Home Computing WEEKLY

An Argus Specialist Publication

Every week: your best buy for software reviews and listings

No. 88
Nov 13-19, 1984

45p

Reviews galore!
Six pages of software reviews for: BBC, Spectrum, CBM 64, Dragon, Electron

Tricks of the trade
How to protect your programs

Death Star Interceptor
30 tapes plus posters must be won!

Dragon program
Psychology by numbers

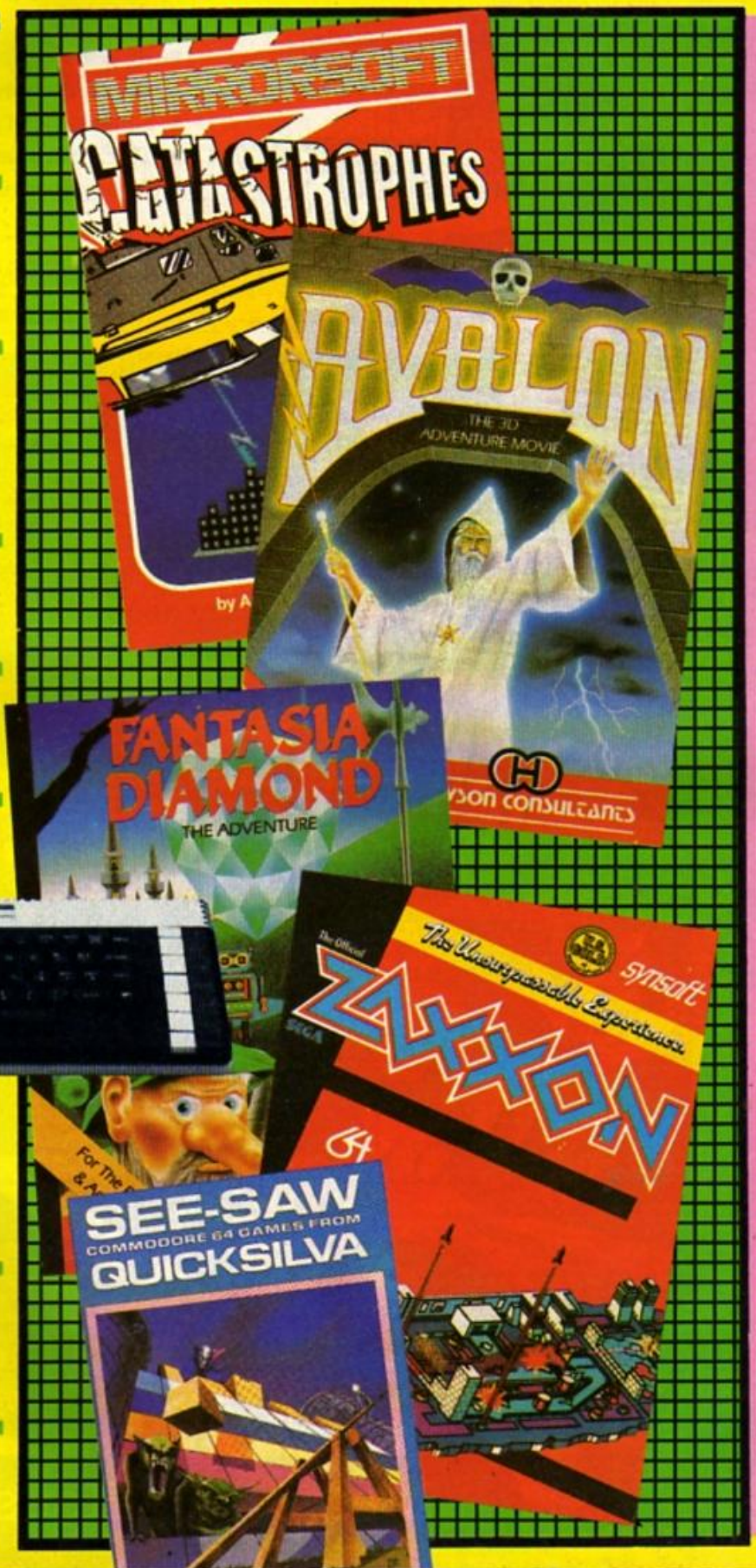
Spectrum game
Stop that runaway train!

How to use the Atari OS

Link up your Commodore to the rest of the universe

Listings for: Amstrad, TI-99/4A, Oric, Atari

Plus: news, letters, charts . . .



School phone-in

Computers are once more making news in the field of education. Two rival computer networks are to be set up which will make it possible for all Britain's secondary schools to be linked via the telephone.

The Prestel Information Service will be launched on 1st January 1985. Richard Hope of Prestel said: "It has been developed over the whole of this year and will be extremely important to schools in three particular areas."

The first is its link with ECCTIS, the Open University's databank. This contains information about courses available at all Britain's universities, polytechnics, colleges and institutes of further education.

It will also enable schools to download educational telesoftware so that curriculum information can be exchanged

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Rent a game

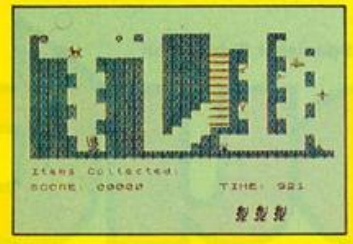
Next time you pop in to your local video shop, why not take home a computer game for the evening? It should cost you about 50p and you'll be able to choose from a range of arcade games for the Spectrum and Commodore.

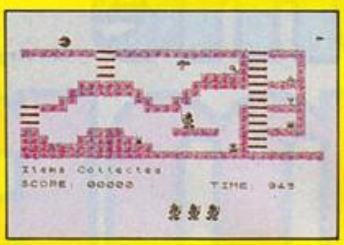
Wildest Dreams, the company behind the operation, was set up to rent out specially written games through video outlets. Together with PSS, it is making available an initial range of seven titles, and aims to have reached 4,000 video outlets in the next few months.

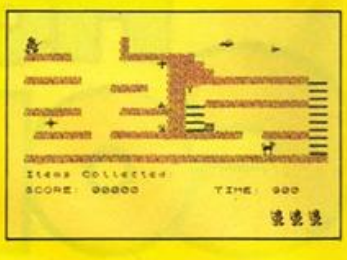
George Armstrong, product manager, explained how the company came to be formed. "Chris Kilburn, my partner, realised that there was a gap in the software market for rental through video shops. He has social connections with one of the directors of PSS, and since we didn't want to be renting out other people's tapes, we set up a deal with PSS to release games exclusively for rental."

And Wildest Dreams doesn't present a threat to the industry,

Continued on page 4







At last, a game all Spectrum owners can enjoy — 24 exciting screens that will prove challenging, infuriating and, even worse, madly addictive!

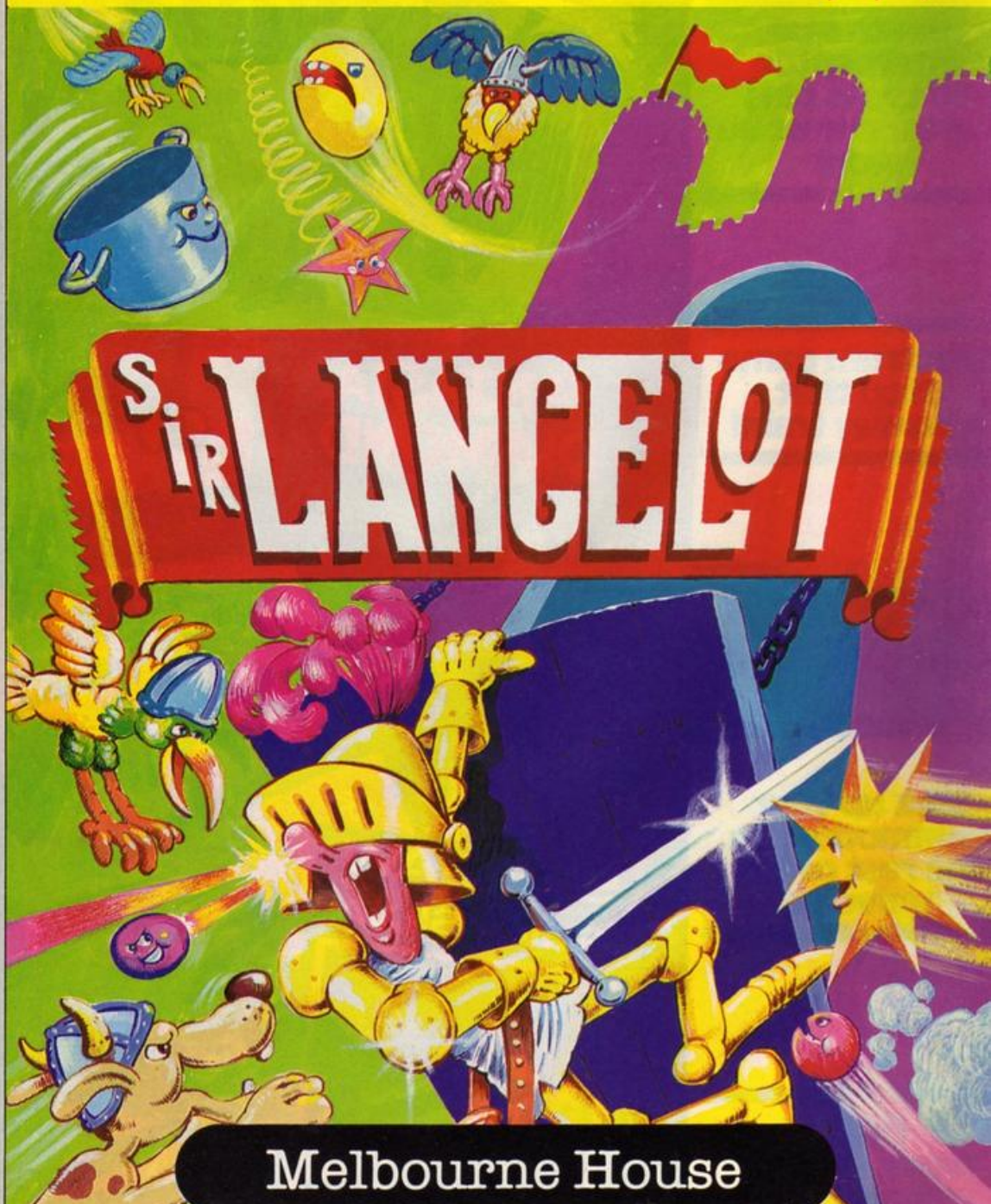
Sir Lancelot must storm the castle, undaunted by such dangers as birds, bouncing balls, dogs, stars (and even cooking pots with legs??!!).

Your task is to collect the various precious objects scattered throughout the castle — a task that sounds easier than it is.

Great animation and high resolution make this the game to beat.

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- ☐ H.U.R.G. 48K £14.95
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- ☐ Melbourne Draw 48K £8.95
- ☐ Abersoft FORTH 48K £14.95

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- ☐ Commodore 64 Penetrator £7.95

BBC SOFTWARE

- ☐ BBC The Hobbit, Model B £14.95
- ☐ BBC/Electron Classic Adventure £6.95

All versions of 'The Hobbit' are identical with regard to the adventure program. Due to memory limitations. BBC cassette version does not include graphics.

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BRITAIN'S BRIGHTEST



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Readers: we welcome your programs, articles and tips

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Argus Specialist Publications Ltd.
No. 1 Golden Square, London W1R 3AB. 01-437 0626

Home Computing Weekly is published on Tuesdays. Subscriptions and back issues: Infonet Ltd, 10-13 Times House, 179 Marlowes, Hemel Hempstead, Herts HP1 1BB. 0442 48432. Trade distribution: Argus Press Sales and Distribution Ltd, 12-14 Paul Street, London EC2A 4JS. 01-247 8233. Printed by Alabaster Passmore & Sons, Ltd, of London and Maidstone, Kent. Design and origination: MM Design, Circus House, 26 Little Portland Street, London W1N 5AF

From front page

according to Mr Armstrong. "There's room for expensive, full-priced games and budget ones. We will be in direct competition with the budget-priced ranges!'

One problem which immediately springs to mind is software piracy. But Mr Armstrong believes that computer games rental could help solve the problem of software theft.

"We're legitimising the whole rental thing!' he said. "We're doing something to try to control piracy and we're catering for people who just want an evening's entertainment. In fact, commercial piracy will be impossible since the games won't ever be sold, so if we see pirated versions for sale it will be obvious they've been illegally copied!'

Mr Armstrong claims that the reaction to his scheme has been "tremendous'! And his launch range is only the beginning: "This is definitely an on-going situation!' he said. "We're looking around for more titles and we will be expanding our range!' The campaign will be backed by nationwide advertising.

Martin Alper, managing director of Mastertronic, market leaders in low-cost tapes, commented: "It's a load of nonsense. They are intending to rent these tapes at 50p a night, yet it will take people time to get used to the game. I think at 50p to rent the company will lose money because it will cost them money to process the rental!'

He also pointed out that most people want to attain a certain level of skill on their games, which usually takes some time. "In the end I think it will cost more than buying!' he said.

Wildest Dreams, PO Box 84, Coventry

School

From front page

between schools through the telephone from one computer to another.

Pupils using this sort of service will gain valuable experience in the use of new technology which will be important to them long after they leave the classroom environment. The service will almost certainly become well established in schools. The breadth of information it can contain is enormous!'

The rival to Prestel's service is called Times Network and is also due to be launched very soon.

Times Network offers a similar service and Steve Bacon, education adviser, said: "Now pupils will learn to use the technology they'll meet as soon as they leave school for the high street of business!'

So far 4,000 schools have agreed to join the scheme and it is hoped that the new networks will also attract teachers who have had no experience working with computers.

Chris Knowles of Prestel said: "It's like one window in a department store. The education facilities will draw the schools in'!

Prestel, Prestel Headquarters, Telephone Hse, Temple Ave, London EC4Y 0HL

Times Network, The Times, 200 Gray's Inn Rd, London WC1X 8EZ

Computer dateline

THE Computer Advisory Service is a new organization which operates a Dateline type of set-up with the aim of matching you with the perfect computer.

At a cost of £6, your answers to a questionnaire will be fed into a computer (what else?) and the computer chooses your soul mate for you.

Computer Advisory Service, 16 Birkdale Dr, Leeds LS17 7SZ

It's time for bed . . . said Zebedee

ALTHOUGH rumours have been abounding for a number of weeks, CRL has only now officially released The Magic Roundabout for the Spectrum.

Based on the original TV program, written by Serge Danon, the game revolves around Dougal's attempts to build a sugar house. He is not helped by his fellow characters, who persist in eating the sugar cubes to get energy.

CRL is promoting this game as a non-violent arcade game — "nobody gets killed" and the game is now available at £6.95. Commodore version will follow shortly.

CRL, CRL Hse, 9 Kings Yd, Carpenter's Rd, London E15 2HD

Import games at lower prices

SYSTEM 3 has acquired the rights to software produced by Californian company Tronix. Three games, Motocross, Juice and Suicide Strike, will be released for the Commodore 64 at £7.95. Normal import price is £24.95.

According to System 3, most American software is released over here in the £9.95 price bracket, so this company is breaking new ground. Mark Cale, managing director of System 3, negotiated the deal with Derek McLeash of Tronix and has plans to release the range of MSX, Amstrad and spectrum.

Motocross is self-explanatory; Juice is a Flip and Flop-type game in which you control Eddison the kinetic android, while in Suicide Strike you must destroy enemy radar bases before they destroy you, in a Buck Rogers-type game.

System 3, Southbank Hse, Black Prince Rd, London SE1



Money changes hands between Derek mcLeash of Tronix and Mark Cale of System 3

CBM 64 BASIC

BREDEN'S BASIC, for the Commodore 64 costs £39.95 and, according to Visions, the manufacturers, incorporates high resolution colour graphics, structured programming techniques, multi-colour graphics, user defined character graphics, music and sound synthesis and toolkit facilities.

With 135 commands, Visions is claiming that Breden's BASIC is the most comprehensive BASIC available for the Commodore. Available on disc and tape, Breden's BASIC runs on less than 8K, leaving you plenty of room for program development.

The program is accompanies by a manual as well as a user registration document which enables you to update your software as and when Visions brings out new releases.

Visions, 1 Felgate Mews, Studland St, London W6 9JT

forests, cities and volcanic mountains. There are more than 3,000 scenes, each with colourful 3-D graphics, as well as 360 degree scrolling so that you can look all around you.

The challenge of Aztec is to interpret a strange, disturbing dream. You must restore the lost sun to your world.

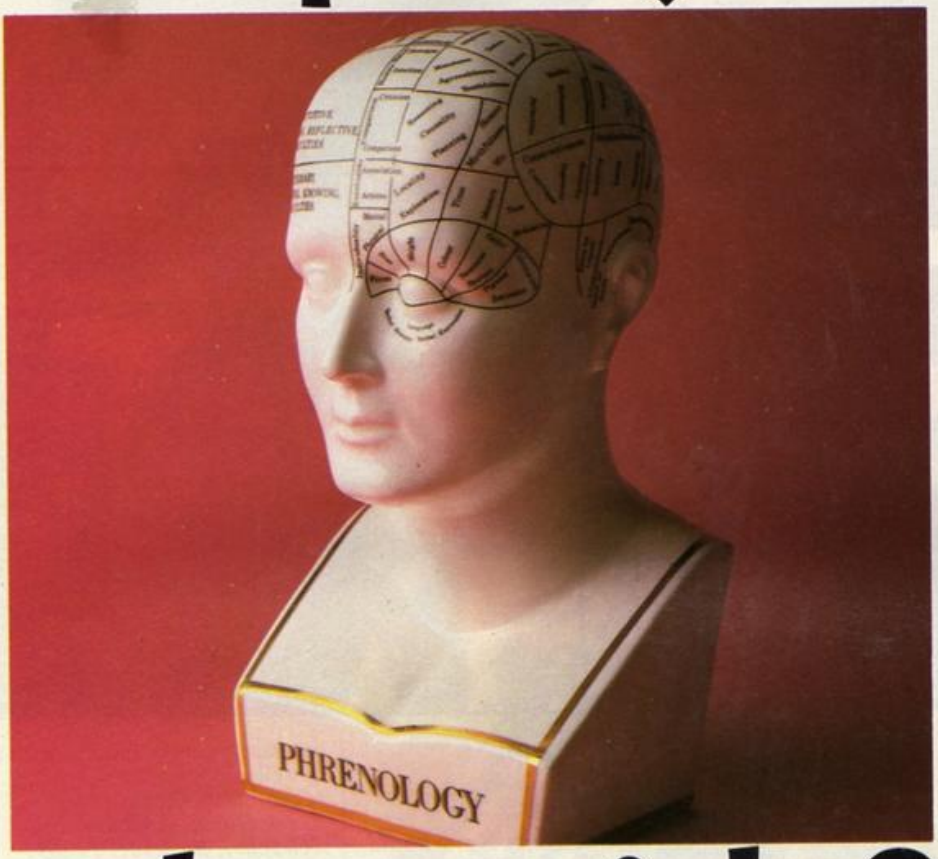
Included in the purchase price of £7.95 is a full-colour poster with a spell-breaker, instruction booklet and keyboard overlay. Available on the Spectrum, Aztec is Microdrive-compatible.

Two further releases from Hill MacGibbon are King Arthur's Quest and Gun Dogs. The former's an adventure, while Gun Dogs is an arcade game. King Arthur's Quest features 3,200-plus scenes and your quest is to free the realm of an icy mist issue by an ice-dragon. All the usual features — spells, unicorns, dragons — are included.

In Gun Dogs you must shoot down flying game and guide your retriever across the landscape to fetch the bird. Mind out, though — there are numerous obstacles and dangers to avoid.

Hill MacGibbon, 92 Fleet St, London EC4 1YD

Do you want to expand your mind



or lose weight?



Home computing isn't all fun and games. The Mirrorsoft Home Discovery series of software programs can help broaden your knowledge and experience or even assist you to lose weight.

KNOW YOUR OWN PSI-Q

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On cassette for the CBM64, Spectrum 48K, BBC B, Electron. **£9.95**

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STAR SEEKER

Published in association with the London Planetarium. This pair of programs, written by Dr. Paul Phillips FRAS, brings the magic of the heavens into your home.

Star Seeker accurately plots the most prominent stars from any position on Earth; at any time in this or the next century. You can obtain information on individual stars, and draw constellations. Solar System plots Planets and Halley's Comet, with us next year!

On cassette for the BBC B (Spectrum 48K and CBM64 versions coming soon). **£9.95**



MASTERMIND

Adapted from the well known BBC TV quiz game, this program lets you take the chair for general knowledge and special subject questions. It comes with two sets of each. Up to four players. Further low-cost packs of questions coming soon.

On cassette for the Spectrum 48K, BBC B, Electron. **£9.95**

THE JOFFE PLAN

A 'no-diet' personal weight control program. Prof. Joffe's Plan awards credits or penalties based on progress to a target weight agreed between the user and the computer. Food is the best reward for an over-eater. So credits earned allow you to indulge a favourite dish. Penalties mean less food, more exercise.

On cassette for the CBM64, Spectrum 48K, BBC B, Electron. **£9.95**

Also available: Mastermind QUIZMASTER – Set your own questions to run on the Mastermind program. On cassette for the Spectrum 48K, BBC B, Electron. **£5.95**



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Available from Boots, W. H. Smith, Spectrum and all good software stockists. Write for free catalogue to: Mirrorsoft, Holborn Circus, London, EC1P 1DQ.

Python saga

TERRY Jones, star of Monty Python, signed copies of his computer adventure game The Saga of Erik the Viking at W.H. Smith recently.

Based on his book of the same name, the adventure is produced by Mosaic Publishing.

"It's a real extension of the book, not a retelling of the story", said Terry Jones. "Playing the game, even I don't know what's going to happen next".

Amstrad version of the game will be available next month, while the Spectrum, BBC and Commodore versions are currently retailing at £9.95. Included in the price is a 20-page booklet, containing extracts from the book.

Mosaid Publishing, 187 Upper St, Islington, London N1 1RQ



Terry Jones eating his new software

Texas special

FOUR games for the TI-99/4A have been released in time for Christmas. They are: Santa and the Goblins, Quasimodo — both £7.95 — Snout of Spout and Shuttle Attack, both £5.95.

If you send 50p to Intrigue, you will receive a catalogue which shows screen shots so that you can see the game before you buy it.

Intrigue, Cranbrook Rd, Tenterden, Kent TN30 6UJ

Duo games bonus

ANIROG is branching out into duo tapes — software which can be played on both the Commodore 64 and VIC-20. Kong, Flight Path 747 are old favourites now available for both machines, and new releases include Las Vegas, Tom Thumb and Minipedes.

Part of the reason for this innovation is so that users can upgrade from a VIC-20 to a 64 and still use the same software.

Anirog, 29 West Hill, Dartford, Kent DA1 2EL

Bring back the sun

AZTEC — Hunt for the Sun God is the title of a new adventure game released by Hill MacGibbon. Promoted as one of its range of "Games to stretch the mind," the company claims that it's a game of imagination and logic suitable for all the family.

You can wander at will through a South American landscape of

Santa's spree

IT MAY seem early days, but Icon has released Merry Xmas Santa – "an extravanganza of arcade action and fun". according to Icon.

Santa's task is to deliver presents to all good children. However, he has hazards to encounter, such as marauding snowmen, flying snowballs and dropping icicles. But Santa has some treats in store: he can eat as much cake, plum pudding and sherry as he can on his travels.

Merry Xmas Santa costs £5.95 on Spectrum and £7.95 on BBC/Electron.

Ultron and Wongo are two arcade games also released by Icon at the same time. Both cost £7.95 on the BBC/Electron.

Icon, 65 High St, Gosforth, Tyne and Wear NE3 4AA

Steve Davis stars on your screen

SNOOKER superstar Steve Davis has signed a contract with CDS to produce a new snooker game. Steve Davis Snooker, for the Spectrum, is Microspeech-compatible and follows on the heels of Pool. CDS states that it spent a considerable amount of money on researching and developing the game, and Mike Lamb, author of Pool, wrote the program.

Features include reset previous facility, accurately definable spin, infinitely variable speeds and highest break table. Commodore, BBC and MSX versions are scheduled for release soon, and the Commodore version will also be Microspeech-compatible.

To make the launch CDS will be running a snooker competition, while Steve Davis will be making three personal appearances at chain stores to promote his games.

CDS, Silver hse, Silver St, Doncaster DN1 1HL

Stocking filler

HERE'S an idea for stocking-fillers — if Father Christmas can afford £11.50, that is: the Rexel home computer starter kit. What you get is a cassette demagnetiser and cleaner, cassette cleaning solution, programmer's pad and pencil, and template.

Packed in a PVC wallet with full instructions, the kit "contains all the basic essentials needed to organise, operate and maintain a cassette driven micro", according to Rexel.

Rexel, Gatehouse Rd, Aylesbury, Bucks HP19 3DT

Briefly

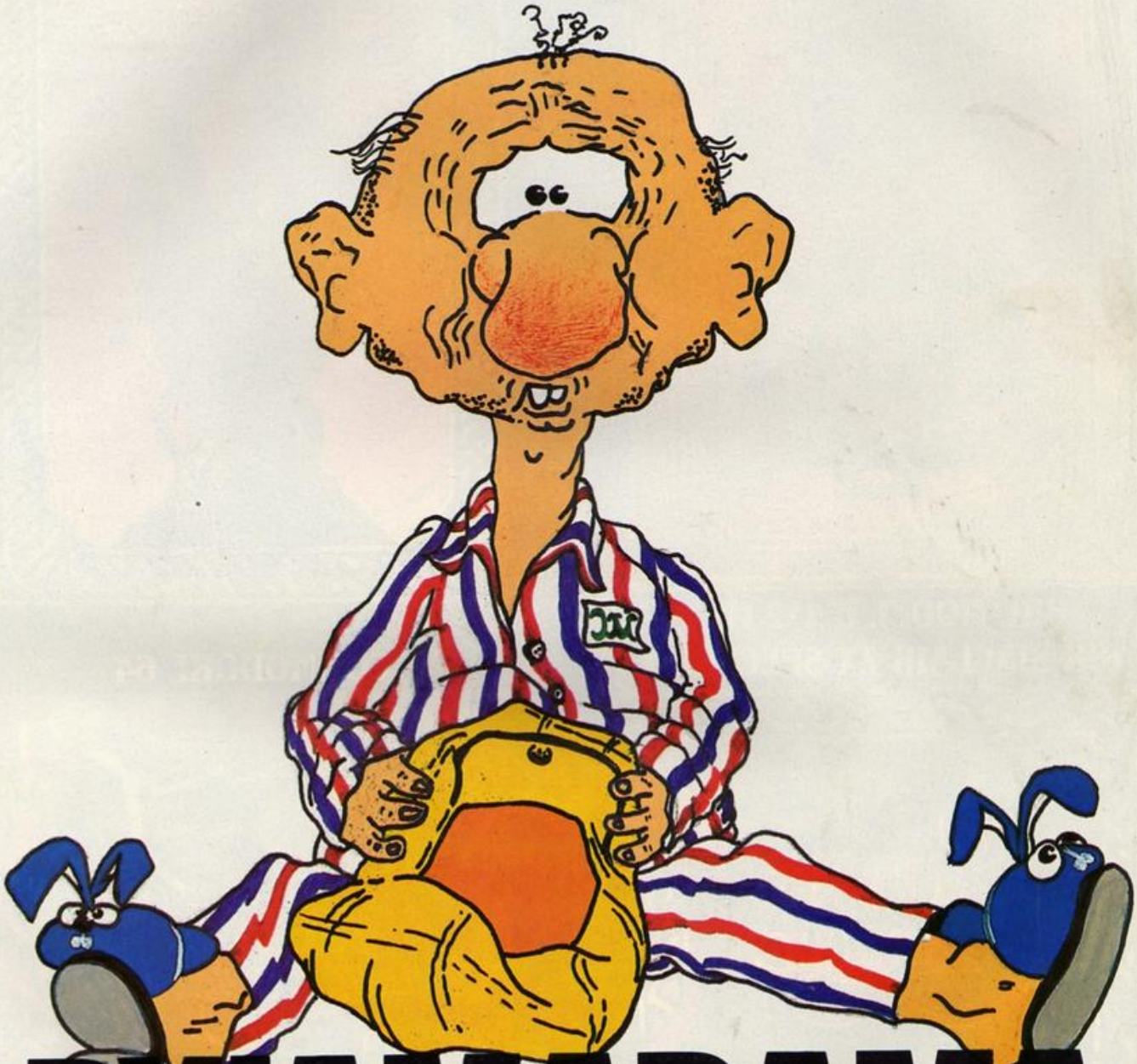
audiogenic is moving into business software with its Professional Series for the Commodore 64. There are three new releases: Micro Magpie Database, Micro Swift Spreadsheet and Micro Wordcraft Word Processor. At £39.95, £19.95 and £24.95, Audiogenic is stating that these programs are "a price breakthrough in business software, making it possible, for the first time, for home users to enjoy the benefits and convenience of the computerised office."

Audiogenic, 39 Suttons Industrial Park, London Rd, Reading, Berks RG6 1AZ

THE Scottish Home Computer and Electronics Show will be held at the Anderston Exhibiton Centre in Glasgow from Friday November 9 to Sunday November 11. It's the second year the exhibition has been held, and Acorn will be displaying its Plus 3 software. A computer swop shop will be held, and entrance costs £1 for adults and 50p for children.

Scottish Home Computer and Electronics Show, Anderston Exhibition Centre, Glasgow G2 7PH

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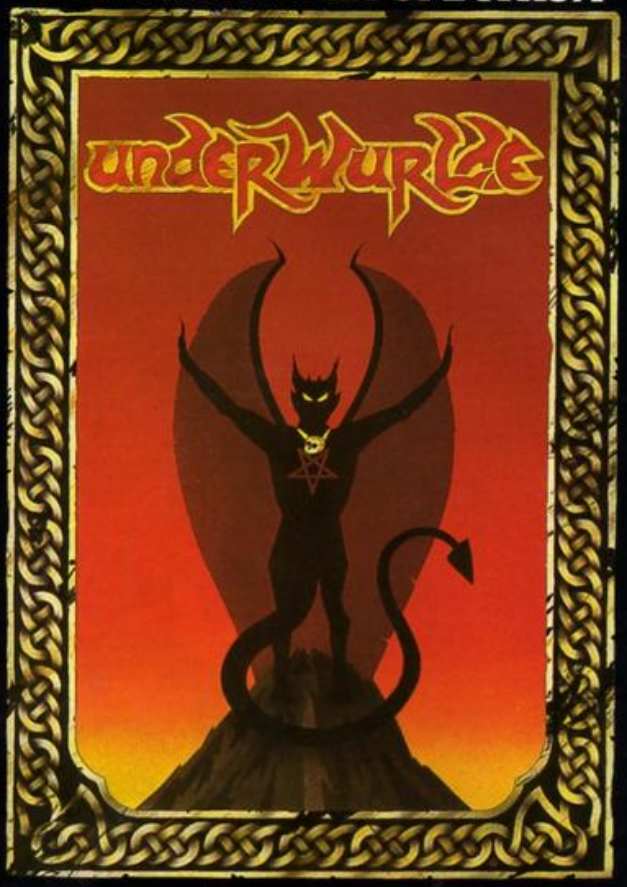
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AND CBM 64 at £7.95

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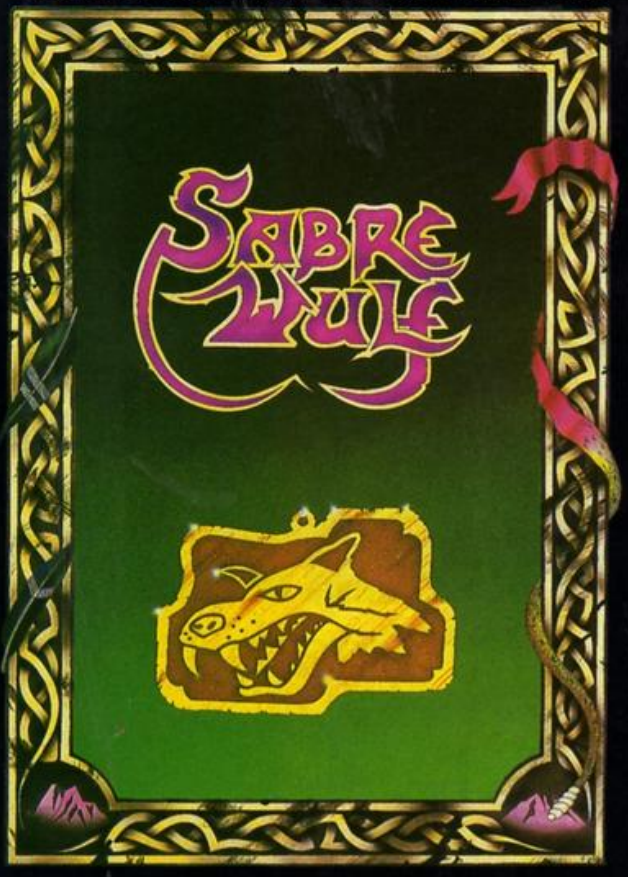
48K SINCLAIR ZX SPECTRUM



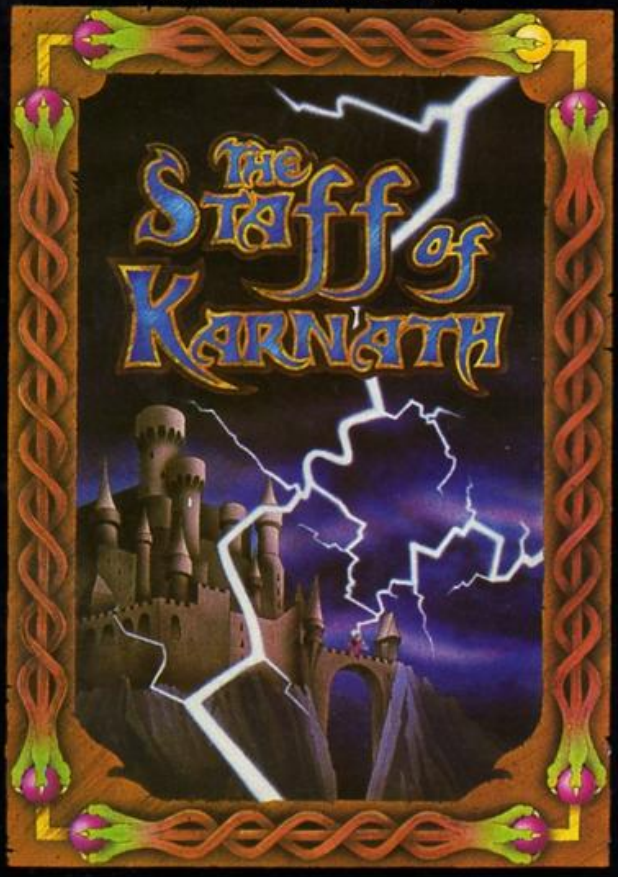
48K SINCLAIR ZX SPECTRUM



BBC MODEL B 1·2 OS
48K SINCLAIR ZX SPECTRUM



COMMODORE 64



"KNIGHTLORE", "UNDERWURLDE", "SABRE WULF", and "STAFF OF KARNATH" recommended retail price £9.95 inc VAT. Available from W.H.SMITH, 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

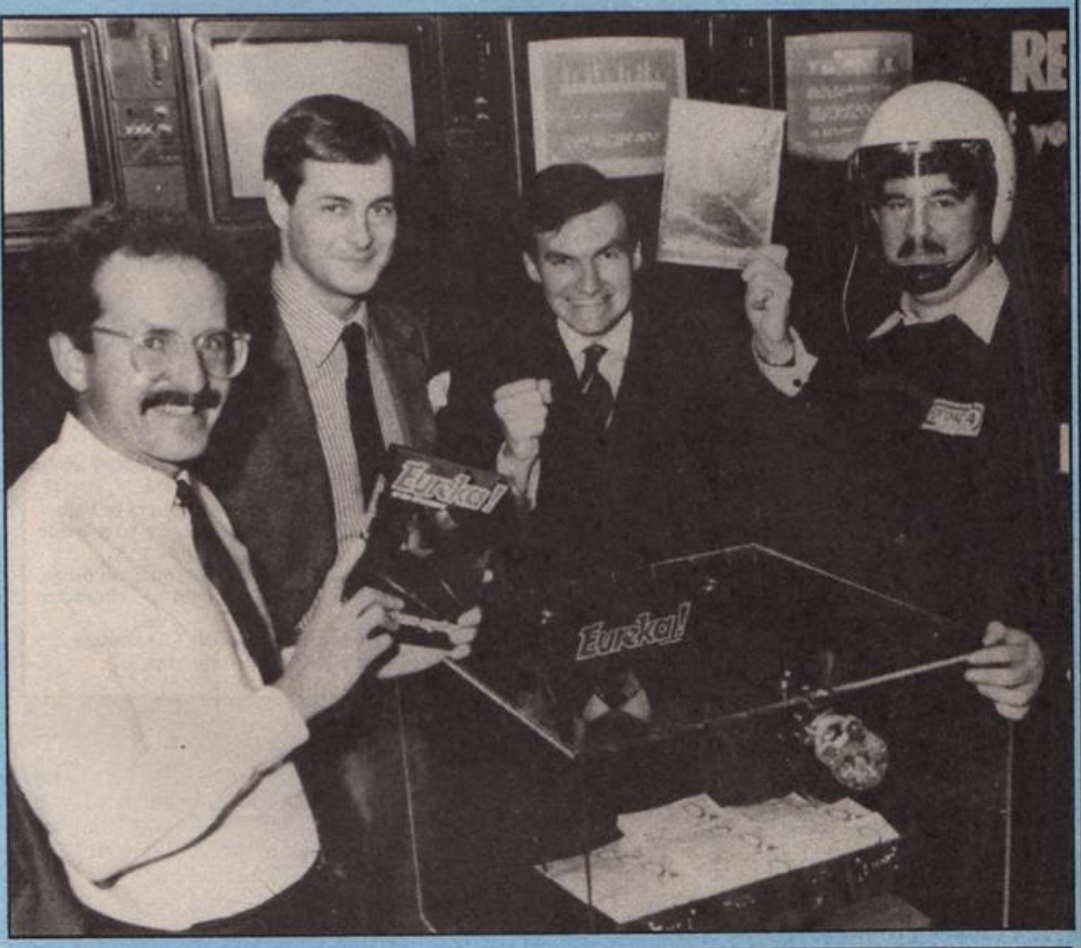
Track down that money

LAUNCHED at a champagne breakfast on October 31, Eureka! is an adventure game with the incentive of a £25,000 prize at the end of it. Released by Domark, the game involves five adventures and the ultimate aim is to discover the mystery telephone number — dial this number and you will all the money.

Domark is a new company formed by Dominic Wheatley and Mark Strachan, and has its background in advertising. An extensive national promotional campaign will no doubt stir up public interest. The company claims that Eureka! will occupy well over 300K of memory, making it the largest computer game ever sold in this country.

At the launch a French version was being displayed and the game will also be marketed in the USA, Canada and Europe. Available on the Spectrum and Commodore, Eureka! costs £14.95 on tape and £16.45 on disc.

Domark, 228 Munster Rd, London SW6



Eureka It's pots of money

You could be on our pages

We welcome programs, articles and tips from our readers. If you feel that your work meets our standards, please submit it to us for consideration for publication.

- **Programs must always be sent on cassette. Listings are helpful, but not necessary. Check carefully that they are bug-free. Include details of what your program does, how it works, variables you have used and hints on conversion.**
- **Articles on using home computers should be no longer than 2,000 words. Don't worry about your writing ability — just try to keep to the style in HCW. Articles most likely to be published will help our readers make better use of their micros by giving useful ideas, possibly with programming examples. We will convert any sketched illustrations into finished artwork.**
- **Tips are short articles, and brief programming routines. Your hints can aid other computer users.**

All submissions will be acknowledged and the copyright in such works which will pass to Argus Specialist Publications Ltd will be paid for at competitive rates.

Keep a copy of your work and include an SAE. Label everything clearly and give a daytime and home phone number if you can.

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Paul Liptrot, Home Computing Weekly, No.1 Golden Square, London W1R 3AB

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ASA Ltd, Dept 2 Brook House, Torrington Place, London WC1E 7HN

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Psychology

Get your computer to analyse your character. Impossible? Not with Dave Edward's Dragon program

This is a program to introduce you to the ancient art of numerology.

Many people throughout the ages have believed that numbers can have a profound effect upon people's lives. Why not try out this program and see whether you agree with them?

For the program to be most effective you must type in the name by which people usually call you. So if your name is David but you are normally addressed as Dave then use Dave for the purposes of this program.

Once you have typed in your name the computer will give you your personal number and an analysis of the general characteristics of your personality.

Will you agree with your computer's assessment of your character? Will you find out new facts about yourself? The only way to find out is to type in the listing.

How it works

10 GOSUB to title screen
120 prompt for input
130-160 remove individual letters of name
170-270 convert letters to values
290-410 add integers to provide personal number
430 prints personal number, reads and prints character analysis
560-590 another GO routine
600-660 introduction




```
1 REM *****NUMEROLOGY*****
2 REM**BY DAVE EDWARDS  C.1984**
100 GOSUB 600
110 CLS:T=0:S=0
120 PRINT@160,"    PLEASE ENTER THE NAME THAT      YOU NORMALLY USE. THIS CAN
   BE YOUR FULL NAME  OR A          NICKNAME OR BOTH.":PRINT:PRINT"    ";:INPUT A
$
130 B$=A$
140 FORI=LEN(A$) TO 1STEP-1
150 A$=RIGHT$(A$,I)
160 C$=LEFT$(A$,1)
170 IF C$="A"ORC$="J"ORC$="S"THEN C=1
```

by numbers

```
180 IF C$="B"OR C$="K"ORC$="T"THEN C=2
190 IFC$="C"ORC$="L"ORC$="U"THENC=3
200 IF C$="D"ORC$="M"ORC$="V"THENC=4
210 IF C$="E"ORC$="N"OR C$="W"THENC=5
220 IFC$="F"ORC$="O"ORC$="X"THENC=6
230 IFC$="G"ORC$="P"OR C$="Y"THEN C=7
240 IF C$="H"ORC$="Q"ORC$="Z"THENC=8
250 IF C$="I"ORC$="R"THEN C=9
260 S=S+C
270 C=0
280 NEXT I
290 IFS<10 THEN410
300 IFS<100THEN330
310 Z=INT(S/100)
320 S=S-(Z*100)
330 X=INT(S/10)
340 T=Z+X
350 S=S-(10*X)
360 T=T+S
370 IF T<10 THEN 420
380 T2=INT(T/10)
390 S2=T-(T2*10)
400 T=T2+S2:GOTO420
410 T=S
420 CLS
430 PRINT@64,"  ";B$
440 PRINT @96,"  YOUR LUCKY NUMBER IS ";T
450 PRINT @128,"  THIS SHOWS THAT YOU ARE"
460 C$(1)="  A CLEAR THINKER AND A LIVELY    PERSON, VERY AMBITIOUS, BUT      ALS
O VERY IMPATIENT."
470 C$(2)="  A CAUTIOUS,HARDWORKING TYPE     OF PERSON, NOT A KEEN LEADER."
480 C$(3)="  AN EXTROVERT AT HEART. GREAT    ENTERTAINER, BUT APT TO BE       A B
IT LAZY."
490 C$(4)="  A RELIABLE,CALM PERSON. YOU     ARE A HOME-LOVER BUT TEND TO     BE
SARCASIC AND JEALOUS"
500 C$(5)="  A HOT-HEADED PERSONAND VERY     TALKATIVE. NOT VERYGOOD AT       TOL
ERATING  OTHERS."
510 C$(6)="  A LOVER OF PEACE AND QUIET.     ROMANTIC BUT TOO TRUSTING        OF
OTHERS."
520 C$(7)="  A DREAMER AND A LONER. BUT      ALSO INVENTIVE OFTEN QUITE       BRI
LLIANT."
530 C$(8)="  A DETERMINED PLANNER. OFTEN     RUDE AND AGGRESSIVE BUT ALSO     FIN
ANCIALLY SUCCESFUL"
540 C$(9)="  A TOLERANT AND COMPASSIONATE    PERSON. HARD WORKING AND KEEN    TRA
VELLER."
550 PRINTC$(T)
560 PRINT:PRINT:PRINT"  DO YOU WANT ANOTHER GO(Y/N)"
570 A$=INKEY$:IF A$="" THEN570
580 IF A$="Y" THEN 110
590 IF A$="N" THEN END ELSE 570
600 CLS:PRINT @ 42,"numerology"
610 PRINT:PRINT"  NUMEROLOGISTS CLAIM THAT YOU    CAN DISCOVER A LOT ABOUT
  YOUR CHARACTER BY USING THE     ANCIENT SCIENCE OF NUMBERS.     USING METHODS
KNOWN TO THE      ANCIENT CHINESE, THIS          PROGRAM WILL CALCULATE YOUR"
620 PRINT"  PERSONAL NUMBER AND THEN GIVE   YOU A CHARACTER ANALYSE"
630 PRINT:PRINT"  press any key to continue"
640 SCREEN 0,1
650 A$=INKEY$:IFA$=""THEN650
660 RETURN
```

Money, money, money

Money, oil, plutonium, diamonds — they're all desirable resources and they all feature in this set of new software reviewed especially for you

Turmoil
48K Spectrum
£6.95

Bug-Byte, Mulberry Hse, Canning Place, Liverpool

The title is a play on words because the object of the game is to fill an oil can from a constantly dripping source.

Once the screen is filled it is taken to the bottom of the screen, and the action of emptying builds up a car.

When the car is fully built up it moves off onto the next screen. Each screen is made up of floors, or levels, with ladders, ropes, spring loaded platforms etc. All the time you are attempting to fill the oil can.

Some Arabs, wielding wicked looking scimitars, are after you. Once your paths collide there is a fierce scuffle, and you are promptly disposed of. Another thing to bear in mind is that the Arabs like things to be tidy. If there are tools lying around it is a good idea to gather them up. I found the game playable, but not what I would call addictive. **B.B.**

instructions	100%
playability	75%
graphics	85%
value for money	80%

★ ★ ★

Plutonium Plunder
32K BBC £6.95

Program Power, Sheepscar St South, Leeds

If you are the kind of games player who likes to show off your lightning reflexes, your planning and foresight then this could be quite a treat for you.

This game is just a little too hard and fast with rather too much happening at once. It starts in a familiar way with a number of blocks to move around or crush while you are pursued by four angry gnomes. The instructions suggest you should first get rid of them and I concur; crushing them with a block is the most effective method.

After this you must move three radioactive cannisters around the screen and through a gap into a pen. Unfortunately there is a gate across the gap to slow you down and time is of the essence. If you take too long the number of blocks starts to multiply at an alarming rate. Any further dilly-dallying causes the walls containing the "nuclids" to break down and the megapods" to appear, at which point life becomes rather a transitory experience.

Good graphics and ideas but just too much, for me at least. **D.C.**

instructions	90%
playability	80%
graphics	85%
value for money	75%

★ ★ ★ ★

Swag
BBC B £6.95

Micro Power, Sheepscar Hse, Sheepscar St South, Leeds LS7 1AD

The object of this game is to steal £250,000 in diamonds. A sense of humour lies behind the creation of this game as you control your man collecting the valuables and deposit them at the bank or shop whilst avoiding the Henrys or Pereys! There are Smileys which can help you and police cars which can be a nuisance. Your opponent is deadly.

This game is unusual because it is a two player game with a practice option just to get used to it. Believe me you'll need it! However, once you've mastered the movements you need an opponent and there is no version against the computer. Just as well as it's difficult enough as it is.

The keyboard version is as good as it can be with two hands at opposite ends and there is an option to define your own control keys. Otherwise the joystick version is preferable.

At the beginning of the game you can change some of the variables to give you an unlimited supply of bullets.

An all action, high speed arcade game with only the one screen. Very enjoyable. **M.P.**

instructions	90%
playability	90%
graphics	75%
value for money	90%

★ ★ ★ ★

Poker
CBM 64

Tom Pinone, 14 Granby Ave, Harpenden, Herts AL5 5QR

With your back pay burning a hole in your jeans, you ride into Tucson and tie up outside Molly's Saloon. Inside, you see Matt Dillon, Black Jake, the mayor, Billy the Kid, Joshua Smith and Doc Holliday playing poker.

Dropping your $1000 on the table, you draw up a chair.

The rules are simple. You have five cards and you see or raise until raising stops, discard and draw up to 3 cards, then see or raise until the showdown. Molly offers advice when asked and the instructions and prompts are enough to teach you the rudiments if you didn't know how to play.

Your companions cuss and shoot a lot — good poker players but bad losers.

The display is excellent, with each player's remaining money and bets shown, and facility to speed up or slow play.

It's some years since I last played poker but, if the betting level is five and I raise ten, shouldn't I have to put five plus ten into the pot, not just ten.

This aside, I had fun for a while and losing doesn't hurt your pocket. It's a change from zapping. **D.C.**

instructions	90%
playability	85%
graphics	70%
value for money	%

★ ★ ★ ★

Moneybox
Dragon 32/64
£14.99

Harris Micro, 49 Alexandra Rd, Hounslow, Middx TW3 4HP

The problem encountered on the cassette version of this program, the inability to report file loading errors and abort in a reasonable manner, no longer exists with this disc version. Coupled with speed of access this presents itself as a powerful and versatile package.

This program enables you to create a file with its own account structure, limited only by the capacity of the disc. You can make a VAT analysis of your transactions, work out your budgeting requirements and get a forecast over a stated period. You can operate your accounts over a normal calendar year with the option of continuing given your current balances.

The display and layout is in the highest resolution black on buff. The program uses a 42 column by 24 row screen with upper and lower case lettering with an option to print all information.

One has to spend time getting used to the system but the 24 page manual is clear and provides helpful hints. When I transferred my accounts to this I was amazed at how effectively and clearly it presented them in a systematic fashion. This needs a Dragon disc drive. **M.P.**

instructions	90%
ease of use	90%
graphics	90%
value for money	95%

★ ★ ★ ★ ★

WILDEST DREAMS

Software Rental

Just a couple of questions for the computer gamer .....

1. **When did you buy your last computer game?**
2. **How often have you played it?**



LITTLE JOHNNYS POCKET MONEY DAY

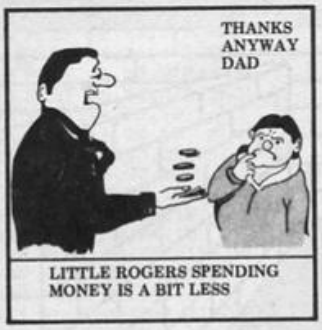


...BUYS HIS WEEKLY SINGLE TAPE


...BUT ITS ANOTHER LEMON



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BUT HE'S HEARD OF WILDEST DREAMS SOFTWARE RENTAL



SO HE GETS LOADS OF PROGRAMS FOR HIS MONEY



AND HAS A BRILL TIME.

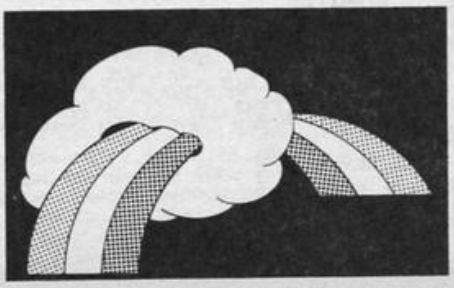
Buying software can seem a pretty bad deal when you pay £5.99 for only a couple of hours play.

Well, now you can visit the Circus, help King Clive in his dungeon, beat the computer on your Lazer Byke, explore deep space, eat your way through a cheese warehouse and get totally infuriated by the Mazeball, all for less than the price of one new cassette.

How? well, if you go down to your Video dealer today, you're in for a big surprise. He can hire you a Wildest Dream rental cassette for your Spectrum or Commodore 64, featuring one of these games, at a very reasonable price (say about one tenth the price of a good recent game ...)

And its not somebody else's old stock were trying to hire you. These are all brand new games that you've never seen before in the shops - and you won't see them in the shops later.

Only through your local Video dealer can you hire Wildest Dreams rental software.



CONTACT:- Chris Kilburn
WILDEST DREAMS
P.O. BOX 84,
COVENTRY.
Tel: (0203) 663085

On the

This program by Karl Hardman sets you a maze challenge. Find your destination but look out for the rocks!

This is a classic escape game which should test your skill and frustrate you.

You start at the bottom of the screen and you must attempt to reach your destination in 55 moves. It sounds easy but it's not because there are hazards strewn along your route: to hinder you on your way.

Be careful to avoid the rocks placed haphazardly around the screen because if you hit one of these the game is over. There is also a wall bordering the screen but it's not as innocent as it looks — it's electrified!

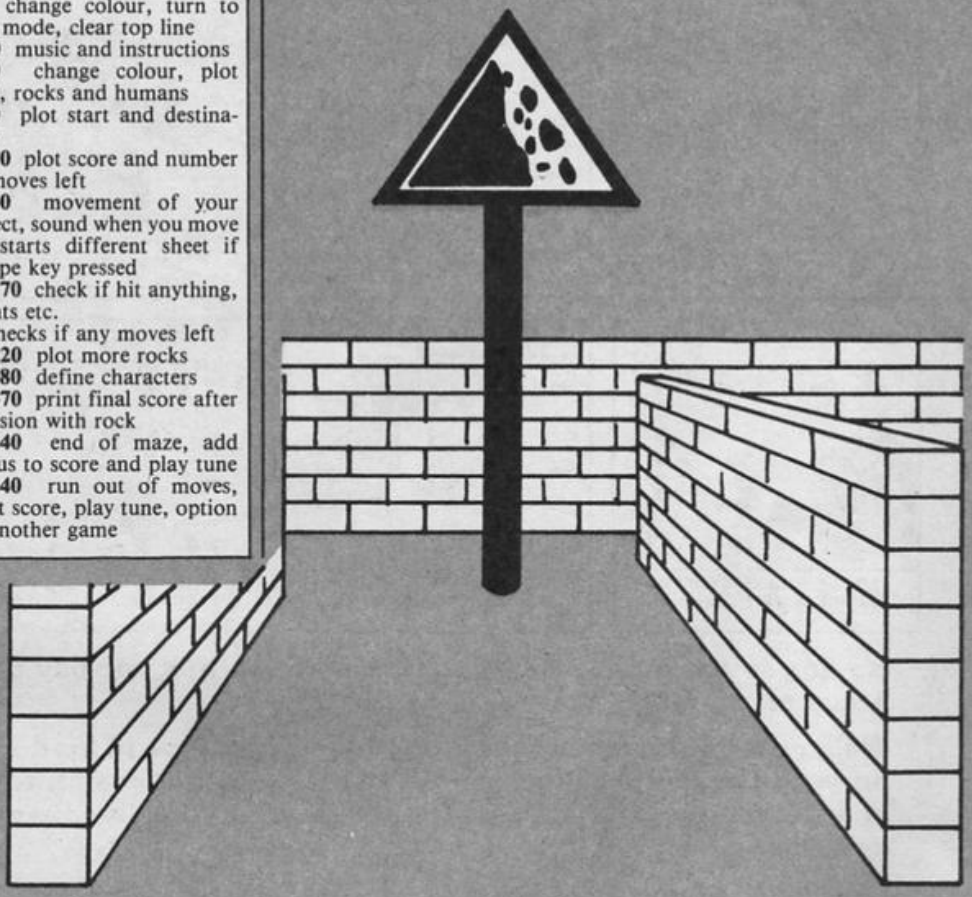
On your way you can collect humans and this will give you 200 points for each one.

You need the cursor keys for controls and if you find your way blocked by rocks press the escape key and this will start a new sheet without cancelling your score.

SAVE the program before running as there are a number of calls which are used to make the sound when you move.

How it works

50-80 change colour, turn to text mode, clear top line
110-150 music and instructions
740-890 change colour, plot wall, rocks and humans
900-910 plot start and destination
920-1070 plot score and number of moves left
180-1130 movement of your object, sound when you move
1132 starts different sheet if escape key pressed
1140-1170 check if hit anything, points etc.
1190 checks if any moves left
1200-1220 plot more rocks
2000-2080 define characters
4000-4370 print final score after collision with rock
5000-5240 end of maze, add bonus to score and play tune
5500-6240 run out of moves, print score, play tune, option of another game



Variables

G,T your position
D,F position of humans
Mo moves
Sc score
U bonus

```
 10 REM ************************
 20 REM **                      **
 25 REM ** Save program first **
 30 REM **                      **
 35 REM ************************
 50 PAPER 0:INK7
 60 WAIT100:TEXT:CLS
 70 REM *** CLER TOP LINE ***
 80 FOR L=48000TO48039:POKEL,32:NEXT
106 REM *** INSTRUCTIONS AND MUSIC ***
110 CLS:POKE#26A,10
150 FORX=48040TO48160STEP40
160 POKEX,20:NEXTX
180 PLOT 13,1,"  GET-OUT"
190 PLOT 13,2,"  GET-OUT"
200 PLOT 13,1,CHR$(10)
210 PLOT 13,2,CHR$(10)
230 PLOT 0,5,CHR$(140)
240 PRINT:PRINT:PRINT:PRINT:PRINT
250 PRINTSPC(10)"By Karl Hardman"
260 PRINT:PRINT" Go about the maze picking up the"
270 PRINT"humans, 200 points are awarded for"
280 PRINT"these. Each time you reach the end of"
290 PRINT"the maze you are given a bonus."
```

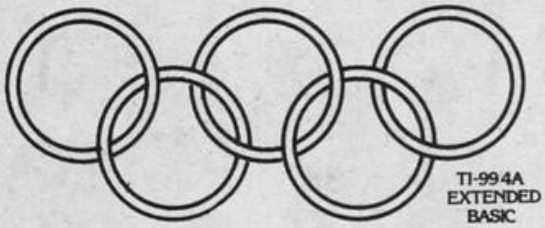
```
300 PRINT"BEWARE of the rocks and the outer "
310 PRINT"wall. You are given 55 moves to "
320 PRINT"complete the maze and collect as"
330 PRINT"many humans as you can."
335 PRINT:PRINT"'' = UP.          ! = outer wall."
340 PRINT:PRINT"'/' = DOWN.       @ = rocks."
350 PRINT:PRINT"'Z' = LEFT.       & = you."
360 PRINT:PRINT"'X' = RIGHT.      # = humans."
400 FOR X=1TO20
410 READ B
420 PLAY 7,0,5,10000
430 MUSIC 1,3,B,0:WAIT20
440 MUSIC 2,4,B,0:WAIT20
450 MUSIC 3,5,B,0:WAIT20
460 NEXT:PLAY 0,0,0,0
470 DATA 3,5,1,3,5,6,8,8,6,5,3,6,5,3,1,5,6,8,10,6
480 PLOT 6,25,CHR$(10)+"Press 'SPACE' to continue."
490 PLOT 6,26,CHR$(10)+"Press 'SPACE' to continue."
495 GOSUB2000
500 REPEAT:UNTIL KEY$=" "
590 SC=0:MO=55
730 REM *** PLOT WALL ***
740 CLS:PAPER 7:INK0
```

rocks

```
745 O=3:Y=21
750 FOR H=2TO36
760 PLOT H,2,"!":PLOT H,22,"!":NEXT
770 FOR V=2TO21
780 PLOT 2,V,"!":PLOT36,V,"!":NEXT
785 REM *** PLOT ROCKS ***
790 FOR H=1TO75
800 J=INT(RND(1)*19)+3
810 G=INT(RND(1)*33)+3
820 PLOT G,J,"@"
830 NEXT
840 REM *** PLOT HUMANS ***
850 FOR M=1TO40
860 F=INT(RND(1)*19)+3
870 D=INT(RND(1)*33)+3
880 PLOT D,F,"#"
890 NEXT
895 REM *** PLOT START AND END OF MAZE ***
900 PLOT 34,1,"END"
910 PLOT 2,23,"START"
915 REM *** PLOT MOVES AND SCORE ***
920 PLOT10,23," MOVES "
930 PLOT10,24," MOVES "
940 PLOT 22,23," SCORE-:"
950 PLOT 22,24," SCORE-:"
960 PLOT 16,23,STR$(MO)
970 PLOT 16,24,STR$(MO)
980 PLOT 16,23,10
990 PLOT 16,24,10
1000 PLOT 35,3,254
1010 PLOT10,23,10
1020 PLOT10,24,10
1030 PLOT 22,23,10
1040 PLOT 22,24,10
1050 PLOT 30,23,STR$(SC)
1060 PLOT 30,24,STR$(SC)
1070 PLOT O,Y,"&"
1071 IF SCRN(O-1,Y)=38THENPLOTO-1,Y,32
1072 IF SCRN(O+1,Y)=38THENPLOTO+1,Y,32
1073 IF SCRN(O,Y-1)=38THENPLOTO,Y-1,32
1074 IF SCRN(O,Y+1)=38THENPLOTO,Y+1,32
1075 REM *** MOVEMENTS ***
1080 K$=KEY$
1100 IF K$="'"THEN Y=Y-1:CALL#FAFA:WAIT5:CALL#FB10:MO=
MO-1
1110 IF K$="/"THEN Y=Y+1:CALL#FAFA:WAIT5:CALL#FB10:MO=
MO-1
1120 IF K$="Z"THEN O=O-1:CALL#FAFA:WAIT5:CALL#FB10:MO=
MO-1
1130 IF K$="X"THEN O=O+1:CALL#FAFA:WAIT5:CALL#FB10:MO=
MO-1
1132 IF K$=CHR$(27)THENGOTO740
1135 REM *** CHECK IF YOU HIT ANYTHING ***
1140 IF SCRN(O,Y)=35THENSC=SC+200:SOUND1,550,0:PLAY1,0
,1,1600
1150 IF SCRN(O,Y)=64THEN EXPLODE:WAIT200:GOTO 4000
1160 IF SCRN(O,Y)=33THEN EXPLODE:WAIT200:GOTO 4000
1170 IF SCRN(O,Y)=254THEN GOTO 5000
1180 IF MO<10THEN PLOT 18,23,"  ":PLOT18,24,"  "
1190 IF MO=0THEN WAIT100:GOTO 5500
1200 J=INT(RND(1)*19)+3
1210 G=INT(RND(1)*33)+3
1220 PLOT G,J,"@"
1230 GOTO 960
2000 REM Define characters
2005 REM *** DEFINE WALL ***
2010 FOR C=46344TO46351:READZ:POKEC,Z:NEXT
2020 DATA 61,61,0,55,55,0,61,61
2030 FOR M=46360TO46367:READN:POKEM,N:NEXT
2035 REM *** YOU ***
2040 DATA 14,14,4,63,4,14,10,27
2045 REM *** DEFINE HUMANS ***
2050 FOR B=46384TO46391:READ V:POKEB,V:NEXT
2060 DATA 12,12,18,45,45,18,12,12
2065 REM *** DEFINE ROCK ***
2070 FOR L=46592TO46599:READK:POKEL,K:NEXT
2080 DATA 12,20,35,41,34,34,41,50
2090 RETURN
3999 REM *** YOU CRASHED ***
```

```
4000 CLS:PAPER0:INK7
4100 PLOT12,3," HARD-LUCK"
4110 PLOT12,4," HARD-LUCK"
4120 PLOT12,3,10
4130 PLOT12,4,10
4140 PLOT2,7,CHR$(1)+"You have collided with some rock
"
4150 GOSUB 6150
4250 PLOT 8,9,CHR$(5)+"Your final score is"
4260 PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:P
RINT:PRINT:PRINT
4270 PRINTSPC(13);SC;"points"
4350 PLOT 7,15,CHR$(140)+" Press 'SPACE' to play again
":SC=0:MO=55
4360 K$=KEY$
4370 REPEAT:UNTIL KEY$=" ":GOTO 740
4999 REM *** END OF MAZE ***
5000 WAIT200:CLS
5010 PAPER 0
5020 INK7
5030 PLOT 13,3," WELL DONE"
5040 PLOT 13,4," WELL DONE"
5050 PLOT 13,3,10
5060 PLOT 13,4,10
5065 U=MO*100+(1000)
5070 LET SC=SC+U
5080 PLOT 9,7,CHR$(1)+"You have a bonus of"
5090 PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:P
RINT
5100 PRINTSPC(13);U;"points"
5110 PLOT10,11,CHR$(1)+"Your score is now"
5120 PRINT:PRINT:PRINT:PRINTSPC(13);SC;"points"
5140 FOR Z=1TO12
5150 IF Z=12THEN FOR Z=11TO1STEP-1
5160 PLAY 7,0,5,10000
5170 MUSIC 1,3,Z,0
5180 MUSIC 2,4,Z,0
5200 MUSIC 3,5,Z,0
5210 WAIT15:NEXTZ
5220 PLAY0,0,0,0
5240 MO=55:WAIT100:GOTO 740
5499 REM *** RAN OUT OF MOVES ***
5500 PAPER 0:INK7:CLS
5510 PLOT 12,3," HARD-LUCK"
5520 PLOT 12,4," HARD-LUCK"
5530 PLOT 12,3,10
5540 PLOT 12,4,10
5550 PLOT 6,6,CHR$(2)+"You have ran out of moves"
5560 PLOT 9,8,CHR$(6)+"Your final score is "
5570 PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:PRINT:P
RINT:PRINT
5580 PRINTSPC(14);SC;"points":GOSUB6150
5590 MO=55:SC=0
5600 PLOT5,12,CHR$(1)+"Do you want another go (Y/N)"
5610 GET K$
5620 IF K$="N"THEN CALL#F420
5630 IF K$="Y"THEN GOTO 740 ELSE GOTO 5610
6150 A$="66669886656"
6160 FOR J=1TO11
6170 X=ASC(MID$(A$,J,1))-48
6180 IF J=2ORJ=3ORJ=5THEN WAIT 40
6190 IF J=6ORJ=8ORJ=10THEN WAIT40
6200 MUSIC 2,2,X,0
6210 MUSIC 3,3,X,0
6220 PLAY 6,0,5,90:WAIT10
6230 NEXT J
6240 WAIT100:PLAY 0,0,0,0
6250 RETURN
7000 REM ****************************
7010 REM **                        **
7020 REM ** author - Karl Hardman. **
7030 REM **                        **
7040 REM ** age - 15.              **
7050 REM **                        **
7060 REM ** Magherafelt  N.Ireland.**
7070 REM **                        **
7080 REM ** date - 18th April 1984.**
7090 REM **                        **
7100 REM ****************************
```

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Venture into the unknown

Here's a selection of the latest adventure games which have been tried and tested by our trusty panel

Avalon
48K Spectrum
£7.95

56b Milton Trading Est, Milton, Abingdon, Oxon OX14 4RX

Avalon, it transpires, is a hill on an island, and this graphic adventure game is all about exploring the rooms set into the hill. The character who you guide throughout the adventure is your astral projection, Maroc, which floats about in response to your commands.

Occasionally you may come across a "servant" spell which gives you control over a sprite. As the name suggests, the servant sprite assumes a lot of the hard work for you, opening doors, picking up objects etc.

Although I haven't been through them all, there are eight levels, and the eighth level is your ultimate goal. This is where the Lord of Chaos hides — the real villain of the plot. Once you get the hang of it guiding the astral projection is easy, although some of the doors may be locked, in which case you will need a key. Of course, various adversaries are waiting to pounce on you, and deplete your energy level.

If you like graphic adventure games with a challenge then I think you will like this. **B.B.**

instructions	100%
playability	90%
graphics	100%
value for money	75%

★★★★★

Faerie
48K Spectrum
£1.75

8th Day, 18 Flaxhill, Moreton, Wirral L46 7UH

If you thought good software at a cheap price was impossible, try this! Faerie is a text adventure written with The Quill. It comes with excellent instructions on the B-Side, explaining the scenario and what an adventure is.

The game is described as a surrealistic fantasy, and is a little similar to Alice's Wonderland. You start with strange lights dancing around you. You wave the aspen wand and you are in fairy land. Wander through fields, talk with characters and try to unravel the mystery of this Midsummer Nights Fantasy. Descriptions are long and atmospheric: a bee flies by from time to time or a little voice sings in your ear. However, the sandman might send you a-dreaming or you may end up buried alive.

8th Day say the game is advanced difficulty. It is also charming and a lot of fun. It made me laugh. There is a save option, but if you want help you will have to send for a hint sheet. A wonderful game. Buy it, you won't be disappointed. **P.S.**

instructions	100%
playability	90%
display	80%
value for money	100%

★★★★★

Fantasia Diamond
32K BBC/ Electron £7.95

Hewson Consultants, 56b Milton Trading Est, Milton, Abingdon, Oxon

This is a text-only adventure game and this cassette can be used by both BBC and Electron. There is little doubt that it's one of those fantasy based games which, of late, appears to be less popular than they were a couple of years ago. It has all the usual ingredients: text, puzzles, problems and, thank goodness, a good portion of humour.

What is rather special is its excellent vocabulary of over 300 words and its use of full sentence decoding. This means that you can give double instructions or highly specific instructions within the one command.

I have to admit that I find this much more satisfactory than the usual noun/verb combination and feel that this is one feature which weighs heavily in its favour.

There are a number of poor features however, the most important being the screen presentation. This is quite plain and although it has a split screen, I don't feel that this is very well used. I really cannot see why the room descriptions should scroll off the screen, meaning that you have to keep using the LOOK command. **D.C.**

instructions	95%
playability	80%
graphics	55%
value for money	75%

★★★★

Eureka
CBM 64 £14.95
(£16.45 disc)

Eureka is a gigantic adventure game. It spans five eras from prehistoric times to modern. Each is a game in itself but they are also linked by a common theme.

The screen in the adventures is split into two. The upper part has some very good hi-resolution pictures on it, while the lower part contains a description of the current situation. The music introducing each game is very authentic for the period and the sound effects used during the game are also good.

I played part of the Roman Italy adventure though I didn't get very far. I came across Androcles and the lion and removed the thorn from the lion's paw. Whenever I came back to the lion he'd got another thorn in his paw; very strange.

I enjoyed Celtic Britain more. I fought a wolf barehanded, and won. Eventually I got shot by a gun. The Celts were always an advanced race.

These adventures are good, but spoilt by the parsing which allows only a limited response to situations. The game comes with a book of associated riddles and clues and the first person to solve Eureka before 31st December 1985 wins £25,000. **L.C.**

instructions	50%
playability	60%
graphics	70%
value for money	60%

★★★

Ice Station Zero
48K Spectrum
£1.75

8th Day, 18 Flaxhill, Moreton, Wirral L46 7UH

Ice Station Zero is an all text adventure written with the Quill. It has excellent on tape instructions. A madman is holding the world at ransom! Only you can save us by battling through the icy dangers of the artic and reaching his secret hideout. You will have to take on such obstacles as glaciers, yeti, snow ploughs and polar bears, plus the inevitable sub zero temperatures.

Descriptions are long and atmospheric. You start outside a snow covered tent. Wolves howl across the frozen plains. There are plenty of locations to explore, and many objects to experiment with. There is quite a large vocabulary. Help gives the response 'You're a bit off the beaten track to expect help around here!' — the author has a sense of humour.

A hint sheet is available from Eighth Day, although the difficulty rating is 'for beginners'. There are still a few tricky problems to solve. How do you get the primus stove for killing the yeti?

I enjoyed playing this game. It is addictive and fun, and at such an incredible price the value is hard to beat. **P.S.**

instructions	100%
playability	85%
graphics	80%
value for money	100%

★★★★★

How to protect your programs

Software piracy is a threat to all programmers. There are a number of tricks of the trade which will help make life harder for the software thief — Allen Webb lets you in on some of the secrets

One of the biggest problems faced by programmers is software piracy. Consequently, a number of tricks are used to foil the copying and examination of software. I thought it might be of interest to describe some of the commoner wheezes.

First the bad news. It is impossible to prevent copying of cassette-based software since audio methods can be used. Assuming that the opposition is not going to use such methods, there are several ways with which you can protect your software.

The most impregnable program is obviously machine code. It can, however, be disassembled — or can it? There are certain op codes, not implemented on the 6502, which, when used, perform simple jumps. Normal disassemblers cannot handle non-standard op codes, so this is one way of keeping prying eyes out of your code.

Many programmers use BASIC which, unfortunately, is easier to look at. The secret is to use a tweak to prevent listing of the program by some means. One common method is to disable the RUN/STOP and RESTORE buttons to prevent access to the routine. To work effectively, however, such measures must be used with an auto-run tweak.

OK, so how do we disable the vital keys? The usual tweak is:

POKE 788,194

This moves the IRQ vector so that the RUN/STOP is not checked. It has the disadvantage that the jiffy clock is stopped and it cannot be used if you have an add-on cartridge activated. A better trick is:

POKE 808,144

This moves the "Test STOP" vector and has no nasty side-effects (except preventing listing ...which we want anyway). The RESTORE button can be sorted with:

POKE 37150,2

OK, you've sorted the keyboard. Next come the anti-list tricks. The stop test vector tweak is one way. The other is:

POKE 775,200

This moves the 'print tokens' link. I've often heard that changing the BASIC link bytes is a good technique. This will certainly make the program unlistable, but since BASIC is rebuilt on loading, this method has limited value.

Auto-running a program is a handy technique. Some software uses a machine code routine which sits in page 3 and alters the BASIC warm start and thus force auto run. I won't give details since it would be unfair on the software houses concerned. A simpler method is a small machine code routine (or BASIC using invisible lines) to push 131 (the character string for SHIFT/RUN STOP) into the keyboard buffer

e.g. POKE 631,131: POKE 198, 1

This will load and run the next program on the tape. The best way of making software difficult to crack is to use several programs each running the next. You would normally check in some way that the previous program has been run. e.g.

Program 1 machine code kills RUN/STOP and RESTORE, prints a code in RAM and auto runs program 2.

Program 2 BASIC checks that the correct code from program 1 is in RAM and resets with SYS64802 if program 1 has not been run.

Add a colon to the end and type REM. Type two sets of quotes and press insert once for every character in the line, including the quotes (in this case 17 times). Press delete the same number of times and press return. Now list the line.

It then runs with loading of further prgrams as required.

It then runs with loading of further programs as required.

This sort of scheme breaks down if program 2 is loaded but not run. Clearly you must hide the lines which check for the hidden code in some way. Enter the invisible line. This type of line uses deletes embedded in a REM to erase itself on listing. A message is often added to assist the deception. Consider the line

10 SYS(1024)

One last problem is to prevent copying. The tweak is an invisible character at the front of the name under which the program is saved. Any non-printing character string will do, e.g.

```
0$ = CHR$(2)+"filename":
SAVE 0$
```

On loading, location 833 will contain the first character. You can therefore test to see if the program name is correct. This will trap any manual copying made by the inexperienced.

These techniques cannot guarantee protection, but they make life rather difficult.



Tried and tested

This Simon-type program is an old favourite — with several original features. You can now win and choose your level of difficulty in this game by Brian Lewis

This Simon-type program is an old classic which has a number of innovative features. For example you can select your level of difficulty, and your choice spans from 1 to 99. This means that you can play as fast as you like.

Once the game starts, you are in command and the computer prompts you between operations. There is no time limit so you are in charge, not your micro.

One original feature is the fact that you can win. Your goal is to get a sequence of 20 correct and as you come closer to your goal, so the rating at the end of the game increases. Your on-screen scoreboard shows you how many you have got right.

When the game begins, you are asked to press the fire button on joystick 1 or the copy key. This decides your interface selection with Simon. Choose your level of difficulty and then play to win.

Variables

n,m,l count variables in FOR... NEXT loops. If first level, variable = n. If two nested, variables are m,n; if three: l,m,n. See lines 350-370
length length of note sequence
up, down, left, right key codes for these actions: use either joystick or cursor keys
pause empty loop for time delay
off key not pressed or joystick moved
off key not pressed or joystick not moved
answer box number in test
number box number in playback
colour, note, box array for each box number/note sequence
praise$ rating given at end of game
ok$ proceed message (fire or copy)
ok code for fire or copy (proceed)
fire code for fire button
copy code for copy key
level level of difficulty (1 to 99: 1 is fastest, 99 is slowest)

How it works

100 GOSUB initialisation
110 GOSUB play sequence
200-330 input guesses, process them
210 GOSUB proceed and score routine, GOSUB title routine
220-320 FOR... NEXT loop to read each key, flash square and make associated sound. If sequence incorrect, jumps to 'wrong answer' routine 400
Note: in Amstrad BASIC, it's OK to jump out of FOR... NEXT loops: see F.3 of Amstrad's Concise BASIC Specification Manual for details
330 checks if game has been won
340-390 game won routine. Flashes all boxes and sounds in a kaleidoscope effect. Resets colours. GOSUB 1200 proceed routine, GOSUBs part of initialisation routine 890, then goes to 110
400-470 if answer wrong, plays correct sequence and gives rating
500-600 increases sequence length by one and then plays full sequence
530-600 play sequence
700-1010 initialisation
700 defines all variables used as integers, mainly to save computer memory
710-740 sets up arrays for colours and notes used in data statement at 1400
760-850 sets up all text windows, links them to associated papers and sets all colours used in the game
860 redirects all print statements to central window
870-880 draws screen
890-900 prints message for choosing input method, either fire button or copy key
910 seeds random number generator so each sequence will be different and initialises some of the variables used in the program
920-930 waits for fire button or copy key to be pressed and sets message printed by proceed routine (1200) and variables for up, down, left right etc accordingly
940-1000 allows user to set game level (1 to 99), 1 being the fastest
1100-1130 prints title in central window
1200-1240 prints score and waits for user to press fire button/copy key as defined at 930
1300-1310 routine which waits until user takes finger off button before proceeding. In this way, slow operators do not skip program segments
1400 data for colours and sounds
1410 data for ratings

```
99     REM    Amstrad Simon              1/8/84        David & Brian Lewis
100 GOSUB 700
110 GOSUB 500
199    REM    Input guesses & process them
200 PEN 6:CLS:LOCATE 2,2:PRINT "ENTER ":PRINT " YOUR  ":PRINT " GUESS"
210 GOSUB 1200:GOSUB 1100
220 FOR n=1 TO length
230    IF (INKEY(up)=off AND INKEY(down)=off AND INKEY(left)=off AND INKEY(right
)=off) THEN 230
240    IF INKEY(up)=press THEN answer=1
250    IF INKEY(down)=press THEN answer=4
260    IF INKEY(left)=press THEN answer=2
270    IF INKEY(right)=press THEN answer=3
280    INK answer,colour(answer):SOUND 1,note(answer),999,7
290    IF (INKEY(up)=press OR INKEY(down)=press OR INKEY(left)=press OR INKEY(ri
ght)=press) THEN 290
300    INK answer,9:SOUND 129,0
310    IF answer<>box(n) THEN 400
320 NEXT n
330 IF length<20 THEN 110
339    REM    Won game !!
340 PEN 8:CLS:LOCATE 1,3:PRINT "PERFECT":PRINT:PRINT "ANSWER"
350 FOR l=1 TO 5:FOR m=0 TO 26
360    FOR n=1 TO 5:INK n,m+n::NEXT n:SOUND 1,m*9.8:SOUND 2,255-m*9.8
370 NEXT m,l
380 FOR n=1 TO 4:INK n,9:NEXT n
390 INK 5,0:GOSUB 1200:GOSUB 890:GOTO 110
399    REM    Wrong answer & correct sequence
400 PEN 7:CLS:LOCATE 2,2:PRINT "WRONG":RESTORE 1410
410 IF length=1 THEN praise$=" SILLY":GOTO 450
420 FOR n=0 TO length/3-1
430    READ praise$
```

```
440 NEXT n
450 PEN 6:LOCATE 1,5:PRINT praise$:LOCATE 2,6:PRINT "SCORE":GOSUB 1200
460 PEN 6:CLS:LOCATE 1,3:PRINT "CORRECT":PRINT "PATTERN"
470 GOSUB 530:GOSUB 1200:GOSUB 890:GOTO 110
499    REM    Play sequence
500 PEN 6:CLS:LOCATE 1,2:PRINT "FOLLOW ":PRINT " THIS  ":PRINT "PATTERN"
510 length=length+1:box(length)=RND(1)*3+1
520 GOSUB 1200:GOSUB 1100
530 FOR n=1 TO length
540    number=box(n)
550    SOUND 1,note(number),999,7:INK number,colour(number)
560    FOR pause=1 TO level*100:NEXT pause
570    SOUND 129,0:INK number,9
580    FOR pause=1 TO level*10:NEXT pause
590 NEXT n
600 RETURN
699    REM    Initialisation & key definitions
700 DEFINT a-z
710 DIM box(20),note(4),colour(4)
720 FOR n=1 TO 4
730    READ colour(n),note(n)
740 NEXT n
750 MODE 0
760 BORDER 0:INK 0,0:CLS
770 WINDOW #1,7,13,1,8
780 WINDOW #2,1,6,9,17
790 WINDOW #3,14,20,9,17
800 WINDOW #4,7,13,18,25
810 WINDOW #5,7,13,9,17
820 FOR n=1 TO 5
830    INK n,9:PAPER #n,n:CLS #n
840 NEXT
850 INK 5,0:INK 6,4:INK 7,8:INK 8,26
860 WINDOW SWAP 5
870 PLOT 0,127,8:DRAW 639,127:DRAW 639,272:DRAW 0,272:DRAW 0,127
880 PLOT 190,399:DRAW 416,399:DRAW 416,0:DRAW 190,0:DRAW 190,399
890 PEN 6:CLS:GOSUB 1300:LOCATE 2,2:PRINT "PRESS":LOCATE 3,6:PRINT "OR"
900 PEN 7:LOCATE 2,4:PRINT "COPY":LOCATE 2,8:PRINT "FIRE"
910 RANDOMIZE TIME:length=0:fire=76:copy=9:off=-1:press=0
920 IF (INKEY(fire)=off AND INKEY(copy)=off) THEN 920
930 IF INKEY(fire)=press THEN ok$="FIRE":ok=fire:up=72:down=73:left=74:right=75
    ELSE ok$="COPY":ok=copy:up=0:down=2:left=8:right
=1
940 PEN 6:CLS:LOCATE 2,4:PRINT "LEVEL":level=10
950 PEN 7:GOSUB 1300:LOCATE 2,8:PRINT ok$:PRINT "UP,DOWN"
960 WHILE INKEY(ok)=off
970    IF INKEY(up)=press THEN level=level+1:IF level>99 THEN level=99
980    IF INKEY(down)=press THEN level=level-1:IF level<1 THEN level=1
990    PEN 7:LOCATE 2,5:PRINT level
1000 WEND
1010 RETURN
1099    REM    Title screen
1100 CLS:PEN 7
1110 LOCATE 1,4:PRINT "AMSTRAD"
1120 LOCATE 2,6:PRINT "SIMON"
1130 RETURN
1199    REM    Proceed routine & score
1200 GOSUB 1300
1210 PEN 7:LOCATE 2,8:PRINT ok$
1220 PEN 9:LOCATE 2,9:PRINT length;
1230 IF INKEY(ok)=off THEN 1230
1240 RETURN
1299    REM    Fingers off !
1300 IF INKEY(ok)=press THEN 1300
1310 RETURN
1399    REM    Colours, sounds & ratings
1400 DATA 24,100,6,300,2,500,19,700
1410 DATA " POOR"," SO-SO","AVERAGE"," GOOD","V. GOOD"," SUBERB","  ACE"
```

Off the wall

These games have a touch of novelty, an element of originality. Read our reviewers' thoughts before you buy

Son of Blagger 32K BBC £7.95

Alligata, 1 Orange St, Sheffield

Blagger was one of my favourite games of last year and, as it also proved popular with others, Alligata has brought out a sequel. The storyline is to some extent the same as in Blagger except that there is a slight twist.

Here, rather than finding money by collecting keys, the purpose is to find a route around the complex National Security Headquarters. There are still keys to find and collect but these are incidental to the mental activity of working out a safe route.

The twist is that unlike normal ladders and levels games, in this one you are only allowed to see a small section of the building at any one time. You have to build up your mental maps and then try them out by trial and error.

There are a number of passive and active guards within the building, ranging from moving floors to killer owls. My particular favourite is the deadly vegetables but then I never did eat my greens as a little boy. A hit. **D.C.**

instructions	65%
playability	90%
graphics	85%
value for money	85%

★ ★ ★ ★

Jinn Genie CBM 64 £8.95

Micromega, 230-236 Lavender Hill, London SW11 1LE

Once upon a time I'd have gone overboard about a game like this. But the yardstick by which games are rated nowadays has improved so much that I was impressed, but not overwhelmed.

there are enough variations on standard themes in the three screens tomake it interesting. On the first you pilot a magic carpet. On the second you scramble round trellis-work and window ledges, and on the third it's stairways between different floors.

This sequence repeats with the action getting faster and more furious as you go.

There's a keyboard/joystick choice, clear instructions, a pause key, but no high score table and fast load.

The feature that I found most novel was the dual movement control on screen one. Our hero on the magic carpet is armed with a Shere of Oblivion. Normally you move him, but pressing fire switches control to the sphere enabling you to intercept and destroy your attackers. As a result you have to develop a balance between dodging and attacking in quite a unique manner. Perhaps it's worth buying just for that. **B.J.**

instructions	88%
playability	82%
graphics	85%
value for money	70%

★ ★ ★ ★

Magic Micro Mission CBM 64 £7.95

Quicksilva, PO Box 6, Wimborne, Dorset BA21 7PY

Apparently this two-part game is based on graphics used in a TV programme produced by Central. I haven't seen the programme, but if the game is anything to go by then I haven't missed much.

The first part of the "mission" is to participate in an uninspired and rather dull shoot-the-aliens game with black blobs meandering about a tiny screen while the background pluses in technicolour. Although technically quite good, it remains a tedious task.

In part two, you are invited to steer the robot Zog through a printed circuit maze while being pursued by RAM chips and two — or is it four? resistors. The aim is to pick up "faulty ROM chips" off the board and cart them back to the mother ship (sic). Again quite smooth graphics but the game lacks originality.

This game would be best suited to younger players as it lacks the pace and style dedicated game-players look for. The sound is not too impressive either, although colour and smooth animation are handled professionally. Judging from the quality of some other Quicksilva games, this is a bit of a let-down. **D.A.**

instructions	40%
playability	45%
graphics	65%
value for money	45%

★ ★

Strontium Dog and The Death Gauntlet CBM 64 £7.95

Quicksilva, Palmerston Park Hse, 13 Palmerston Rd, Southampton SO1 1LL

This is yet another of those cassettes with bright green labels and leader tape which we associate with Quicksilva. I must admit to liking their cassette packaging although it is wasted on a game like this one.

The object of the game is to guide your man through a long planet surface, avoiding the various beasts, rocks, etc. You have a facility to fire at anything which gets in your way — this helps play quite a lot.

The screen layout trys to give a 3D type of effect. This is fine except that each object moves as if it is flat and ruins the idea of adding depth. A radar at the bottom of the display shows the area you are currently in.

This is obviously meant for children and not advanced joystick-destroying games freaks. The one thing which I find slightly disturbing here is that the cassette has two extremely sharp prongs sticking out of it which can easily cut any unaware fingers. **K.I.**

instructions	30%
playability	45%
graphics	60%
value for money	50%

★ ★ ★

In Search Of Angels 48K Spectrum £1.75

8th Day, 18 Flaxhill, Moreton, Wirral L46 7UH

In this budget priced, text only adventure, you play the part of Cobol, a James Bond type secret agent. You must solve the mystery of a stolen communications satellite and the connected death of a C.I.A. agent. You start in London — you can either go by taxi to Heathrow airport (and catch a plane to Brazil — the only place you can go to from London) or go to the British embassy. Here, your boss Omega will give you a Ferrari with built in guided missiles. This is necessary in Brazil as a variety of people will try to kill you.

This is not of the same standard as other 8th Day adventures. The game leads you to doing what the author wants. You have no choice. You cannot explore very much, which is half the fun of adventures. You often cannot go back to previous locations, indicating poor use of The Quill with which it was obviously written.

The game is too easy and I do not recommend it even at the cheap price. Try another game from the same series. The instructions are excellent. **P.S.**

instructions	100%
playability	50%
graphics	80%
value for money	60%

★ ★ ★

Building on good foundations

Build a hotel on an island paradise, avoid rockfalls... it's a hive of industry

Catastrophes
CBM 64 £6.95

Mirrorsoft, Holborn Circus, London EC1P 1DQ

I must confess to having been put off this game by the difficulty I had in loading it. My poor Commodore does not like the Speedy Loading system it employs. A game would have to be very good indeed to compensate for such severe loading problems. This one just doesn't make it.

The objective is to build a hotel on an island paradise, by picking up bricks with a helicopter, then placing them in position. Earthquakes, hurricanes, floods or other disasters undo much of your good work. The building targets you set are uncomfortably high, and my chances of meeting them seemed remote.

The instructions and the demonstration game, suggest that the skill lies in correctly positioning your bricks so as to minimise the damage done to the building, but I found that to be the lease of my worries — the hard part was manoeuvring the helicopter into position to pick the bricks up: a frustratingly tricky task.

I liked the demonstration game, and the fact that two people can play at once if you have two joysticks, but the game itself has limited appeal. **M.N.**

instructions	60%
playability	50%
graphics	75%
value for money	50%

★ ★ ★

Mr Ee
32K BBC £6.95

Program Power, Sheepscar St, South Leeds

Of all the games I have played recently this is the one at which I am most successful, but, rather than give me the impression that this must be a good program, I am of the opinion that it doesn't contain the addictive element which a great game requires.

Copying an arcade game which has a similar name, the aim is to wander around underground eating cherries. You are a wizard, thank goodness, and have a crystal ball to bounce against the umphs, diggers and maras which chase you, after emerging from their central base. The umphs follow the tunnels, the diggers take the fastest path possible and the maras only pursue you if you eat the fruit left at the base. Added to this are bonus letters which you must capture and which give you an extra life while falling apples kill the chasers.

Graphics are good and clear but the lack of a high score chart is surprising. Overall, just a little too tame for most arcade freaks I feel. **D.C.**

instructions	80%
playability	70%
graphics	75%
value for money	70%

★ ★ ★

Builder Ben
CBM 64 £1.99

Scorpio Gamesworld, 11 Fennel St, Manchester M4 3OO

The most astonishing thing about this game is its low price, considering that it is a professionally written good quality game.

The scenario is that you take the persona of Builder Ben, a small hard-hatted figure who has to scale a brick wall to collect tools with which to build houses. Intent on thwarting his plans are his foreman who throws rocks at him, a green brick-beetle which flies about, and a pink one-ton weight. Each is animated very well in sprite colours.

Having successfully gathered three tools, Ben goes on to build a house. On a coloured scaffolding, he scales ladders and collects bricks which drop down to form rather dubious dwellings. Again the militant tools march about intent on his literal downfall. This time help in the form of shields protect him from the marauding hardware.

Builder Ben is a well-written game with good graphics and passable sound. Even at a standard price it would be fairly good, but its low cost makes it an offer you can't refuse. I would probably get bored with it eventually but it's well worth a try. **D.A.**

instructions	60%
playability	65%
graphics	65%
value for money	95%

★ ★ ★

See-Saw
CBM 64 £7.95

Quicksilva, Palmerston Park Hse, 13 Palmerston Rd, Southampton SO1 1LL

Quicksilva is insulting our intelligence by producing a game like See-Saw. The principle is so simple and has absolutely no lasting interest at all.

The screen consists of two towers, one at either side, and a wall of blocks between them. At the bottom of the screen is a see-saw.

An Evil Lord walks from side to side at the top of the wall and pushes the blocks down on to the see-saw. If anything is on the other end it may get propelled upwards and over the wall. As objects fly up, green ghouls catch them. Once all the green ghouls have caught a block and are off the screen you should try to get over the wall to rescue the members of the brotherhood.

A fast-loading system is used to load the game — it seems quite effective and no problems occured.

A small point worth mentioning is that the cassette case supplied with the game has two extremely sharp edges on it; these are unnecessary and serve no function but could easily cut a child. **K.I.**

instructions	25%
playability	25%
graphics	60%
value for money	30%

★ ★

Felix meets the Evil Weevils
32K BBC £6.95

Program Power, Sheepscar St South, Leeds

This is a winner and what's more it has a measure of originality which is missing from many recent releases. Like the previous titles which feature Felix, you control a little man with a great propensity for falling over dead.

The aim is to rid the factory of the evil weevils which wiggle around the place at a surprising rate of knots. The factory is full of conveyor belts which take the product — ball bearings — from the site of their creation to the despatch department. Unfortunately the ball bearings are rather lethal and tend to shorten your life expectancy.

Added to this it is very easy to fall off a moving belt and this too is a rather terminal occurence. To help you there is anti-weevil spray (just enough in each can for one squirt), a lever to change the belt direction and oxygen bottles.

Graphics are great and very smooth, the screens are attractive and well laid out and the addictive magic of a winner is obvious. Watch out for the super-weevils which hide in the tubes! **D.C.**

instructions	85%
playability	100%
graphics	100%
value for money	95%

★ ★ ★ ★ ★

No.3 **QUICKSILVA Computing SECTION** LATEST NEWS

QUICKSILVA

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CHART ACTION

QUICKSILVA TOP 20 – SEPT 1984.

	NAME	MACHINE	PRICE
1	*Summer Games	– CBM 64 Cass –	£14.95
		Disk –	£19.95
2	*Ant Attack	– CBM 64 Cass –	£8.95
3	*Zombie–Zombie	– 48K Spectrum –	£6.95
4	*See-Saw	– CBM 64 Cass –	£7.95
5	Trashman	– CBM 64 Cass –	£7.95
6	*Strontium Dog	– CBM 64 Cass –	£7.95
7	*Battlezone	– 48K Spectrum –	£6.95
8	Gatecrasher	– Electron –	£6.95
9	*Magic Micro Mission	– CBM 64 Cass –	£7.95
10	Boogaboo	– CBM 64 Cass –	£7.95
11	Bugaboo	– 48K Spectrum –	£6.95
12	Fred	– CBM 64 Cass –	£7.95
13	Gatecrasher	– BBC Cass –	£6.95
14	Fred	– 48K Spectrum –	£6.95
15	Drum Kit	– BBC Cass –	£9.95
16	Ant Attack	– 48K Spectrum –	£6.95
	The Snowman	– 48K Spectrum –	£6.95
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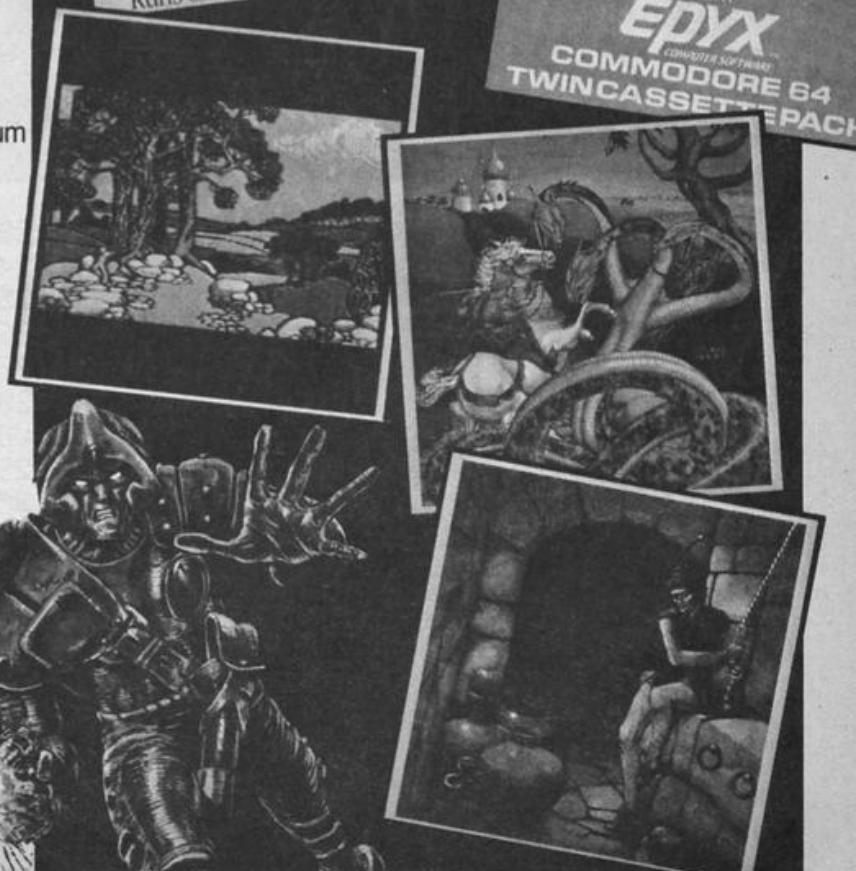
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Meteor

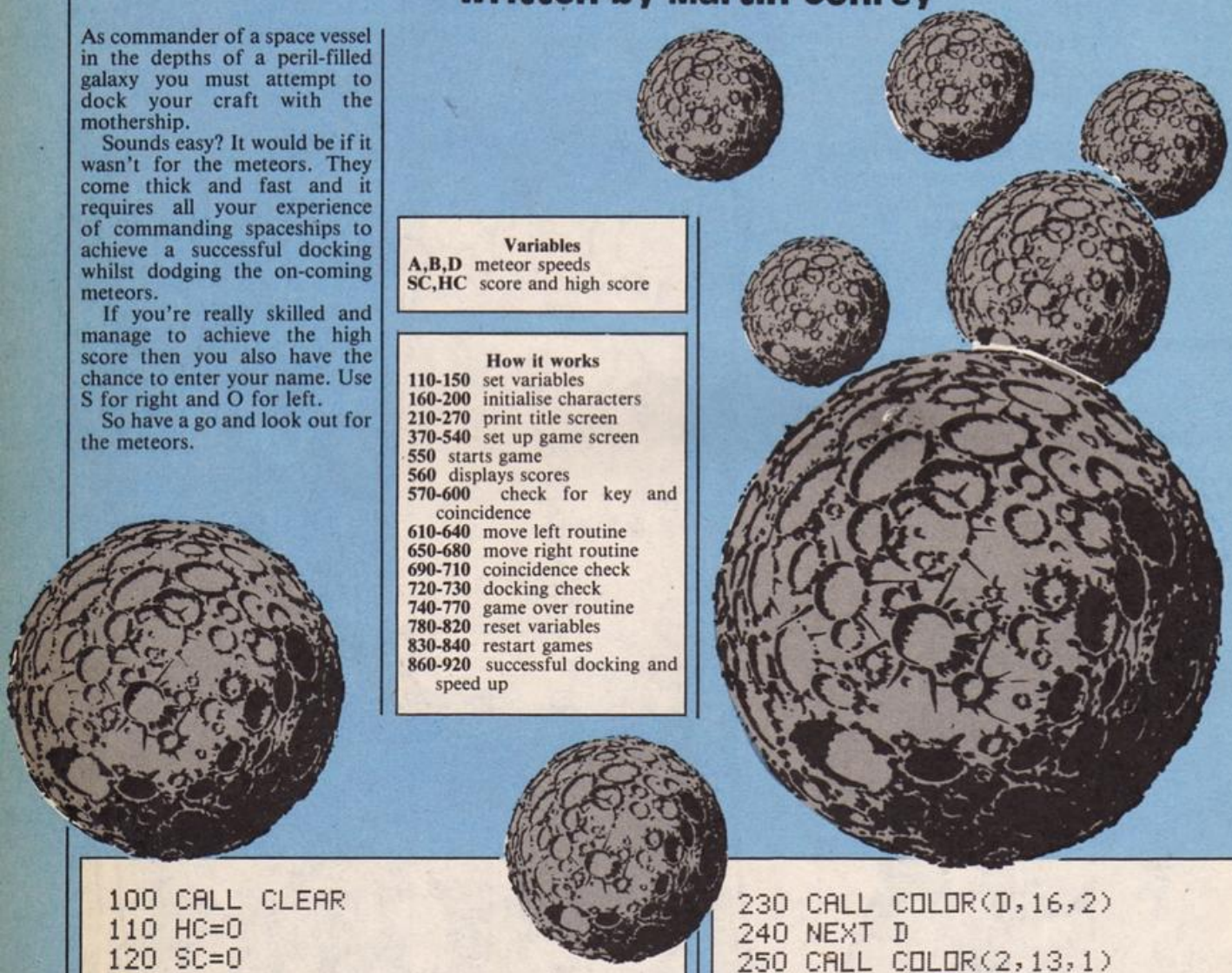
Dodge the meteors to dock the ship in this fast-moving game written by Martin Gohrey

As commander of a space vessel in the depths of a peril-filled galaxy you must attempt to dock your craft with the mothership.

Sounds easy? It would be if it wasn't for the meteors. They come thick and fast and it requires all your experience of commanding spaceships to achieve a successful docking whilst dodging the on-coming meteors.

If you're really skilled and manage to achieve the high score then you also have the chance to enter your name. Use S for right and O for left.

So have a go and look out for the meteors.



Variables

A,B,D meteor speeds
SC,HC score and high score

How it works

110-150 set variables
160-200 initialise characters
210-270 print title screen
370-540 set up game screen
550 starts game
560 displays scores
570-600 check for key and coincidence
610-640 move left routine
650-680 move right routine
690-710 coincidence check
720-730 docking check
740-770 game over routine
780-820 reset variables
830-840 restart games
860-920 successful docking and speed up

```
100 CALL CLEAR
110 HC=0
120 SC=0
130 D=18
140 B=15
150 A=10
160 CALL CHAR(99,"3C7ED57E3C")
170 CALL CHAR(42,"000814D3200000
00")
180 CALL CHAR(97,"00043A418EB24C
30")
190 CALL CHAR(98,"FFBDE7FF5AFFA5
5A")
200 CALL CHAR(96,"02020505")
210 FOR D=1 TO 12
220 CALL MOTION(#1,0,0)
230 CALL COLOR(D,16,2)
240 NEXT D
250 CALL COLOR(2,13,1)
260 CALL CLEAR
270 CALL SCREEN(2)
280 DISPLAY AT(2,6)BEEP:"METEOR
 ATTACK"
290 DISPLAY AT(4,12)BEEP:"BY"
300 DISPLAY AT(6,7)BEEP:"M.GOHRE
Y 1984"
310 DISPLAY AT(8,2)BEEP:"THE AIM
 OF THE GAME IS"
320 DISPLAY AT(10,4)BEEP:"TO DOC
K YOUR SPACECRAFT"
330 DISPLAY AT(12,3)BEEP:"WITH T
HE MOTHERSHIP BUT"
```

attack

```
340 DISPLAY AT(14,4)BEEP:"AVOID
THE METEORS!!!"
350 DISPLAY AT(17,4)BEEP:"PRESS
ANY KEY TO BEGIN"
360 CALL KEY(0,K,S):: IF S=0 THE
N 360
370 CALL CLEAR
380 CALL SCREEN(2)
390 CALL HCHAR(23,1,42,32)
400 CALL SPRITE(#28,98,3,1,120,0
,1)
410 CALL SPRITE(#1,96,14,170,120
)
420 CALL SPRITE(#2,97,7,10,10,0,
-A)
430 CALL SPRITE(#3,97,5,20,50,0,
B)
440 CALL SPRITE(#4,97,15,40,100,
0,B)
450 CALL SPRITE(#5,97,7,60,1,0,-
A)
460 CALL SPRITE(#6,97,5,70,10,0,
A)
470 CALL SPRITE(#7,97,15,70,50,0
,A)
480 CALL SPRITE(#8,97,5,130,1,0,
D)
490 CALL SPRITE(#9,97,7,130,100,
0,D)
500 CALL SPRITE(#10,97,15,140,50
,0,-B)
510 CALL SPRITE(#11,97,7,150,80,
0,A)
520 CALL SPRITE(#12,97,5,160,30,
0,-D)
530 CALL SPRITE(#13,97,5,50,1,0,
D)
540 CALL SPRITE(#14,99,12,90,1,0
,28)
550 CALL KEY(0,K,S):: IF S=0 THE
N 550
560 DISPLAY AT(24,1):"SCORE ";SC
 :: DISPLAY AT(24,12):"HI ";HC;"
-" :: DISPLAY AT(24,19):A$
570 CALL KEY(0,K,S):: CALL COINC
(ALL,C):: IF C=-1 THEN 720 :: CA
LL MOTION(#1,-7,0):: IF S=0 THEN
 690
580 IF K=68 THEN 650
590 IF K=83 THEN 610
600 GOTO 570
610 CALL MOTION(#1,-7,-7)
620 CALL COINC(ALL,C)
630 IF C=-1 THEN 720
640 GOTO 570
650 CALL MOTION(#1,-7,7)
660 CALL COINC(ALL,C)
670 IF C=-1 THEN 720
680 GOTO 570
690 CALL COINC(ALL,C)
700 IF C=-1 THEN 720
710 GOTO 570
720 CALL COINC(#1,#28,15,C)
730 IF C=-1 THEN 860
740 CALL SOUND(1000,-5,0)
750 CALL DELSPRITE(#1)
760 DISPLAY AT(12,8)BEEP:"GAME
 OVER"
770 DISPLAY AT(14,7)BEEP:"PRESS
ANY KEY"
780 D=18
790 B=15
800 A=10
810 IF SC>HC THEN 930
820 SC=0
830 CALL KEY(0,K,S):: IF S=0 THE
N 830
840 GOTO 360
850 GOTO 850
860 A=A+1
870 B=B+1
880 D=D+1
890 SC=SC+1
900 CALL SOUND(100,110,0)
910 CALL SPRITE(#1,96,14,170,120
,0,0)
920 GOTO 550
930 HC=SC
940 DISPLAY AT(13,17):"YOU RANK
No.1 ENTER YOUR
NAME"
950 ACCEPT AT(24,19)BEEP:A$
960 GOTO 820
```

Zaxxon
CBM 64 £9.95

U.S. Gold, Unit 10, The Parkway Ind Centre, Heneage St, Birmingham B7 4LY

This is the official version of this arcade classic for the CBM 64, and very classy it is too. The 3D graphics are excellent, showing your spacecraft, complete with shadow to enable you to judge its position accurately, flying over asteroid cities and through deep space. Sound effects are pretty good too.

I was immensely impressed by the load sequence. Now that fast-load systems are more or less standard on CBM games, U.S. Gold has gone one better to give you a title screen, signature tune — Stars and Stripes Forever — and countdown of the number of blocks remaining while the game loads.

The game itself is all that a good arcade game should be: simple enough not to demoralise beginners too much, yet sophisticated enough to challenge arcade aces. Once you have learnt to negotiate the first asteroid city successfully, you can go back and see how many more of the enemy gun emplacements, tanks and radar towers you can destroy. Having learnt how to fly through deep space dodging the enemy fighters, you can try your hand at shooting them instead.

My only regret is that it isn't British! **M.N.**

instructions	80%
playability	90%
graphics	100%
value for money	90%

★★★★★

Ant Attack
CBM 64 £8.95

Quicksilva, PO Box 6, Wimborne, Dorset BA21 7PY

This popular 3D maze game has been converted for the 64 from the original Spectrum version, and seems to have benefitted from the change.

For those hermits who don't know the game, the idea is to steer a boy or girl — your choice — through the 3D city of Antescer, a strangely abstract place of geometric solids, to rescue a member of the opposite sex trapped somewhere within. To hinder your attempts the city is crawling with deadly ants which chase and bite you. Twenty bites signals your being "eaten alive". You do however have a supply of bombs which are effective against the insects.

The graphics on this version are exceptional, with the facility to view the scene from four different angles. The city is drawn with crystal clarity, and the game itself is fast and challenging.

It requires some practice to get the best out of Ant Attack, but is is well worth it. My only criticism is that the sound is virtually non-existent, a probable carry-over from its Spectrum counterpart, and that the instructions are a bit limited. **D.A.**

instructions	40%
playability	80%
graphics	90%
value for money	75%

★★★★

It's war! Can you survive?

These games all have one thing in common — you're in a hostile situation with enemies around you

Storm Warrior
CBM 64 £7.95

Front Runner, K-Soft Distribution, 620 Western Ave, London W3

Front Runner describes this game as a "fast-moving graphics adventure". It has 12 screens and five levels of play, utilising a massive 58K of RAM. My opinion is that it is a total waste of time and thought just looking at it.

The screen is fairly dark although the occasional flash of lightning may appear in the background. The graphics are not of a very high quality. Most games look addictive to watch and have any viewers anxiety waiting for a go. While showing a friend Storm Warrior I was informed that it was boring — he didn't want a go either.

Play ranges from hitting an energy sphere around the screen and fighting off enemies to dodging boulders.

The instructions waffled on quite a bit and didn't get straight to the point. A mention of the last seven screens is made but you are not told what to do — perhaps the author got fed up playing after screen five and gave up.

I wasn't very impressed with this game and would not recommend it as fun or enjoyable to play. **K.I.**

instructions	20%
playability	30%
graphics	25%
value for money	20%

★

Sir Lancelot
Spectrum £5.95

Melbourne Hse, Castle Yard, Richmond TW10 6TF

Step back in time and become a knight in shining armour! You are Sir Lancelot and must explore twenty-four rooms of a castle. To reach the next screen you have to collect several flashing objects, by leaping about on platforms and up moving staircases. Out to stop you, of course, are a time timit, birds, dogs, pacmen and cooking pots with legs.

Here we have yet another arcade adventure. The important difference is that this game will run on any Spectrum. This is a remarkable programming achievement, but I wonder how many 16K owners remain. Indeed Sinclair are discontinuing advertising it soon anyway.

Still, the game is pretty good. The graphics are startlingly smooth, definitely up to standard, and very fast. The aliens are well defined although there are not very many varieties due to memory limitations.

Colour is very good, there is a wonderful opening tune, but why does it have to play the funeral march very slowly every time you lose a life? This mars the playability.

This is a good game, fast enough to be addictive, and a must buy for 16K owners. **P.S.**

instructions	95%
playability	80%
graphics	80%
value for money	70%

★★★★

Beach Head
48K Spectrum £7.95

U.S. Gold, Unit 10, The Parkway Ind Centre, Heneage St, Birmingham B7 4LY

This is the first game I have seen advertised as "all American software" and I hope it's not the last. Once loaded, you go through the usual preliminaries: redefine control keys (a good feature), choice of joystick, and skill level, etc.

For one or two players, this game begins with a map of the general area. A formation of dots shows the enemy fleet position, flashing dots indicate your position, while a flashing square indicates a hidden passage. Should you choose the passage, you must navigate rocks, mines and torpedoes.

My favourite is going straight to the enemy position. This pitches you into a battle against enemy bombers which take off from both ends of distant aircraft carriers. Your defence is a pair of guns in front of you which move left, right, up and down, and of course, fire. Altering the elevation will alter the range in a very realistic manner.

Having gone through that phase you then have a battle against enemy ships. The final phase is the battle for the beaches, against tanks. Very positive response to the keyboard controls, and a very addictive game. Super! **B.B.**

instructions	100%
playability	100%
graphics	100%
value for money	75%

★★★★★

How to use Atari operating system

This technical article by Frank O'Dwyer, shows you how to use your operating system to send and receive data. You'll need an Assembler/Editor cartridge

One of the things which beginners find most difficult when they write programs in assembly language is input/output, i.e. printing text to screen, reading from the keyboard or cassette, and so on. On some computers, you have to read books and magazines until you find out the address of a ROM subroutine which you can call to do the job you want to do. However, what happens if a new version of the ROM is brought out and your ROM routine is now at a different address? It's tough luck if your program was a best selling game, as it won't run on the new ROM.

Some computers, notably Atari and Commodore, get around this problem by featuring a central operating system to take care of input/output. On such machines all you need do is connect a 'channel' to the device of your choice (say the screen). Then you send or receive characters using that channel, and the central operating system makes sure that these characters are sent to (or come from) the appropriate device (the screen in this case).

The beauty of this system is that you can write a program without regard to where its input will come from, or where its output will go. Once your program (say it's a word processor) is written it's simply a matter of connecting the channels to the appropriate device (so your output may go to either screen or printer, and your input may come from either keyboard or disc, for example).

This article explains how to use the Atari's central operating system (called CIO, for central input output) to send and receive data to and from devices (screen, cassette, etc.) from assembly language. Since most of you will already be familiar with Atari BASIC, let's use that as a starting point. You should note, however, that CIO is not a part of BASIC (in fact it is quite possible to use CIO without BASIC or any other cartridge in place). There is, however, a great similarity between using BASIC's PUT and GET commands and the way CIO works. This isn't surprising really, since BASIC uses CIO for these commands!

Suppose you wanted to translate the following BASIC to assembley language:

```
10 CLOSE #1: OPEN #1,8,
   "E:": REM OPEN A
   CHANNEL TO THE
   SCREEN EDITOR
20 PRINT #1;"SOME
   TEXT.": REM PRINT A
   STRING TO THE
   SCREEN
30 CLOSE #1: REM CLOSE
   THE CHANNEL SINCE
   WE'RE FINISHED
```

The code to CLOSE a channel is given in Listing 2, but first look at Listing 1 and Table 1. Listing 1 is the start of the assembly language equivalent to the BASIC program and defines the important constants for use with CIO. The entry point for CIO is $E456. Table 1 shows the command codes for the operations CIO can perform (close channel, open channel, put characters, etc). These are the same as BASIC's XIO command values, and it's worth looking up the BASIC manual for clarification (especially on the FILL command).

Line 1080 of the code to CLOSE a channel (Listing 2) designates the channel in use ($10 denotes channel one, $20 channel two, $30 channel three, etc). It is essential that the X register is used for this since CIO expects the channel number in the X register. Line 1090 loads the accumulator with the command code for 'close channel' and line 1100 stores this in the command code location for channel 1. Line 1100 actually calls CIO to close the channel.

Now we need some code to OPEN a channel. Listing 3 does this. Again, the X register is loaded with the channel number ($10 since we are using channel 1). Line 1140 loads the accumulator with the command code for 'open channel' and line 1150 stores it in the command code location (where CIO will look for it). Lines 1150 to 1190 store the '8' and '0' from OPEN #1,8,0,"E:" into the special locations reserved for this purpose.

Designating the device name ("E:") is a little more tricky. First, we must set up the string "E:" in memory. This will be done later on in the program; for now assume that the place where this happens is labelled NAME in the Assembly language. Next, we must store the low and high bytes of the address of this string in the special CIO locations used for this purpose. Lines 1200 to 1230 do this. Finally, line 1240 calls CIO to do the OPEN.

Finally, we must PRINT the string "SOME TEXT." to the channel and close the channel again. Listing 4 contains the assembly language to do this. As always, the X register is loaded with the channel number (line 1260). Lines 1270 and 1280 instruct CIO to 'Put a text record'. This requires some explanation. A text record differs from a binary record in that it may be terminated by a carriage return (character code 155). With a binary record, exactly the number of characters you request are output from your string, so if you say there are 20 characters in your string then 20 characters will be output regardless of how many carriage returns are present.

With a text record, if you say there are 20 characters in the string then *up to* 20 characters will be output, with output stopping if there is a carriage return in the string. It is often handy to say there are 65535 characters in a string, and to terminate it with a carriage return, since it saves you having to count the characters.

Lines 1290 to 1320 store the address of the string (or text record) into the buffer address locations used by CIO, while lines 1330 to 1350 store 65535 as the string length (by storing a 255 as both high and low byte, giving the maximum number that two bytes may hold, 65535, or 255*256+255). As explained above, the string is not really 65535 characters long, but this doesn't matter since we will terminate it with a carriage return.

Finally, line 1360 calls CIO to do the donkey work of outputting to the string. Lines 1380 to 1410 close the channel as before. The BRK command is simply to return control to the monitor when the program finishes if you are using the Atari Assembler/Editor cartridge. It should have a similar effect with any monitor program for machine language. If you want to try the example out just assemble it to page 6(* $600) and type the following commands while in the Assembler/Editor cartridge:

BUG (to enter monitor)
C600 (to run machine language)

The example program sends the string to the screen editor device ("E:"), but it is just as easy to send it to cassette ("C:") or a screen text mode ("S:"). Simply change the device name string to "C:" or "S:", or any other device name as appropriate.

To input data from a device, use the same approach, except instead of giving CIO an address of a string to output you give it the address of a memory area where you want CIO to put the characters it gets from the device. Naturally, you also use the command codes for "get text record", etc. rather than the codes for "put text record", etc. Also, you would use a 4 isntead of an 8 when translating OPEN #1,8,0,"E:", indicating that you want to do input instead of output.

In fact, the OPEN command (and its assembly language equivalent) allows you to do more than select whether you want INPUT or OUTPUT. The parameters AUX1 (corresponding to the 8 in OPEN #1,8,0, "E:") allow you to specify options on a particular device. For example, if you are using the screen ("S:") then AUX2 lets you specify the graphics mode you want to use, allowing you to switch graphics modes from machine language! See Table 2 for a complete list of effects possible with AUX1 and AUX2.

Finally, a few miscellaneous notes on using CIO. When you call CIO, (using JSR CIO) the case may arise where the operation you want to do is

impossible (say a tape won't load, or the cursor has gone out of range on the screen). In this case, BASIC would give you an error message.

Machine language has no error messages, however, so CIO will return a 'status code' to you in the Y register. This code is the same as the error number BASIC would give you (these are listed in the BASIC manual), so for example if the cursor went out of range then Y would contain 141, for ERROR 141. This gives you a way of error checking — especially useful when working with disc or cassette. Note that error codes are greater than 127, so that you can test for errors using the 6502's BMI instruction.

Command codes 7 and 11 (put/get character) are often useful. To use them, store 0 in the string length locations. To PUT a character, load the accumulator with the character you want to output and JSR CIO. To GET a character, JSR CIO and the character will be in the accumulator upon return.

When working with graphics modes (as opposed to text modes) you are not sending characters to a device. Rather, you are sending COLOUR data to the screen. So sending a 2 to the device will cause the next PLOT location to be PLOTed. This is similar to writing in BASIC, COLOUR 2: PLOT X,Y except that you can't easily decide X and Y. If you need to plot a particular X,Y co-ordinate then use locations 84-86. Location 84 holds the next Y co-ordinate to be plotted (or printed) while 85 and 86 hold the X co-ordinate in low byte/high byte form.

Simply store the co-ordinates you want to PLOT in these locations, then send the colour you want to plot in to the device using CIO. Upon return, the X co-ordinate will have been automatically incremented so that the next time you plot you may not need to alter the X co-ordinate. Note also that sending a 125 to the screen will clear it.

Listing 1
Setting up constants

```
1000 ;
1010 COMMAND=$342 ;IOCBO COMMAND LOCATION
1020 COMMAND=$344 ;IOCBO BUFFER ADDRESS
1030 BUFLEN=$348 ;IOCBO BUFFER LENGTH
1040 AUX1=$34A ;IOCBO AUXILLIARY BYTE 1
1050 AUX2=$34B ;IOCBO AUXILLIARY BYTE 2
1060 CIO=$E456 ;CIO ENTRY POINT
```

Listing 2
Routine to close a channel

```
1070 ;
1080 LDX #$10 ;select channel one
1090 LDA #12 ;code to close a channel
1100 STA COMMAND,X ;store in command location for channel 1
1110 JSR CIO ;call CIO to close channel
```

Listing 3
Routine to open a channel

```
1120 ;
1130 LDX #$10 ;select channel one
1140 LDA #3 ;code for open channel
1150 STA COMMAND,X ;store in command location for channel 1
1160 LDA #8 ;'8' in OPEN #1,8,0,"E:"
1170 STA AUX1,X ;store in memory
1180 LDA #0 ;'0' in OPEN #1,8,0,"E:"
1190 STA AUX2,X ;store in memory
1200 LDA #NAME&255 ;low byte of device name
1210 STA BUFFER,X ;store in buffer address (low)
1220 LDA #NAME/256 ;high byte of device name
1230 STA BUFFER+1,X ;store in buffer address (high)
1240 JSR CIO ;call CIO to open channel
```

Listing 4
Routine to print string to channel

```
1250 ;
1260 LDX #$10 ;use channel one
1270 LDA #9 ;put text code
1280 STA COMMAND,X ;store in command location
1290 LDA #MESS&255 ;low byte of message address
1300 STA BUFFER,X ;store in buffer address (low)
1310 LDA #MESS/256 ;high byte of message address
1320 STA BUFFER+1,X ;store in buffer address (high)
1330 LDA #255 ;dummy message length (more than needed)
1340 STA BUFLEN,X ;low byte of message length
1350 STA BUFLEN+1,X ;high byte of message length
1360 JSR CIO ;call CIO to put text
1370 ;
1380 LDX #$10 ;close channel one
1390 LDA #12 ;code for close channel
1400 STA COMMAND,X ;store in command location
1410 JSR CIO ;close channel
1420 ;
1430 BRK ;return to monitor
1440 ;
1450 NAME .BYTE "E:" ;name of device (screen editor "E:")
1460 MESS .BYTE "SOME TEXT.",155 ;message, terminated with 'carriage
1470 ;return' (code 155)
```

Table 1
XIO Command values to store in COMMAND,X

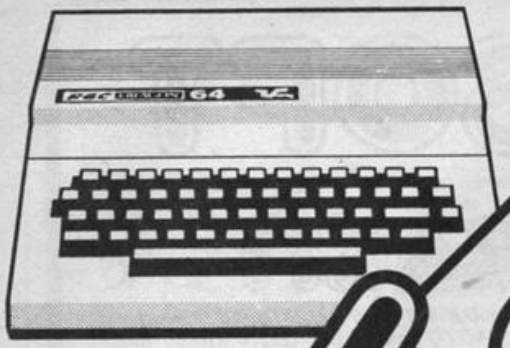
Value	Command
3	open channel
5	get text record (line)
7	get binary record (buffer)
9	put text record (line)
11	put binary record (buffer)
12	close channel
13	channel status
32	rename disc file
33	delete disc file
35	lock disc file
36	unlock disc file
37	point
38	note
254	format disc
7	get character (buffer length set to zero, uses accumulator)
11	put character (buffer length set to zero, uses accumulator)
17	draw line (display handler)
18	fill area (display handler)
32	output partial block (RS232)
34	control RTS,XMT,DTR (RS232)
36	baud, stop bits, word size (RS232)
38	translation mode (RS232)
40	concurrent mode (RS232)

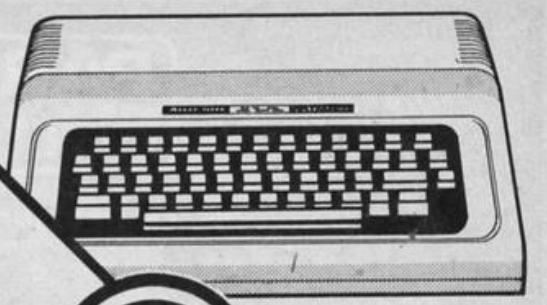
Table 2
AUX1 and AUX2 values for OPEN

AUX1 value	Device	Purpose
2	cassette	read (input)
8		write (output)
4	disc	read
6		read directory
8		write new file
9		append to old file
12		read and write file (update file)
8	screen	screen output
12	editor	keyboard input and screen output
13		screen input and output
4	keyboard	read
8	printer	write
5	RS232	concurrent read
8		block write
9		concurrent write
13		concurrent read and write
8	screen	clear screen, no text window, write
12		clear screen, no text window, read and write
24		clear screen, text window, write
28		clear screen, text window, read and write
40		write
44		read and write
56		text window, write
60		text window, read and write

AUX value	Device	Purpose
128	cassette	sets short inter-record gaps (as in CSAVE)
83	printer	sideways printing
70		normal printing
87		wide printing
0-11	screen	selects graphics mode. If zero is used, then the AUX1 options for clear screen etc. are ignored







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Everyone's is best

How I agree with J. Ince (HCW 85)! The letters page is usually a combination of 'ain't I great' and 'my computer's better than yours, so there!' Having worked my way through four different computers, I reckon most people just don't appreciate their varied qualities.

I started on a ZX81 (who didn't?) which was suitable for a beginner who wasn't sure if computing would be for her. Once I got better (slightly) at programming, I switched to a TI-99/4A What a lovely machine to use but, oh! the price of games etc. and hardware. I just couldn't afford to keep it up. The kids were cheaper to raise.

So on to everyone's love/hate the Spectrum. We got on fine till it broke down. Two months later I was back in business, for a grand total of four weeks. No way was I going to wait, not two months, but four, for a replacement. 'Twas a fun machine but not good enough. What next?

What, but a CBM 64? Fingers crossed that this one stays put. Up to now I'm more than happy with it. Of course it has faults. They all have, and they all have good points too. So less arguments between owners please. We all own the best, or we'd have a different one wouldn't we?

Congrats on a good mag and roll on the adventure page. Keep up the good work, HCW.

Liz Tomlinson, Havant

In the Family

Last Christmas my parents bought a Spectrum 48K for the whole family and since then we have had some really great evenings using our computer and have never regretted getting it.

However, sometimes we get very fed up that so many games are only for one or two players. There do not seem to be that many games for more than two players and this means that we don't use the computer together as much as we'd like.

I think the software houses are missing out on a large section of the software market by neglecting user families who want to enjoy the great possibilities of their micro together. Why aren't there more games with the family in mind?

We have already got the board game versions of things like Scrabble and Kensington so we are very reluctant to spend more money on the computer versions in case they have no advantage over the normal ones.

There are very few original computer games for people to play as a group. I think that, as there are so many excellent programmers, they really should try and cater for us.

Apart from this one snag I would recommend any family to get a computer for Christmas. My parents say that they are really surprised that they enjoy using a micro so much. There was nothing like that around for young people of their generation.

At first I think they were a bit wary about it because they were afraid that they wouldn't understand how to use it but soon they were very at home with it.

I think that people under twenty should realise how lucky they are to live at the beginning of the computer age.

Think how much you would have missed if you had been born just ten years earlier.

Graham Busfield, Portsmouth

Micro mum

I am writing as one of HCW's older readers. I am married and have three sons, all in their teens. Recently my husband and I bought them a computer so that they could learn what I consider to be a very useful hobby.

Unfortunately they are rather put out because every time they go to use the micro (it is an Amstrad CPC 464) they find Mum sitting there. I am learning to program and can already help them out with their problems in this and they are quite amazed at my cleverness.

I think that more people of my generation should try this fascinating hobby. Many of my friends have never even touched a computer. (Some don't even know what one looks like!)

I started getting HCW for the boys to read but now they rarely get first look at it since I am always fastest to the front door when it arrives on a Tuesday morning.

Please keep up the good work, HCW, and don't forget about your older readers.

Mrs Jane McCarthy, Southampton

Advice to parents

I am writing to congratulate HCW on issue 86 of this great magazine. I was thrilled when the bumper issue dropped through my letter box! I hope this will continue.

The other thing that I want to comment on is the problem that John Ramsbottom wrote about in his letter to HCW 86.

I have a Commodore 64 which my grandparents gave me for my birthday during the summer and since I got it I have had hours of enjoyment and, I believe, I have learnt (and am still learning) a very useful skill.

My parents really support me in this and I find it amazing that anyone could disapprove of such a useful hobby.

If John Ramsbottom wasn't using his computer after school then he could be getting in all kinds of trouble as some young people do. I think his mother and father should be glad that he is spending his time so well and they should look upon it as an investment for the future.

Perhaps a good solution would be for his parents to buy him some educational software for Christmas. I know that there is a lot of it about and I have heard that there are even exam revision programs on the market so surely that would solve the problem of his homework.

Anyway, thanks for listening to my opinions, HCW, and keep up the good work.

Joanna Waller, Derby

Up the Aussies

Without doubt, HCW is the best magazine in Australia, if not the world! The trouble is, it takes so long to get down under. Would you believe the latest issue here is No. 70 July 10-16?

I can proudly say that Australia has the best text adventure games in the world. They are not your dreary 'You're in a room' type games.

All feature graphics and a wry sense of humour. One great software house is Mountain Valley Software. Although a Victorian based firm I'm sure they would be glad to receive overseas enquiries. Their address is P.O. Box 407, Boronia, 3155 Victoria, Australia.

I can highly recommend their games.

Stuart Ulhorn, Victoria, Australia

A+ for Spectrum+

I get HCW every week and for 45p it is great value for money.

I own a Spectrum + and I feel I must point out that the review in HCW 85 was a bit harsh on this computer.

I turned it upside down and shook it and none of the keys fell out!

I think your review was unfair to us Spectrum + owners but I must agree that the manual is ace.

G.L. Notts, Nuthall

Dear CBM 64

Why is Commodore 64 software so highly priced? That's what I want to know. Spectrum owners pay up to £2.00 less and even Amstrad and MSX owners will find that they pay a quid less than us poor long-suffering CBM 64 owners.

I think it's incredible that some games cost about a tenner when dear old Commodore brought out the legendary International Football on cartridge for this price. Stay below £7.00 and that's about right.

Even better, go below that to a fiver in line with records.

On the subject of price, Mastertronic should have been originally named Masterchronic. After some terrible releases, Mastertronic has come back to form with the really brilliant Chiller. For £1.99 with five screens, a loading screen, ace music and a great game it's fantastic value. Who needs £9.99 software with super cheapos that aren't so cheap?

Andy Clarke, Baddesley Ensor

Atari says —

I refer to the letter that appeared in HCW 85 from a very angry Mike Curtis, who paid £15 for a software title and was disappointed. I don't blame him, he hasn't got the genuine Atarisoft Pole Position.

If Mr Curtis would like to tell me where he obtained what appears to be a very poor rip-off of Pole Position, I would be more than delighted to pass the details on to our lawyers!

Atarisoft Pole Position for the Spectrum has only been released this week and retails at £7.99. It is similar to the arcade version. It is written in 100% machine code. It feature gear changes and you can drive off the roads. There are also road signs and other cars upon the circuit...not forgetting the incredible start grid.

Atari product is quality product, and further to Mr Curtis' eventual advice to readers, I would advise every Spectrum owner to purchase a copy of Atarisoft Pole Position — it will take pride of place in their software collection for years to come.

Incidentally, all Atarisoft titles for the Spectrum are distinctly packaged in cassette library cases with a blue/green insert. If anyone suspects that they have bought a rip-off of an original Atari product, I would be grateful if they would contact me.

Jon Dean, Computer Product Manager, Atari House, Slough, Berkshire.

Keyboard moans

I am one of the lucky many to have a Dk'tronics keyboard.

The statement in HCW 85 was very true about the Spectrum +'s keyboard is not better than Dk'tronics. But like owners of the Spectrum +, I, too, am having trouble with the expansion slot, because I cannot use the Kempston Joystick Interface. Apart from that I recommend it to anyone.

Thanks for a great magazine at a great price.

Gary Wilding, Thornden

Texas tale

I am writing to you because of two things which have appeared in H.C.W. on the following dates: the 1st May 84 (no 60) and the 19th June (no 67).

Both of these things were to do with the Texas, one was a free tape offer and the other a Texas club. Being a TI-99/4A owner I sent for the tape and to become a member of the TI club. It is now over five months since I sent away for the tape and I still haven't had a reply from them yet.

By the way, I should point out they were at the same address, 41 Winchester Street, London.

Thank you and keep the good work up H.C.W.

David Tomkinson, Hull

Correction

In HCW 86 in the Spectrum programming article on page 30: the fourth column, starting from 'CHARS with the commands' should follow on from the first column 'Finally alter the value of'. Column two should follow on from the end of four and column three should follow this, ending with the two POKES at the top of column four.

We hope that this had not caused too much confusion for Spectrum owners. It did for us!

Stop that runaway train!

What a headache! Not only must you build a bridge to prevent the express falling in the ravine, but you must also dodge enemy fire. David Trillwood and Gary Jowett bring this game of co-ordination to you

Mission: to rescue the runaway Orient Express and its passengers. Resources: helicopter, winch, bricks and manpower. Danger: the train risks being derailed and falling off the viaduct into the ravine, losing its cargo.

Can you save the day? You must quickly and nimbly build up the bridge, so that the train can pass over it and maintain all its passengers in safety.

Full instructions are given on screen. Happy bridge building!

Variables

r,z DIM statement for explosi,a,b,d, FOR...NEXT loop
y$ question variable
f,k winch
zx check if brick is on viaduct
p velocity of train
y co-ordinate of helicopter
go decision variable, decide when train moves
x co-ordinate of helicopter
m,n co-ordinate of train
h height of rope
sheet sheet you're on
j position of tank's target

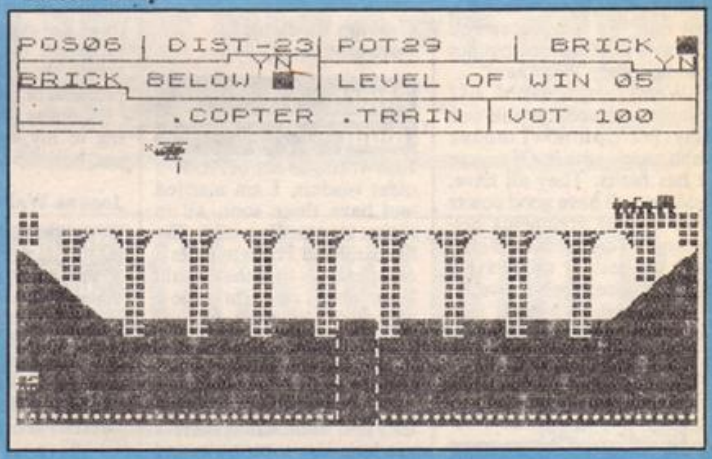
How it works

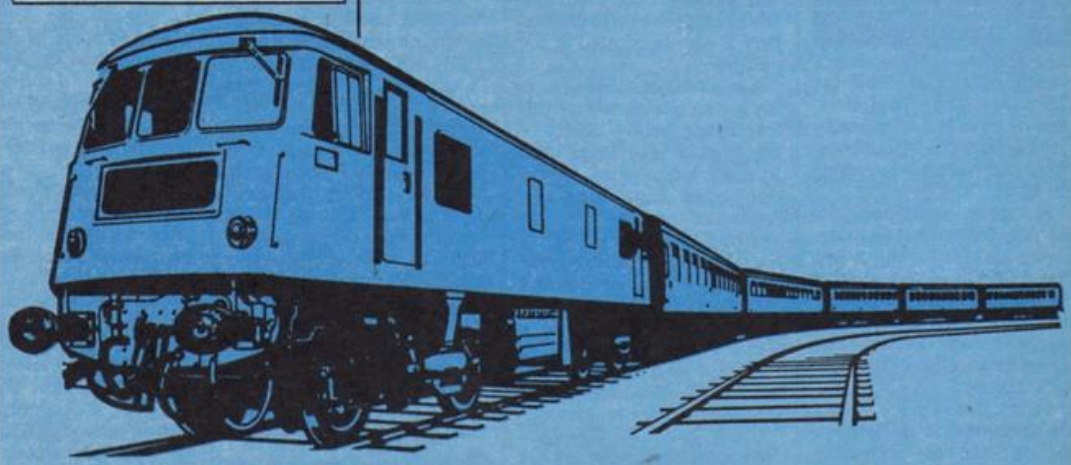
1-18 variables, graphics
19-200 setting screen
500-590 main program
1000-1050 data for graphics
2000-2099 moving train, checking if crashed
2500-2530 on to next sheet
3000-3100 instruction
3500-3540 tank fire
4000-4030 transport brick

Hints on conversion

Here are some explanations to help you convert this program.
BEEP Spectrum sound command
PLOT, DRAW graphics commands, used in vector form
PRINT AT prints character at specified screen position
ATTR command to check if two squares hit each other

Screen dump





Listing

```
   1 DIM r(10): DIM z(10): FOR i=1 TO 10: LET r(i)=INT (RND*20): LET z(i)=INT (R
ND*30): NEXT i
   2 LET sheet=1
   3 FOR i=USR "a" TO USR "u"+7: READ user: POKE i,user: NEXT i
   4 INPUT "Do you want instructions (Y/N).";y$
   5 IF y$="n" OR y$="N" THEN  GO TO 8
```

```
   6 GO SUB 3000
   8 LET f=0: LET zx=0: LET p=0: LET y=0: LET go=0: LET x=6: LET m=29: LET n=9:
LET h=120
   9 BORDER 5: CLS
  10 REM
  11 REM GRAPHICS
  12 REM
  13 REM A B C D E F G H I J K L
  14 REM A B C D E F G H I J K L
  15 REM
  16 REM M N O P Q R S T U
  17 REM M N O P Q R S T U
• 18 REM
  19 PRINT  INK 1;AT x,y;"IJ": INK 0: PRINT AT n,m;"MNO"
  20 INK 2: FOR a=5 TO 26 STEP 3: FOR b=11 TO 16: PRINT  PAPER 6;AT b,a;"A": NE
X
T b: NEXT a
  30 INK 4: FOR a=17 TO 20: FOR b=0 TO 31: PRINT AT a,b;"■": NEXT b: NEXT a
  40 FOR b=0 TO 31 STEP 3: PRINT AT 16,b;"■■": NEXT b
  45 INK 0: FOR b=0 TO 31: PRINT AT 21,b;"A": NEXT b
  50 INK 1: FOR b=16 TO 21: PRINT  PAPER 4;AT ,15;"CD": NEXT b
  60 INK 4: PRINT AT 13,0;"■";AT 14,0;"■■";AT 13,31;"■";AT 14,30;"■■";AT 15,0;
"■
■■";AT 15,29;"■■■";AT 16,2;"■";AT 16,29;"■"
  65 PRINT  INK 0; PAPER 4;AT 19,0;"K"
  70 INK 4: PRINT  PAPER 2;AT 12,0;"E";AT 14,2;"E";AT 14,29;"E";AT 12,31;"E";
PA
PER 7;AT 13,1;"E";AT 15,3;"E";AT 15,28;"E";AT 13,30;"E";AT 16,4;"■";AT 16,27;"I
"
  80 INK 2: PRINT  PAPER 6;AT 10,0;"A";AT 10,28;"A";AT 11,0;"A";AT 11,2;"A";AT
 1
2,2;"A";AT 13,2;"A";AT 11,31;"A";AT 11,29;"A";AT 12,29;"A";AT 13,29;"A";AT 10,
29
;"AAA"
  90 INK 2: FOR a=3 TO 27 STEP 3: PRINT AT 11,a;"GH": NEXT a
 100 INK 0: PRINT AT 0,0;"POS00  DIST10  POT22     BRICK ■            YN

       YNBRICK BELOW ■  LEVEL OF WIN 00                                  ___

  COPTER  TRAIN  VOT 99"
 105 PRINT AT 4,27;95+(5*sheet)
 110 PRINT  INK 2;AT 4,7;"."; INK 1;AT 4,15;"."
 111 PLOT 0,132: DRAW 255,0
 112 PLOT 177,133: DRAW 0,14
 113 PLOT 41,147: DRAW 214,0: PLOT 41,147: DRAW 0,5: DRAW -41,0
 114 PLOT 0,133: DRAW 0,42: PLOT 255,175: DRAW 0,-42
 115 PLOT 1,164: DRAW 78,0: DRAW 0,3: DRAW 34,0: DRAW 0,-3: DRAW 118,0: DRAW 0,-
4: DRAW 23,0: PLOT 113,163: DRAW 0,-15: PLOT 113,168: DRAW 0,7
 116 PLOT 47,164: DRAW 0,11: PLOT 187,164: DRAW 0,11
 20 INVERSE 0: OVER 0
 500 LET go=go+1: IF RND>.98 THEN  GO SUB 3500
 501 IF go=100+p THEN  GO SUB 2000
 502 IF INKEY$="m" OR INKEY$="3" THEN  LET h=h-1: LET k=0: GO SUB 550
 503 IF INKEY$="k" OR INKEY$="4" THEN  LET h=h+1: LET k=1: GO SUB 550
 504 IF h<119 THEN  GO TO 500
 506 IF INKEY$="z" OR INKEY$="1" OR INKEY$="5" THEN  GO SUB 4000
 507 IF INKEY$="x" OR INKEY$="2" THEN  GO TO 520
 510 GO TO 500
 520 PRINT AT 7,y+1;" ";AT 8,y+1;" ";AT 7,31;" ";AT 8,31;" "
 521 PRINT AT x,y;"  ": LET y=y+1: IF y=31 THEN  LET y=0
 522 PRINT AT 0,3;y: IF y<10 THEN  PRINT AT 0,3;"0";y
 524 PRINT  INK 1;AT x,y;"IJ"
 525 PRINT AT 0,11;y-(m+1): IF y-(m+1)=0 THEN  PRINT AT 0,12;" "
 526 IF y-(m+1)>-10 AND y-(m+1)<10 THEN  PRINT AT 0,13;" "
 527 IF y-(m+1)>0 AND y-(m+1)<9 THEN  PRINT AT 0,12;" "
 528 PRINT AT 0,18;m+1: IF m+1<10 THEN  PRINT AT 0,18;"0";m+1
 529 IF f=1 THEN  PRINT  INK 2;AT 0,30;"■ "
 530 IF f=1 THEN  PRINT AT 7,y+1;"J"; INK 2; PAPER 6;AT 8,y+1;"A"
```

```
 531 IF f=0 THEN  PRINT  INK 1;AT 0,30;" ■"
 532 IF ATTR (10,y)=50 THEN  GO TO 534
 533 PRINT  INK 1;AT 2,11;" ■": GO TO 535
 534 PRINT  INK 2;AT 2,11;"■ "
 536 PLOT  INK 2;y,144: PLOT  INK 1;m+1,142
 537 IF y=0 THEN  GO TO 540
 539 PLOT  INVERSE 1;y-1,144: GO TO 541
 540 PRINT AT 3,3;" "
 541 FOR d=31 TO m+2 STEP -1: PLOT  INVERSE 1;d,142: NEXT d
 549 GO TO500
 550 IF h>=120 THEN  LET h=119
 551 IF h<=103 THEN  GO TO 560
 552 PLOT  INK 0; INVERSE k;y*8+12,h
 553 FOR i=1 TO 10: NEXT i
 554 IF h=112 THEN  PRINT AT 8,y+1;" "
 555 PRINT AT 2,28;119-h: IF 119-h<10 THEN  PRINT AT 2,28;"0";119-h
 556 IF f=0 THEN  GO TO 559
 557 LET h=120
 559 RETURN
 560 LET h=104
 565 IF y=m+1 THEN  PRINT AT 8,y+1; INK 2; PAPER 6;"A": LET f=1
 590 GO TO 551
1000 DATA 119,119,119,0,119,119,119,0,255,255,255,153,153,255,255,255,255,127,12
7,127,127,255,255,255,254,255,255,255,255,254,254,254
1010 DATA 0,128,224,240,248,252,254,255,1,1,3,7,31,63,127,255,219,216,32,224,192
,192,128,128,219,31,7,4,3,3,1,1
1020 DATA 255,32,252,254,254,248,144,252,7,160,65,170,31,15,0,1,0,0,119,124,112,
255,127,85,1,7,15,31,62,62,124,248
1030 DATA 0,64,76,255,255,255,109,109,0,224,128,158,158,255,182,182,126,126,126,
126,126,255,102,102
1040  DATA 0,0,0,0,224,252,254,255,0,0,28,254,255,255,255,255,0,0,0,1,7,63,127,2
55,1,7,7,15,15,31,63,255,128,224,224,240,240,248,252,255
1050 DATA 16,16,16,16,16,16,16,16
1500 INK 0
2000 BEEP .55,0: BEEP .55,5: IF ATTR (10,m-1)=50 THEN  LET zx=1: GO TO 2002
2001 LET zx=0
2002 IF ATTR (9,m-1)=50 THEN  GO TO 2020
2003 INK 0: LET p=p+105-(5*sheet): IF m=0 THEN  GO TO 2500: LET m=m-1: PRINT AT
n,m;"MNO ": RETURN
2005  IF m=0 THEN  GO TO 2500
2010 LET m=m-1: PRINT AT n,m;"MNO "
2015 IF zx=1 THEN  GO TO 2099
2020 PRINT AT 9,m;"   ": PRINT AT 10,m;"MNO "
2025 FOR a=10 TO 16: PRINT AT a,m;"MNO": FOR i=1 TO 20: NEXT i: PRINT AT a,m;"

 ": NEXT a
2030 PRINT AT 16,m;"MNO"
2035 FOR i=1 TO 10: PLOT m*8+4,49: DRAW  INK 2;r(i),z(i): NEXT i
2040 FOR i=1 TO 100: NEXT i: FOR i=1 TO 10: PLOT m*8+4,49: DRAW  INK 7;r(i),z(i)
: NEXT i
2050 PRINT  INK 2; PAPER 4;AT 16,m-1;"E": PRINT  INK 2; PAPER 4;AT 16,m+3;"I":
P
RINT  INK 2;AT 15,m;"BOP": PRINT  INK 0; PAPER 2;AT 16,m;"MNO"
2060 INPUT "DO YOU WANT ANOTHER GO?(Y/N)";Y$
2061  IF Y$="y" THEN  CLS : GO TO 4
2062  IF Y$="n" THEN  RANDOMIZE USR 0
2063 GO TO 2060
2099 RETURN
2500 PRINT AT 9,0;"    ": PRINT AT 10,1;"                                    ": LET she
et=sheet+1
2505 PRINT  INK 1; PAPER 6; FLASH 1;AT 10,8;"CONGRATULATIONS";AT 12,2;"GO ONTO Y
OUR NEXT VIADUCT": FLASH 0
2510 FOR a=0 TO 12 STEP 2: BEEP .25,a: NEXT a
2520 CLS
2530 GO TO 5
3000 PLOT 0,63: DRAW 255,0
3002 FOR i=27 TO 1 STEP -1: PRINT AT 13,i; INK INT (I/8)+1;"MNO ": PAUSE 5: NEX
T
```

```
 i
3009 POKE 23692,-1: PRINT '''"      BRIDGE BUILDER"'''"  WRITTEN BY DT & GJ 1983 "
'''"AS ACME'S CHEIF BRIDGE BUILDER  IT IS YOUR JOB TO COMPLETE A    VIADUCT BEFOR
E A RUNAWAY TRAIN  COMES THROUGH."
3010 PRINT '"BUT YOU ARE ON THE ENEMYS' LAND AND ONE OF THEIR DESTRUCTIVE  TAN
KS IS TRYING TO DESTROY YOUR HANDYWORK."
3020 PRINT '"         THE KEYS....,"'" X-MOVE HELICOPTER FOWARDS       M-LOWER W
INCH                  K-HIGHER WINCH                    Z-DROP BRICK"
3030 PRINT "PRESS ANY KEY TO CONTINUE": PAUSE 0
3040 PRINT "OR YOU CAN USE A SINCLAIR       JOYSTICK."''"      JOYSTICK CONTROLS
"'"  UP-WINCH UP                        DOWN-WINCH DOWN                  RIGHT-ACCEL
ERATE HELICOPTER     FIRE/LEFT-DROP BRICK"
3050 PRINT "PRESS ANY KEY TO PLAY....,"''"       BRIDGE BUILDER"
3090 PAUSE 0
3100 RETURN
3500 IF m>=5 THEN  GO TO 3507
3505 RETURN
3507 PRINT AT 18,1; INK 7; PAPER 4;"▙"
3508  FOR i=1 TO 5: NEXT i
3510 BEEP .01,.1
3520 LET j=INT (RND*5)+1
3530 PRINT AT 10,m-j;" "
3535 PRINT AT 18,1; INK 4;"▀"
3540 RETURN
4000 IF f=0 THEN  RETURN
4010 FOR a=8 TO 10: IF ATTR (a+1,y+1)=50 OR ATTR (a+1,y+1)=55 THEN  GO TO 4030
4015 PRINT AT a,y+1; INK 2; PAPER 6;"▒": FOR i=1 TO 5: NEXT i: PRINT AT a,y+1;"

": NEXT a
4017 PRINT  INK 2; PAPER 6;AT 10,y+1;"▒"
4020 LET f=0: PRINT AT 7,y+1;" ": RETURN
4030 PRINT  INK 2; PAPER 6;AT a,y+1;"▒": LET f=0: PRINT AT 7,y+1;" ": RETURN
```




CHARTBUSTERS

BRITAIN'S SOFTWARE CHARTS

by the ASP Market Research Group

ARCADE

1	Daley Thompson Decathlon	Ocean	Spectrum (1)
2	Jet Set Willy	S Projects	Spectrum (4)
3	Beach Head	U.S. Gold	Spectrum (3)
4	Monty Mole	Gremlin	Spectrum (2)
5	Combat Lynx	Durell	Spectrum (8)
6	Summer Games	Quicksilva	CBM 64 (-)
7	Pyjamarama	Mikro-Gen	Spectrum (-)
8	Kokotoni Wilf	Elite	Spectrum (5)
9	Zaxxon	U.S. Gold	CBM 64 (6)
10	Spitfire Ace	U.S. Gold	CBM 64 (9)

NON-ARCADE

1	Elite	Acornsoft	BBC (1)
2	Sherlock	Melbourne Hse	Spectrum (3)
3	Twin Kingdom Valley	Bug-Byte	Spectrum (2)
4	American Football	Mind Games	Spectrum (4)
5	Hampstead	Melbourne Hse	Spectrum (6)
6	Deus ex Machina	Automata	Spectrum (5)
7	American Football	Mind Games	CBM 64 (8)
7	All or Nothing	Abbex	Spectrum (9)
9	Star Trader	Bug-Byte	CBM 64 (10)
10	World Cup Football	Artic	CBM 64 (7)

Compiled with the assistance of Britain's leading software distributors, including: Pinnacle, SDL, PCE, Websters, PCS and Software Centre.

SPECTRUM

1	Daley Thompsons Decathlon	Ocean (1)
2	Travel with Trashman	New Generation (-)
3	Lords of Midnight	Beyond (-)
4	Tornado Low Level	Vortex (10)
5	Cavelon	Ocean (-)
6	Dark Star	Crystal (-)
7	Valkyrie 17	Palace (-)
=	Scuba Dive	Martech (-)
9	Matchpoint	Sinclair (6)
10	Full Throttle	Micromega (-)

COMMODORE 64

1	Football Manager	Addictive Games (-)
2	Flight Path 737	Anirog (-)
3	Trollie Wallie	Interceptor (-)
4	Kensington	Leisure Genius (-)
5	Psytron	Beyond (-)
6	Sherlock	Melbourne Hse (1)
7	Cluedo	Leisure Genius (-)
8	International Soccer	CBM (-)
9	Fort Apocalypse	Centresoft (-)
10	Spitfire Ace	Centresoft (-)

DRAGON 32

1	Hunchback	Ocean (1)
2	Skramble	Microdeal (2)
=	Mr Dig	Microdeal (4)
4	Chuckie Egg	A & F (8)
5	Cuthbert in Space	Microdeal (3)
6	Kriegspiel	Beyond (5)
7	Dragon Chess	Oasis Software (-)
8	Ring of Darkness	Wintersoft (7)
9	Sprite Magic	Knight (-)
=	Sprint	Oasis (9)

Compiled by W. H. Smith and Websters. Figures in brackets are last week's positions.

VIC-20

1	Flight 015	Craig Commun (3)
2	Perils of Willy	S Projects (-)
3	Duck Shoot	Mastertronic (2)
4	Computer War	Creative Sparks (-)
=	Max	Anirog (4)
6	Wizard and the Princess	Melbourne Hse (-)
7	Phantom Attack	Mastertronic (8)
8	Jet Pac	Ultimate (9)
9	Snooker	Visions (5)
10	Bewitched	Beau Jolly (-)

BBC

1	Football Manager	Addictive Games (-)
2	Scrabble	Leisure Genius (3)
3	Frak	Aardvark (5)
4	Castle of Gems	MRM (4)
5	Elite	Acornsoft (-)
6	Rubble Trouble	Micropower (-)
7	Mini Office	Database (7)
8	Ghouls	Micropower (-)
9	Killer Gorilla	Precision Micro (9)
=	Jet Pac	Ultimate (1)

ZX81

1	Black Crystal	PSS (2)
2	Krazy Kong	PSS (1)
3	Invaders	Quicksilva (3)
4	Hopper	PSS (3)
5	Planet Raider	Novus (3)
6	Toolkit	Sinclair (9)
7	Krypton Ordeal	Novus (6)
8	Walk the Plank	Novus (7)
9	Chess II	Artic (10)
10	Espionage Island	Sinclair (8)

Change the colours —

This fast-moving arcade game stars you changing colours of the pyramid. Watch out, though — Coily the snake is out to get you!

By Gareth Wakefield

In this fast-moving arcade game you play the part of HCWbert, a funny looking creature with a long nose.

Your task is to change the colour of every cube of the pyramid shown on the screen. The most frustrating thing is your enemy who comes in the shape of a snake called Coily. He has a habit of changing the cubes back to their original colour. There is also a ball rolling down the pyramid but only on the coloured cubes.

If you have to jump off the pyramid then you must start the whole process again.

If you press the FIRE button then it will pause the game and pressing START, SELECT or OPTION during a game will abort it.

Hints on conversion

The game uses a 20 column by 12 rows text screen.

The large amount of data at the beginning of the program is for user defined characters, each line being one 8 x 8 character.

POSITION selects a place on the screen according to the co-ordinates following it e.g. POSITION 5,9.

LOCATE retrieves data stored at a specific screen location which is then put in a variable name e.g. LOCATE 5,9,PP.

SETCOLOUR sets the hue and luminence of the chosen colour register e.g. SETCOLOUR 1,6,10 sets register 1 to hue 6 and luminence 10.

Variables

X,Y co-ordinates of HCWbert
A,B co-ordinates of snake
C,D co-ordinates of ball
Sc score
Le level
Li number of lives
PQ,PP used for storing values of characters in LOCATE statements
PA, PB used in setting up UDG
Count number of cubes coloured
MOVE CHR$ value of HCWbert
QU counter which controls speed at which ball moves
SO value of tone in falling off pyramid routine
S1 stops ball from moving until five squares have been coloured in
H,J,V,O,N,T,X, used in FOR... NEXT loops

How it works

15-155 redefine character set
250-325 draw pyramid
356-357 display number of lives
370-415 change snake co-ordinates
430-445 check for joystick movement
450-500 change ball co-ordinates
505-515 small sound subroutine
530-538 move ball left
565-572 move ball right
600-650 move snake up right
650-700 move snake up left
700-725 move HCWbert down right
725-750 move HCWbert down left
750-775 move HCWbert up right
775-795 move HCWbert up left
800-805 subroutine to print HCWbert
810-815 subroutine to print score
820-825 subroutine to print snake
840-845 subroutine to print ball
850-860 subroutine to pause game
1050-1075 move snake down right
1100-1125 move snake down left
2000-2270 bonus and tune for completed pyramid
2800-2835 killed by ball
2900-2960 killed by snake
3000-3075 fall off pyramid
3100-3370 game over, title screen, instructions



but avoid the snake!

```
1 REM ***** HCWBERT ******
2 REM ** BY G.WAKEFIELD **
3 REM ******* 1984 *******
10 GRAPHICS 0:HI=0
15 PA=(PEEK(742))*256-512:PB=PA
20 FOR J=0 TO 23:POKE PA+J,0:NEXT J
25 PA=PA+16:FOR X=1 TO 23
30 PA=PA+8
35 FOR J=0 TO 7:READ D:POKE PA+J,D:NEXT J
40 NEXT X
50 DATA 115,255,238,252,248,120,40,60
55 DATA 206,255,111,63,31,30,20,60
60 DATA 112,248,236,254,255,123,40,60
65 DATA 14,31,55,127,255,222,20,60
70 DATA 248,100,130,60,66,60,66,60
75 DATA 60,126,243,247,255,255,126,60
80 DATA 24,36,66,129,129,195,165,153
85 DATA 24,60,126,255,255,255,189,153
90 DATA 145,145,145,145,145,82,52,24
92 DATA 73,42,0,99,0,42,73,0
95 DATA 0,0,238,136,232,40,238,0
100 DATA 0,0,238,170,172,170,234,0
105 DATA 0,0,224,128,224,128,224,0
110 DATA 0,60,102,102,126,126,126,60
115 DATA 0,120,248,24,24,24,126,126
120 DATA 0,124,252,12,24,48,124,126
125 DATA 0,124,254,6,60,6,254,124
130 DATA 0,192,204,204,254,12,12,12
135 DATA 0,252,192,192,252,6,6,252
140 DATA 0,24,48,96,252,206,206,124
145 DATA 0,126,126,12,12,24,24,24
150 DATA 0,60,78,110,60,78,110,60
155 DATA 0,60,78,110,62,6,6,6
170 GOTO 3200
200 SC=0:LE=2:LI=3
205 GRAPHICS 2+16
215 POKE 756,INT(PB/256)
250 ? #6;")":SETCOLOR 4,7,14:SETCOLOR 0,LE,10:SETC
OLOR 1,3,6:SETCOLOR 2,6,2:SETCOLOR 3,12,10
260 N=2:V=0:COUNT=0
265 FOR T=9-V TO 9+V STEP 2
270 POSITION T,N:? #6;CHR$(41):NEXT T
275 V=V+1:N=N+1
280 IF V=8 THEN 300
285 GOTO 265
300 N=3:V=0
305 FOR T=9-V TO 9+V STEP 2
310 POSITION T,N:? #6;CHR$(43):NEXT T
315 V=V+1:N=N+1
320 IF V=7 THEN 350
325 GOTO 305
350 X=9:Y=2
355 A=3:B=8:C=9:D=2:QU=0:JI=0
356 FOR Q=15 TO 15+(LI-2):POSITION Q,1:PRINT #6;CH
R$(4);:NEXT Q:PRINT #6;" "
357 IF LI=1 THEN POSITION 15,1:PRINT #6;" "
360 MOVE=5:GOSUB 800:GOSUB 820:GOSUB 810:GOTO 430
365 GOSUB 810
370 IF INT(RND(0)*LE)+1=2 THEN 430
400 IF X>A AND Y<B THEN 600
405 IF X<A AND Y<B THEN 650
410 IF X>A AND Y>B THEN 1050
415 IF X<A AND Y<B THEN 1100
430 IF PEEK(53279)<>7 THEN 3120
431 IF COUNT>2 THEN GOSUB 840
432 IF STRIG(0)=0 THEN GOSUB 850
434 IF STICK(0)=5 THEN GOSUB 505:GOTO 700
435 IF STICK(0)=9 THEN GOSUB 505:GOTO 725
440 IF STICK(0)=6 THEN GOSUB 505:GOTO 750
445 IF STICK(0)=10 THEN GOSUB 505:GOTO 775
450 IF COUNT<5 OR QU<(20/LE) THEN QU=QU+1:GOSUB 81
0:GOTO 430
451 JI=1
453 IF JI=0 THEN GOSUB 810:GOTO 430
455 LOCATE C+1,D+1,PP:LOCATE C-1,D+1,PQ
456 IF PP=42 AND PQ=42 THEN 520
460 IF PP<>41 AND PP<>32 THEN 530
465 IF PQ<>41 AND PQ<>32 THEN 565
470 POSITION C,D:PRINT #6;CHR$(42):C=9:D=2
500 QU=0:GOTO 365
505 FOR T=32 TO 251 STEP 20
510 SOUND 1,T,10,15:NEXT T:SOUND 1,0,0,0
515 RETURN
520 L=INT(RND(0)*2)+1
525 ON L GOTO 530,565
530 IF PP=3 OR PP=4 OR PP=5 OR PP=6 THEN 2800
532 IF PP=167 THEN 470
534 C=C+1:D=D+1:GOSUB 840
536 POSITION C-1,D-1:PRINT #6;CHR$(42)
538 GOTO 500
565 IF PQ=3 OR PQ=4 OR PQ=5 OR PQ=6 THEN 2800
567 IF PQ=167 THEN 470
569 C=C-1:D=D+1:GOSUB 840
570 POSITION C+1,D-1:PRINT #6;CHR$(42)
572 GOTO 500
600 LOCATE A+1,B-1,PP
602 IF PP=3 OR PP=4 OR PP=5 OR PP=6 THEN 2900
610 A=A+1:B=B-1
615 IF PP=42 THEN COUNT=COUNT-1:SC=SC-25
625 GOSUB 820:POSITION A-1,B+1:PRINT #6;CHR$(41):G
OTO 430
645 RETURN
650 LOCATE A-1,B-1,PP
655 IF PP=3 OR PP=4 OR PP=5 OR PP=6 THEN 2900
665 A=A-1:B=B-1
670 IF PP=42 THEN COUNT=COUNT-1:SC=SC-25
675 GOSUB 820:POSITION A+1,B+1:PRINT #6;CHR$(41):G
OTO 430
700 LOCATE X+1,Y+1,PP
705 IF PP<>41 AND PP<>42 THEN 3000
710 X=X+1:Y=Y+1
715 IF PP=41 THEN SC=SC+25:COUNT=COUNT+1
720 MOVE=5:GOSUB 800:POSITION X-1,Y-1:PRINT #6;CHR
$(42):GOTO 453
725 LOCATE X-1,Y+1,PP
730 IF PP<>41 AND PP<>42 THEN 3000
735 X=X-1:Y=Y+1
740 IF PP=41 THEN SC=SC+25:COUNT=COUNT+1
745 MOVE=6:GOSUB 800:POSITION X+1,Y-1:PRINT #6;CHR
$(42):GOTO 453
750 LOCATE X+1,Y-1,PP
755 IF PP<>41 AND PP<>42 THEN 3000
760 X=X+1:Y=Y-1
765 IF PP=41 THEN SC=SC+25:COUNT=COUNT+1
770 MOVE=3:GOSUB 800:POSITION X-1,Y+1:PRINT #6;CHR
$(42):GOTO 453
775 LOCATE X-1,Y-1,PP
780 IF PP<>41 AND PP<>42 THEN 3000
785 X=X-1:Y=Y-1
790 IF PP=41 THEN SC=SC+25:COUNT=COUNT+1
795 MOVE=4:GOSUB 800:POSITION X+1,Y+1:PRINT #6;CHR
$(42):GOTO 453
800 POSITION X,Y:PRINT #6;CHR$(MOVE)
802 IF COUNT>33 THEN 2000
805 RETURN
810 POSITION 1,0:PRINT #6;"-./ ";SC
815 RETURN
820 POSITION A,B:PRINT #6;CHR$(167)
825 RETURN
840 POSITION C,D:PRINT #6;CHR$(136)
845 RETURN
850 SOUND 1,126,10,15:FOR T=1 TO 50:NEXT T:SOUND 1
,0,0,0
855 IF STRIG(0)=0 THEN SOUND 1,126,10,15:FOR T=1 T
O 50:NEXT T:SOUND 1,0,0,0:RETURN
860 GOTO 855
1050 LOCATE A+1,B+1,PP
1055 IF PP=3 OR PP=4 OR PP=5 OR PP=6 THEN 2900
1065 A=A+1:B=B+1
1070 IF PP=42 THEN COUNT=COUNT-1:SC=SC-25
1075 GOSUB 820:POSITION A-1,B-1:PRINT #6;CHR$(41):
GOTO 430
1100 LOCATE A-1,B+1,PP
1105 IF PP=3 OR PP=4 OR PP=5 OR PP=6 THEN 2900
1115 A=A-1:B=B+1
1120 IF PP=42 THEN COUNT=COUNT-1:SC=SC-25
1125 GOSUB 820:POSITION A+1,B-1:PRINT #6;CHR$(41):
GOTO 430
2000 POSITION X,Y:PRINT #6;CHR$(42):RESTORE 2100
2005 READ V:IF V=-1 THEN 2050
2010 READ D:SOUND 1,V,10,15
2015 FOR N=1 TO D:NEXT N:SOUND 1,0,0,0
2020 GOTO 2005
2050 BONUS=LE*20
2055 FOR T=1 TO BONUS
2060 SC=SC+100:GOSUB 810
2065 SOUND 1,63,10,15:SOUND 1,0,0,0
2070 NEXT T:FOR N=1 TO 200:NEXT N
2075 IF LE<15 THEN LE=LE+1
2080 GOTO 205
2100 DATA 72,30,63,90,72,30,81,90,72,30,53,30,72,3
0,81,90,91,15,81,15,72,30,63,30
```

```
2105 DATA 47,30,53,30,68,30,53,30,72,30,81,30,63,1
20,-1
2270 GOTO 3365
2800 POSITION C,D:PRINT #6;CHR$(42):C=X:D=Y:GOSUB
840
2805 SOUND 1,126,10,15
2810 FOR H=1 TO 25:NEXT H
2815 SOUND 1,0,0,0:SOUND 1,251,10,15
2820 FOR H=1 TO 50:NEXT H:SOUND 1,0,0,0
2830 POSITION A,B:PRINT #6;CHR$(41)
2835 GOTO 2950
2900 POSITION A,B:PRINT #6;CHR$(41):A=X:B=Y:GOSUB
820
2905 SOUND 1,251,10,15:FOR H=1 TO 25:NEXT H
2910 SOUND 1,0,0,0:SOUND 1,126,10,15:FOR H=1 TO 50
:NEXT H:SOUND 1,0,0,0
2915 POSITION C,D:PRINT #6;CHR$(42)
2950 POSITION X,Y:PRINT #6;CHR$(12)
2955 FOR H=251 TO 45 STEP -10:SOUND 1,H,10,15:NEXT
 H:SOUND 1,0,0,0
2960 GOTO 3100
3000 IF PP=167 THEN 2900
3005 IF PP=136 THEN 2800
3010 PRINT #6;")"
3015 GOSUB 800
3020 FOR T=1 TO 5:FOR N=3 TO 6
3025 MOVE=N:GOSUB 800:FOR H=1 TO 5:NEXT H
3030 NEXT N:NEXT T
3035 SO=40
3040 FOR T=Y TO 11
3045 POSITION X,T:PRINT #6;CHR$(5):POSITION X,T-1:
PRINT #6;" "
3050 SOUND 1,SO,10,15:FOR H=1 TO 10:NEXT H
3055 SO=SO+20:NEXT T
3060 SOUND 1,0,0,0:POSITION X,10:PRINT #6;" "
3065 LI=LI-1:IF LI=0 THEN 3120
3075 GOTO 250
3100 LI=LI-1
3105 IF LI=0 THEN 3120
3110 GOTO 355
3120 GRAPHICS 2+16:SETCOLOR 4,3,14
3125 POSITION 5,3:PRINT #6;"GAME OVER"
3130 IF SC>HI THEN POSITION 4,6:PRINT #6;"YOU ARE
THE":PRINT #6;"   SUPREME NOSER":HI=SC
3135 FOR T=1 TO 200:NEXT T
3200 GRAPHICS 2+16:SETCOLOR 4,2,14
3205 PRINT #6;"      HCWBERT"
3210 PRINT #6;"   BY G.WAKEFIELD"
3215 PRINT #6:PRINT #6:PRINT #6;"SCORE ";SC
3220 PRINT #6;"HISCORE ";HI
3225 PRINT #6:PRINT #6;"PLAY GAME   [START]"
3230 PRINT #6;"INSTRUCTIONS[SELECT]"
3240 IF PEEK(53279)=6 THEN 200
3245 IF PEEK(53279)=5 THEN 3300
3250 GOTO 3240
3300 GRAPHICS 0:SETCOLOR 2,3,14:SETCOLOR 1,0,6:POK
E 752,1
3305 ? "  Q*BERT  BY GARETH WAKEFIELD 1984"
3310 ? :? "            INSTRUCTIONS"
3315 ? :? " YOU ARE Q*BERT,A SMALL CREATURE WITH
A VERY LARGE NOSE.YOUR HOME IS A"
3320 ? "PYRAMID AND YOUR HOBBY IS CHANGING    ALL
THE SQUARES ON THE PYRAMID INTO"
3325 ? "A DIFFERENT COLOUR.WHEN YOU JUMP ON A SQUA
RE IT WILL CHANGE COLOUR."
3330 ? " UNFORTUNATELY COILY THE SNAKE ALSO   LIVE
S ON THE PYRAMID AND HIS HOBBY"
3335 ? "IS CHASING Q*BERTS AND EATING THEM.   HE W
ILL ALSO CHANGE THE SQUARES THAT"
3340 ? "YOU HAVE COLOURED IN BACK INTO THEIR  ORIG
INAL COLOUR.WATCH OUT ALSO FOR A"
3345 ? "BALL THAT ROLLS DOWN THE PYRAMID.IF   YOU
JUMP OFF THE PYRAMID YOU LOSE A "
3350 ? "LIFE AND MUST BEGIN TO COLOUR THE     PYRA
MID FROM THE BEGINNING AGAIN!"
3355 ? " WHEN ALL THE  SQUARES ARE COLOURED   THEN
 YOU GO OFF TO ANOTHER PYRAMID."
3360 ? "             PRESS START"
3365 IF PEEK(53279)=6 THEN POKE 752,0:GOTO 200
3370 GOTO 3365
```


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Pick and mix

Choose something from this mixed bunch of new titles. There's something for everyone

Spirit of the Stones
CBM 64 £14.99

Commodore, 1 Hunter's Way, Weldon, Corby, Northants NN17 1QX

Spirit of the Stones is a program and 37-page book which tells the story of a hidden treasure and contains clues to locating its whereabouts on the Isle of Wight. The inclusion of the book presumably justifies the high price.

The program is a mixture of a treasure hunt and arcade action. You wander round the Isle of Wight in search of 40 single diamonds and one large one. There are 21 locations and the inside of each location is like a new level in an arcade game. You have to avoid evil spirits, climb ladders, jump over gaps etc. to seek out the diamonds or clues.

Throughout the game your strength is weakened by attacks from creatures on the island and in the buildings, and you have only a limited time.

Apart from the enjoyment of the game, on solving the clues you can write in and claim against a prize fund.

I found the arcade-type situations quite enjoyable but I would need to be very dedicated to bother solving the clues. The music, while good, is annoying after a time. Verdict: too dear if you want an action game. **L.C.**

instructions	70%
playability	60%
graphics	70%
value for money	50%

★ ★ ★

Jasper
48K Spectrum £6.95

Micromega, 230-236 Lavender Hill, London SW11 1LE

Jasper the mouse must walk, jump and swing his way through 22 screens fraught with danger, to find the key to his house and eventual safety within. There's a lot more to it than you first think, since there is a problem solving/adventure element involved.

Jasper can pick up and hold up to five objects, which can be used later. If you do not plan carefully, you may have to trek back to previous location to collect a much needed object.

The cassette has a demo mode which allows you to view all the screens in turn. I was so captivated by the superb animation and flicker free sprites, I found this entertainment enough, without bothering to play the game. The movement of animals, throughout is first class. It is so accurately observed, I wondered whether a zoologist had written the programme.

When you finally obtain the key I think your troubles are only about to begin, since Jasper's house is located under an active volcano puffing out red-hot balls of lava.

It's well worth releasing the moths from your wallet for this one. **M.B.**

instructions	90%
playability	90%
graphics	100%
value for money	92%

★ ★ ★ ★ ★

Rolf Harris' Picture Builder
CBM 64 £9.95

Commodore, 675 Ajax Ave, Slough Trading Est, Slough, Berks SL1 4BG

This package consists of two cassettes; the Picture Builder program, and a selection of pictures produced with it. Loading all of the sample pictures was a time-consuming procedure — three of them are shown on the packaging. Surely it would have been easier to show them all leaving out the second tape.

The sample pictures give you a good idea of what can be achieved if you have patience and skill. They are block graphics pictures, half produced with the CBM character set and half with a special set contained in the program. The CBM pictures are better than the others, some of which — the portrait of Rolf, for instance — are barely recognisable.

The pictures are drawn with a joystick, by selecting a colour and a character from those shown on the screen. Then you move the cursor to the required position and press the fire button. The procedure is simple, my children managed to produce some patterns, though not pictures.

Instructions are given for saving the finished pictures on tape or disc, and for re-loading them with or without the original program. **M.N.**

instructions	80%
ease of use	80%
display	N/A
value for money	60%

★ ★ ★

European Knowledge
BBC B £6.95

Micro Power, Sheepscar Hse, Sheepscar St South, Leeds LS7 1AD

This is a quiz type program on the theme of Europe that might appeal to the parent who believes the micro has a reputation to live up to at home. I would be disturbed to find it being seriously used at school as it attempts to cover a lot of ground in a superficial way.

The program uses a multiple choice format colourfully presented at the bottom of a high resolution map of Europe. A flashing cursor points to the part in question and asks you to identify it in the first instance.

Questions are asked about 34 countries. There are five levels of difficulty which affect the time allowed to answer rather than the nature of the question. Marks are given as a percentage on request or at the end of a round of 40 questions.

The program covers such areas as capital cities, industries, famous persons, currency and population. It seemed very repetitive and limited in scope even though the database may be extensive.

There is also the problem of slow loading time: the instructions, data and screen each load separately. **M.P.**

instructions	100%
ease of use	100%
graphics	30%
value for money	30%

★ ★ ★

Interdictor Pilot
CBM 64 £17.95

Supersoft, Winchester Hse, Canning Rd, Wealdstone, Harrow, Middx HA3 7SJ

If you are looking for a gentle introduction to flight simulators, then you had better keep looking — this new space flight simulator is dauntingly complex.

It comes with a 48 page instruction manual, which goes into great detail about the theory behind the spacecraft and its weaponry, the various types of craft you are likely to meet, and the working principles, damage susceptibility and interpretation of the instruments and displays.

However, such basic points as how to load and run the program, and which combinations of keys you need, are dealt with sketchily if at all.

You cannot, as I discovered, simply flick through the manual while the program loads. Unlike most CBM 64 tapes these days, it doesn't fast-load. You can't hope to pick up what to do as you go along. This program requires a considerable investment of time if you are to get anything out of it.

This is one for the real enthusiast and if, unlike me, you are sufficiently enthusiastic about similators to spend this much money on one, you may well find it a good buy. **M.N.**

instructions	60%
playability	50%
graphics	70%
value for money	40%

★ ★ ★

Win Death Star Interceptor, plus a matching poster

System 3 Software

CBM 64 and Spectrum 48K owners have a great chance to win software and a poster from System 3

IN THIS week's competition 30 people will win a great prize package from System 3 Software. The package consists of a copy of System 3's chart bestseller Death Star Interceptor for the Commodore 64 priced at £9.99 or Spectrum 48K priced at £7.95. There's also a matching poster worth £3.50.

System 3 is a fairly new software company, formed only last February. Death Star Interceptor is System 3's first release and there are plenty more on the way. A Spectrum version of Deathstar Interceptor is due out on 12th November and on the same day three brand new American games will be launched, all at £7.95.

The three new games are called Motocross, Suicide Strike and Juice, all for the Commodore 64. System 3 intend to convert all their titles for the Spectrum, Amstrad and MSX.

Death Star Interceptor is a classic space game. Set in 4021 A.D., it tells the tale of the dreadful threat to the existence of the earth from the evil Ardands.

Earth has refused to supply any more slaves to work in the terrible Aix mines. The life expectancy of anyone condemned to this fate is only five days. Now the Ardand Empire is taking revenge on the revolutionary people of earth and sending one of its Death Stars to obliterate the planet.

There is only one way to prevent the destruction of the earth. A single earth pilot must penetrate the Death Star's defence of forcefields, laser turrets and fighter craft and score a direct hit on the reactor's exhaust part at the heart of the star. If the fighter succeeds, the reactor will go nova taking the entire Death Star with it.

You are the fighter pilot who has been assigned to this dangerous mission and you must not fail.

The competition is one of our regular spot the difference type of puzzles so the format should be familiar. Hurry up and put pen to paper if you want to save the world.



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Study the two cartoons — there are a number of differences between them. Circle the differences on cartoon B and seal the cartoon and coupon in an envelope. Write clearly the number of differences you found on the back of the envelope.

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You may enter as many times as you wish, but each entry must be on an official coupon — not a copy — and sealed in a separate envelope.

Important: Please follow carefully the guidelines on entering — incomplete coupons and entries in envelopes with no numbers on the back cannot be considered. If you are a winner, the coupon will be used as a label to send your prize so clear writing is essential.

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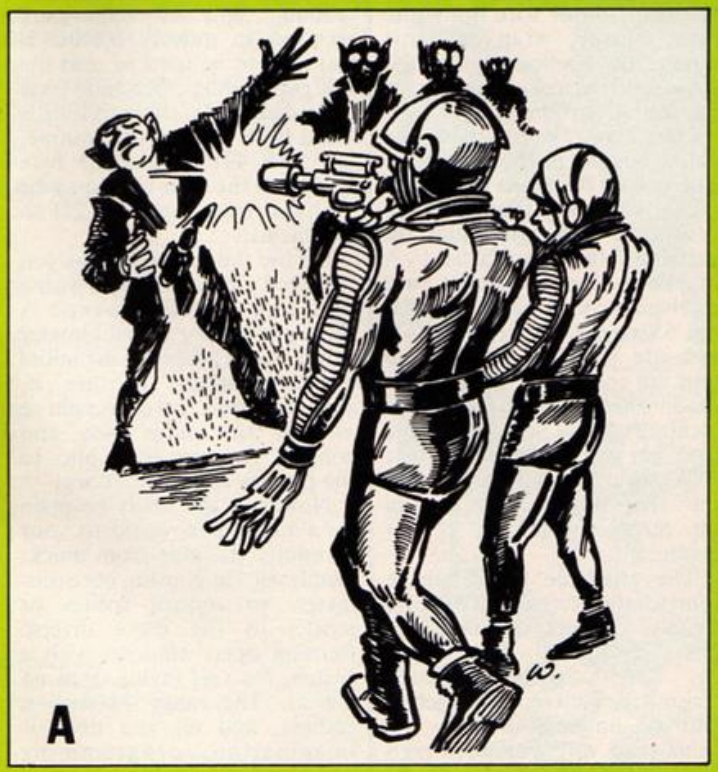
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David Rees shows you how to link up your Commodore with the rest of the universe

Detecting the outside world



One aspect of the Commodore 64 which is neglected by many users is its ability to interface with the outside world. The major reason for this is expense: all the modems sold or the circuits that have been published in electronic magazines have been designed for the user port and cost well into double figures. They are useful for control applications, which make them very worth while, but for the first time user or someone starting to learn about the machine's facilities, these interfaces are normally considered to be a large extra expense.

The solution may be found by looking around the corner of the computer, at the control ports. These may be difficult to use to control the outside world (the output current is low), but there is the novelty of receiving new channels of information.

The first problem is to find a plug for these ports. Old joystick or paddle plugs will do, but they do not connect to all the pins you will use. Plugs are almost impossible to buy so I had to make my own. To make a simple plug, take nine one-inch long pieces of thin drinking straws. Stick them together into the correct shape by placing them into one of the ports and wrapping Sellotape around the exposed surface (glue can later be added for rigidity).

Through each hold thread a piece of cable with a long length of exposed wire (Maplins hook up wire is ideal). Fold the exposed wire in half, one end going within the tube for pin contact, and the other end being stuck to the outside of the tube with Sellotape. Make sure none of the wires touch, and if contact is faulty put small pieces of foil or wire inside the tube. Finally, wrap Sellotape around the leading edge of the plug until there is a snug fit between it and the port.

Next, you must read the values coming in from the port. There are two types of inputs: digital (on or off as with the joystick) and analogue (a variable value as produced by a paddle). Digital signals are received through pins 0 to 4 and pin 6 (see the user guide P141) and are switched when these pins are connected to pin 8. To read these values, PEEK locations 56320 and 56321 (one byte per port) where the first five bits of each location give the five pin values, an on bit meaning the pin is not connected.

The analogue ports behave somewhat differently. To create signals, connect the analogue pins (5 and 9) to +5 Volts (pin 7). These pins measure resistance between themselves and the power source, so the value read varies between zero and 255, and is found at locations 54297 and 54298 (one byte per pin).

As you can see, there are four paddle pins, and only two bytes to read them with, creating a problem. This is solved by location 56320. Bits 6 and 7 determine which port the resistance data is received from. However, changing these values interferes with keyboard reading, and as values are received so quickly BASIC is too slow to be used to read the last two paddles. Machine code is needed, and a short routine is listed here. To run the routine, use SYS 49152, and the byte values of the four pins may be PEEKed from locations 251 to 254 inclusive.

To use the analogue pins you will need a potentiometer with a resistance of 470 K ohms. A three-pin rotary potentiometer is best (and cheapest!) for initial experimentation. To use it, simply connect the centre pin to one of the outer pins and connect the two outer pins to the port as described above.

Now you are ready to open up a whole new world to your computer, ranging from quick, simple uses (e.g. using potentiometers to control sprites or music) to the more diverse (sensing open windows with a switch, for fuel saving or as an alarm). The range of uses is endless, and all you need is imagination, programming sense and some cable.

Listing

```
9 REM*POT READ ROUTINE*
10 FORN=0TO55
20 READA
30 POKE49152+N,A
40 NEXTN
50 END
100 DATA120,173,2,220,170,169,192
110 DATA141,2,220,169,64,141,,220
120 DATA160,255,136,208,253,173,25,212
130 DATA133,251,173,26,212,133,252
140 DATA169,128,141,,220,160,255,136
150 DATA208,253,173,25,212,133,253
160 DATA173,26,212,133,254
170 DATA138,141,2,220,88,96
```



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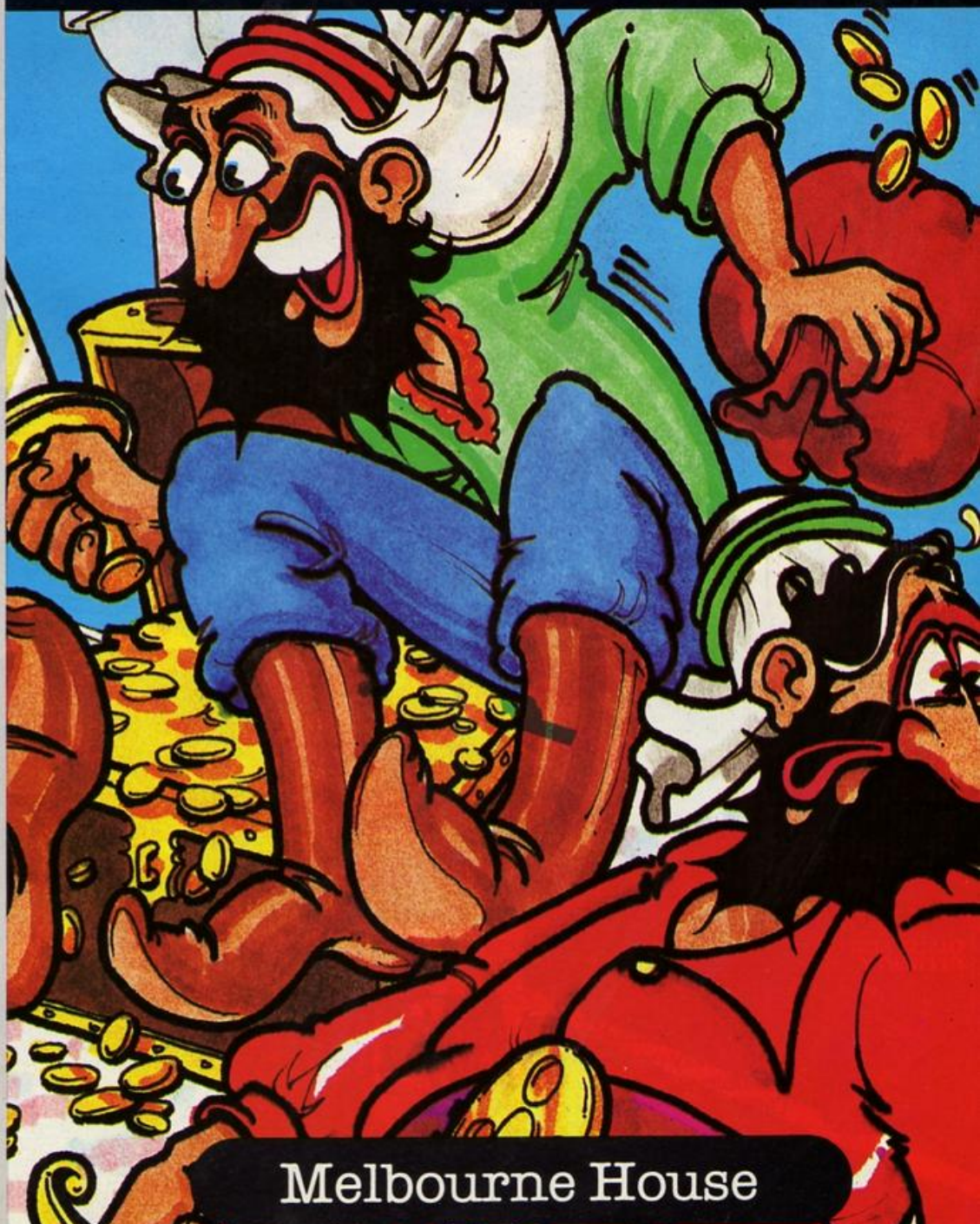
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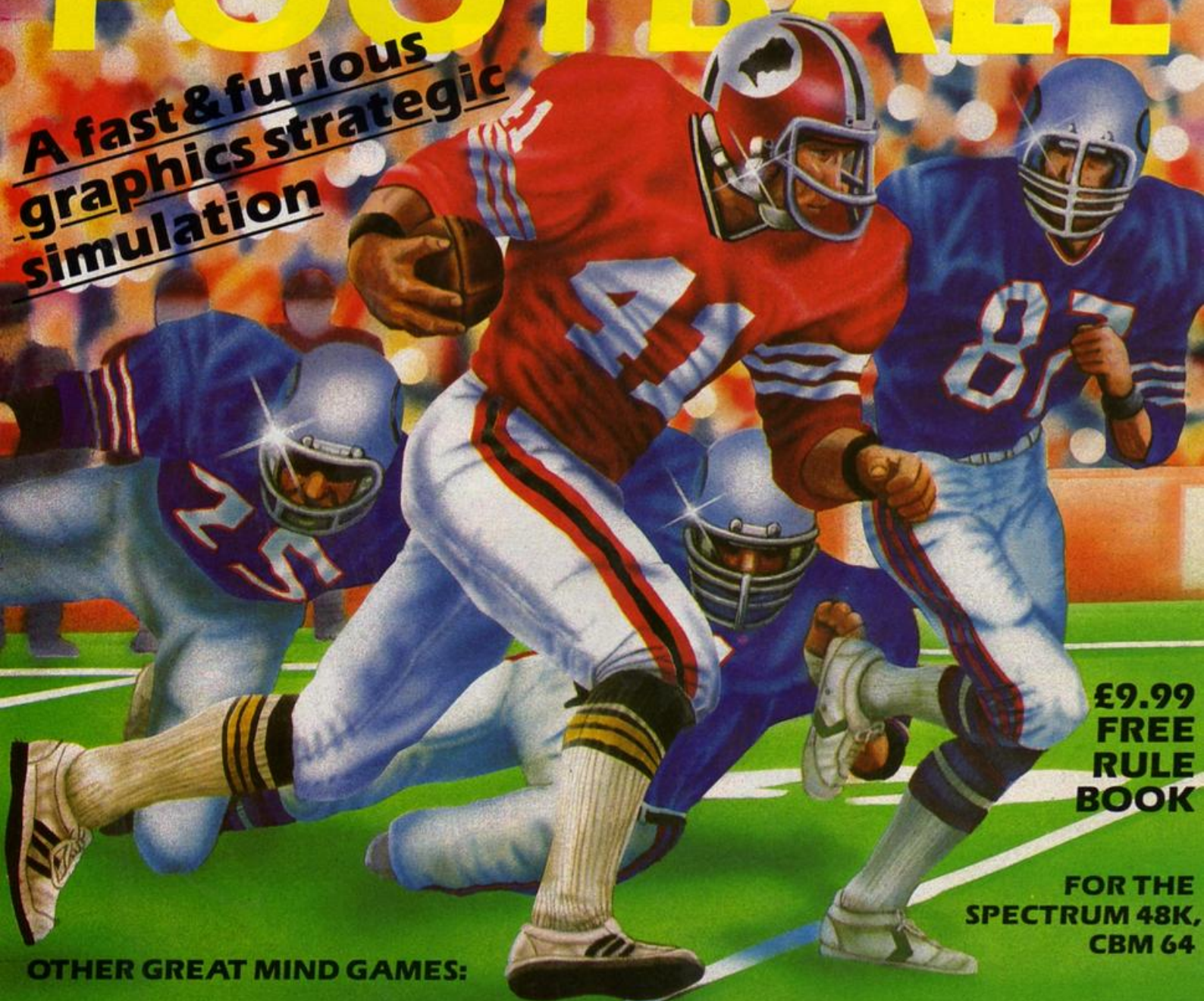
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