

# POPULAR Computing WEEKLY

40, Rock Rd. Only 50p.

23-29 October 1986

Vol 5 No 43

## NEWS DESK

W H Smith boots  
Mastertronic from  
Gallup chart

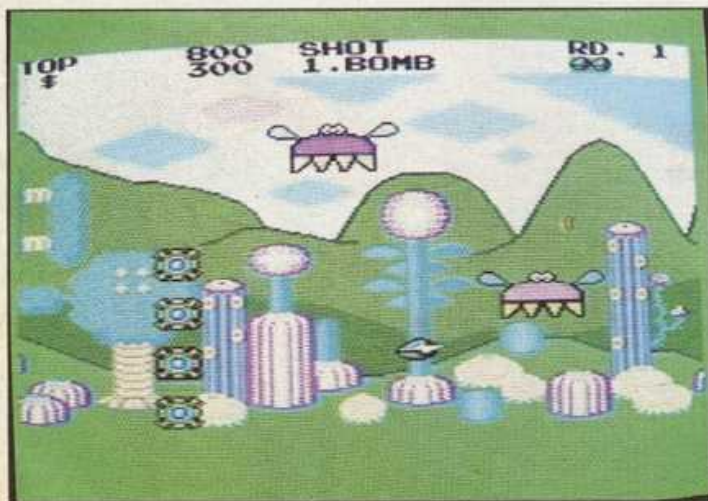
Amstrad PC's  
reliability  
questioned

## Games consoles: the threat to the 8-bit micro

### SEGA MASTER SYSTEM



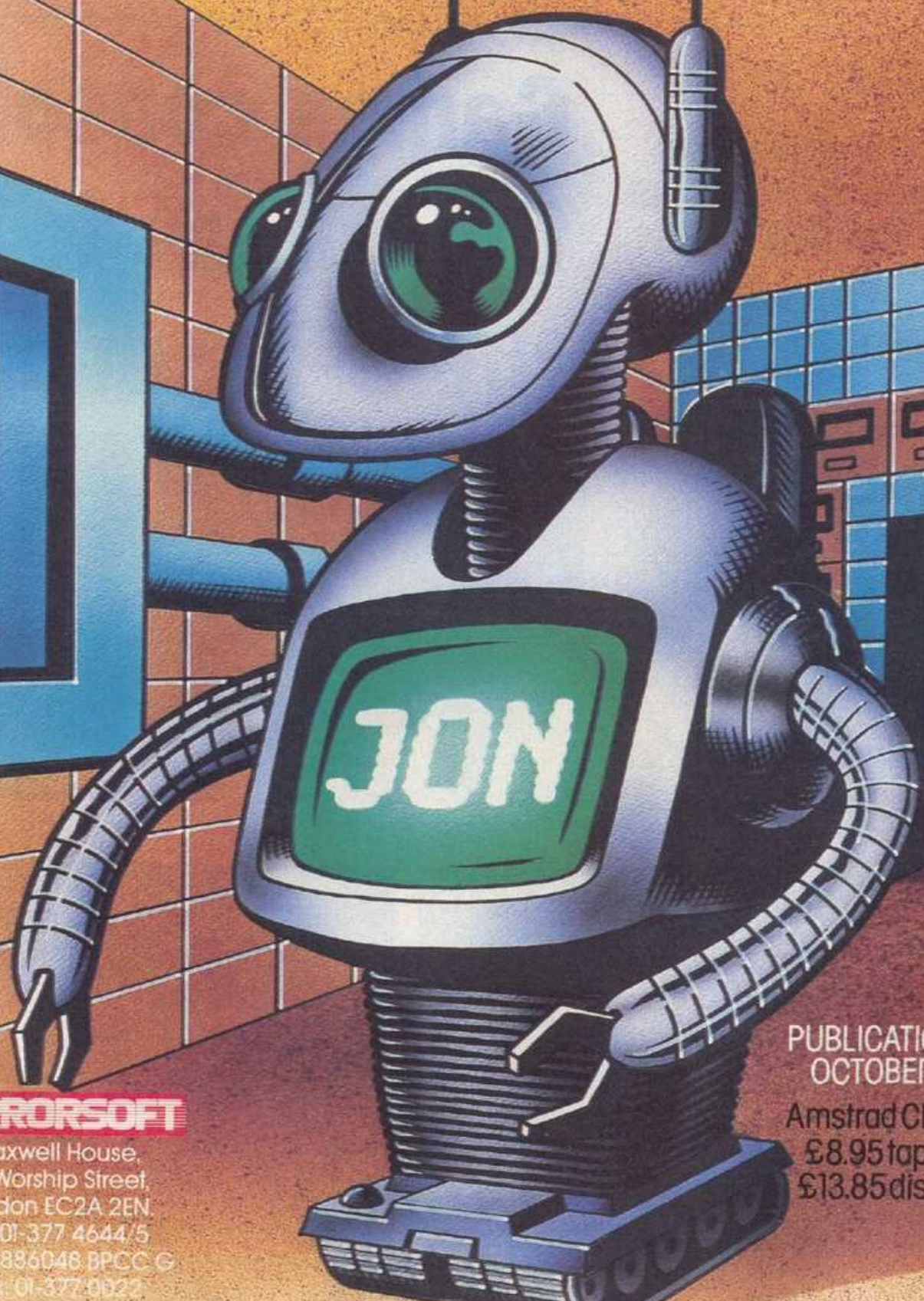
Full review plus  
Sega software  
starts page 14



**MIRRORSOFT**

# ICON JON

What happens to a program that doesn't want to die?  
WHY, IT TRIES TO ESCAPE, OF COURSE!



**MIRRORSOFT**

Maxwell House,  
74 Worship Street,  
London EC2A 2EN.  
Tel: 01-377 4644/5  
Telex: 866048 BPCC G  
Fax: 01-377 0022

PUBLICATION  
OCTOBER

Amstrad CPC  
£8.95 tape  
£13.85 disk

## SOFTWARE ►

**13 Forecasting**

Statistics without tears from Amstat, for Amstrad CPCs and PCWs.

**K-Switch**

Load two programs into your ST and switch from one to the other at will. Particularly useful for transferring in-

formation on utilities, from a database to word processor, etc. Mark Jenkins has the details.

**14 Sega Master System**

Games machines are back in vogue again. Ariolasoft is set to import and market the Sega range of models from the US. See for yourself how

◀ **HARDWARE**

these video consoles have changed since the days of ping-pong on the telly.

John Cook looks at the machine and the software which will be available for it.

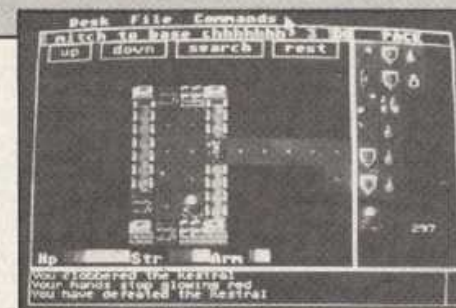
## GAMES ►

**16 Adventure Corner**  
**Adventure Helpline****19 Arcade Action**

The long-awaited *Knight Tyme* tips, plus this week's Gallup Top Twenty.

**22 Reviews**

Infinite variety this week, with *Rogue* from that graphic maestro Epyx on the ST, the Spectrum version of Software Projects' chart-topper *Dragon's Lair*, *The Great Escape* from Ocean, and *Camelot Warriors* from Ariolasoft on Amstrad CPCs.

◀ **PROGRAMMING****24 BBC**

Brought to you courtesy of BBC *Jet Pac* author, David Jones, a utility entitled *Jetmode*.

**25 Atari ST**

A word count facility to use in your documents.

**26 Spectrum**

Slow Pro by Michael Rees.

**26 Amstrad CPCs**

Our racing prediction program reaches its second phase.

**27 Commodore**

More disc and printer utilities.

**30 Bytes and Pieces****33 Peek and Poke**

## REGULARS ►

**4 News Desk**

Upsets on the Gallup chart.

**10 Letters, Puzzle****31 Competition**

20 copies of *The Archers* game to give away to lucky winners.

**35 Soundcheck****36 Communications****44 New Releases****46 Ziggurat, Hackers**

Editor Christina Erskine News editor John Lettice Features editor John Cook Technical editor Duncan Evans Production editor Michelle Beauchamp Supplements editor Christopher Jenkins Supplements designer Barbora Hajek Advertisement and Promotions manager Simon Langston Assistant advertisement manager David Osen Advertisement executive Jon Beales Classified executive Rodney Woodley Editorial secretary Annmarie O'Dwyer Administration Geraldine Smyth Managing editor Peter Worlock Publishing director Jenny Ireland. Published by Sunshine Publications Ltd, 12-13 Little Newport Street, London WC2H 7PP. Tel 01-437 4343 Telex 296275 Fax 01-439 0681 Typeset by Magazine Typesetters, 6 Parnell Court, East Portway, Andover, Hampshire. Printed by McCorquodale Magazines, Andover, Hampshire. Distributed by S M Distribution, London SW9, Tel 01-274 8611, Telex 261643. © Sunshine Publications Ltd 1986. ISSN 0265-0509

**Popular Computing Weekly. Tel: 01-437 4343.**

**ABC**

**How to submit articles** Articles which are submitted for publication should not be more than 2000 words long. The articles, and any accompanying programs, should be original. It is breaking the law of copyright to copy programs out of other magazines and submit them here - so please do not be tempted. We cannot guarantee to return your programs - so please do not send your only copy. **Accuracy** Popular Computing Weekly cannot accept any responsibility for any errors in programs we publish, although we will always try our best to make sure programs work.

# Games machines threaten the micros

GAMES consoles could mean the end of the current generation of 8-bit home computers, according to predictions in the software industry. At the launch of the Sega last week (see review, page 14) Ashley Grey of Ariolasoft was suggesting this possibility, while Activision managing director sees the industry splitting mainly between consoles and the more expensive 16-bit machines.

"I see games cartridges running alongside budget games," he says, "but most of the software is going to be more expensive." The argument goes that the standard of games that will be available on the consoles is so high that games players will move over to them from the

cheaper machines. Logically the market for games on the latter will decline, leaving the likes of the ST and the PC to hold the ring in the home micro market.

The success of the consoles will however depend on software availability, and in the short term it's uncertain how much there will be. Activision already produces software for the machines in the US, and will be able to import it, while Ariolasoft is bringing in Sega's own cartridges, but there seems to be little development currently under way in the UK.

Sega development systems should start to circulate shortly, but Atari has yet to contact software houses about its 7800 machine,

while one major software producer waxed abusive on the subject of trying to get specifications for the Nintendo out of UK distributor Mattel.

Price will also be a barrier. Cousens sees cartridges starting off at £15-£20 and dropping over the next year, but concedes that although the software houses will push for price cuts the console manufacturers will want to keep prices up. He's not willing to predict which machine will do best here, but although price will be a factor – the Atari will be around £40, the Sega £100 and the Nintendo £140 – he feels that the company with the best distribution will dominate the market for consoles.

## Mastertronic hits out over changes in chart

THE domination of Mastertronic in the Gallup chart has dramatically collapsed this week, largely to the benefit of its budget rival Firebird.

This week's Top Twenty (see page 19 for details) has six Firebird titles (not all budget releases) against Mastertronic's one. In the top forty, Firebird has 11 games, and Mastertronic five, compared to ten out of 20 in September.

The reason for this is that this week, W H Smith, one of the leading suppliers of games software, has selected 50 of its stores to return sales figures to Gallup each week.

Gallup software researcher Matthew Brown said, "This is the first week that we have W H Smith on-line. We were aware that something like this was going to happen, but I don't think anyone realised it would be quite so drastic."

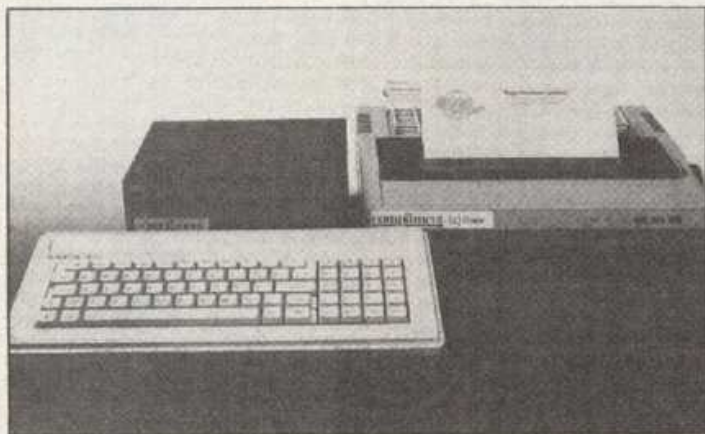
Frank Herman, chairman of Mastertronic, pointed out that the inclusion of W H Smith would inevitably tell against his company's titles.

"It's simple, W H Smith does not stock Mastertronic titles. Mastertronic was not prepared to pay the distributor margins required to get into Smith's."

On the question of whether either Firebird or Mastertronic have been fairly represented in the charts in the past, Matthew Brown said, "If this means we were under-representing Firebird before, then we've put it all to rights. If we're over-representing, then we'll look closely at it."

Frank Herman had no doubts about Mastertronic's share. "I've never thought we were over-represented. Our biggest outlets are Woolworth's, Tesco, and Toys R Us – which are totally ignored by Gallup."

Firebird was understandably cheerful at its increased visibility in the Gallup chart. "It's good to see that the most representative source of market information is starting to become backed by the multiples," said Firebird marketing manager Tom Watson.



The complete Compliment

## First sightings of new Saga at Microfair

FINISHED versions of Saga's new Compliment will be on display at this Saturday's ZX Microfair, and although the machine won't be on sale Saga will be taking orders for deliver over the next few weeks.

The system is basically a bundle of disc drive, add-on keyboard, printer and software, and at £344 is substantially cheaper than the cost of the items separately. The keyboard is a Saga 2+, while

the disc drive is the Opus Discovery, which is as near a disc standard for the Spectrum as you can get.

The printer is capable of 150 cps, and can achieve 25 cps in NLQ mode, while the bundled software, which includes word processor, spreadsheet and data base, is controlled by a menu-driven system that bypasses Spectrum Basic. The system will be reviewed in full in next week's issue.

## Amstrad PC reliability is questioned

THE reliability of Amstrad's new PC was questioned last week as chemical giant ICI decided against buying large numbers of the machines after a series of tests. The PC's small footprint seems to have been its undoing here, as it has no fan and little free space inside. ICI feels that this could cause overheating.

Several individuals who bought the machine are also known to have had problems with it, although an Amstrad spokesman suggested that these were caused by "overloading the power supply." A PC with its full complement of expansion cards would obviously run hotter, but any problem is more likely to relate to the power drawn.

The IBM PC itself and many add-on cards are designed from components with a higher power draw than Amstrad's own circuitry, and the company may therefore have underestimated the rating it needed for its power supply and expansion slots.



The new Business 2

## Memotech's in Business

MEMOTECH'S first new computer since its rescue from the liquidator is to be the Business 2, a micro, printer and monitor bundle that will sell for £650. The machine runs CP/M 2.2 and has a single 3½ inch disc drive as standard, with Ram of 256K plus a 512K Ram disc.

The Ram disc can be expanded up to 4Mb, and the machine has a wealth of interfacing: twin RS232, Centronics, twin composite video,

RGB and joystick ports. It also has a socket for the MSX 2 graphics chip, which will allow the machine to be used with video cameras and frame grabbers.

It will run existing Memotech tape software, and an Amstrad emulator plus a 3 inch disc drive will also be available to allow it to run PCW software.

The machine should come onto the market in the next few months.

## Adventurer's Club reopens

THE Adventurers Club was due to reopen its doors on Monday after an absence of several months. According to a letter sent out to members by organiser Henry Mueller the last few months have been "a length takeover battle" for the Club, which is a limited company.

Mueller has now emerged as a triumphant 51 per cent shareholder and intends to resume publication of the Club's newsletter from the end of this month. Subscriptions will be extended to compensate for the months in which members received nothing.

## Micro smuggler jailed

A COMPUTER expert was fined £20,000 and jailed for nine months last week after pleading guilty to eight charges of illegally exporting computer equipment to the Soviet Union.

Alan Simmons was arrested at Birmingham airport in 1984 after undercover Customs officials watched him unloading a consignment of

equipment into an export warehouse.

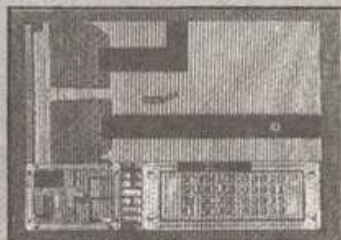
Simmons fell foul of the Nato ban on export of equipment that could be used by the Eastern Bloc for military purposes. The banned list includes equipment from mini-computers down to 16-bit micros, so even the humble QL requires a special export licence.

## Software Hotlines

From contenders for sickest of the year (see Hotlines last week, with *Mad Nurse* by Fire Bird), Durell now make a strong bid in the 'Clutching of hands over the face - Oh God what am I doing here?' award, with the release of *Fat Worm, blows a Sparky*. Technically middling, astoundingly dull, one assumes that someone in the company has gone mentally AWOL.

Jokes (and they can't be serious, can they?) are acceptable at £1.99, but when they are sold at £9.95 they lose much of their humor. Programmer/designer Julian Todd has no shame... his name is there on the inlay. Julian, do the computer industry a favour. Take up basket weaving.

From a Dodo to a Duck, *Howard the Duck* - once comic book character, now movie, soon to be computer game. Activision should be releasing it later in the year, but we went straight to the source (orange sauce in this case) and saw the film last week. Popular's answer to Barry Norman tells me that this duck is more than a little lame. Big A must find this disconcerting to say the least, as it is rumoured that in the film rights carve-up with *Electric Dreams*, Activision chose *Howard* in front of



Fat worm blows a sparky

that blockbuster *Aliens*. They must have been quackers.

More and more it seems that retailers and distributors are taking commercial decisions that are cutting disturbing inroads into what you, the public, get to see in the shops. The actual selection and display policy of the multiples is probably the most serious of these, but how's this for a silly one.

Infogrammes is planning to launch another kind of who-dunnit program later this year called *Murder on the Atlantic*. It involves a murder on board an Atlantic liner just before the outbreak of the Second World War with spies, intrigue, mystery, etc, etc.

Now, together with the tape/disc, Infogrammes have a whole load of supplementary material to help the budding sleuth. Maps, newspaper cuttings, pictures (see the holiday snap below), code books, letters - even some braille text. Infocom would be proud of this little lot - but it seems because it's a bit out of the ordinary, you may never get the opportunity to buy it. Pass the sick bag.

John Cook



Jenny in Deauville

# Seeking the software for Sega system

BOOK now for the invasion of the games consoles. Atari, Nintendo and Sega are all convinced that the market everyone thought was dead is alive and kicking, and poised for spectacular growth through the next year.

Sega's Master System is being distributed in the UK, Holland and Germany by Ariolasoft, and at the launch last week Ariola was talking about the hows, whys and wherefores of the dedicated games machine.

The boom that's perceived as being about to happen is based on the continued popularity of coin-operated arcade machines, and the reasoning is that if you can put together a games console that will allow people to play arcade standard games at home you can sell lots and lots of them.

It is, however, vital to get adequate supplies of games into the shops alongside the consoles. This is one of the

problems they've faced in the past, and could spell trouble in the future. Sega is dominant in the coin-op business and, according to the company's European managing director Victor Leslie, releases around 12 new titles a year.

Now if you accept that the home player's performance differs from the arcade player's - in that while the latter plays until the money runs out, the former plays until sick - it's likely that the games consoles will need to have many more titles available for them, and these are unlikely to come from Sega.

Frank Brunger, marketing manager of Ariola, says that the software for the machine will be fairly tightly controlled. Software houses wishing to write for it will first have to obtain licences from Sega in Japan (Leslie claims they were queueing up for them on his last visit), then write the



Sega: Drawing a bead on the games market

game, and then get Ariola's agreement to market it.

In terms of volume of software there are clearly problems here. Any company wishing to write for the Sega has to be big enough to negotiate the licence and also big enough to sustain the cost of developing a game with no guarantee that it will ever be released.

And while Ariola doesn't envisage any problems in negotiating with Japan it's almost certain, given the ad hoc nature of much of the British software industry, that some companies will face delays and frustration.

The logical alternative, to write and release the software independently, may be closed to people who want to write for the Sega. The machine uses cartridges and

Astron cards for software, but it checks the media for the presence of some form of code that is Sega's copyright, so if you don't have a licence and you write something that runs on it you're probably a pirate.

So if the machine takes off we're likely to see less software produced by fewer companies, and while on average it should be better it will be mainly commissioned work, and will lack the off-the-wall innovation that's generated by having machines end-users can actually program. Naturally it's in the interest of the bigger software houses to have a more controlled market, and to up the ante in terms of entry cost, but is it in the interest of the users?

John Lettice

## QL's return planned for ZX Microfair

THE next ZX Microfair - the 20th - takes place at Central Hall, Westminster this Saturday (October 25). This is a change of venue from recent Microfairs. Central Hall is situated opposite Westminster Abbey.

The show's organiser, Mike Johnson, is enthusiastic about the products on show this weekend: "We'll have the Saga Compliment on display, and Sandy is showing prototypes of its super-QL type machine. CST will also be there with Thor."

But what about Amstrad? Won't it be there to take Sinclair's place with the Spectrum Plus 2? "Well, I was hoping that Alan Sugar would come and sell one or two off

the back of a barrow, but apparently not," said Mike.

"But I wouldn't worry. I expect there'll be quite a few independent companies selling Plus 2s on the day."



Thor: Back for the Microfair

## Geoff Heath hikes over to Mastertronic

GEOFF Heath, who resigned abruptly from the post of UK managing director of Melbourne House last month, joins Mastertronic on November 1.

He will be head of new business development, with responsibility for researching new areas for Mastertronic to go into.

Mastertronic has also acquired Bulldog Distribution, the company which was bought by Melbourne House while Heath was managing director there.

Bulldog is responsible for supplying software to Toys R Us, among other outlets.

Geoff Heath owned a music



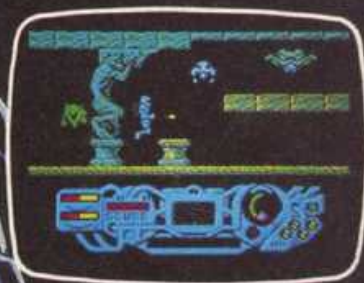
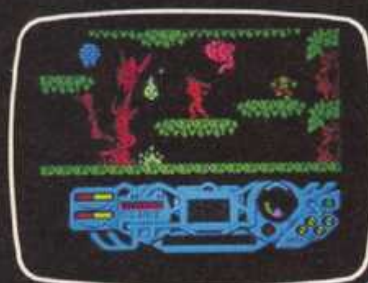
Heath: Researching new business opportunities

publishing company before entering the software market as head of Activision in 1984.

He joined Melbourne House in May of last year, and his move to Mastertronic is probably related to his interest in distribution.

# THE SACRED ARMOUR OF

# ANTIRIAD



Actual  
screen shots  
from the  
Commodore



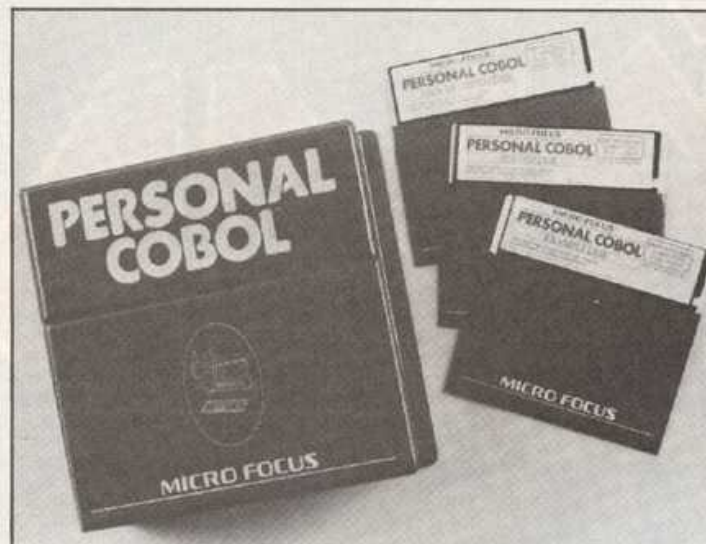
Pack includes  
16 Page  
**COMIC**

**READ THE COMIC!**  
**PLAY THE GAME!**

Available from all good computer game stockists  
or by mail order from Palace Software, 275  
Pentonville Road, London N1 9NL. Send cheque  
or postal order for £8.99 plus 80p p&p.

Access and Barclaycard holders phone 01-278 0751





## Micro Focus produces PC Cobol package

MICRO Focus has produced a special £99 educational package for PC compatible machines. The package is aimed at computer language teachers and consists of *Personal Cobol* plus an accompanying book, free while stocks last.

The program is a fully integrated set of productivity tools that includes Micro Focus' *Animator* software testing facility. The book is

Cobol on Microcomputers, by Alan D T Fryer. The package is available to educational establishments from Micro Focus, and to individual users by Hisoft.

Details from Micro Focus, 26 West Street, Newbury, Berks RG13 1JT. Tel: 0635 32646; or

Hisoft, The Old School, Greenfield, Bedford MK45 5DE. Tel: 0525 718181.

## Prestel goes for gold

FROM December Prestel subscribers will be able to access the Telecom Gold electronic mail service via a new gateway, which will ultimately mean that messages will be able to be transferred across both networks.

The gateway allows scrolling information of the sort produced by Gold to be formatted in Prestel style. Prestel users will be able to edit text prior to transmission, and to move straight to Gold's ID entry point from Prestel.

Details from Prestel, Telephone House, Temple Avenue, London EC4Y 0HL. Tel: 01-822 1056.

## Low-cost PC packages

MAP Computer Systems has launched three specialist packages for IBM compatibles and the Amstrad PC. *News File* costs £119 and is a program designed for newsagents' stock control and accounting, dealing with publications stocked, orders, delivery lists, overdue re-

mindings and monthly accounts.

*Sales Administration and Management* is £79 and provides facilities for mailmerge, prospecting, follow up diary and a range of other sales-related matters. *Life and Pensions Planning* is a system for the life assurance and pensions industries, dealing with life assurance, pensions, capital conversion and other related areas. It costs £99 for the planning module, and £129 for management.

Details from MAP Computer Systems, 105-107 Windsor Road, Oldham OL8 1RP. Tel: 061-624 5662.

## Mini on Rom

*MINI Office II* is now being sold in Rom version for the BBC B, Master and Master Compact computers. The £59.95 product, which is contained in four chips mounted on one board, allows immediate access to the six modules of word processor, database, spreadsheet, graphics, label printing and communications.

Details from Database Software, Europa House, 60 Chester Road, Hazel Grove, Stockport SK7 5NY. Tel: 061-483 2737.

## Diary Dates

### OCTOBER

25 October

#### 20th ZX Microfair

Central Hall, Westminster, London SW1

**Details:** Sinclair machines, hardware and software support.

**Price:** £1.50 adult, £1 children for advance sales, £2 and £1 on the door.

**Organiser:** Mike Johnston, 01-801 9172.

27 October

#### Computer Club 86

Blue Coat Comprehensive School, Birmingham Road, Walsall

**Details:** Mainly Amstrad but includes a Sinclair corner

**Price:** 25p

**Organiser:** West Midlands Amstrad Users Group, 021-420 1915

30-31 October

#### Hampshire Computer Fair

Guildhall, Southampton

**Details:** Business computers.

**Price:** Free entry by business registration.

**Organiser:** Testwood Exhibitions, 0703 31557.

### NOVEMBER

1 November

#### Kent Dragon Show

Maidstone Methodist Hall, Brewer Street, Maidstone

**Details:** Local Dragon show

**Prices:** £1 adults, 50p children

**Organiser:** Computape, 0621 772589

7-9 November

#### Electron and BBC Micro User Show

New Horticultural Hall, Greycoat Street, London SW1

**Details:** Hardware, software and peripherals for the Electron, BBC micro and Master series

**Prices:** £3 adults, £2 children, £1 discount for advance booking

**Organiser:** Database Exhibitions, 061-456 8835

8 November

#### UKEUG National Einstein Show

National Motor Cycle Museum, Birmingham

**Details:** Einstein software and hardware.

**Price:** Free

**Organiser:** UKEUG, 07982 2399

15 November

#### Wales and West Computer Show

Central Hotel, Cardiff

**Details:** All types of home computer and support

**Price:** £1 adult, 50p children

**Organiser:** Preston Exhibitions, 0658 880965

21-23 November

#### The Commodore Computer Show

Novotel, Hammersmith, London W6

**Details:** Hardware, software and peripherals for the Commodore range of computers

**Price:** £3 adults, £2 children, 21 discount for advance booking

**Organiser:** Database Exhibitions, 061-456 8835

28-30 November

#### The Atari Christmas Show

New Horticultural Hall, Greycoat

Street, Westminster, London SW1

**Details:** Hardware, software and peripherals for the Atari range of computers

**Price:** £3 adult, £2 children, £1 discount for advance booking

**Organiser:** Database Exhibitions, 061-456 8835

29 November

#### Wight Computing Fair

Ryde Town Hall, Ryde, IoW

**Details:** Local show covering wide range of subjects

**Price:** N/A

**Organiser:** Wight Computing Users Group, 10 John Street, Ryde, Isle of Wight PO33 2PY

Prices, dates and venues of shows can vary, and you are therefore strongly advised to check with the show organiser before attending. *Popular Computing Weekly* cannot accept responsibility for any alterations to show arrangements made by the organiser.

## Free flightsim from Microsoft

MICROSOFT is offering a £29.95 hotline support package to go with its new low-cost PC products, *Word Junior* and *Multiplan Junior*. The package gives you 12 months' telephone support and comes with a free copy of the Microsoft *Flight Simulator*, which usually costs £45.

Unfortunately it doesn't seem possible to get the free *Flight Simulator* without buying *Word* or *Multiplan* first, as you've got to send a coupon in...

## Einstein owners join the Elite

TATUNG Einstein owners can now play *Elite* with the aid of the company's Spectrum Emulator. The emulator, which costs £49.95, plugs into the Einstein and operates in con-

junction with software that allows 20 Spectrum games, including *The Hobbit*, *Decathlon* and *Elite*, to be played on the machine.

At £49.95 for the Emulator and £9.95 for the software it's something of an investment, but it is cheaper than a Spectrum.

Details from Tatung UK, Stafford Park 10, Telford, Shropshire TF3 3AB. Tel: 0952 613111.

## Training for Amstrad PC

FIRST Class is organising a training course for Amstrad PC owners at its training centre in Basingstoke. The one day course costs £65 and covers the PC's hardware, operating system and bundled software.

Details from First Class, Intec 1, Wade Road, Basingstoke, Hants RG24 0NE. Tel: 0256 463344.

## Tandy to sell cheap PC programs

TANDY is to back up its 1000EX low-cost PC compatible with a range of cheap software, to be sold through its stores from the end of this month on. On the serious side the software includes the *Trust Writer Wordstar* look-alike at £49.95, Lotus clone *VP-Planner* (£99.95) and *Multiplan* (£79).

Details from Tandy UK, 0922 477778.

## Accounts pack for Compact

MEADOW Computers has issued a Master Compact version of its *Micro-Trader* program. The sales and purchase ledger has been enlarged to 1,000 accounts, with 5,000

transactions per month per ledger. The program costs £230.

Meadow is also selling Master Compact versions of the *Micro-Stock* stock control program at £86.25 and an *Extended Payroll* program for the *Micro-Trader* suite at £57.49.

Details from Meadow Computers, 11 London Street, Whitechurch, Hants. Tel: 025682 2008.

## High resolution mono monitor

THE BIM 12 PC is a £99 high resolution monochrome monitor for IBM PCs and compatibles. The monitor has a 12 inch screen and needs a Hercules standard card in order to connect it to the PC.

Details from Hantarex, Unit 2, 243 Kangley Bridge Road, London SE26 5BA. Tel: 01-778 1414.

# Competition

## Join in with the Archers!

Forget Lofty's plight in *EastEnders*. Stop worrying about how the *Dallas* scriptwriters will cope with having to write off an entire series as a figment of Pam's imagination. This is the Big Daddy soap opera of them all - *The Archers*.

*The Archers* is now the world's longest running broadcast serial, and has just become the subject of an interactive fiction computer game by Mosaic Publishing.

To celebrate the occasion, Mosaic has come up with 20 copies of *The Archers*

game to give away to *Popular* readers, and we've racked our brains to come up with the competition to go with it.

### How to enter

And here it is! All you have to do is think up some suitable lyrics to go with *The Archers* radio signature tune; you know, the one that goes 'Dumdy dumdy dumdy dum, dumdy dum dy da da, dumdy dumdy dumdy dum, dumdy diddy da'.

That's it. Nothing rude, please, and something with a (vaguely) *Archers* feel to it would be appropriate.

### Conditions

The closing date for *The Archers* competition is Friday, November 14. The 20 people who submit the best set of lyrics, in the opinion of the judges, will each receive a copy of *The Archers* for the machine of their choice.

Winners' names will be printed in *Popular Computing Weekly*, November 27.

One entry only per person, please.

Fill out the coupon, or a photocopy, and send it to *The Archers* Competition, *Popular Computing Weekly*, 12-13 Little Newport Street, London WC2H 7PP.

Name .....

Address .....

Suggested lyric .....

If I win, I would like a copy of *The Archers* for Spectrum ☐ (tape) Commodore 64/128 ☐ (tape) Amstrad CPC 464/664/6128 ☐ (tape ☐ or disc ☐ Atari XL/XE ☐ (tape) MSX ☐ (tape) PCW 8256/8512 ☐ (disc)

Tick appropriate box



The faces behind the voices on the Archers

## The whole Spectrum

For the benefit of your Spectrum 128 owning readers, here's an update on the National 128 Spectrum User Groups activities since its formation in June.

I was flooded out by membership applications and by early July, with the help of Kim Foley, I set up a Micronet Bulletin Board, Heatsink, to keep members in touch with all the news, views and reviews of interest to discerning 128 owners. I have now extended this idea to produce a 'tapezine'.

Membership of the group is open to all 128 and Plus 2 owners and any Spectrum 48K owners thinking of upgrading. It costs (including subscription to Heatsink) £5, payable to Mr N Fadries at the address below.

The release of the Plus 2 should mean that at long last 128 owners will have proper 128 software. The overwhelming support that the National 128 Spectrum user Group has had only goes to show that far from being a white elephant the 128 has only touched the surface of its possibilities.

Nev Fadries  
6 Derby Street  
Mossley  
Ashton-under-Lyne  
Tameside

## Less than Einstein's brilliance

On reading your review of Tatung's Einstein 256 computer in the October 9 issue of *Popular Computing Weekly*, I feel compelled to point out inaccuracies in the review.

The reset facility is obtained by simultaneously pressing *Alpha Lock*, *Control* and *Graphic* keys. This feature cannot be disabled in software, as implied by Duncan Evans.

The statement that Tatung is working on Amstrad emulation programs is incorrect. Two such programs were developed by third parties, which are: *Amtat* by ACC Computer Services of Abergele and *Amtel* by Syntaxsoft of Burnley.

Both programs are available now. *Amtat* was available at the launch of Einstein 256 at the PCW show! Your reviewer seemed to think the Amstrad emulation wasn't yet available.

There seems to be a misunderstanding about Einstein 256's memory organisation. Duncan Evans said that the Rom used up 16K of the cpu's 64K of Ram. This is quite untrue, the cpu has access to, and uses the whole of, the 64K of Ram. The 16K Rom is bank switched in when

needed.

In comparing Einstein 256 with the Amstrad 'fleet' Duncan Evans implies that the software base for Einstein 256 is poor, particularly for 'serious' use. Einstein 256 has, already, over 500 titles available, ranging from programs such as *Wordstar Professional*, *DBase II* and *Multiplan* to games such as *Manic Miner*, *Spacetrack* and *Batman*. Software houses such as Orion, Software Projects Ocean, Mikrogen, Hi-soft, Gremlin Graphics, and Konami are all writing software for the machine, and at least three of them are writing high resolution games.

A point seemingly missed, is that Einstein 256 is compatible with Einstein, and can therefore use its software base.

When referring to the 'well-established 8256/8512's', one can ask what happened to the well-established Einstein, which is still in production here in Telford?

The general impression I get is one of a heavy bias toward Amstrad, to the detriment of objectivity. Whilst I concede that Amstrad is a volume seller, this does not of itself speak for technical excellence or value for money. In terms of features, performance, specification and reliability, our products far outstrip Amstrad. As to price, Einstein 256 is 15% less than

the PCW. Einstein 256 is £399 including Vat and comes with a colour monitor. The PCW is £399 ex Vat (£458.85 inc Vat) with a monochrome monitor.

Dr R Clarke  
Technical Manager  
(Computers)  
Tatung (UK)

The impression that Tatung itself was working on the Amstrad emulation programs was gained because they were being demonstrated on Tatung's stand at the PCW show, and thus presumably have Tatung's endorsement.

Amtat was given the opportunity by one of the Popular staff to run *Wordstar* on the Einstein - it didn't work.

Your point about the Einstein 256's memory organisation does not appear to take into account the fact that if the memory is bank-switched, then, while banking in 16K Rom, it does have access to 16K of the Ram.

We did not intentionally imply that the Einstein's software base as a whole was 'poor' compared to Amstrad's, but that the type of software suitable for the Einstein fell squarely into Amstrad territory. Comparison

continued on page 11 ►

# Puzzle

## Puzzle 230

I have one of those digital alarm clocks on my bedside table. It operates on a 24-hour system, and displays the hours and the minutes. There are four digits in the display, two for the hour, and two for the minutes.

Sometimes I find that if the digits of the display are read in reverse order, the result also produces a time on the 24-hour clock. For example, the display 05:11 would produce 11:50 when reversed.

In twenty-four hours from 00:00 to 23:59 there are 1,440 different times displayed. How many of these times will produce a possible time when they are reversed?

The other day I looked at the clock before going to sleep. When I awoke I noticed that the figures were now in reverse order. I had had between seven

and three-quarters and eight and a quarter hours' sleep.

Can you say what these times were?

## Solution to Puzzle No. 225

The bicycle cost £48.92.

The program uses two *For/Next* loops for the pence and pounds value of the cost of the bike. Line 40 converts this value to the amount in pence.

The pounds value is then converted into a string (X\$), and the two digits are reversed in line 60 into string Y\$. Line 70 takes this value and adds it to the original pence value times 100. This in effect reverses the pounds and pence values. If this sum is equal to twice the original amount minus £5 (500 pence) the results are printed.

## Winner of Puzzle No. 225

This week's winner is Michael Greenan of Billingham, Cleveland, who will receive £10.

## Rules

The closing date for Puzzle No. 230 is November 10. Answers on a postcard please.

```
10 CLS
20 FOR PENCE=00 TO 99
30 FOR POUNDS=10 TO 99
40 AMT=POUNDS*100+PENCE
50 X$=STR$(POUNDS)
60 Y$=RIGHT$(X$,1)+LEFT$(X$,1)
70 Y=PENCE*100+VAL(Y$)
80 IF Y=2*AMT-500 THEN PRINT POUNDS,PENCE
90 NEXT NEXT
```

was made with the Amstrad range because the package – Z80 processor cpu, plus monitor and 3 inch disc drive – is directly competing, and the capabilities are similar.

We used the term well-established for the 8256/8512s with reference to the Amstrad's user base rather than longevity – and would be surprised if the original Einstein had sold as many in the UK as the PCWs.

## Power tripping

I find it inconvenient to have to take my monitor everywhere I take my Amstrad 6128 computer, as the monitor contains the power supply for both the computer and the disc.

Can anyone notify me if you know of anyone marketing a suitable power supply?

Lee Barton  
Runcorn

## No more GAC

I don't mean to continue the Quill vs GAC debate, so I won't, even though I could rattle off a string of comparisons in favour of one or the other.

What I would like to say is that I find the Amstrad GAC keyboard repeat rates in the drawing part of the program too fast and I'm sure that if many authors were to step through their drawings they would find that they have wasted many bytes with repeated commands.

Now on to the subject of different character sets on the Amstrad GAC. No, I don't have the solution, but I do have an idea.

When I use my Quill I have a Basic header program, which first loads up the character set, then the main program, and calls it instead of autorunning it. I have found that a GAC adventure loads into an area of memory too low for a Basic program to reside anywhere.

Now I'm sure that some machine code whizz out there can write a small routine (preferably relocatable) that will reside somewhere up near high memory that would load in an alternative character set, then the main adventure and call it.

I can provide the memory locations if need be, so, please, can anybody help?

Lee Ford  
84 Stavordale Road  
Carshalton  
Surrey



## Luxury dump

I thought some of your readers might be interested to know how to get screen dumps of pictures created using Koala Painter, as the program does not allow for such a luxury. I cannot claim credit for the screen dump routine, however, which was printed in Popular, September 18, and was written by D Farrow.

Firstly, a machine code monitor is required. Don't be put off by this if you don't know anything about machine code as the operations involved are both brief and simple. Any monitor will do as long as it has a command to copy a block of memory, allows loading of files and allows you to exit to basic.

Type in the program from the September issue, make sure it's working okay then save it to tape or disc. Alternatively send me a stamped addressed envelope and 50p (for a cassette) and I will send you a copy of the program.

Next load your monitor program and type the command to load a file and load the picture drawn with Koala Painter. Don't forget the reversed heart symbol at the beginning of the name.

Now type in the command to copy a block of memory. The block to be copied is from \$6000 to \$7F3F and is to be copied to memory starting at \$2000. Now exit the monitor back to basic and load the multi dump program. When loaded, type Sys49152 and you will see your picture. Full instructions for the screen

dump program are given in the September 18 issue.

I hope this is of some use to all the frustrated artists out there who would like to see their work in a hard copy form. Incidentally, if anyone is thinking of getting a monitor/assembler for the purpose, I would recommend Zeus, as it is perfect for the job.

Peter Dent  
Co Durham

## MTX Fanatic

Being a fairly regular reader of the general computing press, I offer your readers a few moments of relief from articles about Amigas or Amstrads.

Having been attracted to the MTX 512 since it's launch, I couldn't resist one at the latest price. Having been shunned by the software houses, it is essentially a hobbyist's machine and was so purchased as my third micro.

I agree with your two letters in the Sept 11 issue: it is a powerful beast and is a joy to use, but I must admit to having many disappointments.

Firstly, the manual. It offers far more than usual info to beginners and experts alike, but not to the rest of us in between who understand Basic and are gingerly prodding the crust of M-Code.

The 'memory map' might as well be printed in Japanese. It does not show the addresses of display screens, variables, Basic or Character blocks etc. There are no Calls given and one isn't shown how to access the last 16K page(1) of Ram, nor how to enter graphics II mode. What great use is the built-in assembler without such info?

The danger of entering ROM(n) without it being fitted is mentioned, but not explained. The later publication from Phoenix with its countless errors, omissions and misprints so common in lesser 'band-wagon' books was no further help.

I've also been unlucky with the hardware. This is the third MTX in as many months. Modulator faults, it seems: things like losing eight pixels off the edge of the television on the left side; excessive hum and thick plots on certain colours and that damned annoying 'spit' across the screen every five seconds.

The function keys seem superfluous: on default they do with one key what can easily be done with two! One can program them to hold extra patterns, etc, but I don't feel they could perform a defined function in the true sense. However, they do retain a changed condition even after newing.

Compared to Sinclair Basic, the logic is very inflexible. You can't have, for example; *Goto 100 + (50 And A) + (60 And Inkey\$ = "B")* or *If U and walls = 0.3 Then*.

And must apparently follow *If* and then only between arguments, not conditions. One is forced to use *Else* by way of compromise. Fortunately one doesn't need the laborious and cumbersome *Left\$, Mid\$, or Right\$* as the MTX equals Sinclair in general string slicing.

Sadly missed is *Merge* or similar. Without this, there seems no hope whatever of developing simple data manipulation programs, which by necessity store the data in arrays in the variable file.

Due to what must be one of the biggest design 'foul-ups' in computing history, all variables are cleared every time a program line is entered. I wonder why Memotech found this great sacrifice necessary?

Loading is like the old ZX81: where either the whole program is loaded or *totally zapped out, zilched!* It is just as finicky about signal levels, too, but without the added loading lines in the display to act as a guide to signal level.

Sound and graphics, though, are really something else. In Basic their execution almost equals that of some Spectrum M-code, and the recently used yardstick *Manic Miner* could I am sure, be quite acceptably produced in MTX Basic!

No doubt, as I gradually discard my 'running-in' sign on this MTX, I might discover more little quirks. Perhaps by then also, I might discover how to access the Speculator Rom to interchange other similarities than those provided on *Gamestape 1*.

All this said, the MTX is one hell of a machine for the money.

G Payne  
Bushey  
Herts

# GRAFPAD II & POWERCAD

for AMSTRAD PCW 8256/8512 **£149.50**

now for AMSTRAD PC 1512 **£195.50** inc. VAT  
IBM and Compatibles

A complete Draughting system for Architects, Engineers, Electronic Designers and anyone involved in drawing schematics, technical illustrations etc.

**Grafpad II** is a unique, Low Cost Digitiser Tablet.

**Powercad** is a professional CAD software package.

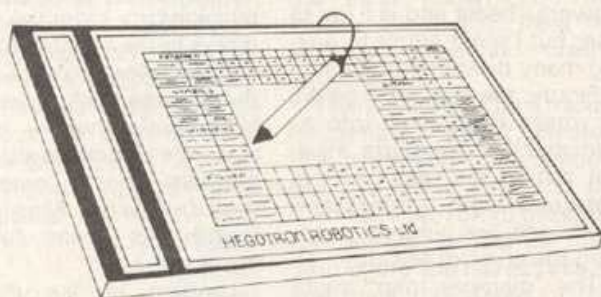
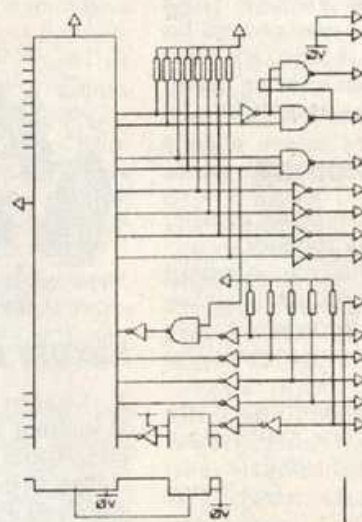
Together they make a Computer Aided Draughting system for use with the Amstrad CPC 6128, PCW 8256/8512, and NOW the PC 1512 and IBM and Compatibles.

The system represents an order of magnitude breakthrough in price/performance relationship.

The programme is totally Menu driven, with the Menu printed on the Tablet Overlay sheet.

Items are selected by moving the Pen to the desired function on the Menu and closing the Pen switch.

Ultimate **USER FRIENDLINESS** is achieved.



- Very easy to use.
- Accurate.
- Automatic Dimensioning.
- Hatching.
- Definable Text fonts.
- Definable Grid and Snap.
- Copy, Move, Mirror X, Y.
- Fillets.
- Unlimited Pan and Zoom.
- Rotate and Slant.
- Rubberbanding.
- Stretch X, Y.
- Reduce X, Y.
- Copy array.
- Ten Line styles.
- Fast Text mode.
- Freehand Drawing.
- Library storage.
- Auto Scaling.
- On screen Colour.
- Symbols, Sections created, stored and retrieved.

Versions for:

- AMSTRAD CPC 6128, PCW 8256/8512, PC 1512.
- IBM and compatible Microcomputers.
- Plot or Print A5 to A0.
- Drawing Units, microns, mm., metres, kilometres, thou., ins, or miles.
- Draw to Absolute, Relative or Polar Co-ordinates.

**Grafpad II** and **Powercad** is available from your Micro Dealer or direct from:

Grafsales Ltd., Unit Q2, Penfold Works, Imperial Way, Watford, Herts WD2 4YY. Tel. (0923) 43942. Telex: 946024.

To: Grafsales Ltd, Unit Q2, Penfold Works, Imperial Way, Watford WD2 4YY.

Please supply me with \_\_\_\_\_ Grafpad II(s) and Powercad for my PCW 8256/8512 Micro at £149.50\*  
PC1512 or IBM at £195.50\* Delete where unapplicable

Please allow 28 days for delivery, plus £2.50. p&p. (£10 for Datapost).

Name: \_\_\_\_\_

Address: \_\_\_\_\_

I enclose cheque value £ \_\_\_\_\_

If you prefer to pay by Credit Card. Please tick box. Barclaycard. ☐ Access ☐

Card No. \_\_\_\_\_

# Hard work and miracles forecast

**F**orecasting comes from the Amstat stable, publishers, of tremendous value statistical packages for home users. This particular package deals with aspects of multiple and linear regression analysis – so why isn't it called 'Regression Analysis'? The answer is that unlike many statistical techniques which have a largely technical or scientific application regression is a means of studying trends in data and the possible uses are too widespread for it to be limited to specialist applications.

It can be argued that regression analysis is, or should be, an important tool for any business interested in making predictions about

*"It can be argued that regression analysis is an important tool for any business interested in making predictions about sales, etc."*

sales, etc., or that wants to find out which components of their business strategy seems to be contributing most or least to their success.

To help reduce costs Amstat manuals are usually rather brief. Beyond teaching the mechanics of the program you are just pointed towards suitable textbooks for more detailed information on the way different tests work. Fortunately, bearing in mind the possible lack of training and

heavy demands on the time of business users *Forecasting* is accompanied by a very clearly written and easy to follow manual which succeeds in being both educational and practically orientated.

The result is that within about half an hour you can perform extremely complex computations on your data with only a few simple keypresses.

As with any statistical package the quality of the

results really depends on the value of the data you are able to enter and forecasting cannot be expected to provide magic answers without some hard work on your part. However on the whole this is probably the strongest Amstat release yet, high powered tests at extremely low prices and backed up by much improved documentation.

**Tony Kendle**

**Program Forecasting Micro**  
Amstrad CPC/PCW  
Price £29.95 Supplier S.  
C. Coleman, 33 Leicester  
Road, Ashby-de-la-Zouch,  
Leics. LE6 5DA.

# Switching back and forth with K-Switch

**W**ouldn't it be lovely if your micro could do two things at once? Well, K-Switch doesn't offer that facility (you can't turn a 520ST into an Amiga for £29.95... yet) but it does allow you to load two programs simultaneously and switch from one to another as desired. This can be incredibly useful if you want to transfer information from a data base to a word processor or a spread sheet or whatever. For my particular musical interests, applications could include switching from a sound editing package to a compositional package, and so on.

The obvious limitations are there – K-Switch divides the micro's memory in half and so you won't be able to use it with anything which takes up the whole memory. Presumably on database-type applications you'll find that the program could run out with the total capacity artificially limited.

But many of the Kuma packages, such as *K-Spread* and *K-Graph*, work happily together using K-Switch, so at least you know where you are with those. For your own combinations, you'll just have to use "File: Show Info" to ascertain how many bytes a program on disk uses up, and perhaps get the retailer to check that your two favourite

programs will run happily together.

When running K-Switch, you'll find that the operating environments for the two programs remain independent, so changes to screen mode or keyboard repeat rates for one program do not affect the other. K-Switch includes a special common Ramdisc facility, since a Ram disc (an area of memory simulating a disk drive but with much faster access times) used in one program would not normally be available to the other program running with it.

K-Switch is installed from the desktop with no programs running, and you simply depress both Shift keys and Alt to swap programs, which takes about 1 second on a 1mB machine. Options include setting the size of the Ramdisc (with an indication given of the amount of memory remaining for the main programs) and these options are saved as default values. You can choose not to install either the Ramdisc or the Switcher, but you must install them together if you want to use them together.

K-Switch also allows you to save the current file and its environment into one file, so you can "put away" your word processor with its current piece of work if you have

to leave it to go on to something else. This function is labelled "Save Work-session".

The Ramdisc can be saved as a single block too, and you can disable the "Verify After Write" function to double saving speed – if you want to take the added risk of disc errors getting past the system.

Because K-Switch will generally remain loaded if one of the programs crashes, it can help you to examine "bug-ridden" programs and allow you to reload a previous worksession over a crashed program. You can remove the Switcher (and Ramdisc if you like) at any time, but it's not possible to remove the RAM disc alone once it has been installed with the Switcher. A good selection of warnings keep you up to date as to what information will be lost if you do this.

K-Switch doesn't take much account of peripheral activity and so shouldn't be used in the middle of printout, disc transfer or RS232 sessions – as we've mentioned, there will no longer be any activity in the de-selected program. You can't use K-Switch with any program on a "boot disc" as K-Switch is removed if the system is re-booted. K-Switch itself uses just 19419 bytes.

Overall the usefulness of this program will be defined by your exact applications for it. In some ways, to quote the sleeve blurb, it is "even better than having two machines side by side", since the Ramdisc speeds up data transfer no end. If you are already working with *K-Spread*, *K-Word* or *K-Graph* and find yourself loading and unloading software all the time, £29.95 is a small enough price to pay for the saving in time and increase in efficiency which you can make.

**Mark Jenkins**

**Program K-Switch Micro**  
Atari 520ST/1040ST  
Price £29.95 Supplier  
Kuma, 12 Horseshoe Park,  
Pangbourne, Berkshire  
RG8 7JW, 07357 4335.



Look for this box

# Consolation for the games player

John Cook chronicles the return of the console

**Q**uote. "And those that shall come first shall come last," etc, etc. Surely not? In the home computer market? Oh yes; this Christmas (marginally) and next year (for sure) dedicated games consoles may well overtake home computers as far as straightforward entertainment purposes go. And how strange that will be.

Remember back in the mid-seventies? Even before the ZX 80 was a gleam in Sir Clive's bank account? Do you remember the games consoles? Those glorious days of the Binatone, Atari and Intellivision. Those days when you mortgaged your house to buy a console, then mortgaged your cat to buy the cartridges and away you went... block graphics and all. It takes all sorts, but I still know people associated with a foremost(ish) programming house that swear by the Atari cartridge version of *Defender*. However, it's no secret why the dedicated consoles eventually lost out to the hybrid computer/consoles, and then to the full blown computer itself.

After all, you can't do your word processing on a console, or hook up to Prestel – and paying out £30 or so for several Eproms packed into a cartridge was far from an inexpensive business.

In short, the question was, why pay for an inflexible, technically inferior system, when you could buy a home computer? People voted with their wallets and the rest is history. Yet, the fact is, this week sees the official announcement of one major games console (the Sega Master System, marketed in the UK, Germany and Holland by Ariolasoft) and two more

consoles (the Nintendo and the new Atari) will be out here pretty soon after. So what's changed?

## That's entertainment

The fact is, the home computing market over the past three years has slowly polarised into two camps – the games players and the buffs. Games players use their computers, usually low-end machines, almost primarily as programmable consoles. Plug in the joystick, load in the games and away you go; whereas the buffs (often with more expensive ma-



chines or peripherals), while often using the thing for entertainment purposes, will spend a great deal of their time actually programming the thing, or using it for some other purpose.



While being totally adequate for the latter function, almost all home computers don't act very well as simple arcade consoles. The need for a keyboard, interfacing, considerable amounts of on-board Ram, etc, and the lack of advanced graphics chips, games orientated hardware routines plus, in some cases, something as elementary as a joystick port, mean that almost all low cost machines don't come up to scratch. Add the chore of waiting for your favourite game to load and the case for a dedicated console starts to take off. Enter the Sega Master System.

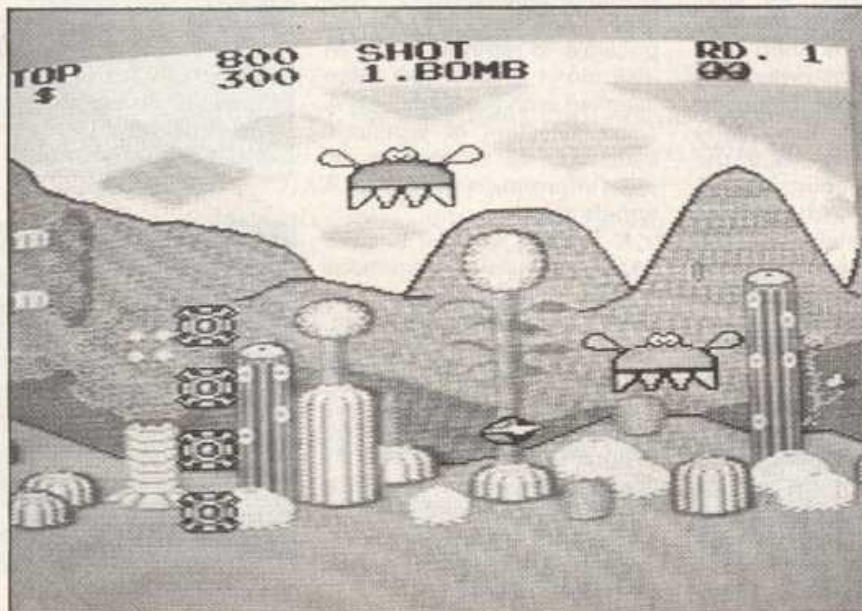
## The Master System

Sega, in case you didn't know it, is a Japanese multi-national which happens to be one of the world's leading manufacturers of dedicated coin-op arcade machines, such as *Space Harrier* and *Enduro Racer*. The Master System package consists of the main unit, the power base and two control pads – together with an AC adaptor and a game on Sega Card, called *Transbots*. But perhaps, the most interesting thing about the Sega is the price – £99.95. And that's pretty cheap for a system that manages to deliver arcade quality games far more consistently than most home computers.

## Hardware

At present, very little is being said about the detailed hardware spec – partly, no doubt, because of paranoia, partly through ignorance, as there are only three machines in the country. However, it can be revealed that the main cpu is a 280A running at 3.6MHz with 8K of Ram and 16K of video Ram. However, the outstanding asset of the machine must be the custom video chip – rumoured to be the same as that used in the stand-alone *Spy Hunter* machine.

This allows 32 colours to be used at one time (from a palette of 64) with a screen resolution of 256 x 192 pixels – compare that with 16 colours and 320 x



200 resolution on an Atari ST (driving a normal telly) and it doesn't come off badly. Hardware sprites, 32 on a single screen from up to 256 and hardware scrolling routines mean real business as far as shoot 'em ups go. Sound isn't neglected either with three four-octave sound channels and white noise generator for those really meaty explosions.

Naturally, connections to the outside world are few. One port for cartridges on the top, one slot for cards on the front. On the back it's one output for the TV, one A/V (audio visual) socket that'll connect up to an RGB monitor or hi-fi if you prefer a few extra decibels, together with the obligatory power in and a widge that'll change the output from VHF channel three to channel four. Power on/off, system reset and pause switches finish the line up – apart from two ports where you plug the controllers in.

These controllers are mini-joysticks with two independent fire buttons and are small enough to hold in the palm of your hand.

The games, of course, are the real

object of the exercise and at the moment you have eight to choose from – two on Sega Card, *Transbot* and *Hang Up*, with six on cartridge: *Black Belt*, *Fantasy Zone*, *World Grand Prix*, *Choplifter*, *Action Fighter* and *Astro Warrior/Pit Pot*, all going at £19.95. The difference between the cards (looking similar to Astron-type cards) and the cartridges are said to be memory size, cards weighing in at 32K and cartridges starting at 128K. That's a lot of game. Let's start with *Transbots* – bundled with the system.

*Transbots*, like most of the games on offer, isn't going to tax your intellect, but has pretty damn smooth right-to-left scrolling and plenty of colourful sprites to shoot the hell out of. Instructions are written in hilarious English translation, but the plot is standard 'save the earth from the aliens' stuff, with the added bonus that you can transform your CA-214 motor into all sorts of deadly devices.



The graphics from *Astro Warrior* were the inspiration for Andrew Braybrook's *Uridium* – but see Firebird's *Warhawk* for a much inferior version of this vertical scrolling blaster.

*Hang On* and *World Grand Prix* are both fairly straightforward racing games – one motor bikes, the other cars, while *Black Belt* is a cross between *Yie Ar Kung-Fu* and *Kung-Fu Master*.

The best straight arcade conversion is probably *Choplifter*, which has you rescuing hostages by helicopter – a classic that is done proud here, but awards for the weirdest game go to *Fantasy Zone*. Put on the sunglasses and away you go in outrageous day-glow. Interior designers will be driven insane by the colour combinations used in this one. And finally *Action Fighter* – the title that outrageously plagiarises almost every coin-op you can think of, from *Galaxians* upwards, but has enough in it to keep you blasting for weeks.

## Conclusions

Put simply, the new generation of games consoles – Sega, Nintendo and Atari – can do straight off what it has taken four years to get anywhere near on the Spectrum; that is, superb multi-colour zapping. Only the Commodore 64 comes anywhere near this standard and then only rarely, with titles such as *Summer Games* and *Uridium*.

They will never replace home computers as far as strategy or adventure games are concerned – but they mark the beginning of the end for the low end HCs which are primarily marketed as games machines – and that has some pretty profound implications for a large chunk of our industry.

The cons are the usual – software support, lastability and so on. By the middle of next year there will be at least three competing machine standards and you might be wise in deciding to wait and see which comes out on top. But as far as this Christmas goes, Sega looks like it's the only contender in the shops.

Another quote: "I have seen the future." And let me tell you – it's fast and very, very loud indeed.





# The quest for the perfect adventure magazine

*Tony Bridge assesses some of the multitude of fanzines*

It's been a few weeks since I looked at magazines for and by adventurers, but that hasn't stopped them flooding into the office. I'm glad to see that there is still such enthusiasm for adventures, even though arcade games (and so-called arcventures) seem to be getting a stronger hold than ever over the software market.

Tony Treadwell's name crops up in a lot of these fanzines, and now I've finally seen more copies of his own efforts, *The Questline Chronicles*; or rather, the efforts of Tony and several (at least a dozen!) helpers. I'm sure that these affairs work better when the workload is shared — after all, no-one can hope to be an expert on all aspects of the hobby.

In this case, the partnership works well, with D&D, New Releases, Infocom corner and Aardvark Action (devoted to

*"The aim of the club is to help frustrated adventurers from ending up in an asylum going mad with problems in adventures"*

the aforementioned arcventures of course) all being looked after by individual contributors. With these departments being supplemented by a puzzles page and plenty of hints, tips and maps and reviews, the magazine is packed with plenty for everybody.

The earlier small format of 45-some pages (looking very much like its friendly

rival, *Orcsbane*, one of my favourite fanzines) has given way to large text on a similar number of large pages, which is not as attractive, but at least no information seems to have been lost in the process.

The main magazine is sent out every two months, and there is also a monthly newsletter (haven't seen this one, though); all this plus the usual helpline service for just £6 a year. Although the magazines are well-illustrated and the maps and solutions are well worth having, I particularly liked the reviews. They have a good rating system and seem to be well-reasoned and not afraid to point out bad as well as good points.

The aim of the Club and magazine is "to help frustrated adventurers like ourselves from ending up in any asylum due to the fact that they are slowly going

## Adventure Helpline

**Zork 1 on Commodore Plus/4.** What do I do in the shaft room? How do I get into Hades — if I need to, that is. Mrs Hayday, 25 Town Meadow Drive, Shefford, Beds SG17 5EF

**Spiderman on Commodore 16.** Cannot make web fluid. I have found baby formula and chemicals and tried mixing. David Northern, 91 Goscote House, 52 Sparkenhoe Street, Leicester LE2 0TL.

**House of Doom on Spectrum 48K.** What is the beautiful woman for? Where can I find long key and step and number to open safe? Debra Cadd, 85 Oakfield Road, London E17 5RN.

**Finders Keepers on MSX.** How do I escape from the castle of spriteland? I've entered 21 rooms in all. Paul Clough, 101 Cathedral View, Newbottle, Houghton-le-Spring, Tyne & Wear, DH4 4HN.

**Macbeth (2) on Commodore 64.** How do you raise the drawbridge? What do you seek in the alchemist's room? Michael Bradley, 111 West Avenue, Melton Mowbray, Leics LE13 0JH.

**Hampstead on BBC B.** Where is the Old Wykehamist tie and how do I get it? Duncan Jones, 39 Long Reach Road, Cambridge CB4 1UG.

**Shadow of the Unicorn on Spectrum.** Any help at all, please! K W Adam, 19 Navarre Street, Dundee DD5 2TW.

**Seabase Delta on Spectrum.** How do I use the tigerfish missile? How do I keep the sliding doors open? Brett Norris, Rama, St Martins Close, Keevil, Trowbridge, Wilts BA14 6NJ.

**See-Kaa of Assiah on Spectrum.** Where is the casket? Where is the blowpipe? How do I get the rod of light out of the block of ice? Brett Norris, Rama, St Martins Close, Keevil, Trowbridge, Wilts BA14 6NJ.

**The Pawn on Atari ST.** How do I escape from the maze of featureless rooms? Andrew Jones, 4 The Ridings, Worlingham, Beccles, Suffolk NR34 7RG.

**Zkul on QL.** Where do I blow the horn? Where do I pick up the scroll without Taradon taking it from me? Where are the bow and shield? Andrew Nixon, 20 Farrar Street, Barnsley, South Yorkshire S70 6BS.

### Adventure Helpline

Going bananas? If you are stuck in an Adventure with nowhere to turn do not despair — help is at hand.

Fill in the coupon, explaining your prob-

lem, send it to us, and a fellow adventurer may be able to help.

Remember — the system only works if those adventurers who have solved the puzzles get in touch. Every week is Save An Adventurer Today (SAAT) week!

Adventure ..... on (Micro) .....  
Problem .....  
Name .....  
Address .....

mad with various problems in their adventures". I know the feeling well!

Questline can be reached at 34 Crossgates Ring Road, Leeds, W Yorks LS1 8RD. (This address is actually that of Jean Thorne, who is responsible for the excellent Puzzle Corner and *not* the subscription department, but she will pass your enquiries on.)

In *Popular*, June 26, I mentioned the Spectrum Adventurer Exchange Club. William Young of SAEC has now brought me up-to-date on activities there. Of special interest is a cassette-based magazine called, naturally, *Spectrum Adventurer*, and contains everything you'd expect including news, reviews, tips and so on. Although tape-based magazines have been with us for some while, this is the first (that I know of) dedicated to the hobby of adventuring, and a mixed bag it proves to be. The tape contains several programs: the usual magazine-ey type of things, such as letters (from the ubiquitous June Rowe), reviews, competitions, adverts and so on – and also an adventure. It's a serial, now in its third instalment, called *Space Odyssey*. Although it is standard *Quill'd* fare, there is a lot of atmosphere in the rather brief descriptions, and most inputs get an intelligent response – obviously a lot of thought has gone into constructing the storyline.

Also on the tape is an appearance by The Bird and The Balrog who seem to be

the dual personae of one John Wilson, often mentioned in the Corner, and provider of much wisdom over the years (as well as being the writer of *The Boggit*; no, not that one, but the other one mentioned alongside CRLs a couple of weeks back – John's is now re-titled *An Everyday Story Of A Seeker Of Gold* and available from him, costing a mere £1.99, at 26 Spotland Tops, Cutgate, Rochdale, Lancs OL12 7NX, and worth every penny). The format here seems to be a review followed by hints and tips: having had first-hand experience of John's encyclopaedic knowledge of Spectrum adventures, I was disappointed that these tips amounted to a mere handful of one-liners, a major opportunity lost for a full-scale run-down on the tough games from a real expert.

There's a lot on the tape as you can see, and the adventure makes the whole thing good value; but I feel that the computer could have been used to more effect – and more hints and tips would have been welcome (and maybe an on-screen map or two). However, the magazine is well-presented with (almost) no spelling mistakes and some attractively re-designed character sets (and the bird from Procom's graphic utility). Each issue is £2, though you may take out a subscription for a hefty discount of 25%. You can write to SAEC at 4 Kilmartin Lane, Carlisle, Lanarkshire ML8 5RT.

Camel Micros will be well known to

adventurers for its adventure-writing utility for CRL, *Genesis*. It has recently started up Camelclub; initially for adventurers, it is now attracting members with more general interests. Weighted towards Amstrad users, there is none the less plenty here for everyone. There is page after page of technical advice, writing in Basic, how to write and solve adventures, pokes for arcade games, special offers, letters, hints and tips and all the rest. Possibly of more interest is a scheme for adventure-writers to join together in an effort to duplicate and market games. The monthly newsletter is £1 per issue (a bit steep), or £9 for 12 issues (a bit better).

Camelclub is at Wellpark, Willeys Avenue, Exeter, Devon.



## "THE ADVENTURERS HANDBOOK"

The monthly book no self-confessed adventurer should be without.

"Stunning value" – Tony Bridge, PCW, issue 12 available now!

**44 pages of adventure help and news for just £1**

**FOR EVEN BETTER VALUE TAKE ADVANTAGE OF OUR SUBSCRIPTION RATES**

3 issues for £2.75

6 issues for £5.00

12 issues for £9.00

Issues 1 to 11 are still available and cover hints, maps and solutions to over 200 adventures (issues 1–6 for £5, issues 7, 8, 9, 10, and 11, £1 each).

## ARCADE PLAYERS

If you enjoy arcade games why not take a look at our other handbooks – £1 each – back copies and subscriptions as for Adventurer.

Spectrum Arcade Handbook – issue 12

Commodore Arcade Handbook – issue 12

Amstrad Handbook (including adventures) – issue 12

BBC Handbook (including adventures) – issue 12

C16/Plus 4 Handbook (including adventures) – issue 6

Send cheque or PO to:

**H&D SERVICES (PCW)**  
1338 Ashton Old Road  
Higher Openshaw  
Manchester M11 1JG  
Tel: 061-370 5666

## G-TEN LIMITED

WE GUARANTEE BEST TITLES AT DISCOUNT PRICES

AMSTRAD	TAPE	DISC	£	£
Top Gun	5.50	N/A	6.75	11.25
Colpa	5.50	N/A	6.75	11.25
Highlander	5.50	N/A	6.75	11.25
Green Beret	5.50	10.25	6.75	7.25
San Combat	5.50	11.25	6.75	10.75
Ghost 'n' Goblins	5.50	11.25	6.75	11.25
Miami Vice	5.50	N/A	6.75	11.25
International Karate	5.50	N/A	11.50	15.50
Paperboy	5.50	11.25		
Desert Fox	5.75	N/A	6.75	11.25
Tomahawk	5.75	N/A	6.75	11.25
Commando	5.75	11.25	6.75	9.75
World Cup Carnival	5.75	11.25	6.75	9.75
Shogun	5.75	11.25	6.75	11.25
Kung Fu Master	5.75	11.25	6.75	11.25
Heavy On The Magic	5.75	11.25	6.75	11.25
COMMODORE 64/128				
Miami Vice	5.50	N/A	6.75	11.25
Parallax	5.50	9.75	6.75	11.25
Cauldron 11	5.50	10.75	6.75	11.25
Knight Games	5.50	10.75	6.75	11.25
Green Beret	5.50	11.25	6.75	11.25
Knight Rider	5.50	N/A	6.75	11.25
Arcade	5.50	N/A	6.75	11.25
The Great Escape	5.50	N/A	6.75	11.25
Top Gun	5.50	N/A	6.75	11.25
Highlander	5.50	N/A	6.75	11.25
World Cup Carnival	5.75	11.25	6.75	11.25
Ghost 'n' Goblins	5.75	11.25	6.75	11.25
Leaderboard	5.75	10.75	6.75	11.25
SHOGUN				
Shogun			6.75	11.25
Silent Service			6.75	11.25
Acce			6.75	11.25
Trap			6.75	11.25
Dragon's Lair			6.75	11.25
Infiltrator			6.75	11.25
Paperboy			6.75	11.25
Trivial Pursuit			11.50	15.50
BBC MICRO				
Commando			6.75	11.25
Yin R Kung Fu			6.75	11.25
Citadel			6.75	11.25
Hepton 2			6.75	11.25
Speech			6.75	11.25
Alienware			6.75	11.25
Ghost 'n' Goblins			6.75	11.25
Paperboy			6.75	11.25
Strike Force Harrier			6.75	10.50
Thrust			5.50	9.75
Trivial Pursuit			13.50	15.50
Green Beret			5.50	N/A

AUTHORISED DEALER OF DATALIFE DISCS (P. & P. Inc.)

BOX OF TEN	OUR PRICE
Datalife 5 1/2 55/DD 48 TPI	14.50
Datalife 5 1/2 55/DD 48 TPI	14.50
Datalife 5 1/2 55/DD 96 TPI	18.00
Datalife 5 1/2 55/DD 96 TPI	24.00
Amsoft 3 1/2 55/DD	44.90

Please send S.A.E. for full list – please specify machine. Please allow 7–14 days delivery. Mail order only. Please add 50p P. & P. per item (U.K./B.F.P.O. only) – Overseas add £1 P. & P. per item. Please make cheques/postal orders payable to: G-Ten Limited. U.K./B.F.P.O. orders send to: G-Ten Limited, FREEPOST (no stamp required), London E1 6BR. Overseas orders send to: G-Ten Limited, Dept DS1, Commerce House, 145–150 Commercial Street, London E1 6NU. Please note: any game which is not released when ordered will be sent on release date.

## HARTLEPOOL COMPUTER SERVICES LTD.

CBM 64 comp pack.....	£150	SAGE accounts plus.....	£110
BROTHER HR5.....	£75	100K disc drives.....	£60
UTX 5000 modem.....	£30	ACORN Z80.....	£195
ACORN Prestel adap.....	£90	SINCLAIR QL.....	£90
AMSTRAD 8256 mem.....		AMSTRAD 6128	
upgrade.....	£25	(green).....	£195

If you have a modem then by dialling 0429 234346 you can log onto 'On-Line Systems' – our 24 hour Viewdata & Scrolling ASCII system.

To become a registered user just send 3 x 17p stamps + S.A.E. + 6 digit password to On-Line Systems, PO Box 31, Hartlepool TS24 7YR.

RAILWAY STATION,  
HARTLEPOOL, CLEVELAND TS24 7ED  
Tel: (0429) 869988

All prices inc. VAT. – Send S.A.E. for price list.  
One to One – 14315001  
On-Line System 100000  
Telecom Gold 83: NTG 083  
Prestel MBX No. 429869988

# SO WHAT'S NEW IN LLAMALAND (HANTS)?

JEFF MINTER, our long-haired Peruvian Correspondent is off to the land of INCA COLA once again...

## LEAVING A FEW SOFTWARE ARTIFACTS BEHIND...

For the CBM 64

- \*\* **IRIDIS ALPHA** - meet GILBY, a droid with a high cuteness factor, scuttling or flying across the planetary surfaces collecting energy..  
A BLAST WITH CLASS for those who like a little subtlety with the intergalactic mayhem. Includes a great bonus-wave game, pause mode game and (a real first!) fractal music! - published jointly with HEWSON ASSOCIATES £8.95 on tape, £12.95 on disc.

For the CBM 16

- \*\* **MATRIX & LASERZONE** - two classics re-written for the C16.  
MATRIX includes all the features of the original version including that traitorous humanoid, the Snitch, plus (it's hard to take) an even faster fire rate than the original! LASERZONE's unique duo of independently controlled laser-bases has never been easy to control but as you learn its skills things get rougher and tougher for those pesky aliens! - published jointly with ARIOLASOFT £6.95 - both games on tape.
- \*\* **VOIDRUNNER** - The new, megablasting sequel to GRIDRUNNER and LASERZONE... lots of waves, loads of chaos and bits of disintegrated alien flying everywhere in the fastest blast to hit the C16... and on the far side (of the cassette) we plan to include the '16 version of HELLGATE - a shoot-em-up for those with superfast reactions and independently controlled eyeballs!  
- coming soon from LLAMASOFT, with ARIOLASOFT.

## AND ALL THIS

- \*\* **VIVA VIC!** is our VIC collection - 8 of JEFF's best for the good old machine. Great stuff for VIC owners! ABDUCTOR, TRAXX, MATRIX, HELLGATE, LASERZONE etc. £6.50, all on one tape.
- \*\* **YAK'S PROGRESS** - the best of Jeff's '64 stuff, includes 8 games, some now difficult to get, commercially - ATTACK, & REVENGE OF THE MUTANT CAMELS, ANCIPITAL, SHEEP IN SPACE, HOVER BOVVER, etc.  
can't whack it at £9.45 (2 tapes) or £11.95 on disc

## AND LIGHTSYNTHS TOO

Another string to JEFF's bow is his work on our **LIGHT SYNTHESISERS** which allow the computer user to play his machine like a 'LIGHT PIANO'.  
The original Lightsynth, **PSYCHEDELIA**, is still available for most home micros, now £4.00

**COLOURSPACE**, its successor, has been published for the ATARI 8-bit micros (only on tape £7.50), the BBC B (tape, £7.95) and in a spectacular 16-bit form for the ATARI 520 ST (£19.95).

**FUTURE:** After the Peru trip the Atari ST is due for a bit of pounding - a new project is planned which should be totally ZARJAZ. Suffice to say that COLOURSPACE addicts should expect something interesting in 1987...

FOR EVEN MORE DETAILS...

SEND S.A.E. FOR CATALOGUE & FREE NEWSLETTER, TO  
LLAMASOFT LTD, 49 Mount Pleasant TADLEY HANTS RG26 6BN

# LLAMASOFT

# Poking around in Knight Tyme

*Tony Kendle brings you the latest readers' tips for this game and more*

Last week I had the chance to visit Gargoyle Games in their Tipton HQ to catch up on the latest developments with the superb *Faster Than Light* range. The Spectrum version of the superb *Light Force* is of course in full swing, deservedly making an impact on the charts and the Amstrad version is just out. Anyone who hasn't bought a copy yet must be mad – the game is a masterly piece of programming by Roy Carter and is wildly addictive.

The Spectrum version caught everyone's attention for the almost unnatural way it seemed to defy attribute clashing problems yet still pack the screen with colour. The Amstrad version is just as clever in a more subtle way – the quality of the scrolling and the action that goes on is difficult to achieve on a 16K screen but it's been done with such style that it's easily the best shootup I've seen on the machine.

The Commodore version is being completed now and no doubt will again pull out all the stops. The second FTL game *Shockway Rider* is likely not to appear until after Christmas but the team is confident that it is going to be superb.

Now then, I have an apology to give to Tracey Rogers of Oldbury for delaying this plea for help but she has landed in a terrible fix in Romantic Robot's *Wiggler* and desperately needs pokes or some foolproof tips for this game (Spectrum version). I'm sure that it wouldn't be beyond the ability of some of our more accomplished hackers to get into this game and send me the details to end her distress.

'Stuart' of Heywood has written about the *Jet Set Willy* pokes which we published for the BBC some weeks ago – which is in fact only for the tape version of the game. If anyone can produce a poke that works on the disc version we will be very pleased to hear from you. Anyway, Stuart has kindly sent in a poke of his own for endless lives on the BBC game *Thrust*. The poke doesn't stop you from losing if you run out of fuel.

Now then, to start on the huge pile of *Magic Knight* pokes and tips that we have collected over the last few weeks. Before concentrating on *Knight Tyme* I'm sure that we should really clear the decks regarding *Spellbound*.

Especially for Paul Bukley of Liverpool, here at last is a full solution to the difficult

*"The Spectrum version of the superb Light Force is of course in full swing, deservedly making an impact on the charts . . . Anyone who hasn't yet bought a copy must be mad – the game is a masterly piece of programming and is wildly addictive"*



problem that everyone seems to get stuck on about half-way through the game.

David Jones writes: "This is one of the most complex parts of *Spellbound* as it involves three main actions to be performed as a result of reading two quite cryptic clues. The clues are both in the Crystal Ball and are, 1) The Tarot Card meaning Death, destruction and the demolition of pride, etc, and 2) a noise and a religious book written in Hebrew etc. Clue 1 is the interpretation of the Tarot card 'The Lightning Struck Tower' – get Thor into the tower room and ask for help. The tower will be struck by lightning causing The Wall to be weakened elsewhere in the building.

"Clue 2 is a reference to the Old Testament and the Walls of Jericho.

continued on page 20 ►

## Charts

### Top Twenty

- 1 (1) Paperboy
- 2 (8) Trivial Pursuit
- 3 (2) Lightforce
- 4 (4) Thrust
- 5 (6) Ninja Master
- 6 (16) Dan Dare
- 7 (13) Go for Gold
- 8 (–) 1942
- 9 (9) Dragon's Lair
- 10 (–) Ollie and Lisa
- 11 (–) Green Beret
- 12 (–) Kai Temple
- 13 (–) Ghosts and Goblins
- 14 (–) The Great Escape
- 15 (–) Strike Force Harrier
- 16 (14) ACE
- 17 (3) Druid
- 18 (12) Video Poker
- 19 (–) Bomb Scare
- 20 (–) Super Cycle

Elite  
Domark  
Faster Than Light  
Firebird  
Firebird  
Virgin  
Americana  
Elite  
Software Projects  
Firebird  
Imagine  
Firebird  
Elite  
Ocean  
Mirrorsoft  
Cascade  
Firebird  
Mastertronic  
Firebird  
Epyx/US Gold

All figures compiled by Gallup/Microscope

# Games: Arcade Action

◀ continued from page 19

Give the Trumpet to Elrand Halfelven and get him to the room with The Wall. Ask for help and Elrand will blow the wall down. As well as having more rooms to explore the two sections of wall can be stood on.

Take these back to the tower and pile them on top of each other and you will have enough height to get over the tower."

Here are one or two other clues that we only gave in a cryptic form. Lady Rosmar should be given a laser to go with her fuse. She will then blast through the wall at the entrance to the secret passageway in the room where Thor's hammer can be found.

Samsun has to be given a javelin and he will then throw the lump of platform into the pit to act as a stepping stone.

The broken glass will act as a magnifying glass on the small writing on the engraved candle.

Richard Fairhurst of Oakham has sent in a version of his memory searcher program that he has used on the Amstrad copy of *Knight Tyme*. Richard writes, "I thoroughly enjoy playing *Knight Tyme*, which is probably my favourite Amstrad game. Using the program I found so many tips and responses that I couldn't begin to list them all.

"Run this program and load *Knight Tyme* from the start. When it has loaded press any key to start the memory dump.

The space bar will pause it so you can write the messages down. Memory has obviously been saved by using lower case letters instead of commonly used words or part words.

```
10 MEMORY 5240
20 LOAD "KTCODE":5241
30 WHILE INKEYS="" : WEND:CLS
40 FOR N=5241 TO 29260
50 P=PEEK(N) MOD 128: IF P>31 THEN PRINT
CHR$(P):
60 IF INKEYS = "" THEN WHILE INKEYS="" :
WEND
```

70 NEXT: PRINT "PROGRAM FINISHED - GOTO 40 TO RESTART"

"The program can be adapted to run on *Finders Keepers* by changing Line 20 to Load "K"5241."

Over the next few weeks we will have more tips and help for the Magic Knight games including a few details about the latest program from David Jones, and news about what's going to happen to those T-shirts!

## Thoust cheats on BBC

```
10REM (C) J.C.Smith
20 REM Dave Addison &
G.Davies
30MODE7
40PRINT 'CHR$130;CHR$157
;CHR$132;"Infinite Men ?
";CHR$156
```

```
50A$=GET$
60IFA$="N"IZ=0:GOTO90
70IFA$="Y"IZ=1:GOTO90
80GOTO50
90*LOAD THRUST3
100IF IZ=1 THEN ?&2912=0
110CALL&5633
```



## Once Bytten

31 BOWNESS ROAD  
LONDON SE6 2DG

Phone Orders: 01-698 2911  
(Callers by Appointment Only)



### IT'S THE WAY WE SELL 'EM!

THAT MAKES ONCE BYTTEN DISCS THE BEST BUY. TOP  
QUALITY FLOPPIES FROM TOP FLIGHT MANUFACTURERS  
100% ERROR FREE - LIFETIME GUARANTEE AND NO HIDDEN  
EXTRAS... WHAT YOU SEE IS WHAT YOU PAY.

### SPECIAL OFFERS FOR AUTUMNAL EVENINGS IN FRONT OF YOUR MICRO!!!

IN LIBRARY CASE WITH SLEEVES, LABELS, WRITE-PROTECTS AND HUB-RINGED:

	10 DISCS	5 BOXES (50 DISCS)	10 BOXES (100 DISCS)
5 1/4" SSDD	£8.50	£39.95	£75.00
5 1/4" DSDD	£9.50	£45.00	£85.00

IN LIBRARY CASE WITH LABELS:

	10 DISCS	5 BOXES (50 DISCS)
3 1/2" SSDD	£15.95	£77.00
3 1/2" DSDD	£19.95	£97.00

### Bulk Unbranded Discs with sleeves (by Athana and Verbatim)

(Without boxes or labels, but same high quality discs)

5 1/4" SSDD 96tpi	25 £14.95	5 1/4" DSDD 96tpi	25 £17.95
	50 £27.50		50 £32.50
	100 £50.00		100 £60.00
3 1/2" SSDD 135tpi	25 £37.95	3 1/2" DSDD 135tpi	25 £46.95

Please ring for quotations on larger quantities. Trade, Government and Company orders welcomed.

3" DSDD DISCS (BY MAXELL) £3.90 each or 5 in Library Case £17.95

### DISC BOXES

5 1/4" 10 Capacity 1 + £1.50 10 + £1.25  
3 1/2" 10 Capacity 1 + £1.50 10 + £1.25

### LABELS

5 1/4" Label Sets (for 10 discs)  
inc. write-protects 1 + 35p 20 + 25p  
3 1/2" Label Sets (for 10 discs)  
1 + 25p 20 + 20p

**IMPORTANT NOTE:** Any order including  
10 or more discs is POST FREE, otherwise  
please add £1.00.

### WANTED

Your micro and peripherals are urgently  
needed for cash or part  
exchange. Call us on  
**01-698 2911**  
after 7pm.  
Large rewards waiting!

Cheques or Postal Orders payable to AMTEN LIMITED  
please. Cash should only be sent by REGISTERED MAIL. You  
may pay by VISA or ACCESS card by mail or phone.  
HOTLINE FOR PHONE ORDERS 01-698 2911 27PD10

## DELTA 4

DELTA 4, without doubt Britain's most unorthodox  
software house, is expanding. To cover more  
"serious" adventures, we are starting a new label -  
*Abstract Concepts* - and therefore require  
experienced programmers/adventure writers to work  
on a freelance basis.

### "WHO CARES?"

If you do, send c.v./impressive demos/thrilling  
ideas/money/nasty little rubber novelties/to the  
address below. Ideally, you should live somewhere in  
the Southampton area, but if you're enough of a  
genius we'll let you off!

### "WORKING WITH DELTA 4 - THAT'S WHAT IT'S ALL ABOUT!"



**DELTA 4 SOFTWARE,**  
Room 101, The Shieling,  
New Road, Swanmore,  
Hants SO3 2PE.



since 1970

## ALL DISCS TESTED INDIVIDUALLY 100% GUARANTEED

5 1/4"	S/S DD	10'S	£9.00
	D/S DD 96TPI	10'S	£9.50

FREE LIBRARY BOX WITH 10'S  
V.A.T. AND POST/PACK, INCLUDED

## BULK PURCHASE DISKS

		50	100	250
5 1/4"	S/S DD	£27.50	£50.00	£120.00
	D/S DD (96)	£32.50	£60.00	£145.00
3 1/2"	S/S DD	10'S	£15.95	
	D/S DD	10'S	£19.95	
3"	D/S DD	10'S	£34.50	

**NEVIS RECORDS LTD.**  
76 MUSWELL HILL ROAD  
LONDON N10. 01-883 7656



DOMARK

## FOLLOWING OUR GREAT SUCCESS WITH "SPLIT PERSONALITIES" AND "TRIVIAL PURSUIT"

WE HAVE LOTS OF NEW  
IDEAS AND WOULD LOVE TO  
HEAR SOME OF YOURS

IF YOU RUN A  
PROGRAMMING TEAM, WHO  
CAN PRODUCE A GAME FOR  
MOST (IF NOT ALL) OF THE  
HOME COMPUTER RANGE –  
THEN WE WOULD LIKE TO  
MEET YOU.

TOP RATES WILL BE PAID,  
SO... **RING RICHARD ON**  
**01-947 5622**

AND LET'S SEE IF WE CAN  
DO BUSINESS TOGETHER!

## C16 + PLUS 4 OWNERS "20 USER" NEW

The only Magazine dedicated to Commodore C16 and Plus 4 Users is "20 USER" (C16 Plus 4 = 20), the official magazine of the C16 & Plus 4 Users Club. For too long now C16 and Plus 4 Users have been treated badly by the majority of the Computer Press, now with the advent of this club, C16/Plus 4 owners can get the most out of their computers.

"20 USER" is a monthly magazine which features all the latest C16 and Plus 4 news, reviews of the latest hardware and software, features, articles, program listings, readers' letters, competitions, special offers, advertisements from trade advertisers and much much more!

To receive a year's subscription to "20 USER" you have to join the C16 & Plus 4 Users Club, one year's membership costs just £10 and this entitles you to 12 issues of "20 USER", a membership card, free classified advertising and various club mailings throughout the year.

If you would like to subscribe to "20 USER" then please send Cheque/Postal Order International Money Order for £10 (UK Membership) or £15 (Foreign Membership) made payable to Micro Media to the following address.

**C16 & PLUS 4 USER CLUB (20 USER),**  
C/O MICRO MEDIA,  
42 MOUNT STEWART STREET,  
CARLUKE,  
LANARKSHIRE,  
ML8 5EB

**SOFTWARE HOUSES!!!!!!**  
**ARE YOUR PRODUCTS**  
**REVIEWED IN "20 USER"? IF**  
**NOT THEN YOU ARE MISSING**  
**OUT. SEND YOUR LATEST**  
**PRODUCTS FOR REVIEW IN OUR**  
**NEXT ISSUE!**

### ANCIENT & MODERN

Unit 111 (Rear), Washington Road, West Wilts Trading Estate, Westbury, Wilts

SPECTRUM	IBM	COMMODORE 64	MSX	AMSTRAD	COMMODORE 16	IBM	AMM	
Paperboy	7.95	4.70	Fast II	8.75	8.95	Commando	7.95	3.75
1942	7.95	4.70	Paperboy	8.50	8.95	Spidersm	6.95	2.50
Asterix	8.95	5.75	Asterix	6.99	8.95	The Hulk	6.95	2.50
Conquestador	7.95	4.70	Dan Dare	8.50	N/A	Legionnaire	7.95	4.50
Dan Dare	7.95	4.70	Dragons Lair	6.50	N/A	Exorcist	5.99	2.99
Dragons Lair	7.95	4.75	Trivial Pursuits	9.50	N/A	International Karate	6.95	4.99
Light Force	7.95	4.99	Trap Shooters 1 or 2	6.99	N/A	AMSTRAD		
Golden Rider	8.95	5.90	Druid	4.99	N/A	Conquest	8.95	4.99
Trivial Pursuits	14.95	9.50	Index Alpha	5.99	N/A	Gold Run	8.95	5.99
Hamlet	8.95	5.50	Bobby Bearing	6.99	N/A	Football Manager	8.95	4.99
Green Beret	7.95	4.70	1942	6.50	N/A	Samantha Fox Strip Poker	8.95	4.99
Street Hawk	7.95	4.75	Knight Rider	5.90	N/A	Cueball	8.95	5.99
Knight Rider	7.95	4.75	Green Beret	5.95	N/A	Bridge Player	9.95	5.99
Crash Snatchers 1 or 2	8.95	5.90	Lord of the Rings	4.90	9.95	ELECTRON		
Colossus Chess 4	9.95	6.90	Quadrant II	5.99	7.99	Region 1 or 2	8.95	5.99
Mammoth	7.95	4.50	Tubular Bells	7.95	N/A	Contract Bridge	8.95	5.99
Spies Dizzy	8.95	5.99	The Etoile	5.99	7.99	Football Manager	8.95	4.99
Johnny Reb II	8.95	5.50	Bonanza	9.95	N/A	Strike Force Harrier	9.95	5.99
Who Dares Wins II	7.95	3.99	FA Cup	4.99	N/A	Steve Davis Snooker	8.95	5.99
The Planets	7.95	4.70	Pyriton	2.99	N/A	Laser Basic	14.95	8.99
Winter Games	8.95	4.50	Poi Warrior	2.99	N/A	MSX		
Price of Magic	9.95	6.99	Borrowed Time	6.99	9.99	Nightshade	9.95	3.99
Machine Code Tutor	14.95	7.99	Little Computer People	4.99	9.99	Hypersports 1 or 2	14.95	7.50
Scrabble	14.95	4.99	Graphic Adventure Creator	14.99	15.99	Track 'n' Field 1 or 2	14.95	7.50
Tasman 2	8.95	4.90	Laser Basic	9.99	10.99	Contract Bridge	8.95	5.99
Laser Genesis	14.95	9.95	Laser Compiler	9.99	10.99	Word Processor Kuma	29.95	14.99
Graphic Adventure Creator	22.95	14.99	Laser Genesis	6.99	9.99	Music Maestro	8.95	5.99

All prices include P & P. Overseas add 75p per tape please. Thousands of titles in stock. Please send SAE for full list stating machine. Lists also available for Atari, Dragon, BBC, Vic 20.

Cheques/P.O.s payable to:

**Ancient & Modern**  
Unit 111 (Rear), Washington Road, West Wilts Trading Estate, Westbury, Wilts.

## AMSTAT

### AMSTRAD STATISTICAL AND MATHEMATICAL SOFTWARE

Fully available for BOTH PCW AND CPC ranges

**AMSTAT 1 (v1.2!)** – means, standard deviations, variance, skewness, kurtosis, one sample, two sample, and paired t-tests, 1-way AOV with single and multiple confidence intervals, 2-way AOV, correlations, regressions, histograms, scattergrams, transformations, file storage and retrieval, output to wordprocessor file, manual. Any number of variables to a total of 500 (+) data points.

**AMSTAT 2** – 27 nonparametric tests in 4 programs providing a "complete Siegel". Binomial, Chi-square (3), Kolmogorov-Smirnov (2), Runs, McNemar, Sign, Wilcoxon, Walsh, Randomisation (2), Fisher, Median (+extension), Mann-Whitney, Wald-Wolfowitz, Moses, Cochran, Friedman, Kruskal-Wallis, Contingency, Spearman, Kendall, Kendall partial, Concordance.

"tremendous value" – Tony Kendle, Popular Computing Weekly, 8-14th May 1986.

"I now give it an unreserved recommendation..." – Jo Stork, Business Computing with the Amstrad, July 1986.

### AMSTAT 3: FORECASTING

An array of business oriented mathematical and statistical software: Linear and Polynomial regression, Trend and Seasonal Variation, Multiple Regression Analysis, Transformations, Exponential Smoothing, Adaptive Filtering. Graphic display, full print-out, manual suited to immediate use and for teaching.

**AMSTAT 4: RESOURCE MANAGEMENT – LINEAR PROGRAMMING MODULE**  
General Purpose Linear programming + Specialised Transportation and Assignment variants. Capable of analysing and solving problems of sequencing, scheduling, blending, and allocation of scarce resources. 40 page manual, 18 worked examples.

The programs have applications in research of all kinds, education, sales, production planning, work and method study, financial planning, personnel, social work etc.

Price list:	CPC	PCW
AMSTAT 1 v1.2	£25.95	£27.95
AMSTAT 2 v1.0	£39.95	£39.95
AMSTAT 3	£25.95	£27.95
AMSTAT 4	£25.95	£27.95
AMSTAT 1+2	£49.95	£49.95
AMSTAT 1+2+3+4	£99.95	£99.95

All prices include P&P within U.K.



+ 24 hours

Cheques, P.O.s to:

**S. C. COLEMAN**

33 Leicester Road, Ashby-de-la-Zouch, Leics LE6 5DA.

Tel: 0530 415919

(AMSTAT 1 v1.1 for the CPC still available at old price)

## The Great Escape: love it or hate it

Each dawn I die, as the saying goes. Like bundles of rags, haggard men with dead eyes shuffle across the bare boards of the freezing huts. There was a time when the sight of trees beyond the bars fired their souls with hope, but now they don't look at the window: they stare at their feet or gnaw at a dry crust of stale bread.

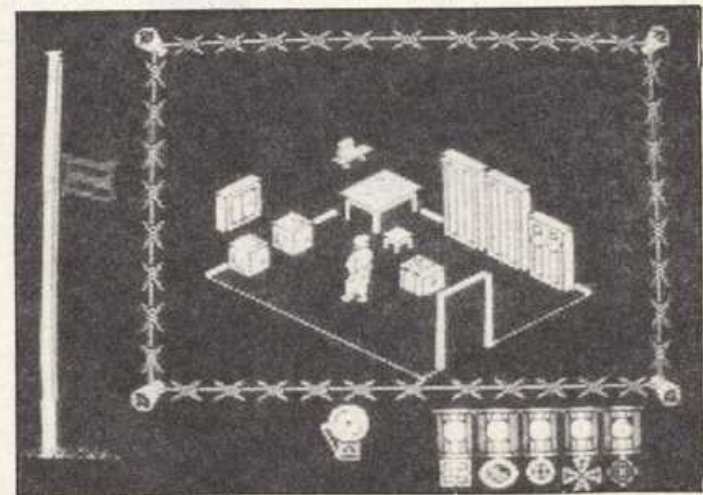
But enough of this everyday tale of programmers down on their luck – let's take a look at *The Great Escape*, Ocean's Colditz-style bid to appeal to short sharp shock addicts. It's a curious program, a sort of Fairlight meets Long Kesh, set in a Second World War German prison camp.

You, Major Steve McQueen, have been incarcerated for the duration and must endure the tedium of prison camp life while at the same time putting together

the necessary equipment to escape. You and the other prisoners are represented by the aforementioned bundles of rags, generally shuffling around aimlessly, while the camp is also peopled by greatcoated guards and the commandant.

The most interesting thing about the program is the way the play is structured. Each day in the camp has its routine, starting with roll call, then breakfast, then exercise time and ultimately bed, and if you leave your character to his own devices he'll follow this. So while you can go where you want you have to judge when you do this carefully, nipping in side doors on the way to breakfast then back out before you're spotted, for example.

The main display is of you, centre screen, surrounded by the part of the camp you're in, while the bottom and side



shows the state of your morale and general heroism. Morale is shown by a flag, which in my experience sinks relentlessly down a pole in response to failed escape attempts (I suppose I need to find the motorcycle). Heroism influences your ability to get hold of various artefacts (nobody's going to give you a key if you're LMF) and can also be collected from failed escape bids.

On first impressions it looks as if there could be a lot to the game, but I have a nagging doubt that the tedium could prove too realistic for

some people – does the Great British software buying public really want to hang around at roll call waiting for an opportunity to sneak off, one could ask? It looks like the sort of program you'll either love or hate, so don't blame me if you hate it. Personally I think I could grow to love it.

**Popular Appeal** ♦ ♦ ♦ ♦  
**John Lettice VC**

**Program** *The Great Escape*  
**Micro** Spectrum **Price** £7.95 **Supplier** Ocean, 6 Central Street, Manchester M2 5NS.

## Pretentious and galvanising Galvan

As the last surviving member of Pretentious Organisation Inc you are sent to the Caverns of Doom or whatever, in the planet Yawn to eliminate all the adversaries you can lay your paws on. Since these foes are Evil it's obviously an okay thing to commit genocide.

Aha! Catch one is you don't have any weapons in your quest to exterminate these droids, robots and aliens. Catch two is this isn't a martial arts thrash. This puts you in serious trouble until you find some weapons beyond your feeble ability to punch. These weapons appear in the form of power crystals which give you extra power (what a surprise!) and an improved weapon. And then it's killing time as you go in search of things to kill, culminating in the hopeful killing of the Giant Demon at the end of each level.

The graphics are presented in a 2D side on perspective with very colourful backgrounds. The problem is that the background is too colourful and all the foreground objects, your good robotic self

included, tend to blend in, making it occasionally difficult to see precisely where you are.

**Popular Appeal** ♦ ♦ ♦  
**Duncan Evans**

**Program** *Galvan Micro*  
**Amstrad CPC, Spectrum** **Price** £9.95 **Supplier** Imagine Software, 6 Central Street, Manchester M2 5NS.

## Spies amongst the horses

Dirty doings amongst the racing fraternity mean just one thing – we're on the Dick Francis track! The man who turned the Sport of Kings into the Sport of Criminals has entered the adventure game.

I'm no Francis aficionado, but the opening of this Ram Jam adaptation seemed faithful to his thrillers in spirit, at least. You start in your house, with a lot to pick up before you answer the incessantly ringing phone. Next leap into your car, roaring off round the home counties, but keep an eye on the petrol gauge if you

want to avoid highway robbery – an AA man with a tow rope.

The presentation is pleasant, with location descriptions appearing above the main communication window. Some objects only appear in this main window though, so watch it carefully. The vocabulary doesn't seem to be that big and the parser becomes confused at times.

The B-side of the tape contains a racing game, in which you study form then place the imaginary money on the animated nags.

I fail to see the fun in gam-

bling an imaginary pony on an imaginary pony, and the inaccuracies of this 'simulation' would make Francis, who is always factually accurate, demand a steward's enquiry.

All in all, your reaction to *Twice Shy* will depend on whether you like its subject matter. If you do, it's competent enough, but if not, you'd better shy away from it.

**Popular Appeal** ♦ ♦ ♦ ♦  
**John Minson**

**Program** *Twice Shy Micro*  
**Spectrum** 48/128 **Price** £9.95 **Supplier** Mosaic Publishing

# The funnier side of Dragon's Lair

**W**anna hear something funny? Remember *Dragon's Lair*, arcade game with groovy graphics, courtesy of several grands' worth of laser disc? Animation designed by

an ex-Disney artist? Well, here it is on that classic graphics machine – the Spectrum!

Okay, so the Spectrum can't deliver the ultra-high-res goods. In fact, to avoid that

old devil attribute clash, hero Dirk is a shadow of his former self – a mere silhouette, indeed. But within the limitations of the machine, Software Projects has done a reasonable job.

They've chosen key episodes from the game, involving running, jumping and sword play, but the only way to contain all the code is via multi-load, which is aggravating if you're forced to go back to the beginning. This is an ideal case for the full 128K treatment.

I also found the loss of life sequence, where Dirk turns to a skeleton, then miraculously reincarnates, irritating. It may be true to the original, but it quickly became tedious.

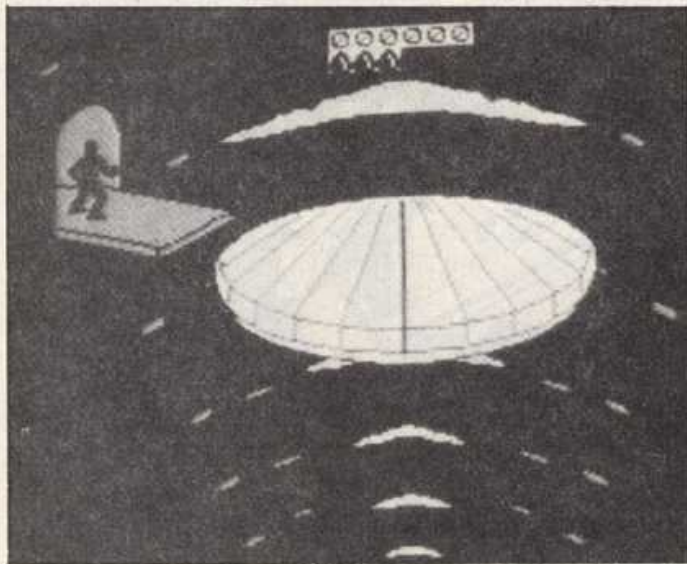
You'll get to see it rather a lot, too. *Dragon's Lair* is difficult. In fact, I'm tempted to suggest that it's too darn difficult. I spent ages attempting

the first section, sliding around a falling disc with four winds blowing, but failed time after time because it requires pixel accuracy.

This is just too much for the first sequence, and without the fantastic cartoon quality, the reward for persistence just isn't enough. If you loved the original, you may want this reminder for your micro. But so much has been lost in the conversion that it's not a classic – just a classic case of attempting the impossible.

**Popular Appeal** ♦ ♦

**John Minson**



**Program** *Dragon's Lair*  
**Micro** Spectrum 48/128  
**Price** £9.95 **Supplier**  
Software Projects Ltd,  
Bearbrand Complex, Allerton Road, Woolton, Liverpool L25 7SF.

## Rogue addicts

**R**ogue is straightforward D&D type solo dungeoneering on a computer – but the ST graphics' ability and the warped minds that programmed the beast combine to make an outstanding hack and slay job.

You make your way through the dungeons of doom – all 26 levels of them – gaining experience as you fight varying monsters.

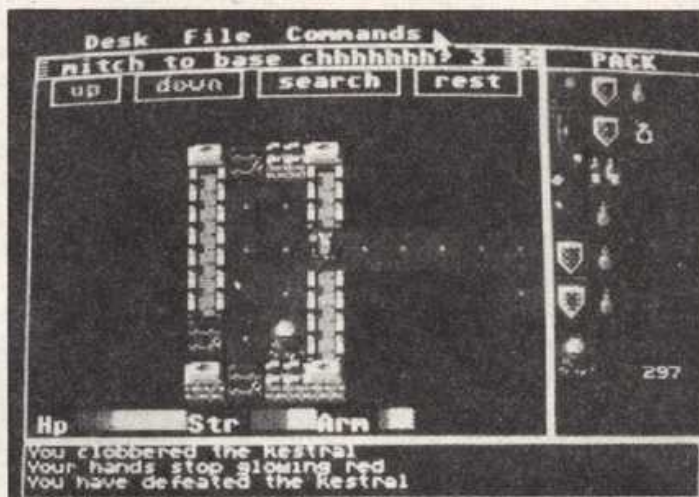
Other things you'll pick up are gold pieces, potions, scrolls, rings, extra weapons, etc.

Not as sophisticated as *Swords and Sorcery*, but considerably more playable and long lasting (different levels are generated each time you play) – nice use of mouse, windowing and so on make this a near ST classic for the fantasy buff.

**Popular Appeal** ♦ ♦ ♦ ♦

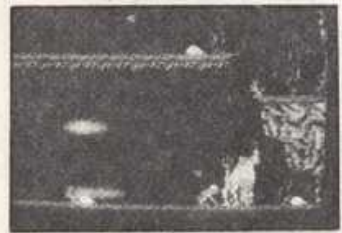
**John Cook**

**Program** *Rogue* **Micro**  
**Atari ST** **Price** £24.95  
**Supplier** Epyx, via Silica Shop, 1-4 The Mews, Hatherley Road, Sidcup.



## Mediaeval adventures

**T**hose of you familiar with the Court of King Arthur will no doubt be eager to buy *Camelot Warriors*, Ariolasoft's faithful reproduction of knights, questing beasts, Holy Grails et al.



Well all right, maybe there weren't any poison kingfishers at Camelot. Or killer pigs. Or man-eating plants, Neptune's kid brother or electric eels. But the hero does look like a knight – until he turns into a frog, that is...

You'll have deduced from the above that *Camelot Warriors* is a somewhat free interpretation of mediaeval armoured warfare. It is, however, a colourful, frustrating and engaging arcade game.

It's split up into four worlds constructed out of scrolling platforms, and you must retrieve four items from the 20th century – including a light bulb and a TV – which have somehow got mixed up in them. Controls are simple, just left, right, jump and fire (to use your sword) and while it's not fast you need split-second timing to survive.

This could, however, prove to be a problem for players, as overcoming obstacles involves precise timing.

But although I feel it could usefully be a bit less rigorous it does have a certain addictive quality, and if you don't mind being driven mad it'll keep you occupied until the van comes.

**Popular Appeal** ♦ ♦ ♦

**John Lettice**

**Program** *Camelot Warriors* **Micro** Amstrad  
**Price** £8.95 tape, £14.95 disc **Supplier** Ariolasoft, 68 Long Acre, London WC2.

## Jetmode

David Jones

Type in and run the listing. Then, after correcting any mistakes save the code with \*Save O.Jetmode 900+1C0 900

The Jetmode routine can generate

screens like those seen in *Jet-Pac* and *Atic-Atac*, which are compacted to leave more memory for the program. To use Jetmode use the following construct -

A%=mode number (0-5 or 8)

X%=screen width (in characters)

Y%=length of screen (in characters)

Himem=USR 900 will change mode and return the start of screen memory.

The program can easily be abused so here are some guidelines.

Don't call the program from within a procedure and make sure there is

enough room for both screen and program else a *Bad Program* message will result.

Jetmode temporarily uses &600-&6FF and &70-&7F. It also sets up a lookup table at &AC0-&AFF and which must not be corrupted.

Do not use VDU26 or hardware scrolling because it won't work and may ruin your program.

Finally, do not use VDU24 or VDU28. Instead use the window procedures given in listing two.



### Listing 1

```
10 FORTX=&900TO&ABCSTEP6
20 CX=0:LX=1000
30 FORRX=0TO5:READAX:AX=AX+TX?RX=A
%
40 NEXT
50 READPX:IFPX<>CX THEN PRINT"Check s
um error at line ";LX:END
60 LX=LX+10
70 NEXT
999 END
1000 DATA &85,&70,&86,&71,&84,&78,&2E8
1010 DATA &C9,&89,&B0,&28,&A8,&B9,&30B
1020 DATA &99,&8A,&30,&22,&4A,&8A,&1E9
1030 DATA &A9,&80,&2A,&85,&74,&A8,&274
1040 DATA &A5,&71,&F0,&16,&CA,&30,&316
1050 DATA &4,&A,&4C,&1C,&89,&85,&104
1060 DATA &77,&D9,&3C,&A,&80,&8,&20E
1070 DATA &A4,&78,&F0,&4,&C0,&21,&2F1
1080 DATA &90,&F,&80,&80,&4F,&75,&163
1090 DATA &74,&20,&6F,&66,&20,&72,&1FB
1100 DATA &61,&6E,&67,&65,&80,&A2,&23D
1110 DATA &D4,&BD,&1C,&CB,&9D,&1C,&331
1120 DATA &6,&CA,&D0,&F7,&A9,&60,&3A0
1130 DATA &8D,&F0,&6,&A5,&7C,&C9,&361
1140 DATA &8,&D0,&22,&A9,&85,&20,&1C3
1150 DATA &1D,&6,&E,&4F,&83,&A9,&12C
1160 DATA &9A,&A2,&E0,&20,&F4,&FF,&4ZF
1170 DATA &A2,&83,&BD,&95,&8A,&9D,&29E
```

```
1180 DATA &60,&83,&CA,&10,&F7,&A9,&2DD
1190 DATA &14,&20,&EE,&FF,&4C,&7C,&2E9
1200 DATA &9,&20,&1D,&86,&A4,&78,&168
1210 DATA &A9,&80,&AA,&18,&65,&77,&247
1220 DATA &90,&1,&E8,&88,&D0,&F7,&308
1230 DATA &85,&76,&86,&75,&A9,&80,&29F
1240 DATA &38,&E5,&76,&85,&76,&8D,&31B
1250 DATA &50,&83,&A9,&10,&E5,&75,&266
1260 DATA &85,&75,&A2,&83,&E,&80,&1FD
1270 DATA &83,&2A,&CA,&D0,&F9,&8D,&34D
1280 DATA &51,&83,&8D,&4E,&83,&49,&17B
1290 DATA &7F,&69,&1,&8D,&54,&83,&1CD
1300 DATA &A9,&80,&8D,&53,&83,&A5,&231
1310 DATA &77,&A2,&83,&A,&2E,&53,&1A7
1320 DATA &83,&CA,&D0,&F9,&8D,&52,&375
1330 DATA &83,&85,&72,&AD,&53,&83,&1FD
1340 DATA &44,&74,&F0,&83,&6,&72,&283
1350 DATA &2A,&85,&73,&A5,&77,&4A,&288
1360 DATA &18,&79,&BE,&8A,&85,&79,&257
1370 DATA &A5,&78,&44,&18,&69,&12,&1FA
1380 DATA &85,&7A,&A2,&85,&8D,&86,&319
1390 DATA &8A,&8D,&80,&FE,&85,&75,&2BF
1400 DATA &8D,&1,&FE,&CA,&10,&F2,&338
1410 DATA &A9,&80,&A8,&AA,&18,&48,&25B
1420 DATA &99,&C0,&8A,&8A,&99,&C1,&347
1430 DATA &8A,&65,&72,&AA,&68,&65,&258
1440 DATA &73,&CB,&CB,&C0,&40,&90,&393
1450 DATA &EC,&A9,&C0,&85,&E0,&A9,&463
1460 DATA &8A,&85,&8C,&1,&44,&78,&88,&314
```

```
1470 DATA &8C,&A4,&8A,&A2,&80,&BD,&299
1480 DATA &A2,&8A,&20,&EE,&FF,&E8,&3A1
1490 DATA &E0,&85,&90,&F5,&A4,&71,&37F
1500 DATA &88,&8C,&8A,&83,&AD,&53,&221
1510 DATA &83,&8D,&4D,&83,&AD,&52,&1DF
1520 DATA &83,&8D,&4C,&83,&A9,&80,&188
1530 DATA &8D,&AB,&8A,&A9,&20,&E5,&2F0
1540 DATA &78,&A2,&85,&8A,&2E,&8A,&202
1550 DATA &8A,&CA,&D0,&F9,&8D,&83,&3DD
1560 DATA &8A,&8D,&AA,&8A,&AD,&AB,&2A3
1570 DATA &8A,&8D,&B4,&8A,&A2,&80,&1F7
1580 DATA &8D,&A7,&8A,&20,&EE,&FF,&37B
1590 DATA &E8,&E0,&89,&90,&F5,&A9,&3FF
1600 DATA &80,&8D,&85,&83,&A2,&83,&13A
1610 DATA &A5,&71,&8A,&2E,&85,&83,&156
1620 DATA &CA,&D0,&F9,&E9,&80,&8D,&409
1630 DATA &84,&83,&B0,&83,&CE,&8E,&18D
1640 DATA &83,&A2,&80,&BD,&80,&8A,&21C
1650 DATA &20,&EE,&FF,&E8,&E0,&86,&3DB
1660 DATA &90,&F5,&AD,&85,&83,&AE,&333
1670 DATA &51,&83,&60,&F,&81,&AA,&16E
1680 DATA &55,&80,&82,&84,&83,&81,&DC
1690 DATA &83,&80,&80,&85,&1C,&80,&124
1700 DATA &83,&80,&80,&18,&80,&80,&1B
1710 DATA &80,&83,&FF,&84,&FF,&83,&288
1720 DATA &1D,&80,&80,&80,&83,&8C,&AC
1730 DATA &8C,&8D,&81,&86,&82,&87,&29
1740 DATA &6E,&37,&33,&1C,&80,&80,&F9
```

### > Listing 2

```
10REM LISTING 2
20REM use this instead of vdu 28,LX,B
%,RX,TX
30DEFPROCwindow(LX,BX,RX,TX)
40VDU28,0,BX,0,TX
50?&308=LX:??&30A=RX
```

```
60!&34C=((&34C AND&FFFF0000)+(RX-LX+1
)*?&34F
70ENDPROC
80REM use this instead of vdu 24,LX:B
%,RX,TX:
90DEFPROCgwindow(LX,BX,RX,TX)
100VDU24,0,BX:1279:TX:
```

```
110VDU29,LX:BX:
120IF?&355>3THENZX=2:ELSEZX=4
130!&304=((&304 AND&FFFF0000)+RX*ZX/?&
34F
140!&300=((&300 AND&FFFF0000)+LX*ZX/?&
34F
150ENDPROC
```

Roger Howorth

It can often be useful to know how many words a document contains, but sadly the Basic supplied with the ST is not the fastest around, documents of only a thousand words can take up to one and a half minutes to count in Basic.

With this in mind here is a word counting program that uses all of the

nicest bits of Gem and counts the same thousand words in less than two seconds. A glance through the source code will show that indeed nearly all of its 5K is taken up with either remarks, which need not be typed, or routines to make the program as user friendly as possible. In particular, the Gem Item Selector is used to obtain filenames from

the user, and should anything go wrong, a comprehensive error trapping routine is employed.

Anyone who would like the program but has not got a C compiler, can send a £5 cheque or postal order to me, c/o *Popular* to cover the cost of disc, post etc, and a disc version will be sent by return.

```

/* Word counting program.
   Counts white space(s) as word. */

#include <stdio.h>
#include <gemlib.h>
#define TRUE 1
#define FALSE 0

short phys_handle,handle,dummy;
short pxyarray[6];
char pathsp[64]="A:\\*.DOC";
char filename[64];
char file[16]="_____";
int button,rc;

main()
{
    FILE *fp,*fopen();          /* Define variable types */
    gem_init();                 /* initialise GEM */
    v_clrk(handle);             /* Clear screen */
    dir();                      /* Get and check file name */
    v_show_c(handle,0);         /* Show mouse incase of OS error */
    if (!fopen(filename,"r"))error(3); /* Open file, if not OK call error */
    v_hide_c(handle);           /* Hide mouse, & output results.. */
    calc_ctr(23);               /* Call 'calc_ctr' */
    printf("There are %d words in %s.",words(fp),filename);
    fclose(fp);                 /* Close file.. */
    wait_click();               /* Call 'wait_click' */
    main();                     /* Run again.... */
}

dir()
{
    int i=0;
    vs_curaddress(handle,25,30); /* Position text cursor */
    puts("Enter CANCEL to quit."); /* Then print out prompt */
    pot();
    v_show_c(handle,0);          /* Show Mouse Cursor */
    rc=fse1_input(pathsp,file,&button); /* Call GEM item selector */
    v_hide_c(handle);           /* Hide mouse cursor. */
    v_clrk(handle);             /* Clear screen */
    if (!rc) error(1);           /* Fatal Error: Call 'error'. */
    if (!button) exit(0);        /* Quit if CANCEL selected. */
    if (!file) error(2);         /* No name entered: Call 'error' */
    for (i=0;i<64;i++) filename[i]='\0'; /* Initialise array 'filename' */
    i=0;                         /* Re zero i after use! */
    while (i<48)                /* Now fill 'filename' with data */
    {
        /* from item selector..... */
        if (pathsp[i]!='*') break;
        filename[i]=pathsp[i]; /* Do until asterisk found.. */
        ++i;                    /* Add i'th char to 'filename' */
    }
    ++i;                         /* Increment i */
    strcat(&filename,&file,16); /* Finally add actual file name.. */
    /* to 'filename'!! */
}

pot()
{
    vs_curaddress(handle,3,26); /* Position text cursor */
    puts("Word Count Program by R Howorth.");
}

wait_click()
{
    vs_curaddress(handle,25,22); /* Position text cursor */
    puts("Click LEFT mouse button to continue."); /* Prompt user! */
    evt_button(1,1,1,&dummy,&dummy,&dummy,&dummy); /* Wait for left click */
}

error(errn)
{
    v_hide_c(handle);           /* Hide mouse */
    v_clrk(handle);             /* Clear screen */
    vs_curaddress(handle,15,25); /* Position text cursor */
    switch(errn)
    {
        case 1: puts("Fatal Error: Program stopped.");
                exit(0);
        case 2: puts("No file name entered by user!!");
                break;
        case 3: calc_ctr(31);
                printf("Cannot open file %s. Check Disk!!",filename);
                break;
    }
    wait_click();               /* Call 'wait_click'. */
    main();
}

calc_ctr(n)
{
    /* Positions text cursor to */
    /* centre output on screen. */
    rc=strlen(filename);        /* rc=number of chars in filename */
    rc=rc+1;                    /* n=length of 'constant' text */
    rc=rc/2;
    vs_curaddress(handle,17,(40-rc)); /* Position text cursor... */
}

gem_init()
{
    int i;
    short work_in[11],work_out[57];
    for (i=0;i<10;i++) work_in[i]=1; /* set all defaults to 1 */
    work_in[10]=2;                /* use raster co-ordinates */
    appl_init();                  /* open the application */
    syst_handle=graf_handle(&dummy,&dummy,&dummy,&dummy);
    handle=syst_handle;
    v_opnvwk(work_in,&handle,work_out); /* sets work area */
    v_hide_c(handle);             /* Hide mouse cursor */
}

words(fp)
{
    /* Function 'words' */
    FILE *fp;
    {
        int in_a_word,item,total; /* declare variable types.. */
        total=in_a_word=0;
        while ((item=getc(fp))!=EOF) /* get character from file. */
        { /* while not EOF.... */
            if (in_a_word) /* If we were in a word.. */
            {
                if (!isalnum(item)) /* Is this char a space? */
                {
                    ++total; /* If so, increment total, */
                    in_a_word=0; /* and reset in_a_word. */
                }
            }
            else if (isalnum(item)) in_a_word=1; /* If we weren't in a word..are */
        } /* we yet? If so set in_a_word */
        return total; /* At EOF return to main with */
    } /* result. */
}

```

## Slowpro

Michael Rees

**E**ver played games where the action was just too thick and fast? Are your reflexes slowing down with the passing of the years? Well, if this is so then Slowpro is just the utility you require.

It uses interrupts to enable the user to slow down programs to any required speed. Run the program and enter *Randomize Usr 65120*. Then load up the game you wish to play. Now, pressing 2 and *Return* slows down a program gradually while 1 and *Return* reverses the effect. 3 and *Return* restores the program to its original running speed.

Slowpro will slow down any user of commercial program as long as they don't use interrupts or memory from 65120 upwards.



```

5 CLEAR 65119: LET L=40: FOR f=65120
TO 65248 STEP 8: LET T=0: READ TOT
10 FOR I=F TO F+7: READ A: IF A=999 AN
D F=65248 THEN PRINT " SLOWPRO NOW LOAD
ED INTO MEMORY SAVE SLOWPRO CODE 65120
,130. RANDOMIZE USR 65120 TO EXECUTE
SLOWPRO": STOP
15 IF A>255 THEN PRINT : PRINT "
ERROR IN DATA ": STOP
20 LET t=t+a: POKE i,a: NEXT i: IF tot
<>t THEN PRINT : PRINT " ERROR IN D
ATA LINE ":L: STOP
30 LET L=L+10: NEXT f
40 DATA 911,62,9,237,71,237,94,201,0
50 DATA 1587,0,255,243,245,197,213,229
,205
60 DATA 1669,123,254,205,206,254,225,2
09,193
70 DATA 1631,241,251,201,62,191,211,25
5,219
80 DATA 1339,254,230,1,202,135,254,201
,62

```

```

90 DATA 1619,247,211,255,219,254,230,1
,202
100 DATA 1682,180,254,62,247,211,255,21
9,254
110 DATA 1401,230,2,202,193,254,62,247,
211
120 DATA 1587,255,219,254,230,4,202,169
,254
130 DATA 886,201,62,0,50,255,255,62,1
140 DATA 1582,50,254,255,201,58,255,255
,254
150 DATA 1297,0,202,220,254,61,50,255,2
55
160 DATA 1700,201,58,255,255,254,255,20
2,220
170 DATA 1517,254,60,50,255,255,201,245
,197
180 DATA 1161,237,75,254,255,11,121,176
,32
190 DATA 945,251,193,241,201,17,0,0,42
200 DATA 1100,255,255,205,181,3,201,999

```

# Programming: Amstrad CPC

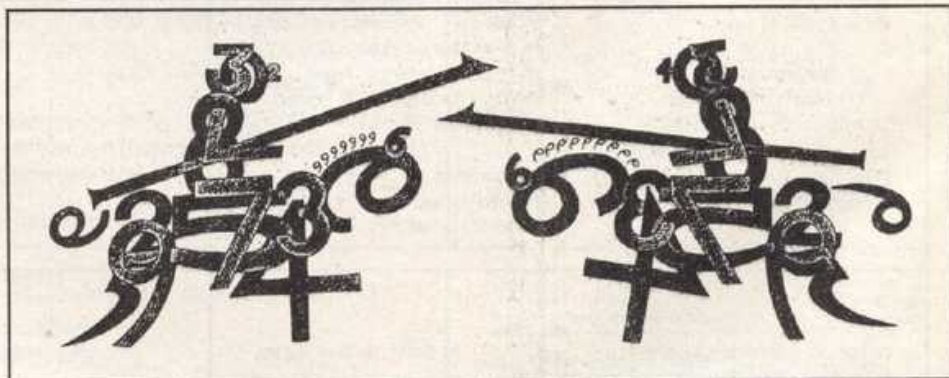
## Race Advisor

Nicky Morris

**T**here now follows the second part of this listing for any Amstrad CPC machine.

When entering a horse's most recent results they can be entered exactly as in a newspaper, ie 103 where 0 is used to represent non-starting, finishing fourth or worse.

The method used by this program could certainly be done by hand but would probably take around three hours for just one race meeting.



If you would like a copy of the program on cassette plus data for several race courses send £3.25 to 22 Richard Street, Dunstable, Beds LU5 4BH.

Popular would like to point out that we accept absolutely no responsibility for any monies lost through the use of Nicky Morris's program.

```

1550 IF a$="2" THEN tot(n)=tot(n)+4
1560 IF a$="3" THEN tot(n)=tot(n)+3
1570 IF a$="4" THEN tot(n)=tot(n)+2
1580 b$=MID$(result$(n),2,1)
1590 IF b$="1" THEN tot(n)=tot(n)+4.5
1600 IF b$="2" THEN tot(n)=tot(n)+4
1610 IF b$="3" THEN tot(n)=tot(n)+3
1620 IF b$="4" THEN tot(n)=tot(n)+2
1630 c$=MID$(result$(n),3,1)
1640 IF c$="1" THEN tot(n)=tot(n)+4.5
1650 IF c$="2" THEN tot(n)=tot(n)+4
1660 IF c$="3" THEN tot(n)=tot(n)+3
1670 IF c$="4" THEN tot(n)=tot(n)+2
1680 NEXT
1690 PEN 5:MODE 1:PAPER 0
1700 PRINT:PRINT "What weight are they c
arrying?"
1710 FOR n=1 TO runners:PRINT:PEN 5:PRIN
T n;a$(n);
1720 PEN 2:LINE INPUT " = ";weight$(n)
1730 weight(n)=VAL(weight$(n))
1740 NEXT n
1750 CLS:PRINT
1760 PEN 5:PRINT "What ground do they pr
efer?"
1770 PEN 2
1780 FOR n=1 TO runners:PRINT:PRINT n;a$
(n);":":
1790 PEN 5:LINE INPUT ground$(n):PEN 2
1800 IF ground$(n)=gro$ THEN tot(n)=tot(
n)+1 ELSE tot(n)=tot(n)-1
1810 NEXT n:CLS
1820 PEN 5:PRINT:PRINT "Enter jockeys:"
1830 PRINT:FOR n=1 TO runners
1840 PEN 2:PRINT n;a$(n);":s=":PEN 5
1850 LINE INPUT jockey$(n):PRINT:NEXT
1860 IF jock$(1)=jockey$(n) THEN TOT(N)=
TOT(N)+5
1870 IF jock$(2)=jockey$(n) THEN TOT(N)=
TOT(N)+4.5
1880 IF jock$(3)=jockey$(n) THEN TOT(N)=
TOT(N)+4
1890 IF jock$(4)=jockey$(n) THEN TOT(N)=
TOT(N)+3.5

```

```

1900 IF jock$(5)=jockey$(n) THEN TOT(N)=
TOT(N)+3
1910 IF jock$(6)=jockey$(n) THEN TOT(N)=
TOT(N)+2.5
1920 IF jock$(7)=jockey$(n) THEN TOT(N)=
TOT(N)+2.25
1930 IF jock$(8)=jockey$(n) THEN TOT(N)=
TOT(N)+2
1940 IF jock$(9)=jockey$(n) THEN TOT(N)=
TOT(N)+1.75
1950 IF jock$(10)=jockey$(n) THEN TOT(N)
=TOT(N)+1.5 ELSE tot(n)=tot(n)+1.25
1960
1970 CLS
1980 PEN 5:PRINT:PRINT "Enter trainers:"
1990 PRINT:FOR n=1 TO runners:PEN 2:PRIN
T n;a$(n);":s=":
2000 PEN 5:LINE INPUT trainer$(n):PRINT
2010 IF TRAIN$(1)=trainer$(n) THEN TOT(N)
=TOT(N)+5
2020 IF TRAIN$(2)=trainer$(n) THEN TOT(N)
=TOT(N)+4.5
2030 IF TRANS(3)=trainer$(n) THEN TOT(N)
=TOT(N)+4
2040 IF TRAIN$(4)=trainer$(n) THEN TOT(N)
=TOT(N)+3.5
2050 IF TRAIN$(5)=trainer$(n) THEN TOT(N)
=TOT(N)+3
2060 IF TRAIN$(6)=trainer$(n) THEN TOT(N)
=TOT(N)+2.5
2070 IF TRAIN$(7)=trainer$(n) THEN TOT(N)
=TOT(N)+2.25
2080 IF TRAIN$(8)=trainer$(n) THEN TOT(N)
=TOT(N)+2
2090 IF TRAIN$(9)=trainer$(n) THEN TOT(N)
=TOT(N)+1.75
2100 IF TRAIN$(10)=trainer$(n) THEN TOT(
N)=TOT(N)+1.5 ELSE tot(n)=tot(n)+1.25
2110 NEXT N
2120 PEN 2
2130 MODE 1:FOR n=1 TO runners:PRINT
2140 PRINT "Enter ";A$(N);":s age: ";PE
N 5:LINE INPUT AGE$(N)
2150 PEN 2

```

```

2160 AGE(N)=VAL(AGE$(N))
2170 IF WEIGHT(N)>9.8 AND AGE(N)>7 THEN
2180 ELSE 2190
2180 IF GOING$="SOFT" OR GOING$="GOOD TO
SOFT" OR GOING$="HEAVY" THEN TOT(N)=TOT
(N)-2
2190 IF WEIGHT(N)<9.8 AND AGE(N)<7 THEN
TOT(N)=TOT(N)+2 ELSE TOT(N)=TOT(N)+1
2200 IF TD>1.2 AND WEIGHT(N)>9.8 OR AGE(
N)>7 THEN TOT(N)=TOT(N)-1
2210 IF TD<0.9 AND WEIGHT(N)>9.8 OR AGE(
N)>7 THEN TOT(N)=TOT(N)-0.75 ELSE TOT(N)
=TOT(N)+1
2220 NEXT N
2230 FOR N=RUNNERS TO RUNNERS-3 STEP-1
2240 IF DRA$="HIGH" THEN TOT(N)=TOT(N)+1
:NEXT N
2250 FOR N=1 TO 3:IF DRA$="LOW" THEN TOT
(N)=TOT(N)+1:NEXT N
2260 FOR N=1 TO RUNNERS:TOT(N)=TOTAL(N)
)+TOT(N)+form(n):NEXT n
2270 CLS:INK 0,0:BORDER 0:PEN 2
2280 PRINT:PRINT "RESULTS:":PRINT "----
-----":PRINT
2290 FOR N=1 TO RUNNERS:PRINT N;" ";A$(N
);b=23-LEN(A$(N))
2300 PRINT STRING$(b,CHR$(32));INT(TOTAL
(N)):NEXT N
2310 PRINT:PEN 5
2320 PRINT "Do you wish results to be re
printed?"
2330 a$=UPPER$(INKEY$):IF a$="" THEN 233
0
2340 IF A$="Y" THEN 2270
2350 FOR n=1 TO runners:a$(n)="" :form$(n
)="" :form(n)=0
2360 RESULT(n)=0
2370 TOT(N)=0:TOTAL(n)=0:RESULT$(n)="" :g
round$(n)="" :weight(n)=0
2380 age(n)=0:age$(n)="" :weight$(n)="" :N
EXT n
2390 GOTO 80
3000 GOTO 390
3010 MODE 1:PAPER 0:PEN 7

```

## Programming: C64

### Disc Help

Gary Mayhew

**P**art two of Disc Help follows along with the instructions for the printer menu.

*Line feed* sends a carriage return to the printer.

*Quit* returns you to the main menu.

*Send Chr\$* is used to send control codes.

*Form feed* ejects 66 lines.

*Print* sends an 80-character string to the printer.

*Test* is used to test double width,

inverse etc.

After selecting an option on either menu you may be prompted to enter a filename or string. On some occasions, after the program has checked for error you should press the space bar.

continued on page 28 ►

# Programming: C64

```
1370 GETKE$:IFKE$<>" "THEN1370
1375 POKE255,1:SYS49152
1380 CLOSE15:CLOSE1:RETURN
1390 CLOSE1:PRINT:PRINTTAB(6)"INSERT SAVE DISK, HIT SPACE"
1400 GETKE$:IFKE$<>" "THEN1400
1410 PRINT:PRINTTAB(6)"WRITING : ";N$;
1420 N=LEN(N$)
1430 IFN<18THENPRINT" ";:N=N+1:GOTO1430
1440 PRINT#15,"IO"
1450 OPEN 1,8,2,N$+",P,W"
1460 FOR K=9216 TO J
1470 PRINT#1,CHR$(PEEK(K));
1480 NEXT
1490 CLOSE1:CLOSE15:PRINT:PRINTTAB(6)"COPY COMPLETE, HIT SPACE"
1500 GETKE$:IFKE$<>" "THEN1500
1510 POKE255,1:SYS49152
1520 RETURN
1530 REM BLOCKS FREE
1540 POKE255,0:SYS49152
1550 X=10:Y=10:WX=20:WY=1:CO=4:GOSUB 270
1560 PRINT"BLOCKS FREE : ";
1570 OPEN 100,8,0,"$:U=U"
1580 FORJ=1TO35:GET#100,X$:NEXT
1590 GET#100,Y$:CLOSE100
1600 BF=ASC(X$+CHR$(0))+256*ASC(Y$+CHR$(0))
1610 PRINT"BF";BF
1620 GETKE$:IFKE$<>" "THEN1620
1630 POKE255,1:SYS49152
1640 RETURN
1650 REM PRINTER
1660 OPEN 4,4
1670 X=21:Y=8:WX=16:WY=6:CO=2:GOSUB 270
1680 PRINT"-----";
1690 PRINTTAB(23);"LINE FEED"
1700 PRINTTAB(23);"FORM FEED"
1710 PRINTTAB(23);"SEND CHR$"
1720 PRINTTAB(23);"PRINT STRING"
1730 PRINTTAB(23);"TEST PRINTER"
1740 PRINTTAB(23);"QUIT PRINTER"
1750 GETKE$:IFKE$=""THEN1750
1760 IFKE$="L"THENPRINT#4,""
1770 IFKE$="F"THENFORL=1TO66:PRINT#4,"":NEXT
1780 IFKE$="S"THEN GOSUB1870
1790 IFKE$="P"THEN GOSUB1830
1800 IFKE$="T"THEN GOSUB1920
1810 IFKE$="Q"THENCLOSE4:PRINT" ";:GOTO160
1820 GOTO 1750
1830 POKE255,0:SYS49152:PRINT" ";
1840 X=7:Y=3:WX=24:WY=3:CO=3:GOSUB270
1850 PRINT"ENTER TEXT, PRESS RETURN";CHR$(13):ML=79:GOSUB2020
1860 PRINT#4,N$:POKE255,1:SYS49152:RETURN
1870 POKE255,0:SYS49152:PRINT" ";
1880 X=7:Y=3:WX=24:WY=3:CO=3:GOSUB270
1890 PRINT"CHR# NUMBER 0-255 ";CHR$(13):ML=2:GOSUB2020
1900 V=VAL(N$):IFV<0ORV>255THENPRINT" ";:GOTO1880
1910 PRINT#4,CHR$(V):POKE255,1:SYS49152:RETURN
1920 REM TEST
1930 PRINT#4,CHR$(15);"TESTING NORMAL PRINT.";CHR$(13)
1940 PRINT#4,CHR$(14);"TESTING DOUBLE WIDTH.";CHR$(13)
1950 PRINT#4,CHR$(15);CHR$(18);"TESTING REVERSE TEXT";CHR$(13)
```

```

1960 PRINT#4,CHR$(18);CHR$(14);"TESTING REVERSE & DOUBLE TEXT.";CHR$(13)
1970 PRINT#4,CHR$(15);CHR$(17)"TESTING CURSOR DOWN MODE.";CHR$(13);CHR$(13)
1980 PRINT#4,CHR$(15);CHR$(145)"TEST COMPLETE ...";CHR$(13)
1990 PRINT#4,""
2000 RETURN
2010 REM INPUT
2020 N$=""
2030 PRINT" 32 31";
2040 GETZ$:IF Z$="" THEN 2030
2050 Z=ASC(Z$):IF Z>95 OR Z=34 THEN 2040
2060 ZL=LEN(N$):IF ZL>ML THEN 2080
2070 IF Z>31 THEN N$=N$+Z$:PRINT Z$;:GOTO 2030
2080 IF Z=13 AND ZL THEN PRINT" ";:RETURN
2090 IF Z=20 AND ZL THEN N$=LEFT$(N$,ZL-1):PRINT;" 32 31";
2100 GOTO 2030
2110 REM M/C SCREEN SAVE
2120 FOR L=0 TO 95:READ DA:POKE 49152+L,DA
2130 T=T+DA:NEXT:IFT<>16330 THEN PRINT"DATA ERROR":STOP
2140 RETURN
2150 DATA 169,0,133,251,133,253,169,4,133,252,169,216,133,254,169,0
2160 DATA 133,172,133,174,169,160,133,173,169,164,133,175,165,255,208
2170 DATA 32,198,1,160,0,177,251,145,172,177,253,145,174,200,208,245
2180 DATA 230,252,230,254,230,173,230,175,165,252,201,8,208,231,230
2190 DATA 1,96,198,1,160,0,177,172,145,251,177,174,145,253,200,208,245
2200 DATA 230,252,230,254,230,173,230,175,165,252,201,8,208,231,230
2210 DATA 1,96

```

READY.

## HARDWARE

	RRP	WAVE
Amstrad PCW 8256	£458.85	£409.00 (a)
Amstrad PCW 8512	£573.85	£513.00 (a)
Amstrad CPC 6128 green	£299.00	£267.00 (a)
Amstrad CPC 6128 colour	£399.00	£361.00 (a)
Amstrad CPC 464 green	£199.00	£178.00 (a)
Amstrad CPC 464 colour	£299.00	£267.00 (a)
DMP 2000 Printer inc. free cable	£169.00	£151.00 (b)
2nd 3" Drive ONLY - PCW	£182.85	£136.00 (b)
2nd 3" Drive + 256K Ram upgrade - PCW	£232.85	£162.00 (b)
CPS 8256 Cent. - RS232 Interface - PCW	£68.94	£60.00 (c)
Alphacom 32/Timex 20/40 printer-spec/ZX81	£49.95	£18.95 (c)
BBC Master 128	£499.00	£430.00 (a)
Ferguson 37140A 14" Portable TV	£169.99	£152.00 (a)
Ferguson 14C1D 14" Portable TV		
New Monitor Style, black	£189.99	£160.00 (a)
Pision Organiser I w.s.l.	£99.95	£70.00 (c)
CBM MPS803 Dot Matrix Printer inc. Tractor Feed	£169.99	£150.00 (a)
CBM 64C Pack NEW MODEL inc. S/W and Mouse	£249.99	£217.00 (a)

## SOFTWARE databases

A. Tate Dbase II - PCW	£119.00	£87.00 (d)
Sage retrieve - 6128/PCW	£69.99	£54.00 (d)
Caxton condor 1 6128 twin/PCW	£99.99	£73.00 (d)
Camsoft Cambase PCW	£49.95	£30.00 (c)
Compact Nucleus - PCW	£99.99	£68.00 (d)
Compsoft delta 6128 twin/PCW	£99.99	£70.00 (d)
Rat. Sol. At last 1 6128/PCW	£49.95	£33.00 (d)
Gemini datagem PCW	£39.95	£26.50 (d)
M.P.S. Kwikfile CPC		£12.00 (e)
C.F.2 3" Blank disks (box of 10)	£49.50	£32.00 (d)

## SOFTWARE

CBM Easyfile Disc C-64	£60.00	£9.99 (d)
CBM Easycript Disc C-64	£75.00	£9.99 (d)
CBM Futurefinance Disc C-64	£75.00	£9.99 (d)
Jewels of Darkness C-64/6128/PCW	£19.95	£14.25 (e)
Micro Simplex Disc C-64	£172.50	£95.00 (c)
Caxton Brainstorm 6128/PCW	£49.99	£38.00 (c)

All prices include VAT. Please add carriage indicated as follows: (a) £5.00  
(b) £4.00 (c) £3.00 (d) £2.00 (e) £1.00 (f) 50p. Despatched by return of post

**W.A.V.E. (mail order)**

Walney Audio Video & Electrical  
53 Shearwater Crescent, Barrow-in-Furness,  
Cumbria LA14 3JP. Telephone: 0229 44753

## NOBLES COMPUTER REPAIRS

- \* Repairs carried out by our own engineers
- \* All repairs carry a 4-MONTH GUARANTEE

For estimates phone or send your computer to NOBLES  
Spectrum Plus..... **£16.95** inc parts  
post and pack

Commodore 64/Vic 20 ..... from **£9.95** plus  
parts

Amstrad ..... from **£18.95** plus  
parts

Also repair specialists for MSX computers

**NO HIDDEN CHARGES**

★ **SPECIAL OFFER**

**5 FREE GAMES WORTH £25**

with each Spectrum repair - Trade/School and Club  
discounts arranged

\* For free, no obligation estimates phone or send your  
computer to **NOBLES** for the fastest, cheapest repairs  
in ESSEX.

**NOBLES**

14-17 Eastern Esplanade

Southend-on-Sea

Essex

0702 63377/8

63336/7/8/9

7 days a week, 24-hour Answering Service

## Italics on Spectrum

by Tim Lynes

The following Spectrum program creates an italic character set starting at 64000. Change the value at line 45 to 39 to create a left sloping set. To use the new set enter *Poke 23607,2493*. To allow the set to be copied to another location do the following:

*Poke 30004,v-256\*Int(v/256)*

*Poke 30005,Int(v/256)*

*Poke 30015,v-256\*Int(v/256)*

```
5 CLEAR 29999
10 FOR I=30000 TO 30047:READ A:POKE I,A:NEXT I
20 RANDOMIZE USR 30000
30 POKE 23607,249:PRINT "ITALIC CHARACTERS !!"
40 DATA 33, 0, 61, 17, 0, 250, 1, 0, 3, 237, 176, 1, 0, 3, 33, 0, 250, 17, 5, 0, 126, 203
50 DATA 47, 119, 27, 62, 0
60 DATA 187, 40, 7, 35, 120, 177, 11, 32, 240, 201, 35, 35, 35, 35, 11, 11, 11, 11, 195, 65, 117
```

*Poke 30016,Int(v/256)*

*Randomize Usr 30000*

where v is the starting address.

To use the set starting at v,

*Poke 23606,v-256\*Int(v/256):Poke*

*23607,Int(v/256)-1.*

To save the new character set enter *Save*

*"Itals" Code 64000,768.*

## Hires Dump

by R Clapp

The following program for not quite forgotten Oric 1/Atmos computers will dump a hires picture to a Brother HR5 printer in about five minutes only.

The printing will be slightly compressed along the x-axis compared with the screen because the pin spacing is smaller than the carriage pitch (1/72). Altering the line feed value in line 600 to 7 or 8 will get round this but will also break up the horizontal lines.

```
500 S=48920:E=4096
510 FORC=1TO40
520 LPRINTCHR$(27);"K";CHR$(200);CHR$(0);
530 FORL=S TO E STEP-40
540 B=PEEK(L)
550 IFB>63 THENB=B-64
560 LPRINTCHR$(B);
570 NEXTL
580 S=S+1:E=E+1
590 LPRINTCHR$(27);"A";CHR$(6);
600 LPRINTCHR$(13)
610 NEXT C
```

## Shadow Ram Access

by A W R Crawford

If you've bought an Atari 130XE or upgraded the old 800XL then you may be wondering how to gain access to the additional banked memory that this machine has. Well, this program allows you access to the extra Ram. Type in and run the program, instructions will be printed on screen.

```
10DIM MOVE$(70):RESTORE:FOR L=1 TO 70
:READ D:MOVE$(L,L)=CHR$(D):NEXT L
20PRINT CHR$(125):POSITION 2,4:FORL=0
TO 80 STEP 10:PRINT L:NEXT L
30POKE 766,2:PRINT "10 COM MOVE$(70):
MOVE$=";CHR$(34);MOVE$;CHR$(34)
40PRINT"20 POKE 842,12:POKE 766,0:PRI
NT CHR$(125):LIST:END":PRINT "GOTO20"
50POSITION 2,0:POKE 842,13:STOP
60DATA 104,104,133,204,104,133,203,10
4,133,206,104,133,205,104,104,170,169,0,
141,14,212,173,1,211,41,254,9,2
70DATA 141,1,211,41,254,9,2,141,1,211
,160,255,177,203,145,205,136,208,249,230
,204,230,206,202,208,240,173,1,211
80DATA 9,1,41,253,141,1,211,169,192,1
41,14,212,96
```

## NORTHERN MICRO

**CLEARANCE SALE - MASSIVE DISCOUNTS**

**ACCESS AND VISA WELCOME**

### EPSOM PC DUAL DISC

including colour card and V.P. planner  
R.R.P. £1,050 Our Price £550

### MICROVITEC COLOUR PC MONITOR (1456/DI2)

R.R.P. £550 Our Price £380

### MICROVITEC CUB (1541/DQ3) FOR QL

R.R.P. £250 Our Price £199

### PRINTERS

PANASONIC KXP 1080 V  
(100 CPS DRAFT, 20NLQ)

R.R.P. £249 Our Price £149

SHIMWA CP80 (SERIAL INTERFACE)

Price: £85.00

JUKI 2200 (20 CPS, PRINTER/TYPEWRITER)

R.R.P. £350 Our Price £199

### AMSTRAD PCW SOFTWARE

	R.R.P.	Our Price
Cardbox	£99.00	£45.00
Cracker 2	£49.00	£25.00
Scratchpad +	£69.00	£35.00
Touch & Co.	£29.00	£10.00
New Word	£69.00	£40.00
Smart Key	£49.00	£25.00
Sage Account +	£149.00	£90.00

### ROM/RAM CHIPS

HITACHI 2764 (8K EPROM)	£1.95
HITACHI 6264 (8K RAM)	£1.95

Please add VAT at 15% to all items except software

## NORTHERN MICRO

**SYCAMORE LANE,  
THONGSBRIDGE,  
HUDDERSFIELD  
HD7 3SC**

Tel: 0484 687875

## LOGIC'S SUMMER SALE

### SPECTRUM TITLES

Lords of Time	4.95	Shoot The Rapids	2.99
Snowball	4.95	Gribbly's Day Out	2.99
Colossal Adventure	4.95	Star Trooper	2.99
Emerald Isle	3.99	Master of the Lamps	2.99
Adventure Guest	4.95	Snowball	4.95
Ashkeron	1.99	Adventure Quest	4.95
Bizzicom	2.95	Imhotep	3.99
Highway Encounter	3.95	Underworld	3.99
Alien Highway	3.99	Mobelius	2.99
Knockout	2.99	Space Pilot II	2.95
Match Fishing	2.99	Frak	3.95
J. S. W.	2.99	William Wobbler	3.95
Now Games Compilation	3.99	Harvey Smith's Show Jumper	2.95
Matchpoint	3.95	Knockout	2.95
Nightlife II	1.99	The Designer's Pencil	2.95
Lord of the Rings	6.95	Music Studio by Activision	3.95
Pinball Wizard	3.50	Ms Pacman (cart)	5.95
Superchess 3-5	3.95	Robotron 2084 (cart)	5.95
Juggernaut	2.99	Defender (cart)	5.95
Talos	2.99	Donkey Kong (cart)	5.95
Beamrider	2.99	Moon Patrol (cart)	5.95
Phantasia Diamond	2.99	Dig Dug (cart)	5.95
Extractor	1.99	Wizard of Wor (cart)	2.95
Spiderman/Hulk	2.99	International Soccer (cart)	4.95
Friday 13th	2.95	Match Fishing	2.95
Heathrow ATC	2.95	Now Games II	5.95
W. Wobbler	3.95	Zimyth Head Alignments	6.99
Toy Bizarre	2.95	Basildon Bond	2.99
Adventureland Secret Mission	3.95		
Komplex	1.99		
Video Pool	1.99		
Manic Miner	2.99		
Avalon	2.99		
Frank Bruno's Boxing	4.25		
Mantronic	3.99		
The Covenant	2.99		
Golfing World	1.99		
Bladerunner	2.99		
Robot Messiah	1.99		
Monty Mole	2.99		
Beachhead II	3.99		
Bruce Lee	3.99		
Bounty Bob	3.99		
Sabre Wolf	2.99		
Twin Kingdom Valley	2.99		
Everyone's a Wally	2.99		
Robin of Sherlock	3.50		
Micro Prologue	3.95		
Way of Exploding Fist	4.50		

### COMM 64 DISCS

Zork I	3.99
Zork II	3.99
Zork III	3.99
Starcross	3.99
Deadline	3.99
Suspended	3.99
6 Games Disc (inc Sooper Fruit, Depth Charge, Stellar Wars, Labyrinth, The Quest, Patience)	1.99
Spirit Stones	2.99
Hover Bover	2.99
Sheep in Space	2.99
Exodus Ultima III	4.99
Super Zaxxon	3.99
Monty of the Run	3.99
Battle of Britain	4.95
Theatre Europe	4.95
Chimera/Willow P.	4.95
Aztec Challenge	2.99

### SINCLAIR MACMILLAN

TITLES (All at 2.99 each)

Alpha Better	Word Setter
Oil Strike	Weathermaster
Planet Patrol	Body Swap
Mac Man's Magic Mirror	Soundabout
Mac Man In The Caves	Cargo Glider
Mac Man And The Great Escape	
Disease Dodgers	

### PERIPHERALS 48K

Currah Micro-Slots	2.95
5 Rolls of Alphacom Paper	8.95
Timex 20/40 Thermal Printers	34.95

### COMMODORE 64 TITLES

Wizardry	3.45
Beachhead	2.95
Combat Leader	3.50
Motorcross	2.95
Red Hawk	3.95
Pit Stop	1.99
Crazy Comets	2.95
Dummy Run	1.99
Automania	1.99
BC's Quest for Tires	2.99
Manic Miner	2.95
J. S. W.	2.95
Who Dares Wins II	2.95
Outlaws	3.99
Hunchback Olympics	2.95
Colossal Adventure	4.95
Lords of Time	4.95
Pastfinder	2.99
Causes of Chaos	2.99
Wed Dimension	2.99
Space Shuttle	2.99
Beamrider	2.99
Rock 'N' Bolt	2.99
Fighting Warrior	2.99
Rocky Horror Show	2.99
Blade Runner	2.99
Dreibus	2.99
Journey	2.99
Bridge Player 2	3.95
Pinball Wizard	2.99
Dark Tower	2.99

### 64 UTILITIES

Dr Watson 64 Ass Lang. Course	
Disc	9.95
Touch Type (cass)	2.95
Commodore Modems	49.95
Easy File (disc)	9.95
Programmer's Ref. Guides	3.99
Easy Stock (disc)	9.95
Easy Script (disc)	9.95
Future Finance (disc)	9.95
Easy Spell (disc)	9.95
Bredens Basic 64 (Cond)	9.95
1551 Disc drives for +4 and C16	79.95
C2N Datarecorders	24.99
C64 Music Maker Keyboard	7.50
Commodore 128 Music Maker Keyboard	9.95
Facem/Assembler/Disassembler	2.99
Programmers Utilities (Disc)	7.95
Simons Basic Extension (cassette or disc)	4.99

### Bargain Books from 1st Publishing

8 Books for just	£9.95 + £2.50 p&p
Normally over £50.00 RRP	
64 Cassette Book	
Anatomy of a Commodore 64	
Graphic Book C64	
Peekas & Pokes C64	
Tricks & Tips C64	
Advanced Machine Language Book C64	
Ideas Book C64	
Machine Language Book C64	

### 1st Publishing Programs on Disc for C64

All just £10.95 each	
At least £20.00 off RRP!!	
Firstword (word proc)	
Firstbase (database)	
Basic 64C	
Pascal (language)	
A.D.A. Training Course (language)	
Power Plan (calc prog)	
Assembler Monitor (compiler)	

### Postage and packing

75p all orders

OVERSEAS

£1.00 per tape



**LOGIC SALES LTD.**  
**6 MIDGATE, PETERBOROUGH,**  
**CAMBS PE1 1TN**

24 hour ordering on 0733 313870



# PDQL

49 FREDERICK STREET  
BIRMINGHAM B1 3HN  
021-233 3042

Make the Most of your QL for your home  
or business use

## INTERACTIVE ARCHIVE TUTORIAL

A necessary adjunct to understand and maximise the  
standard Archive ..... £21

## ARCHIVE SCREEN DESIGNER

More commands; more flexibility; more useful ..... £15

### PLUS

ARCHIVE DATABASE RECOVERY ..... £20  
MAILMERGE De-Luxe ..... £14  
NAME & ADDRESS Standard ..... £18  
NAME & ADDRESS Run Time Extension ..... £18  
PDQ ACCOUNTS ..... £25  
CHASE UP and APPOINTMENTS DIARY ..... £40  
PAYROLL Full featured superfast ..... £70  
DATABASE ANALYSER ..... £7  
ARCHIVE SCREEN FORMAT PRINTER ..... £7  
And for existing CASH TRADER users the UPGRADE  
SUPERFAST version ..... £39

Easy to understand user instructions. All prices include  
VAT and postage within the UK. Payment with orders.  
Write now for full Program list.

Another great new game from  
**Bubble Bus**

NOW  
AVAILABLE  
ON ATARI  
AND MSX

# STARSLAKE

NOW  
AVAILABLE  
ON ATARI  
AND MSX

By Stephen Crow

Author of Wizard's Lair

SPECTRUM 48K

COMMODORE & AMSTRAD

Stephen Crow

Programmer of the Year

C - VG Golden Joysticks



**bubble bus software**

87 High Street, Tonbridge, Kent TN9 1RX  
Telephone: 0732 355962 Telex: 95151

# SMASH HITS AT CRAZY PRICES

## FIRST BYTE CLUB

## SOFTWARE SUPER BUYS,

## ORDER NOW .....

\*

\*

\*

### Amstrad (D = Also on disc)

Batman	£3.99
Computer Hits 10	£3.99
Elite (D)	£7.99
Fairlight	£3.99
Fig Fourth	£4.99
Frankie Goes To Hollywood	£3.99
Heavy On The Magik	£3.99
Hyper Sports (D)	£3.99
Lord of the Rings	£5.99
Movie	£3.99
Ping Pong	£3.99
Quill/Illustrator Tw. Pk. (D)	£7.99
Rambo	£4.50
Sabre Wulf	£3.50
Shadow Fire	£3.99
Sweevo's World (D)	£3.99
They Sold a Million (D)	£3.99
T.S.A.M. II (disc only)	£3.99
The Music System	£4.99
Way of the Exploding Fist	£3.99
Who Dares Wins II	£3.99
Yie Ar Kung Fu	£3.99
Laser Compiler (D)	£5.00

### Spectrum

2112 AD	£3.99
Arcade Hall of Fame	£3.99
Arc of Yesod	£3.99
Bounces	£3.50
Costa Capers	£3.50
Elite	£6.99
Exploding Fist	£3.99
Fantastic Four Pt. One.	£3.99
Hyper Sports	£3.99
International Matchday	£3.99
Laser Compiler	£6.99
Lord of the Rings	£5.99
Panzadrome	£2.99
Rambo	£3.99
Rockford Riot/Boulderdash	£3.99
Splitting Images	£3.99
They Sold a Million	£3.99
Twister	£3.99
Winter Games	£3.99
Winter Sports	£3.50
World Series Baseball	£3.99
Yie Ar Kung Fu	£3.99
Young Ones	£3.99

### Commodore 64

Bounces	£3.50
Comic Bakery	£3.99
Critical Mass	£3.99
Dragonskulle	£3.99
Elite	£7.99
Koronis Rift	£3.99
Laser Compiler	£5.99
Little Computer People	£3.99
Now Games 2	£3.99
One-on-One	£3.99
Outlaws	£3.99
Rats	£3.99
Revs	£5.99
Robin of the Wood	£3.99
Skool Daze 64	£3.50
Summer Games II	£3.99
The Force	£3.99
The Music System	£5.99
Time Tunnel	£3.99
White Lightning	£4.99
Winter Games	£3.99
Quake Minus 1	£3.99
Quill/Illustrator Tw. Pk.	£7.99

Atari, C16, BBC and Electron users send S.A.E. for lists.

A selection from our Summer SuperBuy catalogue ... all orders placed will entitle you to free membership and catalogue. Prices include P&P UK only (overseas add 75p for each tape ordered). Order by sending details plus name, address and post code. (Make cheques or P.O. payable to: First Byte Club) 36, John Kempe Way, Birmingham B12 0HU. Or use Visa by telephoning your No. to: 021 771 4480 or 773 6615.

POST TODAY TO AVOID DISAPPOINTMENT.



**With Kenn Garroch**

## Multiple copies

*Chris Ladds of Hawick, in Roxburghshire, writes:*

**Q** Do you know if anyone has made word processing software for the PCW8256 that produces multiple copies of documents? I use my machine to produce worksheets for pupils. Amsoft says there is no facility for doing this within *LocoScript*.

Do you know whether anyone has produced another version of Basic that will run on this machine? I'm not experienced in programming, and I would like something that uses procedures as BBC Basic does.

Has *Popular* reviewed *Brainstorm* or any similar ideas processor? It's mentioned in your July 10 issue but I haven't seen it since.

**A** The only word processor that I know will produce multiple copies is *Wordstar*, but this doesn't mean that there aren't others. Most reasonable processors will cope with churning out as many copies as you like.

I remember that there was once a Z80-CP/M version of BBC Basic available for the Wren and also running on the Z80 second processor for the BBC. However, I don't know whether this is still available or who produced it. Maybe they will read this and tell me so that I can tell you?

If you want to learn structured programming, you could do worse than use Pascal (available from DR at £50) as this is even better than

BBC Basic since it was originally designed to be a teaching language.

*Brainstorm* has never been reviewed in PCW but we hope to cover it in a future issue.

## Power struggles

*M Sykes of Crewe, in Cheshire, writes:*

**Q** I have a problem with my Commodore 64. When I switch it on, the power light flashes brightly, then dims and slowly comes bright again. All I get on my monitor is a blank screen. I do, however, have a reset switch which if then pressed causes the computer to boot up. After an hour or so, the screen starts doing funny things and the power light dims.

When I try switching on and off, the power light never gets to its full brightness and even the reset switch doesn't work. If I let it cool down, the machine will work but only by the reset method mentioned above.

Could you tell me what is wrong and what, if anything, can be done to fix it?

**A** This sounds as though you have power supply problems. If your power supply is getting very warm, it could well be broken and not able to supply enough power to boot the system. The reset switch works by taking the reset line of the cpu low causing a cold boot. If there is nearly enough power then this will work. After a while though, the power supply gets hot and the voltage it produces drops below the critical level.

The answer is to get your computer looked at by one of the many repair companies now advertising in the various computer mags (see the clas-

sified section of *Popular*). What they will probably do is replace your power supply (approx £30) and give the rest of the system the once over, returning it to you as good as new.

## Amstrad rumours

*Mark Mamone, of Paston, Peterborough, writes:*

**Q** I heard recently that due to the release of the Spectrum Plus 2, the Amstrad 6128 will start to take over from the other Amstrad models.

I have a CPC 464 with disc drive and wondered that if I obtained a 64K Ram pack, would I be able to run 6128 software. If not, how could I?

**A** As far as I know, the software houses currently produce all their Amstrad software to run on the 464 as the basic Amstrad machine since it will then run on the 664 and 6128 as well. The Spectrum Plus two is reputed to be fully compatible with all Spectrum software so the chances are that software companies will continue to publish for both formats.

The software you will want to run falls into two categories, that running under CP/M and that running under Amsdos. With the former, you should have no problem fitting a Ram pack since this should increase the TPA (Transient Program Area) available to CP/M allowing the 6128 CP/M system to be loaded.

With Amsdos, I am not sure whether Amstrad has changed the operating system on the 6128. The chances are that it has, so fitting the extra memory will not help. However, as I mentioned above, there is no reason why the software houses should change from their policy of producing programs for the 464 as a base machine.

## Screen to screen

*Edward O'Toole of Dublin writes:*

**Q** I own an Amstrad 6128 with a colour monitor. Is there any way I could connect my Commodore 64 to my Amstrad monitor?

**A** Sorry, but I'm afraid you can't. The Amstrad uses an RGB output, the Commodore 64 a composite signal, and the two are incompatible.

## Enter the Dragon

*Rob Baxter, of Whalley Range, Manchester, writes:*

**Q** I recently bought a second-hand Dragon 32 and as I do not own a TV, was hoping to connect it to one of my existing computer monitors.

But so far I have had no success. I have been unable to find a suitable cable and have tried to make one up myself but I cannot find details of the pin layout.

My monitors are the standard Amstrad CPC model and a Ferguson green screen monitor. My main worry is the risk of damaging my monitors. Is this possible?

**A** The possibility of damage is always present when messing around with electrical equipment; however, the risks in this case are very slight.

Although the Dragon manual claims RGB output, this was never implemented. The video output is composite video so you're in with a chance on your Ferguson green screen.

Only three pins are used on the Dragon video connector: pin one is sound, pin two is ground, and pin three is composite video. If you can match these up you should get a picture, although sound will depend on whether your monitor has a built-in loudspeaker (many don't).

**Is there anything about your computer you don't understand, and which everyone else seems to take for granted? Whatever your problem *Peek* it to Kenn Garroch and every week he will *Poke* back as many answers as he can. The address is *Peek & Poke, PCW*, 12-13 Little Newport Street, London WC2R 3LD**

# THE FINAL CARTRIDGE II® FOR ONLY £25.

RETURN ANY OLD COMPETITOR'S CARTRIDGE  
TOGETHER WITH A CHECK FOR £ 25 + £ 2  
POSTAGE AND HANDLING.

## Includes:

### FREEZER

Menu-driven. Freezes everything.  
Frozen programs reload fast  
without the cartridge.

### DISK/TAPE TURBO

Unique. Also **saves 6**  
6 times faster to disk.

### GAME KILLER

As good as dedicated game-killers.

### CENTRONICS INTERFACE

Incl. full page multicolour  
screendumps in 12 shades of grey.

### 24 K EXTRA RAM

for Basic programs.

### BASIC TOOLKIT

### ML MONITOR

plus drive monitor.

A total of  
**40 EXTRA  
COMMANDS**  
and  
functions  
always  
available.

**£39**

## The Final Cartridge II

Until now, the Final Cartridge II, together with Robocom Cartridges, were known as the best selling cartridges for the 64. Now, however, the Final Cartridge II has been joined by a new Final Cartridge II, and it's called the Final Cartridge II.

Just before the Commodore Show in May, a French company, GAG Distribution, released a cartridge called the Final Cartridge II. It was the next stage in the Final Cartridge II series. Now, however, the Final Cartridge II has been joined by a new Final Cartridge II, and it's called the Final Cartridge II.

The new Final Cartridge II looks very different from the old one. It is smaller, has a different shape, and a different colour. It is also a different cartridge.

On the left hand side of the cartridge, you have a red button, again, which controls a menu system. Most people will be aware of the idea of freezing a program, and then, when you want to use it, you can use the red button to reset the program.

program. Pressing F2 under you also the comprehensive machine code monitor. This last two options will give you a total reset (after which everything is lost), or reset the machine into standard 64.



### Freeze

On the left hand side of the cartridge, you have a red button, again, which controls a menu system. Most people will be aware of the idea of freezing a program, and then, when you want to use it, you can use the red button to reset the program.

memory only to subsequently save it on either tape or disk. The Final Cartridge II allows you to do this, and it is one of the best examples of the game that I have seen.

As well as the ability to copy almost anything to either tape or disk, the Final Cartridge II also allows you to dump whatever is on the screen, either with a printer, or a graphics card. In more recent versions, you can also dump the screen to a graphics card, or to a printer.

As well as these features, the Final Cartridge II also has a number of other features. It has a disk turbo, which allows you to load and save programs much faster than normal. It also has a tape turbo, which allows you to load and save programs much faster than normal.

All of the function keys are defined to allow specialist commands such as: Copy, Paste, Cut, and so on. This makes the Final Cartridge II a very useful tool for programmers and users alike.

Overall, the Final Cartridge II is really very good. It has all the facilities that anyone could possibly need in the way of a cartridge, and they all appear to work very well. If you are looking for a cartridge, you can't go wrong with the Final Cartridge II.

Commodore Computing August 1986.

**U.K. ORDERS** Available by the wellknown  
Commodore Dealers or directly from

**H & P Computers**  
9 Hornbeamwalk  
Witham Essex CM8 2 SZ England  
Telephone: 0376 - 51 14 71.

**H&P**  
COMPUTERS

copyright and registered trademark.  
H&P computers  
Wolphaertsbocht 236 - 3083 MV Rotterdam  
Netherlands  
Tel. 01031 - 104231982 Telex 26401 a intx nl

WORLD'S MOST SUCCESSFUL EXTERNAL OPERATING SYSTEM

# Absolute beginner, intermediate musician or confirmed expert?

Mark Jenkins peruses a selection of readers' tapes

**T**he main problem in writing a column of this sort is knowing where to pitch it – at the absolute beginner, the intermediate musician, or the confirmed expert? The real distinctions as far as equipment is concerned come in three stages, as follows:

1) The beginner with a standard micro and enough interest in music to buy a software package to use the micro's built-in sound chip.

Examples of products aimed at this level of interest are Rainbird's *Advanced Music System* on the C64, BBC or Amstrad, the Rittor packages for the MSX micros which we looked at a few weeks back, and many more pieces of software in the £10–£30 range.

If you're pleased with the bleeps and bleeps your computer can create, but would like to have them louder/faster/longer/more powerful, the intermediate stage of interest is as follows;

2) The amateur musician with enough cash and interest to want to expand the micro's hardware with a real music keyboard, an additional voice module, a "real sound" sampler or other accessory ranging from perhaps £30–£200.

Some of the most exciting recent micro products lie in this bracket – the *Ram Music Machine* towards the bottom end (£49.95) offers sampling, echo, drum machine facilities and a Midi sequencer for the Spectrum, Spectrum 128, Spectrum Plus and Spectrum Plus 2. That's quite an astonishing achievement, but it can be bettered in terms of quality by products for individual purposes from Cheetah, Currah, Syndromic Music (the *Tron Digidrum III* is a particularly outstanding micro drum machine), Commodore (with the *FM Sound Expander*) and many others.

After this stage you'll probably be hooked on the music bug and will begin to find your micro a little limited as an instrument, even with additional voices, sampling capability and so on. But don't despair, because even basic micros (Commodore, MSX, BBC, and more recently Amstrad for example) can have a place in the world of fully professional music – stage three.

3) For all practical purposes, you've entered the world of professional music once you link up a micro to a series of instruments using Midi, the almost-universal synthesiser interface.

Midi synthesisers start at around £250 now (Casio's CZ-101 remains the best bargain) and every modern synthesiser from the Casio to the £55,000 Series III Fairlight is Midi-compatible (many older ones can benefit from a Midi-to-analog interface too).

If you don't believe that a humble micro can have any part in making chart hits, you'll be pleased to hear that Blancmange, Vince Clarke and A-Ha all use BBC micros with a package called *UMI-2B*, that continental star Michael Cretu swears by *C-Lab* on the Commodore 64 and that Dire Straits and Marillion both use the Atari 520ST with the Steinberg *Pro-24* software.

So from making bleeping noises with an internal sound chip, your micro can take you all the way up to professional studio level with your expenditure tailored to match your interest in music.

What we'd like to know is – where would you place yourself? Are you just interested in music as an alternative to playing endless shoot-'em-up games, or do you feel that your interest will develop? Have you started to record music from your micro and play it to anyone else (and would a few hints on recording techniques be appreciated)? Have you forked out for any kind of hardware expansion yet, and if so, have you experienced any compatibility problems, and do you intend to move on to Midi interfacing?

Answers to a few of these questions help us tailor the music column to suit your specific needs – and so far, we've had a good selection of tapes, discs and data cassettes sent in which confirm interest at all three of the stages we've mentioned.

For instance, Andrew Wilson of Edinburgh has sent in a very sophisticated tape composed with a BBC-based *UMI-2B* system and a selection of Midi synthesisers and drum machines. The sound is very full, particularly in the passages with sampled pianos and fast sequenced arpeggios backing the slower rhythms played on marimba or flute sounds.

Each piece is four or five minutes long, mostly quite up-tempo – ideal for "test card music" (what's called library music in the business, and often paying very well) or for documentary films. Given enough synthesisers, micro control means that you can record a complete

piece (as long as you don't want to do vocals or guitars, for instance) straight on to a master tape without needing an expensive multitrack tape machine at all.

At the other end of the scale, Peter Bayes from North Yorks has been programming music for the MSX micros, and has sent in a listing for a version of *Memory* from the show *Cats*. It takes up 4.2k and is about 90 lines in length – and Peter now plans to get hold of the Yamaha SFG-05 FM Tone Module to improve his micro's sounds. If you're interested in swapping listings you can contact Peter at 6 Pinfold House, Mount Crescent, Malton, N Yorks YO17 0JQ.

Jim Veitch of Berwickshire has written in with a few earth-shaking questions – how much is a Yamaha DX7 and is it value for money? (about £900 second-hand – yes for keyboard players, probably no for programmers); is a Yamaha PSS460 electronic keyboard a good idea for starters and does it connect to a C64/128? (Yes, but no); what is the best beginner's buy for the type C64? (perhaps the Commodore *Sound Expander* with or without keyboard, the Tron *Digidrum III* for sampled drums, and the Steinberg *Pro-16* composer once you've got into Midi synthesisers); what's a Midi and what does it do? (Hal you need to get hold of *Electronic Music On The Commodore 64*, M Jenkins (who), Sunshine Books, £6.95); do you know of any programs which will help me write machine code music? (see Ian Waugh's *Commodore 64 Music* for Basic programs, and Chapter Five of England and Lawrence's *Machine Code Graphics and Sound* for simple machine code music routines, both from Sunshine at £6.95 each). Micro music buffs in Scotland may like to contact Jim to swap ideas – he's at Cross Lea, Coldingham, Berwickshire TD14 5NS.

**CORRECTION** – Prices of the Rainbird Amstrad Music System reviewed in our recent music supplement are £19.95 and £29.95.

If you have any queries or tips for this column, please write to Mark Jenkins at *Popular Computing Weekly*, 12-13 Little Newport Street, London WC2H 7PP. Mark would also welcome examples of your own music on audio or program tape, or disc.





## Roll up for the magical musical modem

*David Wallin sings about Musictel, now bigger and better than ever*

Expect many of you will remember the small London Bulletin Board, Musictel, insignificant amongst the 200 odd other boards in the country. Not any more; Musictel is the name of a company which part-runs many boards. The table at the bottom shows the boards that are presently run as part of the Musictel network. The boss of the entire network, and managing director is James Eckhardt, the sysop of the original board, Musictel.

### Musictel Boards and Music

As the names suggest, Musictel boards specialise in music features. This does not mean that you have to be a composer or concert pianist to understand what you see when you log on. The boards are similar to any other board, but they have slight oddities and very musical Sigs and downloads. For example, Musictel itself has record charts, and Musictel Plus has a what's on on TV section. On Musictel, the Sigs include hi-fi, the Music 500, classical music and pop.

displayed at a high enough resolutions are of a very high quality.

Also speech digitising is possible. To listen to some digitised speech (again you need a BBC, as the files are for the BBC only), log on to Marctel BB, the only BB I know of which has digitised speech files available for download.

Digitised speech is incredible: it sounds just like the real thing. When William Holmes (Sysop, Musictel Plus) played me a digitised copy of the speech at the start of *Knight Rider* over the phone, I had difficulty believing that it was not just a cassette recording of it.

Digitised sound does use up lots of your BBS's K, eight seconds of speech taking up approximately 20K, and a piece of music, up to 30K. The music is of a very high quality though and definitely worth downloading if you're a BBC owner.

One thing to point out, a digitised tune/picture/bit of speech can be played back on an ordinary BBC; the digitizer is not required for playback.

access system to be working within six months.

Musictel 500 specialises in the Music 500 add-on for the BBC, with downloads which require the Music 500 unit to be present for them to run. There will also be information on and for the Music 5000 upgrade unit. I believe this is the newest UK-based Musictel board, and I'd be grateful to hear from anyone with more information.

Egypt is the Musictel network's latest target. A board is due to open up there within a couple of weeks. The number is as yet unknown, but I'll let you know it as soon as I can, for anyone who wants to knock up some *really* long distance calls.

If you're wondering why there's no Musictel 3, then I'll explain. When William Holmes was given the option of joining the Musictel network as Musictel 3, he decided that he preferred the name of Musictel Plus.

I'll bring you updates on Musictel when they occur. As soon as Musictel Egypt is on-line, I'll let you know and give you details on how to dial direct to Egypt and what it will cost.

Musictel boards are designed for advertising purposes. Companies can have an advert on all the boards, Prestel, Teletel in France, Musictel Egypt (when it opens) and the Source in the USA for just £50 a week.

This will enable all the Musictel boards to be upgraded (ie, run on Winchester, faster computers, become multi-user, etc).

This does not mean that when you log on you will see screens and screens of adverts for electrical, computer hardware and software companies and the like, before you even enter your name. Companies wanting more information on advertising can get it by logging on to Musictel or dialling 01-881 6311 for their publicity agents.



All the Musictel boards have downloads of music files for the BBC. I am pretty certain that James is working on having files for other computers available soon. These downloads are not the pathetic tunes of cheap games or type-in listings, but proper, digitised melodies.

A sound digitiser or sound sampler basically listens to a sound, noise or piece of music, and converts it into computer data. The reproductions are as good as if you had recorded the music on to a high quality cassette. In fact they can be better as tapes deteriorate and pick up static and dust.

Digitising devices don't stop at music either, since video digitisers digitise pictures, taken from a video camera or video recorder. The pictures created, if

Musictel Plus, claims William Holmes, will be unusual, with features previously unseen on bulletin boards and he won't say any more!

To find out about the Plus section, you'll have to log on yourself, when Plus goes on-line, which should be very soon. There are plans for some sort of multi-

### The Musictel Boards (more boards are currently being set up)

Name	Number	SYSOP	Location	BBS
Musictel	01-455-0843	James Eckhardt	London	FBBS
Musictel 2	0482-653755	James Lawson	Hull	FBBS
Musictel 4	0695-421493	Guy Oldhams	Liverpool	NBBS
Musictel 500	01-458-9704	Malcolm Carter	London	NBBS
Musictel Egypt	NOT YET OPEN		Egypt	
Musictel Plus	0843-590000	William Holmes	Thanet	FBBS

## TROWBRIDGE COMPUTER SHACK

# ATARI ST YOUR SPECIALIST DEALER FOR WEST OF ENGLAND FULL RANGE OF ST SOFTWARE, PERIPHERALS, IN FACT EVERYTHING FOR THE ST

8 Timbrell Street  
Trowbridge, Wiltshire. Tel: (02214 67299)  
PRESTEL MBX NUMBER 221467299



will offer Royalties or outright  
payments for your best games programs

PROGRAMS FOR:  
COMMODORE 64/128  
COMMODORE C16/PLUS 4  
AMSTRAD 664/464  
SPECTRUM 48K/128K  
ATARI - 8 BITS/520ST/1040ST  
COMMODORE - AMIGA

M.S.X.

I.B.M.

ELECTRON/BBC

+ ALL OTHER HOME COMPUTERS

MIDAS MARKETING LIMITED

35 West Hill, Dartford, Kent.

Tel: 0322-92513/92518

Contact: Paul Godden-Wood

## Evesham Micros PRINTER OFFERS

Check out these offers on top quality dot matrix printers. All the models offered are substantially reduced from the normal high street prices. Prices are fully inclusive of VAT, delivery and lead to suit any computer with centronics parallel printer port. eg. Amstrad, B.B.C., Einstein, Atari ST, Oric, Dragon, Memotech or MSX. For the CBM 64/128 we supply a user port centronics cable. For Spectrum or QL owners an appropriate interface is supplied for an extra £20.00, for Atari models other than the ST an extra £30.00. Delivery is by insured receipted delivery and orders are despatched the next working day after receipt, provided we have stock.

### Micro P. MP165

The best NLQ of any printer in the price range? Many people think so. This particular printer has been very popular recently and should win even more friends at this price. Very highly featured with 165 cps draft speed and a switch selectable NLQ mode at 70 cps. (Manufacturer's figures).

Standard features include friction and tractor feed, 2K buffer, Epson compatibility, quiet operation, and full graphics capability. This printer must offer the highest specification available for the price. Look at these unretouched, actual size print samples.

Superb near letter quality print and high draft speed make the MP165 an outstanding buy at this price. Italics and good underlining along with many other print modes confirms the **FACT**.

THIS MUST BE THE BEST PRINTER OFFER IN THE COUNTRY

**ONLY £219.95**

Price includes printer lead to suit your micro.

Or to suit Spectrum £239.95 including Centronics "E" interface

### PANASONIC KX P1080

Now available at a really competitive price. This printer has a R.R.P. of £245 + VAT. Features are, 100cps; Friction and tractor feed; easy access "dip switches"; easy change long life ribbon and superb switch selectable NLQ mode.

A sample of the impressive N.L.Q. from the Panasonic KX P1080 N.L.Q. available in Elite (12cpi) and italic modes.

Superb value from Evesham Micros  
High quality from Panasonic  
Two names you can trust

**ONLY £199.95**

Price includes Centronics lead to suit your micro.

Or to suit Spectrum with Kempston "E" Interface £219.95

### STAR NL10

New high specification printer just released. All the usual features PLUS easy front panel selection of most modes, semi automatic single sheet feed AND plug in interface cartridges. Choose between standard centronics parallel, IBM, or Commodore. Ideal for Commodore owners who want the convenience of a CBM ready printer but may wish to change later, just buy a new interface cartridge for £39.00.

**OUR PRICE NOW ONLY £259.00**

(state which cartridge required)

### AUTUMN SPECIALS

ATARI 1040ST mono	£799.00	ATARI 1040ST colour	£999.00
(these prices INCLUDE VAT)			
ATARI 520STM c/w SF354	Disk Drive	£449.00	
FREE "THE PAWN" WITH ALL ATARI'S			

CBM 1526 printer	£149.95	LIMITED OFFER
CBM MCS 801 colour printer	£199.95	Complete brand new CBM64 Circuit Boards.
CBM 1541C Disk drive, latest model	£189.95	Repair your own 64, upgrade your Vic 20 or keep as a spare. <b>ONLY £45.00</b>
CBM64C Compendium Pack inc. Mouse, Tape deck, Scrabble, Monopoly, Chess, Claudio, Renaissance and typing tutor	£239.95	CBM 64 Power Pack <b>£24.95</b> CBM Compatible Data Recorders <b>£29.95</b>
All offers subject to availability		

All prices include P&P and VAT. Send cheque, Postal Order or Credit Card No. Credit Card order accepted by phone. Callers welcome. Wide range of goods stocked. Trade enquiries welcome. European orders send price as advertised. Outside Europe £2.00 for airmail. Mail order to Evesham Shop please.

**EVESHAM MICROS**  
BRIDGE STREET, EVESHAM,  
WORCS., WR11 4RY.  
Tel: 0386 41989

**MICRO CENTRE**  
1756 PERSHORE ROAD,  
COTTERIDGE, BIRMINGHAM.  
Tel: 021-458 4564



# CLASSIFIED

Semi-display — £7 per single cc (+ VAT)  
Lineage — 30p per word (+ VAT)

CALL RODNEY WOODLEY on 01-437 4343 FOR SEMI/DISPLAY ADVERTISING

## SOFTWARE

### NEW FROM KBS-INTERACTIVE SOFTWARE

#### 'ENGINE DOCTOR' — FOR EVERYONE

- RALLYING
- MOTOR RACING
- MOTOR CYCLING
- DIY MECHANICS
- THE PERFECT PRESENT

#### 'ENGINE DOCTOR' — THE EXPERT

- DISMANTLE/REBUILD ANY FOUR-STROKE ENGINE
- STEP-BY-STEP SCREEN AND PRINTER TIPS
- BRIDGES THE MAINTENANCE MANUAL GAP
- PRINTS OUT ENGINE CHECK LIST
- PRINTS 'SHOPPING LIST' OF SPARES NEEDED

#### 'ENGINE DOCTOR' — FOR MOST HOME MICROS

- GOOF-PROOF
- JARGON FREE
- IN SCHOOLS
- IN COLLEGES
- INVALUABLE

**All this for just  
£49 inclusive**

If those aren't good enough reasons for buying 'Engine Doctor' for yourself (or as a present) . . . here is another!

For every 'Engine Doctor' order enclosing a KBS corner tab we will deliver a bouquet of flowers to anyone in mainland UK!

**GO ON . . . BE A  
BIG SOFTIE!**

#### ORDER CHECK LIST

- ORDER ADDRESS
- FLOWERS ADDRESS
- USER FORMAT
- CHEQUE/P.O.

## KBS-INTERACTIVE SOFTWARE

**FREPOST,  
NEWCASTLE HOUSE,  
HIGH SPEN, NE39 2BL. Tel: 0207 543053**

**KBS**

#### FOR SALE

#### YOUR PERSONAL CENTRONICS PRINTER



- FAST 50/100cps FAST
- DRAFT MATRIX PRINT
- NEAR LETTER QUALITY
- SUBSCRIPT SUPERCRIPT
- CONDENSE EMPHASISE
- 96 CHAR+48 EURO+16 MATHS
- EPSON/IBM PC GRAPHICS

128 Station Rd  
Glenfield  
Leicester  
LE3 8BR

TEL (0533)

**313531. ROCK HALL**

**ORIC ATMOS** plus books, tapes and programs from mags £70 o.n.o. Atari VCs plus 20 cartridges £40 o.n.o. C64 software for sale all original 50p to £4. Ring for details ask for Andy 0689 73663.

#### SOME FABRIC RIBBON RE-INKING PRICES

Printer	Price £ p	Printer	Price £ p
Amstrad DMP1 & 2000	2.00	Amstrad PCW8256	1.90
Brother M1009	1.35	Canon 1080	1.80
Commodore 4023	1.75	Epson FX80	2.05
Epson LX80	1.30	Kaga Taxis K2B10	1.80
Sekissha GP505	2.05	Shinwa 4023	1.75
Silver Reed EX44	1.95	Smith Corona D200	2.15

If your used fabric printer ribbon is not on this list, send it with £2.00 and we'll re-ink it and quote future prices.

ALADDINK, (Dept PC), 4 Hurkar Crescent, Eyemouth, Berwickshire TD14 5AP (280)

#### HOME ACCOUNTS

Put your house in order! Probably the best home use for your computer! Comprehensive coverage of bank accounts, credit cards, HP, standing orders etc. Inbuilt accuracy check for all transactions. Cashflow projection. For all Amstrads, Commodores and Spectrums.

£9.95 or FREE details from:

**DISCUS,  
FREEPOST,  
ILFORD IG1 1BR  
Tel: 01-514 4141  
(24 hours 'live')**

(15)

#### SOFTWARE MAILBAG

SPECTRUM 48K	RSP PRICE	OUR PRICE	COMMODORE	RSP PRICE	OUR PRICE	AMSTRAD	RSP PRICE	OUR PRICE
Ghost and Goblins	7.95	6.70	Ghost and Goblins	9.95	6.80	Ghost and Goblins	9.95	6.80
Green Beret	7.95	6.70	Indra Alpha	8.95	6.45	Green Beret	8.95	6.80
Paper Boy	7.95	6.70	Alleykat	8.95	6.45	Leaderboard	8.95	6.80
Split Personalities	7.95	6.70	Parallax	9.95	6.45	Jack the Nipper	8.95	6.45
Jack the Nipper	7.95	6.70	Tau Cent	9.95	6.80	Knight Games	9.95	6.80
Highlander	7.95	6.70	Infinitor	9.95	6.80	Highlander	8.95	6.45
Ace	9.95	6.80	Leaderboard	9.95	6.80	Power Play	9.95	6.80
Zythum	7.95	6.70	Jack the Nipper	8.95	6.45	Paper Boy	8.95	6.45

All prices include free fast delivery and same day despatch when available. Cheques/P.O.s payable to SOFTWARE MAILBAG, Wharfedale, Oakham, Rutland LE15 8QZ (Overseas add £1 for P&P) (58)

#### BLANK CASSETTES

##### WITH LIBRARY CASES

	C10	C15	C20	C30
10	3.80	4.00	4.15	4.50
20	7.00	7.20	7.40	8.20
50	15.00	15.20	15.90	17.50
100	27.00	28.00	29.00	33.00

Fully Inclusive (COD 65p extra)

Superior Tapes. Don't Settle for Less!

#### DISKS

10 5 1/2 DS/DD £8  
inc plastic case  
10 3 1/2 SS/DD £17

#### MEMOTECH COMPUTERS AND ACCESSORIES

MTX 512 COMPUTER	£75.00
DMX 80 PRINTER	£150.00
RS232	£35.00
PASCAL ROM	£35.00
SPECULATOR ROM	£35.00
1 mb. DISK DRIVE & INTERFACE	£150.00
1 mb. DISK DRIVE & INTERFACE	£210.00

All the above prices are fully inclusive. We stock the entire Memotech Range. Orders/Enquiries to:

**UK HOME COMPUTERS  
62 CHURCHWARD AVE BATHON  
WILTS. BA2 1BH  
24-hr Phone Service 0793 085034 31PL27**

#### 400/800 XL/XE LOOK ATARI OWNERS

Are you having difficulty finding suitable software? If so, then look no further. We have available for both UK and American titles to choose from. Games and Utilities for all ages. Hardware and add-on utilities at discount prices and special deals regularly being offered. If you would like further information please send a large S.A.S. 10.

**CHARWOOD PRODUCTS AND GAMES  
80A Warwick Avenue, Queens, Loughborough  
Leicestershire LE12 8HD  
Tel: 0509 412804**

#### QL - WORLD CHESS

Got Psion Chess? You have got the best programme. Now get the best games. All 24 games of the 1986 World Chess Championship on microdrive, with analysis.

Send £5 cheque/P.O. to:

**P. CRADDOCK,  
P.O. Box 88,  
Twickenham TW2 5BR**

(81)

# TOP COMPUTER GAMES

IBM 64/128	£	AMSTRAD	£	SPECTRUM	£	MSX	£
Thai Boxing	5.50	Sam Fox Strip Poker	5.50	Timetrax	6.00	Any Ultimate	5.90
Green Beret	5.00	Batman	5.50	Stainless Steel	5.00	Macadam Bumper	5.00
Miami Vice	5.00	Way of the Tiger	6.00	Green Beret	4.00	All Konami Roms	11.95
1942	6.60	Paperboy	5.50	Batman	4.00	Way of the Tiger	6.00
Paperboy	6.60	Saboteur	5.50	Kung Fu Master	4.00	Boulder	6.00
Super Cycle	6.60	Knight Games	5.50	Barry McGuigan	5.00	Zoids	6.00
Infiltrator	5.50	Movie	5.50	Trivial Pursuit	6.00	Jack the Nipper	6.00
Alleykat	5.50	Lord of the Rings	10.00	T.T. Racer	5.50	Int Karate	4.95
War	6.60	Tomahawk	7.00	Split Personalities	5.00	MSXTRA (Compilation)	8.00
Trivial Pursuit	8.00	Elite + Trimmer	10.00	Any Ultimate	6.00	Sam Fox Strip Poker	7.00
Fist 2	7.50	Jack the Nipper	6.00	Dragon's Lair	5.00	Oils Well	6.00
Leaderboard	5.50	Rambo	5.50	Rasputin	4.00	Exploding Fist	6.50
Saboteur	5.00	Ghosts 'n' Goblins	5.50	Yie Ar Kung Fu	5.45	Lazy Jones	4.95
Streethawk	5.00	Dan Dare	7.00	Super Bowl	7.00	Dambusters	7.00
Way of the Tiger	5.00	Nightgunner	6.00	Gunfight	7.00	Hobbit	10.00
Graphic Adventure Creator	12.95	Cauldron 2	6.00	Tomahawk	7.50	Valkyrie (with speech)	6.00
Ace	5.00	Super Cycle	7.00	The Pawn	6.25	Confused	7.95
Hacker 2	6.50	Tau Cati	6.00	Turbo Esprit	6.00	Price of Magic	7.00
Sanxion	6.50	Return to Oz	7.00	Gerry the Germ	6.95	North Sea Helicopter	6.00
Footballer of the Year	6.50	Rebel Planet	7.00	Combat Lynx	5.95	The Boss	4.00
Droids	5.50	Rock 'n' Wrestle	5.00			Minder	6.00
Crystal Castles	6.00	Trivial Pursuit	8.00			Hole-in-One	10.00
Movie Monster	6.00	Vera Cruz	6.00			Ninja	5.95
It's a Knockout	5.50	'V'	6.00			Eddie Kidd	5.00
Uchi-Mata	7.50	Galvan	5.50			Mandragore	10.00
Biggles	6.00	Winter Games	9.00			Snooker	5.00
Bombjack	4.95	Super Bowl	6.50			Way of the Fighter	6.50
Cauldron 2	6.00	Turbo Esprit	6.00				
Ghosts 'n' Goblins	6.00	Swords and Sorcery	6.00				
Lord of the Rings	9.95	Yie Ar Kung Fu	5.95				
Spindizzy	6.00	Combat Lynx	6.50				
Combat Lynx	6.50						
Hardball	6.00						
Dragon's Lair	5.50						
Rogue Trooper	6.00						
Jack the Nipper	5.50						
Strike Force Cobra	6.00						
Trap Door	5.50						
Sam Fox Strip Poker	5.50						
Knight Rider	5.00						
Pub Games	6.00						
Dambusters	7.00						
Elite + Trimmer	9.00						
Freeze Frame (Cart.)	30.00						

ALL ORDERS SENT WITHIN 14 DAYS. PLEASE MAKE CHEQUES/P.O.s PAYABLE TO G. JOHNSON

## JOHNSON ENTERPRISES

262A UTTOXETER ROAD, LONGTON, STOKE-ON-TRENT, STAFFORDSHIRE ST3 5QL

(68)

## POOLSMASTER

GUARANTEED WINS • GUARANTEED WINS • GUARANTEED WINS

ASIRUS SOFTWARE presents the most up to date method for winning the POOLS ever devised. So much so that the company has decided to LIMIT the number of copies available to 3,000 which means it is FIRST COME FIRST SERVED. Whatever method you have used in the past, whether it be FORM, MAGIC NUMBERS, or UP DATING OF DATA you can now forget: WHY: because POOLSMASTER eliminates all CHANCE, giving you a method which can be used ALL YEAR ROUND, with consistent returns of DIVIDENDS.

Developed over the past 2 years accuracy was our aim in finding a WINNING method, we did it, and called it POOLSMASTER. Coupled with easy to follow on screen instructions, which enables the user to see how POOLSMASTER operates, and why it works, and also showing how to STAKE and PERM your coupons to give MAXIMUM returns, making it a complete package.

To obtain a copy of POOLSMASTER, and remember there are only 3,000 copies available, fill in the form below and together with a remittance of £30 send to:

ASIRUS SOFTWARE  
54 Doverhouse Road, Putney,  
London SW15 5AU

POs/cheques payable to  
ASIRUS SOFTWARE price  
includes POST and PACKAGE

### GUARANTEE

ASIRUS SOFTWARE guarantees that POOLSMASTER will give you a winning dividend/dividends within 12 weeks or less. Should POOLSMASTER not perform as stated above, then return the program for a £30 refund.

POOLSMASTER is available for: ALL SPECTRUMS, ALL AMSTRAD CPCs, ALL BBCs, and COMMODORE 64/128 (all programs supplied on cassette)

I enclose cheque/P.O. for £.....

NAME .....

ADDRESS .....

Postcode .....

Computer .....

PLEASE ALLOW UP TO 28 DAYS FOR DELIVERY

POOLSMASTER © 1986

LIMITED  
EDITION

## WINDOS II.

The most comprehensive graphics package for the ZX Spectrum (48 K). Features all the tools you need to write WIMP programs -

Graphics windowing,  
Get and put for screen manipulation,  
A joystick/keyboard driven pointer, under interrupt control,  
Plot, Draw, Circle, Paint, Box commands, with many different plotting modes, eg. shading,  
ANY style of printing possible, of ANY size,  
Sinclair control code compatible,  
All commands available through PRINT.

Also included is a fully comprehensive 22 page manual, and two programs which demonstrate the power of WINDOS II -

IKE, a fully featured character designer for use with WINDOS II. It can help you design complete character sets of any size character upto 24x24 pixels, and icon banks which are a feature of WINDOS II which let you handle icons easily.

DOODLE, a fully featured artist program, which, like IKE, features pull-down menus and icons. Written in BASIC it is designed to show how WINDOS II can be used to produce the most professional look without recourse to machine code! It is also very useful in itself - this ad was prepared using it.

The price is an amazing £12 for the lot!  
If you need more convincing, send us an SAE for more details, or if this is not necessary send a cheque/P.O. to

WINDOSOFT Dept PoCM,  
32, York Road,  
Maidstone,  
Kent. ME15 7PY

# FRONT

# PAGE

FOR THE QL  
BY  
GAP  
SOFTWARE

DESK-TOP PUBLISHING  
FOR THE SINCLAIR QL

## HERE IS A SUMMARY OF THE FACILITIES:

- 800x800 pixel drawing area
- Supports all QL text sizes.
- Alternative font.
- Very simple text entry.
- User-defined graphics on 8x8 square.
- Freehand graphics.
- Cut and paste.
- Load and save full and part screens.
- Up to 80 lines and 133 columns.
- Load your own screens.
- Supports floppies, ramdisks, etc.

This advertisement  
was prepared with  
FRONT PAGE

FRONT PAGE  
=====

...is supplied as  
two cartridges and  
a user manual. It  
is complete, ready  
to use. Now it is  
possible to try  
desktop publishing  
for yourself for  
only

**£22-50!**

Of course, once you  
have created your  
masterpiece, you  
will want to print  
it. FRONT PAGE has  
a built-in routine  
to print. It allows  
Epsons and Epson-  
compatibles to do a  
full A4 page. And  
you can customise  
it for your own  
system, as well!

Yes, the QL can now do  
desktop publishing, and  
can do it economically!

FRONT PAGE allows you to  
do something USEFUL with  
your QL. Design your own  
artwork, produce your  
Company newsletter, make  
up leaflets quickly.

AND DO IT ECONOMICALLY!

FRONT PAGE is:

FULLY MENU DRIVEN  
SELF-CONTAINED  
VERY EASY TO USE  
AND ECONOMICAL

REMEMBER WHERE YOU READ  
IT FIRST-ON FRONT PAGE!

GAP SOFTWARE, 17 ST. JOHN'S TCE, LONDON, E7 8BX: 01-552-5452

P&P INCLUDED FOR UK AND EUROPE. ADD £1-00 FOR OUTSIDE EUROPE

## Oberon International OMNI-READER™ £39.99

*Including VAT, Postage and packing*

The Omni-Reader is a new and easier alternative to typing in data. By using advanced character recognition techniques the Omni-Reader can read printed text and send it to the computer as though the information was coming from a modem.

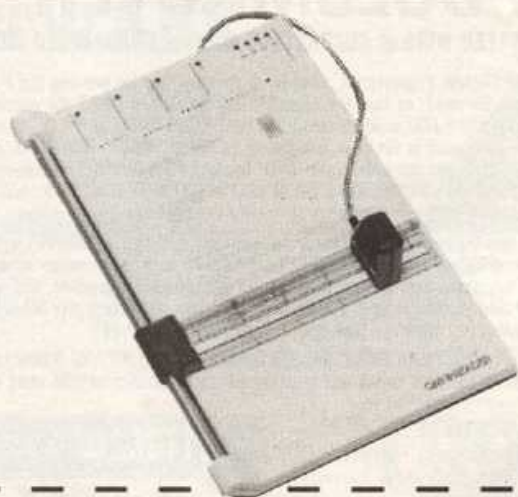
The vast majority of office correspondence can be read by the Omni-Reader which supports the four major types used. These are Courier 10, Courier 12, Letter Gothic and Prestige Elite. To enter a page of text you place it under the special Omni-Reader ruler and read the text with an electronic eye. A small computer within the Omni-Reader then translates those images into standard ASCII text.

Any computer with a standard RS232 port can make use of the Oberon Omni-reader, all you need is some communications software and the cable for your computer.

Cables available for BBC Microcomputers, Sinclair Spectrum 128 and Spectrum +2 with machine specific instructions. Only £11.75

Cable and simple terminal software available for Atari ST. Only £19.95

Standard RS232 cable for IBM, Apricot and Amstrad only £14.95



To: Omni-Reader Sales, Metroheath Ltd, 287-289  
Whitechapel Rd, London E1.

Please send me... Omni-Reader(s) at £39.99 each

..... IBM/Apricot cables at £14.95 each

..... Atari ST cables and software at £19.99 each

..... BBC Cables at £11.75 each

..... Spectrum 128/Spectrum +2 cables at £11.75 each

Name .....

Address .....

Make Cheques and postal orders to Metroheath Ltd,

*Please allow 28 days for delivery.*



**spectrum**  
GROUP MEMBER

OPEN 6 DAYS  
LATE NIGHTS THURS, FRI

All titles of Software stocked for QL & Spectrum

**MICROSNIIPS**  
37 SEAVIEW ROAD  
WALLASEY  
MERSEYSIDE  
L45 4QN  
(NEXT TO TSB)  
051-630 3013

Spectrum Plus	£89.95	Sinclair ZX printer rolls	£11.95
Spectrum Plus pack	£129.95	(thermal) pack	£5.95
Spectrum 128 inc 2 games	£139.95	Timex 2040/Alphacom 32	£8.95
Spectrum 128 pack	£179.95	5 pack	£7.99
Vitaton data recorder	£20.95	11" x 9 1/2" tractor feed	£7.99
Spectrum 2 jack to 2 jack	£1.59	1000 sheets	£3.99
recorder lead	£4.99	Brother M1009 ribbons	£5.95
Robcom head alignment tape	£6.95	DMP 2000 ribbon	£6.99
Microdrive expansion cable	£59.95	Currah microslot	£6.99
Rotronics wafadrive	£59.95	Vulcan gunshot I	£10.99
Beta disk interface	£114.95	Konix speedking	£12.99
New discovery disk drive	£85.00	The Stick (Mercury tilt)	£13.99
for Spectrum 48/128	£1.99	Datex (steel shaft)	£13.00
Kempston new disc interface	£22.95	DK Tronics dual port	£12.95
(inc built in reset switch)	£7.50	DK Tronics programmable	£9.95
Microdrive cartridges	£3.99	joystick interface	£18.50
Microdrive cartridges 4 pack	£4.99	Games player with slo-mo	£16.95
in case	£9.50	DK Tronics single port	£12.95
128K Wafa for Rotronics	£4.99	RAM Turbo dual port inc ROM port	£39.95
Microdrive storage box	£4.99	& reset	£69.95
Disk notcher	£9.50	Kempston pro joystick	£12.95
Axiom 5 1/4" DSDD for 10	£29.95	interface	£12.95
Spectrum to monitor	£2.99	QL joystick interface	£29.95
interface	£1.59	Tri-state joystick interface	£39.95
Q.L. to microvitec	£99.95	DK Tronics keyboard	£39.95
Computer to T.V.	£149.95	Saga 1 emporor	£39.95
Brother HR5 printer	£39.95	Lo-Profile	£69.95
(centronics)	£39.95	Saga Elite	£69.95
Welco DMP 1100 printer	£29.95	AMX/or Kempston Mouse (inc.	£69.95
(centronics)	£19.95	free art pack)	£29.95
Kempston centronics 'E'	£19.95	Spectrum light pen	£29.95
interface	£19.95	Spectrum digital drum	£19.95
D.K. Tronics 56W lead	£29.95	system	£19.95
QL to Epsom (serial)	£29.95	Currah speech	£29.95
Spectrum to Epsom (INT-I	£29.95	3 channel sound	£29.95
serial)	£29.95	Prism VTX 5000 modem	£29.95
Spectrum to Brother	£29.95	Spectrum power supply	£29.95
Rotronics RS232C serial or centronics	£29.95	(inc post)	£29.95
cable for wafa drive	£29.95	Spectrum reset switch	£29.95
Brother HR5 thermal paper	£29.95	Spectrum plus reset	£29.95
Brother HR5 paper	£29.95	Romantic robot "multiface"	£29.95
PLEASE QUOTE (PCW)		back-up utility	£29.95

\* SEND STAMPED SAE FOR FULL PRICE LIST \*

**INSTANT CREDIT UP TO £1,000.00** SUBJECT TO STATUS



MAIL ORDER Cheques/P.O. payable to: MICROSNIPS  
add 5p in £ postage (24 hour Ansaphone)

**VDU OPERATORS DO IT  
WITH A**

**THINGi**  
computer copy holder

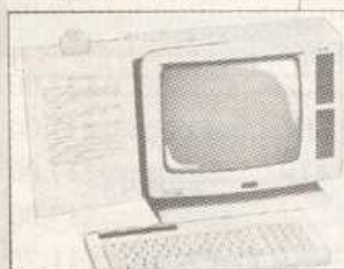
BUSINESS

IDEA OF THE YEAR

OUTRIGHT WINNER

ADVERTISE YOUR  
BUSINESS HERE

Makes an Ideal Christmas Gift  
- Everybody needs a Thingi!  
☐ Unique Velcro Fastening



The Thingi creates working  
space out of 'thin air'.

- ☐ Left hand or right hand versions.
- ☐ What colour clip do you want?
- ☐ The affordable copy holder that suits your needs.

Don't struggle any longer -  
GRAB YOUR THINGI NOW !!!

Your nearest Stockist is:  
**OVERBASE LTD.**  
Contact George Smiley,  
116a Conway Street  
Birkenhead, Wirral L41 3JB  
Tel: (051) 647 8961  
Telex: 265871 MONREF-G  
Mail Box 72, MAG-10590

R.R.P.  
**£6.99**  
inc. VAT  
and P&P

ANOTHER GREAT BRITISH PRODUCT EXPORTED WORLDWIDE • TRADE ENQUIRIES WELCOME

## SUMMER PRICES HELD UNTIL OCT. 31st

### AMSTRAD PCW8256/8512

#### Hardware

256K RAM expansion quality tested components only	£25.00
Quality soft PVC Dust Cover Set only	£7.98
Printer ribbon	£5.60
2nd Disk drive	£145.25
CF2 Disks	each £3.90
CF2 Disks box of 10	£36.25
2 Ribbons	£10.95
HARD DISK. PHONE FOR DETAILS	
RS232/Centronics	£56.95

#### Software

Powerful	dBASE 11	£99.95
Versatile	DELTA	£91.00
Comprehensive	CAMBASE 2	£40.44

**PLEASE PHONE FOR ADVICE ON THE RIGHT DATABASE FOR YOU**

MAP Integrated Accounts	£125.50	CAMSOFT Integrated System	£136.45
Cracker 2	£42.88	Scratchpad Plus	£58.25
Pocket Wordstar	£42.20	Newword 2 & Word +	£60.38
Prospell	£24.99	Typing Tutors: Touch 'N' Go & IANKEY	£21.80
Brainstorm	£44.95	Smartkey	£44.95
DR CBASIC, DR PASCAL, DR DRAW, DR GRAPH		CHIT CHAT Combo	£87.99
		3D Clock Chess	£12.94

Quantity discounts available with 2 or more software packages

#### SINCLAIR QL

Super Q Board 512K NOW WITH THE EXCELLENT TOOLKIT 2	£239.00
Super Q Board 512K with dual 3 1/2" NEC Drives	£444.00
512K Expanderam	£115.00
10 x 3 1/2" DS/DD disks	£25.00
Serial cable	£6.75

#### NEW ITEMS FOR PCW

Music & Sound Generator	£34.99	Joystick Interface	£12.49
Electric Studio Light Pen	£69.99	Printer Extension	£11.95

We now stock quality software and hardware for the BBC and IBM PC. Send S.A.E. for details

Prices include VAT & POSTAGE

PHONE FOR FURTHER DETAILS

All products are offered subject to availability

## PERIPHERY

117 GAINSBOROUGH AVENUE, OLDHAM OL8 1AJ.

TELEPHONE: 061-626 5802

(39)

# SINCLAIR COMPUTER REPAIRS

- ★ SPECTRUM/PLUS COMPUTER REPAIRS ..... £12.00  
(Special Offer)
- ★ SPECTRUM (RUBBER KEYBOARD) REPAIR ..... £8.50  
(Special Offer)
- ★ SPECTRUM PLUS KEYBOARD REPAIR ..... £12.00  
(Special Offer)

SPECTRUM 16K/48K AND KEYBOARD REPAIR ..... £20.00

SPECTRUM PLUS AND KEYBOARD REPAIR ..... £23.00

INTERFACE ONE REPAIR ..... £17.00

INTERFACE TWO REPAIR ..... £17.00

MICRODRIVE REPAIR ..... £17.00

SPECTRUM/PLUS POWER PACK ..... £11.75  
(with new replacement)

COMMODORE C64, C16/PLUS 4 VIC 20 ..... Price on application

All prices are fully inclusive of labour, parts, postage and packing, and VAT. Send cheques or postal orders with computer only, unless power pack suspected.

CALLERS MOST WELCOME. OPEN 9.00 AM-6.00 PM  
MONDAY-FRIDAY (67)

## I. T. WESTERN ELECTRONICS

UNIT F2A & F3, AVONSIDE ENTERPRISE PARK,  
NEWBROUGHTON ROAD, MELKSHAM, WILTS. TEL: (0225) 705017

# THE REPAIR MAN



... and his team of computer repair specialists are here to offer a complete professional service.

**WE SELL  
HARDWARE**

**WE SELL  
SOFTWARE**

Spectrum £19.95 incl. parts  
Commodore 64 £29.95 incl. parts  
BBC £29.95 incl. parts

We also repair Amstrad, Oric, Atari, QL, Vic 20, Printers, Disc drives etc.

- ★ 6 MONTH GUARANTEE
- ★ FAST TURN AROUND
- ★ WHILE-U-WAIT SERVICE
- ★ DIY COMPONENTS

## ZEDEM

COMPUTERS LIMITED

2 Kimbolton Road  
Bedford MK40 2NR

Call (0234) 213645/213032 7 days a week 24 hr. answering service

# FAULTY SPECTRUM?

As you are probably aware from press reports Sinclair Computers no longer have a repair department.

Our computer repair workshop has been an OFFICIAL Sinclair Repair Depot for the past six years and we are pleased to announce that we will continue to do your out of guarantee repairs as in the past.

Send your faulty computer DIRECT

SPECTRUM .....	£18.75 inc parts
ZX81 .....	£11.50 inc parts
16K RAM .....	£9.95 inc parts
MICRODRIVE .....	£15.95 inc parts
INTERFACE 1-11 .....	£18.75 inc parts

CALL OR SEND WITH CHEQUE OR P.O.

**T.V. SERVICES OF CAMBRIDGE LTD**  
FRENCH'S ROAD, CAMBRIDGE CB4 3NP  
Tel: 0223 311371

26TV

# CHRISTMAS SPECIAL OFFER

PRICES INCLUDE VAT, P & P

SPECTRUM 128+2 GIFTPACK	£145.00
SPECTRUM 128+2	£135.00
AMSTRAD CPC6128 (colour)	£360.00
AMSTRAD PCW8512	£520.00
AMSTRAD PCW8256	£420.00

ALL AMSTRAD ACCESSORIES AVAILABLE

MAIL ORDER CUSTOMERS PLEASE MAKE CHEQUE PAYABLE TO:

## NEWCROWN COMPUTERS LTD

98-100 HIGHTOWN ROAD,  
LUTON, BEDS LU2 0DQ (U.K.)

TEL: 0582 455684

**REPAIR** FOR FAST RELIABLE SERVICE  
**SPECTRUM** ..... £16.00  
(INC. PART, VAT, P & P)

WE ALSO REPAIR COMMODORE, ORIC, VIC 20, BBC, AMSTRAD, ALL OTHER PRINTERS, INTERFACES AND DISC DRIVES WITH 3 MONTHS' WARRANTY ON REPAIR. SEND COMPUTERS WITH DETAILS OF FAULT AND A CHEQUE (61)

## FAST COMPUTER REPAIR CENTRE - IN LONDON

\*BBC Micro, Commodore, Spectrum  
\*Amstrad, Others

\*We sell spare parts  
\*Used Micros bought and sold  
\*Epm Programming Service

Phone: 01-863 7166

## PROMPT ELECTRONICS

Unit 4, 15 Springfield Road,  
Harrow, Middx HA1 1QF  
(entrance in Amersham Road) (70)

## SCOTLAND'S No1

for home and personal computer repairs  
specially fast spectrum service!

- ★ Same day for most faults
- ★ 1 hour if delivered personally
- ★ Free estimates
- ★ Upgrades, Membranes and P.S.U.'s
- ★ 3 mth. warranty on work done
- ★ Open 6 days a week

Also BBC/CM/ORIC and PERIPHERALS

## MICRO-SERV

95 Deerdrykes View  
Westfield Industrial Estate  
Cumbernauld  
Tel: Cumbernauld 02367 37110  
Trade, schools and club discount given  
PL442A

## CASSETTE COPIES

50 C10's FOR ONLY £40 INC. P + P  
FROM YOUR CASSETTE MASTER  
IN REAL TIME. PLEASE PACK  
IN FOIL AND SEND CHEQUE TO:—

SOUNDS GOOD  
CLEAR CROFT, BOTTOM LANE,  
SEER GREEN, BUCKS HP9 2UH.  
TEL: (04946) 5900

28PD3

## DUPLICATION

### SIMON STABLE PROMOTIONS CASSETTE DUPLICATION

Competitively priced service of DATA-DUPLICATION. Comprehensive facilities includes blank or printed cassettes, discs, labels, inlays; also bar-code printing. PRICE LIST FROM:

The Knightsbridge Stables  
20 West End, Launton, Oxon OX6 0DF.  
Tel: 0869 25 2831 (73)

# There's a Dealer near you . . .

## ESSEX

### ESTUARY PERSONAL COMPUTERS

318 CHARTWELL NORTH  
VICTORIA CIRCUS SHOPPING CENTRE  
SOUTHEND ON SEA  
Tel: (0702) 614131

PL484

## NOBLES

14-17 EASTERN  
ESPLANADE  
SOUTHEND-ON-SEA,  
ESSEX  
Tel: (0702) 63377/8

PL808

## GLASGOW

THE COMPUTER DEPOT  
205 BUCHANAN STREET  
GLASGOW G1 2JZ  
Tel: (041) 332 3944

PL705

## MEGABYTE

12 ETTRICK SQUARE  
CUMBERNAULD  
G7 1ND  
0236 738398

(58)

## INTERCHIP

3 MILLER STREET  
GLASGOW  
Tel: 041-248 6667  
Dealers for Amstrad/Atari  
and PC clones

(290)

## SCOTLAND

### FOR BARGAIN DISCS

CALL

### GRABACOIN

9 LOW ROAD,  
CASTLEHEAD,  
PAISLEY,  
SCOTLAND  
PA2 6AQ  
Tel: 041-889 0885

(64)

## LEEDS

### MICROPOWER

NORTHWOOD HOUSE  
NORTH STREET  
LEEDS LS7 2AA  
Tel: (0532) 458800

PL883

## LONDON

### GALLERY SOFTWARE

1st FLOOR  
THE ARNDAL CENT,  
WANDSWORTH,  
LONDON SW18  
Tel: 01-870 4941

27PL29

## LIVERPOOL

### NABITCHI COMPUTING

SPECIALISTS IN AMSTRAD  
PCW8256 - PCW8512  
SOFTWARE & HARDWARE

MERSEYSIDE INNOVATION CENTRE

131 MOUNT PLEASANT  
LIVERPOOL L3 5TF  
051-709 0123/708 8775

Software Design Service Available

28PL1

### Microbyte

We talk business, not bits & bytes  
NO. 1 ON MERSEYSIDE FOR  
ATARI AND AMSTRAD  
71 SEAVIEW ROAD, WALLASEY,  
MERSEYSIDE L45 4QW  
(051) 630 6933/638 1420  
10 am - 6 pm

MAIL ORDER  
SERVICE AVAILABLE

(310)

## YORKSHIRE

### YORK COMPUTER CENTRE

7 STONEGATE ARCADE  
YORK  
Tel: (0904) 641862

PL816

## SURREY

### ULTIMA

UNIT 28

WHITE LION WALK

GUILDFORD

(0483) 506939

26PL102a

## NORFOLK

THETFORD MICROS  
SPECIALISTS -  
COMPUTER REPAIRS  
21 GUILDHALL STREET  
THETFORD  
NORFOLK  
(0842) 61645

PL812A

## FOR SALE

**SPECTRUM PLUS**, interface one,  
two microdrives, AMX mouse, Phillips  
monitor, 30 cartridges, Tasword  
three, accounts, plus masses of other  
software. Giveaway price £250 or will  
split. Tel: Dawson 0252 710157  
evenings.

## DISCS

3" per 10 inc. ind. cases	£33.0
AMSOFT/PANASONIC CF2	
3½" per 10 inc. box and labels	
MAXELL SSDD MF100	£22.43
MAXELL SSDD MF200	£32.83
VERBATIM SSDD MF350	£19.98
SONY SSDD D3440	£19.99
5¼" per 10 inc. box and labels	
ATHANA SSDD 40t A20	£9.66
MAXELL SSDD 40t MD10	£13.66
MAXELL SSDD 40t MD20	£18.54
MAXELL SSDD 80t MD200	£22.86
VERBATIM SSDD 40t 525	£12.80
VERBATIM SSDD 40t 250	£12.65
VERBATIM SSDD 40t 550	£15.67
VERBATIM SSDD 80t 557	£19.99
UNBRANDED SSDD 40t OC20	£8.99

Prices inc. VAT and P&P (66)

**RUGBY MICRO SPARES**  
30 OXFORD ST, RUGBY  
CV21 3NF (0788) 71643  
Callers welcome by App.

## COMPUTER HIRE

TO HIRE A COMPUTER AND/OR  
PERIPHERALS BY THE WEEK OR MONTH  
RING 01-607 0157 or 01-997 6457  
WE SPECIALISE IN BBC AND ALSO HAVE  
A RANGE OF AMSTRAD COMPUTERS FOR  
HIRE

COMPUTER HIRE SERVICES  
294A CALEDONIAN ROAD  
LONDON N1 1BA

(9)

## FOR SALE

## LOW PRICES-HIGH QUALITY

### 5.25" BRITISH MADE FLOPPY DISKS

	Track	10-99	100-249	250+
SS/SD	40	£0.59	£0.54	£0.50
SS/DD	80	£0.69	£0.60	£0.55
DS/DD	40	£0.82	£0.73	£0.69
DS/QD	80	£0.88	£0.82	£0.75

### INTRODUCTORY OFFER

For every ten ordered, we will send you twelve!  
These prices include hub rings, envelopes, labels  
and write protect notch tabs.

To ensure the high quality of these disks, every track and  
sector has been tested and is certified equal to, or in  
excess of every Disk Standard.

### 3.5" DISKS-packed in tens with FREE Plastic Library Case.

SS	135 tpl	£9.50	£18.00	£16.00
DS	135 tpl	£25.00	£23.00	£21.00

Free delivery - All orders despatched within 24 hrs  
Add VAT at 15%

**Our Quality Guarantee:**  
Lifetime Warranty - two for one or money  
back if not satisfied

How to order: Cheque/Postal Order with order to:

## Longworth Ltd

31 Bridge Street, Newport, Gwent NP9 4BH.  
Tel: (0633) 52538 24 hour answering service

John Cook looks through this week's new arrivals



## Amstrad CPC

**Program** *Trap Door Type* Arcade/Strategy **Micro** Amstrad CPC **Price** £7.95 **Supplier** Piranha, 4 Little Essex Street, London WC2R 3LF.

**Program** *Camelot Warriors Type* Arcade **Micro** Amstrad CPC **Price** £8.95 (tape) £14.95 (disc) **Supplier** Ariolasoft, 68 Long Acre, Covent Garden, London WC2E 9JH.



**Program** *Firelord Type* Arcade **Micro** Amstrad CPC **Price** £8.95 (tape) £14.95 (disc) **Supplier** Hewson, Hewson House, 56b Milton Trading Estate, Milton, Abingdon, Oxon OX14 4RX.

**S**teve Crow's first after his defection from Bubble Bus, this is first rate arcade adventure – if you're in the market for that kind of thing. 500-odd screens to explore – there's certainly plenty to do, although you might think it looks a bit dated.

**Program** *Popeye Type* Arcade **Micro** Amstrad CPC **Price** £7.95 **Supplier** Piranha, 4 Little Essex Street, London WC2R 3LF.

**Program** *Infiltrator Type* Arcade **Micro** Amstrad CPC **Price** £9.99 (tape) £14.99 (disc) **Supplier** US Gold, Unit 2/3, Holford Way, Holford, Birmingham B6 7AX.

**Program** *Beach-Head II Type* Arcade **Micro** Amstrad CPC **Price** £9.95 (tape) £14.95 (disc) **Supplier** US

Gold, Unit 2/3, Holford Way, Holford, Birmingham B6 7AX.

**Program** *Frost Byte Type* Arcade **Micro** Amstrad CPC **Price** £8.95 (tape) £13.95 (disc) **Supplier** Mikro Gen, Unit 15, Western Centre, Bracknell, Berks.

**Program** *Computer Hits 3 Type* Compilation **Micro** Amstrad CPC **Price** £9.95 **Supplier** Beau-Jolly, 29a Bell Street, Reigate, Surrey RH2 7AD.

**A**nother bunch of games from Beau-Jolly, the K-Tel of the computer games industry. There is some good stuff here – *Cauldron* from Palace, *Dynamite Dan* from Mirrorsoft, *Herbert's Dummy Run* from Mikro Gen. Ten in all, if you've just bought yourself an Amstrad and need a few games, buy it.

## Amstrad PCW

**Program** *Documentor Type* Application **Micro** Amstrad PCW **Price** Software + Manual £45.95, Software + Manual + Mouse £99.95 **Supplier** Python Microsystems, Unit 9, The Maltings, High Street, Burwell, Newmarket, Cambs.

## Atari

**Program** *Vietnam Type* Strategy **Micro** Atari XE/XL **Price** £14.95 (disc only)



## Fantastic adventure

**Program** *Thanatos Type* Arcade/Adventure **Micro** Spectrum **Price** £9.95 **Supplier** Durell Computers, Castle Lodge, Castle Green, Taunton, Somerset TA1 4AB.

**F**antasy arcade adventure are a bit old hat – generally you are Head Pixie and must fight against the Evil One or collect the Lost Amulet of Tharg, then go down to the tobacconist's and collect 20 Rothmans, etc. Boring. So what about this?

You play the part of a huge dragon, flapping your way

around a fantasy world, burning the peasants, dropping large stones on their heads, storming castles, eating witches, avoiding sea serpents. Doesn't that sound better? If you agree, then *Thanatos* may well be a game to suit your taste.

Your dragon character is a huge green figure taking up about one third the length of the display and is wonderfully animated. Your actual task is to rescue a sorceress from a castle – then take her across the sea to find her spell-book, and then finally on to a third castle in which she can weave

**Supplier** US Gold, Unit 2/3, Holford Way, Holford, Birmingham B6 7AX.

**Program** *Sun Star Type* Arcade **Micro** Atari XE/XL **Price** £9.95 (tape) £14.95 (disc) **Supplier** CRL, 9 Kings Yard, Carpenter's Road, London E15 2HD.

**O**ff-beat arcade action that seems original enough, but will remind you of several things – *Ball Blazer* included. However, the fact that one member of staff had to be dragged away from the machine at the end of the day must count for something.

## Atari ST

**Program** *Leaderboard Tournament Type* Simulation **Micro** Atari ST **Price** £24.95 **Supplier** US Gold, Unit 2/3, Holford Way, Holford, Birmingham B6 7AX.

**Program** *Red Alert Type* Arcade **Micro** Atari ST **Price** £19.95 **Supplier** Antic, via Silica Shop, 1–4 The Mews, Hatherley Road, Sidcup, Kent DA14 4DX.

**Program** *Mean 18 Type* Simulation **Micro** Atari ST **Price** £39.95 **Supplier** Accolade, via Silica Shop, 1–4 The Mews, Hatherley Road, Sidcup, Kent DA14 4DX.

**N**ice try, but the game's speed and poor graphics make this way under par compared to *Leaderboard*. It does have the advantage of simulating real courses, and plays quite a good game... but what a lot of money.

**Program** *Rogue Type* Strategy **Micro** Atari ST **Price** £24.95 **Supplier** Epyx, via Silica Shop, 1–4 The Mews, Hatherley Road, Sidcup, Kent DA14 4DX.

**Program** *Psion Chess Type* Strategy **Micro** Atari ST **Price** £24.95 **Supplier** Psion, Psion House, Harcourt Street, London W1H 1DT.

**Program** *Easy Record Type* Utility **Micro** Atari ST **Price** £39.95 **Supplier** Microdeal, PO Box 68, St Austell, Cornwall PL25 4YB.

## BBC/ Electron

**Program** *The Last of the Free Type* Arcade/Adventure **Micro** BBC B/Electron **Price** £7.95 **Supplier** Audiogenic, 12 Chiltern Enterprise Centre, Station Road, Theale, Berks RG7 4AA.

**Program** *Thunderstruck Type* Arcade/Adventure **Micro** BBC B/Electron **Price** £7.95 **Supplier** Audiogenic, 12 Chiltern Enterprise Centre, Station Road, Theale, Berks RG7 4AA.

## from Durell

her magic.

But you must be a Dragon with a heart condition or something, as you have to keep an eye on the old ticker, displayed in the bottom left of the screen, plus looking out for the amount of high octane gob you have left (shown bottom right).

*Thanatos* is fun. I'm not 100% sure that it would keep you hooked for weeks on end, but for an original title that is sure to delight, try it.



## Commodore 64

**Program Hopeless Type** Arcade **Micro** Commodore 64 **Price** £9.95 **Supplier** Ariolasoft, 68 Long Acre, Covent Garden, London WC2E 9JH.

**Program Superstar Ping Pong Type** Arcade **Micro** Commodore 64 **Price** £9.99 (tape) £14.99 (disc) **Supplier** US Gold, Unit 273, Holford Way, Holford, Birmingham B6 7AX.



**Program Leader Board Tournament Type** Simulation **Micro** Commodore 64 **Price** £6.99 (disc) **Supplier** US Gold, Unit 273, Holford Way, Holford, Birmingham B6 7AX.

**T**he new disc – yippeel! The excitement! The build-up! The loading! The cup of tea! The disappointment!

We had all been hoping for

some extra features – rough, bunkers, real courses – but instead, just four more of the same. Mind you, they're amazingly difficult – you've got 19 to beat on hole ten, course four. If you're getting too expert with the original, well worth a try.

**Program Infiltrator Type** Arcade **Micro** Commodore 64 **Price** £9.99 (tape) £14.99 (disc) **Supplier** US Gold, Unit 273 Holford Way, Holford, Birmingham B6 7AX.

**Program Super Huey II Type** Simulation **Micro** Commodore 64 **Price** £9.99 (tape) £14.99 (disc) **Supplier** US Gold, Unit 273 Holford Way, Holford, Birmingham B6 7AX.

**Program Ace of Aces Type** Arcade **Micro** Commodore 64 **Price** £9.99 (tape) £14.99 (disc) **Supplier** US Gold, Unit 273 Holford Way, Holford, Birmingham B6 7AX.

**Program Vietnam Type** Strategy **Micro** Commodore 64 **Price** £9.95 (tape) £14.95 (disc) **Supplier** US Gold, Unit 273 Holford Way, Holford, Birmingham B6 7AX.

**Program Uchi Mata Type** Arcade **Micro** Commodore 64 **Price** £9.95 (tape) £12.95 (disc) **Supplier** Martech, Martech House, Bay Terrace, Pevensey Bay, East Sussex BN23 6EE.

**T**he world's first Judo simulator? Still, great animation and some

well thought out game designs make this an up-market alternative to *Rock and Wrestle*.

**Program Red Max Type** Arcade **Micro** Commodore 64 **Price** £1.99 **Supplier** Code Masters.

**T**he Darling's follow-up to *The Last V8* – slick but you might find it a bit similar.

**Program Trailblazer Type** Arcade **Micro** Commodore 64 **Price** £9.95 (tape) £14.95 (disc) **Supplier** Gremlin Graphics, Alpha House, 10 Caver Street, Sheffield S1 4FS.

**Program Marble Madness Type** Arcade **Micro** Commodore 64 **Price** £9.95 (tape) £14.95 (disc) **Supplier** Ariolasoft, 68 Long Acre, Covent Garden, London WC2E 9JH.

**N**ot quite up to the Amiga version, but authentic enough to satisfy most – and you've got a simultaneous two-player version.

## QL

**Program Ambition Type** Strategy **Micro** QL **Price** £29.95 **Supplier** Care Electronics, 800 St Albans Road, Watford, Herts.

**T**o quote the TV series that made the leg-warmer industry what it is today: "Fame costs – and this is where you start paying." Fair enough, but even with that being the case, you'd expect *Ambition* to be free. Or at the very least, not more than a decent leotard. Not so, for *Ambition* on the QL is going to set you back almost £30.

What you get for your money though, is 9000 programming hours worth of business strategy game – very complex and detailed as the substantial rule book suggests. This took two years in the writing – and considering the full game takes an estimated 40 hours to play, you can't pass judgement on it in

an afternoon.

However, I can say that if you're looking for a strategy game to get your teeth into, then this is almost certainly a winner, but bear in mind that you'll need at least two people and several spare evenings to play – and your Granny won't go anywhere near it.

**Program QL Small Traders Pack Type** Application **Micro** QL **Price** £19.95 (plus £1 p&p outside UK) **Supplier** SD Microsystems, PO Box 24, Hitchin, Herts.

## Spectrum

**Program Firelord Type** Arcade **Micro** Spectrum **Price** £8.95 **Supplier** Hewson, Hewson House, 56b Milton Trading Estate, Milton, Abingdon, Oxon OX14 4RX.

**Program Uridium Type** Arcade **Micro** Spectrum **Price** £8.95 **Supplier** Hewson, Hewson House, 56b Milton Trading Estate, Milton, Oxon OX14 4RX.

**Program Infiltrator Type** Arcade **Micro** Spectrum **Price** £9.99 **Supplier** US Gold, Unit 273 Holford Way, Holford, Birmingham B6 7AX.

**Program Galipoli Type** Strategy **Micro** Spectrum **Price** £8.95 **Supplier** CCS, 14 Langton Way, Blackheath, London SE3 7TL.

**Program Frost Byte Type** Arcade **Micro** Spectrum **Price** £8.95 **Supplier** Mikro Gen, Unit 15, Western Centre, Bracknell, Berks.

**Program Fat Worm Blows a Sparky Type** Arcade **Micro** Spectrum **Price** £9.95 **Supplier** Durell Computers, Castle Lodge, Castle Green, Taunton TA1 4AB.

**Program Durell Big 4 Type** Arcade Compilation **Micro** Spectrum **Price** £9.95 **Supplier** Durell Computers, Castle Lodge, Castle Green, Taunton TA1 4AB.

**Program Computer Hits 3 Type** Compilation **Micro** Spectrum **Price** £9.95 **Supplier** Beau-Jolly, 29A Bell Street, Reigate, Surrey RH2 7AD.

## Where are the women users?

There's been a lot of talk and a lot of headlines recently on the issue of equal opportunities for women, blacks, Asians, gays, disabled people and any other disadvantaged group your local council can think of. The talk has largely consisted of generalisations about how these people have been discriminated against by employers.

However, what all these discussions, committees and proposals have failed to realise is that often it is the overall image – made up of advertising, products, industry leaders, etc. – that intimidates and deters minorities from entering certain professions.

Let us take, for example, the home computer industry and women. Can you name any women games programmers? I've come up with three: Hanan Sumara, head of Dalali Software, Anita Sinclair, *Pawn* author, and Patricia Mitchell, ex-programming assistant at Virgin. Obviously there must be more, but these are the only ones I can think of.

In the hardware and software companies, women are reasonably well represented, compared to other industries though with a strong bias towards marketing and PR positions. But still these figures do not reflect the ratio of men to women in the general population.

Some may argue that the reason for this is that women are not interested in computers, and this may well be true.

But then the question that has to be asked is why this situation has arisen. Surely there are women writers who could use word processors, women executives who could use programs to tot up the sales figures and profit margin, women doctors, dentists and so on who could keep records more efficiently on a disc than in stacks of paper and women who would like to relax after a hard day at work with a game of chess, bridge or golf, or who would prefer a quick game of *Space Invaders*, or the more intellectual challenge of the adventure games.

But apparently this has not happened. Whether the polarisation of interest in computers begins in school, or whether it is because it is often Dad who buys son a computer for home use, it can also be at least partially blamed on sexism within the industry. First of all, the majority of highly placed and influential individuals in the industry are male. Secondly, many of the advertisements for computer products are made to appeal to a male audience. The ad for the game *Miami Dice* featured a woman in a low cut red dress with a huge pair of breasts, surrounded by men in business suits, one with his hand either on her waist or under her skirt – it was difficult to tell which from the drawing. There are three current games which are most definitely aimed at an exclusively male audience – *Samantha Fox's Strip Poker*, *Legend of*

*the Amazon Women* and more recently, *Leather Goddesses of Phobos*.

To say that women are free to buy these and other products if they wish is to sidestep the issue. It is more or less equivalent to saying that women are free to go out and buy *Playboy*, or to go for a walk at night and risk the chance of being raped.

In as much as no woman wants to see pornography, or desires to be raped, they also do not want to see the more thinly disguised pornography of ads with near-bare breasts for the sake of near-bare breasts (which have nothing to do with the game), nor do they wish to be portrayed in games as the 'helpless princess'. It shows women as mere playthings with no purpose in life other than to satisfy men.

With the emphasis on male orientated games for a male audience, no amount of talk about equal opportunity policies, hiring ratios, and incentives in schools aimed at girls will solve the problem of female under-representation. Women, whether consciously or sub-consciously, are not going to want to become consumers in that industry or enter into a market which regards them as largely unnecessary and unimportant.

Unfortunately, in the end it is the industry who will lose out – not only in terms of sales figures, but also in terms of valuable and intelligent human resources.

Michelle Beauchamp

## NEXT WEEK

### Special Supplement The Spectrum Saga's Compliment

A full review of Saga's word processor upgrade system for the Spectrum. New keyboard, disc drive and printer are all included in the package.

### Red Box

A home monitoring domestic interface system – from the company headed by ex-Acorn md Chris Curry!

### Games

All the latest and best games for the Spectrum – *Uridium* (Hewson), *Shaolin's Road* (The Edge), *Infiltrator* (US Gold) and *Thanatos* (Durell).

### Chess

Don't miss your chance to take part in the *Popular vs Colossus* chess tournament.

### Video Digitiser

Create your own digitised pictures with Haba's digitiser for the Atari ST. Duncan Evans reports.

## Hackers



# FROST BYTE

by

~~mikro~~  
GEN

Spectrum Amstrad  
Cassette  
£8.95  
Amstrad Disc  
£13.95



Steinar

# THE GRAPHIC ADVENTURE CREATOR

Over £1 million sales so far Worldwide. GAC a Great British software success.

Available on Spectrum, Commodore, Amstrad & BBC formats. £22.95 Cassette. £27.95 Disc.

New Address: **Incentive Software Ltd.**, 2 Minerva House, Calleva Park, Aldermaston, Berkshire RG7 4QW. Telephone: (07356) 77288.