

POPULAR Computing WEEKLY

with Home Computing Weekly

40 Ract
Only 50p.

5-11 December 1985

It's the best selling weekly

Vol 4 No 49

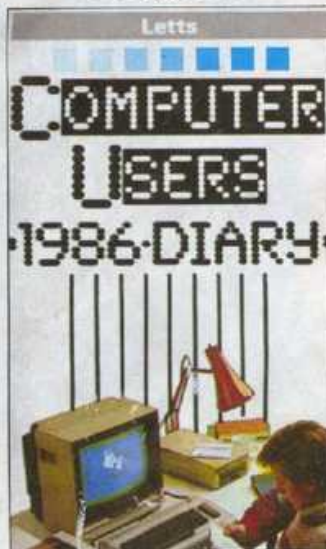
THIS WEEK



Wigmore's
C64 Mouse



Midi Music
Progress



Amstrad sets its sights on IBM

AMSTRAD is believed to be aiming to tackle IBM head-on with the launch of an IBM PC compatible machine in the Spring next year.

Much of the groundwork for Amstrad's entry into the business computer market has already been done.

The PCW 8256 word-processor model launched by Amstrad in September has established links with office equipment distributors who will be expected to take the

follow-up machine.

Many of the CP/M packages being specifically designed for the 6128 and 8256 will also run on the PC. Mallard Basic, Locomotive Software's language package bundled with the 8256 has already been developed as a 16-bit version for the IBM compatible.

The model is unlikely, though, to run the IBM version of Digital's CP/M, CP/M 86. Frank Iveson, operations manager of Digital Research

said, "All our discussions with Amstrad are about 8-bit machines, there is no 16-bit at all."

Locomotive has also acquired the services of Howard Fisher who was formerly in charge of Acorn's ABC product development. The ABC range, now largely dropped by Acorn, included as its flag-ship model the ABC 310, a fast IBM compatible based on the advanced 80286

continued on page 4 ▶

MICRO MAGIC



Find out if you have won an Amstrad 6128 this week or at least some special *Popular Computing Weekly* cassette labels.

Enter your personal Micro Magic number into our special computer program which is printed on page 33.

Lord of the Rings

PART 1 of Lord of the Rings, the long-awaited follow up to *The Hobbit*, is to be released this week by Melbourne

House, for the Spectrum Plus.

The twin-cassette and book package costs £15.95. Full story on page 5.

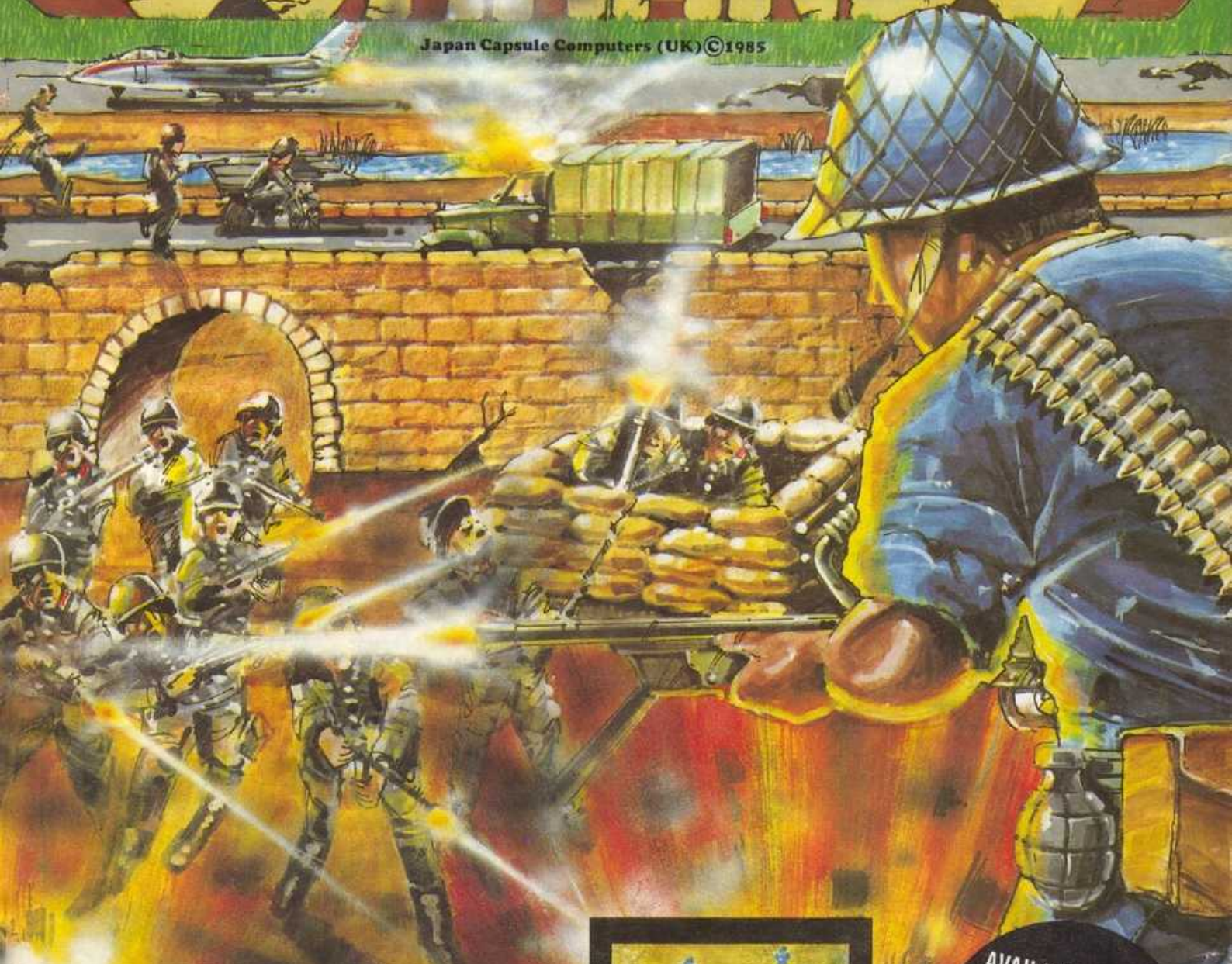


INSIDE ▶ 100 SPECIAL LETTS COMPUTER USER'S DIARIES TO WIN

THE SMASH HIT NO.1 ARCADE GAME!

COMMANDO

Japan Capsule Computers (UK) ©1985



SUPER JOE CRACK COMBAT SOLDIER FIGHTS A LONE BATTLE AGAINST OVERWHELMING ODDS. ALL THE ACTION AND TENSION OF THE WORLD'S NUMBER ONE ARCADE GAME.



**CRASH
SMASH**

AVAILABLE NOW ON
SPECTRUM £7.95
COMMODORE 64 £9.95
COMING SOON ON
AMSTRAD & BBC £9.95

elite

Elite Systems, Anchor House, Anchor Road, Aldridge, Walsall, England.

Tel: (0202) 501654

4 NEWS

Sinclair shows hefty loss

11 MIDI

A two page special which looks at the powerful new sound feature on the new micros

13 COMPETITION

Win a Letts micro diary in this special competition

14 STREET LIFE

Christina Erskine talks to Tony Rainbird who is heading British Telecom's new up-market software label

17 SOFTWARE REVIEWS

Little Computer People on the Commodore 64 and Swords and Sorcery on the Spectrum

20 HARDWARE REVIEWS

Wigmore's Mouse for the Commodore 64

22 AMSTRAD

Data Protection Act - does it apply to you?

24 SPECTRUM

Code Code and more Code, part two of our Machine Code arcade game

26 QL

Part two of the Neverending Story

28 BBC

Work out your Bank Account on disc

30 COMMODORE 64

The last instalment of our filing program



Wigmore's C64 mouse - see page 20

6 Letters

40 Adventure

33 Micro Magic

33 Peek and Poke

35 Bytes and Pieces

59 New Releases

36 Codewords

62 Puzzle, Ziggurat, Hackers

38 Arcade Avenue

EDITORIAL

Following the debate concerning the introduction of the Lenslok anti-piracy device on a number of prestige software products this autumn it was very encouraging to hear from Firebird that some of the expected savings are to be passed on to the software buyers themselves.

The reason Firebird's move to pass on some of the saving will be particularly welcomed is that - almost without anyone noticing - software prices have crept up over the last 18 months by almost a 100 per cent.

Remember Imagine when it first started? It was noted for its one-price policy: all its titles were £5.80. Then it became reasonable to charge higher prices depending on machine; the higher the cost of the hardware - and by association the better off the owner - the more

it was acceptable to charge. So C64 software cost more than Spectrum titles, and BBC software beat the lot.

Then, first Ultimate and then Ocean/US Gold settled on the magical figure of £9.95. Since then most other software houses have followed suit and a shade under £10 is now the norm.

Yet, £10 is an awful lot to spend on a single program. How many young people can afford to fork out that kind of money once a week? Very few. And the deterrent of price alone could itself be a powerful reason to copy.

Software houses may be pricing themselves out of their livelihood.

Entertainment software prices should be pegged at roughly the same as a music cassette or record - around £6-7, because that is their perceived worth.

Editor David Kelly News editor Christina Erskine Features editor Graham Taylor Software editor John Cook Production editor Lynne Constable Editorial secretary Lucinda Lee Advertisement manager Jeff Raggett Advertisement Executive Diane Holyoak Classified executive David Osen Administration Geraldine Smyth Managing editor Duncan Scot Publishing director Jenny Ireland. Published by Sunshine Publications Ltd, 12-13 Little Newport Street, London WC2H 7PP. Tel 01-437 4343 Telex 296275 Typeset by Publishers Reprographics Services Ltd, 4 Roger Street, London WC1. Printed by Greenaway Harrison, Sutton Road, Southend-on-sea, Essex. Distributed by SM Distribution, London SW9, Tel 01-274 8811, Telex 281643 © Sunshine Publications Ltd 1985.

ABC

56,052 copies sold every week
(Jan-June 1984 ABC).

Popular Computing Weekly. Tel: 01-437 4343.

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. **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.

Computer Trade Association Magazine of the Year

ADVERTISEMENT

**'Having worked a lot with the Amstrad, I have found the Enterprise's 256 colours and their versatile use to be a big advantage
- Ed Hickman, Mastertronic programmer**

Sinclair turns in £18.3m loss

SINCLAIR Research's financial results announced late last week show clearly the reason the company hit financial trouble during the summer.

The figures show the company made an £18.3m pre-tax loss for the year ending March 31 1985. This compares with a £14.2m profit for the previous year.

The gloomy picture results from Sinclair having to drastically reduce the estimated worth of high stocks of Spectrum and QL machines held by the company. In total Sinclair wrote down the estimated value of micros held by £22.7m.

Since March the company has taken steps to reduce its high stock levels, first through its £10m Spectrum Plus deal with Dixons, then with a dramatic price cut on the QL from £399.99 down to £199.99.

Despite the loss, however, Sinclair's turn-over continues to rise, as it has done since the company's inception. Turn-



over to March 31 rose to £102.8m from the previous year's £77.7m. Exports were also up; they now comprise 40% of Sinclair's sales as compared to 32%.

Sir Clive Sinclair said that profits were sharply hit by the lack of business in the final quarter (the first quarter of 1985) and the need to revalue stock downwards. He also said that the substantial provisions made by the company at the nine-month stage (at the end of 1984) proved subsequently to be inadequate in the light of the virtual cessation of deliveries to retailers in the first quarter of 1985.

Program hitch for C128

IT WOULD seem that the new Commodore C128 micro is not completely software compatible with all Commodore 64 programs.

Although Commodore has advertised the C128 as being completely software compatible with the C64 in C64 Mode, it appears that some minor changes have been made to the display chip which are causing problems with a few titles.

"There are two additional

registers at the end of the video chip," explained Commodore UK programmer Mark Palmer. "These were normally invisible in C64 mode, but some programs may have written over them, although they should not have. The only other problem we've come across is with some fast loaders."

One game that has been causing problems is *Frankie Goes to Hollywood*, published by Ocean and written by Denton Designs. A spokesman for Denton Designs said, "This sounds like a problem with the loader rather than the game - since as far as I know there is nothing in there that would stop the game from running normally."

Mark Palmer advised anyone having trouble running C64 games on their C128 to contact the software company first, in case an up-dated version has been prepared.

Amstrad PC

◀ continued from page 1

processor. Amstrad is expected to launch its IBM compatible micro next month - around the time that Commodore delivers its rival Amiga micro.

An Amstrad spokeswoman commented, "We have no plans for the near future to bring out any other pieces of computer equipment."

Infocom's adventures out on CP/M

INFOCOM'S highly acclaimed adventures, including *The Hitchhiker's Guide to the Galaxy*, will soon be available on a much wider range of machines following UK publisher Softsel's decision to convert them to run under the CP/M operating system.

Apart from *Hitchhiker's Guide*, *Zork I*, *Seastalker*, *Planetfall* and *Deadline* are also to be converted. Prices have also been reduced. *Hitchhiker's Guide* will now cost £24.95 and the others £19.95.

"I am certain of a huge response from users of machine like the Amstrad, BBC and Einstein," said Peter Scatchard, Softsel's marketing manager.

The conversions should be available within the next two weeks.

Sub-£1,000 Amiga?

COMMODORE'S Amiga micro, due for launch in this country at January's *Which computer?* Show (see *Popular* November 28), may yet be priced at under £1,000 for the basic model.

Commodore is apparently striving to price the Amiga, without the high resolution monitor, at between £800 and £1,000. The US price for the basic machine is \$1295, which



converts directly to £877, at current exchange rates. The version with the monitor costs around \$1900 (£1287).

Commodore itself would only say, however, that a price has yet to be fixed.

Fraud squad goes in at Medic

MEDIC Datasystems, the company which widely advertised QL peripherals such as a disc drive and a memory expansion pack, has been brought to the attention of Hampshire's Fraud Squad, apparently for non-delivery of mail-order goods.

Hampshire police were first contacted by two women apparently running the company after its head, Christer Skoglund, had gone to Ireland, two months ago. The women said they were unable to get in touch with Skoglund, and had found themselves

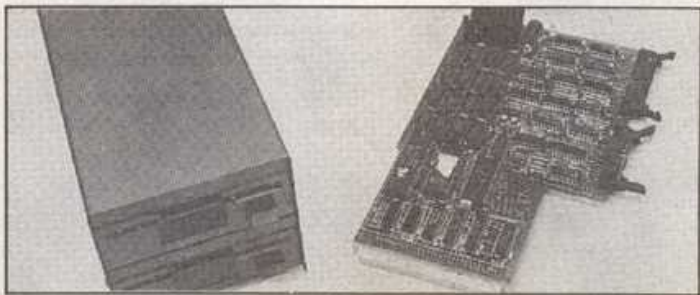
locked out of the company premises after non-payment of rent.

The Fraud Squad is now looking through all Medic's paperwork, which includes orders, cheques and letters complaining of non delivery of goods. "It is not an investigation as such," said a member of the Fraud Squad. "We won't know if the company has acted fraudulently until we have been through all the papers."

Medic's bank account has been frozen by one creditor and a winding-up order placed on the company by another.

"I would not advise anyone to order goods from the Medic at all," the Fraud Squad spokeswoman added.

Anyone who has ordered and not received goods from Medic should contact Sgt Young, Hampshire Constabulary, Orchard Lane, Alton, Hants (0420 82244).



Rings released

TOLKIEN'S *Lord of the Rings* trilogy is being published in three parts by Melbourne House. Part I released this week is based on the first book, *The Fellowship of the Ring*. The next two books, *The Two Towers* and *The Return of the King*, and their associated games are to be released next year.

At £15.95, the first game includes three adventures and a copy of the book, *The Fellowship of the Ring*. Two of the games are full scale text and graphic adventures, while the third is a 'beginner's' adventure, designed to help adventure novices and Tolkien non-afficionados be-

come acquainted with the nature of the full games.

The parser used in the



Apricot profits drop

APRICOT Computers, formerly known as ACT, has run into problems. The company's profits dropped from £3.8m in the first half of 1984 to £1.27m in the first half of

this year. Added to this is a £5.1m write-down of stock, due to disappointing sales of its portable machine, leaving the company with a £4.6m loss. Apricot has also announced 120 redundancies, about 100 from UK staff and a further 20 in West Germany.

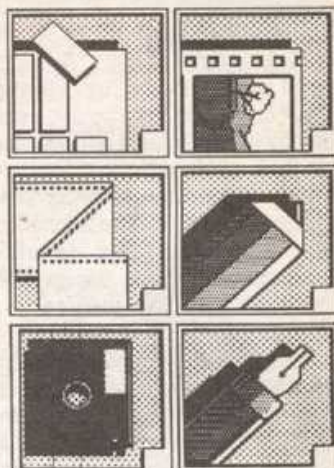
game allows much interaction between characters, and enables the player to take the part of one of four people: Frodo, Sam, Pippin or Merry. It has a vocabulary of 800 words.

Commodore, Amstrad and BBC version are all expected before Christmas at the same price, although there will be no graphics with the BBC version.

Fleet Street goes home

MIRRORSOFT has launched *Fleet Street Editor* a page layout/newsletter creation program for the BBC.

The company intends to publish *Fleet Street Editor* eventually in a number of forms. Level One includes versions for BBC, Amstrad CPCs and Commodore 128, which Mirrorsoft calls the everyday level. These versions enable users to create text in a number of fonts, select graphics to illustrate it, and arrange it on an A4 sheet, then print it out.



Level Two will be based on MSDOS, and thus run-on Apricots and IBM compatible machines. This will accept more sophisticated input and output and will directly interface with a phototypesetting system.

Level Three is designed for 68000-based machines, specifically the Amiga and Atari 520T, and will be a full photocomposition workstation.

The first *Fleet Street Editor*, the BBC version, will be released in January at a price of £39.95.

MACHINE-ORIENTED
MAGIC
FOR ZX SPECTRUM

THE ULTIMATE PRINT UTILITY

POWERPRINT II

THE PROGRAM THAT
PRINTS ITS OWN
ADVERTS.....

FOSTERE NEWS NOTICES
STAMP NEWS TICKETS
BADGES NEWSLETTER AND MAGAZINE
BANNERS PRICE TAGS
PROGRAM FILES
WALL CHARTS
WINDOWSTICKERS LABELS
INSTANT TYPESETTING
IN DOZENS OF EXCITING STYLES.
POWERPRINT UP TO 10FT. X 6FT.
...EVEN ON ZX PRINTER.

FOR:

- * ZX PRINTER
- * ALPHACOM 32
- * FLOYD 40 *
- * TIMEX 2040

KEMPSTON E & TASHAN & LPRINT II

AND ANY INTERFACE THAT SUPPORTS
AT-RES SCREEN COPY USING EITHER
COPY OR A USER XXXXX COMMAND.
(PLEASE STATE INTERFACE)

WITH: *EPSON MX80 *STAR DP510
*SHINWA JP-80 *SEIKOSHA GP80
*QUEN-DATA DP 100 *MICROLINE 80
AND ANY PRINTER THAT SUPPORTS
AT-RES SCREEN COPY.

GET NOTICED! SEND A 5FT. LETTER TO BARRY TOOK...MADONNA...YOUR MP... IT'S SIMPLE WITH POWERPRINT II!

FAST MAIL ORDER! GUARANTEED SAME-DAY DESPATCH!!

48K SPECTRUM SPECTRUM

CASSETTE £7.99
MICROCASSETTE £10.99

BUTTERCRAFT SOFTWARE

14, HESTER AVE., RIDGEMAN, KETCHLEY, YORKS., ENGLAND

HAVE YOU MET...

Barney Trouble

YOU WILL IN...

ROCK'N WRESTLE



Letters

Out of reach

Can anybody out there help me?

I have an Amstrad 6128 and a Juki 6000 printer. Everything works fine, *Tip-Ex* is a thing of the past. The secret of the microelectronic revolution is not that the things are clever but that they're so cheap.

There is however a snag: the Amstrad will only send a seven-bit character code to the printer and there is a proper pound sign and several other useful things of reach on the daisy wheel.

Does anybody make a gizmo that sets the eighth bit to the printer when sent a code (say ESC + >) and then resets it for the next character?

I know other people who have trouble getting characters with codes above 127 to their printers and some of them have gear twice as smart as mine.

Does the fix exist?

Peter Ceresole
14 Medcroft Gardens
London SW14

A cult micro

Your assertion, that the Spectrum is not a good computer, is without foundation.

Most of the micros in your survey were sawn-off business machines, sporting tiny Basics. The exceptions were the QL, Enterprise and the Spectrum.

The major ingredient of benchmarks are *For-Next* loops and, as even the Americans (who invented Basic) now agree, the programmer should be able to:

- 1) jump out of a for-next loop.
- 2) alter the value of the loop counter.
- 3) depend on the value of the loop counter after the loop has finished.

The Spectrum allows all three. The BBC, for instance, allows none.

As a measure of a Basic's power, you should be able to use all the micro's memory with a single direct command or a simple program, eg, 1 Gosub 1. Garbage collection causes problems on micros like the Amstrads and the

BBC. The Spectrum simply never allows it to build up in the first place.

The Spectrum has the most efficient memory manager in the computer world.

Anyone who's learnt assembler (any chip) can instantly understand the flow of a Sinclair Basic program, and conversely, by the time the Spectrum owner has learnt Basic, s/he is half-way to learning machine-code.

Perhaps the Spectrum's greatest asset is that it is future-proof. It uses a single bank of 280 addressable memory (bank switching has no place in future chip use). Furthermore it has a fully documented Rom which teaches by example good assembler technique.

I program on a variety of micros but develop new ideas on the Spectrum.

It is a beginner's, all-purpose machine, which will remain a cult micro for all the right reasons.

Geoffrey Wearmouth
Stoke Newington
London N17



"How did Arthur Dent and Ford Prefect get into our business software, Pemberton?"

C64 changes

It was interesting to see an article by Tim Decker (September 19) concerning changes to the C64.

I have been doing something on similar lines but have extended it to the blowing of an Eprom containing the changes and the manufacture of an adaptor to convert the 28-pin Eprom to the 24 pins of the Rom it replaces.

If anyone wants to know more perhaps they could drop me an SAE..

Robin Harvey
30 Wimborne Close
Coombe Glen
Glos

At Last! Atari Smash Hits volume 4

ATARI 400/800/XL/XE-48K Cassette £9.95

48K Disk £12.95

Available from all good Atari retailers
or POST FREE from:

ENGLISH SOFTWARE™

1 North Parade, Parsonage Gardens, Manchester M60 1BX
Tel: 061-835 1358

Includes:

CHOP SUEY • FIRE CHIEF
• KISSIN' KOUSINS •
• HIJACK!

MIRRORSOFT

CHILDREN'S CHRISTMAS CRACKERS

THE GIDDY GAME SHOW

The Giddy Game Show is new, it's fun, it's for under 5's and their parents – and it's being broadcast nationwide by Yorkshire Television.

Each of the 26 programmes in the series features a letter of the alphabet – and we've taken the same approach with the software. Giddy, the tiny alien with a magic wand, and his friends Gorilla and Gus get up to all sorts of adventures in their quest for knowledge about our world!

There are four games – The Letter Game, The Jigsaw Puzzle, The Hungry Gorilla Game, and Princess Galaxzena's Maze – all combining a lot of fun with learning about letters.

Full colour storybook and keyguide included.

To be published in November with full-colour storybook for BBC B/Electron and Spectrum, £9.95 tape, £12.95 disk (BBC only).



If you like
solving puzzles,
you'll love

CRACK IT! TOWERS

Home of the team that brings you Crack It! puzzle magazine, Crack It! Towers conceals a magical secret within its walls. Players must solve puzzles to collect the seven golden keys needed to unlock the secret of the Towers – if they fail to solve a puzzle, they'll find themselves in the moat, and the less-than-alert could have their keys stolen by any of the castle's more unfriendly residents. But there's also the chance to gain bonus keys in the Maze of Skulls.

There are arithmetic problems, spelling games, anagrams, and mazes to negotiate – with different levels to challenge kids and adults alike!

To be published in November for BBC B/Electron and Spectrum
£9.95 tape, £12.95 disk (BBC only)

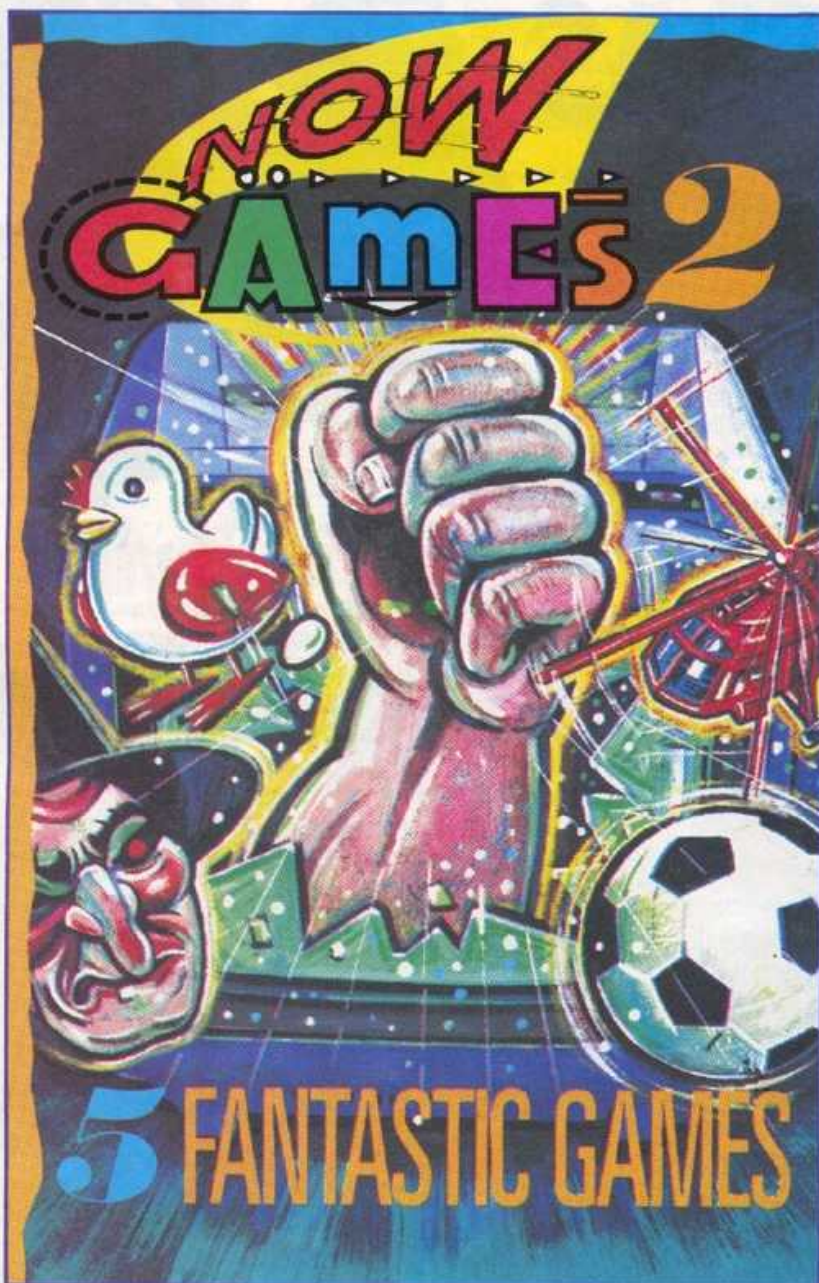
Mirrorsoft's Children's Christmas Crackers are available through BESA and other good software stockists. In case of difficulty or for catalogues and product information sheets on our range of children's software, write to:

MIRRORSOFT

Maxwell House, 74 Worship Street, London EC2A 2EN. Tel: 01-377 4644 (24 hours)
Trade orders: Mirrorsoft Ltd, Purnell Book Centre, Paulton, Bristol BS18 5LQ

Five Fantastic Games

Keep your eyes peeled for NOW GAMES 2. Five major software hits jostle for your attention on this packed-solid-with-fun cassette.



Available for
COMMODORE 64 and SPECTRUM 48K
and for only

£8.95



1. AIRWOLF – Elite Systems Ltd
Stringfellow Hawke must use his helicopter to free five imprisoned scientists in this exciting arcade game which takes place in a subterranean terrorist base!



2. TIR NA NOG – Gargoyle Games
This remarkable interactive graphic adventure allows you to play the mythological Celtic, Cuchulainn, searching for the fragments of the Seal of Calum.



3. CAULDRON – Palace Software
Take up the witches' challenge and unravel the mysteries of this beautiful land in this striking arcade adventure.

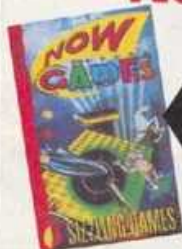


4. CHUCKIE EGG 2 – A & F Software
Help Hen House Harry in the smooth running of the A & F Chocolate Egg Factory! He must find equipment and find out where to use it in this amusing arcade game.



5. WORLD CUP – Artic Computing
This great football simulation lets you re-enact the tough fight to the World Cup Final. Play a friend or the computer (a pretty tough opponent)!

Now that's what I call value



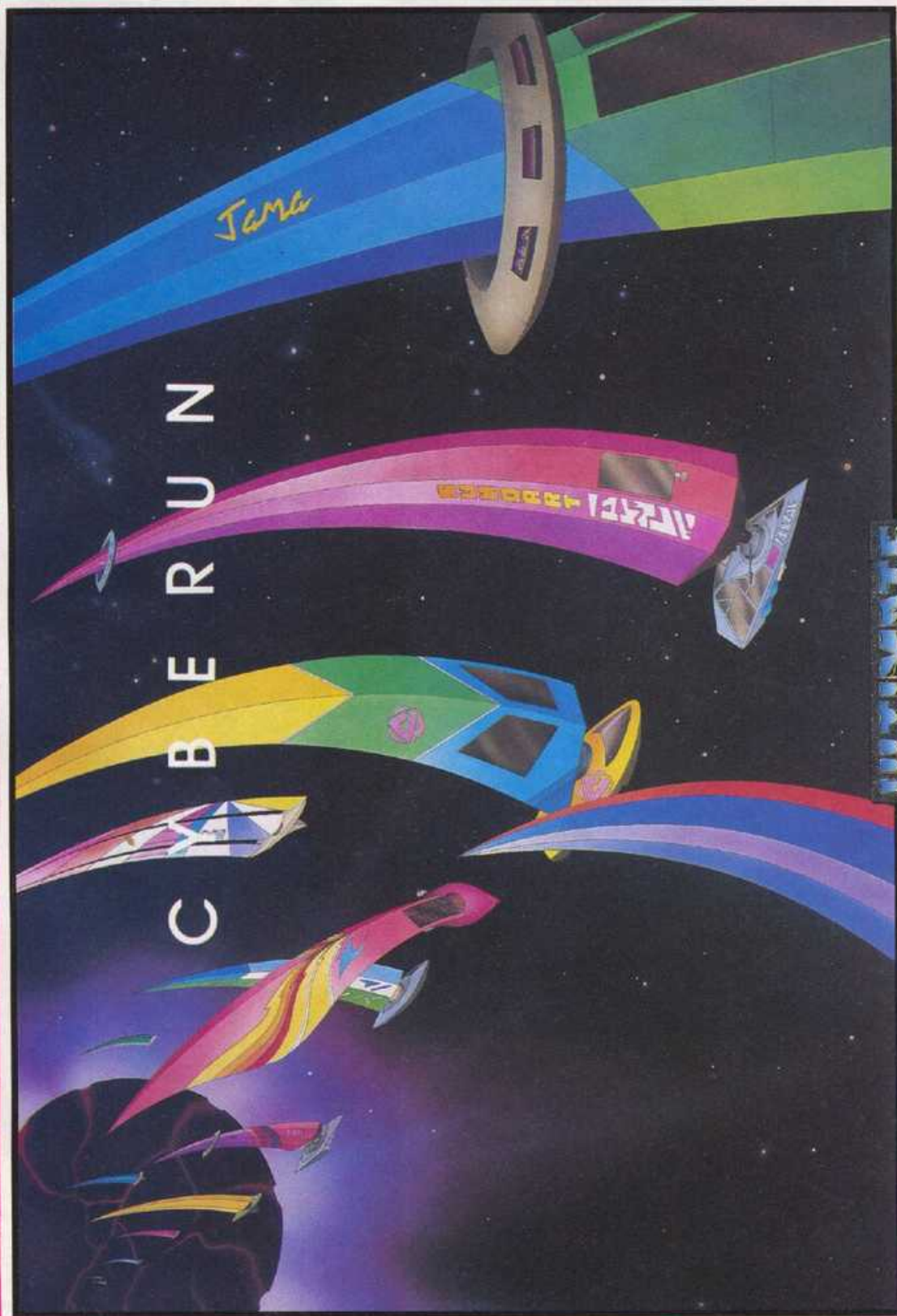
STILL AVAILABLE – NOW GAMES

featuring
*Lords of Midnight, Brian Bloodaxe, Strangeloop,
Pyjamarama, Arabian Nights and Falcon Patrol II*
for only

£8.95

Available from all good software retailers

Also available directly from: Virgin Games Mail Order, 2-4 Vernon Yard, Portobello Road, London W11 2DX



ULTIMATE
PLAY THE GAME

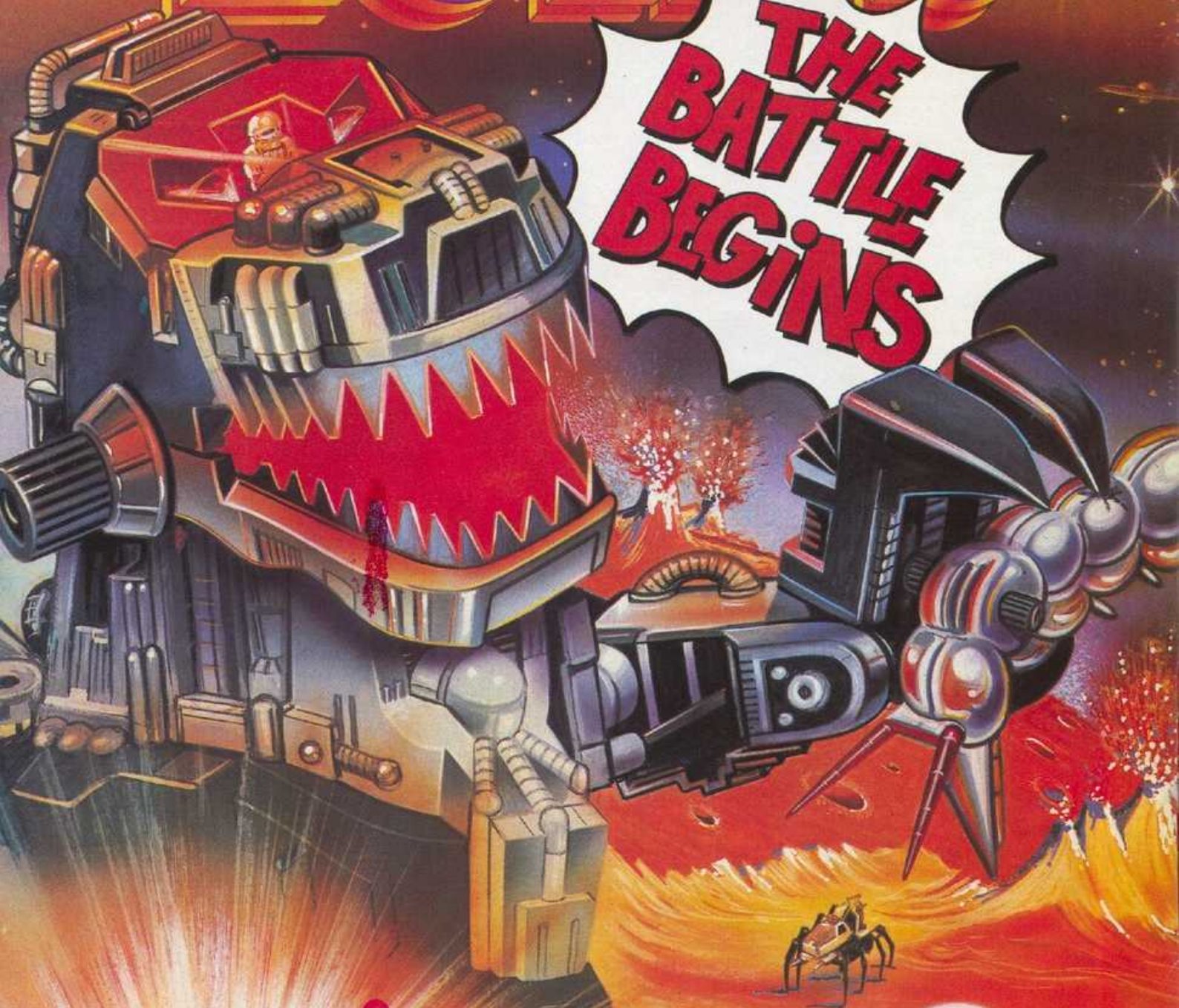
"CYBERUN" recommended retail price £9.95 inc VAT.

Available from W.H.SMITHS, BOOTS, J.MENZIES, WOOLWORTHS and all good software retail outlets. Also available from ULTIMATE PLAY THE GAME, The Green, Ashby-de-la-Zouch, Leicestershire LE6 5JU (P&P are included) Tel: 0530 411485



ZOIDS

THE BATTLE BEGINS



Zoidstar is gripped by war.

Blue Zoid fights Red Zoid in a merciless battle for supremacy.

Mighty Zoidzilla, Blue Zoid combat leader, lies dormant in the hold of your craft, ready for you to climb into its command capsule to merge minds with the powerful machine and take control of this bitter confrontation. Somewhere in the desolate landscape, the Red Zoids lie in wait!

Landing preparations are complete. The descent begins. The task which follows will take you to the very limits of your capabilities and imagination.

LIVE THE GAME. BECOME THE MACHINE!

Cassette: SPECTRUM 48K £7.95
ALL OTHERS £8.95

Disk: CBM 64 £14.95

Available from all leading software retailers
OR order today by mail. Prices include postage
and packing plus VAT.

martech

Martech is the registered trade mark of Software Communications Limited, Martech House, Bay Terrace, Pevensey Bay, East Sussex BN24 6EE
TRADE ENQUIRIES WELCOME.
PHONE: (0323) 768456
TELEX: 87465 EXIM Brighton

48K SPECTRUM • COMMODORE 64

TOMY

Beyond the blip

Graham Taylor looks at the new sound facilities



The noises your computer makes are becoming important. The casual blip to indicate variously, a key pressed, 'you can't do that', or 'the world has now exploded as a result of a cataclysmic atomic war', used to be enough for anyone.

Now everybody knows you beef up sales by a sizeable percentage by giving your product synthoflash multi-channel, get on down, fully-fledged music.

Real programmers don't care, of course, they occasionally moan on about such irrelevancies as music being custard on the meat of computer use, which is, of course, databases, accounts programs and number crunching as in 'let's just work out Pi to a few thousand places before lunch'.

Alan Sugar - well known computer aesthete and purist - is not, however, selling bundles and bundles of 6128s to real programmers, he's selling them to ordinary everyday people like you and I.

Music matters because a decent soundtrack on a game can give it meaning, drama and added excitement in exactly the same way that the soundtrack of a film functions. The first good example of this was *Ghostbusters* which, in its original Commodore 64 version, had a music track so good few reviewers spotted that the game wasn't really up to much - they didn't get past the funky opening credits.

Professional musicians now use micros via the Midi communications protocol to write, arrange and record - they give (in conjunction with all kinds of clever things that have happened in music technology recently) one lone keyboard player the opportunity to ma-

nipulate sounds limited only by the imagination and perseverance. You don't necessarily even need any music skills.

The hardware companies have hardly been oblivious to these developments and it's useful to look at some of the specifications for the newer machines and see how the musical facilities of the machines are changing and growing.

Sampling

A simple idea with fundamental effects. In the long run Sampling could effectively depose the need for musicians - including orchestras - completely. It works by turning a 'real sound' like a trumpet into digital information which can then be manipulated in virtually any way you like and played back at any pitch using a keyboard.

Quite a few programs already feature sampling of a simple kind - mostly it's speech saying something like 'kkkeal the ernemych'. At some point a real person said 'kill the enemy' into a microphone a few thousand times and that information was converted using an analogue to digital device. The reason it doesn't sound too good is partly to do

with 'noise' when the original recording was made and partly to do with the rate of sampling. The higher the rate the more accurate will be the sample, but more memory will be used up.

There are some simple peripherals for home micros which let you try your own sampling and a number of listings have been printed in this and other magazines which convert sound information fed in via a tape port into a digital form - the end result still sounds like a badly tuned-in radio, though.

However, things are changing, mainly thanks to Commodore. The Commodore 64 is shortly to get a Sampler with various sampling rates, clever things like harmonising and flanging and is Midi compatible. That means you will be able to play the sampled sounds from the micro on any Midi-compatible music keyboard.

The Amiga, also from Commodore, due some time early next year, promises to be the first micro with sampling of a quality equal to that of dedicated music machines built-in.

Commodore are describing it as Fairlight compatible (the Fairlight is the Cray of sampling machines) though what that means seems uncertain. Whatever else, though, the Amiga has some superb facilities. Commodore has already shown some demos of samples of such things as drums and pianos, but the crowning glory was a powerful electric guitar sound. Seeing *Smoke on the Water* played on the Qwerty keyboard is a sight I shall never forget...

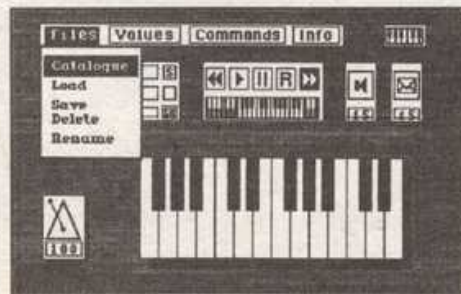
More important still, the Amiga has the memory and hardware (four analogue-to-digital convertors) to enable polyphonic sampling - that means chords.

Midi

Midi is a standard. An agreement between musical instrument manufacturers over electric standards which means that the keyboard of one machine can be used to play another or a drum machine can be synchronised with another manufacturer's synthesiser and so on. The important point for micro owners is that it is possible - indeed quite easy - to implement Midi on a micro.

A Midi equipped micro is, from a musician's point of view, a powerful tool. It means that the memory and programming facilities of the machine can manipulate the sounds of external Midi instruments. Thus a typical Midi software page might let you compose music on-screen, then manipulate that music in a variety of ways, somewhat like a wordprocessed document. The different music parts can then be assigned different Midi channels and played on a number of external instruments. It's really similar to the standard music packages you might find on a micro, but it lets you 'play' your music with real instruments.

The Atari ST has a Midi port as standard, but no software as yet to support it.



Micro Music Power

Even more interesting, the Spanish Spectrum 128 also has a Midi port and there is every reason to think the British version will have one too.



A Sinclair machine with Midi is an exciting prospect because it will bring this facility in as a standard on a low-cost micro and in so doing will encourage other manufacturers to follow suit. The Amiga does not have a Midi port as standard, but will have an add-on music keyboard, software and Midi package available shortly after its launch.

Synthesis

The average sound chip, found in say the Amstrad and BBC, is three channel. Each of those channels consists of an oscillator with a number wave forms and an envelope generator to define the shape of each sound (how quickly it starts and

stops). This has proved adequate for the average game, creating explosions, zaps and jangly little tunes whilst you're playing.

However, people are starting to want more. The Sid chip, found in the Commodore 64, has somewhat better facilities than the norm despite having only three channels. For one thing it has a filter which makes things a lot more interesting because it dramatically increases the range of sounds available; it can also synchronise sounds and do other clever things. The Sid chip is arguably the single feature that distinguishes Commodore 64 titles from those of other machines - they sound better. In fact, some recent programming of the Sid chip, notably by Ron Hubbard, has produced very impressive electro-disco music with wailing guitars and electronic drums.

The Sid chip is leading the way to considerably more powerful on-board chips. So far the only real example is Yamaha's CX5 which has eight-channel synthesis, based on the FM system Yamaha use in the now semi-legendary DX7. The CX5 has recently been reduced in price to £299 complete with mini keyboard.

The Amiga uses a special four-channel arrangement which can create sounds of astounding complexity. The reason is

that the concept of sampling extends to the creation of the waveforms themselves.

Thus instead of taking the sound information from an outside source (sampling) and representing it digitally, you can feed in the digital information directly and create the sound forms out of a string of numbers. These are then fed through the analogue to digital converters and output through the stereo channels as sound.

Commodore are bringing out an FM sound device as an add-on to the Commodore 64 which will give it eight voices and 16 preset sounds of high quality. Later software will allow you to edit those sounds and sequence them.

The important thing about all these developments is not, primarily, the scope the micro gives and will be giving to musicians. The important thing is what it will do for games, which, despite all grumbles to the contrary, still form the main reason that people buy and continue to use micros.

The Amiga, for example, is perfectly capable of running a complete music soundtrack using voices indistinguishable from 'real instruments'. Once you've tried a flight simulator with sampled 737 engine noises that respond to the power level, you'll find a three channel buzz pretty unexciting...

HAVE YOU MET...

Flying Eagle

YOU WILL IN...

ROCK'N WRESTLE



AMSTRAD INTERFACES

THIS IS NOT JUST A MODEM, BUT A COMPLETE SYSTEM. NOTHING ELSE TO BUY

★★ MODEM ★★

★ £153.00 ★

Incorporating serial and parallel interfaces, to allow software control of all functions, each feature controlled from basic with the bar commands. Call from m/c or on entering bar modem all controls are menu driven for ease of use. Bell/coin standards 300/300 600 1200 1300/75 75/1200 full and half duplex. Auto dial and auto answer control bulletin boards, preset compatible software bulletin on its own sideways Rom. Unique panel display, it displays what the modem is doing, mode of operation, and digits when auto dialing, standard B.T. plug connector. Note this modem is not B.T. approved.

NOW WITH LATEST SOFTWARE INCLUDES FREE SUBSCRIPTION TO MICROLINE

★★ SIDEWAYS ROM ★★

★ £26.05 ★

The unit holds 4 Roms. Each can be 2, 4, 8 or 16K in size incorporating a device to allow slower Roms to be used less than Amstrad suggested 200, that means cheaper Roms, free utility Rom with every unit.

RS232

Communicate with your modem
Talk to other computers
Use serial printers
Split Baud rates
Standard 25 way 'D' connector

£34.75

PARALLEL PORT

Make that Robot move
Control electrical appliance
Twist 8 bit ports
Operates direct from basic
2 x 14 way speedblock connectors

£22.57

8 BIT PRINTER PORT

Make use of that 8 bit printer
Allows character codes
Above 127 (ie 0 to 255)
Plugs in between centronics
Port and printer cable

£17.35

All units are cased and have through connectors
★ Please add VAT ★

Dept PCW 15 Hill Street, Hunstanton, Norfolk
PE36 5BS

Tel: (04853) 2076

COMPUTER HARDWARE & SOFTWARE

KDS

ELECTRONICS

Competition

100 Computer User's Diaries from Letts to be won!

We are giving away a hundred special 1986 Computer User's Diaries.

The diaries contain useful information on choosing a micro, computer languages, printers, networking, utilities and many other hints and tips.

Not only that but, of course, they contain all the usual things you expect from a diary - special dates, 1985, 1986 and 1987 calendars.

All you have to do to be in with a chance of winning one of the 100 diaries is to complete the coupon below, cut it out and send it before Wednesday 18 December to: Diary Competition, Popular Computing Weekly, 12-13 Little Newport Street, London WC2H 7PP. The winners will be those who correctly answer the three questions and who, in the opinion of the judges, best complete the phrase. The judges decision will be final.

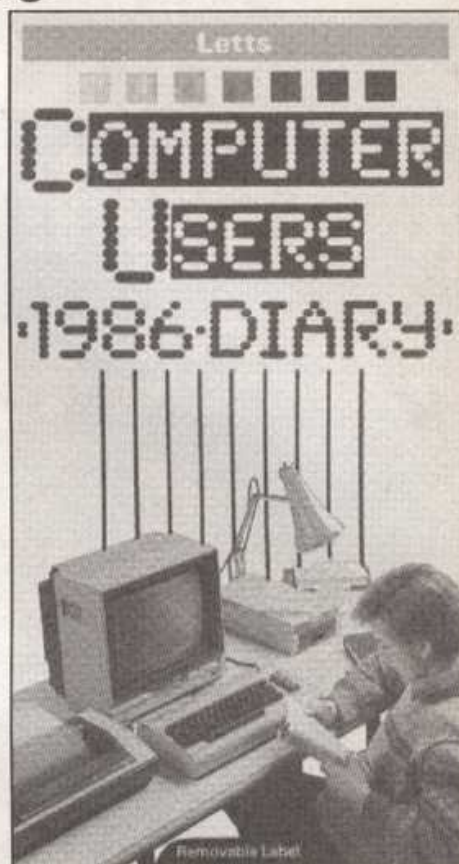
Please fill in the coupon and send it to Diary Competition, Popular Computing Weekly, 12-13 Little Newport Street, London WC2H 7PP.

- 1) In which year was the 16K Spectrum announced?
- 2) In what month did Amstrad announce the CPC664?
- 3) How many issues of Popular Computing Weekly have been published including this one? The first issue was published on April 23, 1982.

Now complete the phrase in not more than 10 words: "A Letts Computer User's Diary would help me to"

Name:

Address:



CUT PRICE SOFTWARE

	RRP	OUR PRICE		RRP	OUR PRICE
Spectrum	7.95	5.90	Amstrad	7.95	6.25
Gyroscope	14.95	13.50	Southern Belle	8.95	6.60
Shadow of the Unicorn	7.95	6.50	W/Serial Baseball	9.95	6.50
Monty on the Run	14.95	11.00	Yie Ar Kung Fu	9.95	7.25
Elite	7.95	5.50	Matchday	29.95	5.99
Mikie	8.50	5.90	Bruce Lee	9.95	7.25
Daley's Super-Test	8.95	6.80	Invictat	29.95	5.99
Critical Mass	8.95	6.95	Frank Bruno's Boxing	8.95	6.95
Exploding Fist	7.95	5.50	Cyrus II Chess (disk)	13.95	10.95
Starquake	7.95	5.25	Sorcery II (Disk only)	14.95	10.95
Commando	7.95	5.25	Nightshade	9.95	7.25
Fighting Warrior	7.95	5.25	Hacker	9.95	7.40
Astroclone	7.95	5.25	Elite (Jan 86)	14.95	11.00
Impossible Mission	7.95	5.50	Bounty Bob	9.95	7.25
AD2112	7.95	5.50	Hypersports	8.95	6.50
Robot The Messiah	7.95	6.25	Syrius II Chess	9.95	7.25
Rambo	9.95	7.00	Sold a Million	9.95	7.00
Sold A Million	9.95	7.00	Glen Hoddle's Soccer	9.95	6.50
Robin of the Wood	9.95	7.00	Spy Vs Spy	9.95	7.00
Tau Ceb	7.95	5.40	Cauldron	7.99	6.00
Yie Ar Kung Fu	9.95	7.00	Fighting Warrior	9.95	6.50
Beach Head II	9.95	7.00	AMSTRAD DISK SOFTWARE NOW		
Xcel	6.95	4.75	AVAILABLE. Please ring for details		
Back to Skool			Special Offer - Amstrad order, £20		
Special offer - Spectrum order, £20			or more FLIGHT PATH 737 FREE		
or more ICICLE WORKS or BRAXX					
BLISS FREE with order.					

P&P included. Overseas orders add 75p per tape. For Mail Order please send Cheques/PD payable to CFS. Visa/Access Card orders by phone welcome. Tel: (0279) 24433 (24hr ansaphone)

SOFT INSIGHT

	RRP	OUR PRICE		RRP	OUR PRICE
SPECTRUM	9.99	7.48	WORLD SERIES BASEBALL	9.95	6.71
ANY LEVEL 9 GAMES	7.95	5.95	SCRABBLE	9.95	7.48
GYROSCOPE	9.95	7.40	ANY AMSOFT GAMES	9.95	6.71
1 OF THE MASK	9.95	5.20	ANY LEVEL 9 GAMES	9.95	7.48
NOW GAMES	9.95	5.20	WORM IN PARADISE	9.95	5.20
TAU CEB	9.95	7.48	3D GRAND PRIX	9.95	7.48
COMMANDO	7.95	5.40	BRUCE LEE	9.95	7.48
YIE AR KUNG FU	7.95	5.40	MAUSPORT	9.95	7.48
SWEEVES WORLD	7.95	5.40	NIGHT SHADE	9.95	6.95
SAROTER	9.95	6.77	YIE AR KUNG FU	9.95	6.71
TOMAHAWK	9.95	6.95	RASPUTIN	7.95	5.40
WHAM MUSIC BOX	9.95	7.48	NOVER ENDING STORY	9.95	7.48
ELITE	14.95	11.21	RAID	9.95	7.48
2112 AD	7.95	5.40	MATCHDAY	9.95	7.48
MIND SHADOW	9.95	7.48	MIND SHADOW	9.95	7.48
FORBIDDEN PLANET	7.95	5.40	HIGHWAY ENCOUNTER	9.95	7.00
CRITICAL MASS	8.95	6.71	THEY SOLD A MILLION	9.95	7.48
STARQUAKE	7.95	5.95	SPY V SPY	9.95	7.48
IMPOSSIBLE MISSION	7.95	5.95	ADRIAN MOLE	9.95	7.48
SPITFIRE 40	9.95	6.90	DYNAMITE DAN	8.95	6.71
WINTERSPORTS	9.95	7.48	TEPPOROMANDOS	9.95	6.71
DEVILS CROWN	9.95	6.90	FIGHTING WARRIOR	9.95	6.71
BACK TO SKOOL	8.95	5.20	CAULDRON	8.99	6.71
ARENA	9.95	6.90	BOUNTY BOB STRIKES BACK	9.95	7.48
ELITE TUNER	9.95	7.48	KNIGHTLORE	9.95	7.48
ROBIN OF THE WOOD	6.95	5.20	MONOPOLY	9.95	7.48
ROBIN OF SHERLOCK	7.95	5.95	PHANTOM	9.95	7.48
BEACHHEAD II	7.95	5.95	CITADEL	9.95	7.48
RASPUTIN	7.95	5.40	MATCHDAY	9.95	7.48
AMSTRAD			ALLEN 8	9.95	7.48
			STRIKE FORCE HARRIER	9.95	7.48
			NIGHTSHADE	9.95	7.48

Write a story

Draw a picture

Make a page

Print a newspaper

MIRRORSOFT

MirrorSoft Ltd. Tel: 01-377 4837/4645

FLEET STREET

CITY OF LONDON EC4

Editor

Publication January 1986

Moving up to 16-bit

Christina Erskine talks to Tony (ex-Firebird) Rainbird

A lot of people were surprised at British Telecom's first foray into the computer software market – unassuming £2.50 budget games. Firebird's product seemed rather down-market given the high tech, go ahead, image BT was promoting at the time of its privatisation.

Yet going up-market was always planned and a month ago, Rainbird was launched. This completes a trinity of software divisions, following as it does, the acquisition of Beyond.

Rainbird is being launched and established by the eponymous Tony Rainbird, who was also a co-founder of Firebird. His brief is to produce sophisticated titles on more machines, leaving budget hits on 8-bit micros to Firebird. The new division currently numbers four staff; Tony, as operations manager, Mike Anderiesz as advertisement manager and Steve Porter and Tony Gibson, project managers.

Tony is particularly interested in developing programs for the 68000 processor based micros, such as the Apple Macintosh, Atari ST, Amiga and the QL.

"This means we'll be doing things

over a much longer time than Firebird – everything will be with a view to the future," he said.

At first sight Rainbird appears a risky, though exciting venture. After all, all the four machines named above have yet to prove themselves in this country; is it really a profitable project?

"Well, there's less risk than you might think: we want to concentrate on the processor rather than a specific machine, and of those four at least one will succeed.

"In fact, I'm expecting us to become profitable very soon because it simply isn't practical to concentrate only on developments for the future micros," he said cheerfully.

"Besides, our range is already wider than that. We have projects in progress for 8-bit micros too – the *Music System* and the *Advanced Music System* for the Commodore, and the *Art Studio* for the Spectrum. These are being converted to the Amstrad CPC micros, and the *Art Studio* also for the Commodore.

"On the adventure side, we will be releasing *The Pawn*, which is being written by Magnetic Scrolls, on the 68000 micros. Magnetic Scrolls is still converting the parser used for the popular 8-bit machines as well.

"But our target for the 16-bit machines is still entertainment – we're not interested in spreadsheets and so on just yet. We will have a combination of adventure, simulation and strategy, and also what I can only really term 'megagames' – I can't think of a better word to describe them.

"For example, one project we have underway is *Reach For The Moon*.

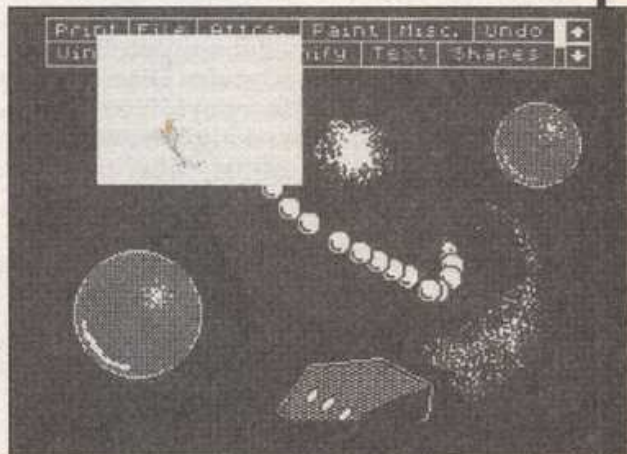
It contains an

icon driven 'decision maker', eight text and graphic adventures, and a vector graphic flight simulator, all in the one program."

Tony hopes that Rainbird will be able to release about one title each month in 1986.

Prices will inevitably be quite high, but according to Tony, "we'll price according to merit and, of course, the development costs."

In some respects, Firebird, Rainbird and Beyond will all be competing against each other with titles of a similar quality;



although New Information Services, the division of BT which holds all three, will ensure that the trio never, for example, bid against each other for the same licensing rights.

Rainbird will also work very closely with BT's newly set up software arm in the US, Firebird Licensees Inc.

"A good proportion of our product will be suitable for the American division, and a smaller proportion of that from Firebird and Beyond. The *Music System* is to be released over there, as is *Elite*."

Tony reckons a priority for the US is products for the Atari ST.

"They've sold between 50,000 and 60,000 over there, so it's going quite nicely. I reckon there'll be quite a few around in this country by next Christmas as well."

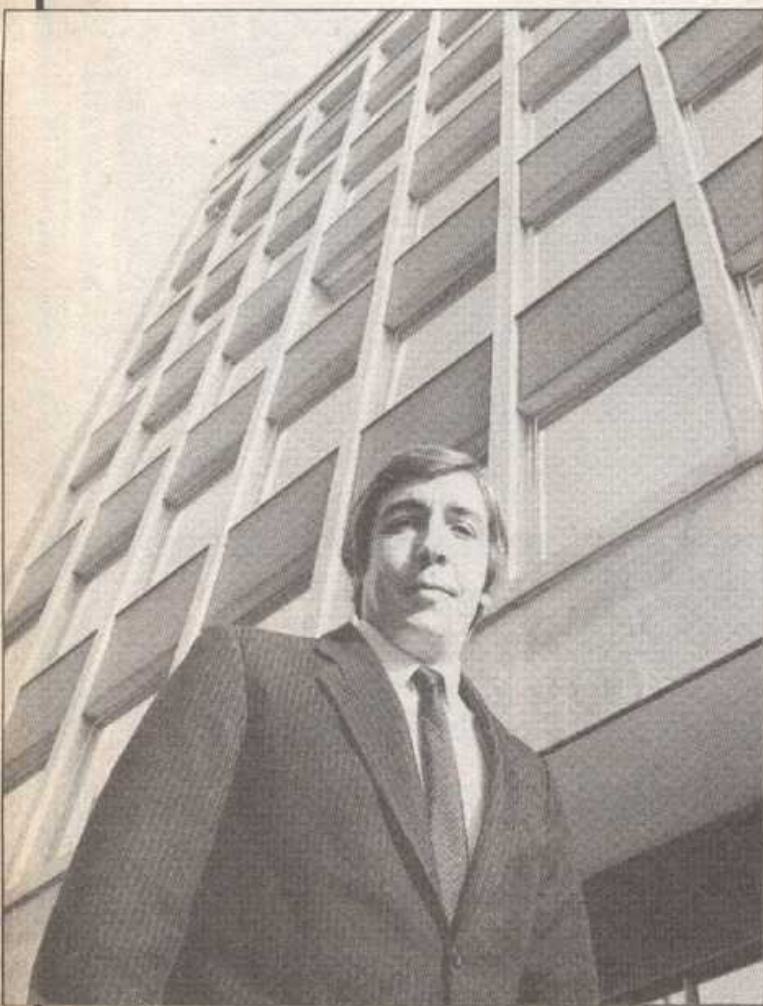
Plans are also afoot to export the other way – into Europe. The *Music System's* manual has been translated into German in readiness.

Rainbird is certainly a far cry from Tony's first micro venture. "I was a warehouse supervisor, writing games and setting up a label called Microgold in my spare time.

"There were five budget titles for the Vic 20, three of these games I'd written myself.

"The duplication, sticking the labels on cassettes, folding the inlay cards and selling directly to the shops was all done by me.

"Then British Telecom bought the product rights, I applied for a job to go with them, and ended up helping to launch Firebird."



**This is the only
warning you'll get.
They're coming soon.**



firebird

NEW FROM FIREBIRD. THE HOT RANGE.



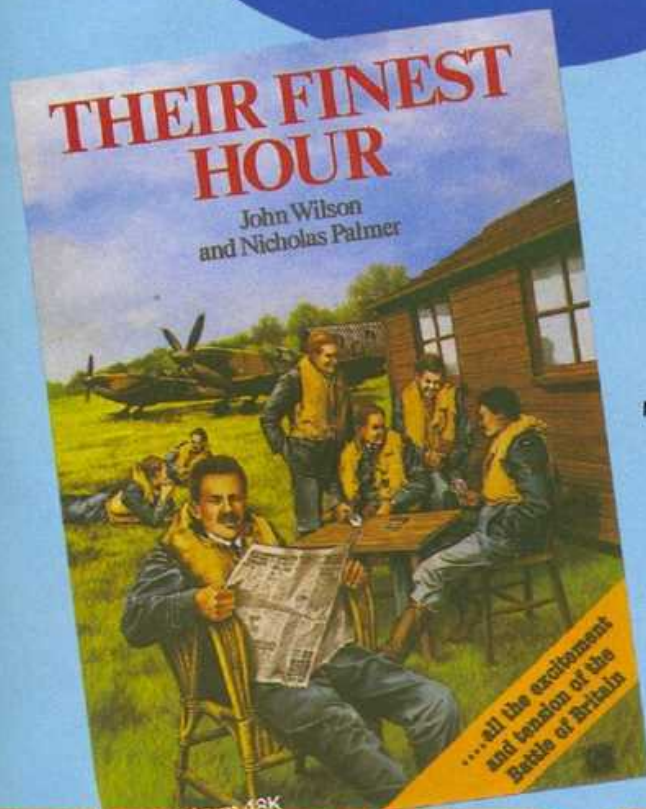
"What's that picture supposed to be?"

"Er, eye-catching, that's what it's supposed to be."

"But it doesn't tell you anything about the great new icon-driven Battle of Britain strategy game, **THEIR FINEST HOUR**, from Century Communications, publishers of **THE FOURTH PROTOCOL**. I mean, what's it got to do with using your skill and judgement to stem the almost inexorable advance of Goering's Luftwaffe? Does it tell you anything about the deployment of Spitfire squadrons and ack-ack batteries, the allocation of fresh pilots, or keeping in touch with the weather forecast? How about the daily reports you have to make to Winston Churchill, and the pulse rate feature where you control the speed of the game?"

"Well, er ..."

"Right, we'd better hurry up and design a new ad before the game hits the streets on 9 December, and people start writing to and phoning Century Communications at 62-65 Chandos Place, London WC2N 4NW, Tel: 01-240 3411 and asking for copies."



THEIR FINEST HOUR



Their Finest Hour — a great strategy game simulating The Battle of Britain, by Nicholas Palmer and John Wilson. Published by Century Communications for the 48K Spectrum at £9.95.

48K Spectrum

Reviews

Lukewarm

Program *Swords and Sorcery* Micro Spectrum 48K
Price £9.95 **Supplier** PPS, 452 Stoney Stanton Rd, Coventry CV6 5DG.

It's been a long time coming and not surprisingly we all hoped for something special.

Opinions differ wildly on the final results. One person I know would put it at the top of his Program of the Year list without any hesitation.

I belong to the other camp. While I admire the hard work in programming *Swords and Sorcery* – and the Midas operating system which drives it – my overall reaction is lukewarm.

Perhaps I expected too much but after 18 months of promises of micro role playing, I'm sad to find the reality



less like *Dungeons and Dragons* than I'd hoped. One immediate problem is the design of the enclosed dungeon, which is rich on rooms but low on atmosphere. The succession of chambers (each with its own monster, most of which have to be fought as they don't respond to the excellent Talk

option: 'Hello, Mr Snake' doesn't get you very far) is hardly inspiring and I'd question the importance of the 3D graphic when all they produce is bland line drawings that suggest nothing more than an NCP car park.

On the other hand the series of menus and sub-menus that guide all but

your movements take no time to learn and then work very smoothly. Even so, other aspects of the display can be confusing, and at times I was unsure just what was going on. Another aspect of role playing is maintaining the logic of the game and so I couldn't see why I was allowed a map of a quarter of the level with the positions of wandering monsters marked.

So, though the game gives you the ability to train your own character in various skills, I found myself unable to empathise with him and get into the spirit of the adventure.

Perhaps the Midas system will improve as better environments become available, but at the moment it lacks the human level of playing another character.

It is all too schematic.

John Minson



Numbers

Program *Supercalc 2 Micro* Amstrad CPC 6128/PCW 8256 (CP/M+) **Price** £49.00 **Supplier** Amsoft, Brentwood House, 169 Kings Road, Brentwood, Essex CM14 4EF.

I must admit that I scoffed at the idea of providing CP/M on home computers. One of my principal doubts was that a vast proportion of the software available carried enormous

nies worldwide. Now for a lowly £49 you too can run the very same thing to keep track of your home budgeting. I'm still not entirely convinced that this means that owners of the 6128 should therefore ignore the best of the cheaper software such as *Mastercalc* but it is something to think about. Perhaps more importantly it makes the 8256 even

more viable as a real low-cost business system.

Unusually for a heavyweight CP/M release, it runs quite well on only one drive. Features offered include complex and very comprehensive formula options, the ability to merge several small sheets into one large one, a utility to convert files from another program into

Supercalc readably and vice versa, calendar functions, user-defined screen formats, windowing, text look-up tables (for details not shown on screen all the time) and the ability to 'hide' selected cells.

Take my word that it can't be faulted.

Tony Kendle



A yardstick

Program *Yie Ar Kung Fu Micro* BBC/Electron **Price** £8.95 **Supplier** Imagine, 6 Central Street, Manchester

Not too long ago Bruce Lee, complete with flying feet and fists, was king of the silver screen. But, like many crazes, the popularity of kung fu slowly faded. The micro revolution has stimulated new interest in this most noble way of beating your opponent senseless. One fine example of a kung fu program is *Yie Ar* from Imagine.

Your function in this game is to control the actions of the kung fu master Oolong. By using keyboard or joystick you can execute over a dozen combinations of jumps,

kicks and dodges.

Oolong's first opponent is a 20 stone tank named Bucha. A chest high head butt is one of this guy's favourite moves. The second opponent is rather more difficult to dispose of. In keeping with his name, Star, he launches a constant barrage of spiked missiles. Getting close to him is difficult, putting him down is even worse.

Nuncha is the third adversary, armed with two lengths of wood joined together by a chain. Once he gets that thing whirling your best bet is to keep your head down and go for the shins.

On level four your opponent is a little man with a big stick. This honourable gentleman is intent upon giving you indigestion. I reached level five and was stood waiting for my next opponent to appear when I was suddenly accost-

ed by a swarm of flying teapots. These "feedles" were my downfall every time, no matter how I tried I just couldn't kick sufficient of them to reach the next level.

The graphics are excellent, each character's movements being tailored to his own particular discipline. This combined with the wide variety of opponents will make *Yie Ar* the yardstick to which other



manufacturers' offerings will be compared.

Hannah Frances



price tags, explained away by the need for 'dealer support', etc, that surpassed the cost of the computers themselves. Now I have to eat my words, as Amstrad, and certain other dealers, have been remarkably successful in negotiating price cuts of important releases.

Supercalc 2 is probably one of the top five best known names in the business software world, used by compa-



Little person

Program *Little Computer Person* **Micro** Commodore 64 **Price** £14.95 **Supplier** Activision, 15 Horley House, London NW1.

Dear Friend,
I am going to be very busy in my new home, so please don't think I am being rude by ignoring you, it's just that there's so many things to play and do, they will take up all my time. Please remember to keep me fed and top up my water and I'll want for nothing else.

Love,

Maxwell."

Billed as Activision's biggie for Christmas, this was how my little computer person introduced himself and his dog to me, and after moving in and having a good look around, he got down to the real business of his life - that of playing games, talking to his friends on the telephone, dancing, playing the piano and exercising.

David (*Ghostbusters*) Crane who masterminded this concept says that each little person sold will have a different name and possess his/her own particular characteristics - shy, extrovert, musical, etc.

I must admit that he is start-

ing to bore the pants off me.

This is not a game, but an exercise in observation and however much Activision promote it as being a real live person inside your computer, it has the obvious limitation of memory and soon becomes repetitious in the extreme.

What you see on screen is a 2½ storey house with all the mod-cons, ie, TV, hi-fi, bedroom, kitchen, lounge etc, and after the initial 'moving in' sequence, which only happens the first time you load up, your little friend flutters around the house at random, ie, playing the piano which utilizes the 64's excellent sound system (and up to now I have heard five different tunes), dancing, listening to records, playing cards and typing letters to you which is his only means of communication to humans.

Using the keyboard, you can type in commands and ask him to do things which may or may not happen.

The attention to detail in the house is excellent, there is even a clock on the wall which keeps perfect time from the moment you type it in at the beginning of each session.

He will go to the toilet at regular intervals, conveniently shutting the door first

and flushing of course, and makes himself meals, washes up and even cleans his teeth afterwards - a nice touch.

Playing cards with him is a bit of a let down, you get two choices of game, poker or card war, and a game of anagrams is thrown in as well, but this is not new and the card information in fact replaces the top half of the house which is quite disappointing.

My five year old daughter instantly fell in love with Max and happily played with him for a couple of hours until she lost interest with watching him go through the same sequences again and again.

Concept - totally new; presentation - brilliant; graphics and animation - superb; sound - excellent; but lasting interest? - no way. What Activision needs to do, if it's possible, is use this as a base module and introduce additional programs to it, giving your man a friend to live with or change the scenery maybe.

As it is, I'm afraid poor Max will be left to live in my daughter's bottom drawer.

Andy Moss



Boiling point

Program *Chemical Formulae* **Micro** Spectrum **Price** £9.95 **Supplier** Eclipse Software, 79 Ardrossan Gardens, Worcester Park, Surrey KT4 7AX.

I don't know about you but drawing up equations was the bane of 0-level chemistry for me. All that time spent looking things up in the Periodic Table, then trying to make things balance. And I usually got it wrong.

Now Eclipse has produced a program that contains a database of elements and ions, which will produce information on formulae, valencies, structures, atomic numbers, and melting and boiling points; more importantly it will calculate formulae, so if you want to know the low down on Potassium Cyanide, just type it in.

It's mainly menu driven and despite being written in Basic works quickly enough. You have to be accurate within certain parameters when naming the elements and ions, but these are quite clearly spelled out in the instruction booklet, which also provides a brief introduction to the topic.

While hardly glossy in presentation, it is serviceable and along with the rather high price this can be excused by the program's specialist nature.

The Basic is unprotected but it's easy to rescue if inadvertently crashed.

There's little more to say. If you need such a program and don't balk at the price this should suit, despite a general lack of chrome. It's also good to see the Spectrum used for something other than alien bashing.

John Minson



Go ape

Program *The Evolution Micro* Spectrum **Price** £6.95 **Supplier** ErnieWare, Postbus 2353, 6201 DB Maastricht, The Netherlands.

I don't know about that much heralded/bemoaned American invasion but nowadays there's a fair amount of continental software around, what with French pinball machines and Spanish boxers. Now it's Holland's chance to get in on the act and ErnieWare tells us that *The Evolution* will be available over here before Christmas.

Despite its missing link cover and instructions full of talk of 'acts', this turns out to be none other than that old - and I do mean old - friend, the computerised cube. A six by four grid of numbers is 'rotated' until the original or-

der is totally scrambled. You have to shift the rows and columns back again. Complete this within a certain number of moves and time limit and you move on to the next stage or 'act'. Difficulty levels are defined by limitations on which way the columns can move and at their hardest these make a complex task totally frustrating.

The game itself is fine if you like that sort of thing and while those of a coolly logical mind will sail through it, others will end up tearing their hair. But no way is it going to scare the producers of the big Christmas games and at the proposed price it's far too expensive for this sort of game. One can only presume that the Dutch software industry isn't so well developed as some of its European counterparts.

John Minson



F.A.B.

Program *Thunderbirds Micro Spectrum* **Price** £3.95 **Supplier** Firebird Software, Wellington House, Upper St Martin's Lane, London WC1.

Cue an excellent rendition of the Thunderbirds March.

"Scott. Virgil. An emergen-

cy. A team of archaeologists have crept into a crypt and gotten themselves trapped."

"Serves 'em right."

"You'll need Thunderbirds One and Two."

"Aww, no - I was gonna take TB One drag racing today."

"There's money in it. The catacombs are alive with treasure."

"And monsters too. Betcha."

"Okay, there may be the

odd monster. But you can equip Thunderbird Two from the whole range of tools before you go... at cost plus 25%."

"How about a pair of scissors to cut the monsters' strings?"

"Now these caverns from a giant maze..."

"Bor-ring!"

"Not so. Some passages are only of a size to take one craft or another, which means you'll need to co-operate."

"I'm not co-operating with him, after last time."

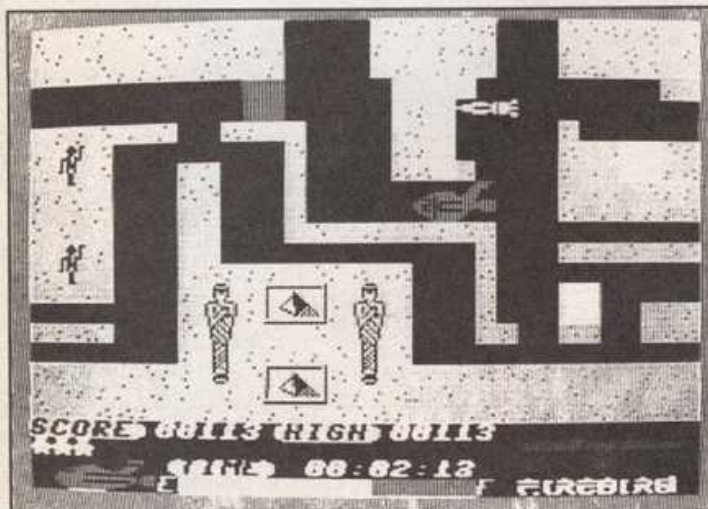
"Well, you'll have to, to clear passages by shifting blocks, most of which only one craft can do. Then there are sections with specific problems. It really takes thought."

"That rules out ole' wood-head here."

"It's really more of an abstract problem."

If you like abstract strategies then you'll probably love it.

John Minson



Patterns

Program *Willow Pattern Micro Amstrad* **Price** £3.95 **Supplier** Firebird Software, Wellington House, Upper St Martin's Lane, London WC2.

Yes Grasshopper - san, it is time for you once again to defeat the forces of wickedness in the guise of Ta Jin, a wicked merchant who plans to marry

tains some pleasant water music to accompany the action (all water music grates after a while and this is no exception).

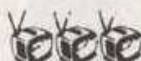
Still, what about the game - it's the usual maze variety with a number of nicely animated guards who throw swords at you if you venture too near, but pass them, wait till they throw the knife, dodge it, pick it up and throw

it back at them.

Once the princess is rescued you have to run back through the maze and on to a boat whilst being pursued by the enraged merchant.

Not as good as some of the other silver range, but, nevertheless a pretty good Japanese take away.

Andy Moss



Princess Koong Shee. You enter the Mandarins' Palace, defeat his sword throwing Samurai and rescue her.

So begins the *Willow Pattern* - a pretty maze game from Firebird's budget range. Although a bit lacking on actual game play, the program makes good use of the Amstrad's colour and con-

Rrum rrum

Program *Revs Micro Commodore 64* **Price** £14.95 (tape) £17.95 (disc) **Supplier** Firebird Wellington House, Upper St. Martin's Lane, London WC2H 9DL

Whenver I hear people moan about the standard of BBC B software, I point them in the direction of that now classic from Acornsoft, *Revs*.

They invariably come back delighted or disappointed depending on what machine they own.

Now *Revs* has been converted to the Commodore 64,

marketed by those bastions of private enterprise, Firebird.

The 64 version is completely faithful to the original in layout and design, and at times you'd be hard pressed to guess which machine it was running on. Admittedly, there are slight differences... the corners seem a touch more angular compared to the original, and the striped kerbs at the side of the track don't zoom by quite so fast, which for me removed a little bit of the drama and atmosphere. But nit picking apart, the gameplay is virtually identical... and you get two tracks, Silverstone plus Brands Hatch.

A nice touch allows the use of the Commodore games

Spelling test

Program *Tas-spell Micro Any Amstrad* **Price** £16.50 **Supplier** Tasman Software, Springfield House, Hyde Terrace, Leeds LS2 9LN.

As a naked word processor, *Tasword/Amstrad* has recently received some extremely stiff competition with the release of Arnor's *Protext*. However, the disc versions of *Tasword* are still the best value all-round package for the Amstrad range with mail merge facilities, the *Tasprint* text-redefiner program, and now *Tas-spell*.

Tas-spell is self evidently a spelling checker and it is only accessible via a menu option of the disc releases of *Tasword* itself, it is not a 'stand alone' package. The program contains a disc with a dictionary of over two thousand words, all with the English spelling and 45K free for you to add ones of your own.

It is extremely simple to use, reading through the text currently held in memory comparing it with the dictionary data. Unrecognised words are highlighted, in context, and you are given options to *Ignore* the word, or *Change* the word that you habitually mis-spell.

An irritating feature is that it constantly throws up names, initials, etc. You would be well advised to add your name and address to the dictionary. Also it makes contextual mistakes such as 'its over their' but that is a flaw with all spell checkers and no reflection on *Tasword*.

On the whole, though, it is an essential utility for anyone who has to produce important and correctly spelt documents.

Tony Kendle



paddle as a 'steering wheel' if desired... good thinking by somebody.

The most challenging and addictive game to hit the Commodore for quite some time. You'll love it.

John Cook



MS-2000 Mouse

Hardware MS-2000 Mouse Micro
CBM 64 Price £69.90 Supplier
Wigmore House, 32 Savile Row, London W1X 1AG.

As mouse/icon/window systems become more popular, no doubt prompted by the success of the Apple Macintosh's operating system, more and more micro owners will discover the joys of using these user-friendly devices. The MS-2000, based on a product for the BBC-B, is by far the best such package for the CBM 64 so far.

The MS-2000 is comfortably small, wedge shaped, and has two oblong click switches on its nose. It connects to the 64's joystick port by a standard 9-pin D-plug. Beneath the mouse is the non-slip rubber ball, and inside, the opto-electric circuitry which gives a movement resolution of 100 points to the inch.

Like all mouse systems, the MS-2000 works by being rolled over a flat table surface, and moves a control symbol over a selection of command icons on the screen.

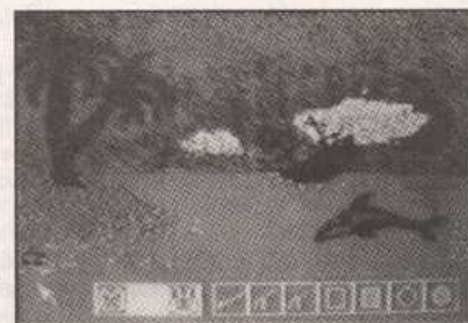
In the case of the MS-2000, the software supplied with the package is called

draw, which is very fast and responsive; dotted line draw; straight line draw, which allows you to set a point, extend a line from it and click the button again to draw the line; a very fast circle/ellipse facility, open or filled; equally good square/rectangle drawing; paint, a very fast and efficient fill routine; three selectable "pencil" thicknesses; an excellent "airbrush", which allows you to "spray" large areas, either in solid colour or in any one of a selection of 32 patterns.

You have a choice of all 16 colours for the cursor or paint, (unlike some packages, such as the Datex Mouse, which limit you to two colours on the screen at any time). Your current drawing colour is indicated by the border colour.

Should you make a mistake at any time - for instance, allowing a fill routine to leak all over the screen by leaving a box open - you can delete the last action by clicking on the "Cat" icon.

Having drawn your basic design or pattern, there are various high-level options to modify it. You can define a box and copy the contents all over the screen; set up a line of symmetry so that patterns reflect in the horizontal, vertical, or diagonal axis, or any combination; you can change the background colour; scroll the drawing area to get at extra space; zoom in on a small area to make corrections to individual pixels;



Free-hand Draw, Pencil and Airbrush

print your design out in black-and-white on an MPS printer; and save it to cassette.

If it isn't already obvious from the description of the facilities, I must say that I found the MS-2000 wonderful to use; the hardware is excellent, the soft-



ware technically stunning and well-thought out, and the graphic effects you can achieve, even if you have no real drawing skill, are extremely impressive.

Three minor quibbles, two of which should be dealt with by forthcoming software releases from Wigmore House. Firstly, given the notorious slowness of Commodore cassettes, a disc option would have been nice; apparently both disc and Rom versions of the software are on the way.

Secondly, the lack of any text input option makes the *Cheese* software more suitable for pure graphic design, rather than for applications such as drawing bar charts or circuit diagrams. Forthcoming software will allow you to use a number of text fonts in your designs. There are also hints of other, more general, Windows/Icons/Mouse software to come.

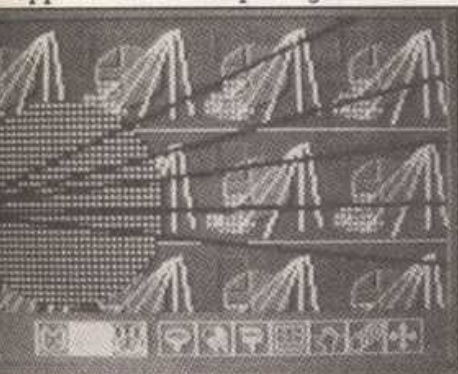
Thirdly, unlike some packages such as Koala Pad, it's not possible to remove the icon menu from the screen to leave the bare graphics. However, this is a minor point since the menu takes up very little space.

The MS-2000 package, which comes with a helpful, clear manual, is certainly one of my favourite 64-compatible products ever.

As a bonus, powering up the micro with the mouse's left hand button held down allows you to use the MS-2000 as a "joystick".

If you can possibly scrape the money together, do so - letting your creativity flow through the mouse is much more satisfying than zapping any number of aliens.

Chris Jenkins



Line, Circle, Square and Fill routines

Cheese. It's a hi-res design program which enables you to utilise the powerful graphics abilities of the 64 without recourse to the awful CBM Basic.

On loading the software from cassette, you are presented with a blank screen with a selection of icons at the bottom. Rolling the mouse around moves a pencil-shaped cursor over the design area. This cursor changes to an arrow shape when it passes over the command icons. A numerical readout on the bottom left of the screen gives you the cursor's precise location, making exact positioning easy.

To select a function, you merely place the cursor over the desired icon, click the right-hand mouse button, and move the cursor to the drawing screen. I must say that the software is brilliantly programmed: all the graphics facilities are fast, smooth and precise. There are three lots of icons to select from, the two hidden pages are brought up by clicking on the mouse icon.

Graphics facilities include freehand

Our first show was an outstanding success...

This time we've got many more surprises and lots more room to wander around!

★ Amstrad goes striding into 1986 as the most innovative and profitable computer company in Britain. Come and see for yourself the ever-growing range of products that puts it head and shoulders above the rest.

★ So many people turned up for the first-ever Amstrad Show in October that entry had to be restricted and lengthy queues formed outside. Not this time! We've almost doubled the floor area - so you'll be able to move around with ease.

★ Every stand was taken at the October show, and many potential exhibitors had to be turned away. This time they've booked well in advance! Well over a hundred exhibitors will be there.

★ On display will be just about every piece of hardware and software that has yet been produced for the Amstrad range. And that means lots more products - and lots more bargains! A big feature of the October show was the way exhibitors entered into the spirit of excitement that pervaded the show and slashed their prices. This time many thousand more visitors will be going home with some really worthwhile bargains!

★ One thing you'll get for nothing - and lots of it - is advice! Waiting to talk to you, and answer any problems you may have about Amstrad computing, are some of Britain's top Amstrad experts. They'll all be there!

AMSTRAD COMPUTER SHOW

Organised by
Database Publications

Champagne Suite,
Novotel,
Hammersmith,
London W6

Saturday **Sunday**
January 11 **January 12**
10am-6pm **10am-5pm**

Avoid the queues!

Get your
ticket in
advance...

**SAVE £1
A HEAD!**

Special prices for groups of 10 or more.
Phone 061-480 0171 for details.



Advance
ticket
order

AMSTRAD
COMPUTER
SHOW

Name _____
Address _____
Signed _____

PHONE ORDERS: Ring Show Hotline: 061-480 0171
Please quote credit card number and full address.

Admission at door: £3 (adults), £2 (under 16s)

Please supply:

☐ Adult tickets at £2 (save £1) _____ £
☐ Under-16s tickets at £1 (save £1) _____ £
TOTAL £ _____

☐ Cheque enclosed made payable to
Database Publications Ltd.

☐ Please debit my credit card account: _____
Expiry date: /

Access _____

Visa _____

Post to: Amstrad Show Tickets, Europa House,
68 Chester Road, Hazel Grove, Stockport SK7 5NY.

PCW

Computereyes Video Digitiser for your Atari



COMPUTEREYES will produce a digital image from any video source; camera, video recorder or video disc. The PAL version of this popular system by Digital Vision Inc. is now available for the Atari 800/800XL and 130XE, with a version for the ST coming in the new year.

COMPUTEREYES connects the video source to the Atari through the two Controller Ports. An image is acquired in less than six seconds and multiscanning modes of the same image allow a realistic grey scale picture to be constructed. Comprehensive software on disc contains image capture, saving to disc and loading routines and produces images which are compatible with Atari Artist, Koala Pad and Graphics Tablet. Individual routines can readily be incorporated into your own programs.

COMPUTEREYES has dozens of applications ranging from producing documents to education and scientific use.

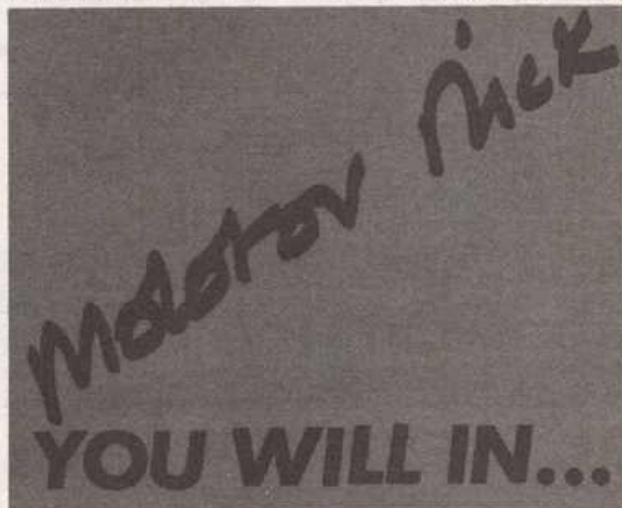
Price is only £129 + VAT. (Add £2.30) for P&P

Stem Computing

3 Blackness Avenue, Dundee, DD2 1ER. Tel: (0382) 65113

PD77

HAVE YOU MET...



ROCK'N WRESTLE



Data Protection

by Jonathan Darks

escape if it contains such information as occupation, home telephone number, date of birth, etc.

All right, most impressive, but what relevance does it have to the home computer user? In my own case using a computer to record patient details, the need for confidentiality are obvious, but what about the enthusiast who keeps a membership/mailling list for the local squash club or amateur dramatic society? Not very exciting information perhaps but it will probably contain at least a name and address, home, and perhaps work telephone numbers (and therefore a clue to occupation), and maybe even a date of birth. There are very few exemptions to registration. Quote: Personal data held by an individual and "concerned only with the management of his personal, family or household affairs or held by him only for recreational purposes". Such users are unconditionally exempt from registration.

Examples of conditional exemption include, Quote: "data held by unincorporated members clubs relating only to club members" and "data held for distribution of articles or information to the data subjects and consisting only of their names and addresses". Note, these last two are examples of conditional exemption. The data subjects concerned must be consulted as to whether they object to the information being kept and must be consulted before any data is disclosed.

How then best to protect the data and, of course, yourself? Basic security is fairly obvi-

ous, don't leave discs or tapes lying around and, proud as you may be of your latest all singing and mail-merging database, be careful who you demonstrate it to! Remember also that computer generated material is just as important so tear up those yards of printout before you chuck them in the wastepaper bin. Finally, to make sure you are not the subject of that fascinating test case that's bound to occur before long, you can obtain full details of the act in (it is claimed) simplified form, for free, from: The Data Protection Registrar, Department 1, Springfield House, Water Lane, Wilmslow, Cheshire SK9 5AX.

Program

And now my own own small contribution to data protection. The following program, designed for use with a disc drive, will scramble ASCII text or program files, including Tasword files, and will cope with most files containing mixed numeric and string data produced by the Amstrad (not Masterfile files unfortunately, as these are in binary format). It accepts a code word of any length (letters only, these are converted to upper case for processing) and for the more paranoid this need not appear on screen. Then the ASCII value of each letter in turn is added to that of successive characters in the data file cycling repeatedly through the codeword until the whole file is scrambled. To unscramble the process is reversed. Written in Basic, the scrambling process takes a short while to complete, but any number of files can be selected for sequential processing.

```
30 REM title & initialise
40
50 MODE 0:CLS:PRINT:PRINT:PRINT:PRINT STRING$(20,"");PRINT*
  BARBASE *;PRINT* data scrambler *;PRINT* *;CHR$(16);*
  J.F.Darks,NGVBS *;PRINT STRING$(20,"");FOR c=1 TO 2000:NEXT
60 OPENOUT"dummy":MEMORY HIMEM-1:CLOSEOUT:CLS:MODE 2:WINDOW #1,1,80,20
  ,25:WINDOW #0,1,80,1,20:BIM info$(2000):DEFINT a-z
70
80 REM options
90
100 PRINT#1,"OPTIONS: A- Encode files B- Decode files"
110 AS=INKEY$:IF AS="" THEN 110
120 IF AS="A" OR AS="a" THEN t$="scramble":option=1
130 IF AS="B" OR AS="b" THEN t$="decode":option=2
140 PRINT#1,"Do you wish the codeword revealed?(y/n)"
150 AS=INKEY$:IF AS="" THEN 150
160 IF AS="Y" OR AS="y" THEN hide=1 ELSE hide=0
170 CAT:CLS#1:PRINT #1,"BARBASE - select files to: t$;n=1
180 INPUT #1, a$(n):IF a$(n)="" THEN 240
190 PRINT#1,"Another? ENTER to proceed, or input further file name."
200 n=n+1:limit=n-1:GOTO 180
210
220 REM enter codeword, check for validity & read into array 'code'(c)
230
240 CLS#1:PRINT#1,"INPUT CODEWORD (any length)":
250 IF hide=1 THEN 280
260 PRINT#1,"WAIT FOR TOME!":BORDER 20,1:PRINT#1:FOR x=1 TO 2000:NEXT
270 PRINT#1,"THIS WILL NOT APPEAR ON SCREEN":PRINT#1:FOR x=1 TO 2000
  :NEXT:PRINT#1,"(So make sure you get it right :)":FOR x=1 TO 2000:NEXT
  :BORDER 1:PRINT CHR$(7):PRINT CHR$(12):INPUT code$:PRINT CHR$(6):CLS#1
  :GOTO 290
280 INPUT #1, code$:CLS#1
290 code$=UPPER$(code$)
300 FOR n=1 TO LEN(code$):IF ASC(MID$(code$,n,1))>90 OR ASC(MID$(code$,
  ,n,1))<65 THEN PRINT#1,"CODEWORD INVALID":FOR t=1 TO 1500:NEXT x:GOTO 240
310 NEXT n
320 c=LEN(code$):DIM code(c)
330 FOR x=1 TO c:code(x)=ASC(MID$(code$,x,1)):NEXT x
340
350 REM read in file for processing into array 'info$(2000)'
```

```
360
370 FOR file=1 TO limit:z=0
380 OPENIN a$(file)
390 WHILE EOF=0
400 z=z+1:LINE INPUT #9,info$(z)
410 WEND
420 CLOSEIN
430
440 REM select subroutine for scrambling or decoding
450
460 PRINT#1,"PROCESSING "a$(file):* -PLEASE WAIT."
470 IF option=1 THEN GOSUB 630 ELSE GOSUB 710
480
490 REM select suitable filetype name & save file
500
510 name=INSTR(a$(file),".")
520 IF option=1 THEN filetype$="GGG" ELSE filetype$="DEC"
530 name=LEFT$(a$(file),name)-filetype$
540 OPENOUT name$
550 FOR n=1 TO z
560 PRINT#9,info$(n):NEXT n
570 CLOSEOUT
580 NEXT file
590 PRINT CHR$(7):PRINT#1:PRINT#1,"PROCESSING COMPLETE!":STOP
600
610 REM subroutine for scrambling
620
630 FOR n=0 TO z-1:FOR m=1 TO LEN(info$(n)):z$=MID$(info$(n),m,1):IF
  ASC(z$)<32 THEN 660
640 number=ASC(z$)+code(m):IF number>255 THEN number=number-223
650 z$=CHR$(number)
660 MID$(info$(n),m,1)=z$:q=q+1:IF q>c THEN q=1
670 NEXT m:NEXT n:RETURN
680
690 REM subroutine for decoding
700
710 FOR n=0 TO z-1:FOR m=1 TO LEN(info$(n)):z$=MID$(info$(n),m,1):IF
  ASC(z$)<32 THEN 740
720 number=ASC(z$)-code(m):IF number<32 THEN number=number+223
730 z$=CHR$(number)
740 MID$(info$(n),m,1)=z$:q=q+1:IF q>c THEN q=1
750 NEXT m:NEXT n:RETURN
```


Evesham Micros

COMMODORE OFFERS

CBM 64 COMPENDIUM PACK includes CBM 64, Data Recorder, Music Maker, Designer's Pencil and Adrian Mole book and game
 CBM 64 + 1541 DISC DRIVE With Super Zaxxon and Ultima III on disc free of charge.
 CBM PERIPHERALS PACK includes 1541 Disk Drive and MPS 801 Printer
 CBM 1541 DISK DRIVE
 CBM MPS803 PRINTER Superb value.
 CBM 128 In stock now!
 CBM 1570 DISC DRIVE In stock now
 CBM Compatible DATA RECORDER

ONLY £189.95
 ONLY £189.95
 ONLY £119.95
 ONLY £259.00
 ONLY £189.95
 ONLY £29.95

STAR SG10C

A superb new 120 cps Commodore ready printer that offers many features including friction and tractor feed, CBM graphics, near letter quality mode etc. Packaged ready to use at the special introductory price of

ONLY £249.00

AMSTRAD OFFERS

DMP2000 PRINTER IN STOCK NOW ONLY £159.00
 (our price includes lead)

CPC 6128 Computer Green Monitor
 Colour Monitor

Amstrad RS232 Interface Module

3in Disks suitable for all Amstrad models
 OR buy a box of ten disks and get "EXCAT" free
 DD1 Disk Drive

ONLY £289.00
 ONLY £389.00
 ONLY £47.95
 ONLY £4.25 each
 ONLY £40.00
 £159.00

BBC OFFERS

CUMANA DISK DRIVES

CSX 100 (100K single)
 CSX 400 (400K single, 40/80 switchable)
 CDX 800S (double 400K, 40/80 switchable)

— Other models available ring for prices —
 TATUNG TMO1 RGB Colour Monitor with green screen option c/w lead
 ACORN DFS KIT

ONLY £99.95
 ONLY £114.95
 ONLY £209.95

SPECTRUM OFFERS

SPECTRUM + 48K complete with data recorder, joystick and interface, four US gold games and a holiday voucher

SPECTRUM EXPANSION SYSTEM

PROTEK 3 position switchable joystick interface with
 QUICKSHOT II JOYSTICK

ONLY £139.95
 ONLY £89.95
 ONLY £19.95

3M FLOPPY DISKS

BOXES OF TEN DISKS

SSI/DD £16.00
 DSI/DD £20.00

NEW SPECIAL PACKS WITH
 PLASTIC CASE

SSI/DD £17.00 including Case
 DSI/DD £21.00 including Case



EVESHAM MICROS
 BRIDGE STREET, EVESHAM,
 WORCS., WR11 4RY.
 Tel: 0386 49641

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.

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

PRINTER OFFERS

Look at these deals on centronics printers we believe that these prices offer the best value in the country. All prices include receipted delivery, despatch is within 48hrs of receipt of order provided goods are in stock. A printer lead is supplied to suit your micro free of charge, (please specify Amstrad, BBC, Oric, Dragon, Einstein, CBM64 or Memotech) for Spectrum or QL owners we will supply with an appropriate interface for an additional £20.00.

SMITH CORONA FASTEXT 80

Bulk purchase allows us to offer this high quality, 80 column dot matrix printer for an unheard of price. Buy a proper printer for the price of a thermal. Friction feed is standard and an optional tractor unit is available.

ONLY £129.95

Price includes lead to suit your micro.
 Or to suit Spectrum with Kempston centronics "E" interface
 £149.95

SHINWA/MICRO P. CPA 80 +

NOW WITH NEAR LETTER QUALITY MODE

Improved specification makes this, the latest version of this popular model, the outstanding printer buy in its class. As well as it's normal superb print quality at 100cps (better than the NLO on many rival models) it now has an NLO mode which offers even better print quality. This can be switched in either from a front panel NLO switch or from software. Other features are friction and tractor feed, external dipswitches, graphics mode, square needle print head (gives less doty look to print) and Epson compatibility. Take a look at these unretouched actual size print samples.

Standard PICA text (100cps)
 PICA text emphasised

True descenders on jpg etc.
 ELITE mode gives 96 columns

CONDENSED mode gives 142 columns

ENLARGED mode
 SUBSCRIPTS and SUPERSUBSCRIPTS

underlines nicely

Italics available in all modes

We are convinced that this printer offers the best performance and value in its class and at our unheard of price is a BARGAIN.

ONLY £189.95

Price includes Centronics lead to suit your micro.
 Or to suit Spectrum with Kempston "E" interface £209.95.

MICRO P MP165

This printer is a very high specification at an unbelievable price. It boasts 165 cps in draft mode and 70 cps in near letter quality mode, which is switch or software selectable. It is friction and tractor feed as standard has a 2K buffer and is EPSON compatible (it even uses an EPSON ribbon). It can print in standard PICA 80 column mode or a variety of others from enlarged 40 column mode to condensed at 132 column. Italics are available in all modes. Normally this printer would be expected to sell at £300 plus we are offering it at our ultra keen price inclusive of printer lead to suit BBC, Amstrad, CBM 64, Oric, Dragon, Einstein or Memotech.

ONLY £249.00

Price includes Centronics lead to suit your micro.
 Or to suit Spectrum with Kempston "E" interface £269.00

U H F GRAPHIC ADVENTURE CREATOR

Probably

^ THE MOST SOPHISTICATED AND
 FLEXIBLE ADVENTURE CREATING SYSTEM
 IN THE WORLD.

The Graphic Adventure Creator for the CPC range of Amstrad Personal Computers. Cassette £22.95. Disc £24.95. from leading multiple and independant retailers. Also from our fast mail order service post free. Telephone: (0734) 591678.

Incentive Software Ltd,
 54 London Street, Reading RG1 4SQ.



WILBUR

by T A Bartley

Part Two of the adventures of Wilbur, our 100% machine code, multi screen arcade game. This week, use the new loader program to

enter the data into memory and save with Save ""Code 41886, 2892. More to look forward to next week.

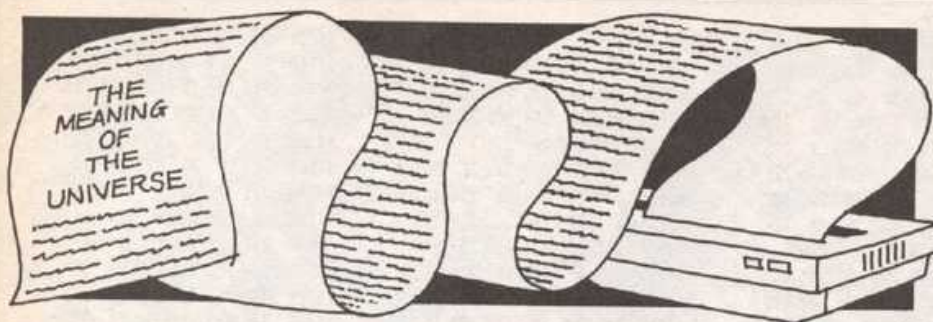
In the meantime, if all that typing is

getting to you, write to T A Bartley enclosing £2.00 for a copy of the game on tape: 81 Beverley Cres, Grimsby, South Humberside DN32 9TJ.

```
1000 REM      DECIMAL LOADER
1010 POKE 23609,50
1015 PRINT "START TYPING IN DUMP ONE NUMBER AT A
TIME, EACH NUMBER FOLLOWED BY RETURN"
1020 LET T=0: FOR N=41886 TO 44777
1030 INPUT J: PRINT N,J: POKE N,J: LET T=T+J: NEXT N
1040 IF T<>321152 THEN PRINT "DATA ERROR: CHECK
LISTING"
1050 IF T=321152 THEN PRINT "DATA OK"
```

41886 0 0 0 0 3 0	42162 163 16 239 201 17 0	42438 35 221 110 0 221 102	42714 221 203 7 214 221 203
41892 0 0 0 0 0 0	42168 96 33 0 64 1 0	42444 1 205 2 164 205 64	42720 7 142 24 13 221 190
41898 0 0 0 0 0 0	42174 24 237 176 201 58 128	42450 164 58 123 163 119 16	42726 5 56 8 221 203 7
41904 0 0 0 6 16 221	42180 162 167 200 71 221 33	42456 234 201 58 122 163 167	42732 206 221 203 7 150 221
41910 110 14 221 102 15 124	42186 129 162 197 221 203 7	42462 200 71 221 33 124 163	42738 203 7 78 221 70 3
41916 198 32 93 87 26 182	42192 70 40 25 221 110 0	42468 221 94 0 221 86 1	42744 40 8 221 53 1 16
41922 119 35 19 26 182 119	42198 221 102 1 221 94 3	42474 197 213 221 35 221 35	42750 251 195 102 167 221 52
41928 43 205 207 163 16 237	42204 221 86 4 205 2 164	42480 221 110 0 221 102 1	42756 1 16 251 195 102 167
41934 201 37 124 230 7 254	42210 221 110 5 221 102 6	42486 205 254 165 209 193 16	42762 221 126 0 221 203 7
41940 7 192 125 214 32 111	42216 221 126 2 119 1 8	42492 237 201 6 8 26 47	42768 94 40 27 221 190 4
41946 230 224 254 224 200 124	42222 0 221 9 193 16 216	42498 166 40 6 62 1 50	42774 32 56 221 126 13 167
41952 198 8 103 201 221 110	42228 201 58 128 162 167 200	42504 166 163 201 37 19 16	42780 32 50 221 203 7 230
41958 0 221 102 1 205 33	42234 71 221 33 129 162 197	42510 241 201 62 61 205 244	42786 221 203 7 158 205 6
41964 164 221 117 14 221 116	42240 221 126 3 205 244 163	42516 163 58 157 163 167 200	42792 169 205 45 169 24 56
41970 15 201 17 144 226 229	42246 221 115 3 221 114 4	42522 71 33 128 87 205 2	42798 221 190 5 32 29 221
41976 111 38 0 41 41 41	42252 221 110 0 221 102 1	42528 164 35 16 250 201 6	42804 126 13 60 221 190 8
41982 25 235 225 201 229 197	42258 205 64 164 221 117 5	42534 6 17 52 166 33 128	42810 32 20 221 203 7 222
41988 213 245 6 8 26 119	42264 221 116 6 1 8 0	42540 90 26 119 35 19 16	42816 221 203 7 166 221 54
41994 37 19 16 250 241 209	42270 221 9 193 16 220 201	42546 250 201 65 70 67 69	42822 13 0 205 6 169 205
42000 193 225 201 33 0 64	42276 58 128 162 167 200 33	42552 68 66 58 201 162 167	42828 45 169 24 22 221 126
42006 17 1 64 1 255 23	42282 159 163 58 120 92 190	42558 200 71 221 33 202 162	42834 13 167 32 16 62 8
42012 175 119 237 176 201 125	42288 200 33 158 163 126 167	42564 197 33 96 204 221 126	42840 221 203 7 94 40 2
42018 15 15 15 230 31 111	42294 40 2 53 201 54 5	42570 2 167 40 7 71 17	42846 237 68 221 134 0 221
42024 124 7 7 230 224 181	42300 58 128 162 71 221 33	42576 32 0 25 16 253 221	42852 119 0 205 228 163 14
42030 111 124 230 7 8 124	42306 129 162 197 221 203 7	42582 117 11 221 116 12 221	42858 1 205 77 164 205 114
42036 15 15 15 230 24 246	42312 70 40 13 221 110 5	42588 70 8 25 16 253 221	42864 167 201 221 110 14 221
42042 64 103 8 180 103 201	42318 221 102 6 126 238 64	42594 117 16 221 116 17 1	42870 102 15 124 230 7 254
42048 124 230 24 203 47 203	42324 119 205 97 165 1 8	42600 22 0 221 9 193 16	42876 7 62 2 40 1 60
42054 47 203 47 198 88 103	42330 0 221 9 193 16 228	42606 213 201 58 201 162 167	42882 8 205 64 164 229 17
42060 201 6 16 221 94 19	42336 201 221 110 0 221 102	42612 200 33 164 163 58 120	42888 32 0 221 203 7 94
42066 221 86 20 221 110 14	42342 1 221 94 3 221 86	42618 92 190 200 119 221 33	42894 40 14 221 126 5 214
42072 221 102 15 58 170 163	42348 4 6 8 26 47 166	42624 201 162 221 70 0 221	42900 8 221 190 0 56 28
42078 167 32 14 126 203 65	42354 40 20 217 205 85 171	42630 35 197 205 241 168 221	42906 35 35 24 17 221 203
42084 40 10 166 40 6 62	42360 217 205 141 165 205 21	42636 203 7 70 40 6 205	42912 7 102 40 37 221 126
42090 1 50 166 163 201 26	42366 171 33 169 163 53 221	42642 147 164 205 161 166 167	42918 4 198 7 221 190 0
42096 182 119 35 19 58 170	42372 54 7 0 201 37 19	42648 1 22 0 221 9 193	42924 48 8 43 62 7 119
42102 163 167 32 14 26 203	42378 16 227 201 221 110 5	42654 16 231 201 205 6 169	42930 167 237 82 119 221 126
42108 65 40 10 166 40 6	42384 221 102 6 62 7 119	42660 205 32 169 221 203 7	42936 6 225 119 35 17 33
42114 62 1 50 166 163 201	42390 221 110 0 221 102 1	42666 78 32 18 221 203 7	42942 0 119 167 237 82 8
42120 26 182 119 43 205 207	42396 221 94 3 221 86 4	42672 86 32 12 221 203 7	42948 61 200 8 24 241 221
42126 163 19 16 201 201 205	42402 6 8 26 47 166 119	42678 94 32 11 221 203 7	42954 203 7 78 40 13 221
42132 228 163 6 16 221 110	42408 37 19 16 248 201 58	42684 102 32 5 205 204 166	42960 126 5 214 8 221 190
42138 14 221 102 15 221 94	42414 122 163 167 200 71 221	42690 24 3 205 10 167 221	42966 1 56 221 25 24 18
42144 19 221 86 20 26 47	42420 33 124 163 221 126 0	42696 203 7 134 201 221 126	42972 221 126 4 198 8 221
42150 166 119 19 35 26 47	42426 205 244 163 221 115 0	42702 1 221 203 7 78 40	42978 190 1 48 208 8 71
42156 166 119 19 43 205 207	42432 221 114 1 221 35 221	42708 15 221 190 4 48 23	42984 8 167 237 82 16 251

42990	62	7	119	35	119	24	43440	176	221	110	4	221	102	43890	254	7	32	2	54	0	44334	0	75	13	213	229	209
42996	193	221	33	215	161	221	43446	5	126	50	128	162	167	43896	35	124	254	91	32	243	44340	0	213	43	237	184	18
43002	70	0	221	35	197	221	43452	40	18	35	71	17	129	43902	201	42	28	172	70	35	44346	225	17	32	0	167	237
43008	126	4	205	244	163	221	43458	162	197	1	4	0	237	43908	62	63	164	103	34	28	44352	82	209	193	16	231	201
43014	110	0	221	102	1	229	43464	176	19	19	19	19	193	43914	172	120	201	230	7	135	44358	62	8	1	0	0	17
43020	205	58	168	225	205	28	43470	16	243	221	110	6	221	43920	95	22	0	33	30	172	44364	32	24	33	223	87	245
43026	168	1	6	0	221	9	43476	102	7	126	50	201	162	43926	25	94	35	86	235	233	44370	213	17	32	0	4	25
43032	193	16	227	201	205	64	43482	167	40	23	35	71	17	43932	6	24	197	205	150	173	44376	16	253	65	4	35	16
43038	164	221	126	3	8	221	43488	202	162	197	1	11	0	43938	205	70	173	193	16	246	44382	253	209	66	5	197	6
43044	70	2	221	126	5	229	43494	237	176	229	213	225	17	43944	201	6	24	197	205	125	44388	0	75	213	229	17	32
43050	119	35	16	252	225	17	43500	11	0	25	235	225	193	43950	173	205	9	173	205	150	44394	0	25	209	229	237	176
43056	32	0	167	237	82	8	43506	16	238	221	110	8	221	43956	173	205	70	173	193	16	44400	225	209	193	120	16	236
43062	61	200	24	232	221	70	43512	102	9	126	50	122	163	43962	240	201	6	32	197	205	44406	241	67	119	35	16	252
43068	3	197	229	221	70	2	43518	167	40	8	17	122	163	43968	125	173	205	9	173	193	44412	201	6	192	17	255	87
43074	205	2	164	35	16	250	43524	1	12	0	237	176	221	43974	16	246	201	6	24	197	44418	213	225	43	197	1	31
43080	225	125	254	32	48	5	43530	126	10	50	162	163	201	43980	205	125	173	205	9	173	44424	0	26	237	184	35	54
43086	1	32	7	24	3	1	43536	33	33	161	58	213	161	43986	205	46	172	205	203	172	44430	0	43	43	27	193	16
43092	32	0	167	237	66	193	43542	167	40	7	71	17	9	43992	193	16	240	201	6	24	44436	240	201	17	0	64	6
43098	16	225	201	33	102	169	43548	0	25	16	253	235	201	43998	197	205	46	172	205	203	44442	23	197	213	6	8	197
43104	17	134	163	1	22	0	43554	33	128	162	6	9	197	44004	172	193	16	246	201	6	44448	213	98	123	254	224	32
43110	237	176	201	58	110	162	43560	1	8	0	9	26	119	44010	24	197	205	126	172	205	44454	8	46	0	122	198	8
43116	167	200	33	165	163	58	43566	19	193	16	245	201	33	44016	151	172	205	46	172	205	44460	103	24	3	198	32	111
43122	120	92	190	200	119	33	43572	128	162	6	9	197	1	44022	203	172	193	16	240	201	44466	1	32	0	237	176	209
43128	127	162	126	167	40	2	43578	8	0	9	126	18	19	44028	6	32	197	205	126	172	44472	20	193	16	227	209	123
43134	53	201	54	5	33	113	43584	193	16	245	201	33	33	44034	205	151	172	193	16	246	44478	198	32	95	167	32	4
43140	162	58	126	162	134	205	43590	161	17	34	161	1	179	44040	201	6	24	197	205	126	44484	122	198	8	87	193	16
43146	244	163	221	33	114	162	43596	0	62	1	119	237	176	44046	172	205	151	172	205	150	44490	208	33	224	87	205	106
43152	58	110	162	71	197	221	43602	201	0	0	0	0	0	44052	173	205	70	173	193	16	44496	172	201	33	231	90	58
43158	110	0	221	102	1	221	43608	0	0	0	0	0	0	44058	240	201	0	0	156	171	44502	171	163	167	200	71	62
43164	70	2	205	2	164	35	43614	0	0	0	0	0	83	44064	169	171	188	171	201	171	44508	2	197	6	5	119	35
43170	16	250	221	35	221	35	43620	67	79	82	69	72	73	44070	220	171	233	171	252	171	44514	16	252	60	193	16	245
43176	221	35	193	16	231	33	43626	83	67	79	82	69	80	44076	9	172	17	224	87	6	44520	58	171	163	71	33	231
43182	126	162	58	111	162	167	43632	79	84	73	79	78	33	44082	23	197	213	6	8	197	44526	87	197	229	6	5	62
43188	32	10	126	254	3	32	43638	135	87	34	83	170	6	44088	213	98	123	167	32	8	44532	60	205	244	163	225	205
43194	3	54	0	201	52	201	43644	5	33	99	170	205	190	44094	46	224	122	214	8	103	44538	2	164	35	16	250	193
43200	126	167	40	2	53	201	43650	170	33	147	87	34	83	44100	24	3	214	32	111	1	44544	16	237	201	58	171	163
43206	54	3	201	58	110	162	43656	170	6	7	33	104	170	44106	32	0	237	176	209	21	44550	167	200	58	170	163	167
43212	167	200	71	221	33	114	43662	205	190	170	33	224	87	44112	193	16	228	209	123	214	44556	32	20	62	253	219	254
43218	162	197	221	110	0	221	43668	34	83	170	6	6	33	44118	32	95	254	224	32	4	44562	230	31	87	62	191	219
43224	102	1	205	64	164	58	43674	111	170	205	190	170	201	44124	122	214	8	87	193	16	44568	254	162	254	31	200	62
43230	112	162	221	70	2	119	43680	33	141	87	34	83	170	44130	208	33	0	71	205	106	44574	1	50	170	163	33	172
43236	35	16	252	221	35	221	43686	6	5	33	85	170	205	44136	172	201	6	8	197	229	44580	163	58	120	92	190	200
43242	35	221	35	193	16	227	43692	190	170	201	33	155	87	44142	229	209	19	175	119	1	44586	119	33	173	163	126	167
43248	201	221	126	21	221	190	43698	34	83	170	6	5	33	44148	31	0	237	176	225	37	44592	40	2	53	201	54	5
43254	10	40	4	221	52	21	43704	90	170	205	190	170	201	44154	193	16	239	201	6	192	44598	42	175	163	229	6	8
43260	201	221	54	21	0	221	43710	197	229	126	205	244	163	44160	17	0	64	213	225	35	44604	126	203	39	119	37	16
43266	203	7	198	201	221	203	43716	42	83	170	205	2	164	44166	197	1	31	0	26	237	44610	252	167	225	192	45	34
43272	7	126	40	6	221	203	43722	33	83	170	52	225	35	44172	176	43	54	0	35	35	44616	175	163	58	174	163	61
43278	7	94	32	7	221	110	43728	193	16	235	201	17	85	44178	19	193	16	240	201	62	44622	40	4	50	174	163	201
43284	11	221	102	12	201	221	43734	170	42	95	170	24	6	44184	8	1	0	0	17	32	44628	62	5	50	174	163	58
43290	110	16	221	102	17	201	43740	17	90	170	42	97	170	44190	24	33	225	87	245	213	44634	171	163	61	50	171	163
43296	221	126	9	221	190	18	43746	1	240	216	205	10	171	44196	17	32	0	4	25	16	44640	33	230	87	79	135	135
43302	40	5	221	52	18	24	43752	18	19	1	24	252	205	44202	253	65	4	35	16	253	44646	129	133	111	34	175	163
43308	7	221	52	13	221	54	43758	10	171	18	19	1	156	44208	209	66	241	197	6	0	44652	175	50	170	163	201	144
43314	18	0	221	126	8	167	43764	255	205	10	171	18	19	44214	75	13	213	229	209	0	44658	175	16	176	247	175	77
43320	40	37	221	190	13	32	43770	1	246	255	205	10	171	44220	213												



Random words

by Richard Hoptroff

This week, the remainder of the listing for the Random Words program, plus the program notes.

Program Notes

In Line 260, the name of the main character is defined. Then, in the *Data* statements at the end, the computer is taught all the other words it knows. If a printer is to be used, the word *Remark* should be removed from Line 280.

Your own personal words can be added to the *Data* file, but the variables in Lines 10 and 40 should be altered to total thus:

- NCj** - Number of conjunctives (and, but, ...), minus one. These must appear at the beginning of the *Data* block, at Line 2000.
- NSj** - Number of subjective nouns (I, he, she, ...), minus one. The *Data* for these starts at Line

- 3000.
- NPs** - Number of personal pronouns (my, his, her, ...), minus one. This *Data* starts at Line 4000.
- NNb** - Number of "numbers" (the, a), minus one. This *Data* is on Line 4990.
- NNn** - Number of nouns (brussel sprout, size nine chucker boot, kitchen sink, ...), minus one. This *Data* starts at Line 5000.
- NVb** - Number of past tense verbs (attacked, nibbled, ...), minus one. This *Data* starts at Line 6000.
- NAj** - Number of adjectives (homicidal, half eaten, ...), minus one. This *Data* starts at Line 7000.
- NCm** - Number of comments (then, meanwhile, ...), minus one. This *Data* starts at Line 8000.
- NAv** - Number of adverbs (frantically, suddenly, ...), minus one. This

Data starts at Line 9000.

- NQt** - Number of quotes ("Go jump in a lake", "You smell like a..."), minus one. This *Data* starts at Line 10000.
- NPh** - Number of verbs of phrases of the form noun, verb, adjective, (wasn't tried hard to be, ...), minus one. This *Data* starts at Line 11000.
- NWy** - Number of reasons why (for tax reasons, for the money, ...), minus one. This *Data* comes last at Line 12000.
- Ltn** - Number of verbs that require a noun after them, minus one. These verbs must be at the beginning of the verb *Data*.
- Snn** - Number of quotes needing nouns to finish them, minus one. These quotes must be at the beginning of the quote *Data*.

```

1210 fin$='.'
1220 END DEFINE
1240 DEFINE PROCEDURE Capshjk$
1250 LOCAL fred$,ted
1260 IF Cpf=0:ans$=hjk$:RETURN
1300 ted = CODE(hjk$(1)):Cpf=0:IF ted>95:ted=ted-32
1310 IF LEN(hjk$)=1:ans$=CHR$(ted):RETURN
1320 fred$=CHR$(ted) & hjk$(2 TO)
1340 ans$=fred$
1360 END DEFINE
1400 DEFINE PROCEDURE An(hik$)
1410 IF anf=0:Capshjk$:PRINT 'ans$':RETURN
1420 anf=0:IF hik$(1) INSTR "aeiouAEIOU":Capshjk$:PRINT 'ans$':
1430 Capshjk$:PRINT 'ans$':hik$!
1440 END DEFINE
1500 DEFINE PROCEDURE Numb
1510 Capshjk$(NND(NNb)):IF ans$='a':anf=1:RETURN
1511 IF ans$='A':anf=1:Cpf=1:RETURN
1520 PRINT 'ans$!'
1530 END DEFINE
2000 DATA 'before','when','and then','but','but','after','and','a
nd','because'
3000 DATA 'I','I','Neil Kinnock','Mrs Thatcher','he','she','it','
they'
4000 DATA 'his','her','my','the','my','the','its','their','its'
4990 DATA 'the','the','a'
5000 DATA 'cowpat','chain saw','kitchen sink','parrot','Sloane Ra
nger','sperm whale','slice of lemon','wheelbarrow','brick','evang
elist'
5001 DATA 'prawn cocktail','iceberg','oyster','eucalyptus tree','c
aeel','Chesterfield sofa','puff of smoke','spring onion','kitten'
,'pebble'
5002 DATA 'gnose','dingo','size nine chucker boot','duckbilled pl
atypus','unknown globule','mug of hot tea','cloud','coffee percol
ator','pot of earwax','penguin'
5003 DATA 'lump','four letter word','vodka martini','teddy bear',
'philosopher','poet','bolt of lightning','broadsword','black hol
e','glass of water'
5004 DATA 'glob of mucus','brussel sprout','bottom','elephant','p
int of Guinness','wooden leg','aspidistra','aaron','shady characte

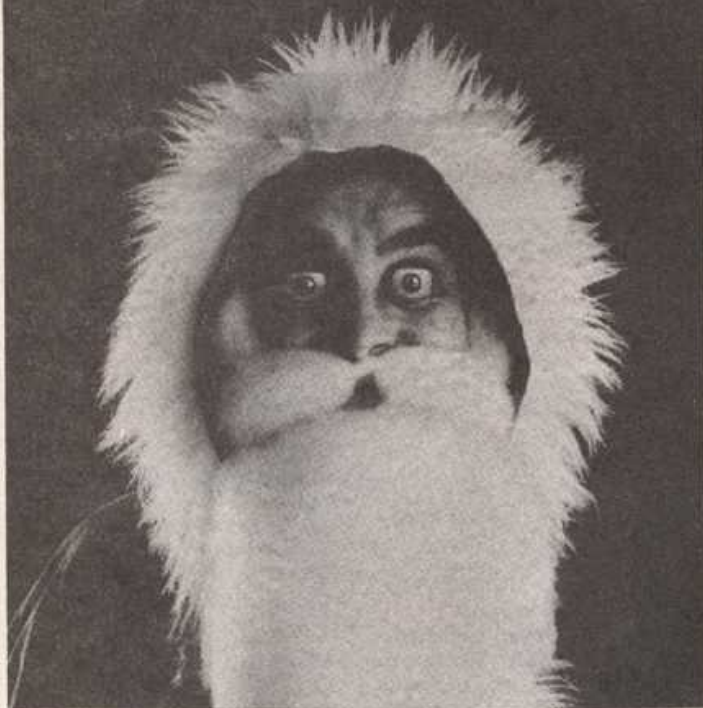
```

```

r','punk'
5005 DATA 'territe','sewage works','lizard'
6000 DATA 'ate','made love to','changed into','fell into','superg
loed it to','nibbled','perplexed','created','peaked up','crucifie
d'
6001 DATA 'disposed','exorcised','resurrected','dessimated','stol
e','crashed into','escaped from','shot','looked like','saelled'
6002 DATA 'felt like','turned into','found','searched in vain for
','force fed it with','got carried to','graffitied all over','ser
enaded','hit it with','groped'
6003 DATA 'stole','gave him','aggravated','pretended to be','gave
birth to'
6500 DATA 'snorted','started a revolution','disappeared','tempo
rily died','went on holiday','went to jail','tried to, but couldn
't','refused','appeared'
7000 DATA 'green spotted','blubbery','furry','deranged','Yiddish'
,'alcoholic','enormous','docile','three-legged','angry'
7001 DATA 'horrendous','mutant','perilous','magic','ubiquitous','
dead','red striped','lumpy','infamous','stupid'
7002 DATA 'blind drunk','existential','primeval','fat','ravenous'
,'intellegent','rather large','bouncy','retarded','extremely tall'
7003 DATA 'temperamental','saelly','carniverous','unshaven','hairy'
,'manically depressed','little','motionless','grotesque','becuse
d'
7004 DATA 'electronic','stylish','homocidal','nauseous','massive'
,'greasy','dirty'
8000 DATA 'then','next','soon','meanwhile','still','however'
9000 DATA 'visciously','quickly','slowly','accidently','publicly'
,'suddenly','frantically','temporarily','half-heartedly'
10000 DATA 'Go and seek the','Go and mutate into a','Go and find
everything but the','I've got a','I wish I was a','You must slay
a','You look like a','Go stick your head in a','I've just seen th
e','Ooh, I could really handle a'
10001 DATA 'You smell like a'
10500 DATA 'Go jump in a lake','Go forth and multiply','Mine's
bigger than yours','Pog off','Tum te tum te tum'
11000 DATA 'was','tried hard to be','wasn't','looked','felt','did
n't like being','pretended to be','knew what it was like to be'
12000 DATA ', for tax reasons','',being in one of those woods','
- but then, why not?',' for the money',' - who wouldn't?'

```


CHRISTMAS MICROFAIR



Looking forward to a high-tech Christmas?
Then come along to the CHRISTMAS MICROFAIR at the Horticultural Hall, London SW1 on the 14th December.
It's enough to make even Santa Claus's eyes light up.
Everything you ever wanted for the ZX Spectrum, Spectrum + and the QL under one roof, in one day of non-stop computer entertainment.
Software, hardware, books, add-ons, printers, monitors, user clubs, magazines, computers, and a fantastic range of gizmos that are not generally available in the shops.
There's all those 'just released' programs for the Spectrum and QL, and more than one opportunity of getting something at special "show" prices.
Send for reduced-price advance tickets now.

CHRISTMAS MICROFAIR
DECEMBER 14TH 1985, HORTICULTURAL HALL
GREYCOAT STREET / ELVERTON STREET LONDON SW1
10am - 6pm
ADMISSION: £1.75 (ADULTS); £1.25 (KIDS UNDER 14yrs)

SEND FOR REDUCED PRICE ADVANCE TICKETS TODAY

Send to Mike Johnston (Organiser), Dept PCW ZX MICROFAIRS,
71 Park Lane, London N17 0HG.

Please send me _____ advance tickets
(Adult @ £1.25)

Please send me _____ advance tickets
(Child under 14 @ £1.00)

Name: _____

Address: _____



Please include a stamped, self-addressed envelope and make cheques/POs payable to ZX Microfair

EXHIBITORS. CALL MIKE JOHNSTON ON 01-801 9172
FOR DETAILS OF STAND AVAILABILITY.

COMPUTER POST

"Your wish is our Commodore/Spectrum/Amstrad etc"
Xmas Special: - Free blank tape with every £10 spent

	OUR RRP	PRICE		OUR RRP	PRICE		OUR RRP	PRICE
Spectrum	8.95	7.25	Little Computer	14.99	11.25	They Sold a Million	9.95	7.50
Tommahawk	8.95	7.25	People (Disk)	9.95	7.50	Main Office	5.95	5.25
Saboteur	7.95	6.25	Starion	14.95	11.25	Master File	24.95	19.95
G.G. Superleuth	8.50	5.50	ElectroSound	8.95	7.50	Master Calc	24.95	19.95
Int Karate	6.95	5.75	Hall of Fame	8.95	7.50	Masterfile Disk	29.95	25.95
Elite	15.95	12.50	Blade Runner	9.95	7.50	Master Calc Disk	29.95	25.95
Back to Skool	7.95	6.25	Little Comp. People	14.95	11.25			
Lord of the Rings	9.95	7.50	Revs	8.95	7.25			
Sweevo	7.95	6.25	Now Games II	9.95	7.25			
Winter Sports	7.95	6.25	Zorro	9.95	7.50			
Monty on the Run	8.95	7.25	Young Ones	7.95	5.75			
Yie Ar Kung Fu	8.95	7.25	Amstrad	4.95	4.75	Young Ones sp.	7.95	6.25
Now Games II	8.95	7.25	3" Blank Discs	9.95	7.50	Lord of the Rings	15.95	12.50
Mixie	8.95	7.25	3D Boxing	9.95	7.50	Friday 13th Sp/84	8.95	7.25
Commodore	8.95	7.25	3D Grand Prix	9.95	7.50	Blade Runner 84	8.95	7.25
Rambo	9.95	7.50	Lords Midnight	9.95	7.50	Rock n Wrestle 84/Ans	9.95	7.50
Superman	12.95	10.75	Spy Vs Spy	9.95	7.50	Daley 1 Superfest Ans	8.95	7.25
Scaletrix	7.50	5.75	Raid	6.95	5.75	Knightrider sp	7.95	6.25
Commando	8.95	7.50	Bored of the Rings	8.95	7.50	Sir Fred sp	8.95	7.25
Flight Night	8.95	7.50	Operation Carastaker	9.95	7.50	Transformers	8.95	7.25
Winter Games	8.95	7.25	Cyrus II Chess	8.95	7.25	Zoids/sp	8.95	7.25
Monty on the Run	14.95	11.25	Yie Ar Kung Fu					
Elite								

Titles not listed - no problem - just send us the details and a cheque for RRP less £1 and we'll do the rest.

All prices included p & p

Cheques/POs to: Computer Post, 49 Snells Park, Upper Edmonton, London N15 2TF
01-803 7998 (ansaphone, enquiries welcome)

PD700

LONDON ADVENTURE

Tour London from your Armchair



"...skillfully linked together...
I recommend this realistic wander
through London" Tony Bridge, PCW 21/11/85

"...original and amusing... very enjoyable
and challenging... a change from the usual
fantasy settings" ZX Computing, Dec. '85

"5★ 24 Carat. Buy it!"
Sinclair User, Dec. '85

"...would keep any adventurer well
absorbed" Crash, Oct. '85

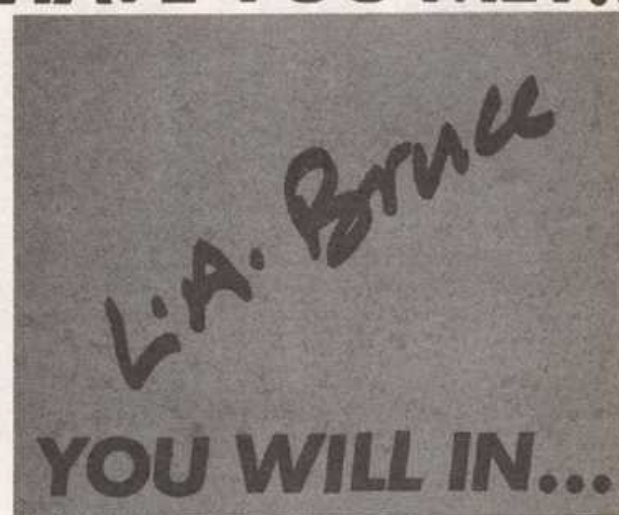
Available by mail order only.
Cassette £4.95 Microdrive £6.75 (inc. p&p).

Fridaysoft

Unit F, The Mallings, Station Road,
Sawbridgeworth, Herts, CM21 9JX.

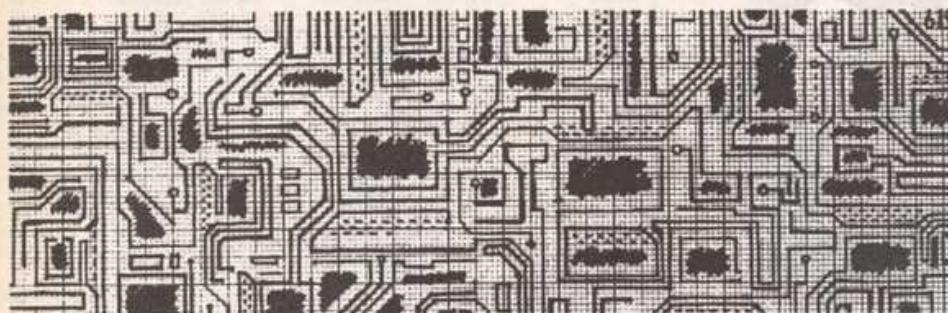
SPECTRUM 48K

HAVE YOU MET...



ROCK'N WRESTLE





BANK STATEMENT

by John Clarke

This is a program for the BBC B to provide a quick and easy Bank Statement. To run it, you'll need a disc drive (although it can be adapted for tape) and possession of an Epson (or Epson compatible) printer would be useful.

To start the program up from scratch, load and run it, type 'W' (for Write), press '1' and enter the details as requested - don't forget to Save all the entries when you have finished. Typing 'P' (for Print) will give you a copy print-out from any part of the statement.

You are limited to 99 entries, which should last most people for a year more or less. But by altering the two lines 630 and 760 to 'BANK2' instead of 'BANK1' then a continuation statement is available, and continues over as many discs as required.

```

10 REM BANK STATEMENT
20 REM by John Clarke
30 REM Emax3:D$max8:M$max10:Dmax8:Cmax8:
   Bmax8
40 @%=&0002020E
50 *TV255,0
60 MODE7:VDU15
70 PRINT""WHITE letters on BLUE....A""
   "BLACK letters on YELLOW....B""CHO
USE by PRESSING the letter required":A$=GET
$:IF A$<>"A" AND A$<>"B" THEN 60
80 IF A$="A" THEN MODE3:VDU19,0,4,0,0,0
90 IF A$="B" THEN MODE3:VDU19,1,0,0,0,0,
   19,0,3,0,0,0
100 DINT$(99),M$(99),D(99),C(99),B(99),P$
   (10)
110 I%=99
120 PROCload
130 ON ERROR GOTO 140
140 IF ERR=17 THEN 170
150 IF ERR=222 THEN CLOSE#0:GOTO 170
160 ON ERROR REPORT:PRINT" error line
   "ERL:GOTO170
170 PROCheading
180 REPEAT
190 PROCinfo
200 UNTIL FALSE
210 END
220 DEFPROCheading:VDU28,0,1,79,0
230 PRINT"NO";TAB(6)"DATE";TAB(17)
   "METHOD";TAB(37)"DEBIT";TAB(50)"CREDIT
   "TAB(63)"BALANCE"
240 ENDPROC
250 DEFPROCinfo
260 PROCbase_window
270 PRINT" L-LOAD S-SAVE P-PRINT
   R-READ W-WRITE E-END A-ALTER an
   entry"
280 A$=GET$:IF A$="R"PROCread
290 IF A$="W"PROCwrite
300 IF A$="S"PROCsave
310 IF A$="P"PROCprint
320 IF A$="L"PROCload
330 IF A$="A"PROCalter
340 IF A$="E" CLEAR:MODE7:PRINTTAB(14,0)
   ;"STOPPED":FOR L= 11 TO 12:PRINTTAB(0,
   L);CHR$141;CHR$134;"HAVE YOU SWAPPED":NEXT:
   FOR L= 15 TO 16:PRINTTAB(9,L);CHR$141
   ;CHR$131;"HAVE YOU SAVED":NEXT:END
350 ENDPROC
360 DEFPROCtop_window
370 VDU28,0,21,79,2:CLS
380 ENDPROC
390 DEFPROCbase_window
400 VDU28,0,24,79,22:CLS
410 ENDPROC

```

```

420 DEFPROCread
430 PROCheading
440 PROCTop_window
450 FOR N%=1 TO I%
460 N$=STR$(N%)
470 PRINTTAB(0);N$TAB(6);T$(N%)TAB(18);M$
   (N%),D(N%),C(N%),B(N%)
480 NEXT N%
490 ENDPROC
500 DEFPROCwrite
510 PROCheading
520 PROCbase_window
530 CLS:INPUT"Item no: "I%:CLS
540 PROCentry_date:CLS
550 PROCentry_method:CLS
560 PROCentry_debit:CLS
570 PROCentry_credit:CLS
580 IF I%=1 B(1)=C(1)
590 IF I%>1 B=B(I%-1):B(I%)=G-D(I%)+C(I%)
600 PROCread
610 ENDPROC
620 DEFPROCsave
630 X=OPENOUT"BANK1"
640 *FX200,1
650 FORN%=1 TO I%
660 PRINTEX,T$(N%),M$(N%),D(N%),C(N%),B(N%)
670 N$=STR$(N%)
680 PRINTTAB(0);N$TAB(6);T$(N%)TAB(18);M$
   (N%),D(N%),C(N%),B(N%)
690 NEXT N%
700 CLOSE#X
710 *FX200,0
720 ENDPROC
730 DEFPROCload
740 *FX200,1
750 PROCTop_window
760 Y=OPENIN"BANK1"
770 N%=1
780 REPEAT
790 INPUTEY,T$(N%),M$(N%),D(N%),C(N%),B(N%)
800 N$=STR$(N%)
810 PRINTTAB(0);N$TAB(6);T$(N%)TAB(17);
   M$(N%),D(N%),C(N%),B(N%)
820 N%=N%+1
830 UNTIL EOF#Y:I%=N%-1
840 CLOSE#Y
850 *FX200,0
860 ENDPROC
870 DEF PROCentry_date
880 LOCAL A$,B$
890 PRINT"DATE: ";
900 A$=""
910 B$=GET$
920 IF B$=CHR$13 THEN T$(I%)=A$:PRINT:
   ENDPROC

```



```

930 IF B$=CHR$13 AND A$<>" THEN =A$
940 IF B$=CHR$127 AND A$<>" THEN VDU127:
    A$=LEFT$(A$,LEN(A$)-1):GOTO910
950 IF LEN(A$)=6 THEN VDU7:GOTO910
960 A$=A$+B$:PRINT B$:GOTO 910
970 DEF PROCentry_method
980 LOCAL A$,B$,C$
990 PRINT"METHOD:";
1000 A$="";C$=""
1010 B$=GET$
1020 IF LEN(A$)<5 AND B$=CHR$13 THEN
    A$=A$+C$:M$(IX)=A$:ENDPROC
1030 IF B$=CHR$13 THEN M$(IX)=A$:ENDPROC
1040 IF B$=CHR$13 AND A$<>" THEN =A$
1050 IF B$=CHR$127 AND A$<>" THEN VDU127:A$
    =LEFT$(A$,LEN(A$)-1):GOTO1010
1060 IF LEN(A$)=10 THEN VDU7:GOTO1010
1070 A$=A$+B$:PRINT B$:GOTO 1010
1080 DEF PROCentry_debit
1090 LOCAL A$,B$
1100PRINT"DEBIT:";
1110 A$=""
1120 B$=GET$
1130 IF B$=CHR$13 THEN D$(IX)=VAL(A$):
    PRINT:ENDPROC
1140 IF B$=CHR$13 AND A$<>" THEN =A$
1150 IF B$=CHR$127 AND A$<>" THEN VDU127:
    A$=LEFT$(A$,LEN(A$)-1):GOTO1120
1160 IF LEN(A$)=7 THEN VDU7:GOTO1120
1170 A$=A$+B$:PRINT B$:GOTO 1120
1180 DEF PROCentry_credit
1190 LOCAL A$,B$
1200 PRINT"CREDIT:";
1210 A$=""

```

```

1220 B$=GET$
1230 IF B$=CHR$13 THEN C$(IX)=VAL(A$):
    PRINT:ENDPROC
1240 IF B$=CHR$13 AND A$<>" THEN =A$
1250 IF B$=CHR$127 AND A$<>" THEN VDU127:
    A$=LEFT$(A$,LEN(A$)-1):GOTO1220
1260 IF LEN(A$)=7 THEN VDU7:GOTO1220
1270 A$=A$+B$:PRINT B$:GOTO 1220
1280 DEFPROCprint
1290 LOCAL N$,P$
1300 PROCbase_window
1310 CLS:INPUT"Print from which no:-";P$
1320 VDU2: *FX200,1
1330 PRINT"No: "TAB(8)"DATE"TAB(18)"METHOD"
    TAB(37)"DEBIT"TAB(50)"CREDIT"TAB(63)"
    BALANCE":PRINT''
1340 FOR N$=P$ TO IX
1350 N$=STR$(N$)
1360 PRINTTAB(0);N$TAB(8);T$(N$)TAB(18);
    M$(N$),D(N$),C(N$),B(N$)
1370 NEXT N$
1380 VDU3: *FX200,0:ENDPROC
1390 DEFPROCalter
1400 S$=IX
1410 PROCbase_window
1420 PRINT"Altering an item Y/N"
1430 A$=GET$:IF A$="N" THEN ENDPROC
1440 PROCwrite
1450 FOR N=IX TO S$-1
1460 IX=IX+1
1470 B(IX)=B(IX-1)+C(IX)-D(IX)
1480 NEXT
1490 PROCread
1500 ENDPROC

```

ED40 MEGASAVE SOFTWARE

46 THE MALTINGS, STANSTEAD ABBOTS, WARE, HERTS

SPECTRUM 48K	RRP	OUR PRICE		RRP	OUR PRICE		RRP	OUR PRICE
McAdam Bumper	7.95	5.90	Winter Sports	7.95	5.90	Karateka	9.95	7.50
Fighting Warrior	7.95	5.90	I of the Mask	9.95	7.25	Worm in Paradise	9.95	7.20
Now Games I	8.95	6.60	Enigma Force	9.95	7.20	Paradroid	7.95	5.90
Daley T. Supertest	6.00	5.20	Back to Skool	6.95	5.20	Pitstop II	9.95	7.20
Critical Mass	8.95	6.70	Fairlight	9.95	6.90	Computer Xmas Card	2.90	2.50
Exploding flat	8.95	6.70	Bounty Bob	7.95	5.95	Deathwsk	9.95	7.20
Computer Xmas Card	2.99	2.50	G. Capes Strongman	7.95	5.95	Flintstones	7.95	5.95
Super Sleuth	7.95	5.90	Robin/Wood + 11 ychr	9.95	7.25	Ballblazer	9.99	7.50
Brainstorm	1.99	1.75	W Series Basketball	7.95	5.90	Transformers	8.95	6.70
Robot Messiah	7.95	5.90	Ark of Yesod	8.95	6.50	Friday 13th	8.95	6.75
Panzadrome	7.95	5.95	Robin of Sherlock	7.95	5.90	ACE	9.95	7.50
Internat Rugby	8.95	5.20	Internat Karate	8.50	4.75	Ten Computer Hits	9.95	7.20
Rothman's Fball Quiz	8.95	6.70	Saboteur	8.95	6.70	Six Computer Hits	8.95	5.20
Ghostbusters	9.95	2.99	Xcel	8.95	6.75	Who Dares Wins 2	7.95	5.95
Mikie	6.95	5.20	Monty on the Run	7.95	5.95	Battle of Britain	9.95	7.25
Sir Fred	8.95	6.99	Neverending Story	9.95	7.25	Secret Diary of A. Mole	9.95	7.50
Three W'sain Paradise	9.95	7.20	Splitfire 40	9.95	7.25	Summer Games 2	9.95	7.20
Now Games II	8.95	6.75	Elite	14.95	10.95	Enigma Force	9.95	7.20
Transformers	7.95	5.90	Beach Head II	7.95	5.95	Yie Ar Kung Fu	7.95	5.95
Sweezy's World	9.95	7.20	Discs of Death	6.95	5.20	Willow Pattern	3.99	3.99
Deathwsk	9.95	7.20	The Young Ones	7.95	5.95	Blade-Runner	8.95	6.75
Swords & Sorcery	9.95	7.25	Sold a Million	9.95	7.20	Winter Games	9.95	6.99
Frankie GT Hollywood	9.95	6.99	Arcade Hall of Fame	9.95	7.20	Spy vs Spy 2	9.95	7.20
William Wobbler	9.95	7.50	The Evil Crown	9.99	7.20	Racing Destruction Set	12.95	10.50
Robcom (Tape)			COMMODORE 64/128			Battlelax	9.95	7.25
Alignment	4.99	4.99	Little Comp People	9.95	6.99	Quake Minus One	0.05	7.20
Robin of Sherwood	9.95	6.99	Space Pilot II	9.95	6.99	Space Pilot 2	9.95	7.25
World Cup	6.95	1.99	Battle of Britain	9.95	7.25	Underwsk	9.95	7.25
Austerlitz	9.95	7.25	Secret Diary of A. Mole	9.95	6.99	Wizardry	9.95	7.20
Red Moon	6.95	5.10	Imhotep	9.95	6.99	Mercenary	9.95	7.20
Wham Music Box	7.95	5.70	Chess Games	7.95	4.99	Skool Daze	6.95	5.20
Terrormolinos	7.95	5.90	Rescue on Frztulus	9.95	6.99	Beach Head 2	9.95	7.25
Impossible Mission	7.95	5.90	Z	9.95	7.25	Little Computer People		
Ten Computer Hits	9.95	7.25	Monty on the Run	9.95	6.99	(disc)	14.95	12.50
Six Computer Hits	6.95	5.20	Underwsk	9.95	7.25	Superman	9.95	7.40
Secret Diary of A. Mole	9.95	6.99	Exploding Flat	9.95	7.20	Internal Soccer (ROM)	14.95	6.99
Shadow of the Unicorn	14.95	12.95	Now Games I	8.95	6.75	Sold A Million	9.95	7.25
Tomahawk	9.95	7.20	Thunderbirds	3.99	3.50	Dynamite Dan	7.95	6.99
Impossible Mission	7.95	5.95	Willow Pattern	3.99	3.50	Arcade Hall of Fame	9.95	7.20
Astro Clans	7.95	5.95	Chimera	3.99	3.50	The Last V8	2.99	2.50
Tau Cell	9.95	7.25	Codename Matt II	8.95	6.50	Fighting Warrior	8.95	6.95
Markport	9.95	7.10	Sabrewulf	9.95	7.25	The Young Ones	7.95	6.95
Bored of the Rings	6.95	5.10	Donald Duck	9.95	7.20	Neverending Story	9.95	7.25
Starquake	7.95	5.95	Schizophrenia	7.95	5.50	Fight Night	9.95	7.25
Waterloo	8.95	7.25	Harvey Smith	7.95	5.90	Imhotep	9.95	7.25
Gyro Scope	7.95	5.95	Skyfox	9.95	7.50	Monty on the Run	9.95	7.20
Borderon's Shadow	9.95	7.50	S Davis Snooker	7.95	5.70	Art of Yesod	8.95	6.50

All prices include free fast delivery & same day despatch, when available. Personal callers welcome. 10% discount on all orders for seven or more tapes or to a value over £45. Cheques/PDs/ECs payable to ED40. For up to date news on available & Access orders ring (0920) 870568. Free Game included for orders over £10. PD626B

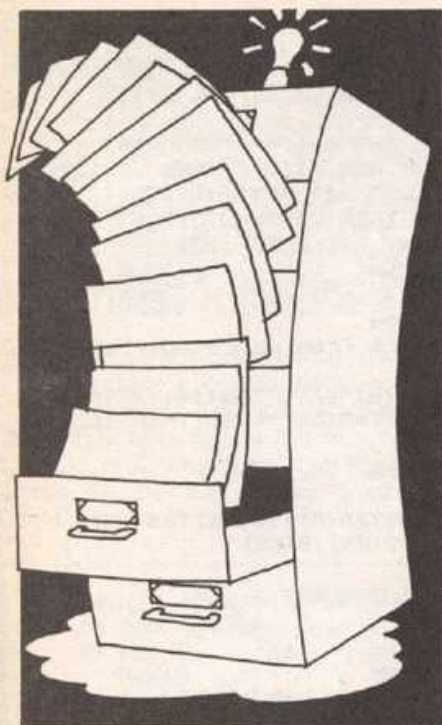
HAVE YOU MET...

Lord Toft

YOU WILL IN...

ROCK'N' WRESTLE





This week we present your final helping of listing plus the rest of the explanation of the Primary Menu Two.

4) Load/open a new data file

This option simply moves the user to Central menu (primary menu 1).

5) Sort data file

This option will sort the data file in ascending order, upon any field.

VERSATILE FILE

by Wail Sabbagh

6) Save data file

This option will save any changes or addition to tape or disc. If these changes are not saved then any update will not be recorded. This option offers the following choices:

- 1) Format new disc.
- 2) Validate disc.
- 3) View disc directory.
- 4) Save file to disc.
- 5) Save file to tape.
- 6) Return to control menu.

7) Edit menu

This menu is concerned with updating the current data file. Records can be edited or deleted, the file name can be changed, file pointers can be zeroed (deleting the file while maintaining current structure), and the password can be changed or deleted (before any chance is made to the state of the password, the old password must be stated). This option offers the following:

- 1) Edit one record.
- 2) Delete one record.
- 3) Reset file pointer.
- 4) Change file name.
- 5) Change delete password.
- 6) Return to control menu.

8) File data

This option will explain to new users the

structure of the file, it also displays the current status of Com File. It gives the following information:

- 1) Name of file.
- 2) Number and name of fields in file.
- 3) Number of records used so far.
- 4) Amount reserved for current data file.
- 5) Type of protection to data file.

9) Calculation menu

This option allows the user to numerically manipulate the data file. It must be noted at this point that non numeric fields are given the value 0. This option offers the following:

- 1) Find total and average of a field.
- 2) Add/delete a percentage – most useful in cases such as adding 15% VAT to all items in file. This option moves to a second level secondary menu which offers addition or subtraction.
- 3) +, -, /* a constant to a field. A constant value can be added, subtracted, etc to all records. This option also moves to a second level menu offering addition, subtraction, multiplication or division.

10) Exit com file

End the session and returns to Basic.

[illegible]


```

12210 PRINT "J"
12220 PRINT "NON NUMERIC FIELDS WILL BE TREATED AS 8"
12230 T=0:FORX=1TOCO
12240 T=T+VAL(AS(X,FL)):NEXTX
12250 PRINT:PRINT:PRINT
12260 PRINT "AVERAGE AND TOTAL OF ",FS(FL)
12270 PRINT:PRINT "TOTAL = ",T:PRINT
12280 PRINT "AVERAGE = ",T/CO
12290 GOTO 13190
12300 REM *****ADD/SUBTRACT/*****
12310 PRINT "J"
12320 PRINT " ADD SUBTRACT RETURN"
12330 GET AS:IFAC<"A"&AS<"S"&ANDAS<"R"&THEN12330
12340 IF AS="R" THEN 12000
12350 IFA$="A" THEN OP=1:
12360 IFA$="S" THEN OP=2:
12370 PRINT:PRINT "ENTER PERCENTAGE (0-999)":PRINT:INPUT "O.":PR
12380 IFPR<0ORPR>999 THENPRINT "J":GOTO12370
12385 PRINT:PRINT:PRINT "OK WORKING"
12390 FORX=1TOCO:Y=VAL(AS(X,FL))
12400 IF OP=1 THENY=100+PR
12410 IF OP=2 THENY=100-PR
12420 Y=(Y*V)/100:AS(X,FL)=STR$(Y)
12430 NEXTX
12450 GOTO 12000
12500 REM*** +/- ***
12510 PRINT "J"
12520 PRINT " ADD /SUBTRACT MULTIPLY RETURN"
12530 GETAS:IFA$="S" THENOP=1:GOTO12500
12540 IFA$="A" THENOP=2:GOTO 12500
12560 IFA$="D" THENOP=3:GOTO 12500
12570 IFA$="M" THENOP=4:GOTO 12500
12580 GOTO 12530
12600 INPUT "ENTER CONSTANT ";PR:PRINT "XXXXXXXXXXXXWORKIN"
12610 FORX=1TOCO:Y=VAL(AS(X,FL))
12620 IFOP=1 THENY=Y+PR
12630 IFOP=2 THENY=Y-PR
12640 IFOP=3 THENY=Y*PR
12650 IFOP=4 THENY=Y/PR
12660 AS(X,FL)=STR$(Y):NEXTGOTO 12000
12950 REM****SELECT FIELD****
12960 PRINT "J"
12970 PRINT ">. ENTER FIELD TO BE USED.<"
12975 PRINT:PRINT:INPUT "O.":FL
12980 IF FL#F ORFL<0THEN ER$="FIELD VALUE OUT OF RANGE":XX=1
12990 RETURN
13000 PRINT "J"
13005 PRINT "OPTION 8","FILE DATA"
13006 PRINT " "

```

```

13010 PRINT"NAME OF FILE ";NA$
13020 PRINT"IT CONSIST OF ";NF;"FIELDS"
13030 PRINT"NO OF RECORDS RESERVED FOR ENTRY";RE
13040 PRINT:PRINT"-----":
13050 PRINT"NUMBER OF RECORDS USED SO FAR ";CO
13060 PRINT:PRINT"-----"
13070 IF P$="COM SALAM" THEN PRINT NA$;" IS NOT PROTECTED BY PASS WORD"
13080 IF P$="COM SALAM" THEN PRINT NA$;" IS PROTECTED BY PASS WORD"
13090 PRINT:PRINT:PRINT"SHIT A KEY FOR NEXT PAGE"
13100 GET A$:IF A$=""THEN 13100
13110 PRINT"CHOPTION 8","FILE DATA"
13120 PRINT"-----"
13130 PRINT" "
13140 PRINT" { FIELDS USED IN FILE! } "
13150 PRINT" "
13160 PRINT:FORX=1TONF
13170 PRINT"FIELD# ";X;" IS CALLED ";F$(X)
13180 NEXTX
13190 PRINT:PRINT" SHIT A KEY FOR CONTROL MENU"
13200 GET A$:IF A$=""THEN 13200
13210 GOTO 2000
14000 GOTO 14000
60000 REM READ DIRECTORY SUBROUTIN
60005 OPEN 1,0,0,"$0":CLOSE1:IFRO=0THENGOSUB 61000
60006 IF RO=1THEN GOSUB 1900
60010 PRINT": ";OPEN1,0,0,"$0":GET#1,Y$,Y$
60020 I=0:GET#1,Y$,Y$,Y$,Y$:IF Y$<=""THEN I=ASC(Y$)
60030 IF Y$<=""THEN I=I+ASC(Y$)*256
60040 PRINT RIGHT$(" "+STR$(I),3); " ";I=0
60050 GET#1,Y$:IF ST GOTO 60140
60060 IF Y$=CHR$(34) THEN I=I+1:PRINT CHR$(34);:GOTO 60050
60070 IF I=0THEN 60050
60080 IF I=1 THEN PRINT Y$;:GOTO 60050
60090 IF I=2 THEN PRINT TAB(22);:I=I+1
60100 IF I=3ANDY$="" GOTO60050
60110 IF Y$<=""THEN PRINTY$;:GOTO 60050
60120 PRINT:GETY$:IFY$<=""THEN GOSUB 60160
60130 IF ST=0THEN60020
60140 PRINT"BLOCKS FREE":CLOSE1
60150 PRINT:PRINT"SHIT A KEY"
60160 GETY$:IFY$=""THEN 60160
60170 RETURN
60500 IF P$<P$THENPRINT"ILLIGAL ENTRY TO ";NA$:END
60510 RETURN
61000 REM****READ ERROR CHANNEL****
61010 OPEN15,0,15:INPUT#15,ER:ER$=CLOSE15
61020 IF ER=0THEN RETURN
61030 ER$="DISK ERROR# "+ER$
61040 GOTO 10000

```

ANCIENT & MODERN

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

[illegible]

All prices inc. Vat and P & P. Overseas please add 75p per tape. Thousands of titles in stock. Please send SAE for full list stating machine. Cheques/POs payable to Ancient and Modern, Unit 111 (Rear), Washington Road, West Wilt Trading Estate, Westbury, Wilt.

PREMIER LEAGUE & EUROPEAN TROPHY

TWO FOOTBALL MANAGEMENT STRATEGY GAMES FOR THE 48K SPECTRUM

PREMIER LEAGUE: FEATURES INCLUDE: Training, Team Selection, Substitutions, Half-Time Scores, Named Goal Scorers, Team Styles, Full Squad Details, Transfer Market, Financial Problems, 5 Skill Levels, Plus Many, Many More.

EUROPEAN TROPHY: FEATURES INCLUDE: Home & Away Legs, Away Goals Count Double, 2 Substitutes Allowed, Penalty Shoot-Outs, Extra Time, Injuries, Penalties, Team Selection, Team Styles, 5 Skill Levels, Plus Many, Many More.

"Premier league is the most realistic football management strategy game on the market and very good value for money." (I.W., Yorks)
 "Premier league & European Trophy are both brilliant" (C.K., Liverpool)

Both these Quality Games use the FULL memory of your SPECTRUM and can be played separately or as Companion Games. SPECIAL FEATURE: Transfer your PREMIER LEAGUE Winning side into EUROPEAN TROPHY.

These Great Games are available by mail order only at the UNBEATABLE VALUE of ONLY £5.25 each. Or send SAE for full details.
SPECIAL TWIN PRESENTATION PACK OF BOTH GAMES AVAILABLE AT ONLY £9.95.

All prices include Postage & Packing (add £1 outside UK)

E&J SOFTWARE, Dept PC, 34 Lordship Road, Cheshunt, Herts EN7 5DP

PD51V

HAVE YOU MET...

Missouri
Breaker

YOU WILL IN...

ROCK'N WRESTLE



+ SUPER BREAKER +

+++ EXTRA +++

CONTAINS TWO GREAT UTILITY DISKS: SUPER BREAKER & SUPER BREAKER-PLUS (TOTAL OF 7 UTILITIES)

This great offer includes a multitude of useful utilities: Turbo Breaker-II, Turbo Breaker Plus, Arrowfile-II, Super Diskopy, Transfer-II, Disk Doctor and Turbo Menu Maker in one package representing unbeatable value.

TURBO BREAKER PLUS: This all new package transfers many of the games not covered in Turbo Breaker-II. Transfers: Nearly all Novaloads, Firebird, new Mastertronic, Beyond, Leisure genius and many more individual files.

TURBO BREAKER-II: This package will transfer: Pavloader, Burner, Activision, Ariola and many more.

MENU MAKER: will make menu on your disk with an option to turbo load from disk.

TRANSFER-II: Transfers nearly all slow load programmes.

SUPER DISKOPY: Copies unprotected disks in 3 minutes and also copies many protected disks in 6 minutes.

ARROW FILE-II: A filing programme that allows you to read disk directories straight into the file so that you can keep a record of all your disk software.

DISK DOCTOR: Disk editing utility that allows you to edit any block on the disk. Also include scratched file recovery and directory editing facilities.

ALL THESE GREAT UTILITIES ON TWO DISKS FOR A MERE £27.00

Separate: Super Breaker..Menu Maker, Turbo Breaker-II, Super Diskopy, Transfer-II...£22.00
Super Breaker+ Turbo Breaker+ Disk doctor, Arrowfile-II£15.00

CBM 64

ARROW MICRO SERVICES

20 Portmeadow Walk
London SE2

CBM 64

PPC

****SPECTRUM****

GAME	RRP	OUR PRICE
GEOFF CAPES	7.95	4.99
WHAM MUSIC BOX	9.95	7.00
THEY SOLD A MILLION	9.95	6.75
THE GOONIES	7.95	5.45
MIND SHADOW	7.95	5.45
OF THE MASK	9.95	7.00
DEATHWAKE	7.95	5.45
INTERNAT KARATE	6.50	4.00
IMPOSSIBLE MISSION	7.95	5.45
BOUNTY BOB	7.95	4.99
NOW GAMES	8.95	6.25
ROBIN OF THE WOOD	9.95	6.75
HALL OF FAME	9.95	6.75
RUNESTONE	7.95	5.45
BACK TO SCHOOL	6.95	4.75
WATERLOO	9.95	7.00
BEACHHEAD II	8.95	7.00
FAIRLIGHT	8.95	7.00
RASPUTIN	7.95	5.45
SABOTEUR	8.95	6.25
RED MOON	6.95	4.75
HACKER	7.95	5.45
SIR FRED	9.95	6.75
MARSFORD	9.95	7.00
GYROSCOPE	7.95	5.45
ELITE	14.95	10.00
INTERNAT RUGBY	7.95	5.45
ROBIN OF SHERLOCK	7.95	4.75
TALUCET	9.95	6.75
THREE WEEKS IN PARADISE	9.95	6.75
NEVERENDING STORY	9.95	7.00
ROTHMANS FOOTBALL QUIZ	8.95	4.75
SEAS OF BLOOD	9.95	6.00
SWORDS OF SORCERY	9.95	6.75
KOEL	7.95	4.95
TOMAHAWK	9.95	7.00
ROBOT MESSIAH	7.95	5.45
ZODS	7.95	5.45
WINTER SPORTS	9.95	7.00
SWEET'S WORLD	7.95	5.45
YIE AR KUNG FU	7.95	4.95
ARENA	9.95	7.00
ROLLER COASTER	6.95	4.75
COMMANDO	7.95	6.00
2112 AD	7.95	5.45
SUPER SLEUTH	7.95	5.45
AUSTERLITZ (Sequel to Waterloo)	9.95	7.00
LORD OF THE RINGS	15.95	12.25
YOUNG ONES	7.95	5.45
FRIDAY 13th	8.95	6.25
NOW GAMES I AND II		
FORBIDDEN PLANET	7.95	5.45
**** COMMODORE ****		
THEY SOLD A MILLION	9.95	6.75
HALL OF FAME	9.95	6.75
ARNHEIM	9.95	7.00
BATTLE FOR BRITAIN	9.95	9.95
FRIDAY 13th	8.95	6.25
SUPER ZAXXON	9.95	5.00
FLINTSTONES	7.95	5.45
WORM IN PARADISE	9.95	7.00

GAME	RRP	OUR PRICE
STARION	9.95	6.00
TRANSFORMERS	8.95	6.25
COMMANDO	9.95	6.75
SCHOOLDAZE	6.95	4.75
SUPERMAN	9.95	7.00
ADRIAN MOLE	9.95	7.00
QUAKE-I	9.95	7.00
ROBIN OF THE WOOD	9.95	6.75
SUMMER GAMES II	9.95	7.00
DEATHWAKE	7.95	6.25
ELITE	14.95	10.00
BLADERUNNER	9.95	7.00
IMHOTEP	9.95	6.00
ROBIN OF SHERWOOD	9.95	6.75
RAMBO	8.95	6.25
SCALECTRIX	9.95	7.00
NEVERENDING STORY	9.95	7.00
ELECTRASOUND	14.95	10.00
ZORRO	9.95	7.00
THE YOUNG ONES	7.95	5.45
LITTLE COMP. PEOPLE	9.95	7.00
BATTLE OF THE BULGE	9.95	6.75
GOONIES	8.95	6.25
GYROSCOPE	9.95	7.00
REYS	14.95	11.95
GEOFF CAPES	8.95	6.25
WINTER GAMES	9.95	6.75
SPACE PILOT II	7.95	5.45
LITTLE COMP. PEOPLE (disk)	14.95	10.95

****AMSTRAD****

GAME	RRP	OUR PRICE
3D BOXING	9.95	7.00
BORER OF THE RINGS	6.95	4.75
GRAND PRIX	9.95	7.00
BRUCE LEE	9.95	7.00
IMPOSSIBLE MISSION	9.95	7.00
GYROSCOPE	9.95	7.00
BRUNO BOXING	8.95	6.00
WORM IN PARADISE	9.95	7.00
BATTLE FOR BRITAIN	9.95	7.00
HYPERSPORTS	8.95	6.25
SPY VS SPY I	9.95	7.00
ADRIAN MOLE	9.95	7.00
ENDURANCE	7.95	5.45
YIE AR KUNG FU	8.95	6.25
BRUCE LEE (disk)	14.95	10.50
THEY SOLD A MILLION	9.95	7.00
SOLD A MILLION (disk)	14.95	10.00
GOONIES	9.95	7.00
CAULDRON	8.95	6.25
BOUNTY BOB	9.95	6.50
DEATHWAKE	7.95	5.45

ALL AMSTRAD DISKS & UTILITIES ARE IN STOCK
BOX OF TEN DISKS 40.00

ALL PRICES INCLUDE P&P
OVERSEAS ORDERS ADD £1.00 P&P

ANY TITLES NOT SHOWN CAN BE SUPPLIED AT 25% OFF RRP. PLEASE MAKE CHEQUES/POs PAYABLE TO: PPC AND SEND TO:

PPC MAIL ORDER
9 BENNECK HOUSE, 100 TOLPITS LANE
WATFORD, HERTS WD1 8PZ
(0923 43855)
PPC Guarantee: that all products will be delivered within 7 days of receiving order or cheques will not be cashed until products are despatched

PD814C

* * SPECIAL OFFER * *

from SUNSHINE BOOKS and PICTURESQUE

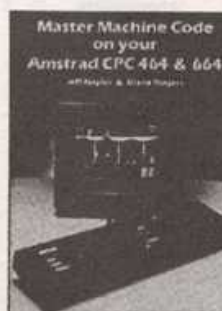
The CODE MACHINE consists of an Assembler and a separate Monitor (both relocatable) and provides all the requirements for rapid assembly language development, including many features not found elsewhere.

A 72 page manual, with plenty of examples, and a flexible command structure make it ideal for beginners, yet it offers all the sophistication and fine detail required by professionals.

Single Stepping your machine code is an essential aid to both learning and debugging and the CODE MACHINE's excellent Front Panel display gives you the most complete picture of what's happening at every step. You can really see what's going on.

Everything about the CODE MACHINE is designed for speed, simplicity, and information. It's received much praise from the industry and is the No. 1 choice of many leading games authors.

Supplied on cassette with a back-up option to disk, it is fully compatible with disks and with the 464/664/6128 machines.



Amstrad Machine Code THE EASY WAY

* SAVE £4 *

"Master Machine Code on your Amstrad" shows you how to make better use of your Amstrad by programming in machine code. This makes programs run much faster and opens the door to a host of new applications.

The book gives an overview of the hardware, and explains how the Firmware (ROM) routines are arranged, and how to access them. Details are given of the most useful of these and how you can use them in your own programs.

Many machine code listings are given, starting with a simple sorting routine which is developed to a full database program.

There are graphics routines to extend Basic with Circle and Fill commands, and a section explaining how easily you can write your own extensions to Basic using the 'BAR' commands.

Written with the beginner in mind, this book is the best introduction to machine code on the 464/664/6128 machines.

How to order

The normal combined retail price of these two products is £26.90. You can save £4 (mail order ONLY) by sending your cheque/P.O. for £22.90, made payable to SUNSHINE BOOKS to: Theresa Lacy, Sunshine Books, 12-13 Little Newport Street, London, WC2H 7PP.



01-437 4343

Sunshine Books and Picturesque are offering you the chance to buy two of the best machine code products at a massive saving of £4 off the normal combined price.

This offer will not last for ever so ORDER NOW.

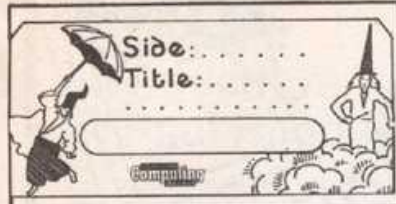
Micro Magic

Popular Computing Weekly

Micro Magic



The Amstrad CPC6128



Popular cassette labels

We are giving away an Amstrad CPC6128 128K micro - worth £399 - every seven days until Christmas. Not only that, but every Micro Magic card is a winner - every card wins a runner-up prize of free Special *Popular Computing Weekly* cassette labels

How to find out if you win this week

To find out if you are a prize winner this week this is what you must do:

- 1) Key in the computer program listing printed here into your micro and Run the program.
- 2) Input your special Micro Magic number as data in the program when requested and press Enter.
- 3) The program will tell you if you have won a prize this week and what it is.
- 4) If you have won a prize you can claim it by filling in the coupon on the back of your special Micro Magic card. Then send

```

5 PRINT "Input your personal Micro
  Magic Number"
10 INPUT x
15 FOR a=1 TO 3
20 LET x=x+1 (x=2?)
30 LET x=x+2?
40 LET x=x+3 = 1050
45 NEXT a
46 PRINT x
50 IF x=1050 THEN GOTO 80
55 IF x=1237480 THEN GOTO 70
60 PRINT "Your winning Micro Magic
  C number is" x
65 PRINT "Better luck next week!"
66 GOTO 60
67 STOP
70 PRINT "Your winning Micro Magic
  C number is" x
71 PRINT "You have won an Amstrad
  CPC6128!"
75 GOTO 70
76 STOP
80 PRINT "Your winning Micro Magic
  C number is" x
81 PRINT "You have won cassette labels!"
84 GOTO 80
85 STOP
    
```

Micro Magic: Week 9 Program listing

the completed card off to: Micro Magic, Popular Computing Weekly, 12-13 Little Newport Street, London WC2H 7PP.

Don't forget to fill in both your name and address, and also both your winning Micro Magic answer from this week and your special Micro Magic number.

5) If you haven't won this week, don't give up hope. Keep your Micro Magic card and use it to find out if you win with next week's Micro Magic computer program. The same card will last you right through to Christmas, so don't throw it away - you could miss the opportunity to win.

This week's winning Micro Magic Numbers: 515896 and 1387480

If you think you've won complete the form on the back of your Micro Magic card and send it to: Micro Magic, Popular Computing Weekly, 12-13 Little Newport Street, London WC2H 7PP.

Micro Magic cards can only be obtained in line with the criteria outlined by Scot Press. Participants are entitled to only one card each. Cards and accompanying documentation can be obtained free of charge by writing to Scot Press, 12-13 Little Newport Street, London WC2H 7PP.

MICROVOX

is a professional sound sampler
(Feargal Sharkey uses one!)

However it doesn't cost £20,000 or even £2,000 but a mere £229.95

You'll need a Commodore 64 or 128 with a disk drive. A MIDI-compatible keyboard is useful, but not essential.

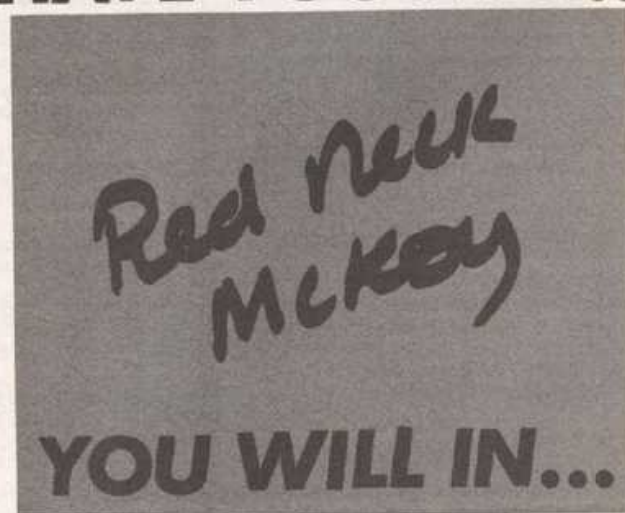
The extensive MICROVOX software allows you to edit waveforms and save sounds to disk. It has a 2000 note sequencer, a digital delay line and much more!

SUPERSOFT

Winchester House, Canning Road,
Wealdstone, Harrow, HA3 7SJ
Tel: 01-861 1166 for further details and
our free catalogue

PD404A

HAVE YOU MET...



YOU WILL IN...

ROCK'N WRESTLE



Breaking into the BIG time!

Do not confuse this product with other inferior products offering less value for money.



At last it's here, the product that lets you do what BBC, C64 and Spectrum owners have been doing for ages. Access to the whole world over the telephone.

SKYWAVE MULTI-PORT

Multiport is supplied with "SKYCOM", a menu-driven, window-based communications ROM package which will drive any standard modem, and lots more!! Other ROMs are scheduled for release soon!!

SKYCOM is a full "Foreground" ROM communications package, and runs without the use of BASIC, thereby releasing large amounts of RAM for the user. One benefit is a 32k+ Spooler.

Just see what the specialists have to say about Multiport...

"A product that should appeal to a large number of Amstrad Users." *Computing Age*, Oct '85.

"Includes the most sophisticated communications software available for the Amstrad." "Multiports sophistication makes it a very attractive product." "An excellent piece of kit." *Amstrad Action*, Nov 85.

Have you heard about "AMSNET", the NEW section on PRESTEL* 25886 # run by Viewfax just for Amstrad owners? Multiport

is the only interface which is Viewfax/Micronet approved, (granted 18/7/85) and you can download software using the telesoftware format developed by us in conjunction with Viewfax 258. This means that you can access the many free Amstrad programs currently on the system and all the other programs about to be put up.

If you have a PROTEK or AMSTRAD interface, or similar make of interface which will not download telesoftware, we are prepared to offer a generous trade-in deal against our Multiport and/or Modem Package. Do not miss out... Call our office for details!!

Multiport will also access Bulletin Boards, and Telecom Gold. An upgrade is available to permit access to the Open University System for use with O.U. Comms courses.

Multiport has many features, too numerous to mention in one ad., please call our office for an Information Pack to be sent to you.

Multiport is really 3 interfaces in 1... Its... A full RS232 Serial Port, a 24-bit parallel port, & a "Sideways" ROM card (takes 2 ROMs).

Modem Package deals are available for all popular modems and include Modem, Multiport, Manual and Connecting lead. From £ 129.95 all inc.

SKYCOM Communications Package

by David Husband

(C) 1985 Skywave

All Rights Reserved

Supplied strictly

Skywave Software

#>HELP

#>|

0 Characters

Auto L/F ON

Printer OFF

Xon/Xoff OFF

E S L

See Manual for more information.

Main Commands are

TERMINAL (center)

PRESTEL (center)

GOLD (center)

KEY-PAD (center)

SKYTEL (center)

COMMANDS (center)

SET-UP (center)

"I" Commands Accepted

See Manual for more information.

Please send me Skywave Multi-port to fit the ☐ Amstrad 464 - ☐ Amstrad 664 * ☐ Amstrad 6128 * ☐ I enclose a cheque for £99.95 ☐ Please debit my Access Barclaycard account. * Fits 664 & 6128 with adaptor, available F.O.C.

☐ Please send me more information.

Name _____

Address _____

Postcode _____

Items sent subject to availability.

Send to Skywave Software,

73 Curzon Road, Bournemouth

BH1 4PW, Dorset, England.

Tel: (0202) 302385.

☐ Please supply Multi-port &

modem to fit my Amstrad as

above @ £169.95.

☐ I enclose cheque for £169.95, or

☐ Please debit my Access -

Barclaycard account, as above.

Skywave
SOFTWARE



We normally operate a world wide return of post service for our mail order customers with credit cards, Access or Barclaycard. Cheques expect 7 days delivery. Please telephone our sales office for details (0202) 302385 or post the coupon today.

Telecom Gold 72: DTB 10181 Prestel Mail Box 202302385 SKYCLUB on Prestel* 25886 # Telex 295141 TXLINK G Attn MBX 202302385

3-D plotter on Spectrum by Paul Rhodes

This machine-code routine produces a '3D' picture of the graph of a function. Whilst the program draws the graph fairly quickly, the user still has to set up the values to be plotted - a slow job even in machine code, as the pattern generator listed here shows.

The 3D effect is simple but effective, and is produced by using the value to be plotted as a displacement added on to the height of a point on a predetermined diagonal line. So if all values are 0, a parallelogram is produced.

Values to be plotted are stored in a table after the program - the address of the start of the table can be found by: *Peek 50998+256*Peek 50999*, and changing the values of these two locations will make the program use any area you choose for the table. The table consists of a 40*40 array: the first 40 bytes are the top line of the graph, the next 40 are the second line, and so on.

To enter the program, either use an assembler or type in the hexloader, enter C736 as the start address and C7C6 as the finish, and type in the bytes from the listing, up to eight at a time (not separated by spaces). Do not enter the checksums until asked for them. Save the code with: *Save "3Dplot" Code 50998,150*

To run the program: *Randomize Usr 51000*. The other listing can be entered

HEX LOADER

```
1 DEF FN B(A#)=CODE A#-48-7*(A#>"9")
2 DEF FN H(A#)=FN B(A#(1))*16+FN B(A#(2))
3 DEF FN B#(A)=CHR$(A+48+7*(A>9))
4 DEF FN H#(A)=FN B#(INT (A/16))+FN B#(A-16*INT (A/16))
5 POKE 23658;8:REM CAPS LOCK ON
10 INPUT "START?";LINE A#:LET START=FN H(A#)*256+FN H(A#(3 TO))
15 INPUT "FINISH?";LINE A#:LET FINISH=FN H(A#)*256+FN H(A#(3 TO))
20 FOR A=START TO FINISH STEP 8
25 PRINT FN H#(INT (A/256));FN H#(A-256*INT (A/256));
30 LET C=0
40 INPUT LINE A#:LET A#=" "
50 FOR G=0 TO 7:IF A#(1)=" " THEN INPUT LINE A#:LET A#=" "
60 LET Z=FN H(A#):LET A#=" " TO:POKE A+G,Z:PRINT " ";FN H#(Z):LET C=C+Z
70 NEXT G:INPUT "CHECKSUM?";LINE A#:IF FN H(A#)<>C-256*INT (C/256) THEN PRINT "CHECKSUM INCORRECT":GO TO 25
80 PRINT: NEXT A
```

HEX FOR 3D GRAPH PLOT, WITH CHECKSUMS

```
C736 CD C7 21 00 40 11 01 40 =47
C73E 01 FF 17 36 00 ED 80 D9 =C3
C746 E5 D9 11 CB C7 3E 28 12 =D9
C74E 2A 36 C7 2B 22 C9 C7 2A =2E
C756 C9 C7 23 22 C9 C7 7E 32 =15
C75E CB C7 1A 87 C6 44 86 47 =07
C766 1A 87 C6 13 4F 3E 28 13 =42
C76E 12 C5 D5 CD E5 22 D1 C1 =12
C776 2A C9 C7 23 22 C9 C7 3A =C9
C77E CB C7 3C ED 44 86 47 7E =47
C786 32 CB C7 0E 03 CD A0 C7 =06
C78E 11 CB C7 21 CC C7 35 2B =B7
C796 20 DE 35 C2 55 C7 D9 E1 =CB
C79E D9 C9 79 1E 01 CB 7F 2B =AC
C7A6 05 ED 44 1E FF 4F A7 20 =69
C7AE 02 1E 00 16 01 7B CB 7F =F9
```

```
C7B6 28 05 ED 44 16 FF 47 A7 =61
C7BE 20 02 16 00 C5 CD BA 24 =AB
C7C6 C1 C9 00 00 00 00 7C =06
```

HEX FOR 3D WAVE SET-UP, WITH CHECKSUMS

```
FF58 06 29 0E 28 C5 79 CD 28 =98
FF60 2D 3E 14 CD 28 2D EF 03 =93
FF68 31 04 38 C1 C5 78 CD 28 =60
FF70 2D 3E 14 CD 28 2D EF 03 =93
FF78 31 04 0F 28 A3 05 1F A4 =D7
FF80 A2 04 04 38 CD D5 2D C1 =72
FF88 2A 36 C7 11 28 00 A7 ED =FA
FF90 52 08 7B 19 3D 20 FC 59 =9D
FF98 19 08 77 0D 20 BE 10 8A =4D
FFA0 C3 38 C7 3B BD 36 FF 23 =0F
```

in the same way, using FF58 and FFA0 as start and finish. To run it (make sure you already have the 3Dplot routine in

place); *Randomize Usr 65368*.

After a delay of five minutes, a 'wave' pattern should appear.

Assorted Graphics Routines on Sinclair QL by Dave Barnett

Here are a selection of short graphics routines for the QL. None of them break new programming ground, but some of the results are quite interesting.

3-D Cube on Amstrad by Glen Campbell

This program calculates the rotation of a cube in 3D and projects it on to the screen in real-time. The maths is quite ingenious, but the screen does flicker as the cube rotates - however, the result is still quite nice. *n* governs the square size, *m* governs the speed of rotation.

```
100 REMARK "circle",program by an Dave Barnett (1984)
10 PAPER 0:CLS
20 INK RND(255):PAPER RND(255)
30 CIRCLE RND(150),RND(50),RND(40),RND(4),RND(300)
40 IF RND>.95 THEN RUN
50 GO TO 120
100 REMARK "figB",program by and Dave Barnett (1984)
10 REMARK After running the program,try changing line 120 to fill 0
30 FOR s=1 TO 255
40 INK RND (255)
50 LINE TO 100+40*SIN(s*2),50+40*COS(s)
60 END FOR
100 REMARK "flash",program by and Dave Barnett (1984)
10 CLS
20 INPUT "what resolution do you want (medium or high)";res$:IF "m" INSTR res$<>0 THEN MODE 255:ELSE MODE 512
30 PAPER 0:INK 7:CLS
40 INPUT "Do you want fill on or off ?(Y or N) ";a$:IF a#="y" THEN FILL 1:ELSE FILL 0
50 CLS:PRINT"Press (esc) at any time to exit program"
60 PRINT "After you have read the message press space to continue "
70 IF INKEY#<>CHR$(32) THEN GO TO 170
80 INK 7:CLS
90 CIRCLE RND(150),RND(50),RND(40),RND(4),RND(300)
100 IF INKEY#<>CHR$(27) THEN STOP
110 GO TO 180
```

```
10 INK 0,0:BORDER 0:DEG:MODE 2:ORIGIN 320,200:n=150:m=5
20 FOR x=0 TO 360 STEP m
30 a=n*COS(x):b=0:c=n*SIN(x)
40 d=-(c*c)/n:e=a:f=a*c/n
50 g=f:h=c:i=-d-n
60 CLS:INK 1,0
70 MOVE (a+d*g)/2,(b+e+h)/2:DRAWR -d,-e:DRAWR -g,-h:DRAWR d,e
80 MOVE (-a-d*g)/2,(-b-e+h)/2:DRAWR d,e:DRAWR -g,-h:DRAWR -d,-e
90 MOVE (a-d*g)/2,(b-e+h)/2:DRAWR -a,-b:DRAWR -g,-h:DRAWR a,b
100 MOVE (-a+d*g)/2,(-b+e+h)/2:DRAWR a,b:DRAWR -g,-h:DRAWR -a,-b
110 INK 1,26:NEXT x
```




Book Price
Microholics £1.95
Micro Any Supplier Unwin
Paperbacks, 40
Museum Street,
London WC1A
1LU.

A man stands by a micro with disc drives and printer, running a home computer accounts package. He holds a yard or so of printout and says to his wife, "Or in other words, we've spent a small fortune just to tell us we're broke."

Microholics is a collection of cartoons, some sexist, most unfunny, by Richard Howell who, according to the blurb, possesses an 'acute eye'. There's no hint of it here nor sign of the artistic talent.

Strangely, Mr Howell's 'jaundiced look' fails to see as far as opportunistic publishing like this, aimed fairly and squarely at the Christmas gifts market. The theory is that the non-computerate half

of the population will buy it for their micro-obsessed friends in the belief that they will find it funny.

I'm going to make sure my aged aunt knows not to, well in advance.

John Minson



Book Price
Peeks and Pokes for the Commodore 64 £7.95
Micro C64 Supplier First Publishing, Unit 20B, Horseshoe Road, Horseshoe Industrial Estate, Pangbourne, Berks.

That owners of the C64 have special needs for *Peeks and Pokes*, in particular those concerned with graphics and sound owing to the machine's inadequate Basic, is one of computing's great truisms.

This book, another of First Publishing's English editions of German Data Becker volumes, deals with these and many other reasons for directly addressing the micro's

memory. In fact, there's so much in its hundred odd pages, culminating in a machine code simulator and discussion of assembly language, that clarity is sacrificed.

Text which definitely reads like a translation plus transposed sections and typographical errors neither help nor instill confidence.

There are many other books which will fill the needs of the novice Pokes better, although it's just possible more experienced programmers will find the odd useful tip here.

John Minson



Book Price
Graphics Programming Techniques on the Amstrad CPC 464 £7.95
Micro Amstrad CPC 464 Supplier Micro Press, Castle House, 27 London Road, Tunbridge Wells, Kent.

Don't be put off by the fact that this book contains

rather a lot of listings; it's far more serious than it first appears.

Wynford James uses the listings to demonstrate various techniques that can exploit the CPC 464's graphics capabilities starting from Basic.

From the very beginning - the modes of screen display and ink colours - he uses examples and hands-on experience to illustrate the theory, and commendably covers relatively complex topics such as Fill.

He makes a logical progression through the problems and solutions involved in such topics.

There are chapters on shape drawing, animation, graphs and charts and pattern making, avoiding the old myth that graphics from Basic will let you create arcade games or artistic masterpieces.

It's a much more practical approach that will teach a good deal of programming technique.

John Minson

Code Words

Name: Sandy White

Author of *Ant Attack* and *I, of the Mask*

I used to build electronic projects in magazines and when the Sinclair Mk 14 came along I built that - my first computer.

I learnt to program using the manual supplied with it - it was awful! The Mk 14 used a simple National Semiconductor chip and so when the Z80 came along it looked horribly complicated as did Rodney Zaks' book - it was so thick!

I think the best advice for anyone who wants to learn about machine-code pro-

gramming is to begin with just a few simple instructions - gradually try a few more as you need them. It's useful to have someone who already knows a bit of code around to help. Despite its difficulty I'd say the Rodney Zaks' book on the Z80 is a vital purchase.

I don't really use any utilities, I have a *Picturesque Assembler* but don't use it much. More useful is networking Spectrums together to keep the code secure. I also have a hex development system which puts in the code as a memory map and is thus crash-proof.

I don't really play other people's games so I can't comment technically on their work but I do like Jeff Minter.

I think my own greatest achievement was to create a full screen of solid perspective graphics and move them around at ten times a second. My ideal program, my ambition if you like, is a development of what I've already done it would be like looking at reality as filmed by a roving video camera that you could control.



Name: Sandy White

Age: 25

Favourite Programs:

I can't think of any games I really like although I have lots of them. The only exception is *Scrabble* - I set it to play against itself and watch it make crosswords. I like and use *Melbourne Draw* a lot.

Favourite Machines:

I think my favourite machine is the Amstrad just because it's a complete package and has decent sound. I have a couple of Spectrums and look forward to the 128K especially because of the Midi. I also use a Commodore 64 with a Midi package.

Software:

3D Ant Attack, *Zombie*, and *I, of the Mask*.

Hobbies:

Music: I have a DX 7. I play the drums and have fantasies about being a pop star, but I can't play it properly, only by programming music via computer. I also like chemistry, blowing things up and making nasty smells. I also make films - at one time I used to enter them for a children's program called *Screen Test* but they'd always send back a form letter telling me to use a tripod or something. Actually I always did use a tripod, I think it was the chopping people's heads off and spurts of blood from squeaky bottles that caused the problems.

MAKE MONEY WITH YOUR MICRO!

you could earn over £50 per week-in your spare time-and you don't need any special programming skills...

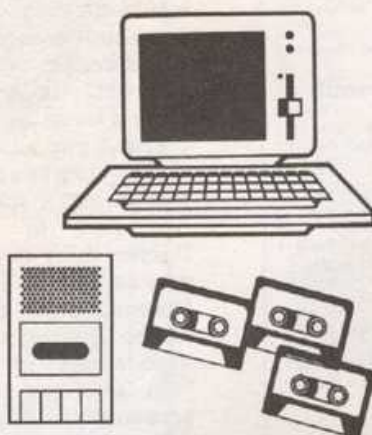
Although you may at present only use your micro to play games, your computer is in fact a very sophisticated business machine which you could use to make yourself a very substantial full or part time income. Whatever your age opportunity exists. You may be a schoolboy looking for a school business project. You may have left school and be looking for a viable business idea. You may have a good job, but you would like to have an extra income. Whatever your circumstances, if you want to make some money, you can turn your micro into a money making machine.

FORGET ABOUT GAMES

Of course it is possible to make money as a games designer, but unless you understand machine code, and have lots of original ideas, you might as well leave games designing to the professionals. After all games design is a very competitive area, and there are lots of easier ways to make money with your computer.

HOW TO GET STARTED

We have compiled a special report which provides you with all the information you need to start a small part time business, which you can operate from home, using your micro. The report contains hundreds of business ideas which give you the possibility of earning thousands of pounds from your micro. Each idea is explained in detail, you need only the simplest of programming ability, if you can write simple basic programmes you can operate any of these ideas. (When we say simple basic programmes we mean very simple) some of the ideas require no programming but even the ideas that have the greatest potential are very simple and easy to operate.



ANY COMPUTER WILL DO!

Whatever your micro, Spectrum, Commodore, Electron, Amstrad etc. all the business ideas in this report are applicable to all home micros, no matter how humble or sophisticated.

TRY THIS SIMPLE TEST

When the report arrives select one idea that appeals to you. Try out the idea for three months, read the directions carefully, start in a small way, remember to begin slowly. At the end of this trial period calculate how much income you've made, if you're not satisfied with the results simply return the report and we will **REFUND YOUR MONEY IN FULL.**

You are free to use each idea, to establish your own part or full time business. All the ideas are viable business opportunities, which don't require any special expertise or skill, just a few hours of your time each week can bring you an income of £50 or more. Many of the ideas are capable of development to provide you with a very substantial income indeed, and each idea will grow and develop as you operate the business. The business you start will be totally your own and can be started with just one micro, and perhaps £5 or £10 start up expenses.

WHAT ELSE WILL YOU NEED

You will need to be prepared to work to make your business grow, each idea requires time and effort, and like any one who runs a business you will need to take advantage of the money making opportunities which develop. You will need to adapt to the challenges, and stick at your project. A telephone would be helpful, and a computer printer would be a great asset (if you do not own a printer don't worry, you can buy one from your first profits). You won't have to wait, most of the projects can be started within 14 days.

EASY TO FOLLOW

Our special report is easy to follow, all the ideas provided are honest straight forward methods of making money from your micro. To prove that you can make money from your micro we offer a no quibble money back guarantee. Keep the report for three months, try one or more of the ideas, and if you don't make any money, just return the report. We'll send you a full refund, within three working days, we won't quibble, we'll just return your money.

We are not trying to take advantage of you, we want to present you in a fair way with the information you need to start making money from your micro.

To: P.W. PROMOTIONS

Please send me your report 'MAKING MONEY FROM YOUR MICRO'. I enclose £9.95 in full payment.

Name

Address

Post Code

I understand I am free to use the ideas in this report to start my own full or part time business or business project.

Signed

Date

Postal Address: P.W. PROMOTIONS, P.O. BOX 21, MANCHESTER M16 8EA.

**MAKE MONEY
WITH YOUR
MICRO!**



Starion kips

To start off this week here, as promised, is the invincible man routine for *Fairlight* from Chris Allen. To use it type in the code, wind the original game tape past the first header of the first program (ie, the part that prints FL on the screen). Run the program you have typed in and start the tape when it tells you to. The program uses the screen at some points so don't worry about the blue border or the mess that you see.

Four sectors

Now then, I must thank everyone for all the help they gave in response to our pleas for *Starion* tips. It isn't really worth anyone else sending any more in for a while. I am hoping to dedicate a special issue of the Avenue to the new games from Melbourne House, which seem to be getting better and better including *Starion* and the tips you have sent in for *Fist*.

I've thought long and hard about the *Starion* tips. I don't want to give much away since solving the anagrams does a lot to stop the game from being just another boring

shoot up, but it can be extremely frustrating if you pick the wrong time zone with your hard won word and have to fight your way out again. For now we will restrict the answers to just the first four sectors to make sure that people can get started.

Sector 1 - Redbreast

Asprin - 1893
Telegram - 1858
Starion - 1985
Electricity - 1831
Bible - 1968
EEC - 1957
Diamonds - 1897
Reativity - 1905
Rhodesia - 1980

Sector 2 - Spacewalk

Coal - 1764
Krakatoa - 1883
Preface - 1086
Leonov - 1965
Armada - 1588
Axe - 1587
Seal - 1764
Egbert - 0814
Wellington - 1815

Sector 3 - Establish

Treaty - 1919
Atom - 1942
Hitler - 1924
Spectrum - 1982
Ivan - 1547
Ballast - 1783
S - 1901
Lamp - 1889
Eiffel -

Sector 4 - Parachute

Avon - 1983
Tobacco - 1565
Umbrella - 2222 BC
Rubber - 1888
Penny - 1840
Cakes - 1789
Halley - 1986
Aerial - 1896
Everest - 1953

Anthony Torak of Leicester has written to claim to be the

first to reach Elite status on the Commodore version of the game. We certainly haven't heard of anyone else doing so but probably only Firebird can say for sure.

Brilliant kick

Anthony offers some tips on the game, which we would be grateful for particularly now that many more people will be playing it, but the same applies to anyone who is doing well with the game. We would be most interested in tips about the new aspects of the different versions since the BBC copy has been around for some time.

Thank you all also for your *Blackwyche* tips and these too will go into a special column dedicated to the game. Darren Riley is one of those who has written in but he also has some more special codes for the CBM version (and perhaps others) of *Bounty Bob*. "On the game adjustment screen enter 57502 and then press 'A' and F3 together. You can then play the game as normal or you can go to any screen you wish to by typing the number on the keyboard. For example '21' takes you to screen 21 and '09' takes you to screen 9. You can wrack up massive scores this way. Other codes to try are 5, 6, 40, 49, 69, 100, 66, 815, 1000, 2049 (surprise surprise!). You just press F3 to activate them. My high score without cheating is 91890 on screen 10."

This thing with *Bounty Bob* strikes me as a brilliant trick, it doesn't make it too easy to

cheat since there is still a challenge to find all of the codes but it still means that ultimately everyone can get to see all screens.

While on the subject of platform games Stephen Trill of Sidcup wants tips and pokes for Mirrorsoft's brilliant *Dynamite Dan*. It's quite a relief now that platform games are beginning to drop off in number to see that good new versions of the idea are still possible. D Moison of Jersey asks if it is possible to actually rescue Esmeralda on the Amstrad version of Ocean's *Hunchback*. Well, you can't on the Spectrum version but as people have complained in the past I did hope Ocean may have added this to new versions.

Record times

Another Ocean game, *Decathlon*, is the subject of a letter from Jason Hall who tips that you can get record breaking times by jiggling two joysticks at once. Of course the presence of a close friend helps here.

Finally here's a letter from Brian Thompson of Beckenham who has completed the CCS wargame *Arnheim*. We occasionally get wargame letters full of long complicated solutions but no one here quite knows what to do with them.

They don't fit into the arcade or adventure columns as they stand, so I'm throwing this open to the readers. Let *Popular* know if you would like wargames covered.

Tony Kendle

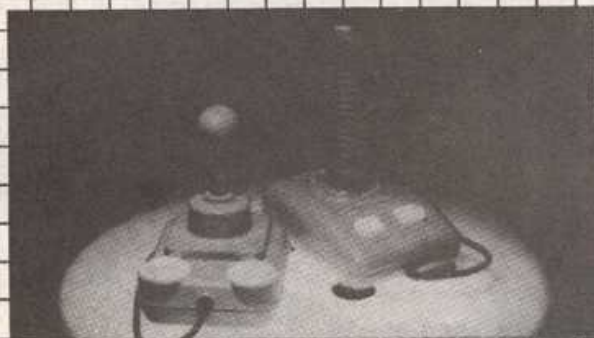
```
1 REM      ** FAIRLIGHT INVINCIBLE MAN **
2 REM
3 REM      * HACKED BY CHRIS ALLEN *
4 REM
5 REM      ...NOTHING IS IMPOSSIBLE!...
6 LET B=0
7 CLS
8 FOR T=0 TO 217:READ A:POKE (T+16384),A
9 LET B=B+A:NEXT T
10 IF B<23495 THEN PRINT "ERROR IN DATA":STOP
11 PRINT AT 19,48:"Play the tape."
12 RANDRND USR 16589

100 DATA 221,33,40,209,17,0,176,33,40,209,1,18,12,26,172,173,170,171,221,119,0,221,35,19,35,11,100,177,32,239,49,200
101 DATA 90,221,35,174,210,35,0,69,221,126,0,119,254,195,40,111,254,95,40,33,254,32,32,24,33,221,35,321,126,0,119,254
102 DATA 224,55,13,221,229,35,54,201,200,0,69,221,225,33,205,62,221,35,35,24,211,271,126,205,254,237,32,244,42,136,64,35
103 DATA 34,136,64,6,9,221,35,16,252,126,42,1,69,237,75,4,69,245,241,245,174,119,35,11,241,195,9,203,191,245,120,177
104 DATA 32,240,241,33,0,69,24,160,137,64,30,17,46,41,107,7,37,58,100,62,34,3,43,19,85,120,9,11,23,25,79,33
105 DATA 33,0,34,200,220,33,0,34,34,202,270,33,231,241,34,204,220,62,201,30,206,220,173,223,218,221,33,203,92,17,93,5
106 DATA 62,205,55,205,86,5,33,15,245,34,26,97,33,129,122,34,39,77,62,203,50,41,97,193,130,194
```

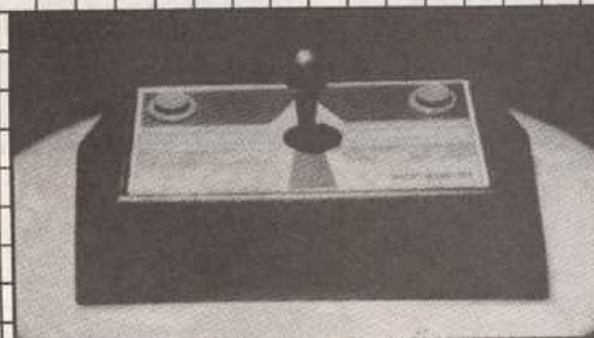

KEMPSTON MICRO ELECTRONICS LTD



JOYSTICK INTERFACE TRI-STATE PRO JOYSTICK INTERFACES



FORMULA 1-2 JOYSTICKS



SCOREBOARD JOYSTICK

ORDER FORM

- Available direct from Kempston Micro Electronics Fast mail order service Please send me the following
- | | | | |
|---|--------|---|--------|
| <input type="checkbox"/> Formula One Joystick | £16.95 | <input type="checkbox"/> Joystick Interface | £9.95 |
| <input type="checkbox"/> Formula Two Joystick | £11.95 | <input type="checkbox"/> TRI-STATE Joystick Interface | £12.95 |
| <input type="checkbox"/> SCOREBOARD Joystick | £19.95 | <input type="checkbox"/> Pro Joystick Interface | £16.95 |

SPECIAL COMBINATION OFFER

- | | |
|--|--------|
| <input type="checkbox"/> Formula One Joystick + Joystick Interface | £19.95 |
| <input type="checkbox"/> Formula Two Joystick + Joystick Interface | £17.50 |

Name _____
Address _____
All prices include VAT and Postage and Packing Overseas order add £4.00 pp. Please allow up to 14 days for delivery
I enclose a cheque for £ _____
Access/Barclaycard _____
Kempston Micro Electronics Ltd, 1-3 Singer Way Kempston Bedford
Tel (0234) 856633



Once Bytten
31 BOWNESS ROAD
LONDON
SE 6 2DG
Phone Orders: 01-698 2911
(Callers by Appointment Only)

COMMODORE		SPECTRUM 48K		AMSTRAD	
	Tape Disc				Tape Disc
Little Comp People	7.50 (12.95)	Elite	10.95	3D Grand Prix	7.95 10.95
Winter Games	7.50 (10.95)	Tomahawk	7.25	3D Boxing	7.95 10.95
Beach-head II	7.50 (10.95)	Robin of Sherlock	6.25	The Quill	10.95 15.95
Goonies	7.25	Robin of wood	7.25	The Illustrator	10.95 15.95
Flight Night	7.50 (10.95)	Tasword II	5.95	Airwolf	6.95
ACE	7.25	Jet Set Willy II	5.20	Jump Jet	6.50 9.50
Who Dares Wins II	6.50	Dambusters	7.25	All the Roland's	6.50
Commando	7.25	Vaihalla	2.95	Timeman 1 or 2	6.50
Rambo	6.95	Scrabble	2.95	Happy Numbers	6.50
Battle of Britain	7.25	The Quill	10.95	Happy Letters	6.50
Racing Dest. Set	7.50 (10.95)	The Illustrator	10.95	Chopper Squad	4.95
Pinball Dest. Set	7.50 (10.95)	The Patch	4.95	Message Andromeda	
Karateka	7.50 (10.95)	Hung	5.95		
Skyfox	7.50 (10.95)	Lord of Midnight	5.95		
Colossus Chess 4.0	7.50 (10.95)	Select One (12 games)	5.95		
Vaihalla	4.95	Chess the Turk	4.95		
Scarabeus	7.50 (10.95)	Tir na Nog	4.95		
Music Const. Set	7.50 (10.95)	Fall Guy	3.95		
Adventure Constr. Set	7.50 (10.95)	Hunter Killer	4.95		
The Quill	11.95 (13.95)	Gilligan's Gold	3.95		
The Illustrator	11.95 (13.95)	VU File	4.95		
Logo/Pilot	(9.95)	VU Calc	4.95		
The Hulk	5.95	VU 3D	3.95		
Death Star Interceptor	5.95	Club Record controller	3.95		
Ultisynth (Bill)	6.95	Collectors Pack	3.95		
Eureka	5.95	Small Business Accts	4.95		
Matchpoint	5.95	Forth	5.95		
American Football	5.95				
Soy Vs Soy	5.95				
Alice in Videoland	6.95				
Select 1 (12 games)	5.95				

DISCS

OUR OWN BRAND - IN TENS - PLASTIC
LIBRARY CASE LIFETIME GUARANTEE

51 SS/DD	9.95	WE SUPPLY DISKS IN BULK TO SOFTWARE COMPANIES, HOSPITALS, CORRUPT FOREIGN POWERS, ALMOST ANYBODY. NO ORDER TOO LARGE OR TOO SMALL. LAST WEEK WE SUPPLIED 30,000 DISKS TO A DISTRIBUTOR AND ONE TO A MAN IN ONGAR. WRITE OR RING FOR OUR PERSONAL QUOTATION.
52 DS/DD	12.95	
53 SS/DD 96TPI	14.95	
3 SS (Card Box)	21.95	
3 DS (Card Box)	30.00	
3 (Card Box)	39.00	

HARDWARE

CBM 64 COMPENDIUM PACK £179.95
SPECTRUM PLUS £99.95
QUICKSHOT II £5.95
PADDLES (PAIR) £7.50
RAM TURBO INTERFACE £14.95

WE BUY ALL MANNER OF COMPUTER EQUIPMENT FOR CASH. WRITE OR RING FOR OUR HUMBLE OPINION. GUARANTEED SECOND-HAND COMPUTERS ALWAYS AVAILABLE

SEE YOU AT THE 17th MICROFAIR

ALL OUR PRICES ARE INCLUSIVE OF SPEEDY DELIVERY and VAT EAOE

Cheques or Postal Orders payable to AMTEN LIMITED please.

Cash should only be sent by REGISTERED MAIL

You may pay by VISA card by mail or phone. PDIE

HAVE YOU MET...

Angry Abdominal

YOU WILL IN...

ROCK'N WRESTLE



Tony Bridge's Adventure Corner



Deflated

Melbourne House and Adventure International are two of the biggest adventure-writing outfits around at the moment, and much of their success has been gained by taking themselves very seriously in the market-place. Their programs are very clever and can certainly stand a little deflation.

Which is where Delta 4 and Silversoft come in: *Sherlock* and *Robin of Sherwood* are good candidates for a bit of gentle leg-pulling, a challenge very quickly taken up by Fergus McNeill and all the other loonies at Delta 4.

One can only guess at what goes on in a mind obsessed with Penguins and Judith (I haven't met any penguins, myself) but as long as it keeps coming up with parodies such as *Bored of the Rings* and now *Robin of Sherlock* who are we to argue? The Jester with his henchperson, The Desperado, has once again turned from thoughts of fish to extracting the Michael from respected adventures.

There's a certain atmosphere present in all Delta 4 (now marketed by Silversoft) adventures – the player has the definite feeling of being followed, if not by a slaving ghoul, at least by a laughing clown. The puzzles included

in the typical Jester adventure are not mind-searing, but rather giggle-provoking, and those met in the present program are more of the same: hardly demanding, but nevertheless interesting and creating echoes of other, maybe more well-known adventures.

The location descriptions are also in the usual McNeill mould – right at the start, for example, you'll find that good old Friar Gorbachetnik succumbs to a surfeit of Venisonburgers in a rather spectacular fashion (resulting in 'lots of bits of Friar!'). Not far from here lies the Kentucky Fried Squirrel House, with copious amounts of Squirrel 'n' Fries (but no Penguinburgers), and a definitely dodgy Convent (don't forget to get the habit!).

On and Off

Robin of Sherlock is *Quill'd*, *Illustrated* and *Patch'd* (all acknowledged, I'm glad to say) and thus features good split-screen graphics/text, weird sound effects and the very useful Ram save and load – so progress is very quick. Particularly as the graphics can be switched on and off at will and, anyway, pictures are only drawn on the first visit to a location (unless otherwise instructed).

With the rustic character set and the good use of colour, this is an attractive adventure to play – as I've said, the puzzles are not numerous, and neither are they particularly taxing, but there are many useable objects, and these will keep you occupied for some while. Characters, unusually for a *Quill'd* game, carry on their own existence (it says here), and you are encouraged to indulge in deep conversation with them. Here is the joke at the expense of *Sherlock* – charac-

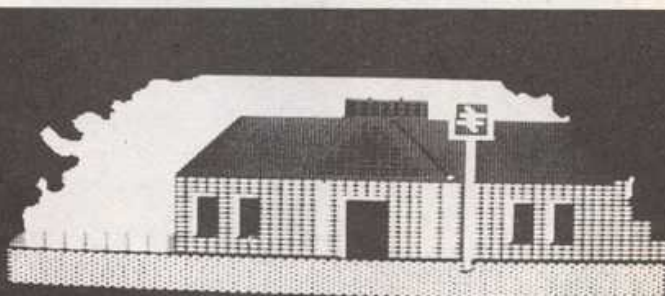
ters may be asked to supply their alibi or to split on another character, but there seemed to be a standard, non-helpful response to my questions, and much of the character 'interreaction' seemed to consist of Dorothy (her from *Wizard of Oz*, don't ask me why) or Marion wandering in and out of the scene. However, it should be possible to ask them about a certain aspect of the adventure, although you run a good risk of getting your ear chewed off for your pains!

The adventure is very pretty, though, with a nice character set, occasionally highlighted in cyan, contrasting with the normal white-on-black. The graphics are quickly-drawn, with much use of repeated blocks (sub-routines as experienced *Illus-*

receive the regular newsheet (rather like a school magazine sent out to old pupils) from this establishment which is for the education of, it seems, rather mature gentlewomen. It's actually an extreme form of torture which said mature gentlewomen submit themselves to as their ideal of a way to spend a holiday, and pretend that they are back in the '30s.

Black on cyan

The Secret of St Bride's is the latest software product of the school, and it's been well received by many magazines. I've just had my first glimpse of the adventure – pretty standard *Quill'd* and *Illustrated* stuff, with a nice black on cyan layout and objects picked out in light col-



Robin stood on the asphalt car park of Sherwood station. To the north was the ticket office door. Small paths led south, east and west into the trees.

Robin of Sherlock from Delta 4

trators will know them) and as there isn't much shading, the whole process is nicely speeded up.

A good laugh

Delta 4 adventures all suffer from the author's devotion to style rather than content: absolutely nothing wrong with this approach as long as you want a good laugh and a few rib-nudging references to some of the old favourites – a good time be had by all, but don't expect brainteasers of the Level 9 standard.

While we're wandering about in this neck of the adventuring woods (the 'let's treat this thing as a lark' neck), let me mention that dubious seat of learning in County Donegal, St Bride's School. I'm always glad to

ours. You wake up one morning in your dorm, along with the other girls, only to find that the others, dotty as they are, seem to believe that they are actually living in the 1930s – you know of course that this is actually the 80s, so what is going on?

Being a good adventurer, you must find out *The Secret*... By examining everything, many objects will be found and then it is a matter of finding the right place to use the objects. So the adventure can be worked through quite logically, with not too many big surprises. And, thanks to Audiogenic's influence, the program is implemented quite professionally.

I look forward to the next adventure from St Bride's, if only to see another of its bizarre press releases!

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 problem, 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.....

IS IT A
DEFENDER
OF THE WEAK?

NO!

IS IT A
CHAMPION OF
THE DOWN
TRODDEN?

NO!

IT'S THE MOST COWARDLY
PANIC STRICKEN
GERIATRIC EVER TO
WEAR A STORE
DETECTIVES
UNIFORM.



KEEP YOUR EYES OPEN
FOR GRUMPY GUMPHREY
SUPER SLEUTH
AVAILABLE NOW
Gremlin Graphics

Come see us at the 17th MicroFair

BYTE

SPECTRUM

GAME	RRP	OUR PRICE
FRANKIE G. T. HOLLYWOOD	9.95	8.99
GRAHAM GOOCH'S CRICKET	9.95	8.99
SPY vs SPY	9.95	8.99
DUN DURACH	9.95	8.99
EXPLODING FIST	9.95	5.99
NEVER ENDING STORY	9.95	7.45
HYPERSPORTS	7.95	5.50
FIGHTING WARRIOR	7.95	5.50
TAU CETI	9.95	8.99
GYROSCOPE	7.95	5.50
AZIMATE 3000	4.99	3.95
FAIRLIGHT	9.95	7.50
TOMAHAWK	9.95	7.40
HACKER	7.95	5.95
MARS PORT	9.95	7.50
BORED OF THE RINGS	6.95	5.25
MONTY ON THE RUN	7.95	5.95
RED MOON	6.95	5.25
NICK FALDO'S OPEN	9.95	7.50
ARCH OF YESOD	8.95	6.10
IMPOSSIBLE MISSION	7.95	5.95
DYNAMITE DAN	6.95	5.25
CYBERUN	9.95	7.50
EVIL CROWN	9.95	7.40
SOUTHERN BELLE	7.95	5.95
SS COMPILATIONS (PSS)	4.99	3.75
INTERNATIONAL KARATE	6.50	4.25
FRANK BRUNO'S BOXING	6.95	5.25
DALEYS SUPERTEST	6.95	5.25
COMMANDO	9.95	7.40
CODENAME MAT II	8.95	6.75
TERREMOLINOS	6.95	5.25
PANZADROME	7.95	5.95
SHADOW OF UNICORN	14.95	11.70
ELITE	14.95	10.25
ROBIN OF SHERLOCK	7.95	5.50
ROBIN OF THE WOOD	9.95	6.99
SEA'S OF BLOOD	9.95	6.99
SWORDS OF SORCERY	9.95	6.99

COMMODORE

FRANKIE G. T. HOLLYWOOD	9.95	7.50
WAY OF EXPLODING FIST	9.95	7.50
WINTER GAMES	9.95	7.45
FIGHTING WARRIOR	8.95	6.70
RACING DESTRUCTION (cassette)	12.95	9.70
BATALYX	9.95	7.45
COMBAT LEADER	14.95	7.50
HYPERSPORTS	8.95	6.75
THEATRE EUROPE	9.95	7.50
BATTLE OF BRITAIN	9.95	7.45

GAME	RRP	OUR PRICE
SPY vs SPY	9.95	7.50
TERREMOLINOS	6.95	5.25
SKYFOX (cassette)	9.95	7.50
WIZARDRY	9.95	7.50
IMHOTEP	9.95	7.45
BATTLE FOR BRITAIN	9.95	5.99
DEATHSTAR INTERCEPTOR	9.95	3.99
WORLD SERIES BASEBALL	7.95	5.95
NEVER ENDING STORY	9.95	7.45
RED MOON	6.95	5.25
NICK FALDO'S OPEN	9.95	7.50
BATTLE OF THE BULGE	9.95	7.50
THING ON A SPRING	9.95	5.95
BEACH HEAD II	9.95	7.50
PARADROID	7.95	5.95
WIZARDSLAIR	8.95	6.75
MONTY ON THE RUN	9.95	7.45
FRANK BRUNO'S BOXING	7.95	5.95
UNDERWURDE	9.95	5.99
PSI WARRIOR	9.95	7.50
THEY SOLD A MILLION	9.95	6.99
WHAM MUSIC BOX	9.95	6.99
ARCH OF YESOD	8.95	6.10
THE LITTLE COMPUTER PEOPLE	9.95	6.99

AMSTRAD

STARION	—	5.99
SABREWOLF	9.95	7.45
EXPLODING FIST	9.95	7.50
DUMMY RUN	9.95	7.45
SOULS OF DARKON	—	4.99
WARLORD	—	4.99
BINKY	—	4.99
MATCHDAY	8.95	6.70
BATTLE OF BRITAIN	—	5.99
RED ARROWS	9.95	7.50
W.S. BASEBALL	8.95	6.70
ALL AMSOFT DISKS	12.95	9.95
THEY SOLD A MILLION	9.95	6.99
GEOFF CAPES	8.95	5.99
FIGHTING WARRIOR	8.95	5.99
TERREMOLINOS	7.95	5.50
ROBIN OF SHERWOOD	—	5.99
TALE OF ARABIAN NIGHTS	—	4.99
SPY VS SPY	—	5.99

MSX

HYPER SPORTS 3 KONAMI	14.95	11.00
HYPER SPORTS 2 KONAMI	14.95	11.00
TRACK FIELD 3 KONAMI	14.95	11.00
TRACK FIELD 2 KONAMI	14.95	11.00
SKY JAGUAR KONAMI	14.95	11.00
TENNIS KONAMI	14.95	11.00

SPECIAL OFFER QUICKSHOT II £6.50

ALL PRICES INCLUDE P&P

PLEASE NOTE IF OUR ORDER EXCEEDS £50

YOU GET 10% FURTHER DISCOUNT

SEND CHEQUES/P.O. TO

GOODBYE PCW10

UNIT 10-11, IMPERIAL STUDIOS,

IMPERIAL, LONDON SW6

(TEL: 01-731 4607)

PD359B

HAVE YOU MET...

*Vicious
Vivian*

YOU WILL IN...

ROCK'N WRESTLE





AVAILABLE FOR

- C64
- AMSTRAD
- ATARI
- BBC/ELECTRON
- VIC 20 + 16K
- PLUS 4 • C16 + 16K
- SPECTRUM

£7.95 each

TRADE ENQUIRIES: Anirog Software Ltd. Unit 10 Victoria Industrial Park Victoria Road
Dartford Kent (0322) 92513/8

MAIL ORDER: 8 High Street Horley Surrey Horley (02934) 6083 (0322) 91649/92518

Payment By: ACCESS/VISA/BARCLAYCARD CHEQUE or P.O.

Peek & Poke



Kempston compatible

Colin Watts of Newcastle upon Tyne writes:

Q Is the Spectrum + upgrade kit compatible with a Kempston joystick, on an issue 2 Spectrum, as I have heard there may be a problem?

A All the connection problems with the plus are caused by the interface slot being 'guarded' by a lightly raised portion of the keyboard casing. In order to check whether your existing interfaces will fit into the new slot, it should only be necessary for you to look closely at the back of a plus. In terms of other types of compatibility, I have not heard of any problems with it.

Language programming

S A Taheri of Canterbury, Kent, writes:

Q I have recently obtained a degree in Maths, Stats and Computing, and I would now like to buy a computer to do language programming (Pascal or Fortran).

I can spend up to £1,000, including a printer and monitor. Could you help me find something suitable?

A There are not many Fortran packages produced for the home micro market, but there are Fortran implementations which run under CP/M.

Amstrad's CPC 6128 is CP/M compatible. The micro costs £299 complete with disc drive and monochrome monitor, and £399 complete with disc drive and colour moni-

tor. Amstrad's DMP 2000 printer costs just £159, so you would be well within your price limit.

Commodore's new 128 machine will also run CP/M programs, but ideally you will need its new 1570 disc drive and 1901 80 column monitor. Neither of the latter are yet available, but have been promised before Christmas. For the 128, 1570, 1901, and Commodore's own printer, the MPS 801, expect to pay just under £1,000.

Interestingly enough, there is a Fortran program for the Sinclair QL which doesn't need CP/M. It is from Prospero Software at 190 Castlenau, London SW13. A QL would cost £199, and Sinclair's own monitor £299.

Two printers which can be used are Mannesmann Tally's dot matrix (with centronics interface) at £250, or Brother's HR5 (RS232 interface) at £157. There is a comparatively large number of languages available for the QL, particularly from Metacomco and HiSoft.

Implementations of Pascal can be found for almost all home micros.

Disabled keyboard

Pamela Sellick, of Abingdon, writes:

Q I have a Spectrum approximately 18 months old. After being on for a short time, the keys in the end columns cease to work. Gradually the other keys also fail. Switching the computer off for a while seems to temporarily remedy the problem. I would like to know whether the problem would disappear by fitting one of the new 'official' Spectrum upgraders' to turn the machine into a Spectrum Plus. If not how can the computer be repaired?

A It sounds to me as if the fault lies in the keyboard membrane, which sits underneath the rubber keypad. It would seem as if this has split or worn in such a way that when the machine heats up the connection(s) are broken, thus effectively disabling your keyboard!

The Spectrum up-grade, as it involves fitting a new membrane (owing to the different keyboard layout), should indeed cure your problem.

Dragon repairs

A T Edwards, of Ystradgynlais, Powys, writes:

Q While loading a program into my Dragon 32 it suddenly crashed, after leaving the din plug in the socket I turned the machine on and off. This resulted in a screen with characters strewn all over it. Many attempts to clear the screen have failed.

Do I require a new chip? If so do Dragon Data do such repairs, if not where can I get it repaired?

A It sounds to me as if you need a new something, but exactly what is difficult to determine. I think that if you asked Dragon Data about repairing your machine you might have a long wait for an answer!

You could try a firm called Mi-Crowe of 49 Wykenham Road Drive, Basingstoke, Hants RG23 8HW (0256 23858). They repair Dragon 32's for £15 plus the cost of parts. Alternatively, try Compusense, PO Box 169, 286a Green Lanes, London N13 5XA (01-882 0681).

Screen messages

I Stokes of Rhyl, Clwyd, Wales, writes:

Q Can you please tell me how to eliminate Program name or Bytes name appearing on the screen? I have assembled programs with a Screen picture only to find that when the next part is loading I get these messages displayed across the screen. I have tried to fill the screen with Print statements but to no avail, since it then scrolls the screen up to put out the message. Is it possible to change its colour? I own a Spectrum.

A One very simple way is not to print on the bottom

line of the user screen, but to issue a Print At statement for line 21, column 32 (Print at 20,31). This has the effect of forcing the message to be printed on the 22nd line of the screen.

Then by setting Ink to be the same colour as paper, you will achieve the desired effect without scrolling. It must be remembered that the Print At statement must be executed before each Load statement.

Lynx characters

Terry Stevens of Plymouth, writes:

Q Firstly, I own a Lynx (remember them?). I want to be able to display large characters on the screen (two or even three times normal height.) Is there any way that this can be done?

As you can imagine it's not easy to find much information on my machine these days.

A I may be able to help you here. VDU24 and VDU25 will give you double height characters. For even large ones try Poke & 6273,96 (Poke & 6273,32 puts things back to normal).

Screen copies

M Payne of Coventry, writes:

Q Is there a way of getting a full screen copy of any picture? If you load in a commercial tape, eg, Lunar Jetman, you then have to Break to Copy, which then loses the bottom few lines.

A Firstly, I guess that you have a Spectrum. Secondly, try this:
10 LOAD "" SCREEN
20 COPY

When this Basic program is entered and Run, it will search a cassette for a screen picture, which when loaded is then dumped to the printer (intact).

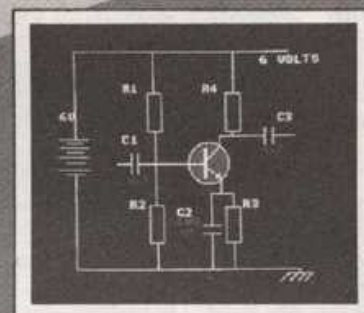
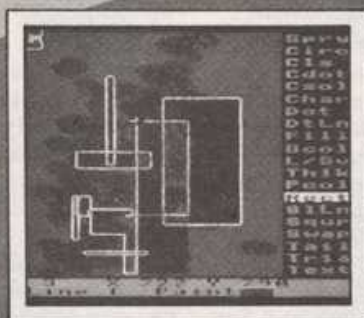
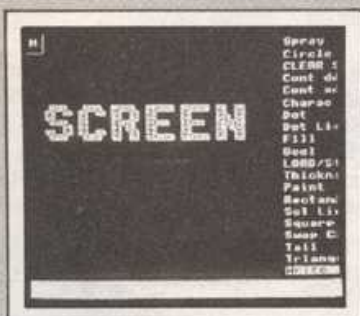
If you want to copy to cassette, then use Save "" Screen instead of Copy on line 20.

TOUCH PAD SCREEN ARTIST

SCREEN ARTIST

Cumana's new, improved Touch Pad with Screen Artist forms the perfect combination of state of the art technology and human creativity – an easy-to-use graphics plotting aid with a brand new and powerful software library with new titles being added on a regular basis.

Screen Artist software has a host of ingenious features for producing creative designs and graphics, illustrations, plans and diagrams, for an infinite variety of applications from interior designs, designing electrical circuits and creative pictures. With Screen Artist, the bounds of artistic skill and invention are virtually limitless.



SCREEN ARTIST (DRAWING COMMANDS)

Airbrush, Swap Colours, Paint Change

Circle, Triangle, Rectangle, Square, Dot

Dotted Line, Solid Line

Continuous Dotted and Solid Line

GCOL Functions – for remarkable patterned effects

Character generator – redefine existing characters with rotate, invert, inverse and multi-functions or create entirely new ones and recall them for inclusion in your developing masterpiece!

Save and load routines for character generator and drawing routines.

Variable text size with rotate function and shadow effect.

Print routine – dump positive/negative images onto any Epson-compatible printer.

CUMANA TOUCH PAD
ONLY £39
inc VAT.

CUMANA®
The best name in memory
Pines Trading Estate, Broad Street,
Guildford, GU3 3BH. Telephone:
Guildford (0483) 503121.

There's a Dealer near you . . .

AVON

SOFTWARE PLUS COMPUTERS
12 YORK STREET
BATH
Tel: (0225) 61676

PL626

HUMBERSIDE

THE COMPUTER CENTRE
(HUMBERSIDE)
26 ANLABY ROAD
HULL
NORTH HUMBERSIDE
0482 26297

PL493

LIVERPOOL

BLUE CHIP
77 ALLERTON ROAD
LIVERPOOL L18 2DA
Tel: (051) 722 3037

PL517

OXFORDSHIRE

CLUB COMPUTERS
6 EVANS YARD
BICESTER
OXFORDSHIRE
Tel: (0869) 248600

PL695

BIRMINGHAM

D.G. MICROTEK ELECTRONICS
190B DUDLEY ROAD
WINSON GREEN
BIRMINGHAM
Tel: (021) 454 4697

PL544

KENT

ANIROG COMPUTERS
29 West Hill
Dartford
Kent
Tel: (0322) 91649

PL494

LONDON

SILICA SHOP
1-4 THE MEWS
HATHERLEY ROAD
SIDCUP, KENT
Tel: 01-309 1111

PL633

ESSEX

MINNIE MICRO COMPUTER STORE
12 EASTERN ESPLANADE
SOUTHEND, ESSEX
Tel: (0702) 615809

PL483

dgh software centre

10 NORTH STREET,
ASHFORD, KENT
Tel: (0233) 32597

PL606

VIC ODDENS
6 LONDON BRIDGE WALK
LONDON SE1
Tel: 01-403 1988

PL488

WARWICKSHIRE

FAST FORWARD COMPUTER STORE
29 SMITH STREET
WARWICK
Tel: (0926) 492004

PL645

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

PL484

MICROWAY COMPUTERS
39 HIGH STREET
RAINHAM, KENT
Tel: (0634) 376702

PL612

GAMES WORLD
129 KING STREET
HAMMERSMITH
LONDON W6
Tel: 01-741 4467

PL516

GLASGOW

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

PL795

LANCASHIRE

SOUND AND VISION
11 SILK STREET
LEIGH, LANCs WN7 1AW
Tel: (0942) 673689

PL602

SOFTWARE STORE LTD
35 LONDON ROAD
LONDON SW17
Tel: 01-685 1476

PL585

YORKSHIRE

THE COMPUTER STORE
18 CLEVELAND STREET
DONCASTER
Tel: (0302) 25260

PL616A

THE COMPUTER STORE
26 TEALL STREET
WAKEFIELD
Tel: (0924) 384983

PL617

THE COMPUTER STORE
8 BRIDGE STREET
YORK
Tel: (0904) 646934

PL618

THE COMPUTER STORE
40 TRINITY STREET ARCADE
LEEDS
Tel: (0532) 429284
(open now)

PL619

HEREFORDSHIRE

HONEYSETT COMPUTERS
17 UNION STREET
HEREFORD HR1 2BT
Tel: (0432) 279404

PL624

LEEDS

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

PL683

LOGIC SALES
19 THE BROADWAY
THE BOURNE, SOUTHGATE
LONDON N14
Tel: 01-882 4942

PL606

HERTFORDSHIRE

BROADWAY COMPUTER CENTRE
75 QUEENS ROAD
WATFORD, HERTS
Tel: (0923) 43301

PL636

LEICESTERSHIRE

DIMENSION COMPUTERS LTD
27-29 HIGH STREET
LEICESTER
Tel: (0533) 57479

PL640

NOTTINGHAM

MPC SOFTWARE
72 JULIAN ROAD
WEST BRIDGFORD
NOTTINGHAM NG2 5AN
Tel: (0602) 820106

PL625

YORK COMPUTER CENTRE
7 STONEGATE ARCADE
YORK
Tel: (0904) 641862

PL616

COMPUTER SWAP

Acorns for Sale

BBC model 'B', OS 1.2, cassette deck, joystick, manual, leads, £30 worth of software. Hardly used. 9 months old. £265 ono. Phone Reigate (43905) after 5.00pm. Ask for Tim.

BROTHER EP-44 printer/typewriter with RS232, LCD display, 4K memory, roll feeder, etc. £160 ono. Tel: Richard on Shephard (0509) 506815.

BBC 'B', 1.2 OS, cassette recorder, joystick, £30 of software, used only a few times, manual + leads. £249 ono. Phone Reigate (07372) 43905 after 5.00pm. Ask for Tim.

40 TRACK double sided disc drive, BBC compatible £90. Spectrum 48K with 15 original £70. Spectrum Ricoll keyboard £10. Tandy MC10 computer (USA model) £10. Broken ZX printer £10. Romford 46948.

BBC 'B' 1.2 OS, £175 ono. Acorn single density disk drive £75. £240 the pair. Tel: 01-254 4709.

BBC B, DFS, Wordwise Plus, Romshell £290, dual 40TK drive £140. Brother HR15 £190. Auto sheet feeder £190. Tractor feed £40. Tel: 01-691 4005.

COMMODORE for Sale

CBM 64, disk-drive, C2N unit, print/plotter, Simons basic, Quickdisk + cartridge, 40 disks, games eg: Exploding Fist, Action Biker + lots more + mags, few months old, 5 year guarantee, worth over £700, bargain at £350. Tel: 0652 34557 after 6pm.

COMMODORE 64 with C2N tape deck, printer, wordprocessor package, speech synthesiser, other assort programs inc. 30 games and serious software, bargain at £160. Tel: 0202 422028.

COMMODORE printer/plotter, hardly used £60. **COMPUNET** modem 9 months old £55. Tel: 01-540 5778.

FOR SALE Commodore 64 £90. 1541 disk drive £90. Together £150. Also Dragon 64 joysticks and software £65. Ring 0277 363991 after 7pm or at weekends.

COMMODORE 64 with C2N recorder, 2 joysticks £150. £550 worth of software, £200 or will split. Tel: 01-391 4727.

COMMODORE disk drive £99 includes eastscript, compiler, blank disks, head cleaner, beached slink pipeline and other games. Disk case, book. Others tapes for sale, cheap. Phone Colin 0438 356489 (Herts).

CBM 40-40 dual disk drive (up-graded 3040) + manual. Suitable for C64 + C128. Includes DAMS V4.4 interface + cable etc. Only £300 ono. Tel: 0753 883800 (Gerrards Cross). Ring anytime.

FOR SALE CBM64, C2N cassette deck, Currah speech, joystick and 14 games including Elite and Beggery Hollywood. Want £160 but price can be lowered. Phone (0253) 594577. Ask for Gavin.

SIMONS basic cartridge and manual plus reset switch for Commodore 64. Sell £20. Tel: 01-478 7868 after 6pm.

CBM128 plus 1570 disk drive, brand new, nearest offer to £450 secures. Tel: Chris on (0524) 762197.

COMMODORE 64 + 1541 disk drive, EasyScript disk, games disk. £250 ono. Tel: 01-254 4709.

For Sale

VTV 5000 MODEM for Spectrum Micronet/Prestel. Brand New. Unused, £30 ono. Sharp MZ80K, lots software and info. Bargain at £80. Phone 0246 410057 after 6pm.

AMSTRAD CPC464 colour + Joystick + Harrier Attack, Forest at World's End. Vgc, £260. Tel: Lowestoft (0502) 517331.

MICROVITEC CUB medium resolution QL monitor. Excellent condition, hardly used (sold QLI), £200 ono. Tel: Barry, 0272 737177 (afternoons, evenings, weekends) or 01-501 1661 (evenings, weekends).

IBM compatible Ferranti PC860. 9 months on-site warranty. Twin drives, 256K, monitor Perfect II software, cost £1590. Now £1090 ono. Epson RX80/FT + BBC software on discs, £199. Tel: Tahir on Blackburn (0254) 679350 5pm to 7pm only.

AMSTRAD disc drive interface for CPC464 and FD-1 drive, manual, CP/M logo disc, £35. Amstrad speech synthesiser, boxed, mint, £19. Tel: Sheffield 460004.

AMSTRAD CPC6128 colour monitor and Hisoft C compiler (CPM and AMSOOS) with 150-page manual, £360. Tel: 01-5674351. Ask for Levent.

AMSTRAD CPC464 (colour) plus joystick, software Sorcery, Manic Miner, etc. Manuals and mags, excellent condition, only 12 months old. 6128 forces sale. Excellent value, £230 ono. Phone Chris, anytime. Bolton 694053.

QL disc drive interface plus two double sided double density Shugart drives, cable utility disc, microdrive to floppy conversion plus discs 1 megabyte capability. Quick sale, £175. Tel: 021-705 3861 (anytime).

AMSTRAD CPC464 colour computer and monitor also with light pen and software. All in prime condition and still boxed. Great Christmas present. All for £200. Tel: (Peterborough) 234134. Will deliver 20 miles.

AMSTRAD CPC464 colour plus disc drive with CP/M and logo, etc. Joystick, lots of software worth over £600. Asking only £350. Tel: 0590 74987.

AMSTRAD 464 green screen and DD1. Excellent condition. Some tape software. Phone after 5pm, £250 ono. Also MP1. Offers? May split. Tel: Royston 838155.

AMSTRAD CPC464 monochrome, £110. Tel: 01-748 5895 evenings - central London.

AMSTRAD CPC664 + colour monitor, CP/M and DR logo disk, manuals, leads. As new. In manufacturer's packing, £300 ono. Tel: 01-254 4709.

MSX TOSHIBA HX-10, 64K. Manuals, leads, demo software. As new. In original box. £100 ono. Tel: 01-254 4709.

512K JM QL + psion V2.00 + Joystick + Chess, Hyperdrive, QLART, ZKUL, Eva, Qdoctor, Assembler, Harry. £275 ono. Tel: 01-586 6155.

PORTABLE EPSON PX-8. Complete w/ram disk unit, P-80X portable printer, adaptors for 12, 220v. Full accessories. Basic, portable calc, scheduler programs. Perfect condition. Value £149. Sell for £1100. Tel: 705 1851.

Spectrum for Sale

I WOULD like an IBM PC compatible pen friend, any offers. Write to Jon, 39 Tetbury Drive, Warndon, Worc. WR4 9LG.

48K Spectrum and data recorder games, worth £35, Jetset Willy, Kong etc. Very good condition, boxed, all for £70. Also £30 books for £15. Tel: 0625 523817 Wilmslow.

BARGAIN IK z x 81 with full size keyboard, all leads, + books, only £10. Tel: (Doid) 0236 29808.

T199/4A computer speech synthesizer ex basic Mini mem speech editor, 11 various educational and games modules cassette games. Books assembler book, £180 ono, would consider splitting ex basic, £40 ono Mini-mem. £40 ono. 0480 75036.

SPECTRUM 48K, Dktronics keyboard, data recorder, books worth £120, software worth £300 (Pascal C, Prolog, Forth, machine + white lightings, Devpac, Tasword, Zeus ass/disass, Chess etc), mags, £200 ono. 041-772 5800.

SPECTRUM interface 1 and 2, microdrive and cartridges, £61. Tel: 01-771 4211 after 6pm.

SPECTRUM 48K, new style keyboard, Interface I, microdrive plus 4 cartridges, Quickshot joystick + interface, plenty of books, utility and games software, all for £135. Phone Colin on 01-393 0831 evenings.

48K SPECTRUM, professional keyboard, sound amplifier, speech synthesiser, printer + paper, Electronics interface, programs, books, magazines, £115 ono. Tel: (0494) 451726.

SPECTRUM +, (upgraded), Interface I, microdrive ZX printer, over £110 software on cartridges and cassettes, books and mags, all boxed and in excellent condition, all offers considered, will split. Tel: (0703) 738432.

SPECTRUM 512 disc drive and interface for sale, 108K storage, commands held in in-built ROM, £120 ono. Phone 01-858 6040.

Dragon

DRAGON 64 cassette recorder, 2 joysticks, 30 plus games, books, 1 year issues of Dragon User. Boxed and as new condition. Only £100 or exchange for a set of golf clubs. (0293) 883653.

Wanted

KEEN SPECTRUM maniac from E. Europe looks for unwanted software, hardware, mags, books, etc. Anything offered in return. All letters answered. Micro lovers of all the world, unite!!! Goto 10, Josef Svoboda, CSLA 514/25, Stetl, 411 08 Czechoslovakia.

OFFERS WANTED for Scripsit and Visicalc model II. Both brand new. Also TRS80 monitor. Swap wanted. BBC Comana Doac disks, for TRS-80 Doac disks. 214 Horninglow Road, Firth Park, Sheffield S5 6SG.

WANTED. Interface 3. Will swap ZX printer and 3 rolls of paper and a Rat joystick and interface G160 32K ram pack. All above for a VTX 5000 modem. **520 ST PENPALS** required! I am an ST user would would like to hear from others. Write to: Paul Taylor, 97 Shelley Street, Northampton NN2 7JZ or Phone (0604) 717801.

WANTED. Extended basic for T1994A computer. Would consider console as well if price low enough. Tel: M.J. Lang 0278 785976. 11 Ramsay Way, Burnham-on-Sea, Somerset TA8 2TR.

WANTED. TRS-80 model I S/W disc/cass, dos systems, etc. Offers for Visicalc, Scripsit 2.0. Brand new for model II monitor with anti-glare screen. Write or call 214 Horninglow Road, Firth Park, Sheffield S5 6SG.

ZX81 POOTER PUZZLER

4 Fun Programs
including
21 PUZZLES
only **£2.95**

OTHER ZX81 TITLES...

MUSE OF POOTER £1.95
Computer generated prose on a ZX81 HANDLES £1 Fun guessing game for age 7+ French version on side 2. **BINARY BRAINS** PL01 'It Aid to understanding binary numbers. ORDER NOW and avoid the Christmas rush!

All software post free - Send 4-6 S.A.E. for more information. **POOTER GAMES** 24 PARLOES AVENUE DAGENHAM RM9 5NX

COMPUTER SWAP

Computer Swap entries are limited to 30 words. All entries cost £2.50. Please enclose a cheque or postal order or give Access or Barclaycard No in the box provided. Only text appearing in the grid will be printed. Send the form to: Computer Swap, *Popular Computing Weekly*, 12-13 Little Newport Street, London WC2H 7PP.

PLEASE NOTE All software offered through computer swap must be in original condition and for private sale only. No advertisements for lists of software will be accepted.

It cannot be swapped.
Warning: It is illegal to advertise pirated software.

COMPUTER SWAP

Please write your copy in capital letters on the lines below.

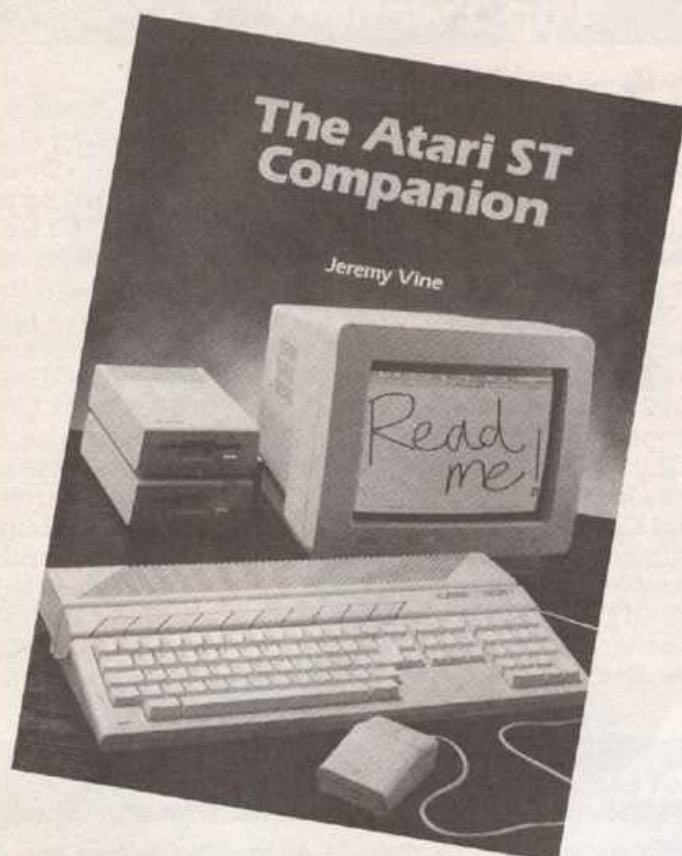
Name

Address

Telephone

☐ Please charge my Visa/Access card no:

Discover the Atari ST



Jeremy Vine's Atari ST Companion will tell you all you need to know if you're wondering whether to invest in the most talked-about new micro of 1985 — the Atari 520ST. Jack Tramiel's new wonder-machine offers you the "power without the price" — a 68000-based window, icon, mouse micro with the GEM graphics environment from Digital Research, all for £750.

The Atari ST Companion has been written with the benefit of full hands-on experience of the machine. Jeremy Vine begins with an overall look at the ST, followed by a detailed introduction to the GEM (Graphics Environment Manager) system. This offers facilities comparable with the much more expensive Apple Macintosh, including windows, pull-down menus and the facility to use a mouse to point to icons to replace typed commands.

Also covered is the Atari Intelligent Keyboard Controller, the very sophisticated sound system of the ST (which includes the industry-standard MIDI interface), the TDS operating system and the graphics LINE "A" interface.

So, whether you are already the proud owner of a new ST, or just thinking of learning more about this revolutionary new micro, send off today for this great new Sunshine book.

Please send me

_____ copies of The Atari ST Companion @ £9.95 each.

☐ I enclose a cheque/postal order for £_____ payable to Scot Books

☐ Please debit my Visa/Access card no. _____

valid from _____ expires end: _____

Signed: _____

Name: _____

Address: _____

Send to: Sunshine Books, 12-13 Little Newport Street, London WC2H 7PP.

C & F ASSOCIATES

BBC	RRP	Our Price	SPECTRUM	RRP	Our Price
ENTHAR 7 (80 TRACK)	16.95	14.95	MARSPORT	9.95	6.90
BLUE RIBBON GAMES			FAIRLIGHT	9.95	7.25
DISK 1 (40 TRACK)	9.95	7.50	RED ARROWS	8.95	5.75
DISK 2 (40 TRACK)	9.95	7.50	THE ARTIST	12.95	9.95
COMBAT LYNX	8.95	6.75	STARQUAKE	7.95	5.95
BOFFIN	9.95	7.25	AQUAPLANE	6.95	1.95
CASTLE QUEST	12.95	8.95	HARRIER ATTACK	5.95	4.50
FELIX & THE FRUIT MONSTERS	7.50	1.95	THAT'S THE SPIRIT	7.95	5.20
RED MOON	6.95	5.50	RED MOON	6.95	5.50
SWOOP	7.95	1.95	ATIC ATAC	5.50	4.50
FELIX & THE EVIL WEEVILS	6.95	2.50	NIGHTSHADE	9.95	7.25
ATIC ATAC	7.95	5.95	UNDERWURLD	9.95	7.25
TEMPEST	9.95	7.25	WORM IN PARADISE	9.95	7.25
KILLER GORILLA	7.95	2.50	KNIGHT LORE	9.95	7.25
ALIEN-8	9.95	7.25	SAM STOUT SAFE BREAKER	6.95	5.25
RUBBLE TROUBLE	7.95	2.50			
WORM IN PARADISE	9.95	7.25			
BUMBLE BEE	7.95	2.50			
KNIGHT LORE	9.95	7.25			
SABRE WOLF	9.95	7.25			
GHOULS	7.95	2.50			
ELECTRON			AMSTRAD		
NIGHTMARE MAZE	2.50	2.25	RED ARROWS (DISK)	12.95	7.50
BOFFIN	9.95	7.25	RED ARROWS	8.95	5.75
COMBAT LYNX	8.95	6.75	KNIGHT LORE	9.95	7.25
CASTLE ASSAULT	2.50	2.25	WIZARDS LAIR	8.95	6.25
			COMBAT LYNX	8.95	5.95
			ROCCO	8.95	5.95
			ALIEN 8	9.95	7.25
			RED MOON	6.95	5.50
			DUN DARACH	9.95	7.25
			BRIAN BLOODAXE	8.95	5.95
			PROJECT FUTURE	8.95	5.95
			TASWORD 484 (CASS)	10.95	18.95
			TASWORD 484/664 (D)	24.95	19.95
			TASWORD 6128 (D)	24.95	19.95
			COMMODORE 64		
			IMHOTEP	9.95	6.25
			RED ARROWS	8.95	5.75
			BLACKWYCHE	9.95	6.25
			WIZARDS LAIR	8.95	6.25
			WANTED: MONTY MOLE	7.95	5.25
			HARRIER ATTACK	5.95	4.50
			ENTOMBED	9.95	6.25
			THING ON A SPRING	7.95	5.95
			COMBAT LYNX	8.95	6.75
			SHADOWFIRE	9.95	6.90
			WIZARDRY	9.95	7.25
			RED MOON	6.95	5.50
			NODES OF YESOD	9.95	6.25
			COMMODORE C16/PLUS 4		
			DORK'S DILEMMA/SWORD OF DESTINY		
			£5.95 THE TWO		

PLEASE NOTE: BBC DISC SOFTWARE GUARANTEED FOR ACORN DFS ONLY

ALL PRICES INCLUDE VAT AND POSTAGE & PACKING
(Overseas Orders add £1.00 per item)

CHEQUES/PO PAYABLE TO: C & F ASSOCIATES
AND SEND TO

C & F ASSOCIATES (PCW), PO BOX 2, BIDEFORD EX39 3RE PD824C

HAVE YOU MET...

*Georgiana
Grey
- The blonde
hero.*
YOU WILL IN...

**ROCK'N
WRESTLE**



Amstrad

1	(-) Yie Ar Kung Fu	(Imagine)	£7.95
2	(3) Grand Prix 3D	(Software Invasion)	£9.95
3	(1) They Sold A Million	(Hit Squad)	£9.95
4	(4) Finders Keepers	(Mastertronic)	£1.99
5	(8) Soul Of A Robot	(Mastertronic)	£1.99
6	(2) Formula One Simulator	(Mastertronic)	£1.99
7	(6) Raid!!	(US Gold)	£9.95
8	(10) Way Of The Exploding Fist	(Melbourne House)	£9.95
9	(5) Nonterraqueous	(Mastertronic)	£1.99
10	(-) Frank Brunos Boxing	(Elite)	£8.95

Atari

1	(1) Mercenary	(Novagen)	£9.95
2	(-) Action Biker	(Mastertronic)	£1.99
3	(7) Electra Glide	(English Software)	£8.95
4	(4) Rescue On Fractalus	(Activision)	£9.95
5	(-) Pole Position	(Datascop/US Gold)	£9.95
6	(2) Super Zaxxon	(US Gold)	£9.95
7	(-) Ballblazer	(Activision)	£9.95
8	(-) Bounty Bob Strikes Back	(Big 5/US Gold)	£9.95
9	(-) Red Moon	(Level 9)	£9.95
10	(3) Chop Suey	(English)	£9.95

BBC

1	(1) Strike Force Harrier	(Mirrorsoft)	£9.95
2	(10) Repton 2	(Superior Software)	£9.95
3	(2) Match Day	(Ocean)	£9.95
4	(9) Bored Of The Rings	(Silversoft)	£8.95
5	(8) Combat Lynx	(Durell)	£8.95
6	(7) Revs	(Acornsoft)	£14.95
7	(5) Jump Jet	(Anirog)	£9.95
8	(4) Beach Head	(Access/US Gold)	£9.95
9	(3) Elite	(Acornsoft)	£12.95
10	(-) Computer Hits (10)	(Beau Jolly)	£9.95

Commodore 64

1	(1) Winter Games	(US Gold)	£8.95
2	(-) Rambo	(Ocean)	£8.95
3	(-) Fight Night	(US Gold)	£9.95
4	(-) Commando	(Elite)	£8.95
5	(3) Last V8	(Mastertronic)	£1.99
6	(-) Little Computer People	(Activision)	£9.95
7	(4) Summer Games 2	(Epyx/US Gold)	£9.95
8	(8) Arcade Hall of Fame	(US Gold)	£8.95
9	(-) Racing Destruction Set	(Ariolasoft)	£12.95
10	(6) They Sold A Million	(Hit Squad)	£9.95

Spectrum

1	(-) Commando	(Elite)	£7.95
2	(1) Elite	(Firebird)	£14.95
3	(-) Tomahawk	(Digital Integration)	£9.95
4	(3) Back To Skool	(Microsphere)	£6.95
5	(2) International Karate	(System 3)	£8.95
6	(9) Beach Head 2	(Access/US Gold)	£9.95
7	(-) Swords And Sorcery	(PSS)	£9.95
8	(15) Daley Thompsons Super Test	(Ocean)	£8.95
9	(4) Saboteur	(Durell)	£8.95
10	(-) They Sold A Million	(Hit Squad)	£9.95

Bubbling Under

Gyroscope/Spectrum (Melbourne House); Computer Hits (6)/Spectrum (Beau Jolly); Scarabaeus/C64 (Ariolasoft); Tau Ceti/Spectrum (CRL); Waterloo/C64/Spectrum (Warmaster); Imhotep/C64 (Ultimate); I of the Mask/Spectrum (Electric Dreams); Spike/Spectrum (Firebird); Battle of Britain/Amstrad (PSS).

All figures compiled by Gallup/Microscope

Top Twenty

1	(-) Commando (Spectrum/C64)	Elite
2	(1) Elite (Spectrum/C64/Spectrum)	Acornsoft
3	(4) Winter Games (C64)	US Gold
4	(-) Rambo (Spectrum/C64)	Ocean
5	(3) They Sold A Million (Spectrum/C64/Amstrad)	Hit Squad
6	(-) Fight Night (C64)	US Gold
7	(2) Formula One Simulator (Various)	Mastertronic
8	(-) Tomahawk (Spectrum)	Digital Integration
9	(8) Computer Hits (10) (Various)	Beau Jolly
10	(16) Back To Skool (Spectrum)	Microsphere
11	(6) Way Of The Exploding Fist	Melbourne House
12	(11) Beach Head 2 (Spectrum, C64, Amstrad)	Access/US Gold
13	(5) Finders Keepers (Spectrum, C64, Amstrad)	Mastertronic
14	(10) Monty On The Run (Spectrum/C64/Amstrad)	Gremlin Graphics
15	(10) BMX Racers (Spectrum, C64)	Mastertronic
16	(15) International Karate (Spectrum)	System 3
17	(12) Frank Brunos Boxing (Spectrum, C64, Amstrad)	Elite
18	(9) Action Biker (Spectrum, C64)	Mastertronic
19	(-) Arcade Hall Of Fame (Spectrum, C64)	US Gold
20	(7) Robin Of The Wood (Spectrum, C64)	Odin

Figures compiled by Gallup/Microscope

Readers' Chart No 53

1	(1) Way of the Exploding Fist (Spectrum/C64/Amstrad/Melbourne House)	The Edge
2	(2) Fairlight (Spectrum)	Imagine
3	(3) Hypersports (Spectrum/C64)	Gremlin Graphics
4	(5) Monty on the Run (Spectrum/C64)	Level 9
5	(4) Red Moon (Spectrum/C64/Amstrad/BBC/Electron)	Firebird/Acornsoft
6	(-) Elite (Spectrum/C64/BBC/Electron)	Ultimate
7	(6) Nightshade (Spectrum)	Beyond
8	(7) Spy vs Spy (Spectrum/C64)	Ocean
9	(-) Daley Thompson's Supertest (Spectrum)	Sub-Logic
10	(-) Flight Simulator II (C64)	

Winning Phrase No 53: "Why do I try? I fail so often" from Darren Gregory, Bispham, Blackpool, Lancs who receives (to his surprise no doubt) £25. Honourable mentions to Andrew Gallagher of Altringham, Cheshire with "Who has tight fist on Soft Aid?" and Andrew Toy of Crawley, Sussex with "Terry Wogan raises lots of gelt".

Now voting on week 55 - £25 to win

Each week *Popular* is compiling its own special software top ten chart - compiled by YOU.

And each week we will send £25 to the person who sends in, with their chart votes, the most original (witty, neat or clever - but never rude) phrase or sentence made up from the letters (you don't have to use them all) in the titles of the top three programs in this week's Readers' Chart, published above.

You can still vote in the chart without making up a slogan - but you won't be in with a chance of winning the prize.

All you have to do is fill in the form below (or copy it out if you don't want to damage your magazine) and send it off to: Top 10, *Popular Computing Weekly*, 12-13 Little Newport Street, London WC2H 7PP.

Voting for Week 55 closes at 2pm on Wednesday December 11 1985. Entries received after that time will not be eligible for inclusion in that week's voting. The judges decision is final. Only one entry per individual per week will be allowed.

Name	My top 3: Voting Week 55
Address	1.....
.....	2.....
.....	3.....
My phrase is:	



	AMSTRAD	BBC/B	CBM 64	EINSTEIN	SPECTRUM	QL
CLUEDO	JAN 8	JAN 86	*		*	FEB 86
MONOPOLY	JAN 8	*	*	*	*	FEB 86
SCALEXTRIC	FEB 86		* †		JAN 22	
SCRABBLE	*	*	*	*		*
RRP cass	9.95	12.95	12.95		9.95	14.95 (cart)
disk	14.95	14.95	14.95	15.95		

* Available Now! † CBM 64 Scalextric, £9.95 (cassette) Dates are approximate.

MAIL ORDER: Please send cheque or Postal order to: LEISURE GENIUS, 3 Montagu Row, London W1H 1AB.

Please send me the following items as marked, for thecomputer.

	CASS	DISK	
CLUEDO	<input type="checkbox"/>	<input type="checkbox"/>	NAME _____
MONOPOLY	<input type="checkbox"/>	<input type="checkbox"/>	ADDRESS _____
SCALEXTRIC	<input type="checkbox"/>	<input type="checkbox"/>	_____
SCRABBLE	<input type="checkbox"/>	<input type="checkbox"/>	_____
			POST CODE _____

(please tick) PCW

Software by...
Leisure Genius
 3 Montagu Row, London W1H 1AB.



NOW AVAILABLE FROM SELECTED

Boots & WHSMITH
 STORES

AND AT OTHER GOOD STORES.

CLUEDO® trade mark and copyright licensed by Waddingtons Games Ltd.
 MONOPOLY® is produced under license from Parker Brothers and
 Waddingtons Games Ltd. SCALEXTRIC® is a registered trade mark of
 Hornby Hobbies Ltd. SCRABBLE® trade mark and copyright licensed by
 J W Spear & Sons PLC. All copyrights reserved LEISURE GENIUS® is
 a registered trade mark of Winchester Holdings Ltd.

FAST COMPUTER REPAIRS

VIDEO VAULT INTERNATIONAL 10★ REPAIR SERVICE

THE NO. 1
REPAIR CENTRE
IN THE U.K.

WHILE YOU
WAIT SERVICE
CALL FOR APPOINTMENT

24 HOUR
TURNAROUND



HOW TO SEND YOUR COMPUTER

Just parcel your computer in suitable wrapping enclosing £19.95 for Spectrum repairs, please do not send power supplies. Commodore computers, just send £1.75 (U.K. Eire, I.O.M. C.I.) or £6.50 (Europe/Scandinavia) with your address or phone number and we will contact you same day by phone or letter with quote, if you prefer, please call us and we will give you a quote over the phone, we aim to please. That's what made us the most reliable service centre.

SPECTRUMS REPAIRED for only £19.95 including PARTS · INSURANCE and P & P. NO HIDDEN EXTRAS

We don't give you a between price and let you guess the bill, we give you a 100% fixed price NO extras. We don't need to boast about our service, we have 1000's of customers from all over the world highly delighted with our service and help. Only 20 minutes from Manchester Centre. BBC, Commodore 64, Vic 20, also repaired call us for details.

Don't wait weeks for your repair, we turn around all computers in 24 hrs. All repairs carry a full 3 month guarantee, plus on every Spectrum we repair, we send you a free game worth £5.95 for your enjoyment and pleasure.

- While you wait service by Professional Computer Engineers.
- 3 month written guarantee on all repairs.
- International Repair Company. We repair computers from all over the world.
- All computers sent by Mail Order turned around in 24 hrs.

- Most Spectrums repaired within 45 minutes.
- All Micros insured for return journey.
- Keyboard faults only £8.95
- School repairs undertaken - discount available.
- Free software with each Spectrum repaired.
- Over 8 years experience working with computers. All computers fully tested.

TRADE
REPAIRS
most
welcome

(SPARES AVAILABLE THROUGH OUR D.I.Y. SECTION.)

BEST SERVICE — BEST PRICES!

COMMODORE 64

* NOW REPAIRED *

Call us for details or purchase the I.C.'s from our D.I.Y. section

WE ONLY USE SINCLAIR
SPARES. FITTED BY OUR
QUALIFIED STAFF!

* SPECIAL KEYBOARD UPGRADE



Why not
upgrade your
Spectrum into
a new keyboard,
we can upgrade your
old Spectrum into a new
D.K. Tronics keyboard

for only £31.50

Normal retail price £49.95 without fitting

ORDER
NOW!

SPECIAL OFFER!

YOU CAN'T REFUSE

16K to 48K Upgrade

Upgrade your 16K Spectrum to 48K Spectrum
for only £19.95 fitted including V.A.T. and P.&P.

(Limited offers while Stocks Last.)
Makes a great Christmas present.

To order the Upgrade Kit,
(only £17.95.)



P.S. We would like to wish all our customers
past and present a very Merry
Christmas and a Happy New Year.

THERE'S
NOBODY QUICKER
IN THE BUSINESS AT PRICES
THAT CANNOT BE
BEATEN

THE
LOGICAL
CHOICE

VideoVault D.I.Y. CORNER

We regret we cannot
show all the components
available. Just give us a
call and we can quote you
over the phone, delivery
by return.

Spectrum Parts

Z80A CPU	3.50
4116 Rams	1.00
ZTX 650	0.60
Transistor ZTX 213	0.30
Transistor ZTX 313	0.50
Power Supply Units	7.95
Feet (Each)	0.25
16K to 48K Upgrade Kit	17.95
Sockets 16-40 Pin	14-50p
Cassette Leads	3.50
T.V. Lead	3.50

Commodore 64 Chips

6526	23.00
6510	23.00
6581	23.00
901227-03	23.00
901226-01	23.00
901225-01	23.00
6569	23.00
4164 Rams	3.00
Power Supply Units	29.00

All prices + P & P. £1.50
But include V.A.T.

TRADE
ORDERS
WELCOME

VIDEOVAULT HEALTH WARNING!!!

Sending your computer to any other Repair Centre can seriously Damage its Health

STOP PRESS

VIDEOVAULT LTD will shortly be
opening their New Branch in
Manchester City Centre for
while you wait computer repairs,
watch this space for details of
Special opening offers.

OPEN
7
DAYS
A
WEEK

VideoVault

PL1
Ltd.

Telephone: Glossop (STD 04574) 66555/67761
140 High St. West, Glossop, Derbyshire, England.

FREE GAME WORTH
£5.95 WITH
EACH SPECTRUM
REPAIR.

ACCESSORIES

SPECIAL

FROM **85p** EACH **5 1/4" DS/DD FLOPPY DISKS**
 ● LIFETIME GUARANTEE
 ● HUB RINGS
 ● FREE SEE-10 CASE
 ● NT BRANDED - FUJI FILM
 PRICE PER BOX

1-4	5-9	10+
£9.50	£8.90	£8.50

8" DD diskettes 100 each min order 50
 AUTHORISED: Sanyo - Phillips - Alternative -
 Sage - Easylink - Mannesman - Juki -
 Dealers

FROM **70p** EACH **5 1/4" DS/DD UNBRANDED FUJI FLIPPY DISKETTES**
 with envelopes and write protect tabs
 For single and double sided drives 80p each
 Minimum order 50 each
 3.5in memorex (10 per box)
 Price per box

1-4	5-9	10+
£28.00	£27.00	£26.00

HOW TO ORDER: To total add 50p per box of 10 postage then add 15% VAT and send cheques or postal orders to:

Newtrends Technology Ltd
 10/14 Hollybush Gardens
 London E2 9QT
 Tel: 01-729 4999

CABLES	
QL Serial cable	£7.50
QL Joystick adaptors	£4.50
QL Monitor cables	
ZK Serial cable	£9.95
ZK Microdrive cable	£5.00

TV Leads	
Tape Leads	
Printer Cables	
Cables made to order	
"Printer Interfaces"	
QL Centronics Printer Interface	£29.95
ZK Centronics printer interface	£29.95
Apple 2C Centronics printer interface	£39.95

TECH LINK LTD
 31 Salisbury Rd, St. Annes, Bristol,
 BS4 4EL
 Tel: (0272) 715370 24-hour service
 ALL PRICES INCLUSIVE OF POST PACKING

3" DISKS
£39 FOR 10
 INCLUSIVE OF VAT & DELIVERY

3 1/2" DISKS
 OS135TP1 £35 for 10
 SS135TP1 £25 for 10
 INCLUSIVE OF VAT & DELIVERY
 CHEQUES/PO's to:
MICRO RESOURCES LTD
 Southfield House,
 11 Liverpool Gardens,
 Worthing, Sussex BN11 1RY
 ACCESS/VISA WELCOME.
 TEL: (0903) 213174

YOUR PERSONAL ELECTRONICS PRINTER

£89 plus vat
 plus £8 p+p

● DRAFT MATRIX PRINT
 ● NEAR LETTER QUALITY
 ● SUBSCRIPT SUPERScript
 ● CONDENSE EMPHASIZE
 ● 96 CHAR+48 EURO+16 MATHS
 ● GRAPHICS
 ● OPTIONAL TRACTOR

ROCK HALL
 128 Station Rd
 Clevedon
 Leicestershire
 LE3 8BA
TEL: (0533) 313531

SPECTRUM/SPECTRUM +
OSCILLOSCOPE add on
 with software. Samples up to 100kHz.
 Wide input range. Variable timebase. Self
 contained.
£38.95
 inc. P & P
S. Huckstepp,
 6 Ashling Road
 Croydon
 Surrey

MONEYMAKER. Comprehensive share
 analyser for Dragon 32/64. Shareplan
 highlights stockmarket trends. Invaluable
 aid to share investment. £3.99.
 Keilyn Software, 31 Harewood Avenue,
 Morecambe LA3 1JH.

C15 BLANK CASSETTES
 WITH LIBRARY CASES
 £20 per 100 full inclusive
UK HOME COMPUTERS (DEPT PCW)
 82 Churchward Ave, Swindon,
 Wilts 0793 695034.

HOME ACCOUNTS Put your house in
 order! Comprehensive coverage of
 bank accounts, credit cards, HP etc.
 Inbuilt accuracy check. Projects cash
 flow for any period. Available for Com-
 modore, Amstrad and Spectrum £8.45.
 Free details from: Discus Software,
 Freepost, Beach Approach, Brixham
 TQ8 8BR. Tel: 0806 455532.

BLANK CASSETTES
 WITH LIBRARY CASES

	C10	C15	C20	C30
10	3.80	4.00	4.15	4.15
20	7.00	7.20	7.35	7.50
50	15.00	15.20	15.35	15.50
100	27.00	28.00	29.00	29.00

Fully inclusive (COD 65p extra)
 Superior Tapes. Don't Settle for Less!
5 1/4" DS/DD DISKS
 10 for £12.00 inc plastic case
 RING US NOW! (0793) 695034
UK HOME COMPUTERS, 82 CHURCHWARD AVE,
SWINDON, WILTS SN2 1NH

FOR HIRE

MIDLAND COMPUTER LIBRARY

A SUBSIDIARY OF PLATINUM GOLD

- OVER 4,000 different titles available for hire for the COMMODORE, SPECTRUM, BBC, AMSTRAD, ATARI and MSX computers.
- ARCADE, ADVENTURE, EDUCATIONAL and BUSINESS software too.
- HIRE PRICES from only 75p INC P & P.
- 205 DISCOUNT off all purchase software.
- FREE CATALOGUES.
- FREE HINTS AND TIPS.
- FAST RETURN OF POST SERVICE (if reserves are given).
- ALL GAMES manufactures ORIGINALS with full documentation.
- OVER 6,000 satisfied members.
- EUROPEAN members welcome.
- LIMITED PERIOD ONLY FREE MEMBERSHIP.
- Fully computerised system keeps track of your order. We pride ourselves in being the most professional Hire Library in the United Kingdom, with staff of 14 who knows what the word service means. Backed by our own software company and programmers.

MIDLAND COMPUTER LIBRARY:
 28 COLLEGE STREET, WORCESTER, WR1 2LS.
 TEL: 0905 611072.

Please rush me my free catalogue stating machine.

Name:

Address:

* CHRISTMAS BARGAINS *

MEMOTECH MTX512 COMPUTER:

A superior designed computer. Suit novice or professional. 64K Ram, 16 Colours
 Z80 Processor. Fully Guaranteed.

ONLY £99.00p
PRINTERS (PANASONIC TYPE 1090)

A Near-Letter-Quality DotMatrix Printer made by Panasonic under licence. 80
 cps. True descenders, Friction & Tractor Feed. Centronics: Parallel Interface.

BARGAIN AT £175.00
SPECTRUM DISK DRIVE PACKAGE:

Comprises of The Beta Magic Button Disk Interface. 250K Single Sided Drive.
 Cables, & 10 free 5.25" Disks for

£195.00p.

Other Drives available. Orders Enquiries to:

UK HOME COMPUTERS (dept.PCW)
 82 Churchward Ave. Swindon, Wilts. 0793 695034

MAGAZINES

commodore
 HORIZONS

COMMODORE HORIZONS
 Special offer! For a limited period only!
 Take out a year's subscription to Commodore
 Horizons now and receive one of three Sunshine
 books - absolutely free! Simply send us £10,
 together with your name and address and your
 choice of book.
Commodore Horizons, Special Subs Offer
 12 13 Little Newport Street
 London WC2H 7PP
 Don't delay - post now!
 Books
 1 Machine code graphics & sound on C64
 2 Artificial intelligence on C64
 3 Building with Logo on C64

DRAGON USER

To make the most of your Dragon you
 need Dragon User - the independent
 magazine for Dragon owners. To make
 sure that you receive a copy of Dragon
 User regularly subscribe direct to us. A
 year's subscription costs £14 for 12 issues
 (overseas rates available on application).
 Send a cheque or postal order made
 payable to Dragon User, and accompa-
 nied by your name and address, to Dragon
 User, Subscription Department, Oakfield
 House, Perrymount Road, Haywards
 Heath, Sussex RH16 3DH.

SERVICES

SPECIAL XMAS OFFER!

2 GAMES (WORTH £10) WITH EVERY REPAIR

NOTE OUR PRICES AND WATCH

REPAIRS BETWEEN £9 AND £20

EXPRESS SPECTRUM & BBC REPAIRS!

in all U.K. with While-u-Wait repairs!

with INTERNATIONAL repair service!

to charge **LOW PRICES** for the smaller repairs! (e.g. £9 for keyboard faults)

FOR SPEED - "One firm at least can effect any necessary repairs over the counter in 45 minutes. Based in Manchester, MANCOMP can offer what is arguably the **FASTEST** turnaround in the business to personal callers" CRASH Magazine JUNE 1985.

FOR LOW PRICES - "My Spectrum blew recently. I took it to MANCOMP, who fixed it in 8 minutes! and for less than £10! They are local, 'clued up', and blindingly efficient!" 4 HEATONS DIGEST.

FOR REPUTATION & HELPFULNESS - "I have come across a firm that will be more than willing to advise you as to how to remedy your problems. They are called MANCOMP and as well as repairing faulty Spectrums, are also quite willing to discuss your problems with you and offer reasonably cheap and more importantly **CORRECT CURES**" Phil Rogers POPULAR COMPUTING WEEKLY JAN 85.

FOR PROFESSIONALISM - "Of all the repair companies 'Sinclair User' spoke to, MANCOMP seemed the **MOST PROFESSIONAL** when it came

to advice and a helpful attitude" AUG 85.

FOR HONESTY - We let you watch your computer being repaired and if there is nothing wrong with it, we will tell you!!!

THIS IS WHY Spectrum users from London, Cornwall, Scotland, Birmingham, Liverpool, Coventry, Leicester, Glossop, I.O.M., etc. AUSTRALIA, AUSTRIA, BELGIUM, EGYPT, EIRE, GERMANY, HOLLAND, KUWAIT, NORWAY, PAKISTAN, PAPUA NEW GUINEA, SAUDI ARABIA, SWEDEN, SWITZERLAND and ZIMBABWE - send their Spectrums to MANCOMP for repair!

- 24 TURNAROUND • NO-QUIBBLE GUARANTEE
- NO HIDDEN COSTS.

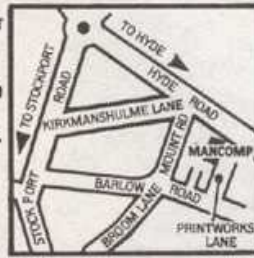
EXTRA-SPECIAL DISCOUNTS FOR EDUC. INST., H.M. FORCES, CHARITIES, HOSPITALS, ETC!

WHY DELAY? For FREE no-obligation estimate PHONE OR SEND YOUR SPECTRUM TO MANCOMP FOR THE FASTEST AND CHEAPEST REPAIR SERVICE AROUND!



MANCOMP LTD
(Dept PL48)

Printworks Lane, Levenshulme, Manchester M19 3JP
Phone 061-224 1888
OR 061-224 9888
OPEN MON - SAT 9am to 7pm
WE ALSO REPAIR APPLES, I.B.M.s, AFRICOTS, and EPSON & OLIVETTI PRINTERS!!



The 1st choice

OTHERS FOLLOW THE LEADER

WANTED



is seeking authors for new titles to add to its highly original and successful book range. Experienced and first time authors are invited to submit manuscript, ideas or fields of interest. Write to: The Book Editor, Sunshine, 12-13 Little Newport Street, London WC2H 7PP

Sunshine Publishers of Popular Computing and Dragon User. PL31

MAKE YOUR PROGRAMS MAKE MONEY!

If you have a game, utility or application to sell, with a view to publishing (particularly CBM64 or BBC B) phone

JOHN COOK at:
Popular Computing Weekly
on: 01-437 4343 PL40

DUPLICATION

FAST reliable service of DATA-DUPLICATION for most computers. Comprehensive facilities include: erasure/re-recording; blank discs/cassettes; blank or printed labels/tapes. **COMPETITIVE PRICE LIST** from:-



PL35

Computer Repairs in Southend

Spectrum/Plus	£19.95
Spectrum K/B faults	£12.95
Interface 1/2	£14.95
New Spectrum power supply	£9.95
C64/Vic 20	from £12.95

Above prices include parts, post & packing. All repairs are guaranteed 3 months. Call in or phone for more details.

MINNIE MICRO ELECTRONICS
12 EASTERN ESPLANADE,
SOUTHEND, ESSEX.
Tel: (0702) 62033/615809
OPEN 7 DAYS A WEEK PL473

Computer Repair Centre

Have you got problems with your computer? Then call us for:

Commodore, BBC,
Spectrum, Dragon

Mail order or call in

Enfield Communications

135 High Street, Ponders End, Middx
Tel: 01-805 7772 PL143

AMSTRAD and BBC software for hire.
Latest games, £1 per for fortnight. Details M. Ryall, 1569 Stratford Road, Hall Green, Birmingham B28 9JA.

COMPUTER REPAIRS

We are the experts, having serviced Sinclair computers since the introduction of the ZX80.

Don't waste money on estimates - we repair Sinclair computers at price quoted inclusive parts, labour, postage, VAT, irrespective of fault. No hidden charges. Repairs guaranteed for 3 months.

Spectrum	£18.75 inc parts
ZX81	£11.50 inc parts
16 KRam	£9.95 inc parts
Microdrive	£15.95 inc parts
Interface 1-11	£18.75 inc parts
also	
BBC	£22.00 + parts
Electron	£19.95 + parts
XK Memory Expansion Kit	£15.95

Computer Retailers please phone for Special Trade Price.

Call or send with cheque or P.O.
T.V. Services of Cambridge Ltd.
French's Road, Cambridge, CB4 3NP
Tel: 0223 311371

TO HIRE A COMPUTER and/or peripherals for the week or month, please ring 01-607 0157 or 01-997 6457. We specialise in BBC and Amstrad computers. Computer Hire Services, 294a Caledonian Rd, London N1 1BA.

BBC SPECTRUM REPAIRS

- ★ Spectrum repairs £18.50 inc. parts insurance and p.p.
 - ★ BBC B repairs £18.50 + parts, insurance and p.p.
- Send your computer with cheque or P.O. for £18.50 and description of fault to:

SUREDATA (PCW)

Computer Service
45 Wychwood Avenue, Edgeware, Middx.
Tel: 01-951 0124 PL53

INTERCONTINENTAL SPECTRUM REPAIRS

Spectrum/Plus	From £12.00
Interface 1	£17.50 inc parts
Interface 2	£13.00 inc parts
Upgrade 16k to 48k	£30.00 inc parts

* Send computer only for estimate
Other items, send unit and cheque/P.O. to:
P.E.A.K. ELECTRONICS, 32 Clifton Avenue, Hartlepool, Cleveland TS28 9QN. Tel: (0429) 72739
Overseas please add £8.50 p.p. PL566

AMSTRAD/SPECTRUM business software. Accounts, mailing list, stock control etc. Send s.a.e for details, stating micro. SD Micro (PCW) P.O.Box 24, Hitchin, Herts.

HINTS - POKES - MAPS

Monthly handbooks packed with hundreds of tips, pokes, maps, competitions and software offers.

Amstrad Handbook	£1
BBC Handbook	£1
Commodore Arcade Handbook	£1
Commodore Games Review Handbook	£0.75
Spectrum Arcade Handbook	£1
Spectrum Games Review Handbook	£0.75
The Adventures Handbook (Spec/CBM)	£1

Send cheque or P.O. to:
H & D SERVICES (PCW)
1338 Ashton Old Road
Higher Openshaw
Manchester M11 1JG

SPECTRUM REPAIRS

We expertly repair Spectrums for £17 inclusive of parts, labour and return postage. Spectrums upgraded to 48K for £34 including post.

R. A. ELECTRONICS,
50 Kimberley Road, Lowestoft, Suffolk.
Tel: (0502) 66289 PL45

BUYING/SELLING a home computer/associated equipment, we can help. Service free to buyer, Seller pays commission on successful sale. Tel: 01-727 6376 (evens).

AMSTRAD

LAS AMSTRAD "TOUCHTYPE" Addictive trainer - educate your fingers. Tape - £5.95. Disc - £8.95. Send SAE for special offers, list. Lingfield Advance Software, Plaistow St., Lingfield, Surrey, RH7 6AU. Tel: 833968. Telex 95596 Bosum G.

AMSTRAD

3in disks £35 box of 10 inclusive
Cheques/POs to
SIMON STABLE
20 West End, Launceston,
nr Bicester, Oxfordshire PL1F

IDLE MEDDLER FOR AMSTRADS

THE MEDDLER, the delightful tape utility has now been upgraded to include TAPE to DISC transfer and HEADER INFORMATION. A number of other refinements for TAPE to TAPE have been added. IDLE MEDDLER now offers:
Choice of six tape speeds, plus a special binary save, DEPROTECTION, alters FILENAMES to suit AMSDOS. RELOCATES automatically A full HEX and CHAR screen dump from ROM or RAM is included. Now all you need in one program, get that long loader on to DISC or FAST TAPE automatically. Still only £4.50 inc by return from: NEMESIS (PCW), 10 CARLOW RD, RINGSTEAD, KETTERING, NORTHANTS NN14 4DW. PL601

TELEX YOUR CLASSIFIED COPY TO:
296275 SUNRGY
HAS

CHILTERN COMPUTER SERVICE

FOR FAST RELIABLE REPAIR SERVICE
SPECTRUM £18.00
WE ALSO REPAIR CBM 64 & BBC, VIC 20, ORIC, AMSTRAD, PRINTERS & DISC DRIVES

Ask for details.
We give 3 months warranty on replaced parts. Send computer with details of fault and cheque made out to:

CHILTERN COMPUTER CENTRE
98/100 HIGH TOWN ROAD, LUTON, BEDS
TEL: 0582 455684
Overseas enquiries welcome PL281



**Book
your
Classified
or
Semi-display
advert by
Credit
Card**

**Call
David
Osen
on
01-437 4343**



HAS

Group For Research Into Paranormal Experiences
Present:

★ ★ WITCHCRAFT REVEALED ★ ★

For BBC 'B', Electron, 16K or 48K Spectrum, Spectrum +
(State which version you require when ordering)

Now you can practice this ancient craft in your own home and become your own budding warlord/witch. Perform many different rituals and spells which have been collected together after much research from authentic witches and warlords. This program includes the binding sex spell, the romany love spell, the spell for extremely good luck and fortune and the ultimate ritual for Astral projection. Over twenty five spells and rituals are in this great package.

An incredible investment at only:

£4.95

HIGH VOLTAGE AND P&M SOFTWARE PRESENT

★ ★ THE DESIGNERS COLLECTION ★ ★

For 16K or 48K Spectrum and Spectrum +

Now with this amazing program you can completely redesign Knight Lore, Jet Set Willy, Manic Miner, Chuckle egg and Hungry Horace so that you can create your own unique games not recognisable with the original game. No programming skill necessary.

"Very usefull utility... Very easy to Use." P.C.W.

"Excellent!" N. J. Shelley.

"Each one is worth the price paid for all eight" C. Bedford.

The Designers Collection is supplied on a C30 tape and costs only:

£4.95

CHALLENGE 'MANDY' TO THE No. 1 SMASH HIT GAME

★ ★ STRIP PONTOON ★ ★

For BBC 'B', Electron, Spectrum 48K and Spectrum +
(State which version you require when ordering)

If you win enough she strips off item by item in superb hi-res. graphics with her favourite tune playing in the background. Now in its 10th month this cult game is still selling well.

"Excellent!" Mr P. Kleser

Each version still costs only:

£2.99

★ ★ KNIGHT LORE 2 ★ ★

(The Conquest of Fairlight)

For 48K Spectrum & Spectrum +

Join Sabre man in his latest quest as he battles against all odds to save the castle of Fairlight. Knight Lore 2 Features 3D Graphics, Amazing Animation, Filmmation and all the favourite features of the original game.
(Note this software needs a copy of Knight Lore for protection of copyright reasons).

"More playable than the original Knight Lore" M. Whitting

All this for only:

£3.95

Send your cheque/cash/postal order to:

HIGH VOLTAGE

Dept. PCW, 16 Bridge Road, Park Gate, Hants, SO3 7AE

Or enclose a S.a.E. for further details on our products and competition details.
(Details also supplied with an order)

PL702

**NOW! A FASCINATING
GAME THE WHOLE
FAMILY CAN ENJOY...**

COMPUTER

Move the cursor strike out the hidden word, see your score rise as the wordlist gets small and your time falls - will you beat the clock?

★TIMER with HOLD button★QUIT when you like★ALL ANSWERS SHOWN★FAST RE-START AFTER EACH GAME★EDUCATIONAL FUN AGES FROM 6 to 96★A DIFFERENT GAME EVERY TIME★SCREEN SHOWS WORDSQUARE, WORDLIST, TITLE, TIME, SCORE & INSTRUCTIONS

SPECIAL OFFER: Save £2 on RRP - Send cheque/PO for £4.95 payable to SOFTFIRM. Free fast delivery, 48-hour despatch. Supplied in library case with quality card inlay. Free replacement guarantee.

SOFTFIRM, 21 ASHBOURNE WAY, THATCHAM, BERKS RG13 4SJ enclose name & address.

SPECTRUM 48K

FOR SALE

QL BACKUP

Duplicates projected software at a budget price. Stretch, format with password, clone, password reader, auto clone, simple to use. 8MDVS supported send s.a.e. + £5.00 or (£2.50 with own MDC) to Steve Jones, 93 Foxbourne Rd, Tooting Bec, London SW17.

PL3A

DISC Drive 250K 40T D.D one month old standard interface fits QL BBC etc. Manual supplied one months guarantee £40 ono 01-845 6419.

★ONE MILLION HIDDEN-WORD GAMES IN ONE
★VAST CHOICE OF SUBJECT from AIRCRAFT to ZOOLOGY, from LOW CALORIE to HI-TECH
★CHOOSE NUMBER OF WORDS to find
★GAME COMPLETE FEATURE
★WRONG ANSWER WARNING
★SUPER CLEAR LETTERS
★4 WAYS TO PLAY - including 'TYPE YOUR OWN WORDLIST'
★IDEAL GIFT

SPECTRUM +, Interface 1, Microdrive twenty-five cartridges, Cambridge programmable, Kempston pro joystick interfaces, pro 5000 joystick, Currah speech tape recorder, a bargain, load of software, £230 ono. Call Bishopton (0505) 863678 Paul

CHRISTMAS BARGAIN. 5 shop soiled joysticks for £14.95, 10 for £24.95 inclusive. Computer Supplies, 146 Church Road, Boston, Lincs PE21 0JX.

ORIC-1/ATMOS

NEW:- Xenon III, Damsel in Distress 7.50, The Quill 15.00 Gubbie, Playgroup 21 6.50, One Key Basic 5.95.
Now Atmos:- Special Ops, Paras, Warlord 5.95, Johnny Reb 5.00, Orion Machine Code Monitor 10.95.
Top Sellers:- Chopper 6.95, Monic Miner 6.90.

Cumana 3" disc drive 229.95 complete, over 45 software titles available on Cumana or Oric disc. Voice Synth, Prog. Joysticks Interface 29.95 each.

Free delivery UK, +50p Europe, +£1 other. Send chq/PO or SAE for full list of over 120 titles, books & accessories.

FGC MAILORDER, 20 MEADOWCROFT, EUXTON, CHORLEY, LANCs PR7 6BU.
(trade enquiries please send letterhead to FGC Distribution)

PL11

EPSOM HX-20 personal, portable, business computer for sale. Twelve months old, excellent. No longer required, cost £525. Offers? Tel: 051-428-8424.

SPECTRUM 48K. Mounted onto board with data recorder. With Reset/Load switches. Now £65. Orpington 22057.

CENTRONICS 779 Printer for BBC. Dot matrix. Manual + ribbons + lead + paper. Ideal for listings. Only £75. Tel: Maldon 869398 (0621).

COMMODORE "MPS802" Printer. 60 CPS, bi-directional, true descenders, graphics, high-res, etc. Bought 30/10/84. Excellent condition. £200 or offer. Ring 0258 857422.

**THIS SPACE
FOR SALE**

£28 (inc. VAT)

**TELEPHONE:
PCWCLASSIFIED
01-437 4343 Ext 206**

PL363

RECRUITMENT

**DUE TO EXPANSION
MAJOR SOFTWARE CONVERSION
HOUSE
HAS VACANCIES FOR
Z80 PROGRAMMERS**

Previous in-house experience not essential.

Salary negotiable in line with previous experience.

Successful applicants would have experience of Z80 Assembly Language and a knowledge of CP/M would be an advantage.

Write in strict confidence, enclosing C.V. or Phone for an Application Form.

**Mr Tony Fagelman
SENTIENT SOFTWARE LTD.
Branch House,
18 Branch Road,
Armley,
Leeds
LS12 3AQ
Tel: (0532) 791136**

PL10

ADVENTURE

HELPLINE

Emerald Isle on Amstrad. How do I shift the stone block from the crypt to graffiti chamber? Billy McDonnell, 11 Knockmenda Road, Clondalkin, Dublin 22, Ireland.

adventure for commodore 64 and spectrum 48k

NO.1 SWORDS & SORCERY



SWORDS & SORCERY

Swords and Sorcery represents the first example of the ultimate in graphic adventures using the unique MIDAS system.

Swords and Sorcery differs from other adventures in that you guide your character through the unending corridors of the underworld on a quest for material, physical and/or spiritual power. The choice is yours.

You begin as a novice with limited abilities in the use of magic, sword play and stealth (lock picking, thieving etc).

As you wander the corridors, you will encounter beings meek and mighty, discover untold wealth and worthless trash. Some objects will increase your powers, whilst some will be dangerous and still others will be protected from pilferers (you!) by fiendishly ingenious traps, all designed to help or hinder you on your pilgrimage to power and glory.

There are quests within quests within Swords and Sorcery, for those who want to follow them. Some are given others

must be found, and some are lost causes. There are many ways of opening the gate between the levels of the dungeons. Some are obscure and easy, others obvious and dangerous. The most profitable paths are both. The Ultimate goal of many will be to find the lost armour of Zob, which was un-made by its maker, and its parts scattered across the levels. What, where, how, who and why are answers to be found. All that is known is the prayer of the seekers:

WHEN DARK CABALLUS HIS COUNCILS LEND US
LET NOT THE RED CLUPEA HARANGUE US TURN US
FROM WHAT SEEMS TREMENDOUS AND THUS TO
ZOB'S GREAT TREASURE SEND US.

You need never tire of Swords and Sorcery - when this dungeon can no longer hold you, the next awaits... there are a series of expansion modules planned to extend your enjoyment indefinitely.

**Available on Cassette £9.95
SPECTRUM 48K**

(Multi Dimensional Animation System)

MIDAS ADVENTURE CONCEPT

Stunning 3D graphic animation simulating video disk games.

A unique fully interactive adventure language using the latest ARTIFICIAL INTELLIGENCE techniques.

State of the art data compression techniques enabling enormous scenarios and vocabularies to be incorporated.

Real time Interactive Conflict Sequences. Talk to your opponent, attack them, flee them and even confuse them.

Develop your own unique player characters. For example specialize in magic, swordplay etc.

Total expandability - your own characters can be transferred to future adventures and new opponents, scenarios and objects can be added to all the games.

A series of expansion modules to increase indefinitely the playing life of each game written with MIDAS.

**Amstrad & Commodore
versions available soon**

NEW
RELEASE
AVAILABLE
18th NOVEMBER



WIZARDS power level 1 -



DRAGON power level 7 -



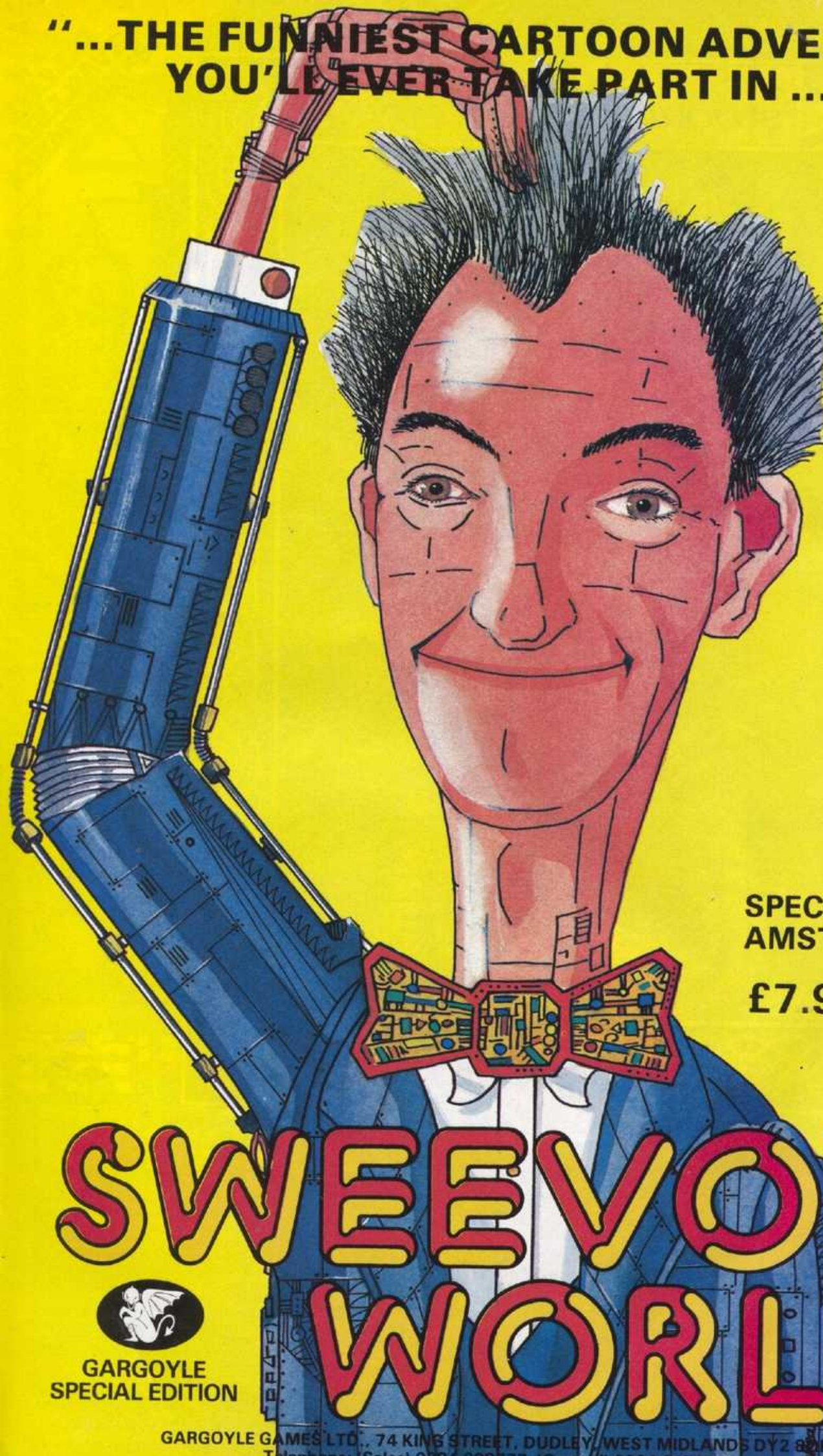
LYTCH power level 6 -



WEREWOLF power level 4
a selection of your opponents



"...THE FUNNIEST CARTOON ADVENTURE
YOU'LL EVER TAKE PART IN ..."



SPECTRUM 48K
AMSTRAD 464

£7.95

SWEEVO'S WORLD



GARGOYLE
SPECIAL EDITION

GARGOYLE GAMES LTD., 74 KING STREET, DUDLEY, WEST MIDLANDS DY2 8QB

WAREHOUSE CLEARANCE

100 DEMONSTRATION
STOCK
AT SILLY PRICES!

1436 MI3 MONITOR

Standard Resolution - 14"

(Suitable for IBM,
IBM compatibles)

INC. VAT and CARRAIGE

£175.00

1456 MI3 MONITOR

Medium Resolution - 14"

(Suitable for IBM,
IBM compatibles)

INC. VAT and CARRAIGE

£205.00

Ring (0462) 31225 NOW!

NEW FUTURE SOFTWARE

BUY DIRECT AND SAVE £££££
ON THESE BACK CATALOGUE BARGAINS

SPECTRUM		COMMODORE 64			
	RRP	OUR PRICE		RRP	OUR PRICE
SON OF BLAGGER	7.95	2.50	HYPERCIRCUIT	8.95	2.99
WINGS LOOPY LAUNDRY	6.95	2.50	NATO COMMANDER	9.95	3.99
SYSTEM 15000	14.95	2.99	LOCO	7.95	2.50
MANIC MINER	6.95	1.99	ROCKET ROGER	7.95	2.99
SUBTERRANEAN STRIKER	6.95	1.99	WATERSKI 3D	7.95	2.99
GREAT SPACE RACE	14.95	2.99	PC FUZZ	8.95	2.50
SPACE SHUTTLE	9.95	3.25	MUTANT MONTY	7.95	2.50
SUB HUNTER	9.95	2.99	WORLD CUP FOOTBALL	7.95	2.50
JASPER	6.95	2.50	TWIN KINGDOM VALLEY	6.95	2.99
ROULETTE	6.95	1.99	EUREKA	14.95	2.99
BMX JUNGLE BIKE	3.95	2.99	WIDOWER BASEBALL	8.95	3.99
STARBIKE	7.95	2.50	BRIAN/J SUPERSTARS	9.95	2.99
DIGGER DAN	6.95	1.99	SPACE SHUTTLE	9.95	2.99
TRIBBLE TRUBBLE	7.95	1.99	ROLANDS RAT RACE	9.95	4.99
GYRON (BACK IN STOCK)	9.95	3.75	ASTROCHASE	9.95	3.25
			SNOKIE	9.95	2.99
			GUARDIAN	8.95	2.99
BBC		COMMODORE C16			
TARZAN	7.95	2.99	ARENA 3000	6.95	2.99
SPIDERMAN	9.95	1.99	CUTHBERT IN SPACE	7.95	2.99
HULK	9.95	1.99	RAIDERS	3.95	2.99
SON OF BLAGGER	8.95	2.50	CUTHBERT IN TOMBS	6.95	2.99
SYSTEM 15000	14.95	2.99	CASTLE DRACULA	6.95	2.99
GRAPHICS PACK	9.95	2.99	CUTHBERT IN COOLER	6.95	2.99
MUSIC SYNTH	9.95	2.99	WILLIAMSBERG ADV3	5.95	2.50
VU FILE	14.95	2.99			
ROBOMAN	7.95	2.99			
ELECTRON		VIC 20			
BUGBLASTER	8.95	2.95	MINI KONG	6.95	1.99
GUARDIAN	8.95	2.95	SKRAMBLE	6.95	1.99
LUNAR RESCUE	8.95	2.95	TANK BATTLE	6.95	1.99
SHUFFLE	2.95	1.99	HELLGATE	7.95	1.99
SPACE SHUTTLE	9.95	3.25	SNACKMAN	6.95	2.25
737 FLIGHT SIM	9.95	3.25	PANIC	5.95	1.99
ATARI 400/800		AMSTRAD			
ARENA 3000	6.95	2.99	HUNTER KILLER	8.99	2.99
CUTHBERT/WALKABOUT	8.95	2.95	LINKWORD GERMAN	14.99	3.99
DANGER RANGER	6.95	2.99	LINKWORD FRENCH	14.99	3.99
MR DIG	6.95	2.99			
PENDON	6.95	2.99			
SPACE SHUTTLE	8.95	3.50			
ACCESSORIES		ACCESSORIES			
QUICKSHOT 2	5.50	ZIP STIK C16	10.95		
QUICKSHOT 1	2.95	ZIP STICK ELECTRON	22.95		
C16 JOYSTICK ADAPTORS	2.99	SURE SHOT STD JOYSTICK	13.95		
SPECTRUM SWITCH/INTERFACE	9.95	BBC JOYSTICK INTERFACE	3.50		

and send to:
30 Wilson Street, Carlisle, Cumbria

PD536A

PITMAN COMPUTER DIARIES 1986

For Planning and Programming

Besides being handy, day-to-day diaries, each title is packed with useful reference material for your micro.



- * Useful Programs
- * Machine Language
- * Sound, Video, Graphics

- * BASIC
- * Disc Commands
- * Memory Layouts

Order your copy NOW.

Send the completed form to: Geraldine Smyth, Scot Books Ltd, 12-13 Little Newport Street, London WC2H 7PP.

ORDER FORM

Please send me:

Acorn Computer Diary
ISBN 0 273 02428 0 £3.95

Amstrad Computer Diary
ISBN 0 273 02429 9 £3.95

Commodore Computer Diary
ISBN 0 273 02430 2 £3.95

Sinclair Computer Diary
ISBN 0 273 02431 0 £3.95

QTY

I enclose cheque/postal order payable to Scot Books Ltd, for £

Alternatively please debit my ☐ ☐ ☐ ☐ ☐ ☐

Number

Signed

Name

Address

Postage and packaging free. Allow 28 days for delivery.

Pitman

ONLY THE BRAVEST FLY....

TOMAHAWK

New, from the author of *Fighter Pilot*... a stunningly realistic helicopter simulation that puts you in command of an Apache Advanced Attack helicopter. You will learn to take off, to land, to manoeuvre and locate and destroy enemy tanks using Hellfire anti-tank missiles. You will experience authentic battlefield conditions as you endeavour to carry out your mission and return safely to base.

BY DK.MARSHALL

48K SPECTRUM

Digital Integration would like to thank McDonnell Douglas for all their help and technical support.

£9.95

inc. p&p & VAT



Spectacular 3D cockpit view with over 7,000 ground features. Authentic aerobatic performance. Ground attack and air-to-air interception, with laser guided missiles, rockets and 30 mm. gun. Doppler navigation and target tracking. Day/Night vision systems.

Cloudy, Crosswinds, Turbulence.

Pilot ratings — Trainee to Ace.

Impressive sound effects.

Pilots Notes.

Twin Joystick Option.

**FREE
HELICOPTER FLIGHT
Competition**

Entry forms & full details inside every pack.
2 First Prizes of a trip in a helicopter.
10 Runner-up Prizes of Apache model kit.
Closing date Feb. 12th, 1995.

SPECTRUM

Tomahawk 48K
Night Gunner 48K
Fighter Pilot 48K

COMMODORE 64

Speed King Disk
Speed King Cassette
Fighter Pilot Disk
Fighter Pilot Cassette

AMSTRAD CPC 464

Fighter Pilot
Fighter Pilot Disk

☐ £9.95
☐ £6.95
☐ £7.95

☐ £12.95
☐ £9.95
☐ £14.95
☐ £9.95

☐ £8.95
☐ £13.95

Cheques payable to Digital Integration Ltd

I enclose a cheque/P.O. for _____ Total

Name _____

Address _____

VAT and p. & p. inclusive within UK (Overseas inc. 55p. per cassette)

Or debit my Access Account No.



Trade and Export
enquiries welcome.
Lifetime Guarantee.

Please send to

**DIGITAL
INTEGRATION**

Watchmoor Trade Centre,
Watchmoor Road,
Camberley, Surrey
GU15 3AJ

Tele Sales
(0276) 684959



New Releases

GOOD CHOICE

Automata are still around and producing some stunningly cheap compilation tapes. The 10 pack volume two has ten games for £10 that makes each one half the usual price of a budget game. It's a mixture of straightforward (well, maybe not straight but forward certainly) arcade games and twisted adventures, with a fruit machine program and a cocktail database to round off your evening of play.

I particularly liked *Paradise in Microdot* which is one of the more bizarre adventures I've ever played, and *Pi in the Sky* is the sort of enter-

taining arcade game that exemplifies what a budget game ought to be.

A good choice for uncertain aunts who don't know what program to buy for computer-owning relatives, or for those who've just bought a Spectrum and want a lot of material quickly.

Program 10 Pack
Price £10
Micro Spectrum
Supplier Automata
PO Box 78
Southsea
Hants PO4 9SL

GRAND SCALE

Tombstowne, the latest Amsoft release, is a multi-screen large sprite game broadly in the style of some of Mikro-Gen's recent *Wally* games. The task is to rescue the lost pages of the book of spells from the Castle.

Getting the pages involves finding your way around the various rooms of the castle and finding and using a variety of objects.

The graphics are, in places, excellent; almost *Sorcery* like in detail and design, on the other hand sometimes when sprites pass one another you get what almost seems to be attribute problems - a nasty flicker effect.



In some ways this is like *Manic Miner* played on a grand scale, but with the bonus of some intelligence being required to know what to do where to get from one room to another. My criticism would be that the game lacks a certain spark.

Perhaps that's an overly personal judgement, though, which comes from seeing too many such games. Worth a look for sure.

Program Tombstowne
Price £8.95
Micro Amstrad
Supplier Amsoft
169 Kings Road
Brentwood
Essex

RIGHT LEVEL

Versions of, well let's be careful and say games like *Trivial Pursuit*, since TP isn't the only grand quiz game, are beginning to crop up on computer. Mostly they are dire.

One that isn't dire, although it still suffers some of the basic failing of this sort of computer replication, is *Quiz Quest* from Alligata Software. It's neatly presented and easy to use and, best of all, the questions seem to have been set at the right level for averagely well informed (British) adults - you have to stretch your brain a bit.

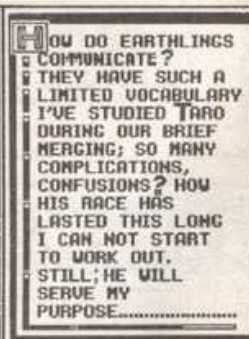
The basic idea is simple, a main program to handle the presentation and then a number of files on tape contain 1,000 questions on pop, TV, general knowledge and sport etc. Questions are answered using a multiple choice format and there is a facility to enter your own files.

As quiz programs go this is one of the best, though for what it's worth I think I prefer question cards over computers every time.

Program Quiz Quest
Price £4.99
Micro Amstrad
Supplier Alligata Software
1 Orange Street
Sheffield



The Rogue Program



New Releases

À DROITE

More goodish educational software from Chalksoft. After their excellent economy simulation comes *Centre Ville*, a disc based French language teaching program. Actually it is three programs in one, all intended for beginners in the language.

Centre Ville, the title game, is all about issuing simple direction instructions to the hapless M. Chou who comes to Centre Ville sans map and who wants to visit just about every sight in the town. If M. Chou were for real I think I'd have murdered him pretty quickly; his chirpy smile and waving hand remind me of those born-again Christians who try to stop you in the street.

Nevertheless, in issuing M. Chou with his instructions, quite a lot of French is tested and surreptitiously taught. Using a menu option, where a large number of directions indications are printed (in

French), M. Chou must be guided around the streets of Centre Ville, eg, go straight on, turn right, straight on, turn left, etc, etc.

Get M. Chou to his chosen destination and there he is grinning inanely at you. It isn't only a matter of getting the directions right, you also have to be as economic as possible in your directions - the less commands the higher the score - this, of course, means knowing your French.

The other programs are concerned with colours and telling the time; both are well designed and neatly presented but, for me, lack the unforgettable quality of M. Chou and his interminable requests for information.

Program *Centre Ville*
Price £17.50
Micro BBC
Supplier Chalksoft
PO Box 49
Spalding
Lincs PE11 1NZ

EXOTIC BUGS

The Young Ones has been turned into a computer game. Impossible, you say?

Yep, dead right; Orpheus has tried it, and what a mistake it has turned out to be.

Here are the good points: it does feature little animated figures who look vaguely like the characters in the TV programme and Orpheus seems to have spent a lot of time trying to inject wild wacky anarchic humour into the game. I mean, Neil begins all his utterances with 'Oh Man' and Rick uses the word 'girly'

Pick of the week

Ariolasoft's most recent release *Think!* is the sort of program you might easily miss or ignore.

Not an arcade game or an adventure, almost totally lacking in animation, it is a board game for the computer. A board game in the sense that you move pieces on a board which is a six by six grid of squares and where the kind of strategy, brains and cunning you might use in chess are paramount.

The virtues of *Think!* are really nothing to do with computers or computer programming, it is simply a wonderfully addictive and ingeniously designed game. It has dim connections with *Connect 4* but only in terms of the overall objective - to get four pieces in a row either vertically, horizontally or diagonally.

Pieces are placed, turn by turn, on either the bottom or right-hand edges of the board, existing pieces in the same row or column are moved along one space as each piece is placed. It has the classic board game virtues - simple rules which can nevertheless lead to astoundingly complex board positions. Furored brows and intense concentration required.

The game is nicely presented, with hint and puzzle-solving options, record of moves made, instant replay and a host of different

CLASSIC VIRTUES



display options. You can, of course, play against the computer and at the highest levels it will show you it thinking, by a flashing cursor that whizzes around the perimeter of the board indicating possible moves. The Spectrum, is, at the highest levels, almost unbeatable (that 'almost' is important - so far as the authors of the game know, there is no logical, algorithmic reason why the computer should be unbeatable).

The ideal program with which to intimidate the family at Christmas.

Program *Think!*
Price £7.95
Micro Spectrum
Supplier Ariolasoft
Asphalte House
Palace Street
London SW1E 5HS



This Week

Program	Type	Micro	Price	Supplier	Play and Read	Ed	BBC B	£28.95	Prisma Soft
Deathwake	Arc	Amstrad	£7.95	Quicksilva	The Worm in Paradise	Ad	Commodore 64	£9.95	Level 9
Renegade	Arc	Amstrad	£7.95	Kuma	Deathwake	Arc	Commodore 64	£7.95	Quicksilva
Strangeloop	Arc	Amstrad	£8.95	Virgin Games	Fight Night	Arc	Commodore 64	£9.95	US Gold
Stock Market	Ed	Amstrad	£14.95	Collins	Friday the 13th	Arc	Commodore 64	£8.95	Domark
Time Manager	Ed	Amstrad	£14.95	Collins	Gyroscope	Arc	Commodore 64	£7.95	Melbourne House
The Worm in Paradise	Ad	BBC	£9.95	Level 9	Scaletrix	Arc	Commodore 64	£9.95	Leisure Genius
Astro Plumber	Arc	BBC	£2.50	Blue Ribbon	Starion	Arc	Commodore 64	£8.95	Melbourne House
Citadel	Arc	BBC	£9.95	Superior	The Young Ones	Arc	Commodore 64	£7.95	Orpheus
Diamond Mine II	Arc	BBC	£2.50	Blue Ribbon	Zorro	Arc	Commodore 64	£9.95	US Gold
Dr Who + Mines	Arc	BBC	£19.95	Micro Power	Commando	Arc	Elite	£7.95	Elite
Joey	Arc	BBC	£2.50	Blue Ribbon	Q-Calc	Ut	QL	£9.95	Psientific
Ravage	Arc	BBC	£2.50	Blue Ribbon	The Worm in Paradise	Ad	Spectrum	£9.95	Level 9
Artist	Ut	BBC	£2.50	Blue Ribbon					

New Releases

-this is called character independence in the trade.

The game looks vaguely like *Frankie*, since the characters wander about the rooms of the Young Ones' student house, displayed as double storey. Your view depends on where things are happening - you see whichever room your chosen character is in and another room where a lot is going on.

Commands are all issued via the joystick, à la *Frankie*, using a series of menus headed *Action*, *Walk*, *Talk*. The first leads to options such as opening cupboards and picking up objects, *Talk* leads the character to offer suggestions about what he should do and what he wants, eg, "I'd really like to smash the video" and *Walk* enables you to move the character to another room. The game revolves around acting in characters eg, Vyvyan tends to like destroying things.

So it goes and as such the game would merely be dull. However, the whole thing is chock full of bugs and bad programming. Bad programming takes the form of speech bubbles that flicker wildly if too much is going on at once, and become illegible.

Bugs are more exotic: the syntax logic in the speech bubbles appears to have downed a few too many dodgy pills leading to such remarkable utterances as *I think I should Open the Mikes Bed* (sic). Sometimes these descriptions disappear over the borders of the screen.

The whole thing is a mess and clearly isn't ready for release, although it is re-deemed by some excellent

music which will entertain you for around ten minutes. The question that creeps into my mind now is, what have all those magazines which have previewed and raved about this game been looking at?

Program *The Young Ones*

Price £7.95

Micro Spectrum

Supplier Orpheus

The Smithy

Church Farm

Hadley St. George

Beds SG19 3HP

MANKIND

Hypa Raid is one of the latest batch of budget titles from Atlantis Software who were in there fighting at the beginning with Mastertronic. *Hypa Raid* is, if not completely original, at least a variation of some game ideas not so done to death as usual.

It reminds me a little of *Frank n Stein*, a venerable game by PSS where you had to use your reasoning and

timing to use a cleverly constructed series of lifts. It's also like *Booty* in that you have to collect coloured keys.

Combine those two elements and you have a game in which you have to find your way around various screens using a series of up and down lifts and collect a series of key and data cards needed to get you through a number of differently coloured doors. All this in a *Miner* like scenario of guards who wander back and forth. Certainly the game requires more thought than the usual budget effort.

The point of all this is to collect all the parts of the Mig Starfighter, a nasty Russian device which may well be their answer to *Star Wars*. In any event your task is to aggressively share their technology for the good of mankind and keeping the Latin American countries Christian. One of the most ingenious budget games I've seen in a long while.

Program *Hypa Raid*

Price £1.99

Micro Spectrum

Supplier Atlantis Software
19 Prebend Street
London
N1 8PF

INGENIOUS

Time Sanctuary is an unusual program from MC Lothlorien - computer wargames from way back. This, though, is an adventure in a style all of its own, although there are touches of *Lords of Midnight* about some of the ideas.

The plot is quite clear, in-

volving injustice and an AWOL time machine. Your main objective is to find out where it went and get it back. This involves wandering around a strange land (which reminds me faintly of Pepperland with its various garish colour clashes.) The game features a kind of simplified LOM landscaping, where objects first seen in the distance grow in size as you move towards them.

The interaction is kept to single key presses for the most part, but an ingenious series of scrolling commands means that quite complex and specific instructions can be issued. There are various other characters in the game with whom you must deal, whose interaction with you is a key feature of the game. Their impression of you matters if you seek their help.

I think *Time Sanctuary* has plenty of imagination but lacks programming skill and slickness, the graphics have that user defined look and the character set has not been redesigned. The game looks like it is in Basic (although it probably isn't) though those are, to be fair, just the kind of comments that 'true adventurers' tell me are irrelevant to a true assessment of an adventure. I'll shut up and say it looks ropey, but shows signs of much original thought.

Program *Time Sanctuary*

Price £7.95

Micro Spectrum

Supplier MC Lothlorien
56A Park Lorne
Poynton
SK12 1RE



Alladins Cave	Arc	Spectrum	£6.95	Artic
Back to Skool	Arc	Spectrum	£6.95	Microsphere
Deathwake	Arc	Spectrum	£7.95	Quicksilva
The Living Body	Ed	Spectrum	£14.95	Martech
Think!	S	Spectrum	£7.95	Ariolasoft
Cammac One	Ut	Spectrum	£5.95	Micro Zeighty
Cammac Three	Ut	Spectrum	£19.95	Micro Zeighty
Cammac Two	Ut	Spectrum	£11.99	Micro Zeighty
Romaze	Arc	ZX81	£3.95	C Wehner

Ariolasoft, Retail. **Artic**, Main Street, Brandesburton, Driffild YO25 8RL, 0401 43553. **Blue Ribbon**, Silver House, Silver Street, Doncaster, South Yorkshire DN1 1HL, 0302 21137. **C Wehner**, 9 Upper Park, NW3 2UN. **Collins**, 8 Grafton Street, London W1X 3LA. **Domark**, 204 Warple Road, London SW20 8PN, 01-947 5624. **Elite**, 55

Bradford Street, Walsall WS1 3QD, 0922 611215. **Kuma**, Kuma Computers, 12 Horseshoe Park, Pangbourne RG8 7JW, 07357 4335. **Leisure Genius**, 3 Montagu Row, London W1H 1AB, 01-935 4622. **Level 9**, 229 Hughenden Road, High Wycombe, Bucks HP13 5PG, 0494 26871. **Martech**, Martech House, Bay Terrace, Pevensey Bay, East Sussex BN24 6EE, 0323 768456. **Melbourne House**, 39 Milton Trading Estate, Abingdon, Oxon OX14 4TD, 0235 835001. **Micro Power**, Northwood House, North Street, Leeds LS7 2BB, 0532 434006. **Microsphere**, 72 Rosebury Road, London N10 2LA, 01-883 9411. **Psientific**, 37 Cottesmore Road, Hessle, North Humberside HU13 9JQ, 0482 649187. **Quicksilva**, Palmerston Park House, 13 Palmerston Road, Southampton, Hampshire SO1 1LL, 0703 20169. **Superior**, Regent House, Skinner Lane, Leeds LS7 1AX, 0532 459453. **US Gold**, Unit 10 The Parkway Ind Centre, Heneage Street, Birmingham B7 4LY, 021 359 3020.

This Week



Alternative World

It seems to be fashionable to be snuffy about computer games.

A writer in one recent report I read said that young people who owned computers and used them mostly for games-playing had no significant advantage when starting computer studies at school.

I wonder. At the simplest level, my own experience suggest that children with home-computers gain at the very least a basic knowledge of the Qwerty keyboard. While the typing rooms in schools are still too likely to be seen, however erroneously, as low-status 'female' ghettos, home computers are among the few ways in which the intelligent young are likely to be made familiar with an important part of their future working environment.

Then I wonder about the computer studies that these pupils are starting. Are they learning to program? Are they being given general computer awareness courses? Are they plugging away at some of the dreaded 'education' software?

Watch young people playing a good computer game together and the first thing you realise from their cryptic comments is that they share an intimate knowledge of an alternative world. Games-playing is not the solitary activity that some of its critics claim. Players like to share their insights, knacks and dodges with fellow devotees.

Language, in fact, is what it's all about. They are immersed in the game's symbol-system, and are reading it on various levels.

First, maybe, there's the fictional level, the pretext of the game, the stuff it talks about on the cassette inlay. "You are alone on a monster-ridden planet and being attacked..." or "Miner Willy has had a party and must collect...". That sort of thing. This level seems to matter the first time you play a game, but is soon forgotten. Its relative insignificance is often signalled by jokiness - mutant camels, flying hairspray, etc.

Next comes the manipulative level, where the player learns how the joystick or keyboard relates to the screen. Every good game has its own feel, and the hand on the joystick trigger must learn to react faster than the conscious mind.

Then comes a deeper level where you attune to the programmer's wavelength - where consciously or unconsciously you find the patterns in the game, and suddenly realise how particular problems can be coped with.

This interconnects with a more technical level, where the player gets to know how sprites behave.

There can also be a hacking level, where useful *Pokes*, often communicated as folklore on an informal network, help you to beat the system by playing it on its own machine-code terms. All's fair in computer-gaming.

Games are absorbing because players can operate on all these levels simultaneously, enjoying a rich and multi-layered experience.

Too often educational programs present the machine as the all-knowing expert that marks you right or wrong and penalises you if you step outside its often all too rigid categories. (Stories of programs grimly rejecting intelligent input that hasn't been anticipated are, of course, legion.) The computer is cast as rigid tyrant that humans must bow before. Fit in or fail.

In a game, on the other hand, the program is a system that challenges you to beat it, by fair means or foul, where you probably discover the best strategy by ganging up with your friends.

I know which I think offers the best preparation for life.

George Simmers

Puzzle No 186

Can seven plus eight ever equal 12? Yes! - if the sum is in the form of an alphametic as shown below:

S E V E N +
E I G H T

T W E L V E

As is usual in puzzles of this type, each letter stands for a digit, the same letter representing the same digit whenever it occurs. Can you find the original sum - though you may find more than one possible answer!

Solution to Puzzle No 181

The correct sum is: $17 \times 4 = 68 + 25 = 93$.

```
10 FOR A=1 TO 9
20 FOR B=1 TO 9
30 IF A=B THEN GOTO 250
40 FOR C=1 TO 9
50 IF C=A OR C=B THEN GOTO 240
60 LET Z=(A*10+B)*C
70 Z$=STR$(Z):Z$=MID$(Z$,2)
80 LET U$=VAL(MID$(Z$,1,1)):LET W$=VAL(MID$(Z$,2,1))
90 IF U=A OR U=B OR U=C OR U=0 THEN GOTO 240
100 IF W=A OR W=B OR W=C OR W=0 THEN GOTO 240
110 FOR D=1 TO 9
120 IF D=A OR D=B OR D=C OR D=U OR D=W THEN GOTO 230
130 FOR E=1 TO 9
140 IF E=A OR E=B OR E=C OR E=D OR E=U OR E=W THEN GOTO 220
150 IF Y$99 THEN GOTO 220
170 LET Y$=STR$(Y):Y$=MID$(Y$,2)
180 LET T$=VAL(MID$(Y$,1,1)):LET U$=VAL(MID$(Y$,2,1))
190 IF T=A OR T=B OR T=C OR T=D OR T=U OR T=W OR
   T=0 OR T=U OR U=B OR U=C OR U=D OR U=E OR U=W
   OR U=0 THEN GOTO 220
210 PRINT A,B,C,Z,D,E,Y
220 NEXT E
230 NEXT D
240 NEXT C
250 NEXT B
260 NEXT A
```

The program works by generating the first three digits (A, B, and C) and calculating the resulting product (A*10+B)*C. This gives the result of the first stage of the calculation. The digits of this product are then checked to see that they have not already been used (lines 80 to 100). A further two values are then generated in two FOR/NEXT loops, again checking for duplication of digits (lines 110 to 140). These digits represent the number which is to be added. When this is done (line 150) the final result is again checked for duplication.

Line 210 prints any solution which passes these tests.

Winner of Puzzle No 181

The winner is E J Sargeant of Long Eaton, Nottingham, who will be receiving £10.

Rules

The closing date for Puzzle No 186 is January 1.

The Hackers



There's never been a better reason
for looking forward to Winter!

WINTER GAMES



Screens from Commodore 64 version of game

COMMODORE 64/128

CASSETTE £9.95

DISK £14.95

Available Soon for
Spectrum 48K
& Amstrad



You've captured the gold in Summer Games™ and Summer Games II™ — now it's on to the Winter Games! And what an incredible setting — a completely realistic winter wonderland featuring six action-packed events. You can compete against your friends or the computer.

First choose the country you want to represent. Then it's practice, training and learning a winning strategy for each event. Now the Opening Ceremony and the competition begins. Will you be the one who takes the gold at the Awards Ceremony?

The quest for the gold continues... And it's all here — the strategy, the challenge, the competition, the art and pageantry of Winter Games!

- ▶ Six Winter Events: Bobsled, Ski Jump, Figure Skating, Free-Style Skating, Hot Dog Aerials and the Biathlon
- ▶ Opening, Closing and Awards Ceremonies complete with National Anthems
- ▶ Compete Against the Computer or Your Friends and Family
- ▶ Unique Joystick Control — Requires Timing and Skill
- ▶ One to Eight Players



EPYX™
COMPUTER SOFTWARE

COMING
SOON

Roller Coaster

SPECTRUM

cassette

£6.95

COMMODORE

cassette

disc

£7.95 £12.95

AMSTRAD

cassette

disc

£8.95 £13.95

The worlds first theme-park game with numerous hair-raising attractions including Roller Coaster, Ghost Train, Log Flume, Big Wheel, Waltzers and several other exciting mystery rides.



Just send a cheque or P.O.
payable to 'Elite' or quote
your Visa number.

elite