, Nottingham NG15 7LE.
ED's FREE PDL – Public Domain for the Atari ST. Send your list for mine. 1-4-1 basis. EJ Carter, 184 Hatters Lane, High Wycombe, Bucks HP13 7LY.
EDLIB – Interactive, educational and productivity compilations of PD for Amiga. £1.50. All regular PD only

ENTERING THE DOMAIN

New libraries open up every week, and *Express* is the best way to tell the world that you have arrived on the scene. If you want to be included in the list fill in the form on below. New entries are highlighted in this box.

PD library entries will only be included in the listing for eight weeks. If you want to keep your library in the listed, just send us a note to say you're still operating.

● Aerial Shareware - IBM PC compatibles. Catalogue on a disc (free, state size). 7 Valehead, Monkseaton, Whitley Bay, Tyne & Wear NE25 9AY[5]

● Alpha PD - Amiga PD, monthly update of cat disc, £1 per disc. 22 Ceylon Place, Eastbourne, East Sussex BN21 3JF. Tel: 0323 26790[5]

● Anglo-American shareware - PC PD, £1 disc + p+p, 2000Mb/AVA. Choose programs to fill you disc. 2 first class stamps for catalogue disc: 37 Devon Place, Newport, Gwent. (0633 259847)[5]

● Amiga Gold PD - Good quality PD at favourable prices. Write: 6 Churcher Cl, Gosport, Hants PO12 2SL[5]

● Asgard PD - New programme (Amos) 'The Ceat Machine' - build your own Cugat library £1.50: 20 Langdale Drive, Flanshaw, Wakefield WF2 9EW Tel: 0924 361101[5]

● Crazy Joe's - Amiga PD, catalogue disk 50p. Tel: 0709 829286[5]

● Freeway Amiga PD - 99p a disk. Phone or write for disk, swaps welcome: 11 Elozabeth Place, Sompting, W Sussex Tel: 0903 767030[5]

● Future PD - Amiga PD only, 60p a disk, send £1 for list & demo to: 138 Guildford St, Grimsby, South Humberside DN32 7PW[5]

● ICPUG - Free PD for Commodore, IBM/PC compatibles. Wrie: ICPUG, PO Box 1309, London N3 2UT[5]

● JASE PD - PD software, £1.25 a disk. Write: 9 Broadfield Sq, Enfield, Middlesex EN1 3PA or call 081 8057749 (6.30pm)[5]

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D 074 VECTOR TUNNEL
D 091 FILLIT THE FISH
D 153 PUGGS IN SPACE
D 190 RSI CEBIT plus more
D 225 HORIZON MEGADEMO
D 259 PHENOMENA ENIGMA
D 261 SIMPSONS DEMO
D 295 TOMSOFT: VIRTUAL WORLD
M 269 ALCATRAZ MUSIC
M 316 LSD: DON'T PANIC

AMAZING GAMES

G 107 STAR TREK (2 disks)
G 133 GAMES COMPO 1
G 142 GAMES COMPO 3
G 170 MEGABALL Breakout
G 175 CUBULUS Rubic puzzle
G 179 LLAMATRON
G 187 SUPA SKODA CHALLENGE
G 195 POM POM GUNNER

Sorry, no descriptions for the above disks, but they are a selection of the very best in PD for the AMIGA. Full catalogue available. Please send SAE, or include £1.00 for Cat. Disk.

UTILITIES

U 225 AMIBASE Database
U 233 UEDIT Wordprocessor
U 611 MED v3.11b
U 616 AMIGA FOX Basic DTP
U 619 MESSYSID Amiga to PC
U 629/30 COMMS Compilation
U 641 to U 655 CLIP ART
Massive 15 disk collection
U 645 24 PIN PRINTER FONTS

U 610 VIRUS TRACKER £1.50
Beginners guide to virus and how to detect them safely!! inc. NUKE the new virus killer

Also available: FISH, AMOS, T-BAG Glamour selection. Commercial Software, Blank disks, accessories, Cables, ribbons etc.
MODULATOR EXTENSION KIT £10.99
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Please make cheque/PO payable to NBS, or phone in with your order. Access and Visa welcome.

NBS - Not the cheapest, but still the best!!

89p. Graphics Master 1 + 2, graphic image manipulation PD software: £3. Contact Edlib, Scotland Farm, Stockwood Rd, Brislington, Bristol BS4 5LU.

ELMSOFT – PO Box 17, Loughton, Essex IG10 2EE.

ESSEX SHAREWARE LIBRARY – Beginners pack of the best of PC Shareware. Ten disks £14.99. Cheques/PO to Essex Shareware, 221 Branksome Avenue, Stanford-Le-Hope, Essex.

FORTISS PD – Amiga PD. Watch the magazines for our advert or send £1 for catalogue disk to Fortiss PD, PO Box 2, Earl, Shilton, Leicester LE9 8LU.[2]

FREAKS PUBLIC DOMAIN LIBRARY – Disks filled from a huge range. Ribbons re-inked, recycled packaging, send stamp for catalogue to Freaks, 29 Leap Valley Crescent, Downend, Bristol BS16 6TQ.

FREEWAY PD – For the Amiga. Loads of titles for only 99p including p&p. Send disk for list. Freeway PD, 11 Elizabeth Place, Somting, Sussex BN15 9U3.

GARNER DESIGNS – Spectrum PD. 57 Lovers Walk, Dunstable, Bedfordshire LU5 4BG.

GOODMAN PDL – 16 Conrad Close, Meir Hay Estate, Longton, Stoke-on-Trent, Staffs ST3 1SW. Tel: 0782 335650.

IMG CLIP ART – GDOS fonts for sale or swap. For catalogue send blank disk plus SAE or £1 to E Renner, 62 Broxholme Lane, Doncaster.

IMAGE ART ST PD LIBARY Hundreds IMG Picts. Calamus Fonts and more. SAE £1.50 for catalogue. Image Art, 19 Brenda Rd. Tooting Bec SW17 7DD[4]

JACKSON'S PD SPECTACULAR – Amiga PD. 22 Victoria Court, Clifton Rd, Worthing, Sussex.

JENNIX PD – Celebrating our second birthday in style. For the best ST PD around, the most competitive prices and the best service talk to us. Send 50p for catalogue disk to Jennix PD, 66 Abbey Road, Strood, Kent. Tel: 0634 723659.[3]

JPDL – Atari ST PD. Double-sided disks supplied if possible. Blank disk and SAE or 70p to: J Kilner, 120 Wiggington Road, Tamworth, Staffs B79 8RW.

KEANSOFT PD – ST PD for sale. Send SAE and blank disk for copy of latest catalogue. Write to Keansoft PD, 42 Lords Croft, Clayton-Le-Woods, Nr Chorley, Lancs PR6 7TP.

KEV'S PD – Amiga £1 disk. K Larkin, 12 Hathaway Court, Cheriton Rd, Gillingham, Kent ME8 0ES.

L & D PD – Amiga PD from 35p per disk. Monthly competition to win PD of your choice. Also a new digitising service is available. For info send SAE and disk to L & D PD, 10 Hornbean Green, Pontefract, West Yorks WF8 2DX.

LAPD – Worldwide reputation for quality PD for the ST. Thousands of programs available. Disk catalogue only £1.00. Credit cards accepted. Telephone 0773 605010 or 0773 761944.

LARD PD – Only 95p per disk. Amiga only. For catalogue write to Lard PD, 41 Craven Road, Hemsworth, West Yorks WF9 4SB. Enclose SAE.

LEMMING SOFT – Amiga demos to swap. over 300 disks, List keeps growing by day also want two meg demos write to ;- John Simmons, Flat 45, 2 Silvermere Road, Sheldon, Birmingham, B26 3XA.

MASTER PD – Amiga PD to swap and sell. Send SAE and list to A Hines, 44 School Lane, Easton Bray, Bedfordshire, LU6 2DT 100 per cent reply.

MERSEY SHAREWARE – PC Shareware. £1.50 per disk. (3.5/5.25). SAE for list. Any title obtained. Phone with details of requirements. 17 Ullet Road, Liverpool L17 3BL. Tel: 051-733 1178.[3]

MERTON PD – Cheap ST PD. Send £1 or blank disk for catalogue with SAE (cheques payable to T Huq) to: 10 Grasmere Avenue, London SW19 3DX.

MONSTER CABLE – Free ST PD, honest! Just the price of a stamp. Puts all others ST PD libraries to shame. Send SAE for more info to M Sandhu, 25 Welbeck Road, Maidenhead, Berkshire SL6 4EB.[2]

NEURAL IMAGES PD – Send an SAE to4, Flint Walk, Throston Grange, Hartlepool, Cleveland. TS26 DTE for your free PD Disk. No catches!

NBS Public Domain - have chaanged their address to:1 Chain LaneNewporIsle Of WightPO30 5QA

NIGHTSHIFT – 8 Bertelin Road, Beaconside, Stafford ST16 3JJ.

OWN PC CLUB 7 SHAREWARE – 73A East Street, Blandford Forum, Dorset DT11 7DX. Send blank disk plus stamp for catalogue. 25p each prog.

PAD PD AND SHAREWARE LIBRARY – For Amiga users. SAE for details: PAD Public Domain Library, 41a Saint Augustine Street, Norwich, Norfolk, NR3 3HF.

PARADISE COMPUTERS (GLOBAL) – 9 Westfiled Crescent, Brighton, East Sussex BN1 8JB.

PAWS PD – Lichfields only PD library. Disks £1. Swaps welcome. Send a SAE for list to: Anthony Cooper, 14 Purcell Ave, Lichfield, Staffs WS13 7PJ.

PC SHAREWARE/PD - £1 Disk + P&P. 2000 MB/AVA. Top titles. Chose programs to fill disk. 2 f/class stamps for menu cat disk, 37 Devon Pl,, Newport, Gwent.[4]

PD for the ST – best catalogue, best service. No connection with 'South West PD'. The South West Software Library, PO Box 562, Wimborne, Dorset, BH21 2YD[4]

PROPHECY PDL –ST PD. Send SAE and disk or a cheque for £4.50 to Prophecy PD, 390 Coulsdon Rd, Old Coulsdon, Surrey, CRS 1EF. Competitive prices.

REAL PD – Amiga PD libraries – wanna join real PD? For more info write to Mark, 50 Victoria Avenue, Sleaford, Lincolnshire NG34 7CN.[2]

PD SOFTWARE for the ST. Only the best programs. Get into our library. Send 50p. or blank disk + SAE 95, Elton Road, Sandbach, Cheshire CW11 9NF[4]

RICHARD KIRK PD – Atari ST PD £1 or 45p per disk. Send disk plus SAE for catalogue to R Kirk PD, Copes Farm, Withington, Leigh, S-O-T, Staffs ST10 4PN.

RIVERDENE PDL – 30a School Road, Tilehurst, Reading, Berks RG3 5AN.

ROBOT PD – 2 Trent Rd, Oakham, Rutland LE15 6HF.

SAINT JOHN'S SCHOOL LIBRARY PDL – ST PD software sale or swap: St John's School Library PDL, c/o Mark Ash, 54 Beaconsfield Road, Sittingbourne, Kent ME10 3BB Tel:0795 425653 after 4pm.

SCOTBASE PDL ASSOCIATION – Affordable Shareware for PC users. Blank disk and SAE for catalogue and details to: Rosie, 63 Springboig Road, Glasgow G32 0DB.

SELECT PD – For the ST. From 35p a disk. Send £1 coin for disk catalogue to RC Newman, 22 Hall Road, Leckinghampton, Cheltenham, Glos GL53 OHW.[2]

SHAREWARE ELITE – Over 1,300 shareware disks for PCs. Send blank disk and SAE for catalogue to 25 Cades Parc, Helston, Cornwall. Tel: 0326 564164.

SHAREWARE KING – 3,000 items of shareware for PC, plus support, membership, plus discounts. SAE and blank disk for details to C Smith, 10 Penwood Close, Westbury, Wilts, BA13 3LW. Tel 0373 865263.

SHAREWARE/PD – Windows, clip-art and GIF shareware for the PC. Send disk and SAE for list to T Wishart, 3 Berwick Rd, Port Glasgow PA14 5QN.[3]

SHIELDSOFT PD – Now from only 50p per disk. Catalogue disk 75p. For details SAE to M Daniels, 63 Churton Rd, Rhyl, Clwyd LL18 3NB.

SINGER PD – 62 Manor Rd, Hastings E Sussex TN34 3LJ.

SOLENT SOFTWARE – Atari ST. 53 Rufus Gardens, Totton, Hants SO4 3TA.

THE SOURCE PD – For the ST. Compacted demos disks. £1.50 each. Write to: 7 Shearwater Lane, Norton, Stockton, Cleveland TS20 1SH.

SOUTH WEST PD – PO Box 562, Wimbourne, Dorset BH21 2YD.

THE ST ADVENTURER'S PD LIBRARY – Catalogue disk just 50p. Write to John R Barnsley, 32 Merrivale Rd, Stafford, ST17 9EB.

ST ICE PDL – Send disk or £1 for great catalogue with programs included. Quality disks, viruses checked. All disks £1.80 incl. p&p.Write to 7 St James' Close, Kettering, Nothants NN14 5HB.

STAR PD – Atari ST PD library fast 'n' friendly! Disk and SAE for free PD and our disk-based catalogue: Star PD, 1 Solva Rd, Clase, Swansea SA6 7NX.

STATE 808 PDL – Atari ST demos, art packages and soundtrackers. Cheaply priced. Send blank disk to: State 808, 3A Old Lanark Road, Charluke, ML8 4HW.

START COMPUTER SYSTEMS – Dept A, Barbican House, Bonnersfield, Sunderland SR6 0AA. Tel: 091-564 1400.

STUPID FLOWER PD – new library for ST users. SAE for free catalogue to SFPD, 3 Read Mead, Glastonbury, Somerset BA6 8ON or call 0458 35027. Ask for Matt.

TANK PD – disks only 60p (members), 75p (non-members). Prices include p&p. Hundreds of titles. Send blank disk and SAE to: 4 Chandos Road, Redland, Bristol BS8 6PE.

TOWER PD (ST) – For POV and other Atari ST PD software. £1.50 per disk. Send £1 for disk catalogue to PO Box 40, Thornton-Cleveleys, Blackpool FY5 3PH.[3]

TOWER TOP PDL – The Coragen Corporation, 4 Cardigan Close, Bletchley, Milton Keynes MK3 7EJ.

TRUST PD – 18 The Park, Southawram, Halifax, HX3 9QY. Tel: 0895 53521.

VENUS SHAREWARE – IBM Shareware: Amateur radio, technical, engineering, education, Windows utilities and more. Tel 0252 837860 for free catalogue.

WARLOCK PD CLUB – New Amiga club and library all tested and virus free. No fee. Tel Mark on 0582 761723. 2 Manland Avenue, Harpenden, Herts AL5.

WINDMILL SOFTWARE – Our catalogue describes programs not disks. SAE and 50p or disk for ST catalogue to P Raeburn, Windmill Software, 360 Windmill Road, Ealing, London W5 4UR.

WIZBIT PD LIBRARY – New Mac PD library. Disks £3. Around 100 disks available. Intro pack £1 from Wizbit PD, 38 Greenbank Gardens, Edinburgh EH10 5SN.

WORSOFT – Michael Andersson, Tjardalsgrand 11, 18341 TABX, Sweden.

ZEON'S LAIR – PD software for the C64. Send 35p stamp :12 Castlegate, Penrith, Cunbria for free catalogue on disk. Free software.[3]

ZOMBIE PD – Latest ST disk cat available. No charges! Send blank disk + SAE and your list to 41 Buckingham Avenue, Penwortham, Preston, Lancs.[3]

PD Library name.....

Details of service offered .....

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Address.....

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Phone no.....

Send to: PD Listing, NCE, Future Publishing, 30 Monmouth St, Bath BA1 2BW



Games Week

Outgoing, outspoken, but never outclassed, Stuart Campbell's reviews, tips and news tell you what's best for you and your machine

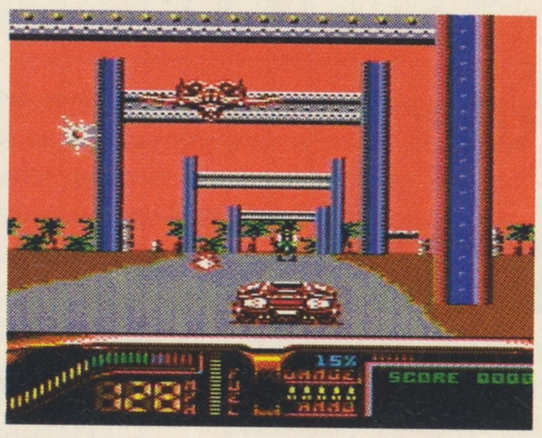
STAR RATINGS

★★★★★ = Teenage Fanclub
★★★★ = Teenage Kicks
★★★ = Teenage Riot
★★ = Teenage Rampage
★ = Barbara Cartland

C64 supremos System 3 has a couple of major releases lined up in the extremely near future, and both are looking impressive in different ways. ***Last Ninja 3*** is the final (?) game in the series which has garnered more accolades for the company than pretty much any other C64 game ever, and this cartridge version looks like comfortably the best of the lot.

System 3 has tweaked the gameplay in an attempt to appeal to a slightly more 'mature' market than the previous titles, with strong role-playing elements added to the usual beat-'em-up and exploration aspects (it says here), and enormous success seems inevitable.

At more or less the opposite end of the gaming spectrum is ***Turbocharge***, a stunningly fast driving-and-blasting game which has already pulled in some ecstatic reviews, including a huge 93 per cent from our sister mag ***Commodore Format***. The review ended with the words 'Any Commy owner who lets this one pass him by is on the one hand stupid, and on the other hand incredibly stupid.', which would seem to suggest that C64 owners are in for a major treat when this hits the streets in about three days' time.



• Turbocharge - the best 8-bit driving game ever?

TOP 10 ALL FORMATS BUDGET

THIS WEEK	LAST WEEK	TITLE	PUBLISHER	MACHINE
1	1	*New Zealand Story*	Hit Squad	SP CO AM ST AG
2	4	*Bubble Bobble*	Hit Squad	SP CO AM ST AG OT
3	2	*Batman - The Movie*	Hit Squad	SP CO AM ST AG OT
4	3	*Shinobi*	Mastertronic	SP CO AM ST AG OT
5	26	*Indiana Jones - Last Crusade*	Kixx	SP CO AM ST AG OT
6	5	*Cabal*	Hit Squad	SP CO AM ST AG
7	12	*Dragon Ninja*	Hit Squad	SP CO AM ST AG
8	11	*Dizzy Panic*	CodeMasters	SP CO AM
9	9	*Double Dragon*	Mastertronic	SP CO AM ST AG OT
10	7	*Monnwalker*	Kixx	SP CO AM ST AG OT

ST = Atari ST AG = Commodore Amiga PC = IBM PC or compatible SP = Spectrum
CO = Commodore 64 AM = Amstrad OT = Other.
Chart compiled by Gallup. © European Leisure Software Publishers Assoc.

TIPS

METAL MASTERS
• Infogrames • Amiga

If you're having a desperately hard time (of the wrong sort) playing this unexciting robot beat-'em-up, simply hit the F4 key during the game to disable your opponent's movement functions, allowing you to wander across and smash him to pieces at your leisure.

SIMPSON SUCCESS

After some success with the Amiga version of the ***Simpsons*** licence (soon to be available on general release after a period of exclusive bundling with new Amiga packs), Ocean is proceeding apace with other machine versions.

The Spectrum port is the most advanced, and it looks like a surprisingly faithful translation of the 16-bit game. All the levels and enemies are still there, and loads of colour has been packed in in an attempt to maintain the cartoon appeal that's so important in games of this nature.

COCK-UP CORNER

Game Boy fans disappointed by last week's one-star review of Dragon's Lair may be slightly less diappointed by the fact that it should in fact have been a three-star review. The person responsible for this teeny mistakette has been shot.

GAMES REVIEW GAMES REVIEW GAMES REVIEW

ROLLING RONNY

Virgin • ST, Amiga • £25.99 ★★★

I've been looking forward to this for quite a while now, having been impressed with the Amiga and ST demo versions which went on our sister magazines *Amiga Format* and *ST Format*. Now Virgin (Sega Europe, surely?) has come up with the finished versions, and I must admit to being just a tiny bit disappointed.

Only a tiny bit, mind you, but this just isn't quite the classic *Mario*-inspired platform romp I'd been hoping for. It's a beautiful-looking game, pin-sharp graphics with loads of character added to great playability and addictive qualities, but there's something lacking in the way of action. The collision detection's a tad iffy for one thing, and the sonic balance between music and sound effects on the Amiga leaves a lot to be desired, as does the ST scrolling (what's new?) And the fact that on a TV screen it's often hard to spot the tiny jewel cases which Ronny has to collect to complete a level, but I think the bottom line has to be that there just isn't enough happening.

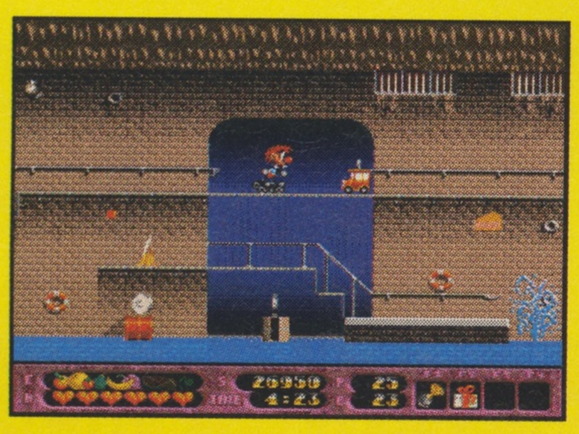
Too much of the time, our Ron (who, it has to be said, is one of the central characters of the year in my book) finds himself skating along unopposed with only the far-from-tight time limit to worry about. If the stages had been halved in length with the same number of baddies, then Virgin could have had a real winner on their hands.

Don't get me wrong, after the first level there's no shortage of difficulty, but it's of a faintly unimaginative design, consisting largely of to-ing and fro-ing backwards and forwards solving platform-negotiating problems and relying on the special pick-up items rather than keeping it all simple and testing the player's joystick-manipulating skills. Often the wrong choice or use of a single item will leave Ronny unable to complete a level, which is just a bit too lazy for my taste. I've gone on about memory-testing as a substitute for proper game challenge at great length in the past, but when it crops up in an otherwise excellent game like this it's even more depressing than usual.



•With such pretty scenery to wander around, it seems almost a shame that Ronny has to bother with something as mundane as crime-solving

Don't mistake this farrago of nit-picking for a real pasting, because *Rolling Ronny* is a lot of fun and I enjoyed playing it hugely, but with only a small amount of extra care it could have been one of the games of the year. *Mario* lovers, don't sell your Famicom just yet.



• Down in the sewer, and the game suddenly gets much, much harder. At least, the Amiga version does - it's well mean

TOP 10 ALL FORMATS FULL PRICE

THIS WEEK	LAST WEEK	TITLE	PUBLISHER	MACHINE
1	NE	*J White's W'wind Snooker*	Virgin	ST AG
2	1	*Man Utd Europe*	Krisalis	SP CO AM ST AG
3	4	*Thunderhawk*	Core Design	ST AG
4	3	*Rainbow Collection*	Ocean	SP CO AM ST AG
5	6	*Rodland*	Storm	SP CO AM ST AG
6	5	*Dizzy Collection*	CodeMasters	SP CO AM
7	NE	*Silent Service 2*	Microprose	AG OT
8	17	*Monkey Island*	US Gold	ST AG OT
9	2	*Cruise for a Corpse*	US Gold	AG
10	10	*Hero Quest*	Gremlin Graphics	SP CO AM ST AG

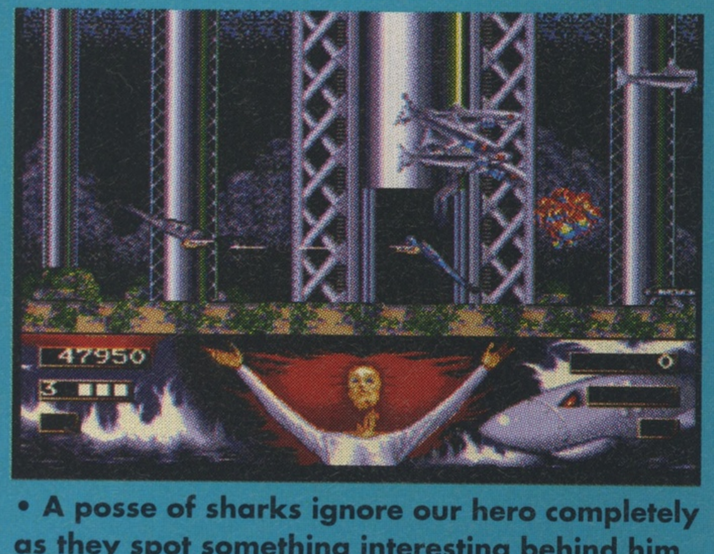
ST = Atari ST AG = Commodore Amiga PC = IBM PC or compatible SP = Spectrum
CO = Commodore 64 AM = Amstrad OT = Other.
Chart compiled by Gallup. © European Leisure Software Publishers Assoc.

THUNDERJAWS

Domark/Tengen • 16-bits £25.99 • 8-bits £12.99 ★★

Rolling Thunder, eh? Didn't you just love it? Those tall, elegant sprites, that well-judged and challenging gameplay, those terrible home computer conversions... It's lucky, then, that the nation's programmers have been given a second stab at the job, with the release of the coin-op sequel *Thunderjaws*.

Consisting of much the same stroll-along shoot-'em-up gameplay, but with an added underwater element whereby every other level took place in a shark-infested ocean full of harpoon-armed enemy divers, like something from any of half-a-dozen *James Bond* movies, *Thunderjaws* presented an ideal opportunity for coders The Kremlin to show off just how much programming techniques have improved in the three or four years (a lifetime in computing terms) since US Gold put out the *Rolling Thunder* conversions.



• A posse of sharks ignore our hero completely as they spot something interesting behind him



• 'See, I told you it was worth getting to the end.'

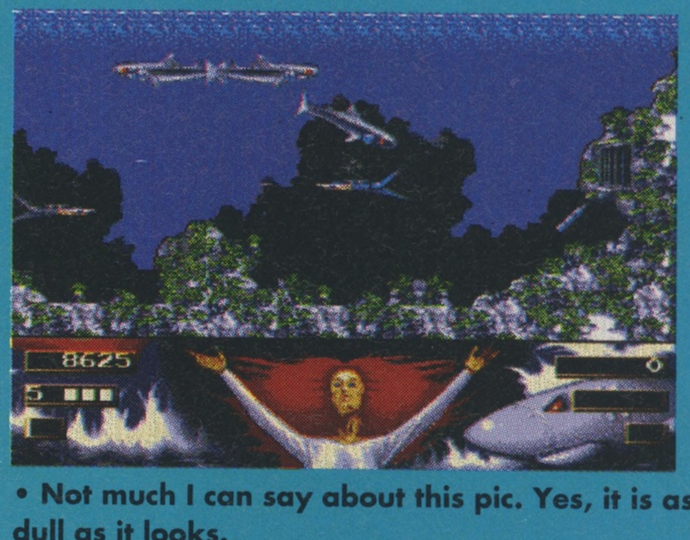


• God only knows what this is meant to signify...

Funnily enough though, it proves exactly the opposite. Cheap, characterless graphics, 60-second accessing pauses between levels and horribly jerky scrolling are just a few of the flaws in this game which can't be put down to the lifeless design of the original coin-op. If I was to go into all the problems with that, we'd be here all day. Gameplay in *Thunderjaws* is a simple matter of holding the joystick to the right, pummelling away repeatedly at the fire button, and nipping off to make a cup of tea every other minute while the disk drive chugs away loading the next five screens of tedium.

Even when it's finished, you've still got some serious bugs to negotiate (on one occasion I lost a life in one of the 'indoor' sequences, only to be re-incarnated in the middle of the floor, from where I fell to my death repeatedly until my lives ran out), and on top of the distinctly unpleasant controls (jumping is an out-of-control nightmare, as is falling from a high to a low platform) and useless physics of later levels (female divers executing underwater somersaults which a dolphin couldn't manage – I'm all for artistic licence in games, but this is just crap laziness), what you've got for your £26 at the end of the day is a fun-free catalogue of mediocrity which may well put you off buying full-price software for life. (Especially when you see the dismally cheap packaging).

Really boys, even with such uninspiring source material, if this is the best you can do then don't give up the day jobs.



• Not much I can say about this pic. Yes, it is as dull as it looks.

The actual graphics, which admittedly weren't Amiga state-of-the-art, are practically identical, and for once it looks like the Speccy version of a big game isn't going to be a pale, rushed imitation of the big machines' effort. Owners of the much-maligned 8-bit can be impressed for themselves any day now. ■



• Wow, man! Yes, er, nice title screen, isn't it?

CARRIER COMMAND (Mirror Image/Realtime)

This all-time classic for the Spectrum, Amiga and ST has recently been re-released on 16-bit budget label Mirror Image, so now might be a good time to help struggling commanders out with a few top tips.

1) GENERAL STRATEGY
Make the first two islands captured factory islands, the next two resource islands, and the next four defence islands. The high number of defence islands is to protect your home island - if this falls it's game over. Keep advancing towards the enemy base island - once this is captured the enemy supply line is destroyed, effectively immobilising the enemy carrier.

2.) FUEL AND SUPPLY PRIORITIES
These should be set as soon as possible as supplies run low very quickly. Carrier fuel should be high priority, with Manta and Walrus fuel on medium. High priorities in supplies should be Mantas, Walruses, ACCBs, long range coms pods, all missiles, and viewing drones. Keep moving the supply islands up or you'll end up stranded without fuel. Try to have a number of routes from your home island to your stockpile island so it's harder for your opponent to cut your supply lines.

3) ATTACKING OCCUPIED ISLANDS
● Method 1 - Cruise missiles Deploy all drones to the rear of the ship and then reverse towards the island. Stop the carrier before you run aground and launch a viewing drone. When the command centre comes into view, let it have it with a couple of missiles. When the command centre is destroyed, simply occupy the island with a Walrus armed with an ACCB.
● Method 2 - Mantas Arm a Manta with 7 missiles (these CAN be used against ground targets), launch it and fly at the command centre at full speed, ignoring the attacks which will be coming from all sides. Launch missiles at the command centre until it is destroyed, then occupy with a Walrus as usual.

4) THE CHEAT MODE
Pause the game, type 'THE BEST IS YET TO BE' and press '+' on the keypad. This renders all your craft invincible, meaning you can land Mantas on enemy runways to refuel! It also gives your Mantas the ability to hover without using fuel.



BEG, BORROW AND BURN

BEG

RODLAND • STORM
If you're just a little bit fed up of Mega Drive owners getting all the good arcade games, here's something to cheer you up no end. Programming stars The Sales Curve don't churn out games in a hurry, but when you see how much care and attention they devote to their products, it's easy to forgive them.

Rodland is a better-than-perfect conversion of Jaleco's cute and straightforward coin-op, with gorgeous graphics and sound and the kind of gameplay that they just don't make any more. *Rodland* bursts at the seams with beauty and entertainment, and if anyone else comes anywhere near me saying 'But it's just a shallow boring arcade game for little kiddies and it doesn't make use of the machine's capabilities' they'll be taking their sad little kidneys home in a box. Utterly wonderful.

BORROW

UTOPIA • GREMLIN
Crossing *Sim City* with *Mega Lo Mania* sounds like a brilliant idea, and indeed it is, but this god sim from Gremlin narrowly fails to pull off either element with sufficient style to make the idea work. The fighting side runs out too quickly and the city-building side lacks the depth of gameplay that this sort of thing really needs. It's a long way short of being a bad game, I enjoyed it a lot, but the chances are it'll leave you feeling just a little short-changed at the end of the day. By all means check it out for yourself though, if you found the other god sims a bit too complex it might be exactly what you've always been looking for.



BURN

MAGIC POCKETS • RENEGADE
Did you love *Gods*? Did you love *Rainbow Islands*? You'll hate this, then. The 'infallible' Bitmap Brothers (is there anyone else out there who thinks that the *Speedball* games are the only decent things this over-rated crew have ever done?) have produced a real turkey this time, and don't let any other blinded-by-hype idiots tell you otherwise. Slow, uneventful gameplay and some of the shabbiest design for quite some time are hidden beneath an exterior of 'cute' graphics and undeniably nice touches, but it doesn't take much scratching at the surface for the true horror to become clear.

Dull, dull, dull, dull, dull.

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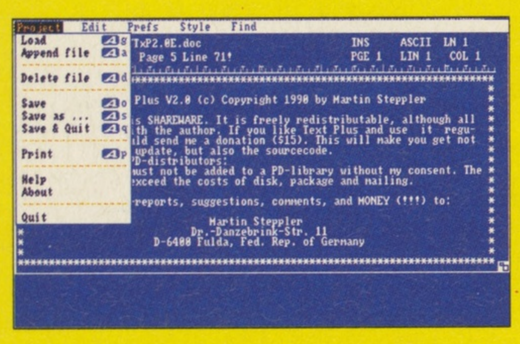

•With *Text Plus*, playing around with text files couldn't be easier!

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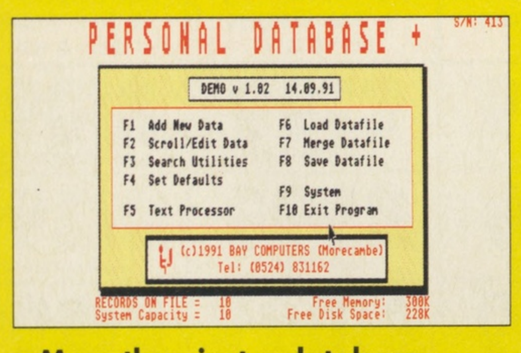

• More than just a database, *Personal Database Plus* is also a text editor and label printer

And on the other side of the disk, for the ST, is a demo version of *Personal Database Plus*, a combined database, text editor and label maker. It's paired with *Calendar*, a handy desktop accessory.

PC



• *Duke Nukem* provides action of the kind never seen in a PC

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* As surveys have shown that 98 per cent of our readers are male, we hope we have not offended any female readers with this overtly sexist page heading. The editor apologises unreservedly. And while we're on the subject he may as well also say sorry for using the completely gratuitous picture on page 21...

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Classic simplicity
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- HDD, Turbo & Power LED's
- Reset Button
- Turbo Switch
- LED Speed Readout*
- Enhanced 102 Keyboard
- Video Card/Monitor
- 40MB Hard Disk Drive

** Not available on slimline case*

ONE YEAR ON-SITE WARRANTY

SYSTEM	MONO	M-VGA	C-VGA	VGA+	S-VGA (0.28 dot pitch)
80286 12MHz	£549	£609	£729	£754	£779
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80386SX 16MHz	£749	£809	£929	£954	£979
80386 25MHz	£899	£959	£1079	£1104	£1129
80386-25 +CACHE	£949	£1009	£1129	£1154	£1179
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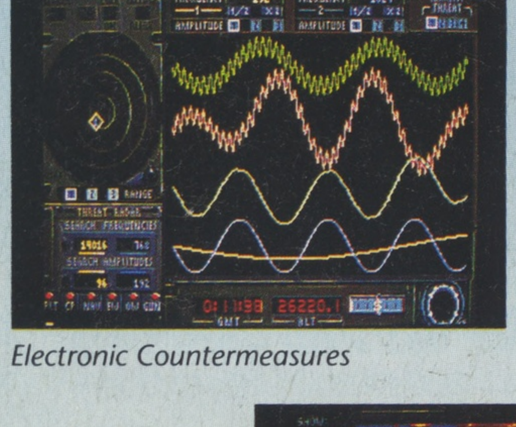

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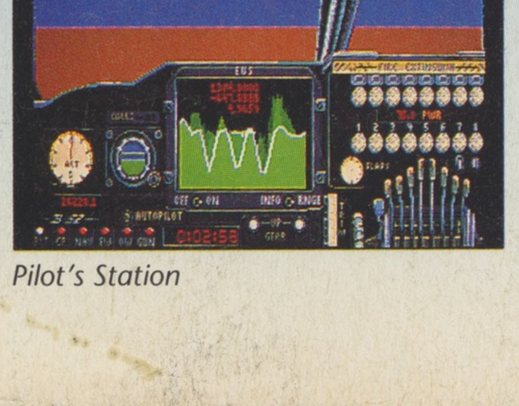

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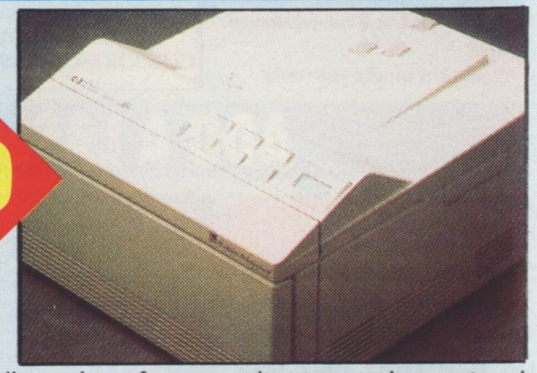

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- 10 function keys
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- One RS-232C serial port
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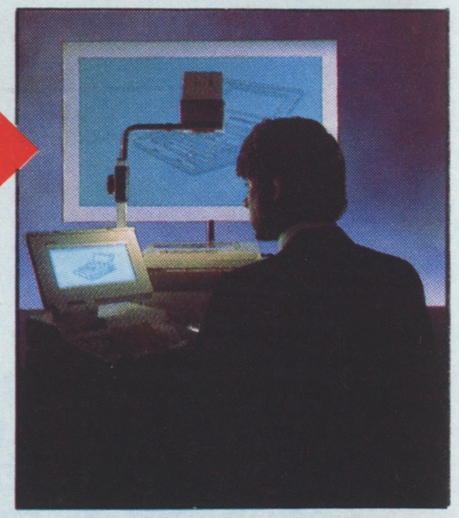

Sharp QA25 gives the computer user the ability to project computer images via an overhead projector. The high quality LCD screen is capable of projecting a large, high resolution picture with extremely clear display.

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- Dark blue on grey 208 × 130mm. Screen gives clarity and wide angle view.
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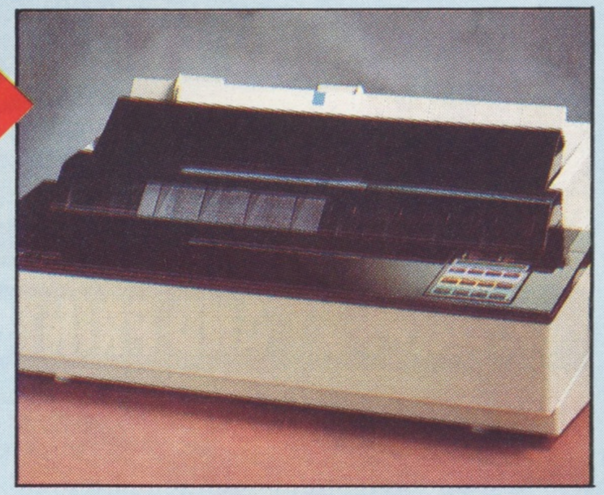
LQ400	24	£299	£176	LQ550	24	£319	£229
FX850	9	£429	£299	FX1050	9	£539	£369
LQ850+	24	£599	£419	LQ1050+	24	£729	£509
LQ860	24	£719	£505	LQ1060	24	£959	£669
LQ2550	24	£1099	£775	TLQ4800 SPECIAL	48	£1999	£599
SQ850	360 × 360 dpi INK JET	£769	£495	SQ2550	INK JET	£999	£699

EPSON TLQ4800 DOT MATRIX PRINTER

RRP £1999

OUR PRICE **£599**



This high specification dot matrix printer from the world's number 1 printer manufacturer is being offered for a limited period at 70% discount. This offer includes full 12 months warranty and each machine is full UK specification and includes power cables and manuals.

STAR LC 10

RRP £199

OUR PRICE **£99**



- Low cost 9-pin, 80 column dot matrix printer
- Fully industry standard compatible
- 144 cps draft elite/36 cps Near Letter Quality
- 4 K-byte buffer as standard
- Paper Parking
- Panel lock mode (for software override)
- Push feed tractor
- 8 resident Near Letter Quality fonts Courier, Sanserif, Orator 1 & 2 and italic versions. (6 selectable from the front control panel)

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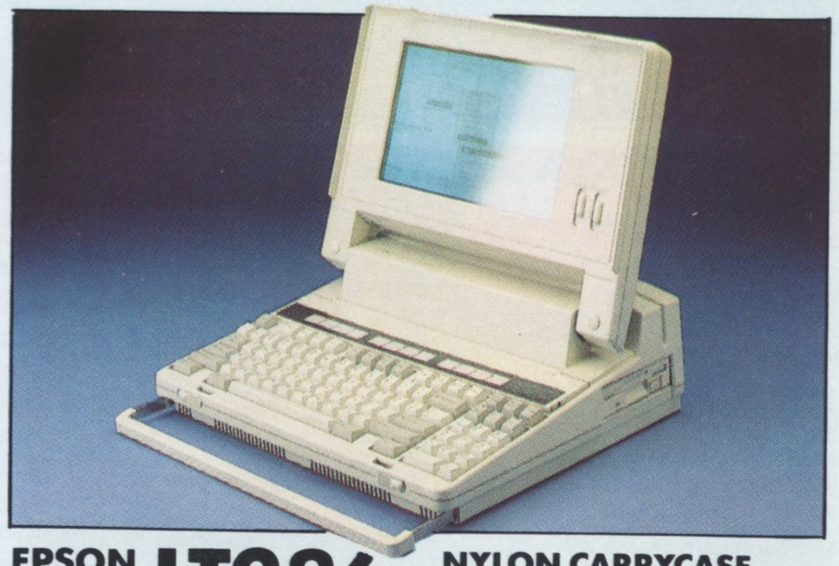

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Protect your portable in a strong black nylon carry case. **£25.**

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- 640K RAM • Keyboard
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- Slot for 80387 co-processor
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TOSHIBA P341SL

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- AC mains adaptor
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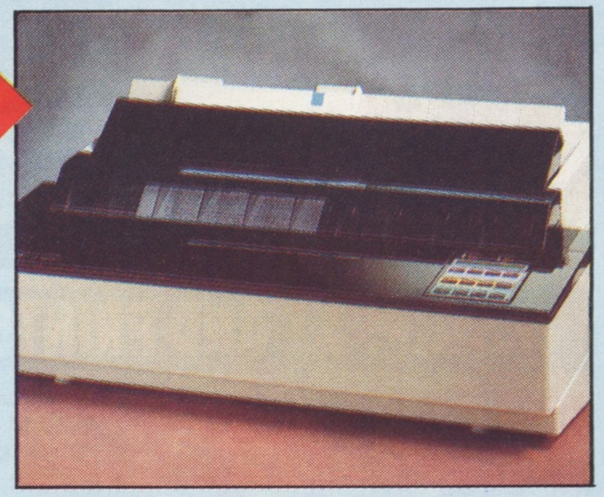
LQ400	24	£299	£176	LQ550	24	£319	£229
FX850	9	£429	£299	FX1050	9	£539	£369
LQ850+	24	£599	£419	LQ1050+	24	£729	£509
LQ860	24	£719	£505	LQ1060	24	£959	£669
LQ2550	24	£1099	£775	TLQ4800 SPECIAL	48	£1999	£599
SQ850	360 × 360 dpi INK JET	£769	£495	SQ2550	INK JET	£999	£699

EPSON TLQ4800 DOT MATRIX PRINTER

RRP £1999

OUR PRICE **£599**



This high specification dot matrix printer from the world's number 1 printer manufacturer is being offered for a limited period at 70% discount. This offer includes full 12 months warranty and each machine is full UK specification and includes power cables and manuals.

STAR LC 10

RRP £199

OUR PRICE **£99**



- Low cost 9-pin, 80 column dot matrix printer
- Fully industry standard compatible
- 144 cps draft elite/36 cps Near Letter Quality
- 4 K-byte buffer as standard
- Paper Parking
- Panel lock mode (for software override)
- Push feed tractor
- 8 resident Near Letter Quality fonts Courier, Sanserif, Orator 1 & 2 and italic versions. (6 selectable from the front control panel)

TOSHIBA P341SL

OUR PRICE **£249**

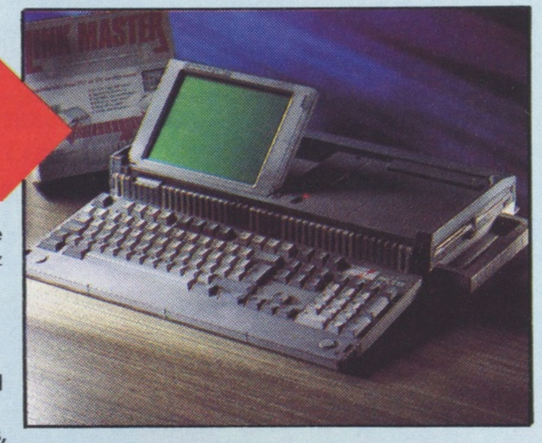


- 24 pin dot matrix printer
- Print speeds 216cps draft, 72cps LQ
- Friction & tractor feeds
- Will handle up to original plus 3 copies
- 3 resident fonts
- Dual interface
- 132 col width for wide carriage printing

AMSTRAD PPC640D PORTABLE

RRP £649

OUR PRICE **£279**



- Fully IBM PC-XT compatible
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- 640K RAM
- Integrated display adaptor
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- Complete with: full manuals, carry case, DC car lead, PPC organiser and Link Master software plus Mirror II Communications software
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