HOME COMPUTING WEEKLY
AN ARGUS SPECIALIST PUBLICATION
Mar 5-11, 1985 No. 102 45p

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Now we're bigger, brighter, better

Welcome to your new, improved Home Computing Weekly. You'll find all your favourite features — plus a whole host more — in this new look magazine from one of Europe's leading computer publishers.

Now we're even bigger, brighter and better. The outlook's sunny and the prospects good. We're sure you'll notice the difference — and as always, we want to hear what you think.

In this, the first new look issue, we've got great articles on:

☐ **Graphics:** Jon Revis gives you the low down on state of the art graphics packages. First of a regular series.

☐ **Spectrum BASIC** — All you've ever wanted to know about programming — an idiot-proof guide to the workings of your computer.

☐ **C64 tips** — Stop ripping your hair out! How to avoid a nervous breakdown when programming your Commodore.

☐ **Readers' page** — Your chance to tell the world about your hi-scores — and have your mug-shot printed — plus puzzles, rhymes and jokes.

☐ **Letters** — Now your published work will automatically win you a prize. What are you waiting for?

☐ **Reviews** — A better, brighter up to date rundown on just how good the latest releases are.

☐ **Programs** — Listings for most popular home computers are a regular feature. And we tell you how each program is constructed, so you can alter them as you wish.

PLUS PLUS PLUS

Whether it's software, new machines or the latest add-ons, you'll read all about it in HCW — the brightest and best weekly on the market.

If you want to make sure of a copy, place a regular order with your newsagent.

Premium Bond

Secrecy worthy of MI5 surrounds the new exclusive James Bond game from Domark.

Mark Strachan, a Domark director, would only say: 'the

game will follow the film exactly'. There will be four full arcade games and each will be based on one of the stunts in the film.

Domark's first game, Eureka! still has a prize of £25,000 for the first person to crack it. Mark revealed that 'we will continue to provide hooks for people to grasp, like the prize', but he wouldn't reveal 007's 'hook'.

Win a robot!

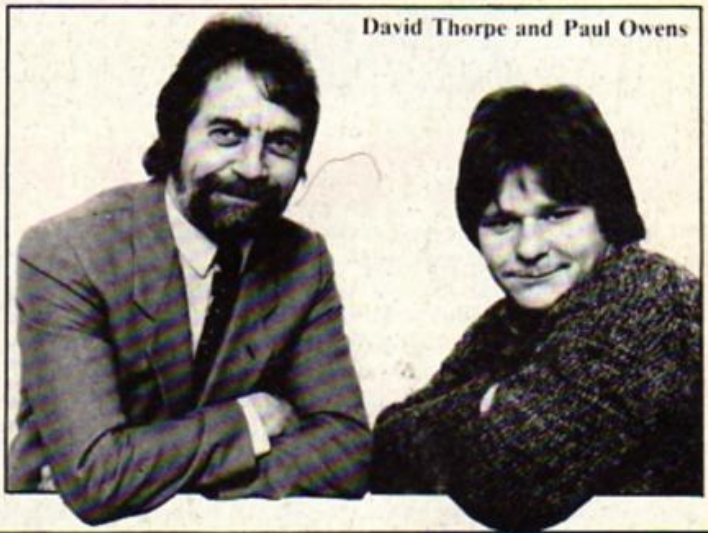
You'll never be lonely with George around. There are 10 CGL robots for 10 lucky readers

Fore!

David Thorpe, writer of Ocean's Royal Birkdale game, has just completed the titles for the latest edition of 4 Computer Buffs.

The titles follow the progress of a golf ball from a rural scene until it hits an office building.

David designed the screens, but they were programmed by Paul Owen, an Ocean programmer. Paul also wrote the Spectrum software that was broadcast over Channel 4's test card recently.



David Thorpe and Paul Owens

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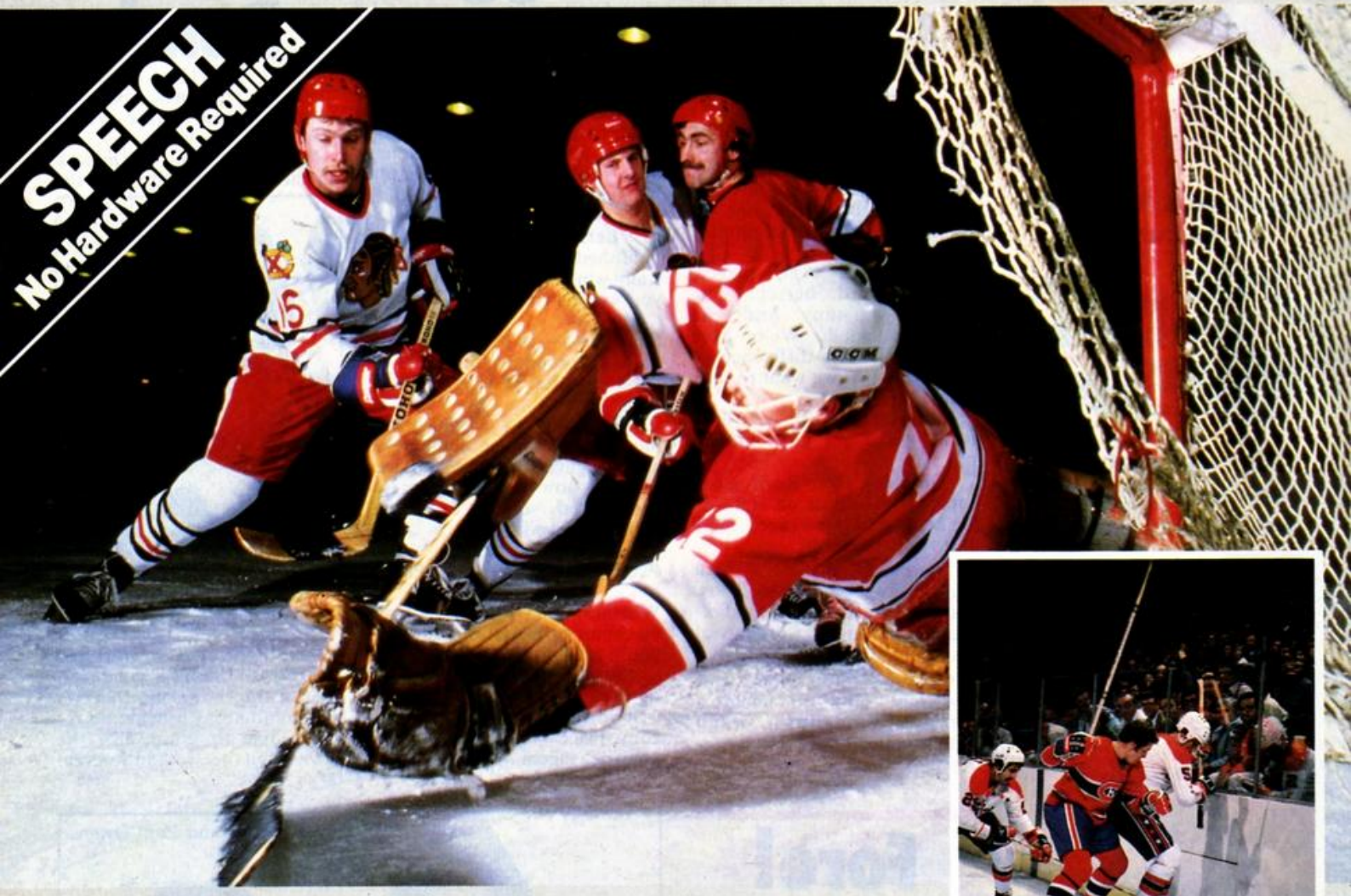
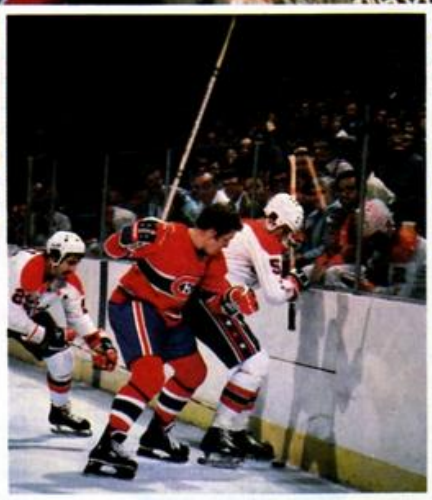
Rave review
Gallup chart
The one to believe in
Meet George
New cartoon strip
First review
Dragontorc from Hewson

FAST AND FURIOUS

SLAP SHOT

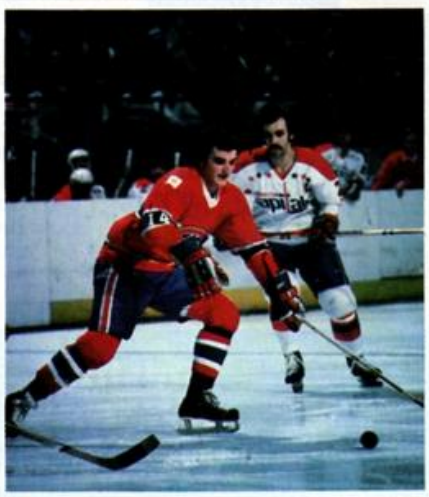
ANIROG





ALL ACTION ICE HOCKEY

SLAPSHOT from Anirog is a two player, fast action, ice hockey program. Also in this thrilling game there is included a smoothly running speech synthesis system of the very highest quality. Before the actual game starts each player must select an international hockey team to represent. After doing this you must quickly and skilfully manoeuvre your man across the glistening ice whilst your other team-mates move automatically around the rink waiting for you to pass the puck to them. If you do manage to race past the opposing defence then you have a chance to shoot for goal and score. However, you still have the goalie to beat who is able to dive in all directions. Also included in this amazingly quick and totally original game is the ability to actually physically bodycheck your opponents. Never the less, do not be too aggressive otherwise you could incur a "roughing penalty", resulting in a faceoff in your own end, giving the opposing side an easy chance of scoring. Also other extra features available include: Pause mode, and three levels of play ranging from fast to slow as well as a re-start option. Slapshot from Anirog is a totally original two player game with lightning fast action never seen before on the Commodore 64.



Two J.S. Commodore 64 Cassette £8.95 Disk £10.95

Trade Enquiries: ANIROG SOFTWARE LTD., UNIT 10, VICTORIA IND. PARK, VICTORIA ROAD, DARTFORD, KENT. (0322)92513/8

HOME COMPUTING WEEKLY

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SOAPBOX

Is the era of the computer game over?

As I go around and see the software houses' new products one might be forgiven for believing that there is an air of pessism becoming common place.

One thing is certain. There will be far fewer new games this year than there were in last year's bumper crop. A number of houses are planing to release their games one by one rather than in larger numbers. Some are even talking of releasing just four or five games instead of last year's dozens.

Rather than showing the decline of the game industry I believe that this is a sign of it's maturity and development. You don't see record companies releasing dozens of albums and then only promoting two or three.

With the trend towards games linked to other products it looks as if 1985 is going to be the year of the TV game. There are huge numbers of such games being planned at this very moment and it will soon be commonplace for you to see software from the latest being sold alongside the sweatshirts and soundtrack albums. **Dave**

If you disagree with anything we say from the soapbox, write to us. We give a prize for all the letters we print, so let us have your thoughts and ideas.

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BASIC LIVING

by Jon Wedge and Jim Barker

The Computer Dictionary by Jon Wedge and Jim Barker is available from A & C Black, price £3.95

SPECIAL OFFER

HALF PRICE GAMES

By special arrangement with Alligata, one of Britain's leading independent software houses, we are able to offer you half price software.

Using the voucher below you can order any item from Alligata's catalogue at 50 per cent discount, post free.

Commodore 64, Spectrum, Amstrad CPC464, BBC, and Electron – software for all these machines can be yours at a bargain price.

New releases include Defend or Die for the Amstrad and Hypercircuit for the C64.

Defend or Die is a faithful version of the incredibly popular arcade game, complete with radar screens, mines, swarmers, mutants and the troublesome minelayers which cause so many problems. Amstrad colours are used to their fullest extent and you won't believe the mind-blowing sounds. Normally £7.95, if you use our special voucher this program will cost you less than £4.

Hypercircuit gives you the chance to travel round your computer's printed circuit board defending the sensitive micro-processor from evil micronasties. You travel the wires, triggar-finger ready to deal with all the crazy inhabitants of this miniature world: it's non-stop action – all yours for less than £4.

Alligata was the first company to sell compilation cassettes of its own best-selling programs at a premium price. A Fistful of Fun, now on BBC and C64, adds to its popular Chartbuster series. The BBC fistful contains Tarzan and Bugblaster – both high selling arcade games – and two brand new titles: 3D Space Rider and Growing Pains. Uncle Claude, featuring a high technology superstar, makes up the final digit in the fist.

The C64 tape also packs in five games: Loco, Son of Blagger and Guardian – arcade favourites – and two adventures: Aztec Tomb Revisited and Haunted House. These titles originally sold for nearly £8 each, but on this compilation tape they are just £9.95 at shop price and by using our voucher you save a further £5. Both compilations are available on disc at a mere £11.95 – £5.97 using our voucher.

This is a once only offer which must close on May 31st 1985. Only the voucher cut from HCW may be used, no photocopies can be accepted. If you would like a copy of Alligata's full catalogue with details of all Alligata products please send a large stamped addressed envelope to the offer address and one will be mailed to you.

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ADDRESS _____

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PROGRAMS REQUIRED (TITLE)	MACHINE	PRICE
TOTAL		

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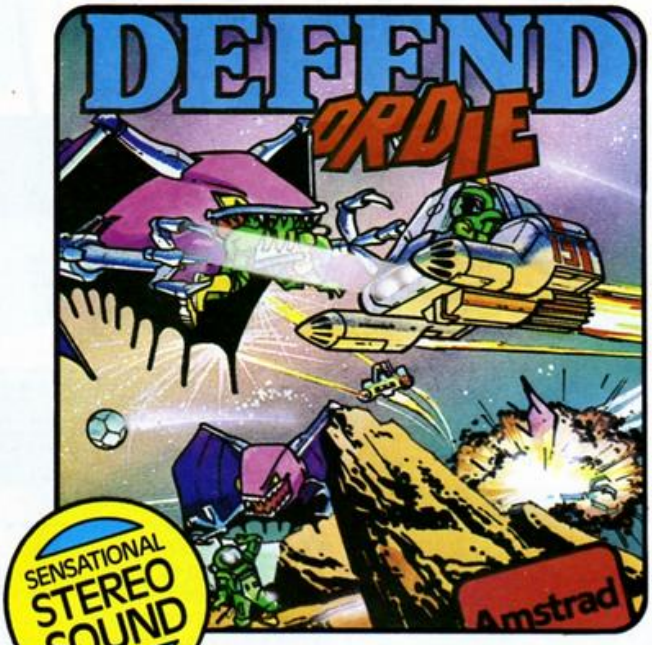
Sheffield S1 4DW
(0742) 755796

Alligata Software Ltd



Acorn sprouts again

At last, details are emerging of the problems that have caused Acorn to start teetering on the brink of receivership.

Over production and high stocks appear to have been the major problems and this has caused Acorn to make a loss of nearly £11 million over the last six months.

In order to bail the company out of these difficulties there is to be a rights issue of shares. All those people who already own shares can buy some more at a special price.

This will raise about £12 million so that the company can carry on trading. Since Hermann Hauser and Chris Curry hold 85.7 per cent of the shares, they are eligible to buy the bulk of the rights issue. Rather than do this they have agreed to sell all those shares and a few of their existing ones to Olivetti. Thus, Olivetti will have 50.1 per cent of the shares and therefore take control of the company.

As part of these changes the new chairman of Acorn is to be Dr Alexander Reid, who joined the board some time ago and has overlooked the change of ownership and the financial restructuring.

In the future Acorn Computers Limited will be split into four divisions. These will reflect it's main markets; education and training; scientific and industrial; business; and consumer. This is expected to reduce the company's overheads and will mean that a further 90 people will be made redundant in addition to the 30 redundancies already announced.

Only time will tell if these changes will make Acorn a viable concern again. The advantage of the new connection with Olivetti is it's overseas marketing expertise. Chris Curry commented: 'We particularly liked the proposal from Olivetti because it adds a valuable international dimension to our activities and because we see an excellent fit between our products and theirs.'

This concern with overseas markets is due to the company's abortive attempts to break into the American educational market, which ended in disaster, a cutting back of the bulk of the American staff and losses of over £2 million.

Acorn Computers, Fulbourne Rd, Cherry Hinton, Cambridge

Company get together

Marketing rights for the next seven titles produced by Bug Byte have been given to Quicksilva.

Contrary to reports in the press, this is not part of a take over but simply a move that makes the most of the expertise of both companies.

The titles haven't all been announced, but are thought to include Bug Byte's new TV tie-in program Automan and also Turmoil, both scheduled for release very soon.

The companies have had a long association in the past, and have been joint hosts of the annual Quickbyte dinner. This is an occasion when people in the computer industry get together and present rather jokey awards to each other.

Rod Cousens, managing director of Quicksilva, said 'One of Quicksilva's functions in the future will be to act as a publisher of third party software. The association between Quicksilva and Bug Byte may signal other areas of involvement at a later stage.'

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

Elementary Dr Watson

Morriarty has met his match. Brothers Paul and David Cunningham have become the first people to solve a Sherlock Holmes mystery before the man himself.

The mystery was in the form of an adventure game from Melbourne House and it took them three months to work their way through the intricate plot.

David commented: 'We thought that the Hobbit was intricate, but Sherlock is even more of a challenge and really does require a lot of work.'

To mark their achievement David and Paul were invited down to London from their home in Morpeth, Northumberland, and were treated to lunch in the Sherlock Holmes restaurant, which incorporates a faithful reproduction of the famous fictional detective's study.

The photograph shows them in the study and despite their amusement Mr Holmes appears rather less than pleased, unless that really is a bullet hole in his head.

Melbourne House, Castle Yard, Richmond TW10 6TF

Super sleuths meet

BY GEORGE! COMPETITION

10 obedient little robots are on offer this week. If you need a friend George could keep you company

George, the programmable computer robot, is a versatile little creature. He stands 16.8 cm tall and is styled in grey, red and blue.

If you think he sounds like a nice person to have around, then read on, because in this week's competition we're giving away 10 of these attractive robots, each worth around £25.

George is made by CGL and is just one product from a wide range of high technology toys and games. CGL claims that George is not only a toy, but also an educational tool. David Morein, CGL's managing director, said: 'This toy will be teaching children to program while they are playing a game with him.'

George is a multi-talented soul. He can go forwards, backwards, hold, turn right, turn left, curve left and right, and even retrace his steps. He also has three selectable gears and nine time intervals. Any action can be programmed step by step and each can be repeated up to nine times. He also emits a light beam and makes a robot-like sound. George even has a demo program so he can show off all his skills.

As a learning aid, CGL claims that George provides all the fundamental features of an expensive teaching system. He has an in-built microprocessor controller and a small keyboard on the top of his head. This control panel has 25 keys and, according to CGL, it is extremely simple to use and can be taught to children aged four and upwards. Dual motors take care of traction and steering for the rubber tyred wheels and a built-in speaker provides beeps, buzzes and light effects.

To win George you must study the two short programs printed on this page. Don't worry if you're no good at programming. All you need to do is count the number of differences between the programs — as you would in a normal spot the difference competition. If you like, you can run the program. It will work on most computers as it is written in very simple BASIC.

Remember there are only 10 winners so get your entry off as soon as you can and you may be one of the lucky ones.

How to enter

Study the two programs — there are a number of differences between them. Circle the differences on program B. Fill in the entry coupon and seal the coupon and program in an envelope. Write the number of differences clearly on the back of your envelope. Program A is the version that will run if you type it in.

Post your entry to: George Competition, Home Computing Weekly, No. 1 Golden Square, London W1R 3AB. Entries must arrive by first post on Friday 22 March, 1985.

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 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.

The rules

Entries will not be accepted from employees of Argus Specialist Publications, Computer Games Limited, and Alabaster Passmore & Sons. This restriction also applies to employees' families and agents of the companies.

The How to Enter section forms part of the rules.

Program A

```
10DIN A(10)
20CLS
25a$="Home Computing Weekly
30FOR Y = 0 TO 10
40LET A(Y)=15-Y
50NEXT X
60FOR X = 0 T0 10
70PRINT TAB(A(X));A
80NEXT Z
90FOR Z- 0 TO 10
100PRINT TAD(A(10+Z));A$
110NEXT Y
```

Program B

```
10DIM A(10)
20CLS
25A$="Home Computing Weekly"
30FOR Y = 0 TO 10
40LET A(Y)=15-Y
50NEXT Y
60FOR X = 0 TO 10
70PRINT TAB(A(X));A$
80NEXT X
90FOR Z= 0 TO 10
100PRINT TAB(A(10-Z));A$
110NEXT Z
```

George Competition

Entry Coupon

Name _____

Address _____

_____

_____

_____ **post code** _____

Number of differences found _____

Complete clearly and fully — if you are a winner this will act as a label for your prize. Post to George Competition, Home Computing Weekly, No. 1 Golden Square, London W1R 3AB. Closing date: first post, Friday 22 March, 1985. Don't forget to follow closely the advice in the How to Enter section, including writing the number of differences on the back of your envelope.

Micro Live menu

Micro Live, BBC 2's computer programme, will feature laser discs connected to micros in the next edition on Friday March 8th.

The system of recording images onto the discs, which can then be read by a laser, has applications in industry, education and leisure. The programme will show how this technology is applied in a commercial picture library.

There is the possibility that a new Phillips system will even make floppy discs obsolete, but this is likely to be some time in development. One project that is already underway is the BBC's own Doomsday Project, which will involve over 10,000 schools compiling a new version of the Doomsday Book for the 900th anniversary of the original.

The book will be stored on laser discs, currently being developed, which will interface to a BBC computer and allow you to go from a map of an area to comments and photographs of the people living there in 1985.

Other features of Micro Live will include reviews of portable computers and integrated software, live subtitling for the deaf, computer ergonomics and robot table tennis.

There will also be a preview of The Learning Machine, a new series about the educational aspects of computing. This will examine the effects of the government scheme to put a micro in every school.

Micro Live, Rm 811, Villiers Hse, Ealing Broadway, London W5 2PA

Going bananas

Fruit cocktail

The connection between computers and fruit was taken a stage further today with the announcement that the Banana micro interface has been developed.

There are already computer products named Apple, Mackintosh and Apricot, so before long you will be able to have a full fruit salad in your computer room.

This new interface is designed to give the computer control of it's environment and will be of particular interest to teachers of craft, design and technology.

The units will interface to BBC, VIC-20 or Commodore 64 computers and give a whole array of options. There are eight inputs to allow intelligent control of the 16 output lines. Eight of these drive relays, whilst the other eight are 12 volt logic signals for driving motors.

A special feature of this interface is it's robust nature. The unit has been designed for schools and incorporates a range of protection devices. These should ensure that not only the children, but also the computers are safe from harm.

The naming of this product is not quite as strange as one might think. There are 54 four millimetre 'Banana' sockets on the front. It is through these sockets that the unit can take control.

Castle Associates, Salter Rd, Cayton Low Rd Ind Est, Scarborough YO11 3UZ

SuperGran drops in

A surprise visitor to the recent LET show was Super Gran, star of the successful TV series.

Tynesoft has signed a licencing agreement with Tyne Tees Television to produce a game based on the character. No details of the game have emerged yet, but if she manages to work as well for Tynesoft as she does in her northern home town, success should follow.

Tynesoft, Addison Ind Est, Blaydon-upon-Wear, Tyne & Wear NE21 42E

Is it a bird?
No, it's Super Gran

FOR EVERY CASSETTE 50 YOU ORDER BEFORE 31st MAY 1985 YOU WILL RECEIVE A

FREE cascade microclean Computer Cassette Player Head Cleaner

MICROCLEAN is specially designed to remove damaging oxide deposits left on the playback head by program tapes. MICROCLEAN is so simple and quick to use yet it can greatly improve your computer's performance.

SPECTRUM 16k/48k or +

'Incredibly frustrating!' – that's the verdict on Cassette-50's FROGGER. Satisfied users tell us it's one of the most challenging you'll find – it's almost as good as the arcade version! CARGO has you trying desperately to complete your helicopter mission under attack. Plus 48 other tactical, logical and adventure games featuring multi-coloured and user-defined graphics, scrolling and full use of the Spectrum sound capabilities.

1. Muncher
2. Ski Jump
3. Basketball
4. Frogger
5. Breakout
6. Crusher
7. Startrek
8. Martian Knockout
9. Boggles
10. Alien Attack
11. Lunar Landing
12. Maze Eater
13. Microtrap
14. Motorway
15. Labyrinth
16. Skittles
17. Race Track
18. Ski Run
19. Tanks
20. Solar Ship
21. Ten Pins
22. Cars
23. Stomper
24. Pinball
25. Cavern
26. Laser
27. Alien
28. Cargo
29. The Race
30. The Skull
31. Orbit
32. Munch
33. Bowls
34. Raiders
35. Field
36. Draggold
37. Space Search
38. Inferno
39. Nim
40. Voyager
41. Sketch Pad
42. Blitz
43. Fishing Mission
44. Mystical Diamonds
45. Galaxy Defence
46. Cypher
47. Jetmobile
48. Barrel Jump
49. Attacker
50. Space Mission

ATARI

Munch, Munch . . . it's the MAZE EATER! Can you eat the ghosts before they eat you? Or would you rather chance it on the MOTORWAY? Your Cassette-50 is compatible with the 400/800 and 600XL/800XL series ATARI computers. Advanced features include high-resolution graphics, sound, music and mixed mode screens. Many games are joystick compatible.

DRAGON 32

If you like the light cycles of TRON, you'll love JETMOBILE – a thrilling 2-player game featuring high speed graphics. More special features include smooth scrolling, high resolution graphics, sound and music, plus many games are joystick compatible.

COMMODORE 64

Only you can save Europe from destruction! It's ROCKET LAUNCH, the thrilling war game that reproduces a European map. More ambitious? Try rescuing your crew under an ultrafast GALACTIC ATTACK and escaping back to your spaceship! Just two of the great games on your Cassette-50, featuring high resolution and user-defined graphics, sprites, sound and music

1. Maze Eater
2. Galactic Attack
3. Space Mission
4. Lunar Landing
5. Plasma Bolt
6. Startrek
7. Radar Landing
8. Attacker
9. Galactic Dog Fight
10. Psion Attack
11. Ivasive Action
12. Noughts & Crosses
13. Boggles
14. Pontoon
15. Ski Jump
16. Hangman
17. Old Bones
18. Thin Ice
19. Orbitter
20. Motorway
21. Force Field
22. Nim
23. Tunnel Escape
24. Barrel Jump
25. Cannonball Battle
26. Overtake
27. Sitting Target
28. Smash the Window
29. Space Ship
30. Jet Flight
31. Phaser
32. Intruder
33. Inferno
34. Ghosts
35. Submarines
36. Rocket Launch
37. Planets
38. Black Hole
39. Dynamite
40. Do Your Sums
41. Derby Dash
42. Space Search
43. Universe
44. Rats
45. Tanker
46. Parachute
47. Jet Mobile
48. High Rise
49. The Force
50. Exchange

VIC-20

Will it be BALLOON DODGERS, or the prizewinning DUSTMAN DAN? Play these and 40 other fabulous games – including many automatic double loaders – on your unexpanded 3.5K VIC-20. And with an 8K* or 16K** expansion cartridge you can choose from 8 additional games like STAR TREK or SKULL CASTLE. Special effects user-defined graphics, super sound and music.

APPLE

Can you land your jet with nothing but a radar projection to guide you as you wrestle with the controls? High-resolution graphics make RADAR LANDING a real thriller. And Cassette-50 gives you 49 other great games to choose from including a classic STAR TREK and blazing INFERNO.

BBC A/B

An advanced computer like the BBC demands a sophisticated games cassette. That's why Cassette-50 gives you full use of screen modes with high resolution colour graphics, user-defined graphics, excellent sound and music, joystick compatibility and many high-speed games. HIGH RISE gives you the chance to beat a realistic roulette wheel, with all the extras, and you'll need the fastest reactions of all to beat IVASIVE ACTION as you trail across the screen in a frantic search for oxygen. With multi-levels and superb graphics this game is totally addictive.

ELECTRON

Can your FORCE FIELD protect the city from Alien Attack – or maybe you have the skill to DYNAMITE the dam and flood enemy headquarters! Fifty different games with high speed, high resolution colour graphics, user-defined graphics and excellent sound and music. Not to mention full use of screen modes. Fifty fast-paced, fascinating games.

ZX81

Even a small computer gets more from Cassette-50! You can run 39 games on just the basic 1K ZX81, while 11 more will play with the addition of a 16K expansion pack. Where else could you watch your radar instruments and judge your final approach in games like RADAR LANDING – a realtime flight simulator, or enjoy the thrills of PSION ATTACK. Logical, tactical, maze, arcade – all kinds of games on just one tape!

ORIC ATMOS

Have a go at GALACTIC ATTACK – you'll need fast reactions to beat the invaders in this all-time favourite – or if you prefer you can travel through space at warp factor 9 in SPACE MISSION, a realistic 3-D version of space warfare as seen from the cockpit of a spacecraft. Everyone has a favourite game on Cassette-50. With fifty classic and original games featuring user-defined graphics, sound effects and increasing levels of play.

ORIC 1

It's the dreaded MAZE EATER! Can you safely negotiate your man through levels of mazes? Watch out, it's really tough! Or would you prefer PLASMA BOLTS, a superb high speed version of the classic arcade Centipede game. Maybe you'd rather leap straight into SKI JUMP, or any of 47 other exciting games featuring sound effects and user-defined graphics.

EXPRESS DELIVERY- ORDER NOW! and get your FREE Cascade Microclean with every Cassette 50

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HCW 3-85

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I enclose a cheque/ postal order for £ _____ made payable to Cascade Games Ltd.

or through any Post Office by TRANSCASH (Giro No. 655 6655) For even faster ordering when charging to Access, Barclaycard and Trustcard Visa use our 24 hour service. (0423) 504526.

ACCESS VISA No. _____

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SPECTRUM	☐	ELECTRON	☐	ZX 81	☐	APPLE	☐
ATARI	☐	ATMOS	☐	DRAGON	☐		✓

Cascade Games Ltd.,
1-3 Haywra Crescent, Harrogate,
North Yorkshire, HG1 5BG. England.
Telephone: (0423) 504526. *Registered Number 1755554*

BACK TO BASICS

Colin Wilton-Davies introduces you to Spectrum BASIC with his idiot-proof guide. It's easy to follow and gives you an insight on how your machine works. First of a regular series

The enemy dead lie all around you, the treasure is yours and the princess is safe. Safe from you, anyway, as she's not really your type. The treasure looks suspiciously yellow for gold, and the excitement of zapping aliens has worn thin. When you reach this stage, you should begin thinking about writing your own programs. Whether you want to write games or something useful, this series is for those of you who haven't given up, but wish the manual was a bit thinner!

You'll know by now a bit about the Spectrum keyboard, like using the CAPS SHIFT and SYMBOL SHIFT keys, and just pressing the J key instead of typing in LOAD. Now see what happens if you press the P key; instead of the word LOAD which you get from the J key, the word PRINT appears at the bottom of the screen. This is a good place to start learning to program the Spectrum; no matter what clever things are going on inside the machine, you won't know if it doesn't tell you, and the PRINT statement is a very versatile tool for giving out information.

If you now press the ENTER key, the Spectrum gives you an 'OK' message and some numbers; what you've done is told it to PRINT nothing, so it did exactly that and then said 'OK' meaning 'That was done as you said, what next?'; computers are like that, very simple minded. You don't have to be clever to write programs, you really have to get down to a very simple level and break everything down into tiny steps. Computers are, however, quite good at arithmetic, and you can use them like calculators.

Press the ENTER key again, then the P, then 9, then SV (this is my shorthand for 'SYMBOL SHIFT' and V keys pressed together'), then 7. You should now be seeing the message 'PRINT 9/7'. Press the ENTER key, and the Spectrum displays '1.2857143' at the top of the screen; it has divided 9 by 7 and given you the result faster than thought.

That was a short series of instructions carried out, but not yet a program; if you want that result again, you have to give the same instructions again. To make it into a program, you must give 'LINE NUMBERS' before each small group of instructions. So press 1, then 0, then 0 (these are zeroes), then P, then 9, then SV then 7, then ENTER. That should look like:

```
100 › PRINT 9/7
```

which is a very short program. It is stored in memory, but hasn't done anything because you haven't told it to. I said computers were stupid, didn't I?

To get the answer, you have to RUN the program, which you do by pressing R (see the word 'RUN') and ENTER. Same answer as before, and an OK message. RUN it again and again, and the same answer comes up without your having to repeat the instructions. This is the essence of a program; it is a stored list of instructions.

Not much use so far, though, and not very appealing. Let's improve it. Have you noticed the '›' sign after the line number? It's a pointer to the 'current line', and if you press C1 (CAPS SHIFT and 1), a copy of this line appears at the bottom of the screen for EDITing; this has a flashing K (a 'K cursor') to mark your place in the line. You can move the cursor left or right by pressing C5 or C8. Try left first, then press 1 and ENTER. Now you have a two-line program:

```
100 PRINT 9/7
1010 › PRINT 9/7
```

Rather than RUN this (I'm sure you'll guess the result), press C1 again and move the cursor Right (C8) two places, erase the 9 by pressing C0, then type '11' (without quotes) and ENTER. Your program now reads:

```
100 PRINT 9/7
1010 › PRINT 11/7
```

and if you RUN it, you get

```
1.2857143
1.5714286
```

The Spectrum has executed your instructions in sequence, in the same order as the line numbers. This is a general property of BASIC programs. Now EDIT again, changing '1010' to '1000' and '11' to '10', lengthening the program to:

```
100 PRINT 9/7
1000 › PRINT 10/7
1010 PRINT 11/7
```

with your new line inserted in the proper place for its number. You can see the point of not using consecutive line numbers; if you leave gaps, you can insert your afterthoughts! You can also press C7 or C6 to move the current line pointer up or down to EDIT other lines, or you can write new lines with numbers.

If you just type a line number

and ENTER, this has the effect of erasing the whole line. Now try EDITing each line to change all the '/'s to '*'s (SB)s. The '*' is the 'operator' for muliplying, just as '/' is the operator for division. In this way, you could write a program to print out your seven times table (or your 997 times table) on the screen, but don't.

There's a better way to do that, using a method of counting. Get rid of your program; the quick way is to press A and ENTER — this NEW instruction tells the Spectrum that you want to write a new program. Almost like English, really. The screen blackens, then clears to the usual copyright message.

Before using the counting method, I must mention the idea of *variables*. These are like house names in a street; the names referring to the contents of the houses. Variable names are the names of *memory addresses* with numbers as their contents. We are going to call a variable 'c' because we are going to count with it, and in this case the Spectrum won't let us use a longer name. The technical term to call this kind of counting is a FOR NEXT loop, and we are going to count from 1 to 12. Type 100, then F,C,SL,1,12 without commas, and you should get:

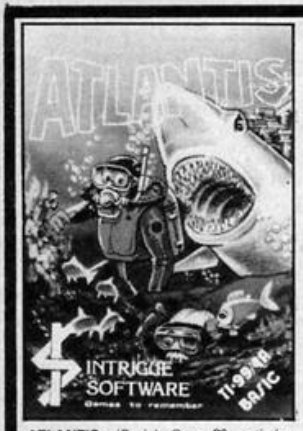
```
100 FOR c=1 TO 12
```

in a similar way, enter

```
110 PRINT c*7
120 NEXT c
```

and when RUN, you will see the answers to the seven times table on the screen. The FOR statement sets up the starting and finishing limits for 'c', the second line calculates and prints the answer; the NEXT statement adds 1 to the value of 'c' and checks to see if this has exceeded the end limit. If it hasn't, the Spectrum repeats the calculation with the new value of 'c'. When 'c' does go over the limit, execution passes to the line following the NEXT statement. There isn't one, so everything stops.

Put a blank cassette in your recorder, wound forward a bit to get past the leader. Now press S,SP,S,E,V,E,N,SP, connect the MIC socket on the Spectrum to the MIC on the recorder, disconnect the EAR lead, press RECORD and PLAY together, and the ENTER key on the Spectrum. This will SAVE 'seven' — your program is now recorded on cassette. Rewind, reconnect the EAR lead, enter VERIFY (XSR (X is shorthand for CAPS SHIFT and SYMBOL SHIFT. together))'seven'. This compares the program just saved on tape with the program in memory; if you don't get an OK message, SAVE again with a different volume setting until you do. We'll make the program more versatile next time.



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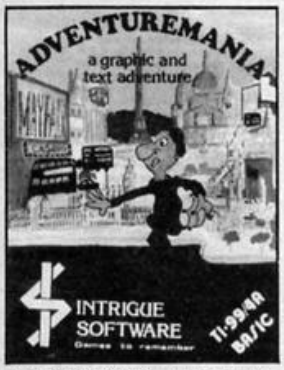

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SOFTWARE

Dragontorc

Morag the Shapeshifter has seized the crown of Dumnovia and is out to find the other four. This is how the scene is set for Dragontorc, the sequel to the Hewson Consultants best-seller, Avalon.

A Torque is an ancient celtic necklace that consists of many strands twisted together forming a band which is decorated and worn around the neck as a status symbol. The Dragontorque was an ancient magical symbol, possession of which guaranteed rule of all the British Isles.

We are told in a poem that the Dragontorque was melted down and made into the crowns of the Five Kingdoms of Britain in order that the Torque's power could be lessened. All went well until Morag of the North caused Death of the high King Vortigern and stole his crown as the first part of the Torque. At this stage our hero, Maroc, star of Avalon, enters the game, called by the seal of Merlin he is entrusted with the defence of the realm and the task of rescuing Merlin from Morag.

The game is described as an 'Adventure movie'. You have control of Maroc and can move him through the many locations of the game by using a joystick. The screen scrolls very smoothly left and right, but Maroc can also leave the screen by up and down movement in which case the screen is changed instantly. The graphics are of a very high quality and the screen is very colourful with a decorated border on display permanently around it.

At the bottom of the screen is the picture of a scroll which contains all the spells that Maroc knows, these may be selected by scrolling the scroll (what else?) by using the joystick and pressing fire when the correct spell title is opposite a displayed arrow. When a spell is selected you once again control Maroc by joystick, so that he may use the current spell. As the game progresses Maroc may pick up magical items that will give him another spell, if this happens the spell is added to the scroll.

Another main feature of Dragontorque is 'Sensory Animation' which is what Hewson have called their unique form of creature interaction. That is to say each creature that Maroc meets in the game has an attitude towards him, e.g. hate, like, distrust, etc., but this is not fixed and changes, depending upon Maroc's actions. Thus Maroc must use all the creatures in the game if he is to succeed in his mission.

You are able to save the game at any stage which is useful as it will take many hours of hard work to solve Dragon torque and thus rise from the lowest Magician to the exalted Lore Lord.

In conclusion I must say that if you like this sort of game then Dragontorc is for you, however this game does take a lot of getting used to and I wouldn't recommend it to a beginner.

J.G.D.

Publisher: Hewson Consultants

Address: Hewson Hse, 566 Milton Trading Estate, Milton, Abingdon, Oxon OX14 4RX

SPECTRUM

Accelerator

This is a great game at a great price. I must confess a weakness for shoot-'em-up alien zappers, though I've seen so many they're coming out of my ears! — *And I thought they were earrings! Ed.* — But this is super!

A multi-coloured loading screen changes to reveal stars scrolling in the background, whilst you have the option to select Interface II controls, view instructions, hi-score or points table, then on into space. You control your ship in all four directions blasting as you go, taking care to avoid space mines. Your target is a wide variety of alien ships, each in waves. The more waves you down, the trickier they become, and the more points they're worth, 20 waves in all.

What marks this out from other games is the quality of the graphics. The sprites are large, flicker-free, and move with great smoothness. The sound is as good as you'll hear from the Spectrum, and accompanies explosions and zaps on the screen. As each successive wave succumbs to your blaster, the screen whites out and a new wave begins.

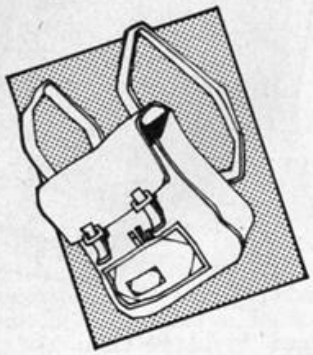
Now the best news of all! It's only £1.99! This is as good as games four times the price; the Spectrum hardware is virtually taken to it's limit. What more can you ask? Why don't other software houses offer the same value? Buy **two** copies for your collection if this is the sort of game you like. You won't be disappointed with it. **D.M.**

Price: £1.99

Publisher: Century City

Address: 99 High St, Dudley, W Midlands DY1 1QP

SPECTRUM



Desk Diary
C64

Desk Diary claims it is a powerful Diary Information Management System. In essence you can make diary entries by date, you can maintain separate pages of notes such as names and addresses, and you can search the information base for the occurance of any string. In addition you can import or export files between Desk Diary and Easy File, Easy Script and Easy Calc.

It sounds good, but naturally there are restrictions and your attitude to this piece of software will depend on how dedicated you are to micros. In other words I still think a traditional handwritten diary is superior.

Your diary is maintained on a separate data disc. The year is divided into predetermined quarters, i.e. Quarter I is always 1st January to 31st March, and you set up your data disc for the current quarter. Desk Diary allows you to make entries on up to 30 future appointments beyond the current quarter. These are carried forward automatically when the next quarter's disc is set up. When you make an entry against a date you must remember to save it to disc before returning to the main menu.

While the main menu is displayed, there is a window situated at the top right hand corner of the screen that displays the appointment entries over 10 days starting from the previous Sunday. You can scroll this window as required. In the bottom corner of the screen there is a real time clock which you set when starting up Desk Diary.

One of the options from the main menu is Desk Data. This in effect passes you to 19 other general purpose pages which can contain information. As supplied Desk Diary has these pages already set up, partly for your convenience and partly to illustrate how they can be used. Thus one page is set up for conversion factors, another for hotel details, another for your tax details etc.

Any information held in Desk Diary can be searched by the Easy Analysis option. You enter the text you are searching for and a start date, or you can search for a specified date and retrieve it's appointments page. There is an option to print out anything retrieved to a Commodore printer (the system hung outputting to my Epson).

Despite a few other features I found it limiting and slow, so my existing diary remains a valued possession.

This needs a disc drive. **L.C.**

Publisher: AZAD

Address: 23 Chesham St, London SW1X 8NQ

C64

Spook Loot

This is another maze game with walls built of bricks.

The five-minute load time seems an eternity, with nothing on the screen at all, apart from the occasional message to let you know that the program is still loading.

Read error b is also indicated far too often, which means rewinding the tape and starting all over again.

At the start of the game, looking quite humanoid, you are placed inside the maze and can be moved around using either the keyboard or a joystick.

Your objective is to find all the hidden treasures spread throughout the 160 rooms. If you achieve this part you then have to locate the hidden button to a secret passage, and presumably the end of the game.

I liked the original design of the many evil spirits set on your downfall. The only defence to their repeated attacks is your slow motion shotgun which sprays a veritable hail of pellets at all and sundry, reducing your enemies to a cloud of dust.

The large, clear, smooth-moving graphics make the screen display pleasing, though the walls of the maze soon become claustrophobic.

As the attackers seem to approach from the same direction each time the game is played, it becomes comparitively easy to shoot to kill.

On the other hand, remembering which room you are in is no simple matter, nor is finding all those rooms.

Having played the game for an unhealthy length of time with still only a quarter of them located, this would seem the ultimate challenge. **D.H.**

Publisher: Andtronic

Address: 28, Upper Bridge Rd, Chelmsford, Essex

AMSTRAD

Chopper Squad

Assemblng an aircraft whilst dodging a seemingly endless succession of aliens is no mean feat.

Your task is to do just that nine times over, piloting a helicopter between three landing pads.

The aero parts appear from the top of the screen, and need to be hastily collected and deposited at the bottom right hand corner.

To let you know how near your task is to completion, each aircraft is displayed at the top of the screen, in it's various stages of completion. Armed with a photon proton lazer blazer, your rocket-powered helicopter is manoeuvred around using keys or joystick.

The wrap-around screen allows movement from side to side at great speed, in your attempt to dodge the aggressors.

An unsophisticated screen display uses chunky graphics, but the all important movement around the screen is smooth and rapid.

This one simple screen becomes boring after a couple of games, the progressive increase in the alien's speed of attack adding some impetus as each plane is assembled.

Coming from a major software house, would-be purchasers could be forgiven for expecting more than this for their money. The game offers nothing either innovative or original, lacking the addictive quality of many competitively priced programs.

Loading and playing instructions, along with a synopsis of the story-line are all printed on the cassette inlay. **D.H.**

Price: £6

Publisher: Interceptor Micros

Address: Lindon House, The Green, Tadley, Hants

AMSTRAD

The Joffe Plan

Whereas the Psi-Q program from Mirrorsoft left me rather cold, this seems to be of much greater value. It's a weight reduction package which actually treats you like a grown up! First your height, weight, age and sex are input and as a result, your ideal weight range is calculated. From that, a target weight and the date by which you should achieve it are displayed. You can then negotiate with your Spectrum as to the target date and weight. If you choose to go too fast, you are warned about the dangers.

When you've settled your targets, another program is loaded which is a very detailed questionnaire about your eating habits. As a result of this a personal plan is drawn up for you, which makes simple, and non-horrendous suggestions as to how you should modify your eating behaviour. Again, these mods are negotiable.

You are then encouraged to take a little more exercise, again, nothing awful, but enough to change your consumption of energy. Finally, you are told about penalties if you are naughty and don't stick to the deal! How come? You have to report in to your Spectrum on certain days to let it know how you're doing, and it compares your results with those previously saved to tape!

Excellent presentation together with a good manual and an approach to eating, exercise and self control that really does seem sensible without being oppressive. You might just succeed with this where the boring traditional diet fails. It's easier to be honest with a computer! **D.M.**

Price: £9.95

Publisher: Mirrosoft

Address: Holborn Circus, London EC1 1DQ

SPECTRUM

3D Skramble

Yes folks, you guessed it, here's a revamped version of that old favourite. In case some of you haven't played skramble, you pilot a space craft and must fly through a series of caves destroying missiles, fuel dumps, etc. The last of the six stages contains the power complex which must be destroyed. As you progress your fuel supply falls. This can be replenished by bombing fuel dumps.

This version uses diagonal scrolling similar to Zaxxon and Blue Max to give the 3D effect. You fly down canyons and a feeling of depth is given by each object casting a shadow. The size of shadow changes with the object's height above the ground. Your passage is impeded by missiles, flying saucers and fire balls which must be shot or avoided.

In light of the lack of originality of the plot, the value of this game hinges on the implementation. In fact, the 3D effect isn't too bad. The scrolling tends to be a little jerky which does reduce the effect but overall things aren't too bad. The fuel dumps and other objects are nicely drawn with a good solid feel. The flying objects, such as saucers and fire balls, flash with pretty colours and are formidable obstacles. The background music is reasonably well arranged but I found myself turning it off after a while.

Overall, not a great game, but at the price, not bad. **M.W.**

Price: £6.95

Publisher: Livewire Software Ltd

Address: Progress Hse, 31/33 Mount St, Manchester M3 6LQ

C64

Monty Is Innocent

Latest in the saga of Monty Mole is an arcade adventure in which you guide Sam Stoat to rescue Monty from the depths of Scudmore Prison. Finding Monty is one problem, rescuing him is another!

You need guns from the armoury, and keys which must be returned to the governor's office until you find the one to fit Monty's cell. That sounds straightforward until you see the massed ranks of skeletons, skulls, warders, ghosts and, seemingly, millions of other sundry chasers. Though you do have the guns with which to defend yourself, they only have five shots, and even the bottles of invisibility potion wear off very quickly.

The graphics are excuted in clever, multi-coloured 3-D; as a result, you can go round and behind things like pillars etc. The old Spectrum attribute problem does get in the way every now and then, but, on balance, the effect is good. Levels, ladders, rooms, ropes, courtyards, cells, even the gym are illustrated. One of the most fun things to do is to disappear down a hole, to reappear somewhere else. It's very impressive.

And it's hard...very hard. Even using a special version with infinite lives, I still haven't fond Monty. The cell keys are hard to come by, though joystick control for Kempston and Interface 2 makes steering Sam easy enough.

Very well presented and executed, good value for money, and certainly plenty to keep you occupied for quite some time. There's even a sweat shirt offer too! **D.M.**

Price: £6.95

Publisher: Gremlin Graphics

Address: Alpha House, 10 Carver St, Sheffield S1 4FS

SPECTRUM

Zulu

This is a maze type game, the maze in this case being paths through the jungle.

The jungle, like all jungles, is quite large and it is easy to get lost. There are 25 screens full of jungle in which you seek a priceless collection of 100 Zulu masks. Naturally the Zulus are not happy about this and are constantly attacking.

You can overcome the Zulus while your force field holds up. In addition to this space age concept there is a touch of voodoo in the game. If you accidently touch a cooking pot, and there are many because Zulus are hungry people, the maze becomes invisible. The only way to make the maze visible again is to collect another mask. If you touch a second cooking pot instead, you dematerialise which makes it even more difficult to collect masks.

The game can be played via keyboard or joystick and has four speeds. You can select and change the speed of play any time you wish. This is a nice touch allowing those suffering jet lag to settle in before getting down to collecting in earnest. The screen graphics were acceptable without being outstanding. More importantly, the colour combinations used were sensible allowing everything to be seen. In addition to the maze the screen displayed the usual type of status report on the highest score, no of lives, no of masks collected etc.

This game is good value at its price and will provide quite a few hours of happy hunting.

Price: £2.50

Publisher: Firebird

Address: Wellington Hse, Upper St, Martin's La, London WC2H 9DL

C64

Splat!

Computer games seem to have gone through phases in imitating each other. A rash of space zappers followed by pac-mazes followed by platforms and levels seems to have been the pattern since 1982. How refreshing to review something which can claim some originality.

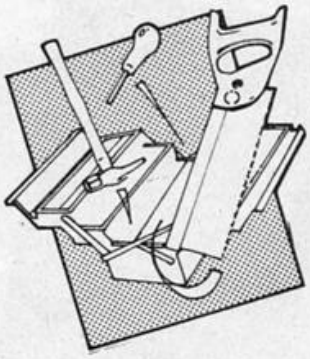
You control Zippy, a vaguely froggy creature — but not frogger — round a maze — neither is it pac-man eating grass. The maze is huge and drawn very large, on which the screen is just a window with a nicely decorated frame. It all seems very simple at the start, until the maze starts moving beneath the window, totally out of your control. Not only must you keep on eating the clumps of grass, but you must now avoid being trapped in the maze, or catching the window edge, because, if you do, Zippy is splatted into so much strawberry jam!

The window changes direction without warning, and blind panic results! You really have to be sharp. There are eight levels altogether, each with new items to collect and avoid. Getting into each new level takes some doing too! The hi-score table and demo mode just heighten your frustrations — or determination to win.

Graphics are very smooth, and it's good to see provision to change the colours; very handy for green-screen owners or those with the dreaded shimmering colour modulator. My only real criticism is the failure to exploit the sound facilities fully; otherwise, original, gripping and fun, but, as with all Amstrad software, a little too expensive. **D.M.**

Price: £8.95
Publisher: Amsoft
Address: 169, Kings Rd, Brentwood, Essex CM14 4EF

AMSTRAD



Supercode 3

If he achieves nothing else, the author of this should get the award for the most modest software writer in the country. According to the instructions, this is the finest toolkit available for any computer in the world with four times as many routines as any of it's competitors.

What we have is a collection of 152 machine code routines which can be incorporated in your own BASIC programs. The range of the routines is impressive covering graphics, utilities, microdrive commands, sound and many other bits and pieces.

The presentation is faultless. First there is a 31 page instruction booklet which explains in detail what you get. Second, there are demonstration programs which describe the routines, give the size of the routines and give saving instructions. Many demonstrations are included showing what the routines will do. Full details are given on how to use the routines and most are relocatable giving maximum flexibility.

I won't attempt to describe each routine since space won't allow it. The graphic commands include every conceivable scroll you could want, fill commands, border effects and many others. Probably the strongest areas are the microdrive routines, the utilities for program protection, program handling and debugging.

Whilst I can't agree with the self acclaim given with this package, I must admit that it's pretty good albeit a touch pricey. The package will appeal to the average user who wants to use some snappy effects in his programs but doesn't want to learn assembler. **A.W.**

Price: £12.95
Publisher: CP Software
Address: 2 Glebe Rd, Uxbridge, Middx UB8 2RD

SPECTRUM

Centre Court

A tennis simulation, and a tricky one! You can watch the computer play itself, play the computer, or play a friend using keyboard or joysticks. Having selected an option, no instructions can be found too get out of it! In the end, I discovered the TAB key does the job. The instructions are generally weak.

The game starts with a huge racket bouncing a ball complete with sound, then following option choice, drawn onto the court drawn in perspective to give 3-D. The judges, umpire and crowd are all there, animated at various points. The heads of the crowd follow the action, and cheers resound after each point scored. Even the sound of the ball being hit is here! The players are little more than animated stick persons, but they do run and serve well, and ball movement is very natural, albeit in slow motion; if it were full speed, you'd never score a point!

All the scoring conventions are observed including tie-breakers, but service and return of the ball are rather different. To serve, the fire button is pushed once to throw the ball into the air, and again to hit it. The timing of this controls the strength of service. To return, the position of the player together with the direction of his movement determine both strength and direction. It takes a bit of getting used to, but once done, a good game results.

Recorded only "load now-play later mode," Centre Court has reasonable graphics, clever sound, and lasting appeal. **D.M.**

Price: £8.95

Publisher: Amsoft

Address: 169 Kings Rd, Brentwood, Essex CM14 4EF

AMSTRAD

'O' Level Maths

It was difficult to assess this program fairly, as slack programming occasionally leads to the presentation of odd questions with peculiar equations.

Essentially this is an 'O' level maths revision test, with two passes being made through a series of questions spanning a number of topics in that subject. Calculators may not be used, but trigonometric tables are permitted. The sparse documentation does not say whether tables of logarithms or, the staple of exams, the slide rule, are also allowed. Despite some minor criticisms — the $ symbol could have been redefined to £ — the program achieves its aim.

It has been seven years since I practised much of the maths here, and some of it wasn't even taught in my day, but I still managed to score about 38% on both passes without preparation. Perhaps parents might be persuaded to try their hand. Many of the questions test, not so much your ability to calculate, but rather your understanding of the question itself and of the subject.

For the price I found this good value for money and of use to the teenager who wishes to revise at home. On its own it is not comprehensive enough to encompass everything needed but it could form a valuable part of a larger revision programme — not program. Good use has been made of the graphics capability of the TI, although the use of colour is not so successful.

Price: £3

Publisher: Softi

Address: 14 Station Rd, Brough, N Humberside

TI99

Blagger

Blagger is a gem of a platforms and levels game. A blagg being a robbery, your task is to rifle the safes — one in each room — of the house. To crack them, you need a series of keys which are dotted around. In each room is a weird assortment of twisting whirling bits and bobs; phones, skulls, prams, trolleys ...you name it! Using keyboard or joystick move left, right or jump.

The demo mode reveals all the rooms, and the standard of the graphics. The yardstick in games like this tends to be Manic Miner for the Spectrum. Undoubtedly, this is superior, with great detail and multi-coloured moving objects. Strangely, even with its sophisticated graphic screen, Blagger did display a hint of flicker with some objects in certain areas.

The best is yet to come however; the music is magnificent! Rag time pianola à la Scott Joplin; a masterpiece of syncopation. Interestingly, the music slows down when the demo screen changes. Even so, there's still a channel left for an echoing zap as you bite the dust yet again!

This isn't an easy game, but once the bug bites you, you'll keep at it. I suspect you'll need a joystick to get into the hi-score table. Very addictive, and if you haven't heard what the sound chip on your CPC can do, then buy this for starters. You won't be disappointed even though the concept is rather worn and the price, typically for the CPC 464, rather over the top. **D.M.**

Price: £8.95

Publisher: Amsoft

Address: 169 Kings Rd, Brentwood, Essex, CM14 4EF

AMSTRAD

Combat Lynx

According to the instruction booklet this is probably the most comprehensive real time battle simulation ever written for a home micro. It is also probably the first written for schizophrenics with four hands!

You control a lynx helicopter and, depending on your predilection, can fly a number of missions. For slaughter merchants, you can simply shoot all that moves. Those with brains, on the other hand, may prefer a more complex option.

At the start of the mission, you can select which arms are loaded on your Lynx. The range is quite overwhelming. Once arming is complete, off you go.

The screen gives a view of the control panel complete with the view outside the windscreen. The view of the terrain varies with your bearing and height. You have an unbelievable range of controls covering manipulation of the Lynx, a map and firing weapons. Such is the range that either two joysticks or most of the keyboard must be used. In all, rather too much to memorise.

The most impressive feature is the use of graphics. The view through the screen is impressively done with flicker free movement. Similarly, the instruments are clear and frequently updated. Sound is used to great effect providing the mandatory explosion and zapping noises.

This is a complex game which will appeal to the war gamer who enjoys a little arcade action. The implementation of the controls is over complex and needs significant effort to master. **A.W.**

Price: £8.95

Publisher: Durell

Address: Castle Lodge, Castle Green, Taunton, Somerset TA1 4AB

C64

Detective

There's no getting away from it, this is a computer version of the board game Cluedo. The butler has been murdered, his body dumped, and it's your job to deduce the criminal from the assembled guests, together with the weapon and the location of the dirty deed! Though you can play on your own, it's better with friends.

Each of you assumes the role of one charaters, and the dice is thrown for each player. This determines the maximum number of moves you can make in one turn. The character you choose is shown as a little head, finely drawn, and the playing area is the plan of the house. As you move into each room, you may make an accusation as to murderer and weapon for that room. The computer responds, showing you which, if any is correct. You thus move about the house and garden gaining clues as to who didn't do it, and what they didn't do it with! From this, you work out who did, and with what.

Graphically this is good, with nicely chosen colours and neat movement. If you like Cluedo, or indeed, not too complex games of deduction, you'll enjoy this. I have to admit to being biased, I find the original very boring, though this is better.

Instructions both written and on screen are adequate, but loading is in slow mode only. Quite reasonable as a game, but in my view not worth this sort of price. £5.95 would be more realistic, and that's pushing it! **D.M.**

Price: £8.95

Publisher: Amsoft

Address: 169 Kings Rd, Brentwood, Essex, CM14 4EF

AMSTRAD

Bouncer

Bouncer uses very comical characters in both appearance and action giving the game a sense of humour but one which requires a surprising level of skill.

The aim, is to bounce a figure called Arthur up and down a pyramid of cubes in an attempt to land on each cube at least once before being zapped by spritely figures and coloured balls.

When Arthur lands on each cube it changes colour, but he has to dodge coloured balls which can kill. Some of these balls change into snakes when they reach the bottom of the pyramid and then pursue him, but if chasing sprites get too close, Arthur can jump on to one of two lifts to be transported to the top of the pyramid again. The lifts can only be used once each but their use does clear the screen of any marauding monsters.

If he manages to land on all the cubes a new screen of a different colour is introduced but he only has three lives so it requires skill to move through the various levels of play. However, as one progresses through the game other creepy crawlies come to pester Arthur and one figure spends its time undoing all Arthur's work. As always, only my daughters skill enabled me to view these higher levels of play.

It is a compulsive and highly colourful game with many subtle facets. Instructions are adequate and graphics excellent. Good value.

Price: £9.95

Publishers: Acornsoft Ltd

Address: Betjeman Hse, 104 Hills Rd, Cambridge CB2 1LQ

BBC

Psychedelia

This is different. It's not a game, just something to enjoy. As the instructions say, switch on and freak out.

The program does to the screen what a synthesiser does to sound. Essentially you can produce multi-coloured patterns on the screen by moving the joystick. But any description is inadequate for this, you have to see the effects to appreciate them.

You have numerous controls over the dynamics of the display. For example you can set the width of a line. When you move the cursor across the screen you leave a trail that ripples smoothly through a range of colours. You can create starburst effects, streamers, mirror images etc.

When first loaded sixteen different effects are preset into the top row of keys. Apart from using these you can define your own parameter settings and store the settings on one of these keys. You can record up to half an hour's worth of your own generated light show on tape. This can all be loaded back into the memory to provide a performance that automatically repeats. You can alter the parameters via the keyboard during playback to experiment further.

If you sit in the dark moving the joystick in time to your latest pop record yu have a light show that beats any tame disco lights.

Jeff Minter has done it again. It's mesmerising, different and good value for money. **L.C.**

Price: £7.95

Publisher: Llamasoft

Address: 49 Mount Pleasant, Tadley, Hants

C64

Congo Bongo

Those devious minds over in the states never cease to come up with new ideas for games. This is a 3D blend of a number of gaming concepts combined in a jungle scenario. This version comprises of two screens and is in fact a weak cassette version of an excellent disc based Product.

On screen one you climb a mountain and reach the Perch of the monkey Congo. You must avoid the coconuts Congo throws at you, avoid falling in the water and down a chasm. Sundry monkeys leap around trying to foil you.

In the second screen you cross a river. To achieve this you can use shrinking lily pads, hippos and fish as stepping stones. Again there are hazards such as rhinos and hungry fish to avoid. Complete both screens and you start again with a greater difficulty level.

The graphics are reasonable but certainly not exceptional — the disc based version with Koala pad pictures is quite outstanding. The sound seems to comprise of just drums and doesn't really get one going. The animation of the various creatures probably saves the day but only just.

Overall, interest soon wanes. Inevitably the problem of free memory will limit the possibilities but having said that, I've seen better efforts given the same constraints. More screens or greater variety would have saved the day on this one. At the price, don't bother. **M.W.**

Price: £9.95

Publisher: US Gold

Address: Unit 10, The Parkway Industrial Centre, Heneage St, Birmingham B7 4YL

C64

Carry On Laughing

This is another variant on the general theme of platform games. In it you take the part of Mr Livewire, the caretaker of St Hexadecimal's, a school with more than its fair share of delinquents. Your task is to clean away graffiti, in the form of crosses, from the walls whilst avoiding the usual nasties.

There are nine screens depicting different areas of the school and arranged in a three by three array. Each screen has its own problems and requires different tactics. Some screens aren't particularly imaginative or new — there is a Kong style screen in which you must avoid rugby balls rolling down a series of platforms. On completing a screen you can move to the next of your choice, and you can repeat screens if you so desire. All screens require the usual combination of planning, timing and dexterity. There is not, however, a single solution to any screen, so you can ring the changes if you want.

Graphically the game is competent with reasonable design of figures and passable animation. The background music is well arranged albeit with the odd off note. Several lengthy pieces are played with sufficient variety to reduce monotony. The play is interspersed with the usual bells and other noises.

Overall, not an earth shattering game although it's not that bad. The review copy gave unpredictable loading and there were occasional bugs which gave unexpected results during play. At the price, give it a try, you might like it. **M.W.**

Price: £6.95

Publisher: Livewire Software Ltd

Address: Progress Hse, 31-33 Mount St, Manchester M3 6LQ

C64

AMSTRAD CPC464 GAME

GRID WARRIOR

Light cycles, power grids, flashing crystals — they're all there, in Stephen Anderson's game for the Amstrad CPC464

As a grid warrior you control a light cycle on the power grid by using a joystick or keys **a** for up, **z** down, **o** left and **p** right.

The object is to collect the flashing power crystals while avoiding the barriers and your own trail. You are awarded an extra warrior at 1,000 points.

If you complete a board with more than 2,000 points then you've beaten the grid.

How it works

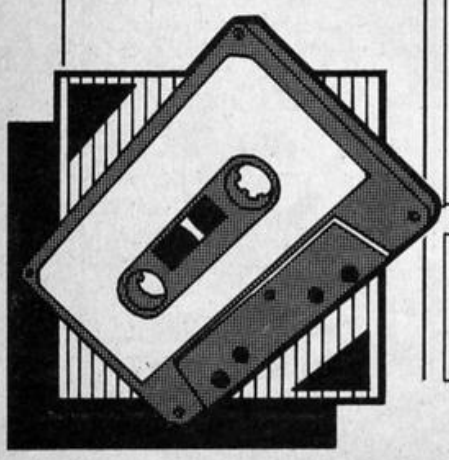
10-240 start screen
250-420 user chars and machine code
430-480 print grid, set variables
690-910 main loop
920-970 machine code, crystal data
980-1120 crash routine
1130-1230 death routine
1240-1310 finished board
1320-1430 escaped grid

Variables

h high score
byte machine code byte
a$,b$ grid string$
s score
l warriors remaining
x,y co-ordinates of warrior
count, flag keep track of game stage
1a$ warrior

Hints on conversion

Leave out machine code and replace lines 790 and 800 with a screen$ or equivalent instructions.



```
10 REM GRID WARRIOR
20 REM BY S.ANDERSON
30 REM START SCREEN
40 MODE 1
50 INK 1,20
60 INK 0,0
70 INK 2,2
80 INK 3,6,24
90 PAPER 0
100 BORDER 2
110 CLS
120 PEN 1
130 LOCATE 15,1:PRINT"GRID WARRIOR"
140 PEN 2
150 LOCATE 15,2:PRINT"------------"
160 PEN 3
170 LOCATE 8,10:PRINT"A=UP,Z=DOWN,O=LEFT,P=RIGHT"
180 LOCATE 15,12:PRINT"OR JOYSTICK"
190 PEN 2
200 LOCATE 7,18:PRINT"PRESS SPACE OR FIRE TO PLAY"
210 IF INKEY(47)=0 THEN 240
220 IF INKEY(76)=0 THEN 240
230 GOTO 210
240 h=0
250 REM RESTORE DATA AND SET UP U.D.C'S
260 RESTORE
270 SYMBOL AFTER 240
280 SYMBOL 240,192,192,254,245,245,254,192,192
290 SYMBOL 241,3,3,127,175,175,127,3,3
300 SYMBOL 242,24,36,60,36,60,60,255,255
310 SYMBOL 243,255,255,60,60,36,60,36,24
320 SYMBOL 244,255,129,129,129,129,129,129,255
330 SYMBOL 245,255,153,189,153,153,189,153,255
340 REM POKE MACHINE CODE IN PLACE
350 FOR f=30000 TO 30009
360 READ byte
370 POKE f,byte
380 NEXT
390 FOR f=32000 TO 32022
400 READ byte
410 POKE f,byte
420 NEXT
430 REM SET UP $ VARIABLES
440 a$=STRING$(40,CHR$(143))
450 b$=CHR$(143)+STRING$(38,CHR$(244))+CHR$(143)
460 s=0:l=3
470 PEN 1
480 CLS
490 PRINT a$;
500 FOR f=2 TO 20
510 PRINT b$;
520 NEXT
530 PRINT a$;
540 FOR f=1 TO 10
550 LOCATE INT(RND*37)+2,INT(RND*12)+2:PRINT CHR$(
143)+CHR$(143)
560 LOCATE INT(RND*36)+2,INT(RND*3)+16:PRINT CHR$(
143)+CHR$(143)
570 NEXT
580 PEN 3
590 IF XE=34 AND YE=10 THEN RESTORE 960
600 FOR f=1 TO 6
610 READ xe,ye
620 LOCATE xe,ye:PRINT CHR$(245);
630 NEXT
640 flag=0
650 x=20:y=15
660 count=0
670 la$=CHR$(242)
680 LOCATE 1,22:PEN 1:PRINT"SCORE=":LOCATE 13,22:P
RINT"HIGH=":LOCATE 24,22:PRINT"WARRIORS="
690 REM MAIN LOOP
700 IF INKEY(27)=0 OR INKEY(75)=0 THEN la$=CHR$(24
0)
710 IF INKEY(34)=0 OR INKEY(74)=0 THEN la$=CHR$(24
1)
720 IF INKEY(69)=0 OR INKEY(72)=0 THEN la$=CHR$(24
2)
730 IF INKEY(71)=0 OR INKEY(73)=0 THEN la$=CHR$(24
3)
740 x2=x:y2=y
750 IF la$=CHR$(240) THEN  x=x+1
760 IF la$=CHR$(241) THEN  x=x-1
770 IF la$=CHR$(242) THEN  y=y-1
780 IF la$=CHR$(243) THEN  y=y+1
790 LOCATE x,y
800 CALL 30000
```

```
810 IF PEEK(31000)=127 OR PEEK(31000)=143 THEN fla
g=1 ELSE flag=0
820 IF PEEK(31000)=245 THEN count=count+1:SOUND 2,
100,10,6:s=s+10:IF count=6 THEN flag=2
830 PEN 2:PRINT la$
840 LOCATE x2,y2:PRINT CHR$(143)
850 LOCATE 7,22:PEN 1:PRINT s
860 LOCATE 18,22:PRINT h
865 LOCATE 33,22:PRINT l
870 IF flag=1 THEN 990
880 IF flag=2 THEN 1250
890 SOUND 1,(x*20),2,5
900 IF s>1000 AND zx=0 THEN l=l+1:zx=1:ENT 3,20,-5
,5:SOUND 2,150,100,7,0,3
910 GOTO 700
920 REM MACHINE DATA
930 DATA &F5,&CD,&60,&BB,&21,&18,&79,&77,&F1,&C9
940 DATA &F5,&C5,&D5,&E5,&06,&01,&3E,&00,&CD,&4D,&
BC,&06,&00,&3E,&00,&CD,&4D,&BC,&E1,&D1,&C1,&F1,&C9
950 REM CRYSTAL DATA
960 DATA 10,3,30,10,25,5,38,14,19,14,11,13
970 DATA 23,5,14,17,2,15,11,4,35,6,34,10
980 REM CRASH
990 INK 2,6,2
1000 LOCATE x,y:PEN 2:PRINT CHR$(238)
1010 ENT 1,200,10,2:SOUND 2,300,400,5,0,1
1020 l=l-1
1030 IF l=0 THEN 1140
1040 PEN 1
1050 FOR F=1 TO 50:CALL 32000:NEXT
1060 CLS
1070 IF L>1 THEN LOCATE 10,13:PRINT L;" WARRIORS L
EFT"
1080 IF L=1 THEN LOCATE 10,13:PRINT L;" WARRIOR LE
FT"
1090 LOCATE 1,1
1100 FOR F=1 TO 3000:NEXT
```

```
1110 INK 2,2
1120 GOTO 490
1130 REM DEATH ROUTINE
1140 CLS
1150 PEN 1
1160 LOCATE 5,10:PRINT"YOU FAILED TO ESCAPE"
1170 LOCATE 10,12:PRINT"YOU SCORED";s
1180 IF s>h THEN LOCATE 10,14:PRINT"NEW HIGHEST":h
=s
1190 LOCATE 5,16:PRINT"PRESS SPACE TO PLAY AGAIN"
1200 WHILE INKEY(47)<>0
1210 WEND
1220 INK 2,2
1230 GOTO 260
1240 REM NEXT BOARD
1250 FOR f=500 TO 100 STEP -4:SOUND 3,f,2,5:NEXT
1260 s=s+100
1270 CLS
1280 IF s>2000 THEN 1330
1290 LOCATE 10,13:PEN 1:PRINT"TRANSPORTED TO NEXT
BOARD"
1300 FOR F=1 TO 1000:NEXT
1310 GOTO 470
1320 REM ESCAPED
1330 PEN 1
1340 LOCATE 1,13:PRINT STRING$(40,CHR$(244));
1350 LOCATE 18,5:PRINT"     YOU'VE ESCAPED THE POW
ER GRID"
1360 LOCATE 36,11:PRINT"EXIT"
1370 PEN 2
1380 FOR F=1 TO 39
1390 LOCATE F,13:PRINT CHR$(143)+CHR$(240)
1400 SOUND 1,F*10,2,3:SOUND 2,F*20,2,3:SOUND 3,F*1
5,2,3
1410 FOR G=1 TO 100:NEXT
1420 NEXT
1430 FOR F=1 TO 2000:NEXT:CLS:PEN 1:GOTO 1170
```

HARDWARE

DISC DRIVE FOR EVERYONE

Even if you've never used a disc drive, you'll be able to follow David Holme's rave review

Amstrad Disc Drive and Interface DDI-1

As the vast majority of home computer owners have never used a disc system, this review is couched in simple terms, being specifically aimed at this enormous market potential.

In appearance, the DDI-1 is a grey box matching the other Amstrad hardware. Somewhat smaller than expected, but nevertheless, a proper power pack.

As a means of storing programs and data — called files — it can be likened to a cassette tape recorder. However the similarity ends there.

So fast is the response to your RUN command, that the first time it is difficult to believe that the program has actually loaded.

Programs over which the Datacorder took nearly 10 minutes are now only a few seconds away.

There's 180K of storage space on each side of the disc which provides almost instantaneous access to a considerable library of programs.

Along with the DDI-1 is a CP/M master system disc, on the obverse side of which is the Logo language program. A comprehensive handbook is also included.

In the excitement of actually having the disc drive alongside the computer, you will be tempted to POKE around. Don't do it!

The instruction book is vital reading; some considerable time must be spent going through it slowly and carefully. Only then can your considerable investment be fully realised.

The three-inch floppy discs are an unusual size and consequently may not yet be on sale in your high street shops. So remember to order at least two blanks when you order the DDI-1.

I am prompted to suggest that Amstrad purposely doesn't include any blank discs so that you are forced to read the handbook thoroughly whilst waiting.

Amsdos is the resident disc operating system. On switching on the disc drive, there are several additional Amsdos command words activated, along with the ordinary BASIC commands. These enable instructions to be passed to the disc drive from the keyboard.

Loading CP/M gives full access to the numerous commands and routines, allowing you to maximise on the advantages of your disc system.

The instruction manual explains CP/M at some length.

Further advancement can be gained from Soft 159 — A Guide to CP/M, available from Amsoft.

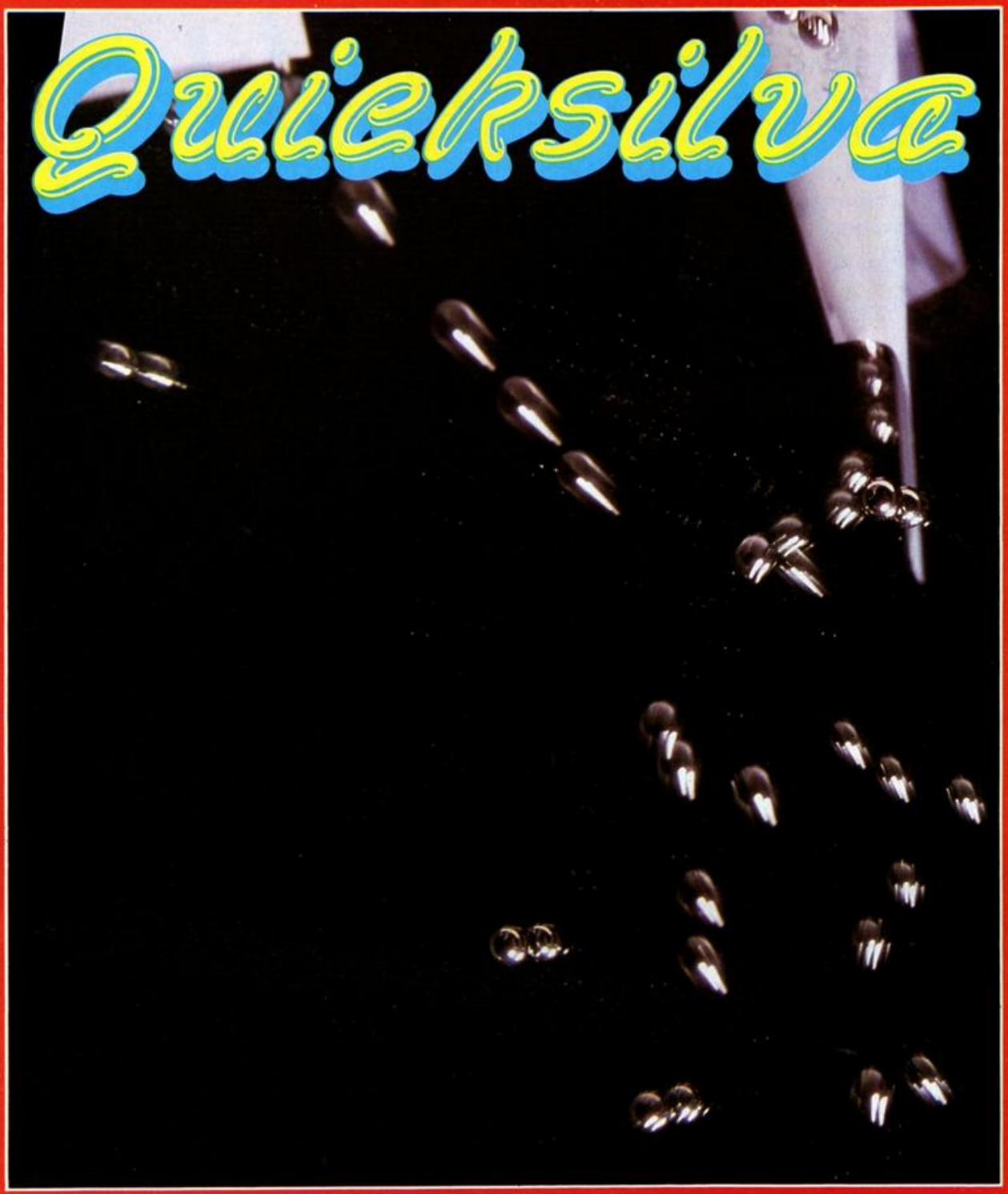
So that is the Amstrad disc drive. A well constructed electronic data store which will delight you with its performance.

Price: £199.95

Amstrad, Brentwood Hse, 169 Kings Rd, Brentwood, Essex

AMSTRAD

Quicksilva



1985

THE YEAR THE GAME LORDS CONQUER THE WORLD

A prophecy is about to be fulfilled. The Dead will rise again to eat the flesh of the living...
Zombie Zombie
From the authors of ANT ATTACK, Sandy White and Angela.
DJR
Softsolid 3D* from SPACEMAN
*Patent pending
48K Spectrum £6.95
All titles available from
QUICKSILVA
Quicksilva Mail Order, P.O. Box 6, Wimborne, Dorset BA21 7PY.
Telephone (0202) 891744.
WARNING: These programs are sold according to QUICKSILVA Ltd's terms of trade and conditions of sale, copies of which are available on request.
WHSMITH
Boots
WOOLWORTH
John Menzies
and leading multiple retailers and specialist computer stores.

Quicksilva

Introduction

From the pioneering days of home computer games software Quicksilva has been a major force in the market. Since its formation in 1981 Quicksilva has gone from strength to strength and built up a formidable reputation as a producer of quality, innovative and commercially successful software titles.

If 1984 was 'the year of the Game Lords', 1985 will be 'the year the Game Lords conquer the world', with new titles added to the existing range, a wider variety of computers catered for and exciting new licencing agreements and deals with book publishers and tv characters – all to be sold worldwide.

IN THE BEGINNING

Quicksilva came into being at the beginning of the games computer breakthrough. Nick Lambert was the original founder and, being an electronic engineer by trade and a pub video games fanatic by nature, the idea of transferring his favourite games onto home computer was obvious. He was the proud owner of a ZX80, and later a ZX81, and set about it immediately.

Before moving heavily into creating computer games Quicksilva developed a variety of peripherals and add-ons for the ZX81 which were very well received. But when the mail order sales of games took off like a rocket it was obvious that the software path was the one to follow in future.

So Quicksilva Ltd was formed – the name coming from Nick's favourite group, Quicksilva Messenger Service. Now there was no holding QS back. With the advent of the first colour home computer, the Sinclair ZX Spectrum, more programs and upgrades were developed and launched.

In 1982 the release of Timegate, the first ever truly 3D computer game, was a significant step in QS's progress. It heralded them into the top league of software producers. An office move into larger premises followed and Mark Eyles joined Nick and John Hollis to supervise marketing.

WH Smith had by now realised the potential of the games market and were selling Spectrum computers through their stores. Smiths approached Quicksilva and asked if they could sell their software in their retail shops. A deal was struck which marked a turning point in the market and Quicksilva were there first. Then Rod Cousens joined to run the 'business strategy' side of Quicksilva.

Now Quicksilva has expanded into several areas – more software titles for more computers, more staff, another office move, the formation of the Software Studios and a link-up with record company CBS who are now responsible for software manufacture and distribution.

The Software Studios was formed in 1983 and is the company's specialist development facility. Quicksilva's aim in setting up the Studios was to bring up the standard of their games to a very high quality, by investing in sophisticated equipment and programmers with extra special skills. Games Designer was the first product to come out of the Software Studios and fulfilled all Quicksilva's aims. It was the first program of its kind, an innovative concept which has since been 'borrowed' by other firms, as well as being a best seller.

It has always been Quicksilva's policy to concentrate efforts on developing a strong overseas sales base and this, combined with the strain which demand for products placed on manufacturing, prompted Quicksilva to look for a partner in this area. CBS fitted the bill and now handle manufacturing, distribution and sales for Quicksilva, throughout the world.

And as part of Quicksilva's expansion across a range of hardware they have agreements with smaller firms such as Salamander Software, Llamasoft and New Generation Software to convert their successful games and market them. This strategy will continue as QS sees itself as a publishing house with its own in-house resources as well as the expertise of third parties and their products.

Since its formation Quicksilva has made sure that its presence is felt in the market by imaginative, aggressive advertising campaigns, quality products and regular appearances at major computer and electronics shows world-wide, from Britain's Personal Computer World Show, across the Atlantic to the Consumer Electronics Show and on to the Far East for Singapore's PerCompAsia exhibition.

At the end of May, 1984, Quicksilva was bought by the Argus Press Group, the publishing and communications arm of BET (British Electric Traction Company). And this ensured the stability, security and growth pattern of Quicksilva remained intact at a time when the home computer software business became increasingly precarious.

Remember . . . Quicksilva 1985 – the year the Game Lords conquer the world.

COMING SOON FROM QUICKSILVA – 1985

This year Quicksilva are poised for further expansion and currently under way are several exciting new projects within the software industry.

POP GOES SOFTWARE WITH THE THOMPSON TWINS

In constant search of original material which appeals to the now highly critical home software audience Quicksilva have teamed up with the successful pop trio, The Thompson Twins.

This liaison stemmed from a partnership made with the Twins in 1984 when they made a flexi-disc together, around a computer game, which appeared on the front cover of the computer games magazine, *Computer and Video Games*.

Now the team have undertaken to produce a fully fledged game which will be on sale through Quicksilva's dealer network. At the moment it's still at the story board stage and the end result promises to be an arcade adventure strategy. The program will feature some of the Thompson Twins' music and the game will revolve around some antics that the Twins get up to.

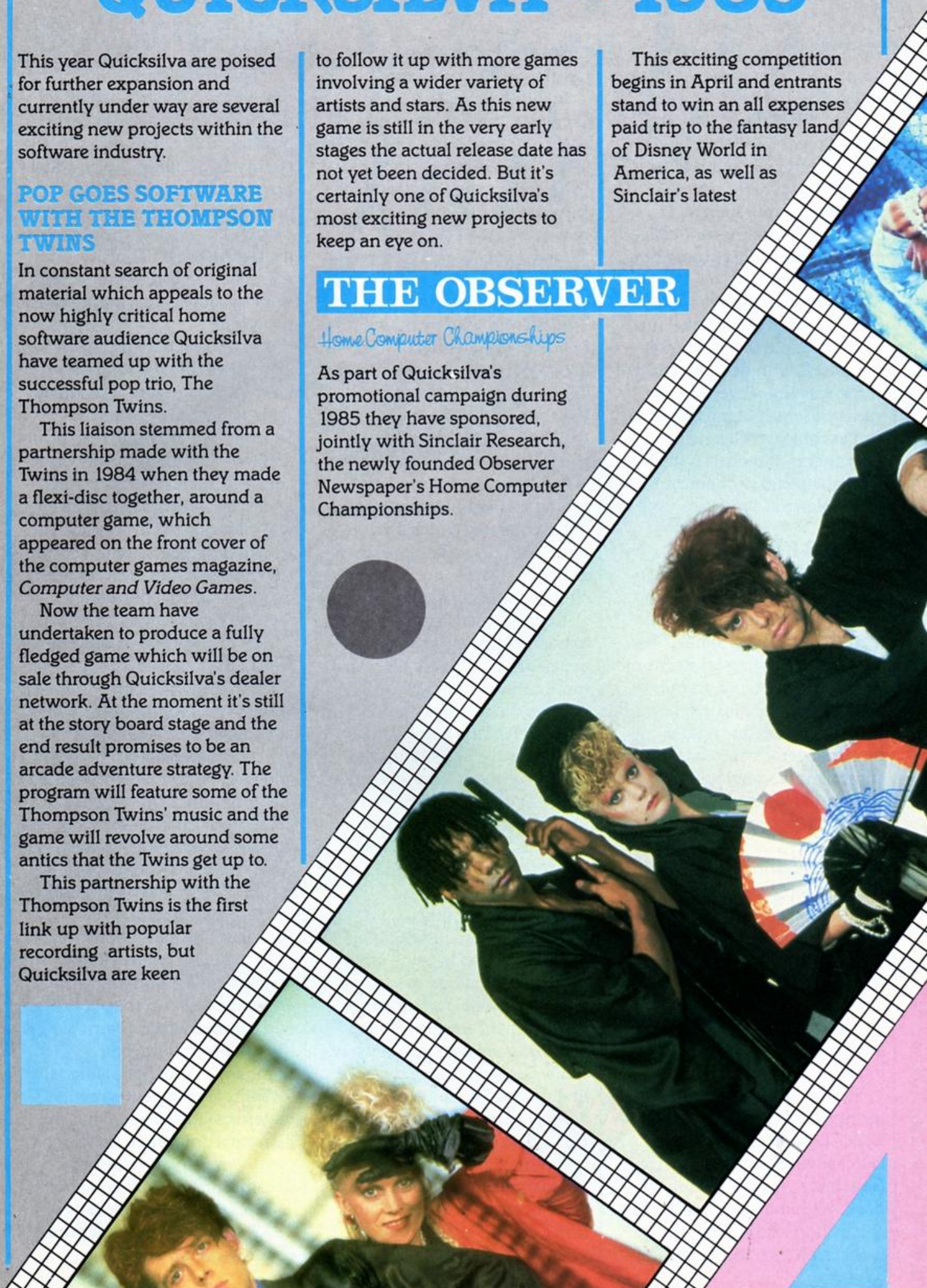
This partnership with the Thompson Twins is the first link up with popular recording artists, but Quicksilva are keen to follow it up with more games involving a wider variety of artists and stars. As this new game is still in the very early stages the actual release date has not yet been decided. But it's certainly one of Quicksilva's most exciting new projects to keep an eye on.

THE OBSERVER

Home Computer Championships

As part of Quicksilva's promotional campaign during 1985 they have sponsored, jointly with Sinclair Research, the newly founded Observer Newspaper's Home Computer Championships.

This exciting competition begins in April and entrants stand to win an all expenses paid trip to the fantasy land of Disney World in America, as well as Sinclair's latest



computer, the QL. The competition centres on Quicksilva's adventure game Xadom and all entrants must answer correctly a number of questions relating to the game.

Once all the entries have been received there will be a selection process whereby the judges will come up with 16 finalists. The lucky 16 will then attend the competition finals to be held at London's Metropole Hotel and they will have to take part in a play-off involving Xadom before moving on to the next phase. Eventually a top four set of final finalists will emerge and the

after another competition to do with the Games Designer product.

Throughout the competition consolation prizes will be awarded to the less successful entrants, and every entrant will be given a £1 voucher against any Quicksilva software. These vouchers will be redeemable in any dealer shop, or retail outlet stocking Quicksilva products.

Make sure you watch out for the Observer Sunday Colour supplement during April 1985 so that you don't miss the chance of a lifetime—a free trip to Disney World.

ON THE MOVE AGAIN

As Quicksilva's reputation and business has grown since its formation so has the number of staff it employs. Now there are 14 members of staff and the company has, for the fourth time, outgrown its offices.

For some time they have been looking around the Southampton area for alternative office accommodation and are shortly to move into the building. Quicksilva's new address will be: Carlton Lodge, Carlton

MORE SOFTWARE

As well as Quicksilva's own brand name for its entire range of games software, **The Game Lords,** in 1983 they also launched a range of educational games under the label QED. Although at the moment the number of these titles is only a few, Quicksilva is poised to launch many more when they feel the market is large enough to justify them.

Even Quicksilva's educational software has an element of fun in the products and it is the company's firm belief that all their packages are essentially 'recreational'. So the learning process involved in educational programs is made much easier and appeals much more to children.

Following the success of The Snowman, that enchanting program based on the famous book of the same name by Raymond Briggs, this year will see similar projects launched. The first planned is a game about the slimey creature in the very popular book, 'Fungus the Bogeyman' and will probably follow some of his adventures in the book.

In addition to Quicksilva's tie-ups with book publishers, plans are also in the pipeline for franchising both film titles and music/recording artists. For instance the company has recently won the rights to produce the program for the film, Fantastic Voyage which will be on sale from March this year.

Many more exciting new Quicksilva products will be on their way during the course of 1985—and the ever-changing nature of the software industry means that you never know what the next three months will

A Tony Crowther/Quicksilva Production

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■ We require programmers proficient in machine code on the Z80 series, 68000 series, 6809, and 6502/6510 processors. We require games, utilities and education programs on the Commodore 64, Spectrum, QL, Electron, BBC, Atari, Memotech, Dragon, Atmos and MSX computers.

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2 ZOMBIE, ZOMBIE
Introducing three firsts for the ZX Spectrum in this eerie arcade/adventure – moveable, Softsolid colour graphics, simultaneous two channel sound, and compatibility with the versatile Midi Interface.

3 CASTLE OF JASOOM
A real time action interactive film – spectacular arcade and adventure graphics. Prove you are the rightful ruler of Jasoom by finding the fabled Jasoomian diamond and set right the evil deeds of the murky past.

4 DUNGEONS OF BA
Norman Warrior strikes again in a challenging adventure in search of the fabled Ba stone. No-one has come out of the dungeons, which contain the stone, alive – could you be the first?

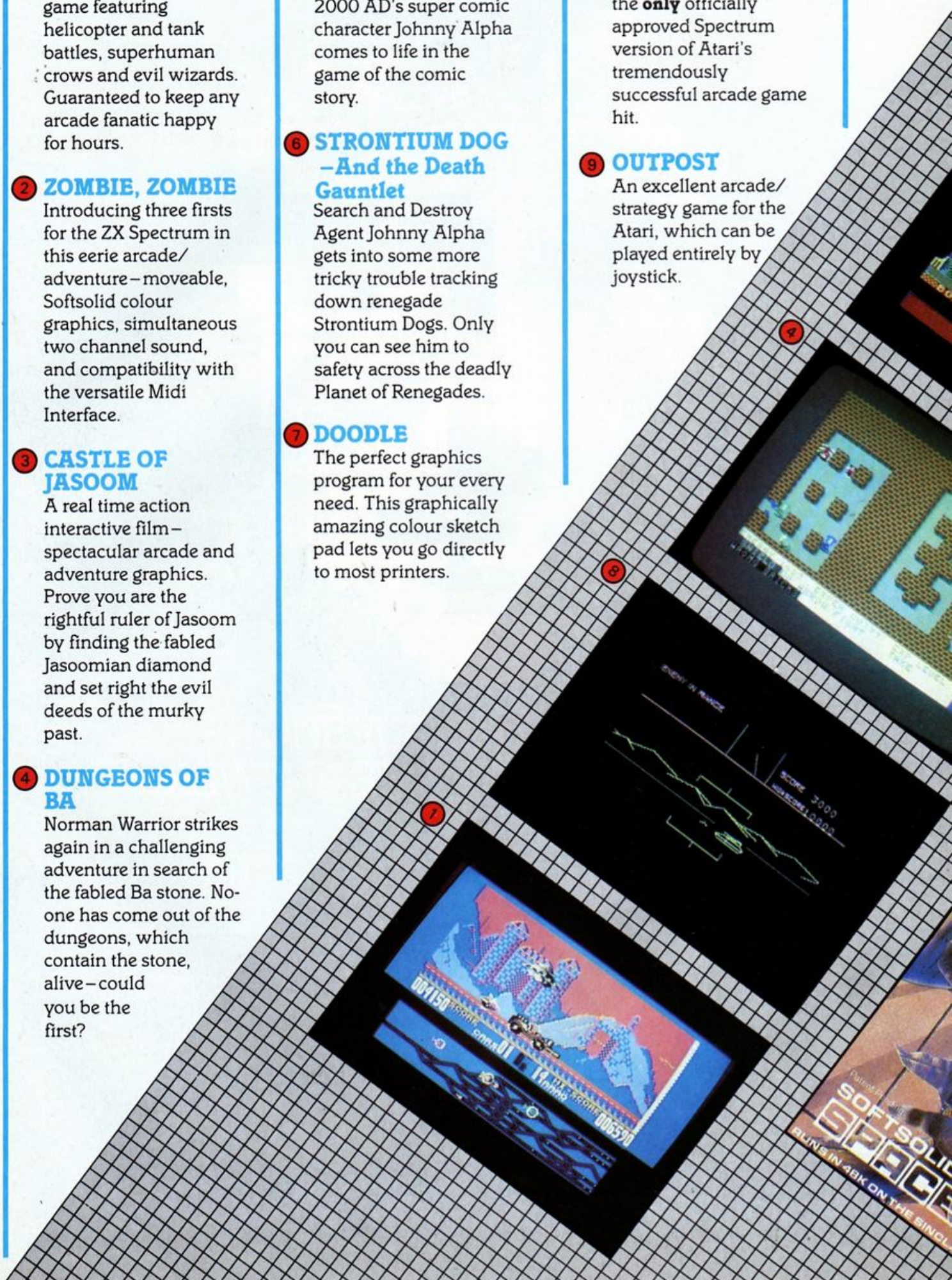
5 STRONTIUM DOG – The Killing
2000 AD's super comic character Johnny Alpha comes to life in the game of the comic story.

6 STRONTIUM DOG – And the Death Gauntlet
Search and Destroy Agent Johnny Alpha gets into some more tricky trouble tracking down renegade Strontium Dogs. Only you can see him to safety across the deadly Planet of Renegades.

7 DOODLE
The perfect graphics program for your every need. This graphically amazing colour sketch pad lets you go directly to most printers.

8 BATTLEZONE
Quicksilva bring you the **only** officially approved Spectrum version of Atari's tremendously successful arcade game hit.

9 OUTPOST
An excellent arcade/strategy game for the Atari, which can be played entirely by joystick.



7
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ATARI
Atari approved
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JASOOM
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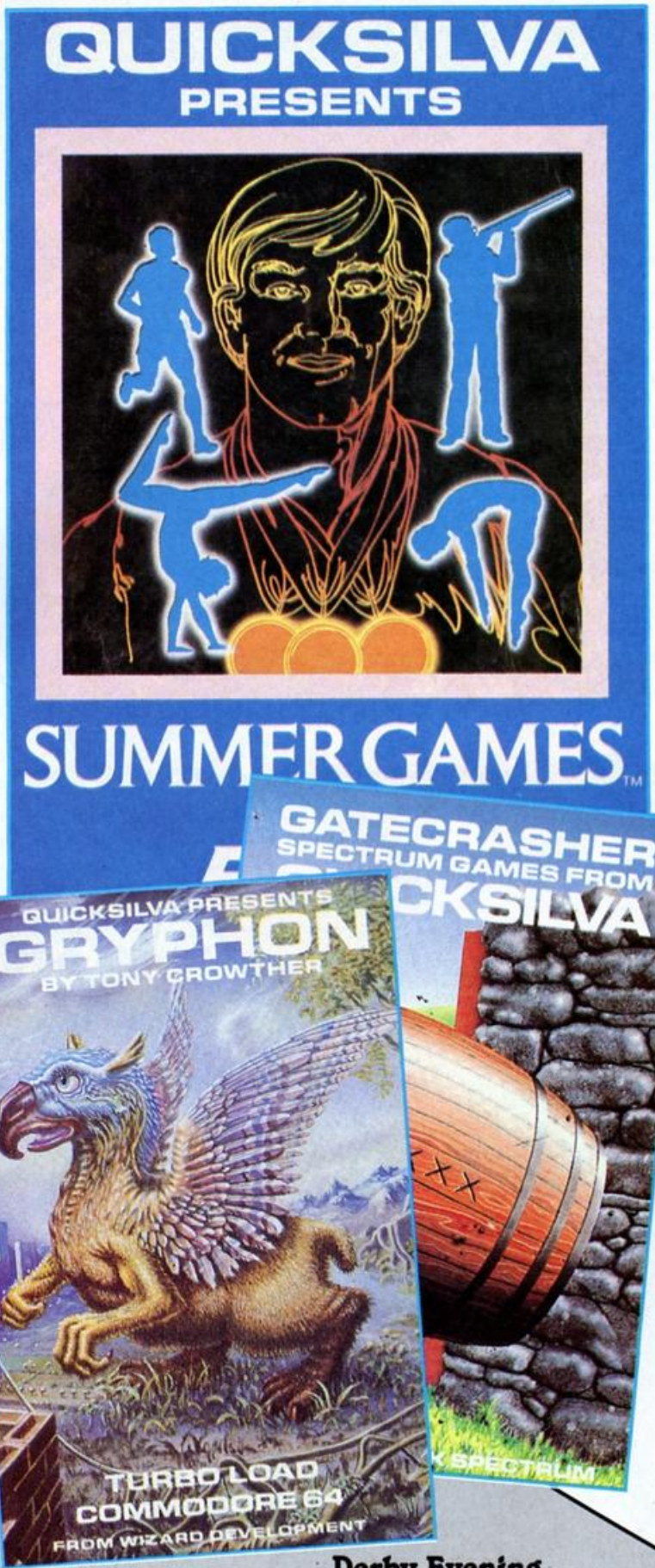
FULL GRAPHICS ARCADE ACTION
COMMODORE 64 + JOYSTICK
DISK SOFTWARE FROM ACCELERATED SOFTWARE INC
2
ZOMBIE ZOMBIE
SPECTRUM GAMES FROM
QUICKSILVA

⑩ ERIC BRISTOW'S PRO-DARTS

A realistic and addictive darts game for the 48K Spectrum, endorsed by the sport's champion, crafty Cockney Eric Bristow.

⑪ GRYPHON

An arcade fairytale featuring Gryphon, the ultimate griffin. Help him survive the threat of the evil Id Monsters who are after his treasured horde of gold . . .



⑫

SUMMER GAMES

Superbly realistic Olympic type games to play – eight different events to tackle, opening and awards ceremonies, action and strategy in each event. Graphically this game is fabulous – buy it, see it and believe it.

⑬

⑬ GATECRASHER

The ultimate arcade game of skill and strategy that will test your mind to it's limits, in full colour animated graphics, special 'earthquake' feature, superb sound and seven levels of difficulty.

Please turn to p14 for a complete Quicksilva product list.

READ WHAT THE PRESS SAY ABOUT QUICKSILVA GAMES . . .

Which Micro & Software Review:
'**Summer Games** . . . sets new standards for graphics and animation. The opening sequence is enough to make your jaw drop – it's more like watching a cartoon than a computer game.'

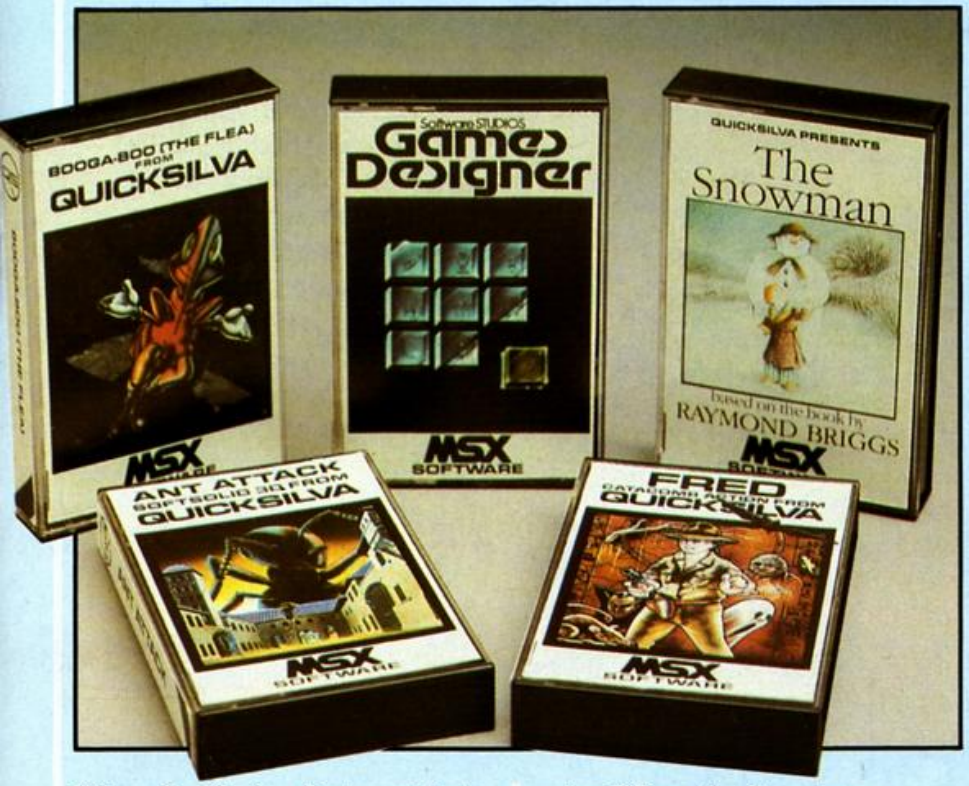
Yorkshire Evening Press:
'It's difficult to imagine a more impressive arcade/strategy than Quicksilva's **Ant Attack**.'

Northern Echo:
'**Black Thunder** (Quicksilva) is a classic – fast, furious and dynamic – and among the best releases of the year for Commodore 64.'

Derby Evening Telegraph:
Zombie, Zombie – 'Verdict: Annoyingly good'.
Strontium Dog, The Killing – 'Verdict: Compelling'.
'Quicksilva's **See-Saw** for the C64 is sheer fun' . . . Verdict: Good for a laugh'.

Daily Express:
'**Summer Games** may be a bit out of season, but this Olympic sports simulation can even give Daley Thompson a run for his money'.

HOW ABOUT THE HARDWARE?



When Quicksilva first went into operation it produced basic games for the now crude ZX80, followed smartly by the ZX81 and later progressed to the first colour home computer, Sinclair's ZX Spectrum.

It was natural for Quicksilva to evolve as a 'ZX' software producer, largely because at the time of Quicksilva's conception the only home computer on sale and at an affordable price was the ZX80. Although remarkably ahead of its time in terms of price/performance, in comparison to today's vast range of home computers the ZX80 was extremely basic and had limited, well practically no, graphics capabilities.

But it was the only home computer around. Not for long though. Soon came Sinclair's ZX81, an improvement on the 80 but still with limitations, and it quickly sold in huge numbers but quality software was lacking. Until Quicksilva arrived on the scene, and software sales took off in line with hardware sales. When the Spectrum superceded the 81, Quicksilva were able to produce really stunning games, and these too sold in huge numbers along with the hardware.

It was now obvious that it made good business sense to write software for the best selling computer hardware. And after the arrival of the Spectrum on the home computer scene the emergence of many other similar computers – notably Commodore Business Machines' VIC 20 and Commodore 64, the BBC Model B, Atari's range and most recently the Japanese MSX range of computers.

If a particular make of computer sells well, they support it – a common policy among software suppliers. Likewise when sales of a piece of hardware die down, so do software sales which is why Quicksilva is no longer actively promoting the ZX81, although there are old stocks of the early games which can be bought at knock-down prices.

Quicksilva currently produces software for the ZX Spectrum, CBM 64, BBC B, Electron, Atari and MSX. The majority of games out now run on the Spectrum and CBM 64 and with the 64 Quicksilva is keen to make use of its superior sound facilities. This year will see an expansion of software products available for the Atari and MSX range of machines. In fact, discussions are afoot between Quicksilva and Atari to develop software for Atari's 8 bit and 16 bit computers as well as developing material for use on 68000 chip computers.

Already Quicksilva has completed five conversions to run on the MSX range of computers now available. Titles include The Snowman, Ant Attack, Fred, Games Designer and Boogaboo. Plans are already under way to convert programs for the Amstrad computer, which has sold very well in 1984. Also work is now under way on software for the second generation of MSX computers.

Over the past couple of years Quicksilva have made agreements with other software suppliers and hardware manufacturers for conversion rights in order to expand the firm's software range and coverage of computers.

So far deals have been struck with Llamasoft, New Generation Software and Salamander Software to convert and market their best selling games – sometimes conversions are from Spectrum to CBM 64 and vice versa. This type of agreement is to continue throughout 1985 so you can expect to see on sale a much broader range of third party labels from Quicksilva and a wider variety of computers catered for.

QUICKSILVA'S GOLDEN OLDIES...

Remember these past super hits which zoomed to the top of many a Hall of Fame? All these games are evidence of QS's insistence on high quality products.

GAMES DESIGNER

The game that allowed you to create your own games. Another QS first. This simple to use program requires no programming knowledge, and with it you can design your own animated aliens, ships, missiles and explosions giving smooth arcade quality. Still highly popular and available on a wide range of computers.

ANT ATTACK

Quicksilva's classic arcade game in stunning Softsolid 3D graphics. The Walled City of Antescher, suspended in a time gone by, must now defend itself and its ant inhabitants from the destructive couple He and She.

TRASHMAN

You'll get more than a load of rubbish in this amusing arcade game, originally developed by *New Generation Software*. Watch out for mad motorists, crazy cyclists, and irate housewives when emptying these bins.

THE SNOWMAN

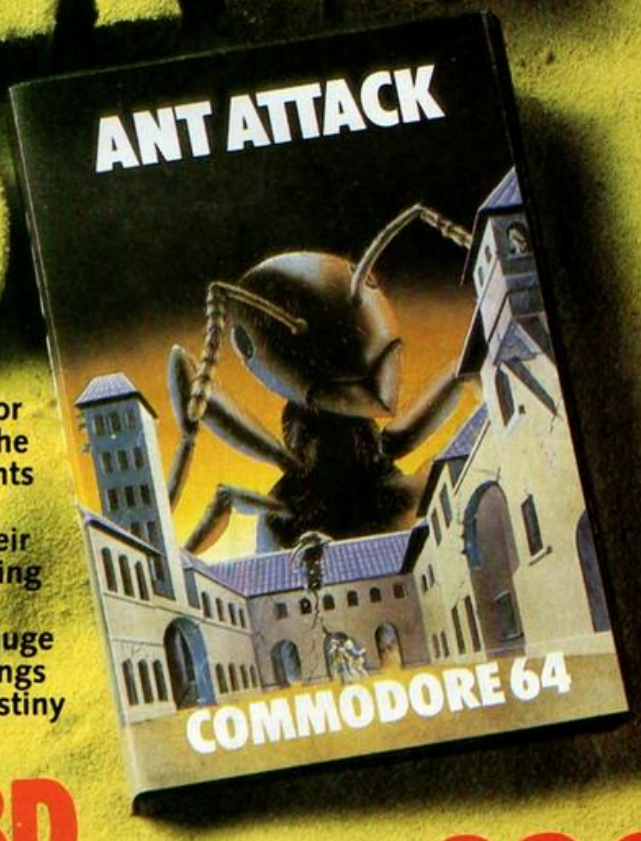
Raymond Briggs' book is brought enchantingly to the screen. Build up the complete Snowman, and clothe him before the mid-day sun melts him away. Now at least 18 months old, The Snowman is still in great demand by a range of computer owners.

TIMEGATE

Quicksilva's first ever 3D computer game was a top-selling product of its time back in 1982.

They came from out of the desert to the lost city of Antescher and discovered the HORROR of the ANTS...

ANT ATTACK 3D



The Walled City of Antescher has rested for a thousand, thousand years in the midst of the Great Desert inhabited by only the deadly Ants who have made it their home.

Then one day He and She arrive to play their games through the wind-swept streets, ousting the Ants from their exclusive occupation.

But the City seems to have a presence, a huge brooding entity which hangs over the buildings and in some mysterious way controls the destiny of those below ...

ANT ATTACK 3D

Turbo load Commodore 64 £8.95

available from

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QSP 0080	**Battlezone**	£ 6.95
QSP 0085	**Eric Bristow**	£ 6.95
QSP 0095	**Strontium Dog–The Killing**	£ 6.95
QSP 0096	**Zombie, Zombie**	£ 6.95
QSP 0102	**Bloodn 'n Guts (Fantastic Voyage)**	£ 6.95

COMMODORE 64

QSC 0059	**Ultisynth**	£14.95
QSC 0061	**Boogaboo**	£ 7.95
QSC 0071	**3D Tunnel**	£ 7.95
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QSC 0073	**Trashman**	£ 7.95
QSC 0077	**Traffic**	£ 7.95
QSC 0078	**Fred**	£ 7.95
QSC 0079	**Ant Attack**	£ 8.95
QSC 0081	**Summer Games** (Cas)	£14.95
QCD 0082	**Summer Games** (Disk)	£19.95
QSC 0083	**See-Saw**	£ 7.95
QSC 0088	**The Snowman**	£ 7.95

QSC 0089	**Strontium Dog–The Death Gauntlet**	£ 7.95
QSC 0090	**Magic Micro Mission**	£ 7.95
QCD 0091	**Castle of Jasoom**	£12.95
QCD 0092	**Dungeons of Ba**	£12.95
QCD 0093	**Doodle** (Disk)	£14.95

BBC

QSB 0027	**Music Processor**	£14.95
QSB 0041	**Beeb-Art**	£14.95
QSB 0067	**Gatecrasher**	£ 6.95
QSB 0070	**Drum Kit**	£ 9.95

ELECTRON

QSE 0068	**Gatecrasher**	£ 6.95
QSE 0069	**Electro-Art**	£14.95

ATARI

QAD 0094	**Outpost** (Disk)	£12.95

MSX

QSX 0097	**Games Designer**	£ 9.95
QSX 0098	**Ant Attack**	£ 7.95
QSX 0099	**The Snowman**	£ 7.95
QSX 0100	**Fred**	£ 7.95
QSX 0101	**Boogaboo**	£ 7.95

The above list contains details of Quicksilva's most recent software releases. You can buy them from any Quicksilva distributor or dealer throughout the country, or mail order direct from Quicksilva (see the coupon at the bottom of the page).

A list of old stock software at discount prices for the ZX81, VIC 20 and BBC computers is available upon written request,

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Important: Please use this form *only* if you are NOT a dealer. Your order will be invalid if you use any other form in this brochure.

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Name (Block Caps) .....

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Send this form to: Quicksilva Ltd, Palmerston Park House, 13 Palmerston Road, Southampton, Hampshire SO1 1LL.

NEWS ON DEALER DEALS

Things are looking up for dealers who are wise enough to keep a constant stock of Quicksilva software.

Quicksilva is on the look-out for more outlets for its products, other than those already involved in CBS's distributor network. Special discounts and incentive schemes are either operating now, or are shortly to be introduced. These include:

– **Special offer:** for every 10 Quicksilva programs you take dealers will get one free.

– **Volume related discounts** (details available from Quicksilva – make contact by filling in and sending off the Business Reply card overleaf).

– **Special incentive competitions.** To be introduced this year. A exclusively to Quicksilva dealers in which you could win a fabulous dream holiday – if you top the performance figures from participating Quicksilva dealers.

– **Point of Sale material** – high quality, eye-catching posters to draw attention to your shop and Quicksilva's products. Also calendars, scarves, badges, hats and T-shirts are given to dealers as part of special sales campaigns for a variety of Quicksilva products.

Quicksilva, through CBS, is a firm believer in looking after its dealers and distributors. That's why Quicksilva formed, in conjunction with Virgin Software and Bug Byte, the Software Sales Service. This organ is responsible for producing all Point of Sale material and is there specifically to provide an efficient service for dealers.

Quicksilva wants to contact you, and help you increase your business by selling its products. With Quicksilva's solid, established reputation for quality products and its secure financial backing you cannot afford not to take part in the company's growth in 1985.

Simply complete the brief questionnaire overleaf, tear off the page, fold it as directed and put it in your nearest post box as soon as possible.

QUESTIONNAIRE–QUICKSILVA

QUESTIONNAIRE–QUICKSILVA

1. What is your company name? .....

2. What is your address? .....

.....

.....Telephone No:.....

3. Is your shop: a small independent/part of a retail chain?

4. Do you sell: computer hardware and software/other electrical goods?

5. If you already stock software, which computers do you cater for?
Spectrum ☐ CBM 64 ☐ BBC B ☐ MSX ☐ Amstrad ☐

Any other? If so, which makes .....

6. Have you ever been asked to stock Quicksilva software in the past? Yes ☐ No ☐

7. Do you currently stock any Quicksilva software? Yes ☐ No ☐

8. Which category of software do you sell most of?
arcade games ☐ adventure games ☐ utility programs ☐ business programs ☐ sports simulations ☐
'space' games ☐ 'non-space' games ☐

9. Would you like to receive further details of Quicksilva's discount and incentive schemes? Yes ☐ No ☐

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SECOND FOLD

HARDWARE

George on his own...

George is loveable, cute — and controllable. He'll do what you want, within reason, and he's more than just a toy. Jonathan Barry took him home to play

BY GEORGE! IT'S A ROBOT

George
£19.95

George is a robot: small, friendly and rotund. He sits on two wheels on the floor and wanders around almost at your whim and fancy. George doesn't need a computer — he already has one in his head, a special four-bit processor which controls his every move.

This type of robot provides an ideal opportunity for children to understand what programming is all about. This is so well accepted now in education that a number of primary schools have robots like George and use them with very young children before they use the computer. Programs are fed into the robot by the buttons on the top of his head and a vast range of movement is available.

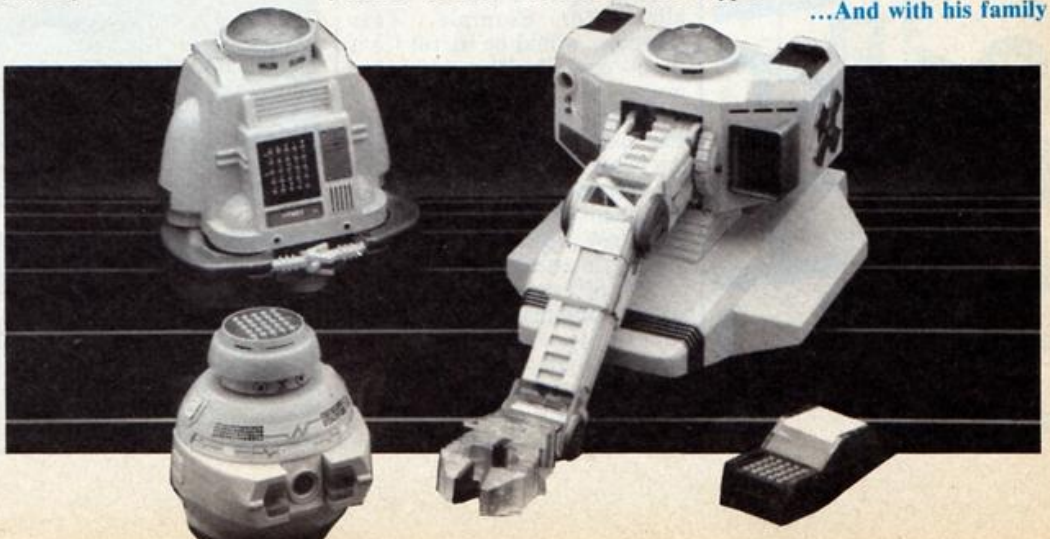
Besides forwards and backwards George can turn left and right, move at three different speeds, called gears in the manual, and he can even make a great deal of noise. He has two red eyes — could be something to do with his drinking habits — and a strobescopic guide light. The most disappointing feature about him is his hands don't move.

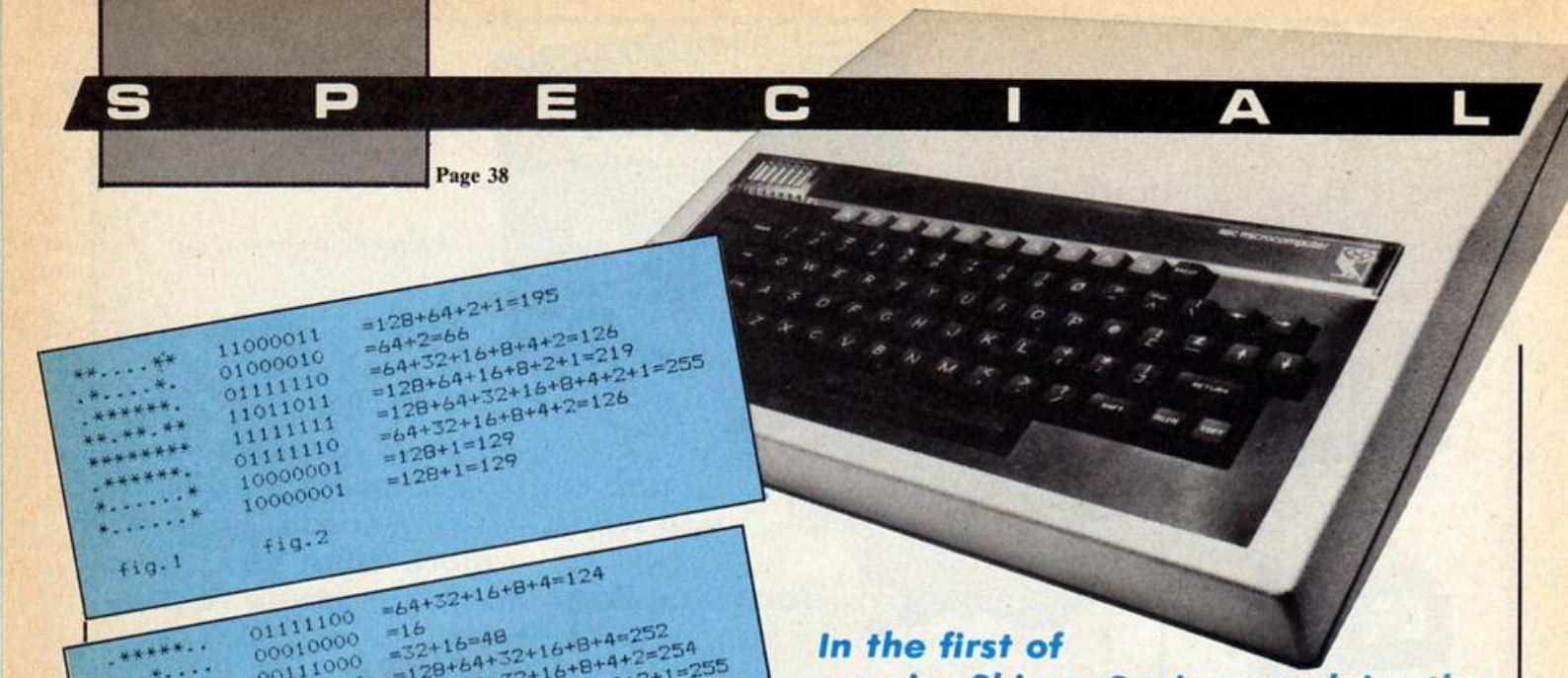
With his 20 buttons he can be programmed with up to 48 movements which take a period of about one hour should you want to wait that long for him to do his tricks. Commands are entered in the form of direction then time. All commands can be multiplied by any number so that to get a walk of 27 seconds you can enter either forward nine times three or forward three times nine. This has the added advantage of teaching a little about factors. The numbers relate to time, so that if you set George in high gear he will go further each second than when he is in a lower gear.

To get George to move at all there are two commands available: the Go key and the Recollect running key. The first executes the program as you have typed it in, whilst the second runs the program as typed and then runs it in reverse order so that George should end up back where he started from. I use the word should because on carpets there is a considerable degree of error.

George is well built, comes with a humorously written manual which covers all the points and has already provided many hours of fun in our household. I have even been to see the bank manager to ask if he can make me a loan for batteries, four pen cells and a 9v type.

...And with his family





USER DEFINED CHARACTERS

In the first of a series Shingo Sugiura explains the basics of defining your own characters

```
**....**  11000011  =128+64+2+1=195
.*....*.  01000010  =64+2=66
.******.  01111110  =64+32+16+8+4+2=126
**.**.**  11011011  =128+64+16+8+2+1=219
********  11111111  =128+64+32+16+8+4+2+1=255
.******.  01111110  =64+32+16+8+4+2=126
*......*  10000001  =128+1=129
*......*  10000001  =128+1=129

fig.1     fig.2
```

```
.*****..  01111100  =64+32+16+8+4=124
...*....  00010000  =16
..****...  00111000  =32+16=48
******..  11111100  =128+64+32+16+8+4=252
*******.  11111110  =128+64+32+16+8+4+2=254
********  11111111  =128+64+32+16+8+4+2+1=255
...*....  00010000  =16
..***...  00111000  =32+16+8=56

Helicopter
```

When the Beeb is switched on, characters from code 32 to 126 are predefined. To see them all, type:

```
FOR A%=32 TO 255:VDUA$:
  NEXT ❮ RETURN ❯
```

This set consists of the alphabet in upper and lower case, various punctuation marks and numerics etc. (page 490 in the User Guide for a complete list). As you may know, characters from ASCII code 224 to 255 may be defined by the user to be of any shape he wants. These are called user defined characters, and for many programs they are very useful and provide that professional touch. In this article, I will explain the principle of designing these.

Each character is made up of a matrix of 8 x 8 dots. Programming these involves lighting up the appropriate dots in this matrix using the VDU23 command. The first step is to draw it on a suitable piece of graph paper.

Take fig.1, a picture of an alien, for example. This character would be useful for a shoot-'em-up! The character must be converted into numerical form that the Beeb can understand. First replace the blank squares by zeroes and the filled squares by ones. Now the alien should be as fig.2. Each row represents a binary (base 2) number in the range 0 to 255. Since the Beeb will only accept numbers in base 10 (decimal) or base 16 (hexadecimal), these numbers must be converted to base 10 or 16. To do this, each column is given a value, starting with the left most column with 128, the next 64, the next 32, until the right most column.

To convert a binary number to decimal, you add the values of each column that are filled in. Having done so for all eight rows, the values for each row should be as shown in fig.3. These numbers must be fed into the computer using the VDU23 command. The user may redefine ASCII codes from 224 to 255. The VDU23 is followed by the ASCII code of the character you wish to redefine and then the eight values for that character. Therefore, to redefine character 224 to be the little alien, type:

```
VDU23,224,195,66,126,21-
9,255,
  126,129,129
```

You may display it by typing PRINT CHR$(224) or VDU23. Try it now, but don't forget, you cannot display user defined characters in MODE7 (since it uses a special character set of it's own). Also, you can print more than one user defined character next to each other in order to obtain giant user defined characters.

As you see, although defining characters is easy in principle, it takes time and can be error prone. In a future article, I will describe a program which takes the chore out of designing your own characters. In the meantime, I have designed a few characters for you to play around with.

```
...**...  00011000  =16+8=24
...**...  00011000  =16+8=24
...**...  00011000  =16+8=24
..****..  00111100  =32+16+8+4=60
*.****.*  10111101  =128+32+16+8+4+1=189
*.*..*.*  10100101  =128+32+4+1=165
*.*..*.*  10100101  =128+32+4+1=165
********  11111111  =128+64+32+16+8+4+2+1=255
Spaceship
```

```
.******.  01111110  =64+32+16+8+4+2=126
*......*  10000001  =128+1=129
*.*..*.*  10100101  =128+32+4+1=165
*......*  10000001  =128+1=129
*.*..*.*  10100101  =128+32+4+1=165
*..**..*  10011001  =128+16+8+1=153
*......*  10000001  =128+1=129
.******.  01111110  =64+32+16+8+4+2=126

Smiling face
```

```
...***..  00011100  =16+8+4=28
...***..  00011100  =16+8+4=28
....*...  00001000  =8
.*******  01111111  =64+32+16+8+4+2+1=127
....*...  00001000  =8
...*.*..  00010100  =4+16=20
..*...*.  00100010  =32+2=34
.*.....*  01000001  =64+1=65
Mr. Stick
```

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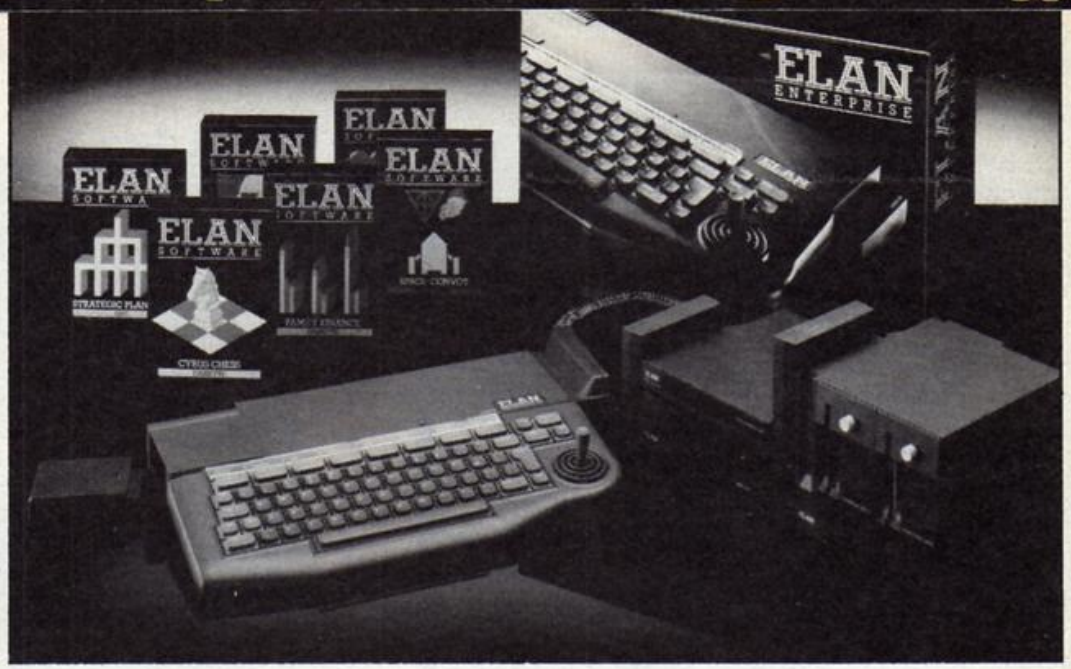

THREE ENTERPRISE

Three pairs of eyes focused in on the Enterprise. Jonathan Barry, seasoned computer user, had different criteria to Genevieve King and Marianne Johnson, two complete novices. Experienced or beginner — the end verdict was much the same

Expert view

For a programmer the most important feature of any machine is the language that the machine uses. My first job therefore was to decide if the BASIC that the Enterprise uses is a modern and capable language. There are certainly a number of commands and statements which aren't present in any other version for a home computer. There are full function defining commands and a whole group of looping commands that can test the conditions at both the beginning and the end of the loops.

The range of built-in functions is also vast, with over 80 such commands. In fact I find this huge range of words totally overwhelming. I know that most programmers use only a small range of words and that having this vast range is, theoretically at least, of great advantage but I feel that it is likely to put as many programmers off the language as it is to excite them. Wonderful programs have been written with much less developed languages and I wonder if here we have a prime case of the law of diminishing returns.

The manual is also rather less than I had expected. The first section is of a tutorial nature with 144 pages of introduction to the machine. This leaves just 60 pages for the reference section and I feel that this is far too little — all the syntax is squashed into a very small space indeed. The amount of detail is far less than I had expected both in terms of the language and of the machine itself. There is reference to a technical manual, but this isn't really good enough. I am of the opinion that if you've bought a machine then you have the right to information about it's inner workings without having to go to even more expense.

Possibly the most upsetting part of all is the error reporting procedures. They are accessible from BASIC with no problem whatsoever and the messages are of a reasonably explanatory nature, but there is no detail given in the manual about the errors. Perhaps this, too, is in the technical manual, but it should have been in the standard one. Information about memory usage is confined to just 13 lines and the whole of the operating system is dealt with in just two and a half pages.

The machine is pleasant to use with a good on-screen editor which makes correction of typing errors very simple indeed. The picture is not as crisp as I had expected on a normal TV, although I believe that this is much improved by the use of a monitor.

The areas which are most likely to excite new users are the sound and graphics commands. These are very well thoughtout

and you have control of almost every aspect of the operation. The sound command is followed by details of all the parameters you want to use and instead of following a set syntax standard you can use the parameters in almost any order prefixing each one with it's name. This means that you have a very flexible, if wordy, system.

Envelopes are fully definable in almost every respect and with 254 of them I cann't see anyone running out of possibilities. What I couldn't ascertain was if you had to set aside extra memory for these envelopes. There is control of pitch and volume across a number of phases and there can be synchronised sound on a number of channels too. As there are two speakers and each envelope can be set to send different volumes to each speaker there is the possibility of writing some very sophisticated music programs.

The graphics too are quite exciting. You can set windows for both text and graphics and these can be accessed by using a channel command from BASIC. Each of these windows can have a graphics BEAM to either draw lines or move across the screen without drawing. The range of 256 colours can be an exciting prospect, but with only 16 usable at any one time, assuming that you want a reasonable resolution too, this changes the concept slightly.

There is no doubt that the graphics chip, known affectionately as Nick, has a range of features which aren't available anywhere else, but it is very difficult to use this chip with the information given in the manual. I have the feeling that a number of users will settle for the default facilities instead.

The most disappointing feature of the whole machine is it's lack of speed. To say that the Enterprise is slow is too kind. This can be seen when you load almost any graphic program but it's particularly poor with zombie-type games.

In a couple of simple tests running the same program, the Enterprise proved to be three times slower than a BBC. On one test the BBC took less than nine seconds whilst the Enterprise took over 30. This was without any complicated arithmetic or use of the internal functions. If you're programming, this means you either have to use machine code or be very efficient in your use of program lines.

Overall this is a nice machine with a whole host of new and exciting features, but without the quality of support it requires. I would like to see a completely revised manual with more for the beginner and more for the advanced user. I would also like to see the price fall to about £130 as I feel that the machine is unlikely to become popular when it is placed in the market against such a well established machine as the Commodore 64. **J.B.**

Setting up

The Enterprise comes in a rather large box containing everything you need to start you off except a TV and a cassette player. There were two booklets and two manuals to contend with, but the Setting Up guide seemed to be the logical place to start.

It is fairly comprehensive and there was very little that we could find wrong with it. Carefully following the instructions the computer was connected up with no problems.

The Setting Up guide contains a description of the computer and some very clear diagrams which name all the keys and sockets — which are in fact very well marked on the machine itself.

One small fault which became obvious at this stage was the fact that although the guide described the cassette connection lead as a lead with four plugs at each end, it transpired that there were in fact two leads with two plugs at either end. **G.K.**

The manual

The programming guide is a 229-page guide to programming for the idiot and as such it falls far short of it's objective.

The first program we tried out was a very short graphics program taken from the manual. This worked perfectly first time and we were able to add an extra line to produce a rather clever effect. The graphics comprised a series of ever decreasing circles which perpetually changed colour and the modification taken from the manual caused the background to flash through the spectrum.

Once achieved the program modification was quite effective but the manual presumes some prior knowledge of editing which tends to confuse the absolute beginner. It instructs the user to insert line 135. Presuming that line 135 should come between lines 130 and 140 we tried to position it there using the insert key. We failed and only later discovered that it can be typed at the bottom of the listing and is automatically inserted at the correct position by the computer.

Having got the first program to run we then moved on to the next listing in the book. This is described as a program which 'draws a multi-coloured tunnel with exploding fireballs'. This listing unfortunately contained at least two errors: a semi-colon instead of a colon and line 1000 numbered 100000. One of HCW's experts helped sort out the first problem and the second rectified itself. However, the program still failed to run and gave out the message 'missing end of block' but nowhere in the manual could we find any explanation of this phenomenon.

Another error message we received several times which was nowhere explained in the manual was 'Cassette CRC error'. Having searched the manual for advice on how to deal with this problem we once again had to go to the experts for help: the solution was to adjust the volume or tone.

With obstacles like these the time we spent using the Enterprise was incredibly frustrating. We had approached the project certain that we would be able to cope with any reasonable difficulties which might arise, but unfortunately the problems we encountered were largely out of our hands. When we managed to get programs to run they were quite entertaining and interesting, but this was outweighed, from a beginner's point of view, by the seeming inability of the makers to cater for the totally uninitiated. **G.K.**

Good looks

The Enterprise keyboard looks quite stylish. It's grey, with green control keys around the traditional QWERTY keys, blue function keys above the numbers and a red stop key, which, although highly visible, is unlikely to be pressed in error.

It's attractive and compact-looking. The joystick is built in at the bottom right hand corner, and has a green knob. This seems fairly flexible but reaction is somewhat delayed.

ROM cartridges slot in on the left hand side, while there's room for expansion on the right hand, opposite, giving a nicely symmetrical look. The whole of the machine looks as if it's been carefully designed for looks, with compactness and simplicity the key features.

The rear end of the micro houses the ports for printer and tape recorder, etc. The reset button is located at the far right hand side at the back, and it's easy to identify by touch alone.

From a touch-typist's point of view, the keyboard functions are irritating. Most of the commands are typed in upper case, but you can't use the normal shift keys, for example, if you just want to type in one letter in upper case. Instead you must press CTRL and LOCK, both with your left hand fingers. This means that you can't press a key which is normally covered by the left hand at the same time, slowing input down.

The keys have a mildly unpleasant feel. They're rather scratchy, but are indented to finger shape. Not ideal, like a typewriter keyboard, but passable. Response was good, but from time to time uneven touch didn't provide any depression, whereas on a

normal typewriter there wouldn't have been any problems.

The function keys were great: they did just what they were supposed to do. Well displayed, and with clear indicators of their purpose, they're in an ideal location.

On the whole, visually impressive — although, inevitably, plasticky — but the keyboard isn't prefect. Perhaps not so important for non-touch typists, but frustrating for those who are. **M.J.**

Demo tape

We experienced enormous, frustrating problems with the demo tape. OK, so we were complete computer no-nos to begin with, but we're not stupid.

The demonstration manual should really be comprehensive. Well, it's not. We were relying on it heavily, and hadn't yet opened the user's manual, but there were a number of problems we came across which weren't touched on by the booklet.

Firstly, we couldn't get the demo to load from the beginning. This could have been our fault, but the booklet really wasn't specific enough. We started off with Character Definer, which we played around with, and had some gratifying results. We didn't get as far as using any of the designs we made in any games, though.

The demo manual is quite good but does assume a certain level of knowledge. Most things are quite well explained, but sometimes the text jumps infuriatingly, just when you're likely to come across a problem.

City Bomber was our first game. Not bad, but rather slow. We tried our best to alter the speed, as the demo instructions specified, but we just couldn't follow the steps. Too much programming knowledge was presupposed.

Fractals plots two little designs — fine as a demo, but when we came to program it ourselves, we couldn't work out how to see the listing and whether we needed to insert text and if so how. Pehaps it sounds easy if you know how, but it's not a foregone conclusion.

We liked the Sketch Pad, and the part where you could colour in Pooh Bear. We got bored very quickly with the Sliding Squares puzzle, couldn't find the graphics modes, or Animan. I'm afraid that's as far as we got, although other programs on the tape include Stereo Music, Word Processor and the Interlace Driver.

I have to admit that our frustration got the better of us as far as seeing the demo through to the end goes — and we also nearly came to blows. And it's not all our fault — loading problems could have been better explained, and although hardened programmers may well think that changing a program is child's play, it's not as obvious as manual writers think. Unfortunately, the demo was a very discouraging introduction for us novices to this attractive-looking machine.

M.J.

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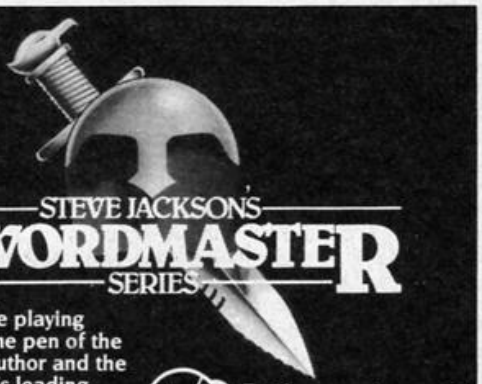

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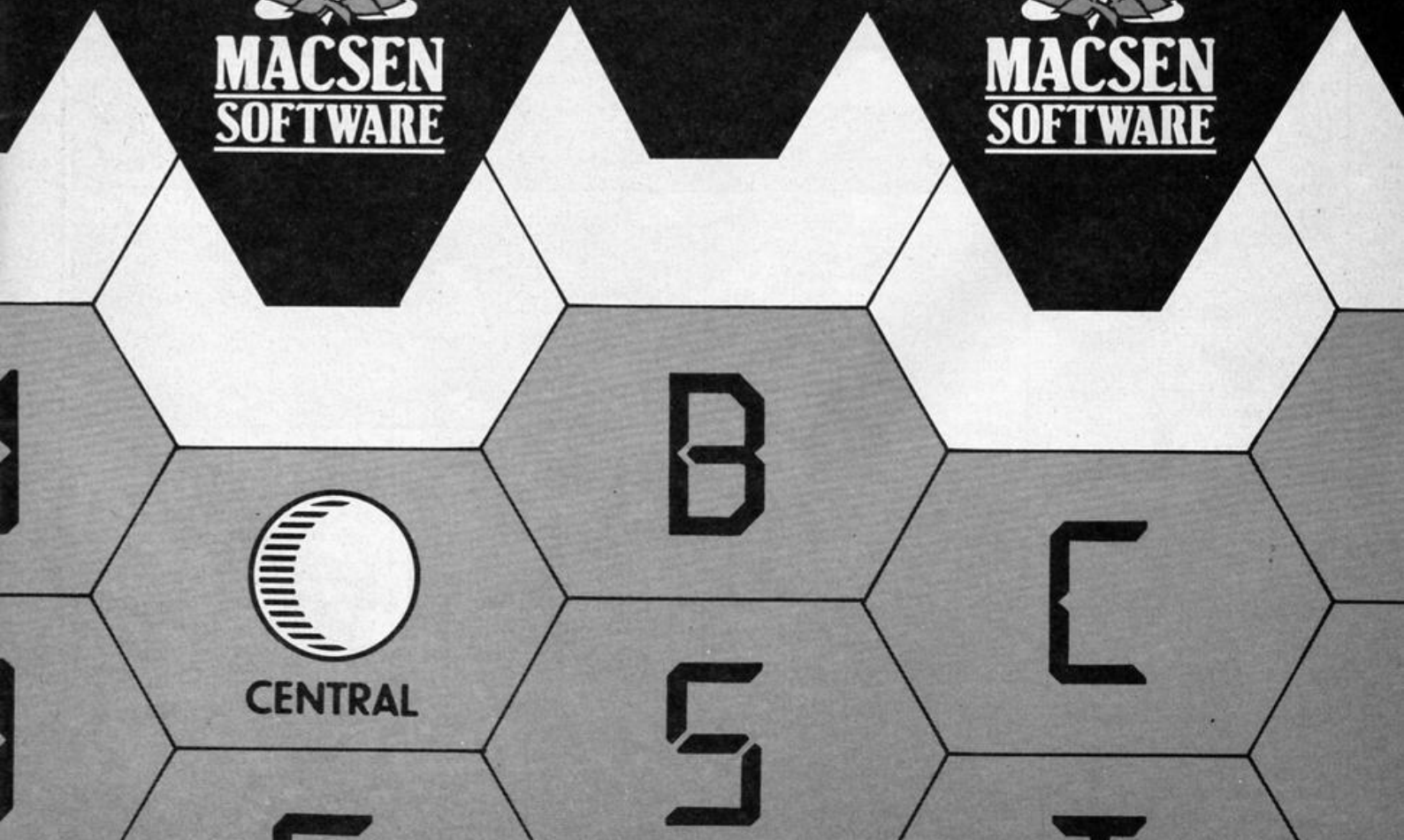
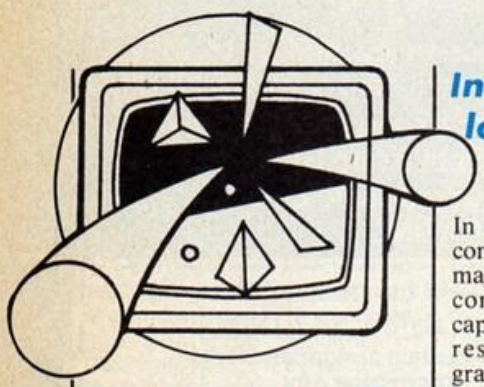




STATE OF THE ART GRAPHICS

In a new regular series, Jon Revis takes a closer look at utility packages

In today's cut-throat world of computer marketing, one of the major selling points of a home computer is it's graphics capabilities. Does it have high resolution, line drawing graphics? How many colours does it have? How many of these can be displayed on the screen at one time? In the early days of the Pets and Tandys these questions weren't even dreamed of. In those days graphics had to be built up from solid or, if you were lucky, shaded blocks which were POKEd on to the screen.

As we now have all this new technology at our fingertips it would be nice to try and make full use of it. It is my aim, through this column, to get beginners off the ground, and maybe plant a few seeds of inspiration for our more advanced readers.

Apart from producing graphics the hard way we shall be taking a look at some of the utility packages, both software and hardware, which are aimed at making the computer artists' life that little bit easier.

Beeb hint

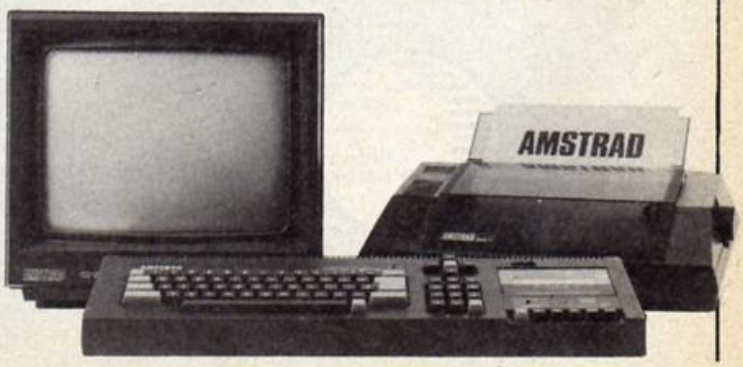
Most BBC and Electron owners will tell you their machine has one of the best and most comprehensive BASICs on the market. What you can't do with the graphics on a BBC just isn't worth doing. If you want to upset them just mention circles — one glaring omission from the graphics armoury of the BBC is it's lack of a circle

In the example program PROCcircle is called from line 20, the three numbers in the attached brackets are the X and Y co-ordinates and the radius of the circle. These are passed to the procedure at line 2000 and using the statement: PROC circle(posX%,posY%,radius %). Parameters posX% and posY% are the co-ordinates of the centre of the circle and radius% is the radius of the circle. One point to remember is that the procedure won't work if you aren't in a graphics mode e.g. 0,1,2,4, or 5.

The following procedure can be called from anywhere within one of your own programs stored in their corresponding

```
10 MODE4
20 PROCcircle(640,512,300)
30 END
2000 DEF PROCcircle(posX%,posY%,radius%)
2010 VDU29,posX%;posY%;
2020 MOVE 0,radius%
2030 FOR circle = 0 TO 2 * PI STEP PI/30
2040 DRAW radius% * SIN(circle),radius% * COS(circle)
2050 NEXT circle
2060 VDU29,0;0;
2070 ENDPROC
```

```
OUT &BC00,12 : REM Select register 12
OUT &BD00,48 : REM Send value to register
OUT &BC00,13 : REM Select register 13
OUT &BD00,0  : REM Send value to register
```



variables. The resultant circle is drawn in the middle of the screen and has a radius of 400 graphics units. An ideal way to save the above procedure is to use the *SPOOL and *EXEC method which is described on page 402 of the user guide.

OUT with Amstrad

The Amstrad's video display is under the control of a very clever chip: the 6845 video chip. Using the OUT statement you too can manipulate the screen display like a professional.

Registers 12 and 13 of the chip normally contain the values 48 and 0, respectively. By altering these values a screen display can be moved in all four directions.

Watch the birdie!

New from Micro-Robotics we have The Snap Camera for the BBC. The device is a 7 x 5 cm black box upon which is mounted a dinky little Pentax lens. The camera is connected to the Beeb via a two-metre ribbon cable which plugs into the user port.

The Snap is able to convert images into a form which can be displayed on your VDU by the computer. The software supplied allows the Snap to be used in a variety of different ways. The first of these programs allows the on-screen display of any object viewed by the camera.

Unfortunately, the display is only half a screen deep. The image can be dumped to an Epson printer at any time by pressing the COPY key, but this reduces the image further still. Better results can be obtained by listing the program and substituting the screen dump call with a call to a Computer Concepts Printmaster ROM.

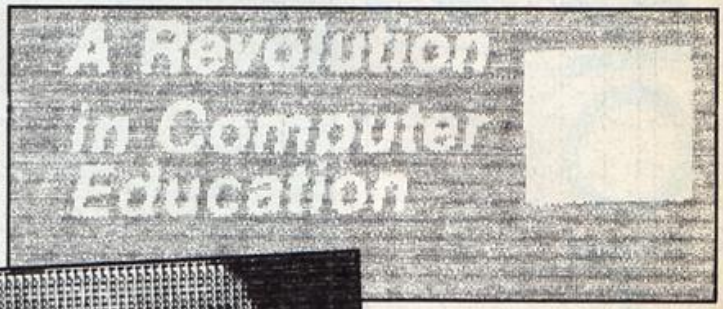
As with many peripherals, they stand or fall with the standard of the software supplied. With this type of device one would expect to be able to save screens to disc or tape for printing at a later date. No such routine is provided in any of the programs: this must be supplied by the user. The most impressive of the suite of programs supplied produces excellent full screen images in eight shades of grey.

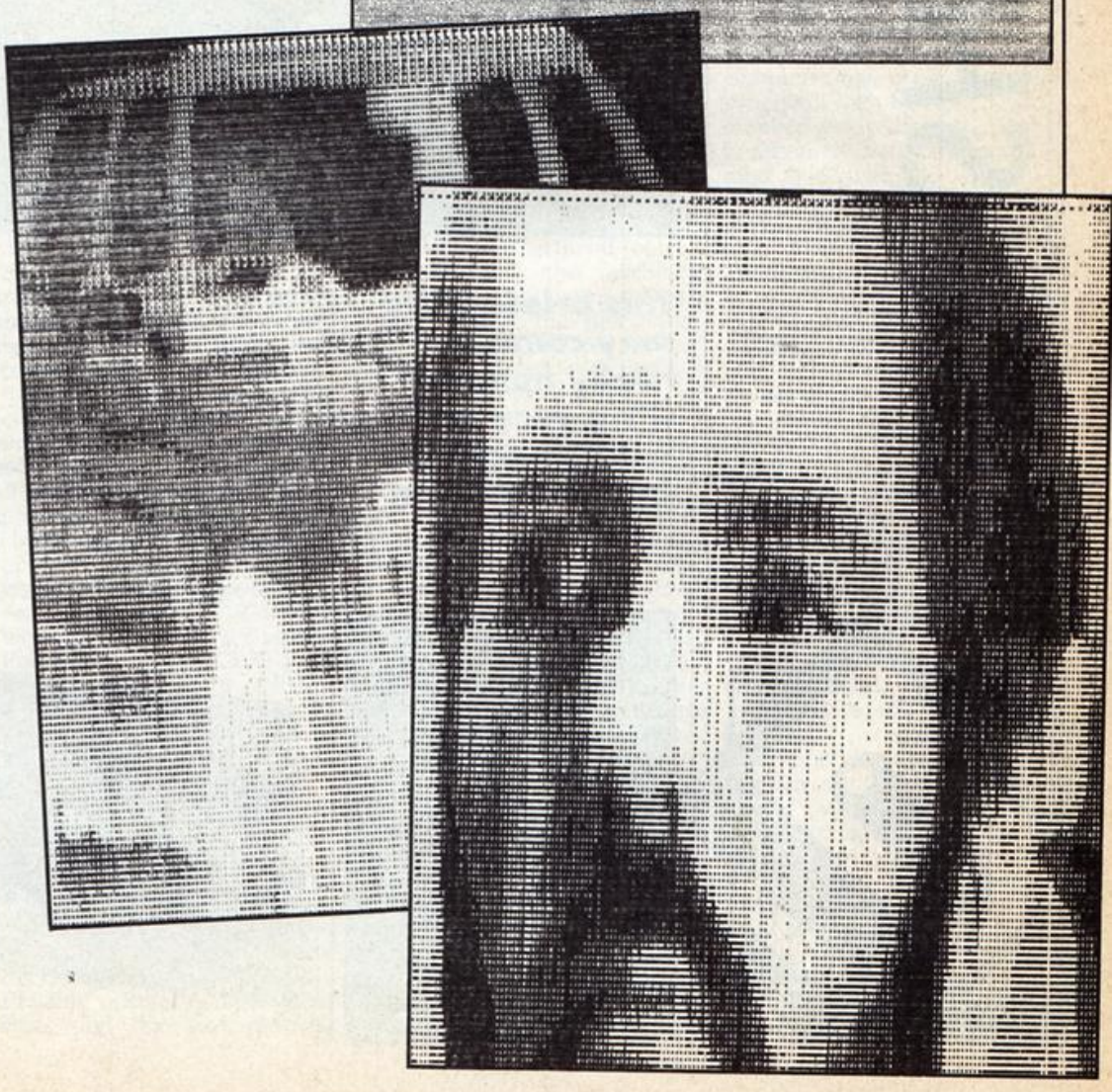
Despite it's limitations the Snap is a snip at £115.

By using a series of loops and altering the values of both registers you get some impressive effects.

The following short program prints some text on the screen and then scrolls it all to the left by using a FOR/NEXT loop to send values to register 13.

```
10 FOR N = 1 TO 10
20 PRINT "Hi There !"
30 NEXT N
40 OUT &BC00,13
50 FOR M = 1 TO 40
60 OUT &BD00,M
70 FOR Z = 1 TO 100 : NEXT Z : REM delay loop
80 NEXT M
90 OUT &BC00,13
100 OUT &BD00,0 : REM Reset register to it's original value
```





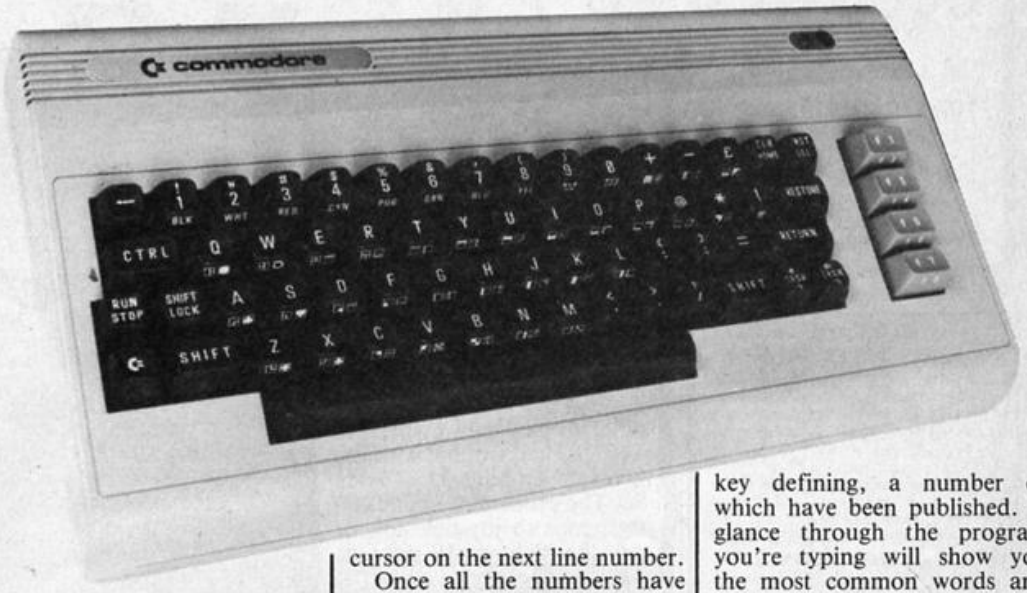
COMMODORE 64 UTILITY

SHORT BUT SWEET

```
10 REM************************************
20 REM TYPE TO PRINTER BY J.S.ROBINSON *
30 REM FOR CBM64 & MPS801   8:1:85     *
40 REM************************************
50 POKE53280,2:POKE53281,10:NL=1
60 REM******OPEN FILE TO PRINTER********
70 OPEN1,4:PRINT#1
80 REM********TITLE/MENU*****************
90 PRINT"■■■■■ TYPE TO PRINTER  BY J.S.ROBINSON ■"
100 PRINT"■■■■■S■TANDARD OR ■D■UBLE PRINT"
110 PRINT"■■■■U■PPER    OR ■L■OWER  CASE"
120 PRINT"■■■■R■EVERSE  OR ■N■ORMAL FIELD "
130 PRINT"■■  @@@ TO END.       ← FOR CHANGE.      ■"
140 REM*****CHOOSE TYPE TO BE PRINTED********
150 INPUT"■■■■■
```

STOP THE BRICK WALL SYNDROME

Ever felt so frustrated by typing in your own programs that you'd prefer to be banging your head against a proverbial brick wall? Iain Murray shows you how to stop ripping your hair out



If you intent to do a lot of home programming on the Commodore 64, here are some general and specific hints.

Firstly, learning to type correctly is a great help in keying in information quickly and accurately. This involves using certain fingers for certain keys — miles better than two fingers over the whole keyboard, no matter how fast they are! Most secretarial books will help here, and a number of typing tutors which run on the computer are available.

If you are typing in your own programs, it is vital to have them written down beforehand. If you just sit down and start typing, your program will almost certainly be unnecessarily complex, and you will probably get lost and waste a lot of time — so write it out first. Also, put plenty of REM statements into your program so that you easily remember what each bit of code does while developing it, or if you come back to it in the future. The REMs can be removed once the program is complete.

The 64's BASIC does not provide for automatic line numbering or block deleting functions, but FOR-NEXT loops can come in very useful. For instance type: [CLR] FOR I = 10 to 100 STEP 10 : PRINT I : NEXT [RETURN] [HOME] [CRSR DOWN] (words in [square brackets] refer to single key entries).

This will give you a set of line numbers down the screen with the cursor on the first one. Repeated pressing of [Return] will delete these lines from memory, or you can move the cursor past the number, ready to type in a line of BASIC code. Pressing [Return] will then enter that line and put the cursor on the next line number.

Once all the numbers have been used, press [Home] and edit the FOR-NEXT statement to give you the next few numbers. With a little practice, this can save a lot of time. Another useful tip is that if you have two lines the same, or very similar, then type one, enter it, and then edit the line number to give you the next line, and enter it. Only one line is on the screen, but if you LIST the program, you will see the two lines.

The maximum line length on the 64 is two screen lines long (80 characters), and if you type anything more than this it won't be accepted when you enter the line, which is rather annoying. Fortunately, Commodore has included a 'shorthand entry' capability into the machine. Most keywords have an abbreviation, usually the first letter followed by a 'shifted' second letter (e.g. RUN is r 'shifted U' or rU), though PRINT, a notable exception is just '?'.

The program is stored with the keywords in this reduced form to save memory, but they are expanded automatically when the program is LISTed. Hence when a line is fully expanded, it may be more than the allowed 80 characters long. This is fine if you don't re-edit the line, and if you do, the keywords may need to be reshrunk to make the line less than 80 characters long before you press [Return]. This can be very awkward and takes a bit of getting used to. (A word of warning here — avoid deleting back from the bottom line of the screen to the second bottom line as very occasionally this results in the computer 'locking up' and your program will be lost.)

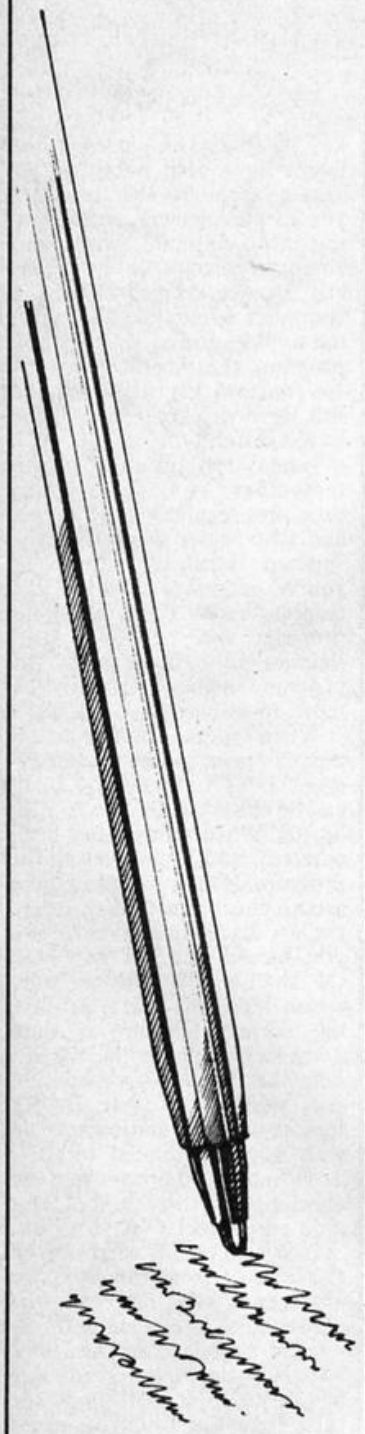
One very handy utility to have is a toolkit with function key defining, a number of which have been published. A glance through the program you're typing will show you the most common words and character groups in it. These can then be defined on to the computer's function keys using the toolkit, and as you type the program, pressing the appropriate function key will print the full word or expression on the screen instantly.

When typing in listings, remember to SAVE your programs regularly as you type, and also while debugging the finished listings, because if you've made a mistake, the computer may crash and your program will be lost. Also, number your versions of the program so that you know the most up-to-date one.

When typing in DATA statements, zeroes can be missed out (e.g. DATA 26,0,0,3,0,34,10 can be written as DATA 26,,,3,, 34,10). When all data has been entered, SAVE and RUN the program. If all is well (and there are no checksum errors), delete the last data item and reRUN — you should now get an 'OUT OF DATA ERROR' message, which tells you that you have the correct number of data items (remember to put the last item back!). Having a checksum (i.e. adding all your DATA figures together and comparing with a pre-calculated total) is a virtualy foolproof way of checking that the values of your data are correct.

It is also useful with printed listings to compare the difference in line lengths between your screen and the printed page (e.g. if line 100 is two characters longer than line 90 on the screen, but the difference is four character widths on the page, then you must have made a mistake).

These simple tips should help you enter programs into your machine more quickly and accurately, so get typing!



VIC victory

May I first congratulate you on a great magazine. Unfortunately I have just discovered it, and I feel a bit sad about missing the first 95, but I have now ordered it and I will definitely not miss any more.

Anyway, I felt I should write in case any owners of VIC-20s had trouble with the program on page 32 of issue 96. The problem is in line 700 (responds to joystick down). All the right stuff printed! Only in the wrong order. It should read:

```
700 IF X X 8120 + C OR
  PEEK (X + 22) = 2
  THEN RETURN
```

I can assure other VIC-20 owners that it's worth typing in the program. The game is a good combination of thought and luck. Well done, Gary Todd.

Andrew Scott, Midlothian

P.S. Are back issues available?

Yes, back issues can be obtained from Infonet, 10-13 Times House, 179 Marlowes, Hemel Hempstead, Herts HP1 1BB

Tron freak

I dare say you get lots of letters from baffled would-be users like me. (I've seen Tron 15 times: can anyone beat my score?)

Anyway, after spending nearly four hours and missing Birthday Time on BFBS — all British Forces Germany personnel will know how sad that made me!

Still, I had my new C64 to play with, although I had to wait nearly three weeks to get it (suppliers take note).

Four hours into the evening and at last the big moment. RUN... and what? A screen-full of disjointed white lines with a purple blob in the centre!

Now, I fully realise it could be me, but I did find it rather hard at times to make out the symbols on your C64 program Money Maze in HCW 94. Whereas the BBC program was both clear and easy to read, but of no use to me!

Would it not be possible to ask your printers to use the Heidelberg printer and not the Caxton Mark 1?

I did find your mag rather full of high-tech info and a little mind-blowing to a mere learner like me. Still, the ads are good. Can all the software programs be as good as they are made out to be?

C Thornby, RAF Laarbruch, W Germany

Disgusted!

Having just read the letter headed Moans and Groans from Mr R P Potterton (HCW 98), I was disgusted. I own a C64 and look forward to Tuesday when I can open the pages to find a C64 program. Alas, there is not always one there.

However I'm not so disappointed that I have to write letters and moan. If the only reason, or should I say, the main reason Mr P buys HCW is for programs for the (useless games computer) 48K Spectrum, then he should go and buy a specialist ZX magazine as well.

Otherwise he shouldn't get upset if there isn't a program. So Mr Potterton, take my advice and stop talking balderdash and stop moaning.

Neil Glew, Keyworth, Notts

Going gone

A big thanks for being the best value for money mag on the market. It's interesting from cover to cover and is of special value to VIC-20 owners — of whom I am one — because you support them so well with your listings. Please keep on putting them in. I buy it every week but have only one gripe.

The listings for the VIC-20 sometimes are so faint that I can't read them, or are you fading them out to match the production of the VIC-20?

J A Sheppard, Balham

Good point

I must object to Alex Sonny's letter in HCW 97. All computers have their advantages and disadvantages. It's not fair to say one is better than the other. The VIC-20 has good graphics and keyboard, while the BBC has good sound and BASIC, and the Spectrum has excellent software support.

Marcus Knight, W Sussex

Cheap tricks

I am a Spectrum user and I must say that, like a lot of people, I choose cheaper software, and what better to choose than Mastertronic.

Mastertronic now has a wide range of £1.99 games, and they are all ace. I have seven games from this range, including Bullseye, Gnasher and Tank Trax.

I also want to give a vote of thanks to British Telecom for Firebird Software. I bought Booty — it's bootiful! The graphics are great and the sound is super.

Kevin Ringrose, Brixworth

LETTERS PAGE

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TOP 20 SOFTWARE

Compiled by Gallup

Week Ending February 19, 1985

Up and Coming

This new column starts our regular look at the changes in the chart, particularly those programs in the lower reaches of the top 50.

All change this week, with Alien 8 rushing straight to number one. It seems one mythical being has ousted another. Yes, after 13 weeks in the chart, Ghostbusters has lost the number one slot. Read a review of this week's number one game elsewhere in this issue.

There's lots of activity in the one-machine charts too. Five re-entries to the Commodore top 10 suggest a new winner could fight it's way out of the crowd.

The BBC chart shows a number of changes too, but Castle Quest hasn't managed to push Elite from top position. Both Quickie Egg, soon to have a sequel, and 3D Grand Prix re-enter after a break of some weeks.

Raid over Moscow has made a big jump in the Spectrum chart, but not without opposition. US Gold's headquarters were picketed last week by CND protestors who felt the game encourages military attitudes.

Biggest strides in the lower 30 were made by Castle Quest, which managed to slink in at number 35, closely followed by Database's Mini Office at 37. This is quite an achievement for a program destined for serious use. It's the only utility program in the entire top 50 this week.

Another first is the entry of a Commodore 16 program: Roller Kong inched in at number 47. The recent change in prices could make this a real star of the future.

LAST WEEK	MOVE	THIS WEEK	TITLE	PUBLISHER	SPECTRUM	CBM 64	BBC	ELECTRON	VIC 20	AMSTRAD	ATARI	OTHERS
NE	□	1	Alien 8	Ultimate	•							
1	▼	2	Ghostbusters	Activision	•	•						
23	▲	3	Raid over Moscow	US Gold	•	•						
RE	□	4	Impossible Mission	CBS		•						
3	▼	5	Daley Thompson's Decathlon	Ocean	•	•						
4	▼	6	Booty	Firebird	•	•						
11	▲	7	Hunchback	Ocean	•	•	•	•	•			
2	▼	8	Zaxxon	US Gold	•	•	•			•	•	
5	▼	9	Football Manager	Addictive	•	•	•	•				•
15	▲	10	Match Day	Ocean	•							
22	▲	11	Combat Lynx	Durell	•	•	•	•		•		
20	▲	12	Elite	Acornsoft			•	•				
9	▼	13	Technician Ted	Hewson	•					•		
34	▲	14	3D Starstrike	Realtime	•							
7	▼	15	Jet Set Willy	Software Projects	•	•						•
6	▼	16	Airwolf	Elite	•							
18	▲	17	Monty is Innocent	Gremlin Graphics	•							
13	▼	18	Flight Path 737	Anirog	•	•	•	•				•
10	▼	19	Hunchback II	Ocean	•	•						
8	▼	20	Manic Miner	Software Projects	•	•	•				•	•

SPECTRUM Top Ten

1	**Alien 8**	Ultimate
2	**Ghostbusters**	Activision
3	**Raid Over Moscow**	US Gold
4	**Match Day**	Ocean
5	**Zaxxon**	US Gold
6	**3D Starstrike**	Realtime
7	**Airwolf**	Elite
8	**Booty**	Firebird
9	**Monty is Innocent**	Gremlin Graphics
10	**Daley Thompson's Decathlon**	Ocean

BBC Top Ten

1	**Elite**	Acornsoft
2	**Castle Quest**	Micro Power
3	**Combat Lynx**	Durell
4	**Sabre Wulf**	Ultimate
5	**Eddie Kidd Jump Challenge**	Durell
6	**Chuckie Egg**	A & F
7	**Football Manager**	Addictive
8	**Blockbusters**	Macsen
9	**Grand Prix 3D**	Software Invasion
10	**Hunchback**	Ocean

COMMODORE Top Ten

1	**Impossible Mission**	CBS
2	**Ghostbusters**	Activision
3	**Daley Thompson's Decathlon**	Ocean
4	**Raid Over Moscow**	US Gold
5	**Frak!**	Statesoft
6	**Booty**	Firebird
7	**Hunchback II**	Ocean
8	**Compat Lynx**	Durell
9	**Select 1**	Computer Records
10	**Jet Set Willy**	Software Projects

Compiled by Gallup for the industry's weekly trade magazine, Computer and Software Retailing.
For details contact John Sorrenti, Computer and Software Retailing, No. 1 Golden Square, London W1R 3AB. 01-437-0626

John Donovan masters Killer Gorilla

Ione Holmes scores with Eddie Kidd

Star joke

This week's star joke comes from Eddie Kidd, hero of Martech's Eddie Kidd Jump Challenge.

There was this man parachuting from an airplane. He jumps out of the plane and whizzes down through the air. He pulls at the release cord, but his parachute doesn't open up. He tugs frantically, but it's not working.

As he bombs down towards earth he sees a brown speck moving towards him. He realises it's a brown cloth cap, and underneath it is a little man.

'How do you open a parachute?' shouts the parachutist. 'Look mate, I don't know, I can't even mend a gas boiler', shouts the little man as he flies past him.

Readers' hi-score table

Name	Game	Machine	Score
Jon Chatten	Falcon Patrol	C64	6025
John Donovan Ekan	Killer Gorilla	BBC	33,700
Mark Foster	Tombstone City	TI-99/4A	204,850
Ione Holmes	Eddie Kidd Jump Chall.	BBC	30 cars
Alan Keane	TI Invaders	TI-99/4A	12,650
Neil Rennie	Chuckie Egg		270,125
Stuart Rodgers	Daley Thompson's Decath.	C64	33,538
Richard Speed	Pentathlon	TI-99/4A	Discus: 99.97m
Vincent Whitfield	Parsec	TI-99/4A	2,734,300

Send in your hi-scores to HCW. If you enclose a photo, we'll try to feature that, too.

Grin and bear it

What do computers have for breakfast?
Special K
Hugh Barnard, Tadley

What do you get if you make a copy of Chuckie Egg?
A poached egg
T Simcox, Derby

Wealthy American tourist: Listen, Buddy, I wanna buy a great little British computer...
Assistant: Electron?
Wealthy American tourist: Hell, no, I voted Democrat!
Eric Waters, Solihull

Send your jokes to us at HCW, No. 1 Golden Square, London W1R 3AB

Roll out the banner

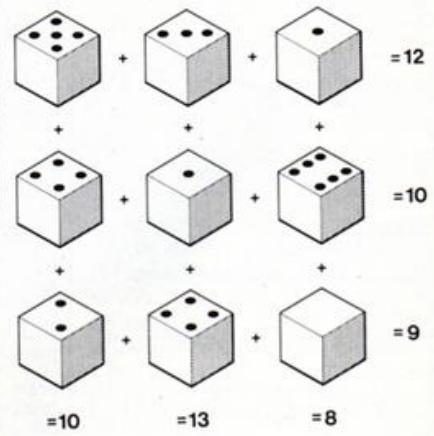
If you've got a birthday or special occasion coming up, why not send a personalised message, via your Amstrad CPC464? Here's how: type in the listing below, inserting your own personal message. By A R Cordell

```
5 '------------------------------
10 '            MESSAGE BANNER
15 'PLACE YOUR OWN MESSAGE IN LINE 250
20 '       MAXIMUM 40 LETTERS
25 '------------------------------
30 ON BREAK GOSUB 175
35 MODE 0:BORDER 2
40 EVERY 5 GOSUB 135
45 x=0:c=1
50 FOR y=1 TO 399 STEP 10
55 PLOT 0,y:DRAWR x,399-y,c
60 x=x+8:NEXT y
65 x=0:c=1
70 FOR y=1 TO 399 STEP 10
75 PLOT 639,y:DRAWR -x,399-y,c
80 x=x+8:NEXT y
85 x=0:c=1
90 FOR y=399 TO 1 STEP-10
95 PLOT 0,y:DRAWR x,-y,c
100 x=x+8:NEXT y
105 x=0:c=1
110 FOR y=399 TO 1 STEP-10
115 PLOT 639,y:DRAWR -x,-y,c
120 x=x+8:NEXT y
125 INK 1,24: PEN 1:INK 6,2:PAPER 6
130 GOTO 140
135 c=c+1:RETURN
140 A$="GREETINGS FROM HCW-"
145 A$=A$+SPACE$(20-LEN(A$))
150 A$=LEFT$(A$,20):B$=A$
155 LOCATE 1,13:PRINT A$
160 A$=MID$(A$,2)+LEFT$(A$,1)
165 B$=MID$(B$,LEN(B$),1)+LEFT$(B$,LEN(B$)-1)
170 GOTO 155
175 MODE 1: INK 0,1:INK 1,24:INK 2,20:INK 3,6:BORDER 1:PAPER 0:PEN 1
```

Puzzled? You will be

How many spots should you be able to see on the blank die face? Each row and line fits a pattern, so what's the marking on the bottom die?

Answer and explanation next week.



READERS PAGE

A L I E N

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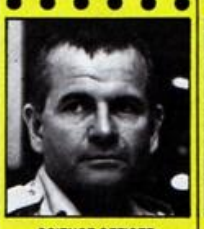
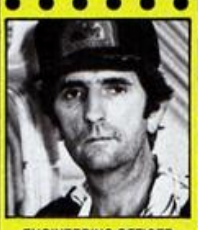


SCIENCE OFFICER
Secretive, Unlikeable, Brilliant — Occasionally Illogical.

CAPTAIN
Solid, Dependable, Courageous — Excellent Leader.

ENGINEERING OFFICER
Physically Strong, Low I.Q. Potentially Rebellious

3RD OFFICER
Wilful, Ambitious, Authoratitive, Resourceful.



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The MSX Micro that's paid

Yamaha manufacture probably the most successful range of electronic musical instruments in the world. Their new CX5M Music Computer is no exception.

The CX5M is a fully-fledged MSX micro-computer offering the exciting advantages of its breed; an ever-growing array of standardised software, 16-colour graphics, cassette and printer interfaces, twin joystick ports and expansion slot.

But that's not all.

Inside the CX5 is a polyphonic, programmable FM Digital synthesiser that can be played with its own music keyboard or, via its industry-standard MIDI port, control a network of compatible musical equipment.

In 1984 Yamaha's DX Series FM Synthesizers revolutionised the voice of music synthesis with their stunning reproduction of natural and electronic sounds. Now the CX5 gives you that same musical fidelity simply by hooking-up through your TV monitor or Hi-Fi system. For the first time a computer is a real musical instrument.

Yamaha also offer a number of music-based software ROMs. Music Macro for instance is designed specifically for the computer hobbyist. It enables you to access the CX5's superb FM sounds from MSX BASIC and from this, program games and AV sequences using music and sound effects.

Or try the FM Music Composer Program which provides an on-screen musical stave for fully expressive, computer assisted composition and arrangement.

So when you've completed your modern-day answer to Beethoven's piano concerto... you could always start cataloguing your record collection, work out your home accounts and discover why you have that overdraft at the bank, or even just sit back and play the latest arcade game!

its musical dues

Yamaha CX5M - Outline Features

- CPU - Z80A; 32K ROM; 32K RAM; 16K VRAM
- 16-colour graphics
- MIDI (Musical Instrument Digital Interface)
- Programmable FM voice generator (46-voice, 8-octave, 8-note poly)
- Music keyboard split & swap - voice and mono/poly)
- 8-voice multi-timbral
- Built-in real-time performance recorder
- Auto-accompaniment with rhythm
- Yamaha Software ROMs:
  - FM Music Macro
  - FM Music Composer
  - FM Voicing Program
  - DX7 Voicing Program (Coming Soon)
  - RX Rhythm Editor
  - 4-track Real Time Sequencer
- Price: From £534rrp (CX5M + YK01 music keyboard)
- YK10 music keyboard (full-size keys) also available

Yamaha CX5M - Hearing is believing

Yamaha CX5M - 'Hearing is Believing' FREE Demonstration tape. Fill in the coupon NOW!

See and hear the CX5M only at the following Yamaha Hi-Tech Centres.

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Rod Argent's Keyboards, 20 Denmark St, WC2
Chappell of Bond Street, 50 New Bond St, W1
Chromatix, Oak Rd, W5
Freedmans, 629 High Rd, E11
Future Music, 202 New Kings Rd, SW6
Gigsounds, 86-88 Mitcham Lane, SW16
Gigsounds, 22 Rushey Green, SE6
London Rock Shop, 26 Chalk Farm Rd, NW1
Rose-Morris, 11 Denmark St, WC2
Soho Soundhouse, 18a Soho Sq, W1
Syco Systems, 20 Conduit Pl, W2
Addlestone: ABC Music, 14/16 High St.
Barnet: ESS, 230 High St.
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Musical Exchange, 89 Old Snow Hill
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Bristol: Bristol Guitar Workshop, 157 St Michael's Hill
London Rock Shop, 7 Union St.
Cambridge: Cambridge Rock, 8 Burleigh St.
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Eastbourne: Peter Bonner, 12a Grove Rd.
Edinburgh: James Grant, 53 Home St.
Exeter: City Music, 4 Stn. Cres, Queen st.
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Glasgow: James Grant, 404 Byres Rd, G12
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Ipswich: Axe Music, 41-3 St Nicholas St.
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Liverpool: Frank Hessy, 62 Stanley St.
Maidstone: Sharon Music, 65 High St.
Mansfield: Carlsbro', 182 Chesterfield Rd. Nth.
Middlesbrough: Guitarzan & Bongo Bill 23/27 Middlesbrough Road
Milton Keynes: Chappell of Bond St, Silbury Boulevard.
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Portsmouth: Future Music, 104-106 Elm Grove, Southsea
Romford: Music Village (BAJ) 10 High Rd. Chadwell Heath
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Listing correct at time of going to press and subject to change.

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