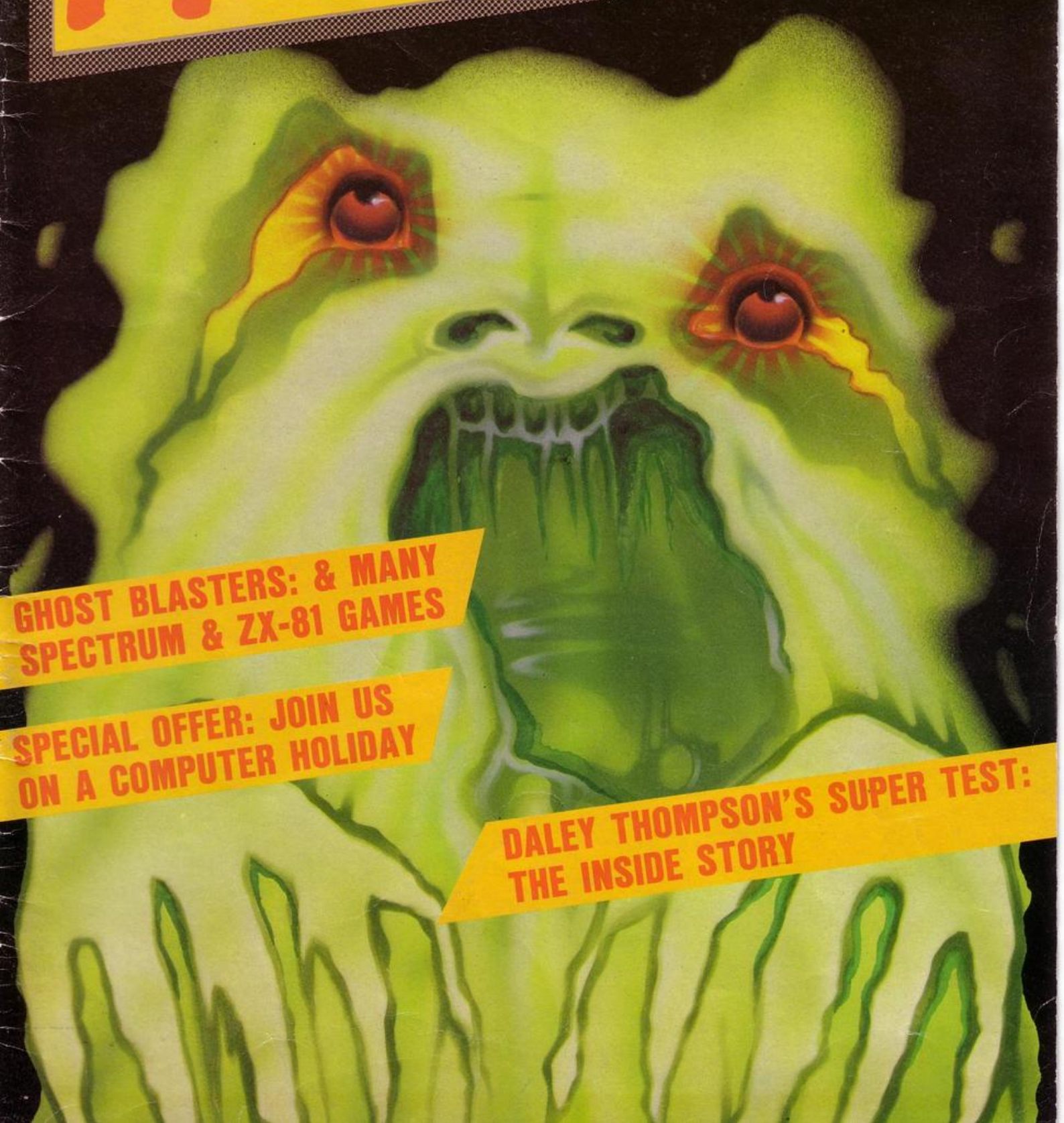
An independent magazine published by EMAP
June 1985

95p

SINCLAIR PROGRAMS



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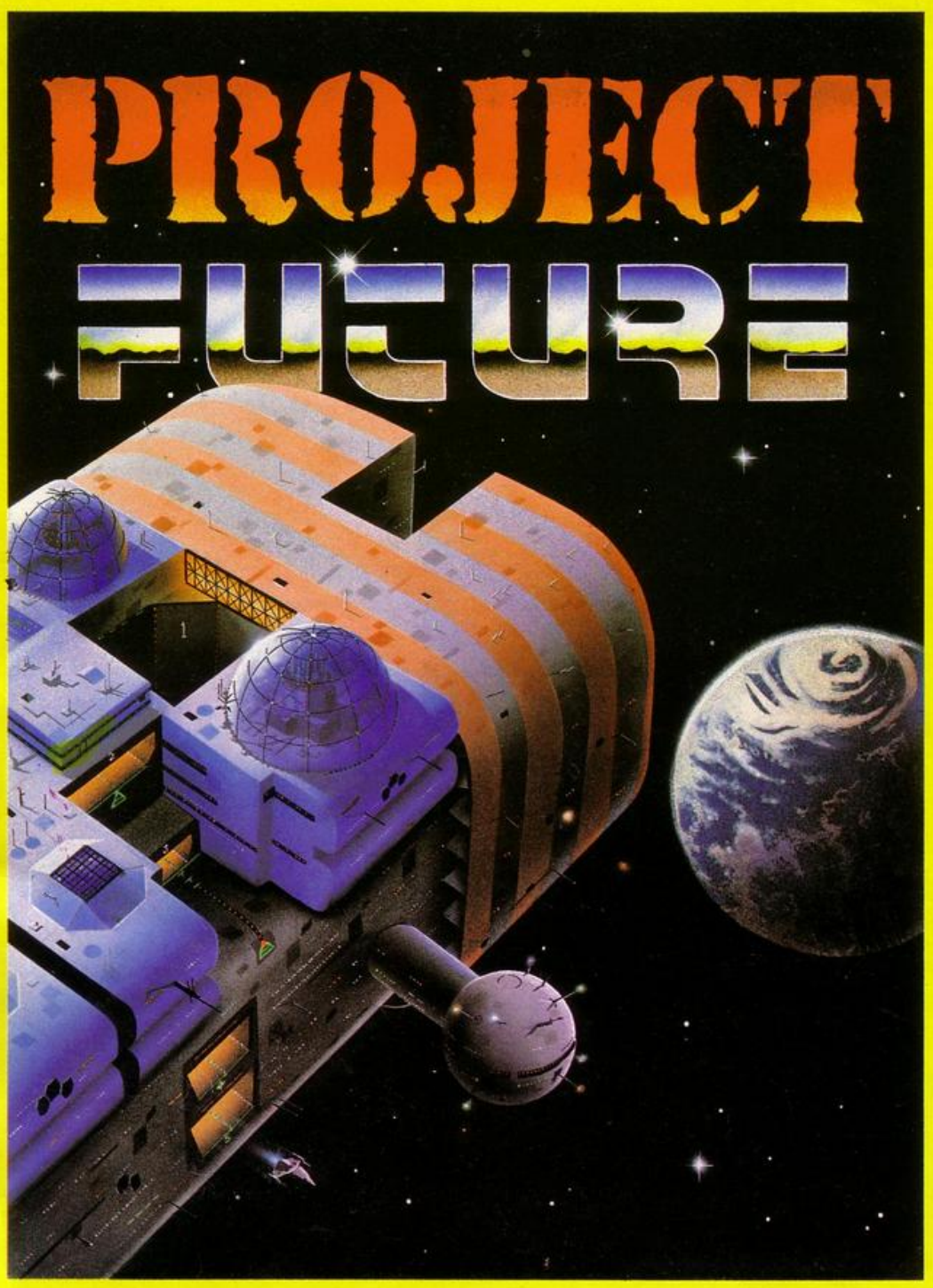

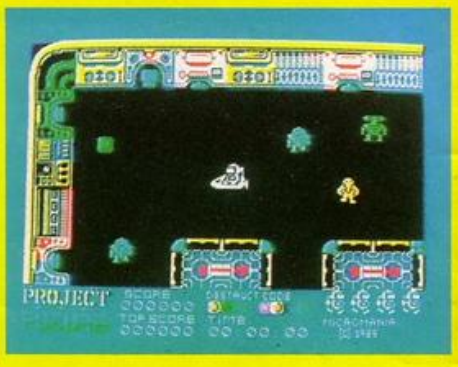

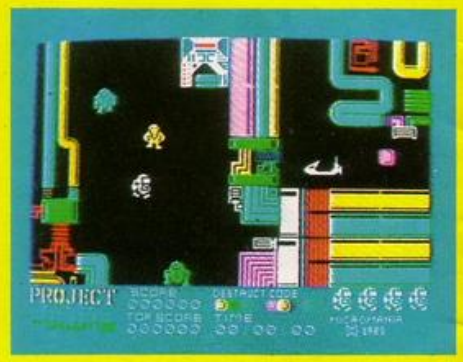

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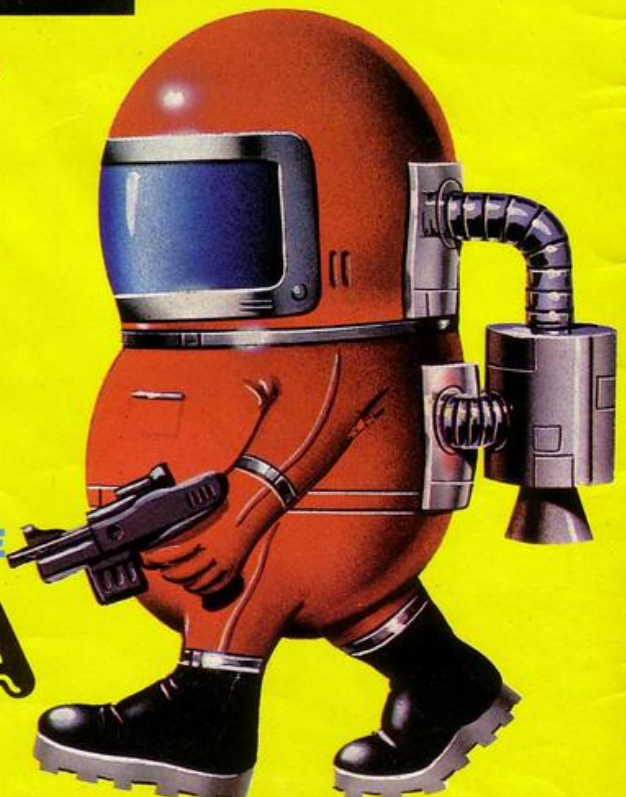

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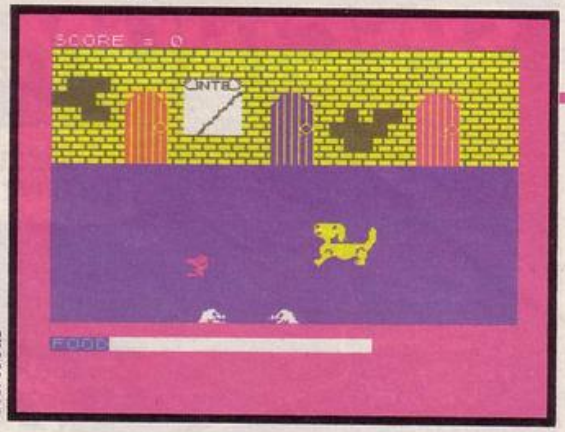

Soft focus

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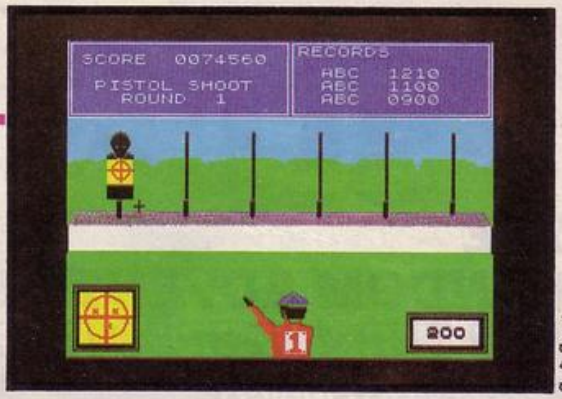

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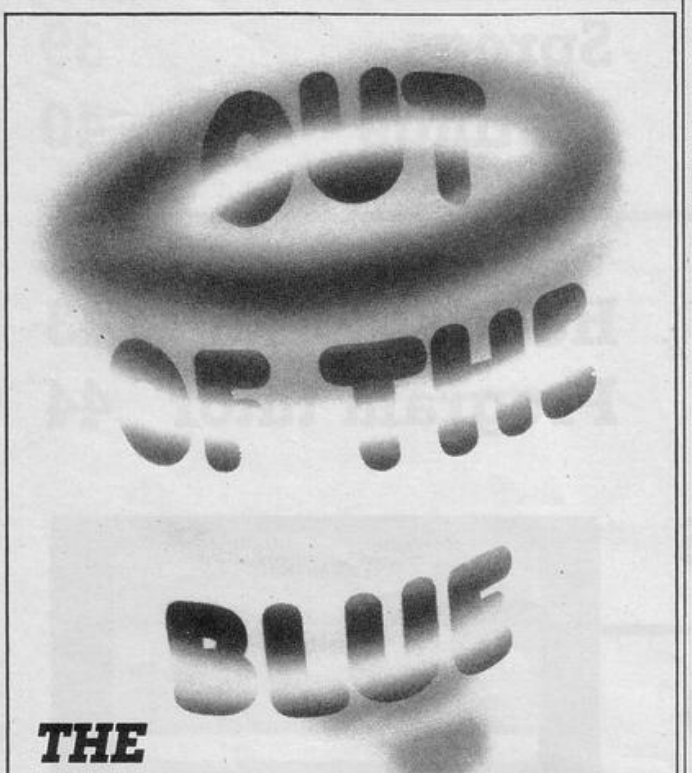

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Elsewhere in the magazine we have an early view of **Daley Thompson's Super Test,** a look at the game before it was completed. We are still publishing details of readers' highest scores on **Decathlon** and we should like to hear your highest scores on Supertest.

New in our letters section this month is a HELP! feature. **Got it Licked** gives hints on games, but do you ever look in vain for an essential hint to find we miss it month after month? Write in with a plea for help, and if anyone can answer it we will publish the answer in Got it Licked. Remember that we work a couple of months in advance, so we will not be able to publish answers to this month's questions until August.

Editor
Rebecca Ferguson

ABC

Staff writer
Colette McDermott

Design/Illustration
Elaine Bishop

Advertisement manager
Shahid Nizam

Production co-ordinator
Serena Hadley

Advertisement secretary
Maria Keighley

Subscription manager
Carl Dunne

Publisher
Neil Wood

Sinclair Programs is published monthly by EMAP Business and Computer Publications.

Telephone 01-251 6222

If you would like your original programs to be published in Sinclair Programs, please send your contributions, which must not have appeared elsewhere, to:
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London EC1R 3AU

Programs should be on cassette. We cannot undertake to return them unless a stamped, addressed envelope is included. We pay £25 for the copyright of listings published and £10 for the copyright of listings published in the Beginners' section.

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ISSN No 0263–0265

Printed and typeset by Cradley Print PLC, Warley, West Midlands

Distributed by EMAP National Publications Ltd.

All subscription enquiries:
Magazine Services,
EMAP,
Priory Court,
30-32 Farringdon Lane,
London EC1R 3AU
Telephone 01-251 6222

Cover Illustration—Ivan Hissey

Instructions for graphics characters are printed in lower-case letters in our listings. They are enclosed by brackets and separated by colons to distinguish them and the brackets and colons should not be entered.

Inverse characters are represented by the letter "i" and graphics characters by "g". Thus an inverse W would be represented by "iw", a graphics W by "gw", and an inverse graphics W by "igw".

Spaces are represented by "sp" and inverse spaces by "isp". Whenever any character is to be used more than once, the number of times it is to be used is shown before it, together with a multiplication sign. Thus "6★isp" means six inverse spaces and "(g4:4★i4:g3)" would be entered as a graphic four, followed by an inverse four repeated four times, followed by a graphics three.

Where whole words are to be written in inverse letters they appear in the listings as lower-case letters. Letters to be entered in graphics mode on the Spectrum are underlined.

Inverse characters may be entered on the ZX-81 by changing to graphics mode and then typing the appropriate characters and on the Spectrum by changing to inverse video and typing the appropriate letters. Graphics characters may be entered on the ZX-81 by changing to graphics mode and then pressing symbol shift while the appropriate characters are entered. On the Spectrum graphics characters may be obtained by changing to graphics mode and then pressing the appropriate character. User-defined graphics will appear as normal letters until the program has been RUN.

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LETTERS

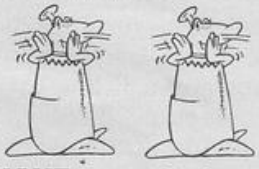
Send your thoughts to us at Letters, Sinclair Programs, Priory Court, 30–32 Farringdon Lane, London EC1R 3AU. We pay £2 for every letter published.

Decathlon: beat that

WHILE playing **Daley Thompson's Decathlon** I have managed to throw the javelin 120 metres and 17 centimetres. I think this is quite good, but my best ever score was achieved when I scored an amazing 171 metres and 83 centimetres on the long jump.

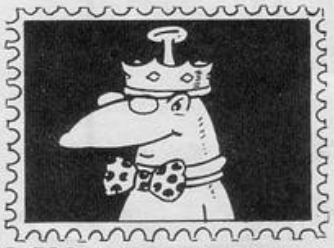
You probably will not believe me, but it is done by running really slowly and jumping well before the line and on a certain part of track after the jump line. The measuring man at the bottom is unable to find you, so your score rockets while he searches for you.

Carl Mitchell,
Tonbridge, Kent.



I HAVE recently begun to play **Daley Thompson's Decathlon** day two, and I have reached some high scores in each event. I have run the 110 metres hurdles in 9.36 seconds, jumped the pole vault at a height of 5.05 metres, thrown the discus 75.92 metres, hurled the javelin 136.11 metres and run the 1500 metres in 235.32 seconds. My best score on day two is 874 184.

Robert Dunning,
Middlesbrough.



I AM writing to let you know my highest scores in **Daley Thompson's Decathlon.**

100m	8.48
l. jump	11.76
s. putt	33.16
h. jump	2.45
400m	27.12
110m	9.45
p. vault	5.05
discus	75.90
javelin	126.70
1500m	252.76

The trick with all the running except the 1500 metres, and with the shot putt, long jump and javelin is to get the speed graph into the top, purple segment. If you can achieve this when jumping or throwing it dramatically improves the distance.

A Carter,
Stevenage, Herts.

• Thanks to everyone who has sent in their scores so far. Can anyone beat those printed above?

Making the dumb speak

IN THE days of the ZX-80 a number of programs appeared which claimed to produce sound on it, however none ever did.

It was therefore with much apprehension that I viewed Paddy Moindrot's program in your March issue that claimed to produce sound on the ZX-81.

I was spurred to enter it when I left the TV sound on and typed NEW. This produced two bleeps, so my hopes were slightly raised.

However, when I entered and tried Paddy's program, I could not believe it, my dumb ZX-81 was actually producing sound! Paddy is to be congratulated for his effort in producing such a brill program.

M J Davies,
Llandeilo, Dyfed.

Set your lords right

THANK YOU for the excellent **Lords of Midnight** map in the March 1985 issue. However, some of the army strengths given for the Lords are incorrect, as follows: Ithrorn begins the game with 700 guards, 1200 warriors and 1000 riders. Athoril should have been allocated 150 guards and 300 warriors. Herath has 300 guards, 600 warriors and 500 riders. Mitharg was shown as having 250 guards but he actually starts with 150. Morning begins with 200 guards, 800 warriors and 300 riders. Korinel begins with 1000 warriors and Brith has 150 guards, as stated, together with 300 warriors and 500 riders.

M Grey,
Newcastle on Tyne.

I AM GLAD to say that I have finished the game **Lords of Midnight** thanks to the map printed in the March edition of *Sinclair Programs.* The map was very useful and meant that I was able to locate the lords very easily. I found Fawkrin the Skulkrin and he and Morkin went to the Tower of Doom. Morkin took the Ice Crown and gave it to Fawkrin, who destroyed it.

At the end of the game it says: "The Ice Crown has been destroyed, victory went to the free." Nothing very spectacular about the ending but it is a good game and I reccmmend it.

Craig Howe,
Huddersfield.

Fastest so far

I AM WRITING to tell you that I have completed **Monty is Innocent** in a time of one minute fifty-five seconds. Can anyone beat this time?

Michael Guy,
Chorley, Lancs.

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LETTERS

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HOW DO you reach key five on screen one of **Booty?**

Whatever happens, do not wait but keep moving. Firstly turn off the sound because the game will then move faster. Take key four and open key four but do not take the booty. Take key seven and go straight to door seven, not forgetting the booby trapped booty in front of it. At this point the pirate should be turning his back to the door. Open the door and take the gun.

When you go back up the ladder you should take key two automatically. Open door two. Go for key six as soon as door two is open. Go up to door six and wait for the pirate to turn his back. Get key one and go straight to door one. You are nearly home free IF you have not paused at any stage.

Finally, take key eight, go to the bottom and open door eight. If you have done everything right the pirate should be going in the opposite direction. Instead of getting out of the way, wait on the ladder. As soon as the pirate on the bottom goes past, go down, take key five and go back up.

I would take key five before taking any booty to avoid the possibility of being blown up. My highest score on Booty is 88.

Victor Bell,
Clifton, York.

Support from ZX-81 owners

I, LIKE many other ZX-81 owners, I am sure, think that your magazine is the best on the market. It, like no other magazine I have seen, gives program listings for the ZX-81. Added to that is the fact that a lot of the programs are very good indeed and are well worth spending the time to type out.

I Sinclair,
St Ives, Cornwall.

Help with the high jump

AFTER reading Chris Buxton's letter about **Daley Thompson's Decathlon** I noticed that people were having problems with the high jump. I therefore trotted down to our local computer shop and purchased a copy. After days and days of trying I finally succeeded.

I found out that you have to run up to the high jump and, when you are about half way Daley's width away from the obstacle, you press jump quickly and let go. When he is nearly at his full height you press jump again and this time keep your finger on the button until you land.

I have also found that in the 100 and 400 metres you can go faster by rolling a ping pong ball across the left and right keys as long as they are next to each other.

Darren Kemp,
Leeds, Yorkshire.

Vast fortune accumulated

I HAVE completed Gil Ben-Horing's top score of 36,279,714 on **Cash Accumulator.** On my third attempt I managed to score 64,704,216.

I could have scored more, but my brother pulled out the plug!

Simon Graves,
Devizes, Wiltshire.

Help!

I can see a tower and palace beyond the northern icy wastes in **Doomdark's Revenge.** How can I get there? Where is Morkin? **Anon.**

Help!

QS Defenda, produced for the ZX-81 by Quicksilva contains a 32 line by 31 character display. Does anyone know how they achieve this effect? **D Greenwood.**

Heroic Jill is top knight

ON MARCH 31st, 1985 I finished **Knight Lore** from Ultimate in thirty five minutes. I gained 66% in 32 days and had to collect 14 objects from various places. For this I received the comment Hero.

On dropping the last object into the cauldron the blocks around the cauldron turned into magic spells which then engulfed me and a poem appeared on screen.

Jill Oughton,
Milford Haven, Dyfed.

Black belt Level seven

I HAVE successfully completed **Kung Fu** for the 48K Spectrum. I reached black belt level seven and finished with a score of 455. On my second attempt I finished with a score of 524.

I have discovered that if you leave the demonstration running, the program will crash.

I think this is a great program, with the best animation I have seen.

Simon Pritchard,
Belper, Derbyshire.

I AM WRITING to compliment you on what I think is the best computer magazine on sale. I buy *Sinclair Programs*

Help!

Has anyone solved **Inca Curse?** I cannot extinguish the fire in the fire room, remove the panels in the panelled room or go down in the sand dungeon. **David Johnson.**

every month, and cannot wait to type in some programs. I bought the February issue and became very good at the game **Byteman.** I have scored 99 076 and should like to hear from anyone who can beat me.

G Stocks,
Scunthorpe.

Bruce Lee: beat that

I HAVE finished **Bruce Lee** by US Gold. On Saturday March 23rd I completed the game twice and scored 123,900.

My friend and I have also completed **Beach Head** with 100,100 points.

I have a tip for those people playing **Death Star Interceptor.** On the second screen on level one, move your fighter to the bottom right hand side of the screen, this place is quite safe as you are not attacked so much there.

Barrie Williams,
Rickmansworth, Herts.

Betwixt and very between

DID YOU know that there was an issue 2½ Spectrum? On buying a new Spectrum a couple of months ago I was determined to discover whether I had an issue two or an issue three.

After looking at the edge connector I found that I did not have an issue one. I also saw that the heat sink ran across the top, and not down the side of the edge connector, suggesting that I had an issue three.

However, when I typed all the PRINT IN numbers I always received the response 255, indicating an issue two.

Finally I was so frustrated that I opened it up. There it was, stamped in white letters ISSUE THREE.

So, I have the heatsink of an issue three, the edge connector of an issue two or three, the PCB of an issue three but the ULA of an issue one or two, making my Spectrum an issue two and a half. Weird.

P Roberts,
Yeovil, Somerset.

More power to your ZX-81

WHY IS there no ZX Microdrive compatible with the ZX-81? Is it because there would be nowhere to put the Ram Pack, or is it because the ZX-81 is not as powerful a machine as the Spectrum?

Why do Sinclair not bring out a new ZX-81 with QL style keyboard, built in 16K memory and a ZX-81 compatible microdrive included in the price? If Sinclair were thinking about a new ZX-81 they should put it at a very competitive price.

G Jones,
Swansea, Glamorgan

Help!

Has anyone found an infinite lives POKE for **Kokotini Wilf?** I am fed up with reaching the final level with one life left, only to be killed immediately. **Fred Mathisen.**

Help!

Can anyone offer any hints and tips on **Gift From the Gods,** produced by Ocean? **Michael Ranford.**

Airwolf walls demolished

IN YOUR review of **Airwolf** you stated that you had to knock the bricks out of the wall on the second stage. In fact you only have to shoot out about three layers of bricks, so that it is easy to get through the wall before it is rebuilt.

AFTER reading your review of **Airwolf** I was surprised that your reviewer could not pass the second wall without difficulty. I go onto the next screen with the laser cannon then return to the next but, when the screen has just finished scrolling, I press down and right. When you are under the wall, press down and you move on to the next screen. If you hit the square which turns blue, turn round and go back in order to shoot the square again.

David Price,
Tewkesbury, Glos.

Help!

On the first screen of **Manic Miner** I always lose my lives by hitting the stalactites on the top ledge. How do I reach screen two? **Elizabeth Wakefield.**

On the third stage a wall is rapidly built across the entrance to the next screen. Do not try to shoot this wall. Either try to beat the wall to the entrance, which is difficult, or go straight across onto the dummy fourth screen, turn round, return to the third screen and enter the hole from this direction.

Clive Sims,
Felixstowe, Suffolk.

NEWS

Fault vault

A NEW service has been set up in the midst of revolt by Sinclair computer owners who have suffered long delays in having their machines serviced or repaired.

Video Vault are operating a service that includes while-u-wait and a 24 hour turnaround on any machine sent to them. They charge a standard £19.95 irrespective of fault. This service covers the ZX-81, Spectrum and Spectrum Plus.

The firm have been working in the computing field for over eight years now. They felt that they could easily outdo the poor record of Sinclair Research on machine maintenance.

Video Vault can be contacted at: 140 High Street West, Glossop, Derbyshire or by telephoning (04574) 66555.

WINNERS

TWO competitions were held in the March 1985 issue; winners are listed below.

The first was held with Adventure International and the winners will each receive a copy of **Swordmaster.** The correct answer to final strength was 42 although we had a variety of answers ranging from 35.99997 to 371700. The winners are:

R J Law, Cameron MaClean, A G Coersqi, Ed Mansell, Peter West, C Hampton, Lee Anthony Frost, Darren Woodberry, Darren Williams, Andrew Atkins, Nicola Walker, Garry Flowers, Vincent Hill, Kevin Heasman, Mark Cannon, C S Martin, J Fitzpatrick, Colin J Smith, Stuart Hollins Gareth Smith, Mark Dixon, David Foster, Craig Charlton, Andrew Brogden, C Whiting, Martin Nicholson, Kevin Hill, S Baigent, Gregory Bones, Lee Davis, M Wilkinson, Jason Humphreys, B K Collier, Geoff Walton, D Voright, Amanda L Jukes, Kevin Wood, Paul Humphries, Christopher Brennan, David Cookson, B Morris, Brian Gordon, Andrew Hunt, Andrew Walker, Gemma Smith, Mike Davies, S M Hindley, A Pearce, Colum Scott, Keith Oiscombe.

The second competition was held with **Software Farm,** producer of ZX-81 software. The twenty winners will each receive its range of games. The winners are:

Brian Moss, A Beckers, David L Hamlyn, Andrew Fletcher, Shaun Palmer, Alfred Campbell, A Jackson, Martin Tubb, Ashley Strachan, Richard Hansen, David Blair, David Ross, R E Browning, R M Simmons, Ian Tomkins, Steven Wildman, Raymond Kroes, Francis Dickenson, E J Cooper, J R Houghton.

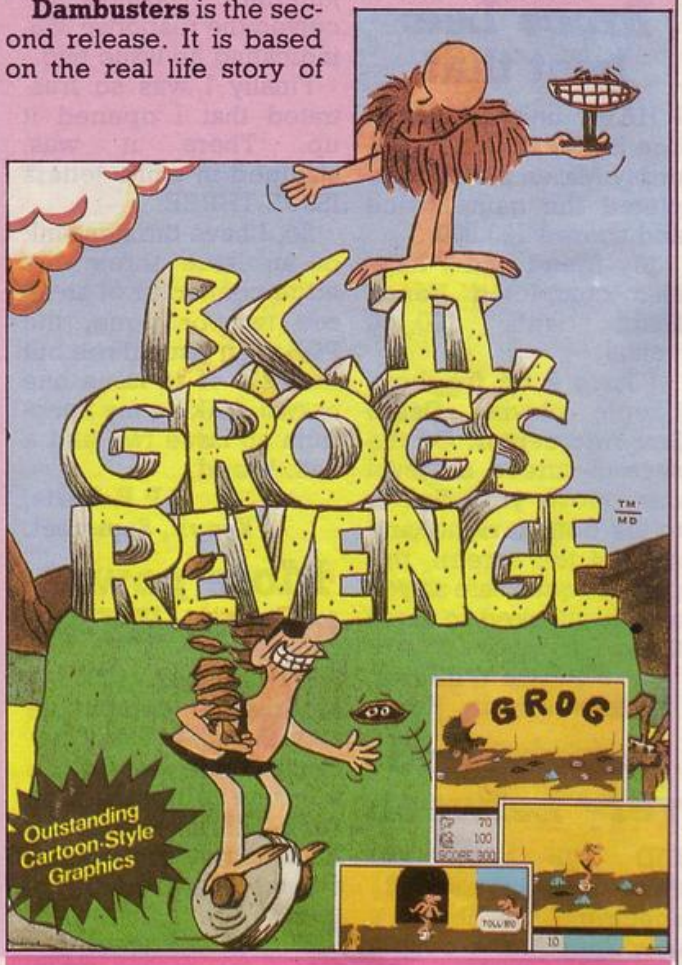
Dambusters!

US GOLD has released two new Spectrum games for the summer, both will cost £7.95.

BC2, Grogs Revenge is a sequel to **B C Quest for Tires.** The game is described as an adventure with graphics. The graphics are animated cartoons and the story is set around Tor who is searching for the meaning of life. His quest takes him into many dangerous situations and you must guide him along the way.

Dambusters is the second release. It is based on the real life story of the famous war time exploits of 617 Squadron, who carried out raids on the German dams in 1942. It is an arcade style game using simulation techniques to show you various enemy locations. You have the option to act as pilot, navigator, front or rear gunner. Flying a Lancaster Bomber plane you must fire your bouncing bombs to destroy the dams.

Both the RAF and the 617 Squadron have approved the game.



Make the connection

CHEETAH Marketing have developed two new joystick interfaces which are compatible with both the Spectrum and Spectrum Plus.

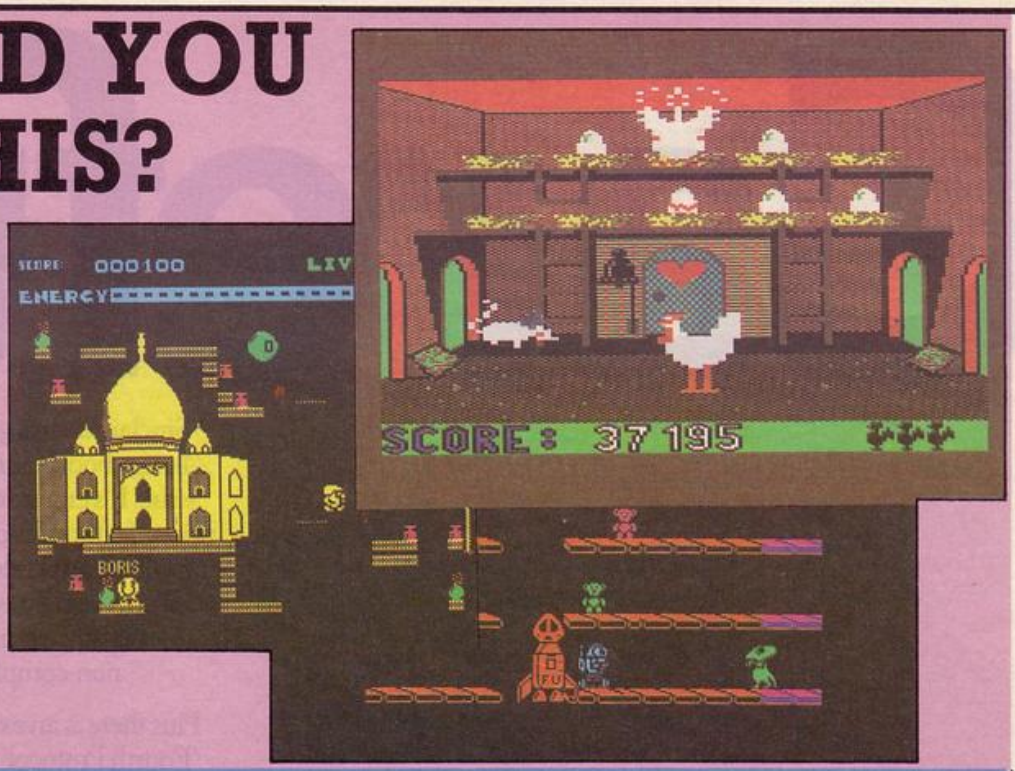
£11.50 will buy the basic interface, or for £12.75 the second will allow you to attach other peripherals. They are designed to work with most well known joysticks, including Sinclair, Kempston and Protek.

The interfaces are now on sale and can be bought through the usual suppliers.

SHOULD YOU BUY THIS?

DON'T Buy This! Firebird are attempting to prove that you can be mad and stay in business.

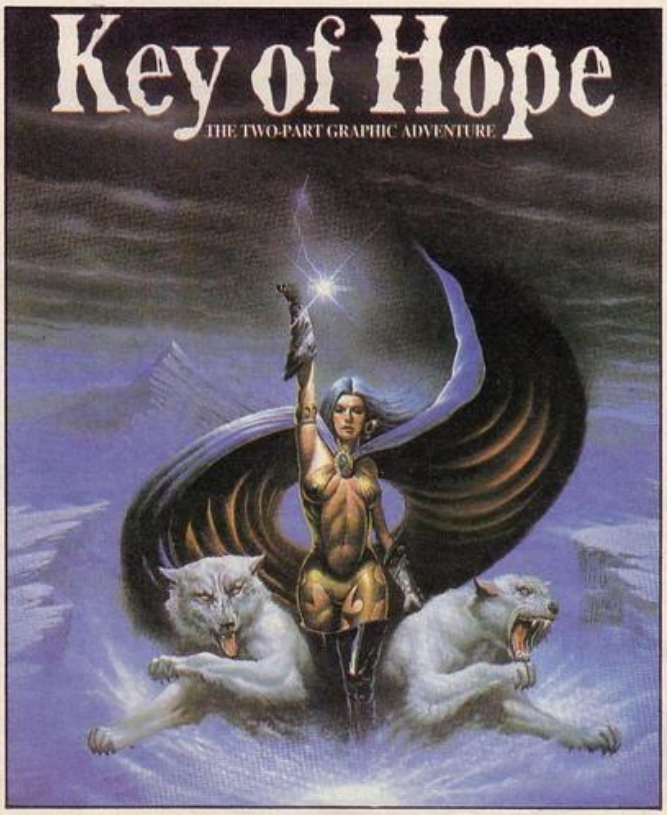
Their new software package is called **Don't Buy This** and it is now on sale, for £2.50. "The package contains a selection of the worst Spectrum games ever published in the world" said James Leavey, marketing manager. Games included are **Fido 1, Fido 2, Weasel Willy** and **Fruit Machine.**



Despairing? Hope arrives

GAMES Workshop's authors have devised a hint sheet to help anyone who is having difficulty completing **Tower of Despair.** For the sheet write, enclosing a SAE, to: Mail Order Dept, Games Workshop Ltd, 27/29 Sunbeam Road, London, NW10.

Meanwhile for those who have completed, or given up on the game, a sequel will be out at the end of May. **Key of Hope** continues the saga in a graphic adventure with over 400 locations. It costs £7.95 and has been written by one of that all too rare species of author, a female.



Racing ahead

KEMPSTON, well established joystick and interface manufacturer, has decided to launch a range of software which is being developed by Orpheus Software.

Kempston Micro Racing will be launched shortly. It is a Formula Ford Racing simulation and features include a car on the race track with side mirrors to watch out for opponents following behind.

Orpheus have been producing software for some time, but this is the first for the Spectrum. Ab Pandaal, managing director of Kempston said "Although relatively new, they impressed me with their professionalism and close attention to detail."

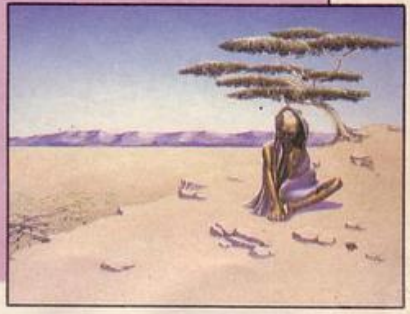
Plans are afoot for more games which will be released throughout the year. Micro racing will be available through the normal outlets and will carry the Kempston logo.

Soft Aid sales still soaring

OVER £150,000 was raised, in only seven weeks, by the Soft Aid appeal.

All this money will be used to bring relief to the starving people of Ethiopia.

The tape costs just £3.99 and 60% of the profits are being sent directly to the charity. You can buy a copy from any major computer store in the country. The tape contains twelve of the best Spectrum games ever produced.



Careful!

Sinclair User is giving away a FREE 24-page booklet on the front of the June issue. It's crammed with information, prices, features, suppliers and star ratings of all the available Spectrum and QL add-ons. So you'll never again buy an overpriced joystick or non-compatible printer.

Plus there is an exclusive review of the 'Fourth Protocol' a revolutionary new game based on Frederick Forsyth's latest novel.

Not to be missed. On sale May 18th.

SINCLAIR USER is at all good newsagents price 95p.

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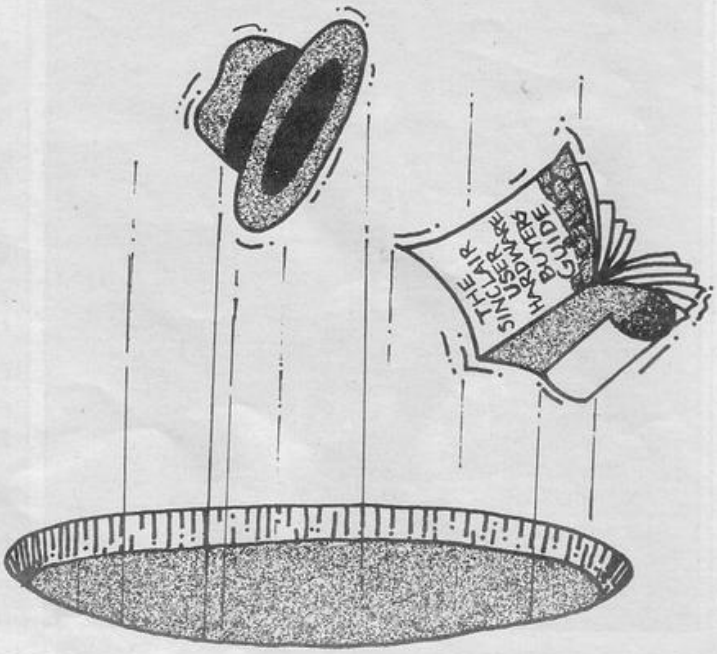

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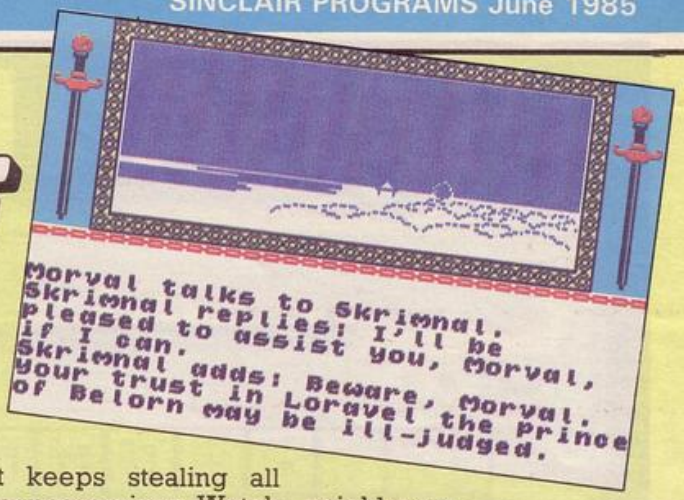
RUNESTONE



GAMES Workshop kept surprisingly quiet about their graphic adventure, **Runestone.** Surprisingly quiet in view of the fact that it is an excellent game, a direct successor of such classics as **The Hobbit** and **The Lords of Midnight.**

To start with, it contains 2000 locations, from each of which you can look in four different directions. Your view of the countryside is strongly reminiscent of Lords of Midnight. Detailed pictures, on the basis of which you can make your next move, appear quickly and smoothly.

Where the game goes beyond the Lords of Midnight is in its text input. Commands can be input as they would be in a normal adventure, and you are able to converse to a limited extent with the forty other characters in the game.

There are a variety of characters in the game, all of whom have different attributes and personalities. It is possible to change your own personality from that of Morval the warrior to that of Eliador the elf or Graymarel the wizard. Another character who will turn up sooner or later is the unwelcome Skrimnal the Sly. Skrimnal seems very friendly, offers help and advice, but keeps stealing all your possessions. Watch out whenever he looks too happy.

Runestone incorporates a number of different quests. You can aim to collect the stolen treasures of Belorn, defeat the orcs and denizens of the northern wastes or destroy the fearsome Kordomir the dark. Movements are made in real time, so if you wish to embark on a quest it is important to start immediately and not leave your enemies time to assemble their forces while you wander around and chat to your neighbours.

Movement is made more difficult by the great lakes and river which separate different parts of the country from each other. Enthusiastic and heroic though Morval is he is unable to swim, and there are only two ships to be found on his side of the water.

Runestone is an excellent game produced for the 48K Spectrum by Games Workshop, 27/29 Sunbeam Road, London.

Game type: Adventure
Price: £7.95
Rating: 85%

CHAOS

ON A FIRST run through, **Chaos** certainly lives up to its name. You play the part of a wizard aiming to defeat all other wizards on the board. There can be up to eight wizards on screen at a time, each of which can be human or computer controlled. Eight wizards firing spells at each other on a Spectrum screen; chaos indeed!

The game is set in the Dungeons and Dragons mould. Each wizard is assigned a variety of spells from a long list. Some are offensive, such as Giant Rat or Golden Dragon and some, such as Magic Armour, are defensive.

Most spells are not guaranteed to work. Success will depend partly on chance, and partly on whether your spell would disturb the balance of the universe. Of course, you could always go one step further and change the nature of the universe yourself . . .

The screen display is not as impressive as the phrase "Continuously animated sprite graphics" suggests but then, as this is primarily a strategy game, and most characters spend most of their time standing still, this is no problem.

A good introduction to the realms of fantasy for novices, and fun for experienced role games players as well, Chaos is produced by Games Workshop, 27-29 Sunbeam Road, London.

Game type: Strategy
Price: £7.95
Rating: 66%

DUKES OF HAZZARD

IN ORDER to win £5,000 and save the General Lee, the **Dukes of Hazzard** must reach the start of the Hazzard County Road Race in safety. All that is necessary is to avoid Boss Hogg and the entire Hazzard County police force.

You drive the General Lee from left to right across the screen, with the police chasing you in their car, flying above you in their helicopter and various obstacles approaching you from the other direction.

To increase speed it is necessary to push one key as many times as possible. This wears out your fingers and, presumably, your keyboard, very quickly without adding any touch of how it really feels to drive a car. You can also leap oncoming objects, change lanes on two lane sections of the road, and throw dynamite at any nearby obstruction.

Nothing very spectacular about the storyline, graphics or the game itself.

Dukes of Hazzard is produced for the 48K Spectrum by Elite, 55 Bradford Street, Walsall.

Game type: Arcade
Price: £6.95
Rating: 37%

GREMLINS

LOAD IN this game and what do you get? **Gremlins** all over the house, that is what you get. For starters, the first thing you see in this adventure is a gremlin throwing a dart at you. This involves some quick thinking; discretion is, after all, the better part of valour.

Down in the living room is a gremlin, and the action starts to hot up, for it will not let you pass. The kitchen seems to be stuffed with the little creatures. Remember the liquidised gremlin in the film? Here is your chance to see a gremlin liquidated on your Spectrum screen in full colour animation.

There is a lot in this game. Good pictures, quickly drawn, which change depending on your actions, a series of puzzles to keep you racking your brains, a strong storyline, and a close attention to the film.

Gremlins is an enjoyable adventure, although the early puzzles suggest that it would not keep an experienced adventure player stumped for long.

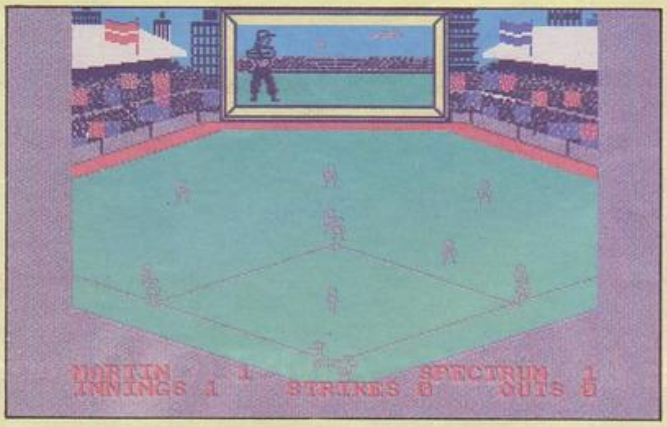
Produced for the 48K Spectrum by Adventure International, 85 New Summer Street, Birmingham.

Game type: Adventure
Price: £9.95
Rating: 74%

WORLD SERIES BASEBALL

THE CHEER leaders parade across the ground, the last advertisement scrolls across the giant video screen and the players run onto the pitch to start another thrilling game of **World Series Baseball.**

Imagine, the headline making company of yesteryear are back, or at least, their logo is back, with a vengeance. World Series Baseball looks good, plays well and is very challenging.



The program manages to produce a simulation of baseball by showing the pitch on screen, and highlighting essential sections on a screen at the back of the pitch. Batting and bowling are highlighted, while fielding and base stealing are all done on the pitch.

It is not necessary to know anything about baseball to play the game, but some knowledge, either of baseball or of rounders, comes in very useful. Of course, baseball sounds smarter than rounders, but the games are very similar.

All the difficulties of the real game are there: failing to hit the ball three times in a row, running for a base and finding a fielder has beaten you to it, missing a catch, throwing a ball in a wildly inaccurate way ... you name it, it is in there.

World Series Baseball is produced by Imagine (1984), 6 Central Street, Manchester M2.

Game type: Simulation
Price: £6.95
Rating: 69%

A DAY IN THE LIFE

SOME celebrities have their lifestyle celebrated on television, some describe their daily routine in the glossy colour supplements. It seems only fair that Sir Clive should have his life examined in **A Day in the Life,** a Spectrum arcade game.

Life as computer guru seems not to be as straight forward as you would imagine. For one thing, Clive appears to have mislaid most of himself, although his head rolls merrily on regardless. As the game progresses he loses some of his more vital characteristics, not to mention a great deal of lives. Still, what can you expect, venturing into London at a level even lower than that of a C5?

The game claims to detail a day in Clive's life as he makes his way to Buck House to receive the award of Dame Commander of the British Empire. To do this successfully he must cross various screens: the bank, the station, the street etc until he stands at the foot of the throne.

The puzzles are difficult, requiring split second timing and quick reactions. A Day in the Life is produced for the 48K Spectrum by Micromega, 230 Lavender Hill, London.

Game type: Arcade
Price: £6.95
Rating: 54%

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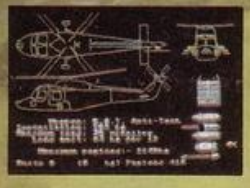

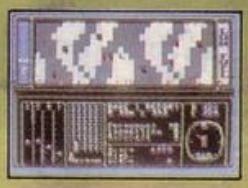

COMMODORE 64

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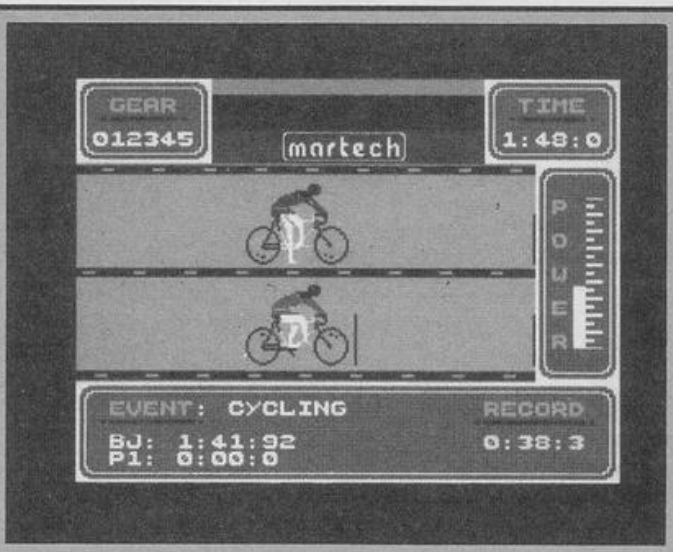
BRIAN JACKS CHALLENGE



COULD you make it as a sporting superstar? **Brian Jacks Superstar Challenge** gives you a chance to work out whether you could or, whether your index finger could.

Ocean really do have a lot to answer for. Not only have they given everyone the idea that sports simulations are a really good idea, they have also given us the joystick-bustin' movement which leaves all players without joysticks with fingers twitching spasmodically after a long session on the computer.

It did seem that almost every sport had been simulated on the computer but, to give Martech their due, they have had some original ideas. Arm dips and squat thrusts on the computer?

You compete against Brian Jacks or, at least, an animated figure in eight sports at a variety of different skill levels. Some of these sports require fast movement of the joystick or of two fingers, but others are more complex. Arm dips, for example require you to move the joystick as you go up, press the fire button to change direction, move the joystick as you go down, press the button again. It is a difficult routine to master and seeing Brian, out of the corner of your eye, doing perfect arm dips every time is no help.

A little more difficult than most sports simulations, Superstar Challenge is produced for the 48K Spectrum by Martech, Martech House, Bay Terrace, Pevensey Bay, Sussex.

Game type: Sports simulation
Price: £7.95
Rating: 64%

MOON CRESTA

NOWADAYS it is not often you come across aliens and spaceships in a computer game. **Moon Cresta,** the official Spectrum version of the arcade game takes us back to the good old days of computer programming. Trouble is, so near to the time, they still look like the bad old days and alien zapping is not calculated to raise feelings of nostalgia.

Your space ship moves from left to right at the bottom of the screen. Aliens move in all directions on a wrap-round screen, which allows them to corner you, or suddenly emerge Jaws-like, from below.

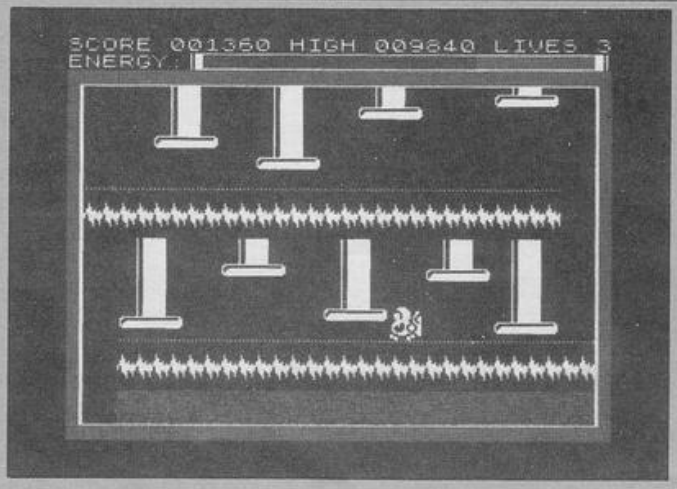
Aliens come in a variety of different colours and different sizes but not in very large attack waves, and they do not shoot you they only kill on contact. Attack waves come in cycles, and there is not a wide range of alien types.

The main difficulty with the game is the lack of continuous fire option. Every time you wish to shoot you must press the fire button, whether you are using joystick or keyboard. Aliens which would not defeat you through strategy or speed, finally win through as your index finger gives way.

There are faster shoot 'em ups on the market, there are more graphically attractive shoot 'em ups on the market, there are better shoot 'em ups on the market. Moon Cresta is produced for the 48K Spectrum by Incentive Software, 54 London Street, Reading.

Game type: Arcade
Price: £7.95
Rating: 38%

BUG EYES



PRECISE movements and timing are essential elements in **Bug Eyes.**

The storyline of Bug Eyes is simple. The aliens are committed to destruction of all intelligent life in the universe, starting with the earth. Your aim is to stop them by crossing all ten levels of their space ship and switching it off. This you do, not by shooting, zapping and jumping, but by walking left and right around obstacles.

With only two controls the challenge is to work out the correct timing on each screen. Moving platforms, lifts and bouncing aliens are the main problems to be faced, and it is often essential to pass several obstacles without pausing.

The graphics are clear and flicker free, but there is little variety to be found in the theme of aliens and spaceships, however liberally you interpret those subjects.

Bug Eyes is produced for the 48K Spectrum by Icon Software, 65 High Street, Gosforth, Tyne and Wear.

Game type: Arcade
Price: £6.95
Rating: 35%

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Penrith. Penrith Communications, 14 Castlegate. Tel: 0768 67146.
Whitehaven. P D Hendren, 15 King Street. Tel: 0946 2063.
Workington. Technology Store, 12 Finkle Street. Tel: 0900 66972.

DERBYSHIRE

Alfreton. Gordon Harwood, 67-71 High Street. Tel: 0733 832078.
Chesterfield. Boots, 35-37 Low Pavement, Market Place. Tel: 0246 203591.
Chesterfield. Computer Stores, 14 Stephenson Place. Tel: 0246 208802.
Derby. Boots, 1 Devonshire Walk. Tel: 0332 45886.

DEVON

Exeter. Boots, 251 High Street, Tel: 0392 32244.
Exeter. Open Channel, Central Station, Queen Street. Tel: 0392 218187.
Paignton. Computer Systems Ltd, 35 Hyde Road. Tel: 0803 524284.
Plymouth. Syntax, 76 Cornwall Street. Tel: 0752 28705.
Seaton. Curtis Computer Services, Seaton Computer Shop, 51c Harbour Road. Tel: 0297 22347.
Tiverton. Actron Microcomputers, 37 Bampton Street. Tel: 0884 252854.

DORSET

Bournemouth. Lansdowne Computer Centre, 1 Lansdowne Crescent, Lansdowne. Tel: 0202 290165.
Dorchester. The Paper Shop, Kings Road. Tel: 0305 64564.
Poole. Lansdowne Computer Centre, 14 Arndale Centre. Tel: 0202 670901.

ESSEX

Basildon. Basildon Software Centre, 78-80 Liberty Shopping Hall, East Square. Tel: 0268 27922.
Braintree. Mirage Microcomputers Ltd, 24 Bank Street. Tel: 0376 48321.
Chelmsford. Maxton Hayman, 5 Bromfield Road. Tel: 0245 354595.
Chelmsford. Way In Computers, 7 Village Square, Tel: 0245 467858.
Colchester. Boots, 5-6 Lion Walk. Tel: 0206 577303.
Colchester. Colchester Computer Centre, 3a Short Wyre Street. Tel: 0206 47242.
Grays. H. Reynolds, 28a Southend Road. Tel: 0375 31641.
Harlow. Harlow Computer Centre, 17 Staple Tye. Tel: 0279 22846.
Hornchurch. Comptel Computer Systems, 112a North Street. Tel: 0402 446741.
Ilford. Boots, 177-185 High Road. Tel: 01-553 2116.
Romford. Software Plus, 72 North Street. Tel: 70 65271.
Southend-on-Sea. Computerama, 88 London Road. Tel: 0702 335443.
Southend-on-Sea. Computer Centre, 336 London Road. Tel: 0702 337161.
Southend-on-Sea. Estuary Personal Computers, 318 Chartwell North, Victoria Circus Shopping Centre. Tel: 0702 614131.

GLOUCESTER

Cheltenham. Laskys, 206 High Street. Tel: 0242 570282.
Cheltenham. Screen Scene, 144 St. Georges Road. Tel: 0242 528979.
Gloucester. Boots, 38-46 Eastgate Street. Tel: 0452 423501.

HAMPSHIRE

Basingstoke. Fishers, 2-3 Market Place. Tel: 0256 22079.
Petersfield. Foly Micros, 45 Chapel Street. Tel: 073(66841.
Portsmouth. Micro Choice, 159 Havant Road, Drayton. Tel: 0705 327591.
Portsmouth. RDS Electrical, 157-161 Kingston Road, Tel: 0705 812478.
Southampton. Business Electronics, Micromagic At Atkins, 7 Civic Centre Road. Tel: 0703 25903.
Waterlooville. GB Microland, 7 Queens Parade, London Road. Tel: 0705 259911.

HERTFORD

Potters Bar. the Computer Shop, 107 High Street. Tel: 0707 44417.
Stevenage. DJ Computers, 11 Town Square. Tel: 0438 65501.
Watford. SRS Microsystems, 94 The Parade, High Street. Tel: 0923 26602.
Welwyn Garden City. DJ Computers, 40 Fretherne Road. Tel: 0707 32844.

HUMBERSIDE

Beverley. Computing World, 10 Swabys Yard, Dyer Lane. Tel: 0482 881831.

KENT

Ashford. DGH, 10 North Street. Tel: 0233 32597.
Ashford. Geerings of Ashford, 80 High Street. Tel: 0233 33366.
Bromley. Boots, 148-154 High Street. Tel: 01-460 6688.
Bromley. Computers Today. 31 Market Square.
Chatham. Boots, 30-34 Wilmott Square, Pentagon Centre. Tel: 0634 405471.
Gravesend. Gravesend Home Computers, 39 The Terrace. Tel: 0474 23871.
Gillingham. Regal Software Supplies, 49 High Street. Tel: 0634 579634.
Maidstone. Boots, 56-62 King Street. Tel: 0622 53912.
Maidstone. Kent Micros, 51 Union Street. Tel: 0622 52784.
Rainham. Microway Computers, 39 High Street. Tel: 0634 376702.
Sevenoaks. Ernest Fielder Computers, Dorset Street. Tel: 0732 456800.
Shortlands. The Village House of Computers, 87 Beckenham Lane. Tel: 01-460 7122.
Sittingbourne. Computer Plus, 65 High Street. Tel: 0795 25677.
Tunbridge Wells. Modata Computer Centre, 28-30 St. Johns Road. Tel: 0892 41555.

LANCASHIRE

Blackpool. Blackpool Computers Store, 179 Church Street. Tel: 0253 20239.
Burnley. IMO Business Systems, 39-43 Standish Street. Tel: 0942 44382.
Preston. 4Mat Computing, 67 Friargate. tel: 0772 561952.
Preston. Laskys, 1-4 Guildhall Arcade. Tel: 0772 59264.
Wigan. Wildings Computer Centre, 11 Mesnes Street. Tel: 0942 22382.

LEICESTERSHIRE

Leicester. Boots, 30-36 Gallowtree Gate. Tel: 0533 21641.
Market Harborough. Harborough Home Computers, 7 Church Street. Tel: 0858 63056.

LONDON

W1. Computers of Wigmore Street, 104 Wigmore Street. Tel: 01 486 0373.
W1. Laskys, 42 Tottenham Court Road. Tel: 01-636 0845.
W1. Lion House, 227 Tottenham Court Road. Tel: 01-637 1601.
W1. Sonic Foto Micro Center, 256 Tottenham Court Road. Tel: 01-580 5826.
W1. Tomorrows World Today, 27 Oxford Street. Tel: 01-439 7799.
W1. Walters Computers, DH Evans, Oxford Street. Tel: 01-629 8800.
WC1. Transam Micro Systems, 59-61 Theobalds Road. Tel: 01-405 5240.
W5. Laskys, 18-19 Ealing Broadway Shopping Centre. Tel: 01-567 4717.
W8. Walters Computers, Barkers, Kensington High Street. Tel: 01-937 5432.
SE7. Vic Oddens Micros, 5 London Bridge Walk. Tel: 01-403 1988.
SE9. Square Deal, 373-375 Footscray Road, New Eltham. Tel: 01-859 1516.
SE15. Castlehurst Ltd, 152 Rye Lane, Peckham. Tel: 01-639 2205.
EC2. Devron Computer Centre, 155 Moorgate. tel: 01-638 3339.
N14. Logic Sales, 19 The Bourne, The Broadway, Southgate. Tel: 01-882 4942.
N22. Boots, 38-40 High Road, Wood Green. Tel: 01-881 0101.
NW3. Maycraft Micros, 58 Rosslyn Hill, Hampstead. Tel: 01-431 1300.
NW4. Davinci Computer Store, 112 Brent Street, Hendon. Tel: 01-202 2272.
NW7. Computers Inc, 86 Golders Green. Tel: 01- 209 0401.
NW10. Technomatic, 17 Burnley Road, Wembley. Tel: 01-208 1177.

MANCHESTER

Bolton. Computer World UK Ltd, 208 Chorley Old Road. Tel: 0204 494304.
Manchester. Boots, 32 Market Street. Tel: 061-832 6533.
Manchester. Laskys, 12-14 St. Marys Gate. Tel: 061-833 0268.
Manchester. Mighty Micro, Sherwood Centre, 268 Wilmslow Road, Fallowfield. Tel: 061-224 8117.
Manchester. NSC Computer Shops, 29 Hanging Ditch. Tel: 061-832 2269.
Manchester. Walters Computers, Kendal Milne, Deansgate. Tel: 061-832 3414.
Oldham. Home & Business Computers, 54 Yorkshire Street. Tel: 061-633 1608.
Swinton. Mr Micro, 69 Partington Lane. Tel: 061-728 2282.

MERSEYSIDE

Heswall. Thornguard Computer Systems, 46 Pensby Road. Tel: 051-342 7516.
Liverpool. Hargreaves, 31-37 Warbreck Moor, Walton. Tel: 051-525 1782.
St. Helens. Microman Computers, Rainford Industrial Estate, Mill Lane Rainford. Tel: 0744 885242.
Southport. Central Studios, 38 Eastbank Street. Tel: 0704 31881.

MIDDLESEX

Enfield. Laskys, 44-48 Palace Garden Shopping Centre. Tel: 01-363 6627.
Harrow. Harrow Micro, 24 Springfield Road. Tel: 01-427 0098.
Hounslow. Boots, 193-199 High Street. Tel: 01-570 0156.
Southall. Twillstar Computers Ltd, 7 Regina Road. Tel: 01-574 5271.
Teddington. Andrews, Broad Street. Tel: 01-997 4716.
Twickenham. Twickenham Computer Centre, 72 Heath Road. Tel: 01-892 7896.
Uxbridge. JKL Computers, 7 Windsor Street. Tel: 0895 51815.

NORFOLK

Norwich. Adams, 125-129 King Street. Tel: 0603 22129.
Thetford. Thetford CB & Micros, 21 Guildhall Street. Tel: 0842 61645.

NOTTINGHAMSHIRE

Newark. Jacobs Computers, 13 Middle Gate. Tel: 0636 72594.
Nottingham. Telstar, 280 Huntingdon Street. Tel: 0602 505585.
Sutton in Ashfield. HN & L Fisher, 87 Outram Street. Tel: 0623 54734.
Worksop. Computer Grafix, 32 Bridge Street. Tel: 0909 472248.

OXFORDSHIRE

Abingdon. Ivor Fields Computers, 21 Stern Street. tel: 0235 21207.
Banbury. Computer Plus, 2 Church lane. Tel: 0295 55890.
Oxford. Absolute Sound & Video, 19 Old High Street, Headington. Tel: 0865 65661.
Oxford. Science Studio, 7 Little Clarendon Street. Tel: 0865 54022.

SCOTLAND

Aberdeen. Boots, 133-141 Union Street. Tel: 0224 585349.
Edinburgh. Boots, 101-103 Princes Street. Tel: 031-225 8331.
Glasgow. Boots, 200 Sauchiehall Street. Tel: 041-332 1925.
Glasgow. Boots, Union Street and Argyle Street. Tel: 041-248 7387.
Glasgow. Tom Dixon Cameras, 15-17 Queen Street. Tel: 041-204 0826.

SHROPSHIRE

Shrewsbury. Clairmont Enterprises, Hills Lane. Tel: 3647 52949.
Shrewsbury. Computerama, 13 Castlegate. Tel: 0743 60528.
Telford. Computer Village Ltd, 2/3 Hazeldine House, Central Square. Tel: 0952 506771.
Telford. Telford Electronics, 38 Mall 4. Tel: 0952 504911.

STAFFORDSHIRE

Newcastle-under-Lyme. Computer Cabin, 24 The Parade, Silverdale. Tel: 0782 636911.
Stafford. Computerama, 59 Foregate Street. Tel: 0785 41899.
Stoke-on-Trent. Computerama, 11 Market Square Arcade, Hanley. Tel: 0782 268524.

SUFFOLK

Bury St. Edmunds. Boots, 11-13 Cornhill. Tel: 0284 701516.
Bury St. Edmunds. Suffolk Computer Centre, 1-3 Garland Street. Tel: 0284 705503.

SURREY

Bagshot. P & H Electronics, 22-24 Guildford Road. Tel: 0276 73078.
Croydon. Laskys, 77-81 North End. Tel: 01-681 8443.
Croydon. The Vision Store, 53-59 High Street. Tel: 01-686 6362.
Croydon. The Vision Store, 96-98 North End. Tel: 01-681 7539.
South Croydon. Concise Computer Consultants, 1 Carlton Road. Tel: 01-681 6842.
Epsom. The Micro Workshop, 12 Station Approach. Tel: 0372 721533.
Guildford. Walters Computers, Army & Navy, 105-111 High Street. Tel: 0483 68171.
Wallington. Surrey Micro Systems, 53 Woodcote Road. Tel: 01-647 5636.
Woking. Harpers, 71-73 Commercial Way. Tel: 0486 225657.

SUSSEX

Bexhill-on-Sea. Computerware, 22 St. Leonards Road. Tel: 0424 223340.
Brighton. Boots, 129 North Street. Tel: 0273 27088.
Brighton. Gamer, 71 East Street. Tel: 0273 728681.
Brighton. Laskys, 151-152 Western Road. Tel: 0273 725625.
Crawley. Gatwick Computers, 62 The Boulevard. Tel: 0293 37842.
Crawley. Laskys, 6-8 Queensway. Tel: 0293 544622.
Eastbourne. Boots, 15 Eastbourne Arndale Centre. Tel: 03232 7742.

TYNE & WEAR

Newcastle-upon-Tyne. Boots, Eldon Square. Tel: 0632 329844.
Newcastle-upon-Tyne. Laskys, 6 Northumberland Street. Tel: 0632 617224.
Newcastle-upon-Tyne. RE Computing, 12 Jesmond Road. Tel: 0632 815580.

WALES

Aberdare. Inkey Computer Services, 70 Mill Street, The Square, Trecynon. Tel: 0685 881828.
Aberystwyth. Aberdata at Galloways, 23 Pier Street. Tel: 0970 615522.
Cardiff. Boots, 26 Queens Street & 105 Frederick Street. Tel: 0222 31291.
Cardiff. Randall Cox, 18/22 High Street Arcade. Tel: 0222 397162.
Mold. Clwyd Personal Computers, Unit 19, Daniel Owen Precinct. Tel: 0352 56842.
Newport. Gwent Computers, 92 Chepstow Road. Tel: 0633 841760.
Swansea. Boots, 17 St. Marys Arcade, The Quadrant Shopping Centre. Tel: 0792 43461.
Swansea. The Microstore, 35-36 Singleton Street. Tel: 0792 467980.

WARWICKSHIRE

Coventry. Coventry Micro Centre, 33 Far Gosford Street. Tel: 0203 58942.
Coventry. Impulse Computer World, 60 Hertford Street Precinct. Tel: 0203 553701.
Coventry. JBC Micro Services, 200 Earlsdon Avenue, North Earlsdon. Tel: 0203 73813.
Coventry. Laskys, Lower Precinct. Tel: 0203 27712.
Leamington Spa. IC Computers, 43 Russell Street. Tel: 0926 36244.
Leamington Spa. Leamington Hobby Centre, 121 Regent Street. Tel: 0926 29211.
Nuneaton. Micro City, 1a Queens Road. Tel: 0203 382049.
Rugby. O.E.M., 9-11 Regent Street. Tel: 0788 70522.

WEST MIDLANDS

Birmingham. Boots, City Centre House, 16-17 New Street. Tel: 021-643 7582.
Birmingham. Laskys, 19-21 Corporation Street. Tel: 021-632 6303.
Dudley. Central Computers, 35 Churchill Precinct. Tel: 0384 238169.
Stourbridge. Walters Computer Systems. 12 Hagley Road. Tel: 0384 370811.
Walsall. New Horizon, 1 Goodall Street. Tel: 0922 24821.
West Bromwich. DS Peakman, 7 Queens Square. Tel: 021-525 7910.

YORKSHIRE

Bradford. Boots, 11 Darley Street. Tel: 0274 390891.
Leeds. Boots, 19 Albion Arcade, Bond Street Centre. Tel: 0532 33551.
Sheffield. Laskys, 58 Leopold Street. Tel: 0742 750971.
York. York Computer Centre, 7 Stonegate Arcade. Tel: 0904 641862.

Phone 01-278 3143 for your free information pack now!

Micronet 800, 8 Herbal Hill, London EC1

SPY HUNTER

SPY HUNTER sets you, as a world class spy, on the road in your ultra-equipped, turbo-charged spy mobile. The road is crawling with enemy agents bent on your destruction and the law of the road is kill or be killed.

What the grandiose game description and flashy cassette cover refer to is a straightforward variation on a theme which you have seen many times before. You drive your car up the screen, along a winding road, shoot some obstacles, avoid others and try to push others off the road.

There are several nice touches. To pick up weapons you must allow the weapons van to overtake you and then drive on board while it is still moving. The road takes you on several diversions, round unsatisfactory bridges and through water.

When all the variations are taken into account, this is still not a game which could be described as being state-of-the-art or even the best of its kind. It is fast moving, it does give scope for great improvements in performance but if you like arcade games you could do much, much better.

Spy Hunter is produced of the 48K Spectrum by US Gold Ltd, Unit 10. Parkway Ind. Centre, Birmingham B7.

Game type: Arcade
Price: £7.95
Rating: 36%

WRIGGLER

THREE, two, one: and they are off, in the annual Maggot Marathon. The other worms wriggle quickly away as you, **Wriggler,** hero of the game, consider your strategy.

Starting on the maze before you you meet a wandering ant. Ants can be lethal, but this one keeps out of your way. Round the corner, and you find a welcome cup of coffee waiting for you. Do not relax for too long, though. One touch from an ant could leave you with your whole body crumbling gruesomely to pieces and one fewer life.

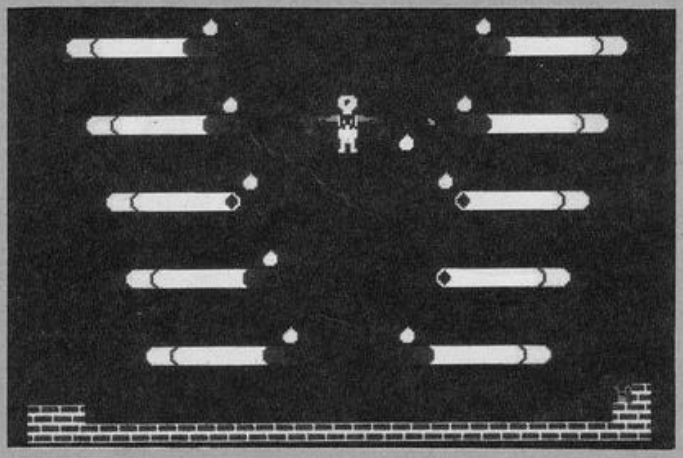
The pace of the game is a little slow moving, especially on deserted screens. On those with enemies approaching or chasing you, things seem to move far too quickly. Enemies are gruesomely animated, especially the long legged spiders. All those eight legs, all moving at once, yeeuch.

Once out of the maze like garden you are far from home and dry. You must then wander through the scrubland, through the underground, avoid going through hell, wander through the mansion and escape.

Wriggler verges on being an adventure as it involves collecting and using objects as well as sorting out a maze and avoiding nasties.

Original and cute, Wriggler is produced for the 48K Spectrum by Romantic Robot, 77 Dyne Road, London NW6.

Game type: Arcade adventure
Price: £5.95
Rating: 58%



NICOTINE NIGHTMARE

SAVE THE world from the Evil Weed! Your aim in **Nicotine Nightmare** is to stamp out all cigarettes by bringing an entire cigarette factory grinding to a standstill.

The game begins with smouldering cigarettes on screen. You must douse six to escape before any one of the cigarettes burn out. This short sequence is supposed to test your commitment to stamping out smoking. What it in fact tests is your patience, as cigarettes appear to light spontaneously and some refuse to be doused.

The main body of the game takes you through the factory which is built in a style reminiscent of **Manic Miner.** Accurate movement is difficult although, in many cases, the game requires absolute accuracy.

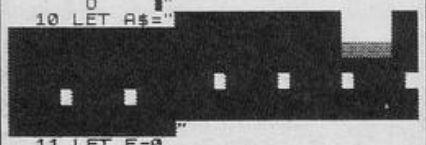
Frustrating rather than fun, Nicotine Nightmare is produced for the 48K Spectrum by Atlantis Software, 19 Prebend Street, London N1.

Game type: Arcade
Price: £2.99
Rating: 34%

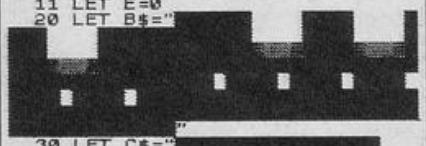
SAVE ESMERELDA

```
  1 LET S=0
  2 LET T=100
  3 LET D=1
  5 FAST
  6 CLS
  7 REM DEFINE VAIRIBLES
  8 LET S=0
  9 LET L$="
```

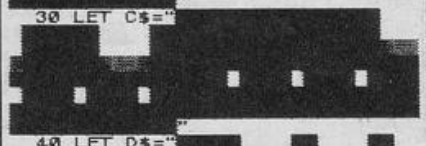
```
  0 "
 10 LET A$="
```



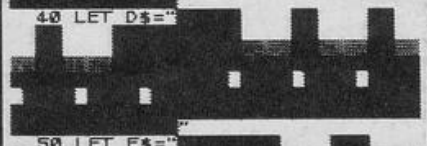
```
 11 LET E=0
 20 LET B$="
```



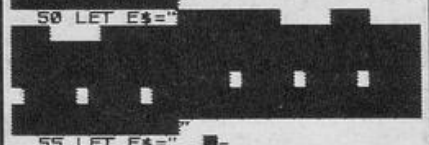
```
 30 LET C$="
```



```
 40 LET D$="
```



```
 50 LET E$="
```

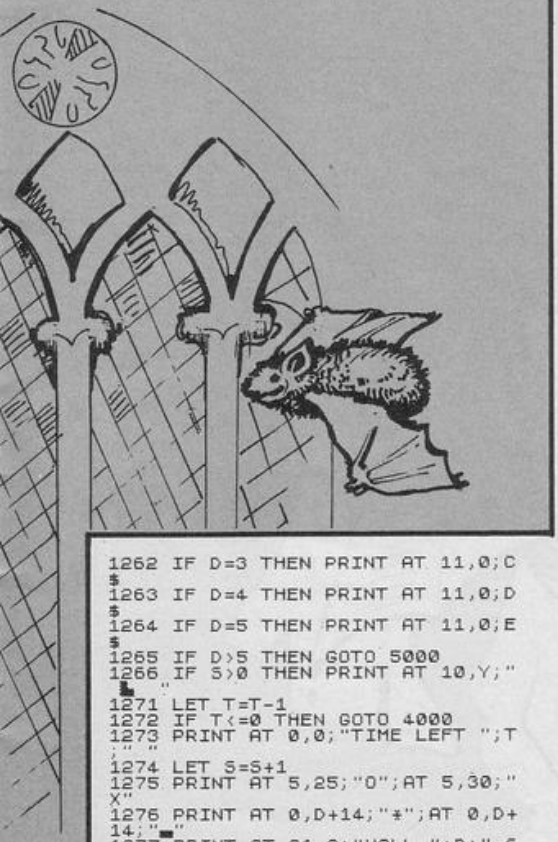


```
 55 LET F$="
```

```
 60 LET X=7
 70 LET Y=0
 80 PRINT AT 11,0;A$
 90 REM DISPLAY TITLE
100 PRINT AT X,Y;F$
110 PRINT AT 0,7;" QUOZIEMODOS
REVENGE"
120 PRINT AT 21,0;" WRITTEN BY
MARTIN (1984)"
130 SLOW
140 FOR N=0 TO 200
150 NEXT N
160 CLS
170 PRINT AT 0,0;"DO YOU REQUIR
E INSTRUCTIONS Y/N?"
180 IF INKEY$="Y" THEN GOTO 900
0
190 IF INKEY$="N" THEN GOTO 100
0
200 GOTO 180
1000 REM MAIN GAME
1001 CLS
1010 PRINT AT 0,0;L$
1011 PRINT AT 0,015;"▄▄▄▄▄▄▄▄";AT
 1,15;"▄▄▄▄▄▄▄▄"
1260 IF D=1 THEN PRINT AT 11,0;A
$
1261 IF D=2 THEN PRINT AT 11,0;B
$
```

Poor Esmerelda is trapped. Can you Save Esmerelda? The route is filled with dangerous pits which must be jumped and you must collect the bells hanging from the towers. Use keys 5=left, 8=right and 0 to jump.

This program was written for the 16K ZX-81 by Martin Johnson of Bognor Regis.



```
1262 IF D=3 THEN PRINT AT 11,0;C
$
1263 IF D=4 THEN PRINT AT 11,0;D
$
1264 IF D=5 THEN PRINT AT 11,0;E
$
1265 IF D>5 THEN GOTO 5000
1266 IF S>0 THEN PRINT AT 10,Y;"
 "
1271 LET T=T-1
1272 IF T<=0 THEN GOTO 4000
1273 PRINT AT 0,0;"TIME LEFT ";T
;" "
1274 LET S=S+1
1275 PRINT AT 5,25;"O";AT 5,30;"
X"
1276 PRINT AT 0,D+14;"*";AT 0,D+
14;" "
1277 PRINT AT 21,3;"WALL:";D;" S
CORE:";S
1280 PRINT AT X,Y;F$
1290 LET Y=Y+(INKEY$="8")-(INKEY
$="5")
1300 IF INKEY$="0" THEN GOSUB 30
00
```

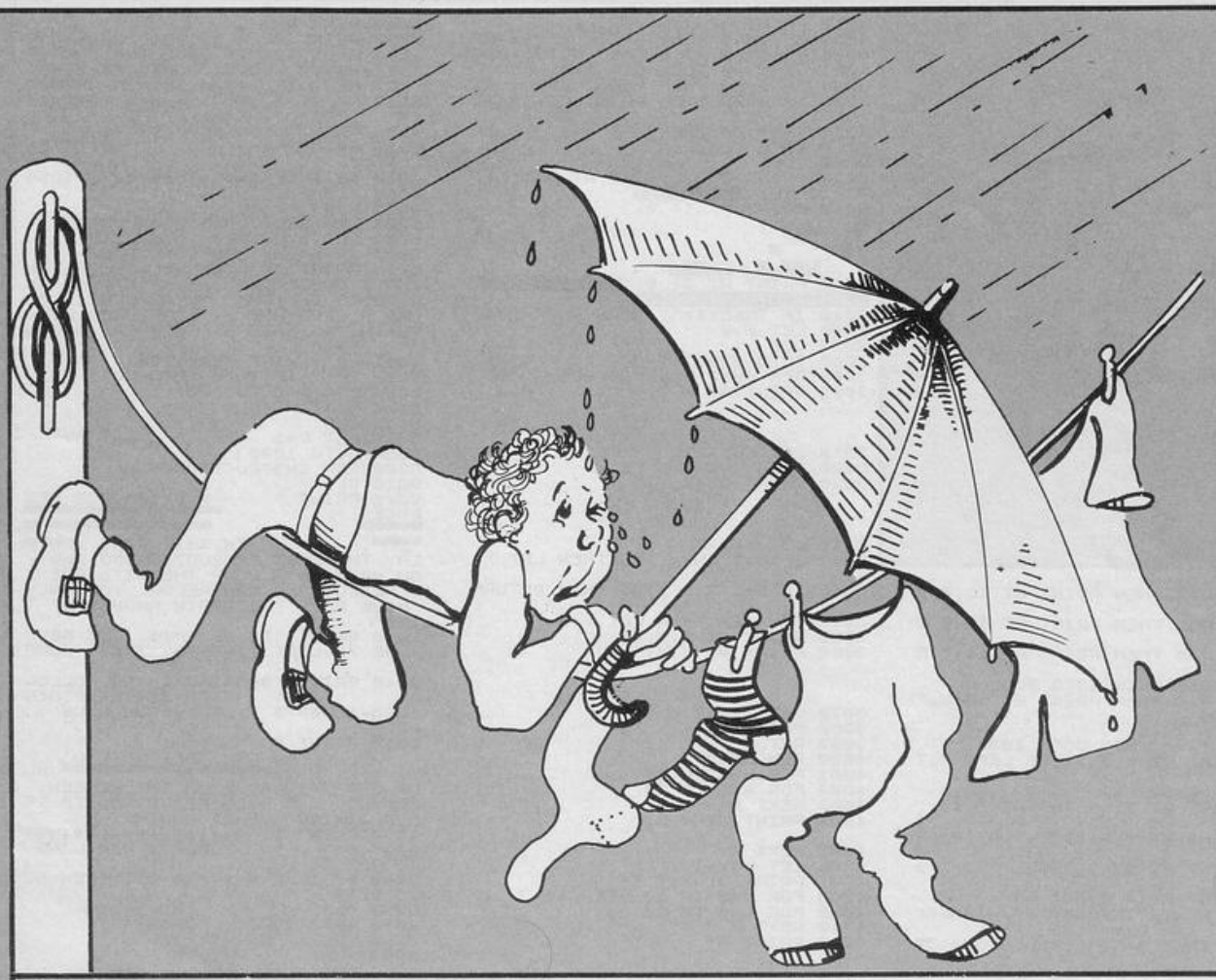
```
1310 PRINT AT X+4,Y+2;
1320 IF CHR$ PEEK (PEEK 16398+25
6*PEEK 16399)=" " THEN GOTO 4000
1321 IF Y<=0 THEN LET Y=0
1324 IF Y>25 THEN LET D=D+1
1325 IF Y>25 THEN PRINT AT 10,Y;
" "
1326 IF Y>25 THEN LET Y=2
1330 GOTO 1260
2000 CLS
2010 PRINT AT 7,10;F$;AT 0,0;L$;
AT 13,10;"[graphics]"
2020 PRINT AT 14,0;"
[graphics]
[graphics]>"
2030 PRINT AT 21,0;"[graphics]"
2040 IF INKEY$="" THEN GOTO 2040
2050 LET E=0
2055 CLS
2060 GOTO 5000
3000 REM JUMP MAN FOWARDS
3001 PRINT AT X,Y;"
                  "
3010 LET X=X-2
3020 PRINT AT X,Y;F$
3030 PRINT AT X,Y;"
                  "
3040 LET Y=Y+5
3041 IF D=3 AND Y>25 THEN LET X=
X+2
3042 IF D=3 AND Y>25 THEN RETURN
3043 IF Y>25 THEN LET Y=0
3050 PRINT AT X,Y;F$
3060 PRINT AT X,Y;"
                  "
3070 LET X=X+2
3080 PRINT AT X,Y;F$
3090 RETURN
4000 REM DEAD
4001 FOR N=4 TO 10
4002 FOR A=0 TO 10
4003 NEXT A
4004 PRINT AT N,0;"
                  "
4005 NEXT N
4006 LET Y=Y+1
4007 PRINT AT X,Y;F$
4008 FOR N=5 TO 10 STEP -1
4009 FOR A=0 TO 10
4010 NEXT A
4020 PRINT AT N,0;"
                  "
```

```
4025 NEXT N
4030 PRINT AT 0,12;"YOU HAVE FAI
LED";AT 1,12;"TO SAVE THE ONE";A
T 2,12;"YOU LOVE. DONT";AT 3,12;
"LET HER DIE";AT 4,12;"IN VAIN-P
RESS A";AT 5,12;"KEY AND TRY AGA
IN"
4031 PRINT "YOU SCORED ";S
4032 PRINT "AND HAD ";T;,,"TIME
LEFT."
4050 IF INKEY$="" THEN GOTO 4050
4060 CLS
4070 RUN
5000 REM WELL DONE COMPLETED
5001 LET S=S+1000
5004 IF E=10 THEN GOTO 2000
5010 PRINT AT 0,0;"WELL DONE YOU
 HAVE COMPLETED     THE STAGES AN
D SAVED THE ONE     YOU LOVE.  OH
 NO A GARD HAS      CAPTURED HER
AGAIN. SO WAIT      AND TRY AGAIN
."
5011 LET T=INT (RND*100)
5012 IF T<45 THEN GOTO 5011
5020 FOR N=0 TO 300
5030 NEXT N
5031 CLS
5040 LET D=1
5050 GOTO 1000
9000 REM INSTRUCTIONS
9010 CLS
9020 PRINT "      QUOZIEMODOS REV
ENGE
                IN THIS GAME YOU P
LAY THE PART OF QUOZIEMODO AND Y
OU HAVE TO    JUMP THE PITS ETC T
O RESCUE      ESMERELDA. YOU ONLY
 HAVE A       CERTAIN AMOUNT OF T
IME"
9030 PRINT "TO DO THIS. THE KEYS
 ARE (5-LEFT RIGHT-8) ""0"" JUMP
."
9040 PRINT "SCORING IS AS FOLLOW
S:                  FOR SAVING ESMER
ELDA-1000PTS        FOR EACH MOVE 1
PT.                 "
9045 PRINT "
                REMEMBER NOT TO:
JU
MP OFF THE    EDGE OF THE SCREEN,
OR YOU        WILL BE WARPED TO TH
E BEGINING    OF IT AGAIN."
9050 PRINT "     ****************
******          PRESS NEW/LINE
TO GO"
9070 IF INKEY$<>CHR$ 118 THEN GO
TO 9070
9075 CLS
9080 GOTO 1000
9990 SAVE "H[graphics]"
9999 RUN
```

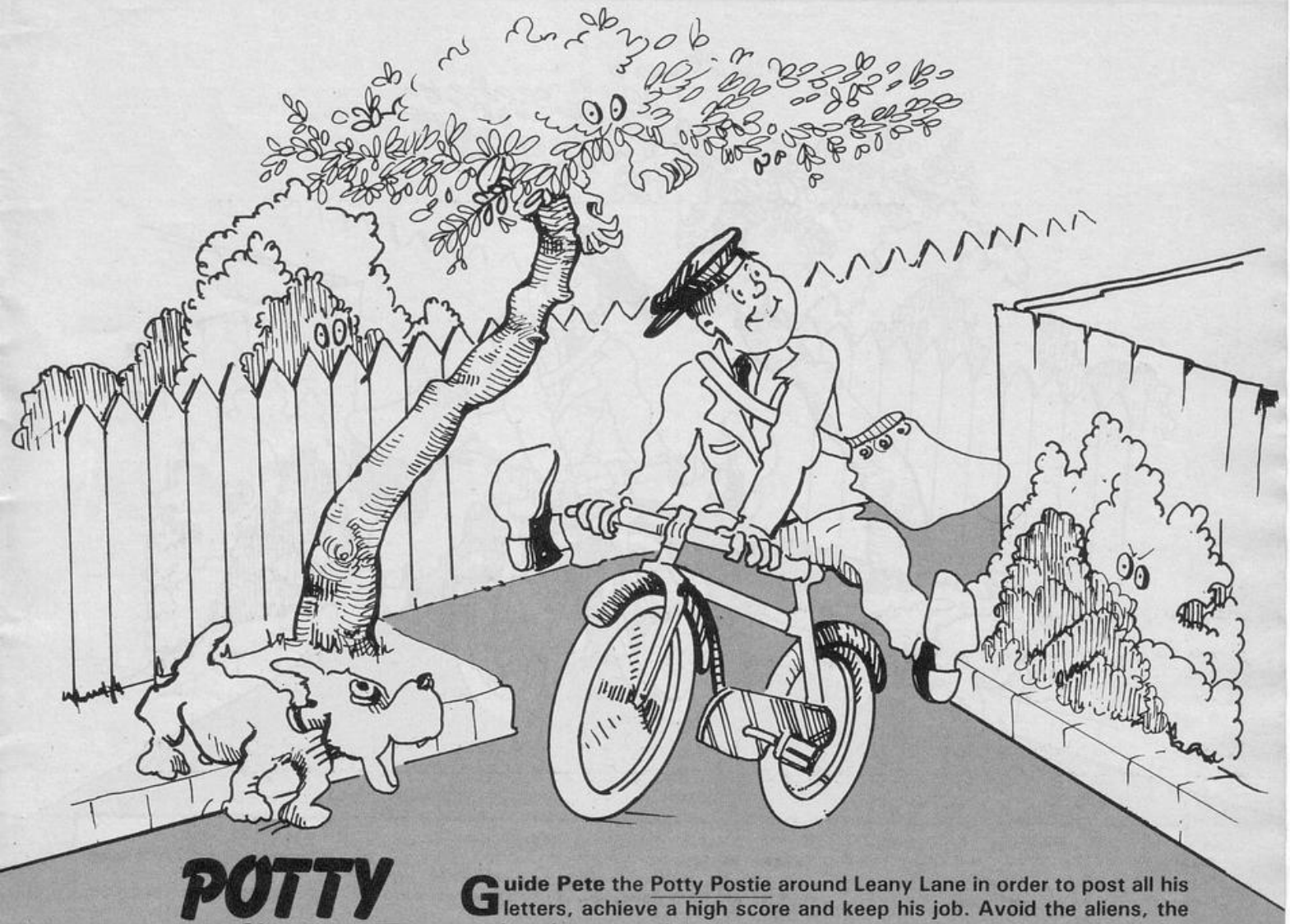
Today is washday and you have just hung all your washing out to dry. A sudden cloudburst threatens all your good work. Keep the washing dry by protecting it with an umbrella.

Drycleaner was written for the Spectrum or Spectrum Plus by Paul Chatwin of Broadstairs, Kent.

```
  1 REM DRY CLEAN
  2 REM BY PAUL CHATWIN 1985
  3 REM
 20 GO SUB 9000
 21 LET HC=0
 25 REM INSTRUCTIONS
 30 CLS : PRINT  INK 1; AT 0,0;
"JJJJJJJJJDRY CLEAINGJJJJJJJJJJJ
J"
 35 PRINT  AT 3,0;"YOU HAVE JUS
T PUT YOUR WASHING"'"OUT ON A NI
CE SUNNY DAY WHEN,TO"'"YOUR HORR
OR IT STARTS TO RAIN."'"YOU MUST
 PROTECT YOUR CLOTHES"'"USING AN
 UNBRELLER."'''; TAB 11;"Q....L
EFT"' TAB 11;"P....RIGHT"' TAB 1
1;"H....HOLD"' TAB 11;"E....END"
 40 PRINT  AT 20,7;"PRESS ANY K
EY TO START"
 45 PAUSE 0
```



```
  50 IF  INKEY$ ="" THEN  LET X=
X-1
  80 REM SCREEN DISPLAY
 100 PAPER 7: BRIGHT 1: INK 0: B
ORDER 1: CLS
 110 FOR A=21 TO 18 STEP -1
 111 FOR S=0 TO 31: PRINT  AT A,
S; INK 4; BRIGHT 0;"(isp)"
 112 NEXT S: NEXT A
 120 PRINT  AT 18,0; INK 0; PAPE
R 4; BRIGHT 0;"B"; AT 19,0;"B";
AT 18,31;"B"; AT 19,31;"B"
 125 FOR A=17 TO 12 STEP -1: PRI
NT  AT A,0;"B"; AT A,31;"B": NEX
T A
 130 PRINT  AT 11,0;"A"; TAB 31;
"O"; AT 12,1; INK 2;"EG"; TAB 3;
 INK 1;"CC"; TAB 5; INK 4;"II";
TAB 7; INK 1;"EG"; TAB 9; INK 3;
"II"; TAB 11; INK 1;"EG"; TAB 13
; INK 0;"CC"; TAB 15; INK 0;"II"
; TAB 17; INK 2;"EG"; TAB 19; IN
K 3;"CC"; TAB 21; INK 0;"EG"; TA
B 23; INK 2;"II"; TAB 25; INK 4;
"EG"; TAB 27; INK 1;"CC"; TAB 29
; INK 0;"EG"
 135 PLOT 5,80: DRAW 247,0
 140 PRINT  AT 13,1; INK 2;"FH";
 TAB 3; INK 1;"DD"; TAB 5; INK 4
;"II"; TAB 7; INK 1;"FH"; TAB 9;
 INK 3;"II"; TAB 11; INK 1;"FH";
 TAB 13; INK 0;"DD"; TAB 15; INK
 0;"II"; TAB 17; INK 2;"FH"; TAB
 19; INK 3;"DD"; TAB 21; INK 0;"
FH"; TAB 23; INK 2;"II"; TAB 25;
 INK 4;"FH"; TAB 27; INK 1;"DD";
 TAB 29; INK 0;"FH"
 145 REM GAME
 150 LET SC=0: LET X=14: LET Y=8

 165 LET L=0
 170 IF L >= 50 THEN  GO TO 2000
 172 PRINT  PAPER 4; BRIGHT 0; A
T 21,0;"SCORE:";SC; AT 21,10;"SA
TURATION:";L; AT 21,24;"H/SC:";H
C
 175 IF X<0 THEN  LET X=X+2
 176 IF X>30 THEN  LET X=X-2
 180 PRINT  AT Y,X;"KM"; AT Y+1,
X;"L"; AT Y+1,X+1;"N"
 200 LET RX= INT ( RND *31)+1
 210 FOR R=0 TO 10
 220 PRINT  INK 1; AT R,RX;"J"

 230 PRINT  AT R-1,RX;" "
 250 IF  INKEY$ ="q" THEN  LET X
=X-1: PRINT  AT Y,X;"KM"; AT Y+1
,X;"LN"; AT Y,X+1;"  "; AT Y+1,X
+1;"  "
 255 IF  INKEY$ ="h" THEN  PAUSE
 4e4
 260 IF  INKEY$ ="e" THEN  GO TO
 2000
 265 IF  INKEY$ ="p" THEN  LET X
=X+1: PRINT  AT Y,X;"KM"; AT Y+1
,X;"LN"; AT Y,X-1;"  "; AT Y+1,X
-1;"  "
 266 IF X<0 THEN  LET X=X+2
 267 IF X>30 THEN  LET X=X-2
 275 PRINT  AT Y,X;"KM"; AT Y+1,
X;"L"; AT Y+1,X+1;"N"
 280 IF RX=X AND R=Y OR RX=X+1 A
ND R=Y THEN  BEEP .01,50: GO TO
1000
 285 PRINT  AT R-1,RX;" ": BEEP
.01,R: NEXT R: LET L=L+1
 286 PRINT  AT 10,0;"
                    "
 290 GO TO 170
1000 PRINT  AT R,RX;" "; AT R-1,
RX;" "
1010 LET SC=SC+10
1020 GO TO 170
2000 PRINT  AT 10,11; FLASH 1; I
NK 0; INVERSE 1;"GAME OVER"
2005 PAUSE 100
2010 IF SC >= HC THEN  LET HC=SC

2020 CLS : PRINT '''  YOUR WASHI
NG IS NOW SATURATED"''"IN DIRTY R
AIN WATER."'''"YOU SCORED ";SC: P
RINT '"HIGH SCORE ";HC;'''''"
    ANOTHER GO (Y/N)"
2030 PAUSE 0
2040 IF  INKEY$ ="y" THEN  GO TO
 25
2050 IF  INKEY$ ="n" THEN  STOP

5000 STOP
9000 REM DATA FOR DRY CLEANING
9005 PRINT  AT 10,10;"PLEASE WAI
T"
9010 RESTORE 9010: FOR n= USR "A
" TO  USR "O"+7: READ a: POKE n,
a: NEXT n: RETURN
9100 DATA 24,60,60,24,24,24,24,3
1,24,24,24,24,24,24,24,24,31,17,
31,31,31,31,127,255,255,126,0,0,
0,0,0,0
9150 DATA 28,62,127,126,117,117,
117,6,7,7,0,0,0,0,0,0,56,124,254
,126,174,174,174,96,224,224,0,0,
0,0,0,0
9200 DATA 170,85,170,85,170,85,1
70,85
9250 DATA 16,16,40,92,190,190,12
4,56
9300 DATA 0,0,1,7,11,23,47,63,63
,42,0,0,2,2,1,0,0,128,192,240,24
8,252,254,254,254,170,128,128,12
8,128,0,0
9350 DATA 24,60,60,24,24,24,24,2
52
9500 REM SAVE
9550 CLS : PRINT  AT 10,10;"INSE
RT TAPE"''"          PRESS ANY KE
Y"
9555 PAUSE 4E4
9560 CLS : PRINT  AT 10,13; INVE
RSE 1; FLASH 1;"SAVING"
9570 SAVE "DRY CLEAN" LINE 1
9580 CLS : PRINT  AT 10,5;"REWIN
D TAPE TO VERIFY"''"            V
ERIFYING": VERIFY ""
9590 CLS : PRINT  AT 10,6;"VERIF
IED"
```



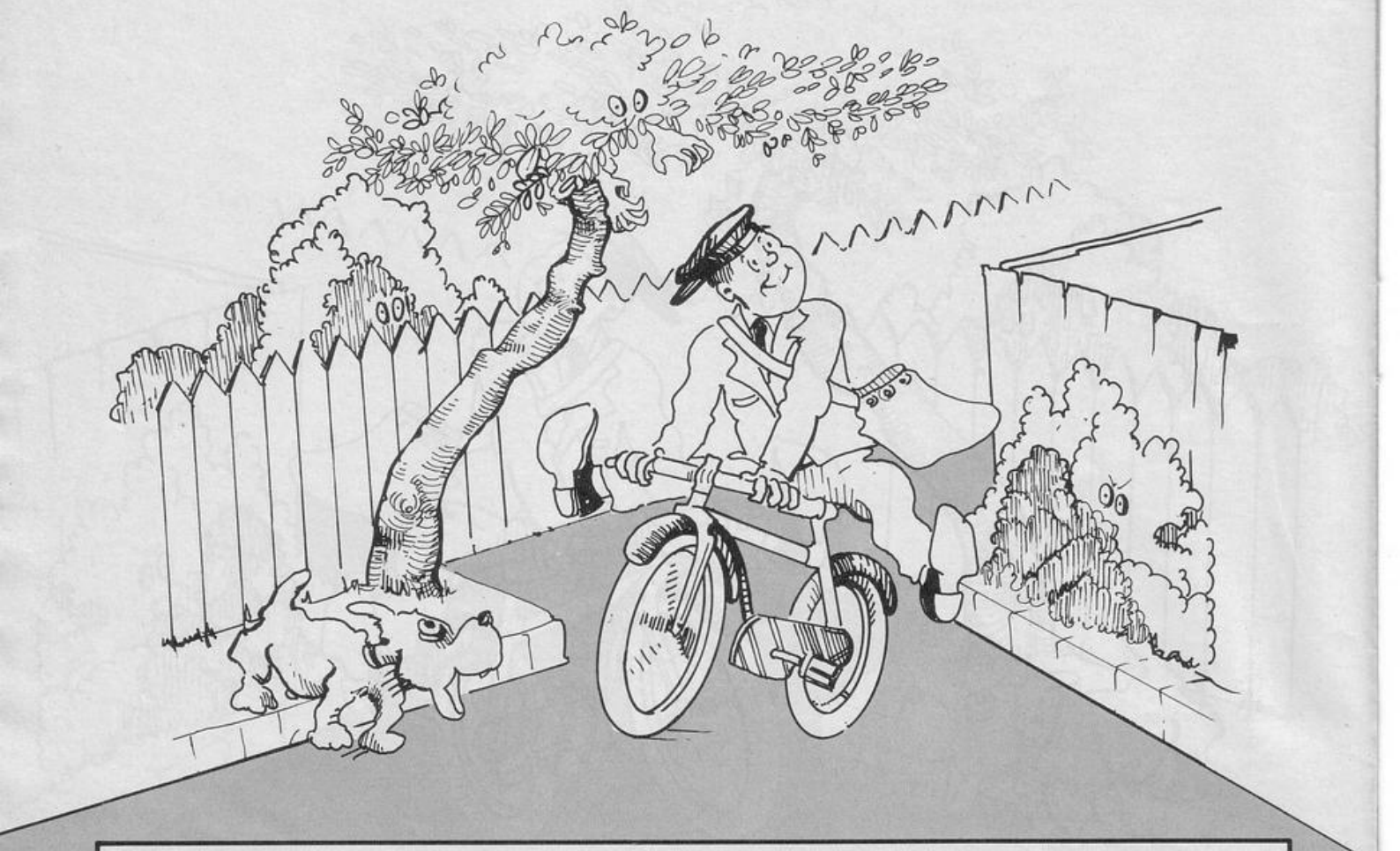
POTTY POSTIE

Guide Pete the Potty Postie around Leany Lane in order to post all his letters, achieve a high score and keep his job. Avoid the aliens, the nasties, the man eating stereos . . .

Written for the Spectrum or Spectrum Plus by Mike McAulay of Kingswood, Bristol.

```
  1 LET HS=0
  2 POKE 23658,8: LET N$="MIKE
MCAULAY": LET SC=0
  3 BORDER 7: PAPER 7: INK 0: C
LS : GO TO 9000
  4 LET M=0: LET T=100: LET C=0
: LET D=0: LET H=0: LET L=0: LET
 W=SK: LET P=5: LET R=1
  5 CLS : INK 0: PRINT  AT 0,5;
"ROUND "; AT 0,12;R; AT 0,13;" -
 ~LEANY LANE~"
 10 PLOT 70,0: DRAW 0,150
 20 PLOT 200,0: DRAW 0,150
 25 PLOT 40,30: DRAW 0,120
 26 PLOT 230,30: DRAW 0,120
 50 FOR x=0 TO 149 STEP 30
 60 PLOT 70,x: DRAW -30,30
 70 NEXT x
 90 FOR x=28 TO 149 STEP 30
100 PLOT 16,x+1: DRAW 25,0
110 NEXT x
120 FOR x=0 TO 149 STEP 30
130 PLOT 200,x: DRAW 30,30
140 NEXT x
150 FOR x=28 TO 149 STEP 30
160 PLOT 230,x+2: DRAW 20,-0
170 NEXT x
210 FOR x=20 TO 149 STEP 10
220 PLOT 50,x: DRAW 20,-20
230 PLOT 200,x-20: DRAW 20,20

240 NEXT x
250 FOR x=30 TO 149 STEP 30
260 PLOT 50,x: DRAW 0,10
270 NEXT x
280 FOR x=30 TO 149 STEP 30
290 PLOT 220,x: DRAW -0,10
295 NEXT x
297 FOR X=0 TO 5: BEEP .05,20:
NEXT X: GO SUB 5000
305 PRINT  AT 4,9;" "; AT 3,10;
"  "; AT 3,9; INK 2; PAPER 6;"I"

310 LET X1=0: LET Y1=0
320 LET X=21: LET Y=10
330 INK 0: PRINT  AT 0,0;"DELIV
ERY$=";D; AT 0,11;"           ";
 AT 0,22;"WAGES=#";W
331 IF C=1 THEN  PRINT  AT 3,9;
 PAPER 6; INK 3;"I": GO TO 333

332 PRINT  AT 3,9; INK 2; PAPER
 6;"I"
333 IF W <= 100 THEN  PRINT  AT
 0,31;" "
334 IF H >= 1 THEN  LET L=L+1

335 PRINT  AT X,Y; INK 2;"H"
337 LET XX=X: LET YY=Y
340 LET A$= INKEY$
350 IF A$="5" THEN  LET Y1=-1:
LET X1=0
360 IF A$="6" THEN  LET X1=1: L
ET Y1=0
370 IF A$="7" THEN  LET X1=-1:
LET Y1=0
380 IF A$="8" THEN  LET Y1=1: L
ET X1=0
390 LET X=X+X1: LET Y=Y+Y1
394 LET W=W-1: IF W <= -1 THEN
 PRINT  AT 0,29;"0  ": BEEP .5,1
0: PAUSE 100: CLS : GO TO 7499

400 IF X<3 OR X>21 THEN  LET X=
XX
410 IF Y<9 OR Y>24 THEN  LET Y=
YY
420 PRINT  AT XX,YY;" "
422 GO TO 1000
425 IF D=8 THEN  GO TO 7000
426 IF L=30 THEN  GO SUB 2000

430 GO TO 330
1000 IF  ATTR (x,y)=57 OR  ATTR
(x,y)=60 OR  ATTR (x,y)=59 THEN
 BEEP .2,-50: LET X=XX: LET Y=YY
: LET W=W-5
1010 IF  ATTR (x,y)=50 THEN  GO
TO 1110
1020 IF  ATTR (x,y)=120 AND  ATT
R (3,9) <> 50 THEN  LET D=D+1: B
EEP .06,4: PRINT  AT 1,0; FLASH
0;"          ": LET C=0
1030 IF  ATTR (x,y)=120 AND  ATT
R (3,9)=50 THEN  LET X=XX: LET Y
=YY: BEEP .02,2
1105 GO TO 425
1110 PRINT  AT 1,0; FLASH 1;"CAR
RYING": BEEP .05,10: LET C=1
1120 GO TO 425
2000 FOR N=0 TO M
2005 PRINT  AT X,Y; INK 2;"H"
2010 LET Z= INT ( RND *18)+3: LE
T V= INT ( RND *9)+14
2020 PRINT  AT Z,V;"CD": BEEP .0
```

Continued on page 26



```
5,10
2025 IF  ATTR (Z,V)=58 THEN  BEE
P .08,10: LET W=W-20
2030 FOR K=0 TO T: NEXT K
2040 PRINT  AT Z,V;"  ": BEEP .0
5,5
2050 NEXT N
2060 LET L=0: RETURN
5000 FOR N=0 TO P
5010 LET A= INT ( RND *18)+3: LE
T B= INT ( RND *8)+9
5020 PRINT  AT A,B; INK 1;"F"
5030 IF  ATTR (A,B)=18 THEN  PRI
NT  AT A,B;" "; AT A+1,B;" ": GO
 TO 5010
5036 IF N >= 5 THEN  PRINT  AT A
,B; INK 3;"A"; AT A+1,B;"B"
5037 IF N>7 THEN  PRINT  AT A+1,
B+1; INK 4;"K"
5040 NEXT N
5047 REM
5050 FOR N=0 TO P
5060 LET A= INT ( RND *18)+3: LE
T B= INT ( RND *11)+14
5070 PRINT  AT A,B; INK 1;"K"; A
T A+1,B; INK 3;"J"
5080 IF N >= 5 THEN  PRINT  AT A
,B; INK 4;"G"
5090 NEXT N
6000 FOR N=20 TO 5 STEP -4
6010 PRINT  AT N,9; BRIGHT 1;"E"
; AT N+1,9; BRIGHT 0;" "; AT N,2
4; BRIGHT 1;"E"; AT N+1,24; BRIG
HT 0;" "
6020 NEXT N
6030 FOR X=0 TO 148 STEP 20
6040 PLOT 138,X: INK 1: DRAW 0,7

6050 NEXT X
6055 INK 7: PRINT  AT 20,10;"  "
; AT 21,11;"  "
6057 PRINT  AT 20,17;" "; AT 5,1
7;" "
6060 RETURN
7005 LET R=R+1
7007 IF R>6 THEN  GO TO 8000
7008 CLS
7010 FOR X=0 TO 20: BEEP .02,X:
NEXT X
7020 PRINT  AT 6,12;"WELL DONE";
 AT 12,10; FLASH 1;"BONUS WAGES=
";W
7120 LET SC=SC+W: LET P=P+3: LET
 D=0: LET W=SK
7360 IF r>3 THEN  LET H=1: LET M
=M+5: LET T=T-20
7370 PAUSE 200: GO TO 5
7499 BORDER 0: PAPER 0: INK 7: C
LS
7500 PRINT  AT 5,13;"H A R D"; A
T 11,11;"L  U  C  K !"
7595 PAUSE 200: BORDER 7: PAPER
7: INK 0: CLS : IF SC>HS THEN  G
O TO 8300
7597 GO TO 9500
8000 FOR J=1 TO 2: FOR N=0 TO 7:
 FOR X=0 TO 25 STEP 5
8010 BEEP .01,X
8020 NEXT X: BORDER N: NEXT N: N
EXT J
8050 BORDER 1: PAPER 1: INK 7: C
LS
8060 PRINT  AT 0,11;"WELL DONE!"
; AT 1,11;"----------"; AT 4,3;"
YOU HAVE DELIVERED ALL THE
"; AT 7,0;"LETTERS SAFELY - YOUR
'E JOB HAS "; AT 10,0;"BEEN SAVE
D."
8065 PRINT  AT 16,6; INVERSE 1;"
-PRESS ANY KEY TO GO-": PAUSE 0

8070 CLS : IF SC>HS THEN  GO TO
8300: GO TO 9500
8300 PRINT  AT 0,9;"W E L L  D O
 N E !"; AT 5,17;"A"; AT 10,12;"
HIGH-SCORE!"
8310 INPUT "ENTER NAME (12 CHARS
 MAX): "; LINE U$: LET N$=U$
8320 IF  LEN U$>12 THEN  BEEP .5
,7: PRINT  AT 21,0;"I SAID 12 MA
X NUMSKULL!!!!!!!!!!": PAUSE 100
: CLS : GO TO 8300
8330 GO TO 9500
9000 FOR X=0 TO 86: READ D: POKE
  USR "A"+X,D: NEXT X
9010 DATA 0,0,24,60,90,90,36,24,
255,60,60,60,60,36,36,102,128,12
8,159,191,255,40,68,51,34,28,244
,255,255,72,36,27,255,249,249,14
3,255,129,255,255,252,126,142,28
,56,112,126,63,16,24,56,60,124,1
26,254,16,24,24,60,82,82,24,36,3
6,60,60,126,255,255,255,255,126,
126,66,255,255,153,153,255,255,6
0,90,90,36,24,36,66,195
9500 BORDER 7: PAPER 7: INK 0: C
LS
9505 PRINT  AT 0,11;"POTTY POSTI
E"; AT 1,11;"----------"
9510 PRINT  AT 3,2;"Guide Pete t
he Potty Postie     "; AT 5,0;"a
round ~Leany Lane~ to post all "
; AT 7,0;"his letters to gain th
e highest"; AT 9,0;"score you ca
n - and to save his "; AT 11,0;"
job.Beware of nasties - such as"
; AT 13,0;"aliens,trees,man eati
ng stereos "; AT 15,0;"AND NASH-
A-LOT THE DOG,who eats "; AT 17,
0; INVERSE 1;"ANYTHING!"
9520 PRINT  AT 20,0;"HIGH SCORE=
";SC;"  BY ";N$
9580 INPUT "ENTER SKILL LEVEL (5
-15) ";SK
9590 IF SK<5 OR SK>15 THEN  BEEP
 .05,10: GO TO 9580
9600 LET SK=SK+2
9610 LET SK=SK*50
9620 GO TO 4
```

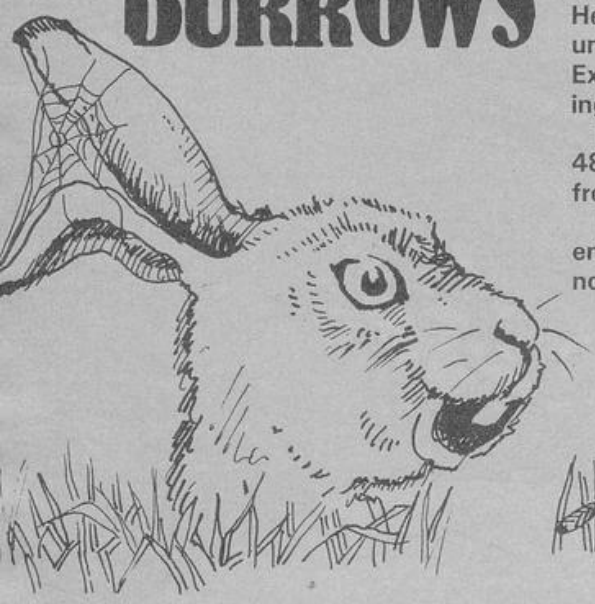
RED DEVILS

```
  1 LET hi=0
  2 REM *** U.D.G ***
  4 FOR x=0 TO 7: READ a: POKE
 USR "a"+x,a: NEXT x
  5 DATA 90,90,36,24,24,36,66,1
29
  6 FOR x=0 TO 7: READ a: POKE
 USR "b"+x,a: NEXT x
  7 DATA 24,60,126,255,255,255,
66,66
  8 CLS : PRINT  AT 20,9; FLASH
 1; BRIGHT 1;"PRESS ANY KEY"
  9 PRINT  AT 5,5;"Q - Left"
 10 PRINT  AT 7,5;"P - Right"

 11 PRINT  AT 0,1;"Red Devil -
By Richard Simpson"; AT 0,1; OVE
R 1;"--------------------------
---"
 12 PRINT  AT 11,0;"You are a R
ED DEVIL on a night  air drop,la
nd on the target or  prepare to
meet your fate. See  how many ju
mps you can do."
 13 INK 7: PAPER 0: BORDER 0
 70 LET j=0
 77 PAUSE 0
 78 CLS
 79 LET f= INT ( RND *27)+1
 80 GO SUB 1000
 90 LET a$="A"
 91 LET b$="B"
100 PRINT  AT 1,14; INK 3;"(ig2
:2*isp)"; AT 0,16;"(g4)"; AT 1,1
7;".....": LET a=15: LET b=3
105 PRINT  AT b,a;a$
106 LET z=b: LET x=a
107 PRINT  AT b-1,a;b$
110 IF  INKEY$ ="q" THEN  LET a
=a-1
120 IF  INKEY$ ="p" THEN  LET a
=a+1
130 LET b=b+1: IF b>19 THEN  GO
 TO 1510
135 PRINT  AT 0,0; BRIGHT 1;"JU
MPS : ";j
140 IF a>30 THEN  LET a=30
150 IF a<1 THEN  LET a=1
160 PRINT  AT z,x;" "
170 PRINT  AT z-1,x;" "
200 GO TO 105
1000 PRINT  AT 21,0; INK 4;"(32*
isp)"
1020 PRINT  AT 21,f; INK 2;"(2*i
sp)"
1500 RETURN
1510 PRINT  AT z,x;" "; AT z-1,x
;" "; AT b,a;a$; AT b-1,a;b$
1511 IF a=f OR a=f+1 THEN  LET j
=j+1: BEEP .3,15: CLS : GO TO 79
1520 BEEP .5,-10
1530 PRINT  AT 7,9; FLASH 1; BRI
GHT 1;"PRESS ANY KEY"
1540 PAUSE 0
1550 CLS
1560 PRINT  AT 0,1;"Red Devil -
By Richard Simpson"; AT 0,1; OVE
R 1;"--------------------------
---"
1570 PRINT  AT 6,0;"You have mis
sed your landing  target and y
ou have been thrown out of The R
ed Devils."
1580 PRINT  AT 12,0;"You made ";
j;" successful jumps."
1581 IF j>hi THEN  LET hi=j
1582 PRINT  AT 15,0;"The hi-scor
e is ";hi;" jumps."
1590 PRINT  AT 20,9; FLASH 1; BR
IGHT 1;"PRESS ANY KEY"
1600 PAUSE 0: GO TO 8
9999 SAVE "red devils" LINE 1
```

As top parachutist in the famous Red Devils parachute team you must make as many successful jumps as possible from your aeroplane. As your team is so famous it is a point of honour that you not only make a successful landing, but that you land exactly on the landing square every time. Move to left and right using keys P and Q.

Red Devils was written for the Spectrum or Spectrum Plus by Richard Simpson of Kidlington, Oxfordshire. Underlined characters are those to be entered in graphics mode.

BURROWS



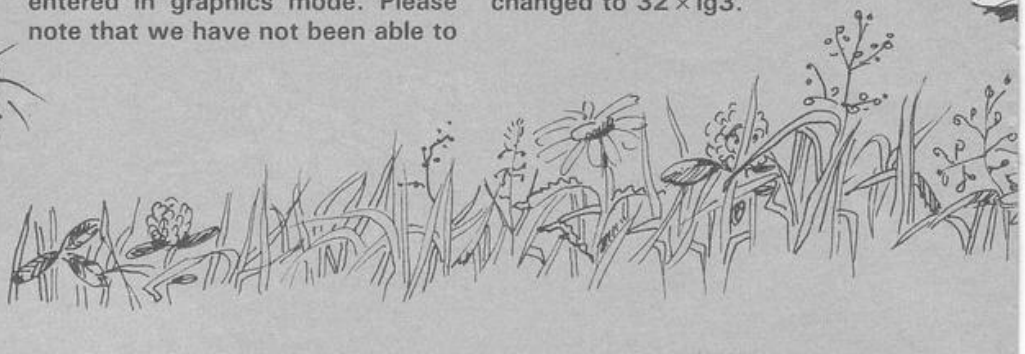
The rabbit is digging a burrow, but the spiders are after him. He can kill them by luring them under the boulders in the ground. Extra points can be gained by picking up diamonds.

Burrows has been written for the 48K Spectrum by T. Sherwood from West Bromwich.

Underlined characters are to be entered in graphics mode. Please note that we have not been able to convert some of the program on our printer; the changes are as follows:

Line 7059 the four sections between quotation marks. A space is shown between each mark, each of which should be replaced by one ig5.

Line 7056. The last section shows 32 spaces, these should be changed to 32 × ig3.



```
  10 GO TO 6000
  50 LET x1=x+( INKEY$ =m$(4))-(
 INKEY$ =m$(3))
  55 LET y1=y+( INKEY$ =m$(2))-(
 INKEY$ =m$(1))
  60 IF  ATTR (x1,y1)=6 OR  ATTR
 (x1+1,y1)=6 THEN  POKE z+3,140:
 POKE z+5,3: RANDOMIZE  USR z: P
OKE z+3,255: LET s=s+10: PRINT #
0; AT 0,15- LEN  STR$ s; PAPER 1
;s
  65 IF  ATTR (x1,y1)<8 AND  ATT
R (x1+1,y1)<8 THEN  PRINT  AT x,
y;" "; AT x+1,y;" ": PRINT  AT x
1,y1;a$(i); AT x1+1,y1;b$(i): LE
T x=x1: LET y=y1
  70 RETURN
 100 FOR n=1 TO 18: FOR i=1 TO 2

 200 GO SUB 50
 230 IF  RND >.85 THEN  GO TO 51
1
 290 PRINT  AT a,b;" "
 311 LET b1=b+(y>b)-(y<b)
 320 IF  ATTR (a,b1)=7 THEN  LET
 b=b1
 330 LET a1=a+(x>a)-(x<a)
 340 IF  ATTR (a1,b)=7 THEN  LET
 a=a1
 350 PRINT  INK 5; AT a,b;c$(i)

 410 IF  ATTR (x,y)=5 THEN  GO T
O 1000
 510 IF  ATTR (a-1,b)=32 THEN  G
O SUB 1500
 995 NEXT i: NEXT n: PRINT  AT a
,b;" "
 996 RANDOMIZE : LET a=1+ INT (
RND *20): LET b=1+ INT ( RND *30
): IF  ATTR (a,b) <> 7 THEN  LET
 a=20: LET b=15
 997 PRINT  INK 5; AT a,b;"E"
 998 POKE z+5,2: POKE z+24,29: R
ANDOMIZE  USR z
 999 GO TO 100
1010 POKE z+5,13: POKE z+24,28:
RANDOMIZE  USR z
1020 LET li=li-1
1025 PRINT  AT x,y;" "; AT x+1,y
;" "
1030 IF li<1 THEN  GO TO 4000
1050 GO TO 7500
1500 LET k=a: LET j=b
1510 PRINT  AT k-1,j;" "; AT k,j
; INK 0; PAPER 4; INVERSE 1;"G":
 POKE z+5,5: POKE z+24,28: RANDO
MIZE  USR z: POKE z+5,3: POKE z+
24,29: RANDOMIZE  USR z
1520 BEEP .04,-k: LET s=s+5: IF
 ATTR (k+1,j)=7 THEN  PRINT  AT
k,j;" ": LET k=k+1: PRINT  INK 0
; PAPER 4; INVERSE 1; AT k,j;"G"
: GO SUB 50: GO TO 1520
1530 PRINT #0; AT 0,15- LEN  STR
$ s; PAPER 1;s
1540 IF k=20 THEN  PRINT  FLASH
1; INK 0; PAPER 3; AT 21,j;"E":
POKE z+5,13: POKE z+24,29: RANDO
MIZE  USR z: LET e=e+1: IF e=14
THEN  GO TO 7020
1599 RETURN
4030 PRINT #0; PAPER 1; INK 6; F
LASH 1; AT 1,18;" PRESS A KEY ";
 INVERSE 1; AT 0,18;" GAME  OVE
R "
4080 IF  INKEY$ <> "" THEN  GO
TO 4080
4090 IF  INKEY$ ="" THEN  GO TO
4090
4091 IF  INKEY$ <> "" THEN  GO
TO 4091
4095 GO TO 8500
6000 PAPER 0: BORDER 0: INK 7: C
LS
6001 CLEAR ( USR "a")-100
6010 RESTORE 6010
6015 LET z=( USR "a")-99
6020 FOR i=z TO z+28
6025 READ j: POKE i,j: NEXT i
6027 FOR i= USR "a" TO  USR "j"+
7: READ j: POKE i,j: NEXT i
6030 DATA 5,17,16,2,38,1,58,72,9
2,31,31,31,14,254,238,16,237,121
,67,16,254,37,32,244,28,21,32,23
2,251
6035 DATA 112,154,159,61,93,117,
124,56,8,62,93,157,21,116,119,7,
14,89,249,188,186,174,62,28,16,1
24,186,185,168,46,238,224
6045 DATA 60,219,189,129,66,66,6
6,102,0,0,60,219,189,129,129,195

6050 DATA 60,126,255,191,255,223
,118,60,36,255,206,127,251,95,24
6,162,150,254,247,124,111,235,25
4,78
6062 DATA 0,16,40,68,186,68,40,1
6
6100 LET z=( USR "a")-99: LET a$
="AC": LET b$="BD": LET c$="EF"

6101 LET h=0: LET s=0: LET li=3

6105 LET r$="E F E F E F E F E F
 E F E FF E F E F E F E F E F E
F E": LET m$=""
6200 POKE z+3,255: GO TO 8500
7009 IF s>h THEN  LET h=s
7010 LET li=3: LET s=0
7020 LET e=0
7050 RANDOMIZE : CLS
7055 PAPER 0: INK 2: FOR i=0 TO
18 STEP 2: PRINT  AT i,0;"IHIHIH
IHIHIHIHIHIHIHIHIHIHIHIHIHIHIHIH
HIHIHIHIHIHIHIHIHIHIHIHIHI": NEX
T i
7056 PRINT  INK 0; PAPER 3; INVE
RSE 1; AT 21,1;"
                "; OVER 1; INK 1;
PAPER 4; AT 0,0;"
                "
7058 FOR i=1 TO 21: PRINT  INK 0
; PAPER 1; INVERSE 1; OVER 1; AT
 i,0;" "; AT i,31;" ": NEXT i
7059 PRINT  INK 0; PAPER 1; AT 2
0,0;" "; AT 21,0;" "; AT 20,31;"
 "; AT 21,31;" "
7060 LET j=2: FOR k=1 TO 14
7070 LET i=1+( INT ( RND *18)):
LET n=1+( INT ( RND *18))
7075 PRINT  AT i,j; PAPER 4; INK
 0; INVERSE 1;"G"; AT n,j+1; INK
 6; INVERSE 0; PAPER 0;"J": LET
j=j+2: NEXT k
7100 INK 7
7500 RANDOMIZE : LET x=1: LET y=
15
7530 LET a=15: LET b=y: PRINT  A
T x,y;"A"; AT x+1,y;"B"; INK 5;
AT a,b;"E"
7540 FOR j=x+2 TO a-1: PRINT  AT
 j,b;" ": NEXT j
7600 PRINT #0; AT 0,0; PAPER 1;"
    SCORE 00000
 HI-SCORE 00000      LIVES * * *
"
7610 PRINT #0; AT 0,15- LEN  STR
$ s; PAPER 1;s; AT 1,15- LEN  ST
R$ h; PAPER 1;h; AT 0,25;
7620 FOR j=1 TO li: PRINT #0; PA
PER 1;" A";: NEXT j: PRINT #0; A
T 1,25;: FOR j=1 TO li: PRINT #0
; PAPER 1;" B";: NEXT j
7680 IF  INKEY$ <> "" THEN  GO
TO 7680
7910 DATA 70,58,46,58,67,55,43,5
5,70,58,46,70,65,53,41,29,70,58,
46,58,67,55,43,55,70,58,46,70
7911 DATA 58,46,58,70
7920 RESTORE 7910: FOR i=1 TO 16
: FOR j=1 TO 2
7924 READ k
7925 BEEP .1,k-40: BEEP .03,k-28

7990 PRINT  INK 0; PAPER 3; INVE
RSE 1; AT 21,2;r$(j*27-26 TO j*2
7)
7995 IF  INKEY$ <> "" THEN  GO
TO 100
7999 NEXT j: NEXT i: GO TO 7920
```

PRO PRINTOUT

```
8500 CLS : INK 2
8510 FOR i=-50 TO 40 STEP 6: PLO
T 168,135: DRAW 87,i: PLOT 168,1
35: DRAW -168,i: NEXT i
8540 INK 5: PLOT 156,66: DRAW -4
0,0,-2: RESTORE 8590: FOR k=1 TO
 3: FOR m=1 TO 5: READ i,j: DRAW
 i,j: NEXT m: NEXT k
8545 PLOT 156,66: RESTORE 8590:
FOR k=1 TO 3: FOR m=1 TO 5: READ
 i,j: DRAW -i,j: NEXT m: NEXT k

8546 DRAW -55,0,2.5
8547 PRINT  INK 3; AT 10,15;"\
/"
8548 PRINT  INK 2; AT 11,15;"O
O"
8550 PLOT 130,68: DRAW -2,-5: DR
AW -2,5: DRAW 20,0,-.8: DRAW -2,
-5: DRAW -2,5
8552 PLOT 129,62: DRAW 14,0,-1

8560 INK 4: POKE z+29,201: PRINT
  AT 20,14;"BURROWS"
8565 PLOT 121,15: DRAW 0,1: DRAW
 -9,0: DRAW 0,2: DRAW 9,0: PLOT
126,15: DRAW 0,1: DRAW 41,0
8570 DRAW 0,2: DRAW -41,0
8575 PLOT 112,7: DRAW 55,0: DRAW
 0,-2: DRAW -55,0: DRAW 0,2
8590 DATA -32,-8,-14,-56,11,59,3
0,10,-1,4,-32,4,-17,-56,14,59,32
,-2
8591 DATA 1,4,-32,12,-26,-56,23,
61,35,-11
8592 DATA 0,0
8598 DATA 29,41,53,65,29,65,53,4
1,31,43,55,67,31,67,55,43,29,41,
53,65,29,65,53,41,70,58,46,34,70
,34,46,70
8599 INK 7: POKE z,243
8616 PRINT #0; AT 1,0; INK 2;"1=
INSTRUCTIONS      2=START GAME"

8618 IF  INKEY$ <> "" THEN  GO
TO 8618
8620 RESTORE 8598: FOR j=1 TO 32
: READ k
8630 BEEP .07,k-28: BEEP .04,k-2
8: BEEP .07,k-40: BEEP .04,k-40

8689 LET k$= INKEY$
8690 IF  INKEY$ ="" THEN  NEXT j
: GO TO 8620
8691 IF  INKEY$ <> "" THEN  GO
TO 8691
8693 IF k$="1" THEN  GO TO 8700

8694 IF k$="2" AND m$ <> "" THEN
  GO TO 7000
8699 GO TO 8620
8705 GO SUB 9800
8706 CLS
8710 PRINT  AT 2,0; PAPER 1;"

                                "
8720 PRINT  AT 5,0;"WHILE THE RA
BBIT DIGS          UNDERGROUND
BURROWS, SPIDERS    CHASE HIM AL
ONG THE TUNNELS."
8730 PRINT ' PAPER 1;"IF HE LURE
S A SPIDER UNDERNEATH A BOULDER,
 IT WILL FALL.          "
8732 PRINT '"THE BOULDER WILL KE
EP FALLING   UNTIL IT REACHES TH
E BOTTOM OF  THE TUNNEL."
8735 PRINT  PAPER 1;'"THE RABBIT
 MUST MAKE ALL THE    BOULDERS F
ALL DOWN ON TO THE    SPIDERS' L
AIR AT THE BOTTOM..    "
```

```
8740 PRINT '"..WITHOUT GETTING C
AUGHT !"
8750 PRINT #0; AT 0,0; PAPER 1;"
PICK UP DIAMONDS FOR MORE POINTS
"
8870 PRINT  INK 0; AT 0,0;"BURRO
WS": INK 5
8871 FOR j=174 TO 169 STEP -1: F
OR i=0 TO 55
8872 IF  POINT (i,j)=1 THEN  PLO
T 64+i*2,170-(174-j)*4: DRAW 2,4
: DRAW 0,1: DRAW -2,-4
8873 NEXT i: NEXT j: INK 7
8885 PRINT #0; AT 1,0;"_________
_press a key__________"
8890 PAUSE 0
8894 IF  INKEY$ <> "" THEN  GO
TO 8894
8896 GO TO 7000
9803 POKE z+5,2: POKE z+24,29
9804 INK 3
9805 RESTORE 9860: READ nk
9807 LET m$="": CLS
9808 PRINT  AT 4,4;"CHOOSE USER
DEFINED KEYS"''''
9810 FOR i=1 TO nk
9811 READ d$: PRINT "          "
;d$'': NEXT i: INK 6
9815 RESTORE 9860: READ nk
9816 PRINT  AT 0,0;: PRINT '''''
''
9818 FOR i=1 TO nk: READ d$
9819 LET m$=m$+ CHR$ 0
9820 PRINT '"          ";d$;
9822 FOR j=1 TO 11- LEN d$: PRIN
T "_";: NEXT j
9825 PRINT  FLASH 1;"?"; CHR$ 8;
9827 PAUSE 1: PAUSE 0
9830 LET k$= INKEY$
9832 FOR j=1 TO  LEN m$
9833 IF m$(j)=k$ THEN  GO TO 982
7
9834 NEXT j
9840 LET m$(i)=k$: PRINT k$
9845 RANDOMIZE  USR z
9854 NEXT i: INK 7
9855 IF  INKEY$ <> "" THEN  GO
TO 9855
9856 PRINT #0; AT 1,10; INK 3;"P
ress a key": PAUSE 1: PAUSE 0
9857 IF  INKEY$ <> "" THEN  GO
TO 9857
9858 RETURN
9860 DATA 4,"LEFT","RIGHT","UP",
"DOWN"
```

You've got it Licked

THE FOUR objects to be collected in **The Alchemist** are the lamp, the lead bar, the vase and the ring. Place these objects in the chest and pick up each piece of scroll immediately it appears. When you have all four pieces of scroll go to the Warlock's room and press D.

C Smith,
Armadale, West Lothian.

TO SOLVE **The Alchemist** it is necessary to turn the lead to gold. To reach the spell performing this function, as well as the lantern, the key must be used on the locked door.

Ian Morris,
Crawley, Sussex.

VARIOUS BUGS in **Daley Thompson's Decathlon** make it possible to accumulate high scores. On the high jump, wait until you reach 2.47 metres and then jump under the bar. On the 400 and 1500m, wait until the clock reaches 1000secs — your average record time, and then start running. The clock will return to zero and you will be given a huge score.

On the long jump, jump just past the beginning of the pit. This will give you a score of over 247m.

S Bourne,
Whitsable, Kent.

GETTING nowhere with **Pyjamarama?** Start by taking the bucket to the bathroom, and waiting until it is full. Then go to the plant room and exchange the bucket for the fuel can. Fill the fuel can, collect the £1 coin, swap it for the 1p, go to the toilet, collect the hammer, exchange the hammer for the — **Hang on, this is getting too easy. Just stop there. Ed.**

S Bourne,
Whitstable, Kent.

GAIN INFINITE lives on **Lunar Jetman.** Load the program with MERGE "", and stop the tape when OK appears. Then enter POKE 23755,10. Edit the line, by moving the cursor until it reaches the PRINT USR statement. Just before that add POKE 36965,0 then RUN the program and press play on your cassette recorder.

Marcus Wu,
Sparkbrook, Birmingham.

BRIGHTEN UP your loading screens and title pages on the Spectrum and Spectrum Plus with this short routine:

```
10 PLOT 72,94
20 PLOT 100,100
30 DRAW 7, 20, 20000
```

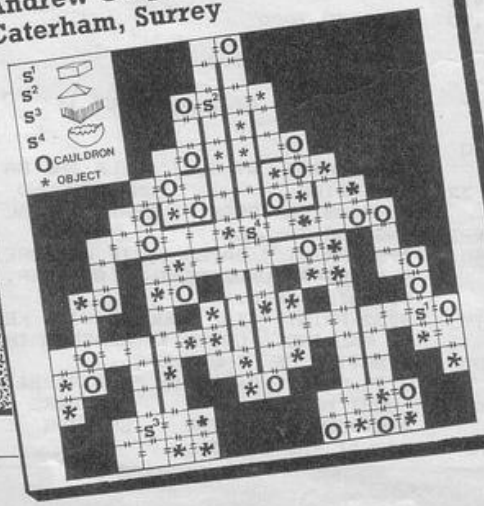
Timothy Sneath,
Cambridge.

INFINITE lives are always useful in **Manic Miner.** Acquire them by adding 25 POKE 35136,0 to the loader program.

Michael Rimmer,
Manama, Bahrain.

ALIEN 8 MAP

Andrew Carpenter,
Caterham, Surrey



SEARCHING for a cassette recorder compatible with the ZX-81 can be like looking for a needle in a haystack. The **Teleton TCR 400** radio/cassette recorder is the perfect solution. Load and Save leads can be left in place without problems and the LED indicator shows you exactly what is happening. Even better is the motor speed control, which allows you to SAVE a program at normal speed and then LOAD it in at the fastest speed, thus speeding the loading procedure considerably.

John Hammond, Heywood, Lancashire.

WANT TO start **Ghostbusters** with £101,200 instead of £10,000? Use BEENY as your name and 30335020 as your account number in order to start out rich.

J Browning & P Parsons, Tavistock, Devon.

STOPPING RAM wobble on the ZX-81: a new solution. Try taking a piece of strong card at least the length of your ZX-81 and bending it 2" from the end. Place it under your ZX-81 and Ram pack and tape it firmly in position. Once this has been done the ZX-81 can be hit without it crashing.

Darren Lovatt, Stoke on Trent, Staffs.

Pen-friends

Jason Underwood, 71 Frodingham Road, Bentilee, Stoke on Trent, Staffordshire ST2 0PT has had his Spectrum for 1½ years and also owns a joystick, professional keyboard and plenty of games. His favourite games are **Airwolf, Hunchback** and **The Hobbit.** He would like a penfriend aged between 14 and 16 with whom he can swap hints and ideas.

Stephen Beechey, 34 St Laurence Road, Northfield, Birmingham B31 2AX is 17 years old, and owns a wide variety of games. He would like a pen pal who is interested in playing games.

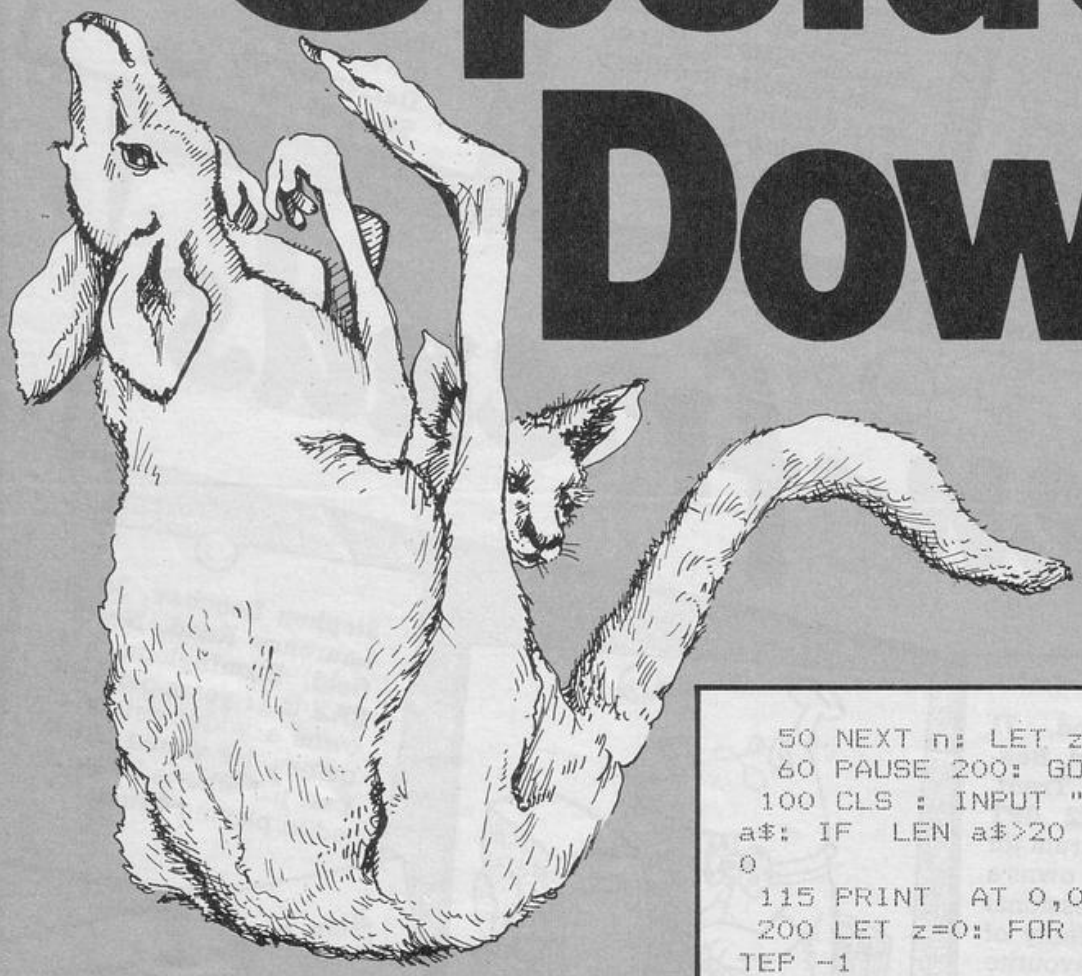
Alan Panter, 10 Bridge Road, Dewsborough, Northants, NN14 2IF is 10 years old and owns a 16K ZX-81. He would like to find a penfriend with whom he could exchange tips, news and programs.

O O Ademiyi, PO Box 4616 KDJ, Kaduna, Kaduna State, Nigeria owns a Spectrum and is finding it difficult to contact other Spectrum owners, as there are no Computer clubs in Nigeria. Interests are Spectrum programming, listings and the use of LOGO.

Sarah Young, 40a Carnarvon Road, South Woodford, London E18 is 13 years old and owns a 48K Spectrum. She enjoys arcade and adventure games, especially **Sherlock, Pygamarama** and **Knight Lore.** She also enjoys programming occasionally.

Matthew Kane, 147 Tandragee Road, Portadown, Co Armagh, N Ireland has a Spectrum and over 150 original games. He enjoys typing listings into his computer, if they are long enough. He would like to find a pen-friend who also has a Spectrum.

Upside Down



```
  1 REM ***by andrew seccull***

  2 CLS : PRINT  AT 10,10;"1=UP
SIDE-DOWN"
  3 PRINT  AT 12,10;"2=SIDEWAYS
"
  4 IF  INKEY$ ="1" THEN  GO TO
 10
  5 IF  INKEY$ ="2" THEN  GO TO
 100
  6 GO TO 4
 10 CLS : INPUT "ENTER A WORD";
a$: IF  LEN a$>30 THEN  GO TO 10
 15 PRINT  AT 0,0;a$
 20 LET z=166: FOR a=167 TO 175

 30 FOR n=0 TO ( LEN a$*8)
 40 IF  POINT (n,a)=1 THEN  PLO
T n,z
 50 NEXT n: LET z=z-1: NEXT a
 60 PAUSE 200: GO TO 0
100 CLS : INPUT "ENTER A WORD";
a$: IF  LEN a$>20 THEN  GO TO 10
0
115 PRINT  AT 0,0;a$
200 LET z=0: FOR a=175 TO 168 S
TEP -1
300 FOR n=( LEN a$*8) TO 0 STEP
 -1
400 IF  POINT (n,a)=1 THEN  PLO
T z,n
450 NEXT n: LET z=z-1: NEXT a

460 PAUSE 200: GO TO 0
```

Updside down, written by Andrew Seccull of Oxford for the Spectrum, is a useful little program for demonstrating to newcomers how to use some of the less frequently used commands, LEN and POINT. It will also help you to understand how each character printed on the screen is made up of dots (called pixels) on an 8×8 grid and encourage you to think of your TV screen as a grid which is 256 pixels wide by

176 pixels deep.

Upside down prints a word you input, called an echo, and develops from this an image which is either upside down or sideways. It does this by looking at each pixel of the echo and re-plotting it somewhere else for the image.

Variables

A variable is a name given to a location in memory used to store a number. The value of a variable may change as the program is run. There are just a few variables in Updside down:

a$ is a string variable to hold the word as entered.

a is a loop counter which counts the pixel row of the echo.

z is the y coordinate for upside-down image and x coordinate for sideways image.

n is a loop counter for counting pixels horizontally along each pixel row of the echo. It is also used as a coordinate for the image: x for upside-down and y for sideways.

How it works

Lines

2–3 Clear screen and print instructions.

4–6 Control subroutine (upside-down or sideways).

UPSIDE DOWN

10 Clears screen. Inputs word. Checks number of characters in word using LEN a$. Must be fewer than 30 for horizontal image.

15 Prints word echo on top line of screen.

20 Sets z=166 for first pixel row of image i.e. 9th pixel row from top. Sets a to count upward through eight pixel rows of echo.

30 Sets n to count pixel columns of echo from left to right. Note that LEN a$ * 8 gives number of pixel columns in echo.

40 Checks to see whether pixel at n,a is INK (using POINT). If it is, then a dot is PLOTted at n,z.

50 Loops back to 30 for next n. When all pixel columns of a single pixel row in echo, have been PLOTted in image, z is reduced by 1 (to PLOT on next pixel row down) and the program loops back to 20 for next row up in echo.

60 Re-starts program after a PAUSE.

SIDEWAYS

100 As lines 10–15 but checks that number of characters is fewer than 20 for vertical image.

200 Sets z=0 for first pixel column of image. Sets a to count down through pixel rows of echo.

300 Sets n to count pixel columns of echo from right to left.

400 As line 40 but dot now PLOTted at z,n.

450 As line 50. Note that this should be z=z+1 although negative numbers are taken as positive when PLOTting.

460 As line 60.

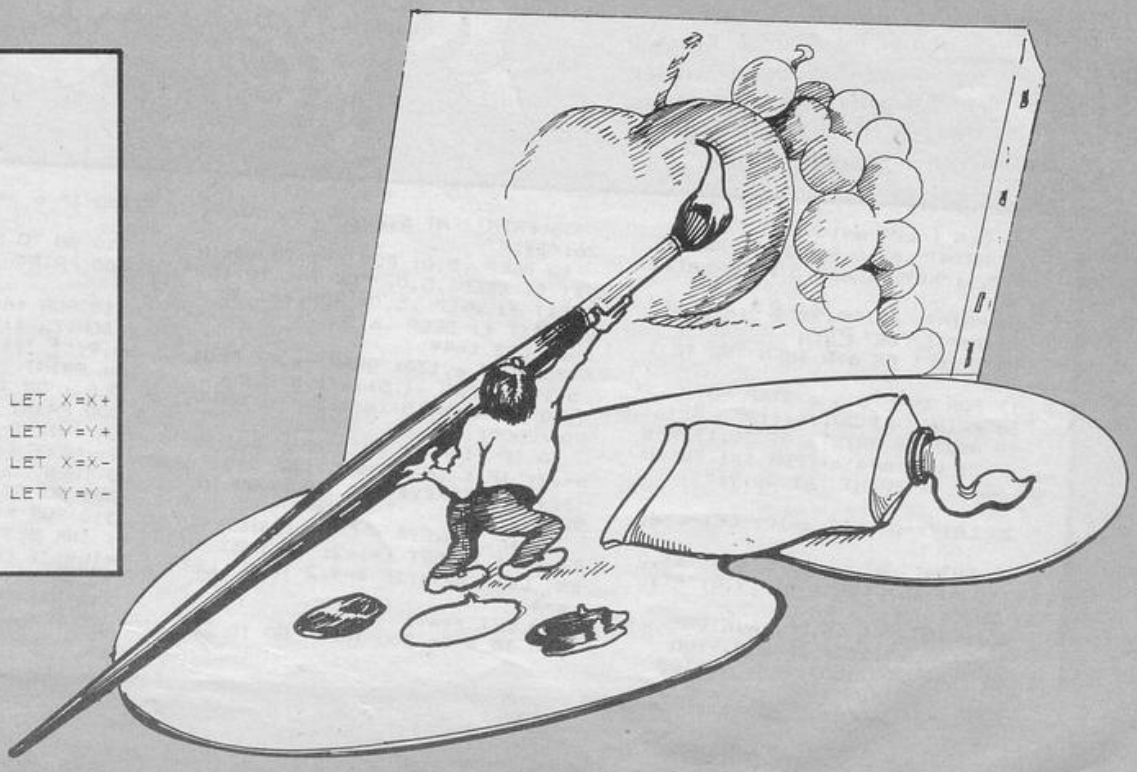
BEGINNER

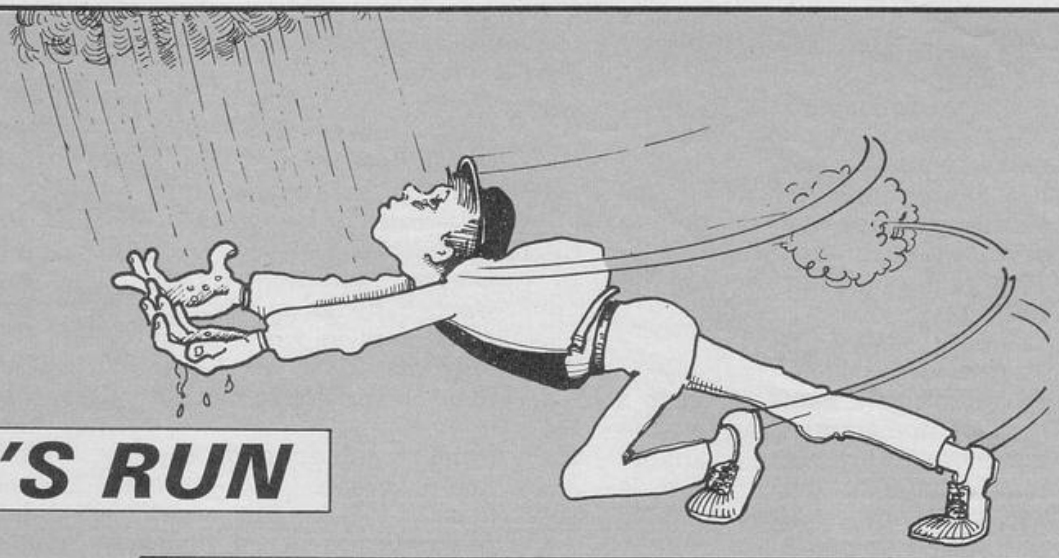
MINI ARTIST

Using the cursor keys you can draw horizontal and vertical shapes on your ZX-81 with this program.

Mini Artist has been written for the 16K ZX-81 by Keith Lancaster from Fleet.

```
  5 LET A=2
 10 LET X=A
 20 LET Y=A
 21 FOR F=0 TO 31
 22 PRINT AT 0,F;"▀"
 23 NEXT F
 24 FOR F=0 TO 31
 25 PRINT AT 21,F;"▄"
 26 NEXT F
 27 FOR F=0 TO 21
 28 PRINT AT F,0;"▌"
 29 NEXT F
 30 FOR F=0 TO 21
 31 PRINT AT F,31;"▐"
 32 NEXT F
 33 PRINT AT 0,0;"▛"
 34 PRINT AT 21,0;"▙"
 35 PRINT AT 0,31;"▜"
 37 PRINT AT 21,31;"▟"
 39 PLOT X,Y
 40 IF INKEY$="8" THEN LET X=X+
1
 50 IF INKEY$="7" THEN LET Y=Y+
1
 51 IF INKEY$="5" THEN LET X=X-
1
 52 IF INKEY$="6" THEN LET Y=Y-
1
 60 GOTO 39
 62 SAVE "MINI-DRAW"
```





DAVID'S RUN

David is the security guard at a major chemical plant. A tank, containing acid, has begun to leak onto another tank beneath, which holds a dangerous gas.

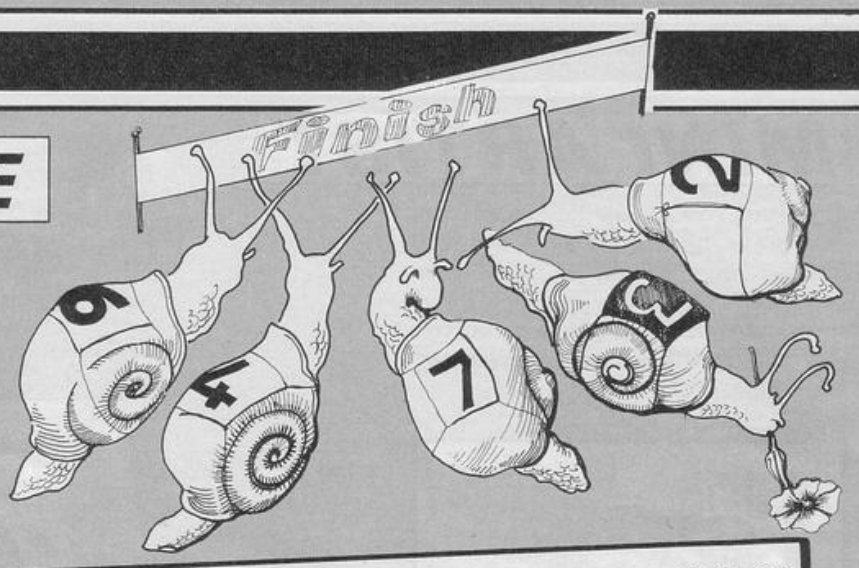
To stop the acid drops before they hit the tank David must run along catching the droplets in a bucket. Use keys 5 = left and 8 = right.

T. Harness of Lincolnshire wrote David's Run for the 16K ZX-81.

```
  1 REM "ET"
  4 LET H$="ZX-81 COMPUTER"
  6 LET HS=10
  8 LET A=15
 10 LET Z=0
 12 CLS
 14 LET B=INT (RND*30)
 16 LET C=0
 18 PRINT AT 21,0;"
                   "
 20 PRINT AT C,B;"O";AT C-1,B;"
 "
 22 IF A+3<>B AND C=18 THEN GOT
O 38
 24 LET C=C+1
 26 IF C=20 THEN GOTO 14
 28 IF INKEY$="5" AND A>0 THEN
LET A=A-1
 30 IF INKEY$="8" AND A<28 THEN
 LET A=A+1
 32 PRINT AT 16,A;"  ";AT 17,A;
"  ";AT 18,A;"  ";AT 19,A;"
  ";AT 20,A;"  "
 34 IF A+3=B AND C=18 THEN LET
Z=Z+5
 36 GOTO 20
 38 CLS
 42 PRINT AT 2,2;"YOU ARE DEAD
."
 44 PRINT AT 4,2;"YOUR SCORE=";
Z
 45 PRINT AT 6,2;"PLEASE ENTER"
;AT 8,2;"YOUR NAME."
 46 IF Z>HS THEN INPUT A$
 48 IF Z>HS THEN LET H$=A$
 50 PRINT AT 6,2;"HIGH SCORE BY
";H$
 52 IF Z>HS THEN LET HS=Z
 54 PRINT AT 8,2;"HIGH SCORE IS
";HS
 56 PRINT ,,"FOR ANOTHER GO PRE
SS ANY KEY"
 58 IF INKEY$="" THEN GOTO 58
 60 GOTO 8
```

BEGINNER

SNAIL RACE



Can you beat the computer's snail? Place your bets and off you go. Using keys 1 and 3 you must move the keys as quickly as you can to increase the speed of your snail.

Snail Race by Daniel Merrick from Cleveland has been written for the Spectrum and Spectrum Plus. Underlined characters are to be entered in graphics mode.

```
  5 CLS : LET m=100
 10 PRINT  AT 0,9;"SNAIL RACE";
 AT 2,1;"KEYS:1 AND 3 ALTERNATIN
G"
 11 PRINT  AT 20,9;"£ ";m
 15 INPUT "BET £";q
 16 IF q<1 OR q>m THEN  GO TO 1
5
 17 FOR f=m TO m-q STEP -5
 18 PRINT  AT 20,11;f;"  "
 19 NEXT f: PRINT  AT 20,11;m-q
;"  ": LET m=m-q: FOR f=1 TO 10
0: NEXT f: PRINT  AT 20,9;"
 "
 20 LET s=0: LET a=10: LET b=a

 25 PRINT  AT 16,0;"S"; AT 17,0
;"T"; AT 18,0;"A"; AT 19,0;"R";
AT 20,0;"T"
 26 PRINT  AT 16,25;"FINISH"
 30 PLOT 10,150: DRAW 0,-100
 35 PLOT 200,150: DRAW 0,-100
 36 PRINT  AT 5,26;"YOU"; AT 9,
26;"ZX."
 40 BEEP .5,0: FOR f=1 TO 10: N
EXT f: BEEP .5,0: FOR f=1 TO 10:
 NEXT f: BEEP .5,0: FOR f=1 TO 1
0: NEXT f: BEEP .6,5
 50 LET i=49
 55 PLOT a,130: DRAW -s,0: PLOT
 b,100: DRAW -(.5+(s/1.5)),0
 60 LET b=b+.5+(s/1.5)+(q/3000)
+(m/2000)
 70 IF  INKEY$ ="" THEN  LET s=
s-.2: IF s <= 0 THEN  LET s=0
 71 IF  INKEY$ ="" THEN  GO TO
80
 75 IF  INKEY$ = CHR$ i THEN  L
ET s=s+.1: LET i=i+2: IF i=53 TH
EN  LET i=49: IF s=4.2 THEN  LET
 s=4
 80 LET a=a+s
 90 IF a >= 200 THEN  GO TO 200
100 IF b >= 200 THEN  GO TO 300

110 GO TO 55
200 PRINT  AT 16,10;"YOU WIN"

210 FOR f=m+q TO m+(q*2) STEP 5
: BORDER 1: BORDER 5: PRINT  AT
20,9;"£ ";f: NEXT f: LET m=m+(q*
2): PRINT  AT 20,10;m: BORDER 7:
 CLS : GO TO 10
300 PRINT  AT 16,9;"YOU LOSE":
FOR f=1 TO 200: BORDER 2: BORDER
 6: NEXT f: BORDER 7: CLS : IF m
=0 THEN  GO TO 310
305 GO TO 10
310 FOR f=1 TO 7: PRINT  PAPER
f; INK 8;"(10*ig8)YOU ARE SKINT(
9*ig8)": POKE 23692,255: IF  INK
EY$ <> "" THEN  GO TO 320
315 NEXT f: GO TO 310
320 RUN
```

STAR DODGE

A wall of stars is advancing towards your ship, if they hit you they will damage the ship and push you off course.

Star Dodge has been written by Paul O'Kane from Belfast, for the 16K ZX-81.

```
  20 REM "STAR SCORE"
  30 LET X=9
  40 LET S=0
  50 LET X=X+(INKEY$="8")-(INKEY
$="5")
  60 PRINT AT 8,X;"Y";AT 9,X;
  70 LET F=PEEK (PEEK 16398+256*
PEEK 16399)
  80 IF F=136 THEN GOTO 160
  90 IF F=20 THEN LET S=S+1
 100 IF F=151 THEN LET S=S+10
 110 IF F=23 THEN LET S=S+2
 120 PRINT AT 15,RND*19;"▒==▒==*
▒==■"
 130 SCROLL
 140 IF S=99 THEN SCROLL
 150 GOTO 41
 160 FOR X=0 TO 9
 170 PRINT AT 8,X;"SHIP DESTROYE
D"
 180 SCROLL
 190 NEXT X
 200 IF S<250 THEN GOTO 230
 210 IF S<800 THEN GOTO 240
 220 IF S>800 THEN GOTO 250
 230 PRINT "STAR SCORE SHOULD BE
 BETTER  ";S
 240 PRINT "STAR SCORE GETTING B
ETTER ";S
 250 PRINT "ACE PILOT  ";S
```

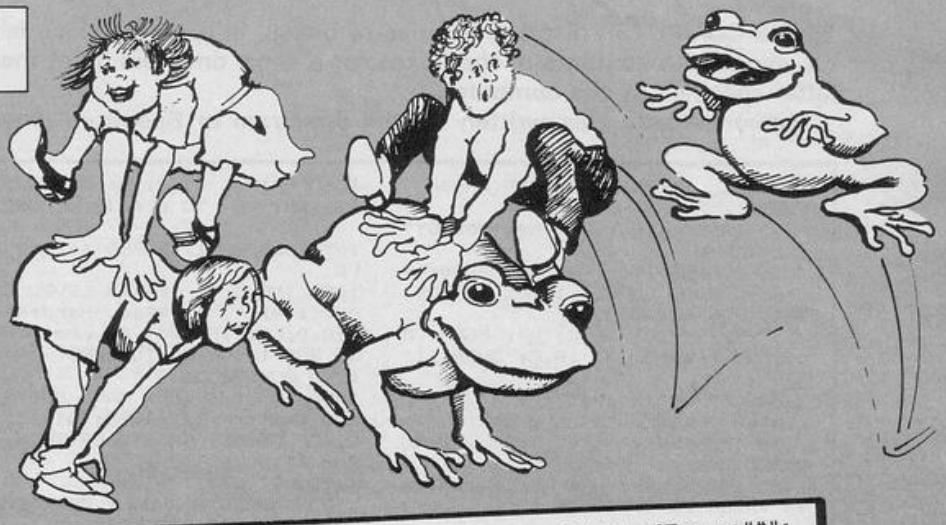
BEGINNER

LEAP FROG

Catch the frogs sitting around the pond to score points. To play each new game press RUN and ENTER.

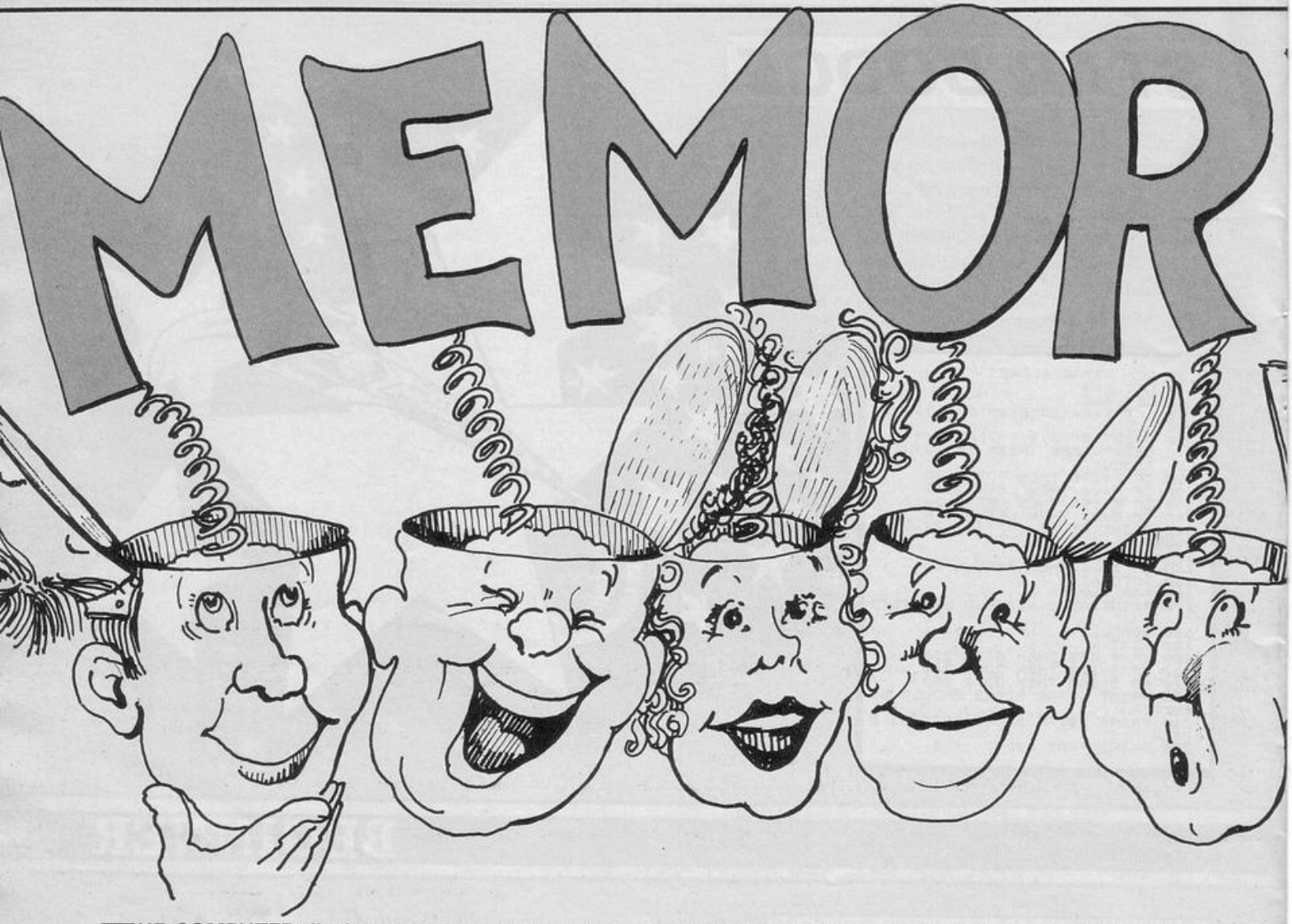
Leap Frog has been written for the Spectrum and Spectrum Plus by Colin Flisk from Cheshire.

Underlined characters are to be entered in graphics mode.



```
  1 LET sc=0: BORDER 5
  3 GO SUB 200
 10 LET l=1: LET a=10: LET b=10
 11 PAUSE 0: INK 4
 20 IF  INKEY$ ="z" THEN  LET l
=1
 30 IF  INKEY$ ="a" THEN  LET l
=2
 40 IF  INKEY$ ="m" THEN  LET l
=3
 50 IF  INKEY$ ="n" THEN  LET l
=4
 60 IF l=1 THEN  LET a=a+1: PRI
NT  PAPER 4; AT a-1,b;"*"
 70 IF l=2 THEN  LET a=a-1: PRI
NT  PAPER 4; AT a+1,b;"*"
 80 IF l=3 THEN  LET b=b+1: PRI
NT  PAPER 4; AT a,b-1;"*"
 90 IF l=4 THEN  LET b=b-1: PRI
NT  PAPER 4; AT a,b+1;"*"
 95 IF  SCREEN$ (a,b)="*" THEN
GO TO 1000
 96 IF  SCREEN$ (a,b)="#" THEN
LET sc=sc+1: BEEP .1,40
100 PRINT  AT a,b; INK 2;"(ig8)
"
110 GO TO 20
200 FOR f=0 TO 21: PRINT  INK 2
; PAPER 2;"*"; AT f,31;"*": NEXT
 f: PRINT  INK 2; PAPER 2; AT 0,
0;"**************************
***"; AT 21,0;"*****************
***************"
300 FOR f=0 TO 20: LET z= INT (
RND *20)+1: LET x= INT ( RND *3
0)+1: PRINT  INK 1; AT z,x;"#":
NEXT f
400 RETURN
1000 PRINT  AT 9,8; FLASH 1; INK
 0;"YOU ATE ";sc;" FROGS": BEEP
.1,6: BEEP .1,8
1010 STOP
1020 PRINT  FLASH 1;"FROGS": PRI
NT : PRINT "YOU MUST EAT ALL OF
                THE FROGS BEFORE YOU CRA
SH INTO         THE WALL OR YOURSELF
.
                A=UP
                Z=DOWN
                M=RIGHT  N=LEFT" .
1030 PRINT "PRESS ANY KEY TO PLA
Y": PAUSE 0: RUN
1040 SAVE "FROGS" LINE 1020
```

MEMOR

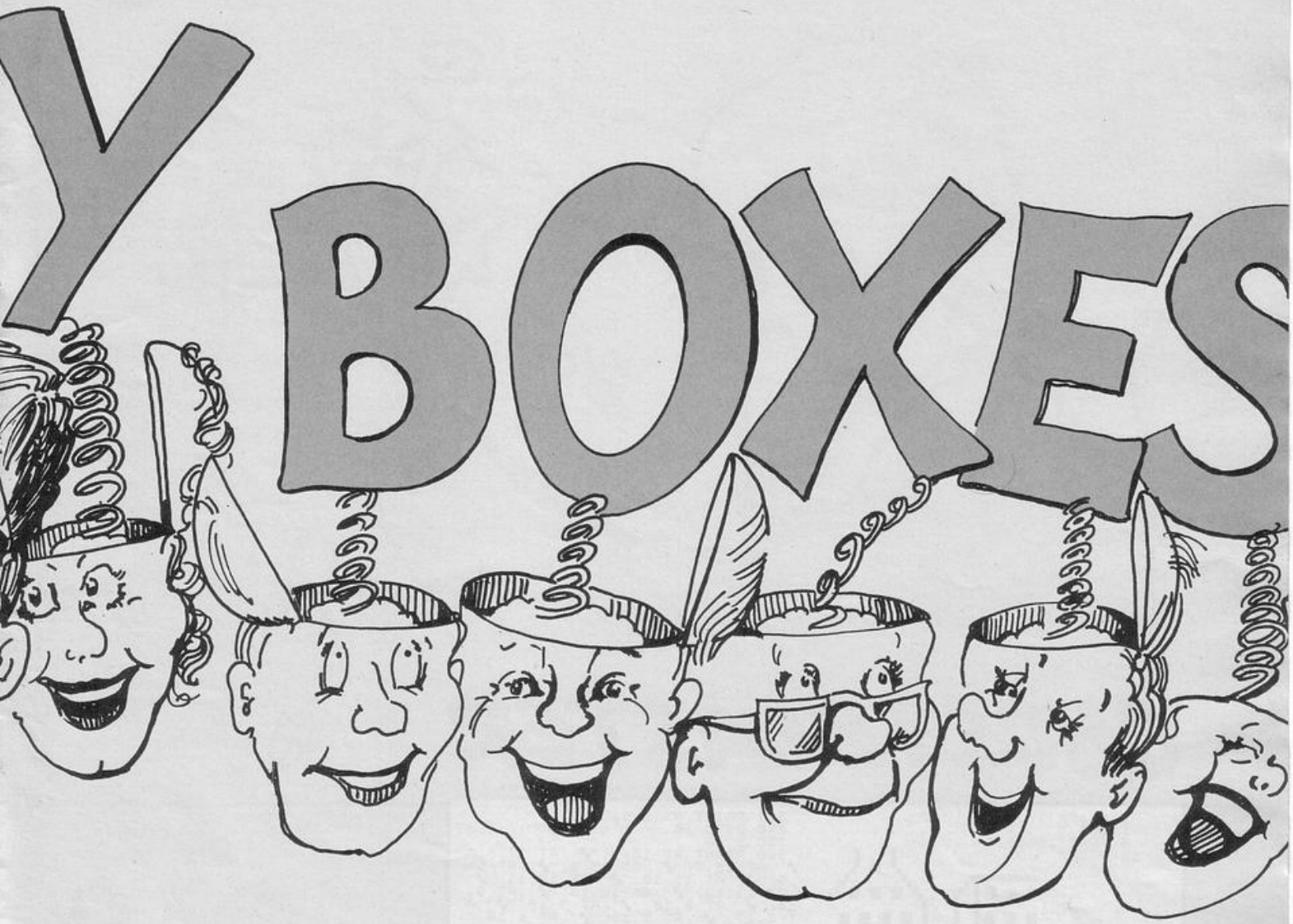


THE COMPUTER displays a series of boxes, in each of which is hidden a letter of the alphabet. You are shown the contents of the boxes for a short time and must then identify correctly the box containing a letter specified by the computer.

Memory Boxes was written for the Spectrum or Spectrum Plus by R Manga of Penn, Wolverhampton.

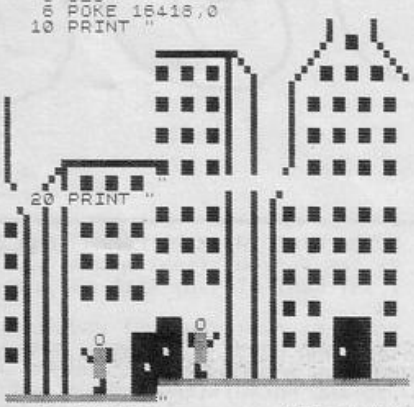
```
  1 REM *MEMORY BOXES*R.MANGA

 10 RANDOMIZE : LET N$="NOBODY"
: LET H=0
 20 GO SUB 1000: GO SUB 2000: G
O SUB 2200: GO SUB 1300: GO SUB
2100: GO SUB 3500
 50 PRINT  AT 18,C;"A": BEEP .0
05,C*2: PRINT  AT 18,C; OVER 1;"
A"
 60 LET C=C+( INKEY$ ="3" AND C
<28)-( INKEY$ ="1" AND C>2)
 70 IF  INKEY$ ="9" THEN  GO SU
B 3000
 80 IF  INKEY$ ="0" THEN  LET M
$="*ABORTED*": GO TO 5000
 90 GO TO 50
1000 CLS
1020 LET A$="": LET SCR=0: LET N
=0: LET C=16
1030 GO SUB 2200
1040 PRINT  AT 1,10; INK 1; PAPE
R 6;"MEMORY BOXES"; AT 1,10; OVE
R 1;"____________"
1050 PRINT  AT 3,0; INK 2; PAPER
 6;" In this game the computer w
ill choose a letter.You must fir
e atthe box which you think cont
ains that letter.You will be giv
en a chance to see them beforeha
nd. "
1055 BEEP .3,10: PRINT  AT 13,2;
"USE KEYS:-","1-LEFT","3-RIGHT"
,"9-FIRE","0-ABORT"
1060 PRINT  AT 21,5; FLASH 1;"PR
ESS ANY KEY TO START": PAUSE 0

1070 BORDER 1: PAPER 1: INK 7: C
LS
1080 INPUT "   ENTER LEVEL OF PL
AY (1-9)       **Easy-Hard**"; AT
 10,0;LP: IF LP<1 OR LP>9 THEN
GO SUB 1110: GO TO 1080
1085 GO SUB 3600
1090 INPUT "  HOW MANY SHOTS DO
YOU WANT    (27-99)"; AT 10,2;ST
S: IF STS<27 OR STS>99 THEN  GO
SUB 1110: GO TO 1090
1095 LET ST=STS
1100 INPUT "HOW MANY CHANCES DO
YOU WANT PER LETTER (2-5)"; AT 1
0,2;CH: IF CH<2 OR CH>5 THEN  GO
 SUB 1110: GO TO 1100
1105 LET D=CH: RETURN
1110 PRINT  AT 18,6;"ERROR;,Plea
se Retype": BEEP .5,-10: CLS
1120 RETURN
1300 LET LC= LEN A$: IF LC=0 OR
A$="" THEN  LET M$="SUCCESSFULL
COMPLETION": GO TO 5000
1305 IF LC=0 THEN  RETURN
1310 LET RD= INT ( RND *LC)+1: L
ET L$=A$(RD): LET A$=A$( TO RD-1
)+A$(RD+1 TO )
1320 RETURN
2000 PRINT  AT 11,3; BRIGHT 1;"W
ATCH THE SCREEN CAREFULLY": PAUS
E 250
2010 CLS : FOR A=10 TO 15 STEP 2
: FOR B=2 TO 26 STEP 3: GO SUB 1
300: PRINT  PAPER ( RND *7); INK
 9; BRIGHT 1; AT A,B+n;L$: BEEP
1/LP,0: PRINT  AT A,B+n; INK 2;
PAPER 2;L$: NEXT B: LET n=n+1: N
EXT A
2020 PRINT  INK 2; PAPER 6; AT 3
,8;"LETTER TO GET:"; AT 5,4;"SHO
TS LEFT:"; AT 5,18;"CHANCES:"; A
T 7,12;"SCORE:"
2030 PRINT  AT 20,3;"Level:";P$,
"Hi-score:";H
2035 RESTORE 2050
2040 PLOT 7,23: DRAW 231,0: DRAW
 0,80: DRAW -231,0: DRAW 0,-80:
FOR A=1 TO 5: READ X,Y,Z: PLOT X
,Y: DRAW Z,0: DRAW 0,10: DRAW -Z
,0: DRAW 0,-10: NEXT A
2050 DATA 92,111,86,27,127,113,1
40,127,78,60,143,127,21,7,211
2060 RETURN
2100 INK 7: PAPER 1: PRINT  AT 5
,26;D; AT 5,15;STS; OVER 1; INK
1;" "; AT 7,18; INK 7; OVER 0;(
INT SCR AND SCR>0)+0; OVER 1; IN
K 1;" "; OVER 0; AT 3,22; INK 7;
 FLASH 1;L$
2110 BORDER 1: PAPER 1: INK 7: R
ETURN
2200 FOR A=65 TO 90: LET A$=A$+
CHR$ A: NEXT A: LET A$=A$+"#": L
ET L= LEN A$: LET B$=A$
2210 RETURN
```

MEMORY BOXES



```
3000 LET L=17: LET STS=STS-1: IF
 STS<0 THEN  LET M$="YOU RAN OUT
 OF SHOTS": GO TO 5000
3010 IF  SCREEN$ (L,C) <> " " TH
EN  GO TO 3050
3020 PRINT  AT L,C;"!": BEEP .00
1,L+3: PRINT  AT L,C; OVER 1;"!"

3030 LET L=L-1: GO TO 3010
3050 LET C$= SCREEN$ (L,C): PRIN
T  AT L,C; INK ( RND *7); PAPER
9; BRIGHT 1;C$: BEEP 1/LP,5: PRI
NT  AT L,C; INK 2; PAPER 2;C$
3060 IF C$=L$ THEN  GO SUB 3100:
 LET SCR=SCR+10+3*(D/CH): PRINT
 AT L,C; FLASH 1;"*": LET D=CH:
GO SUB 1300: GO SUB 2100: RETURN

3065 IF C$="#" THEN  PRINT #0; A
T 0,0;"BAD SHOT LESS FIVE SHOTS"
: BEEP 1,-30: LET STS=STS-5: GO
SUB 2100: PRINT #0; AT 0,0; TAB
31;: RETURN
3070 IF C$="*" THEN  PRINT #0; A
T 0,0;"BAD SHOT LESS FIVE POINTS
": BEEP 1,-30: LET SCR=SCR-5: GO
 SUB 2100: PRINT #0; AT 0,0; TAB
 31;: RETURN
3080 LET SCR=SCR-1: LET D=D-1: I
F D<1 THEN  LET D=CH: LET A$=A$+
L$: FOR G=1 TO 3: BEEP .07,20: N
EXT G: LET SCR=SCR-5: GO SUB 130
0: GO SUB 2100: RETURN
3090 GO SUB 2100: RETURN
3100 FOR G=0 TO 6: BORDER G: BEE
P .01,G*9: NEXT G: BORDER 1: RET
URN
3500 RESTORE 3510: FOR A= USR "A
" TO  USR "A"+7: READ X: POKE A,
X: NEXT A
3510 DATA 0,24,24,24,24,126,255,
126
3520 RETURN
3600 RESTORE 3610: FOR G=1 TO LP
: READ P$: NEXT G
3610 DATA "ONE","TWO","THREE","F
OUR","FIVE","SIX","SEVEN","EIGHT
","NINE"
3620 RETURN
5000 PAPER 0: PRINT  AT 21,0: PO
KE 23692,-1: FOR A=0 TO 27: PRIN
T : NEXT A
5010 PRINT  AT 1,10; INK 1; PAPE
R 6;"MEMORY BOXES"; AT 1,10; OVE
R 1;"____________"
5020 PRINT  INK  RND *7; PAPER 9
; FLASH 1; AT 3, ABS ((32- LEN M
$)/2);M$
5025 LET LC=LC+1
5030 PRINT  AT 5,2; BRIGHT 1;"YO
U SHOT ";("ALL THE" AND LC <= 0)
;("NONE OF THE " AND LC=27);( ST
R$ (27-LC) AND LC>0);" LETTER";(
"S" AND LC<26); AT 6,1;"It took
you ";ST-STS;" shots to do it"

5035 IF SCR<0 THEN  LET SCR=0
5040 LET PR= INT (SCR/2.95)
5050 PRINT  AT 8,2; PAPER  RND *
7; INK 9;"Your final score was "
; INT SCR; AT 9,6;"This is ";PR;
"%"
5060 LET M$=("YOU MUST HAVE CHEA
TED" AND PR >= 90)+("WELL DONE Y
OU HAVE A GOOD MEMORY" AND PR >=
 70 AND PR<90)+("AN AVERAGE EFFO
RT" AND PR >= 60 AND PR<70)+("NE
EDS IMPROVEMENT" AND PR >= 45 AN
D PR<60)+("A PRETTY POOR EFFORT"
 AND PR >= 30 AND PR<45)+("GO BU
Y A ZX81" AND PR >= 20 AND PR<30
)+("FORGET IT" AND PR<20)
5070 PRINT  AT 11, ABS ((32- LEN
 M$)/2); INVERSE 0; BRIGHT 1; FL
ASH 1;M$
5080 IF SCR>H THEN  FOR g=1 TO 5
: BEEP .1,g*5: NEXT g: PRINT  AT
 15,1; INK 6; PAPER 0;"YOU HAVE
BEATEN THE HIGH SCORE": INPUT "P
lease input your name"; AT 4,0;N
$: LET H= INT SCR
5090 PRINT  AT 15,1;"The high sc
ore is ";H; TAB 38;" by ";N$
6000 PRINT  AT 20,3; PAPER 3; IN
K 7;"PRESS SPACE TO PLAY AGAIN"

6010 PAUSE 200: LET A$= INKEY$ :
 IF A$="" THEN  GO TO 6010
6020 IF A$=" " THEN  CLS : GO TO
 20
6030 STOP
```

GHOSTBLASTER



```
  1 GOSUB 800
  5 CLS
  6 POKE 16418,0
 10 PRINT "
 20 PRINT "
 25 PRINT "          GHOSTBUSTERS
 30 FOR Y=30 TO 23 STEP -1
 40 PRINT AT 8,Y;"▀"
 50 IF INKEY$="F" THEN GOTO 500
 60 IF Y=23 THEN GOTO 80
 70 NEXT Y
 80 PRINT AT 8,24;"▄"
 90 FOR Y=22 TO 19 STEP -1
100 PRINT AT 8,Y;"▀"
110 IF INKEY$="F" THEN GOTO 500
120 IF Y=19 THEN GOTO 140
130 NEXT Y
140 PRINT AT 8,20;"▌"
150 FOR Y=18 TO 9 STEP -1
160 PRINT AT 8,Y;"▀"
170 IF INKEY$="F" THEN GOTO 500
180 IF Y=9 THEN GOTO 200
190 NEXT Y
200 PRINT AT 8,10;"▐"
210 FOR Y=8 TO 6 STEP -1
220 PRINT AT 8,Y;"▀"
230 IF INKEY$="F" THEN GOTO 500
240 IF Y=6 THEN GOTO 260
241 PRINT AT 8,5;"▐"
250 NEXT Y
260 PRINT AT 8,7;"▐"
261 PRINT AT 8,6;" "
262 PRINT AT 8,5;"▐"
270 FOR Y=4 TO 0 STEP -1
280 PRINT AT 8,Y;"▀"
290 IF INKEY$="F" THEN GOTO 500
300 IF Y=0 THEN GOTO 330
301 PRINT AT 8,5;"▐"
310 NEXT Y
330 PRINT AT 8,0;" "
331 PRINT AT 8,5;"▐"
340 GOTO 30
350 STOP
500 PRINT AT 18,5;"▄";AT 17,6;"
▄";AT 16,7;"▄";AT 15,8;"▄";AT 14
,9;"▄";AT 13,10;"▄";AT 12,11;"▄"
;AT 11,12;"▄";AT 10,13;"▄";AT 9,
14;"▄";AT 8,15;"▄";AT 7,16;"▄";A
T 6,17;"▄";AT 5,18;"▄";AT 4,19;"
▄";AT 3,20;"▄";AT 2,21;"▄"
510 PRINT AT 18,25;"▄";AT 17,24
;"▄";AT 16,23;"▄";AT 15,22;"▄";A
T 14,21;"▄";AT 13,20;"▄";AT 12,1
9;"▄";AT 11,18;"▄";AT 10,17;"▄";
AT 9,16;"▄";AT 8,15;"▄";AT 7,14;
"▄";AT 6,13;"▄";AT 5,12;"▄";AT 4
,11;"▄";AT 3,10;"▄";AT 2,9;"▄"
520 PRINT AT 8,Y;"▀"
530 IF Y=15 THEN GOTO 700
540 PRINT AT 0,0;"GAME OVER"
550 FOR N=0 TO 30
560 NEXT N
570 CLS
580 PRINT "BAD LUCK-GOZER THE G
OZERIAN HAS DEFEATED THE WORLD."
590 PRINT "PRESS ANY KEY TO PLA
Y AGAIN"
600 IF INKEY$="" THEN GOTO 600
610 RUN
620 STOP
700 PRINT AT 0,0;"WELL DONE"
710 FOR N=0 TO 30
720 NEXT N
730 CLS
740 PRINT "WELL DONE-YOU HAVE D
EFEATED     GOZER THE GOZERIAN A
ND YOU HAVE SAVED THE WORLD."
750 PRINT "BUT OH DEAR-GOZER IS
 PLANNING    ANOTHER ATTACK."
760 PRINT "PRESS ANY KEY TO PLA
Y AGAIN"
770 IF INKEY$="" THEN GOTO 770
780 RUN
790 STOP
800 CLS
810 PRINT TAB 10;"GHOSTBUSTERS"
;TAB 10;"============"
820 PRINT
830 PRINT "YOU ARE A GHOSTBUSTE
R AND YOU    MUST SAVE THE WORLD
FROM AN      ECTOPLASMIC PLAGUE O
F GHOSTS."
840 PRINT "PRESS KEY F TO FIRE
THE STREAMS WHEN YOU THINK THE G
HOST IS IN   THE CORRECT POSITION
."
850 PRINT "YOU ONLY NEED TO CAT
CH GOZER     ONCE TO SAVE THE WOR
LD."
860 PRINT "BUT IF YOU MISS THE
WORLD IS     THEIRS."
870 PRINT "PRESS ANY KEY TO CON
TINUE."
880 IF INKEY$="" THEN GOTO 880
890 CLS
900 PRINT "
910 PRINT
920 PRINT
930 PRINT "PRESS ANY KEY TO PLA
Y"
940 IF INKEY$="" THEN GOTO 940
950 RETURN
960 STOP
970 SAVE "GHOSTBUSTERS"
980 REM BY J.ANDREWS
990 STOP
```

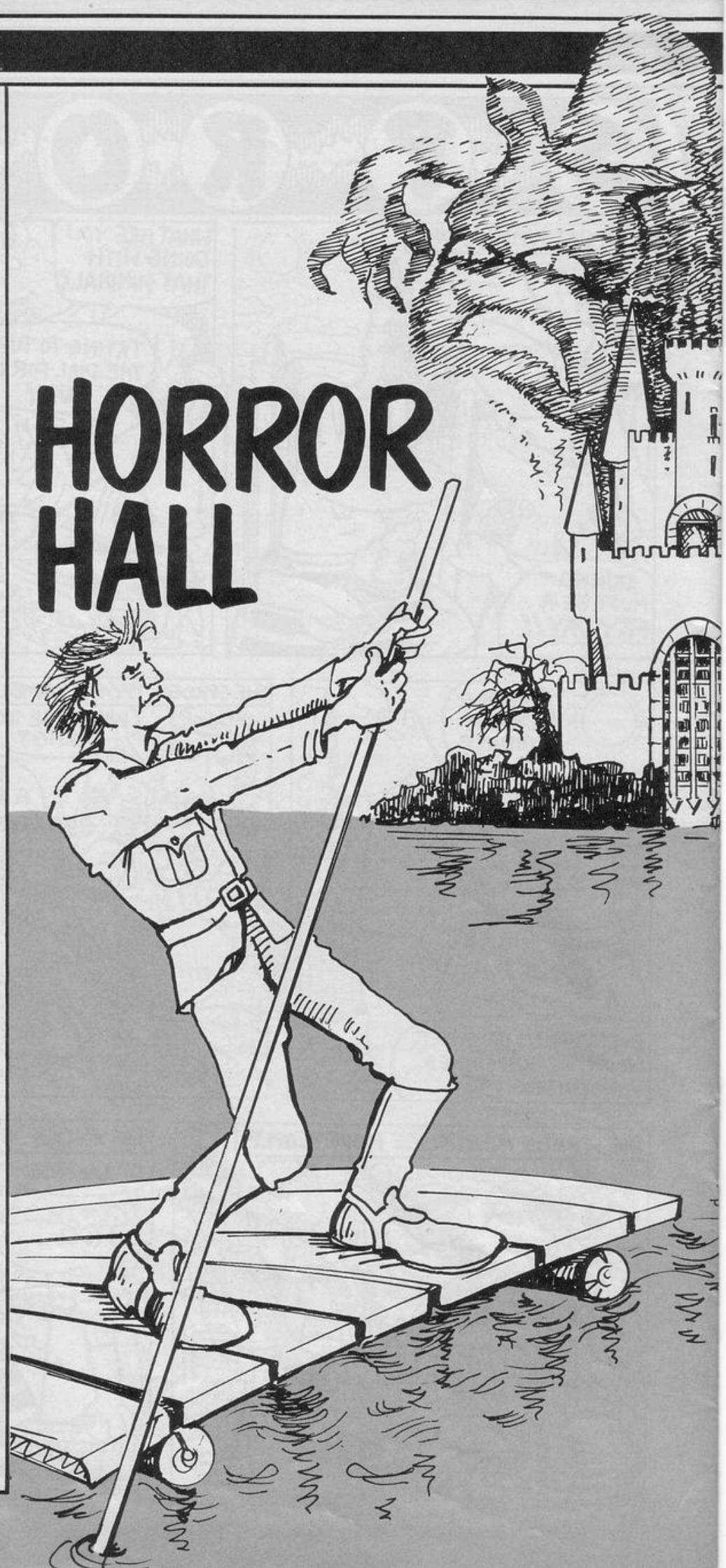
Your town has been invaded by nasty ghosts intent on taking over all the buildings and haunting them. Armed with your death gun it is up to you to save the town.

Jonathan Andrews from Frome wrote Ghostblaster for the 16K ZX-81.

SPROGS

IT'S A HOT SUMMERS DAY..
WHY IS IT SO HOT?
DUNNO - MUST BE A FRY DAY!!
WHAT ARE YOU DOING WITH THAT SUNDIAL?
TRYING TO TURN THE DIAL FOR LESS SUN!
THE ONLY THING TO DO IN THIS SORT OF HEAT IS TO GO ON A PIC-NIC!
FEELING BRAINY TODAY?
WAR & PEACE
EVERYTHING'S BRIGHTER WHEN THE SUN SHINES - INCLUDING ME!
THE SPROGS PASS A RAMBLER
WHAT ARE YOU DOING?
THE ANTS DO LOVE A PICNIC, SO WE'RE GIVING THEM A LIFT
HAMPER
SCRATCH
SCRATCH
SCRATCH
ITCH
ITCH
THE SPROGS MEET SOME MORE PEOPLE
?
?
?
THE SPROGS JOIN THE GROUP
OF COURSE - THE ONLY THING TO DO ON A HOT SUMMERS DAY -
SET OFF FOR THE SINCLAIR PROGRAMS HOLIDAY!

```
  2 LET A=0
  3 LET O=0
  4 LET P=30
  5 LET L=18
  6 LET I=19
  8 PRINT AT 21,0;"BY M.ESSERS"
  9 FOR D=0 TO 21
 10 PRINT AT D,0;"                "
 11 NEXT D
 12 IF A>0 THEN GOTO 15
 13 LET C=0
 14 LET Z=8
 15 LET W=31
 16 LET Q=4
 20 PRINT AT 2,10;"  ▄▄▄▄  "
 21 PRINT AT 3,10;" ▐    ▌ "
 22 PRINT AT 4,10;" ▐    ▌ "
 23 PRINT AT 5,11;"▐      ▌"
 24 PRINT AT 6,11;"▐      ▌"
 25 PRINT AT 7,11;"▐      ▌"
 26 PRINT AT 8,11;"▐      ▌"
 27 PRINT AT 9,10;"▐▄▄▄▄▄▄▌"
 28 PRINT AT 10,10;"▐      ▌"
 29 PRINT AT 11,10;"▐      ▌"
 31 PRINT AT 7,5;"▒";AT 8,8;"▒"
;AT 8,21;"▒";AT 9,9;"▒";AT 10,22
;"▒";AT 11,6;"▒";AT 12,13;"▒";AT
 13,8;"▒";AT 13,15;"▒";AT 14,10;
"▒";AT 13,19;"▒";AT 15,16;"▒"
 32 PRINT AT 1,15;"▒";AT 2,5;"▒
";AT 2,21;"▒";AT 4,7;"▒";AT 5,23
;"▒";AT 6,7;"▒";AT 6,9;"▒";AT 6,
20;"▒"
 33 PRINT AT 21,31;"X"
 34 LET R=0
 35 PRINT AT 3,18;"$";AT 3,11;"
$";AT 10,11;"$";AT 10,18;"$"
 36 LET X=21
 37 LET Y=12
 38 SLOW
100 IF X<>18 AND X<>19 THEN GOT
O 102
101 GOTO 109
102 PRINT AT X,Y;"▒"
109 LET Y=Y+(INKEY$="8" AND Y<3
1)-(INKEY$="5" AND Y>0)
110 LET X=X+(INKEY$="6" AND X<2
1)-(INKEY$="7" AND X>0)
111 GOTO 150
112 LET X=X+1
113 GOTO 150
114 LET Y=Y-1
115 GOTO 150
116 LET X=X-1
117 GOTO 150
118 LET Y=Y+1
150 PRINT AT X,Y;
159 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▒" THEN GOTO 183
165 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "X" THEN GOTO 5800
169 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▐" THEN GOTO 118
170 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▌" THEN GOTO 118
171 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▄" THEN GOTO 116
172 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▀" THEN GOTO 116
173 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▝" THEN GOTO 114
174 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▘" THEN GOTO 114
175 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▟" THEN GOTO 225
176 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▙" THEN GOTO 1000
177 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▜" THEN GOTO 112
178 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▗" THEN GOTO 112
179 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▖" THEN GOTO 112
180 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▛" THEN GOTO 112
181 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE ":" THEN GOTO 2000
183 PRINT "▒"
184 IF X<>18 AND X<>19 THEN GOT
O 186
185 PRINT AT X,Y;"▒"
186 FOR U=18 TO 19
188 PRINT AT U,0;"                "
190 NEXT U
199 IF X<17 THEN GOTO 1050
200 PRINT AT I,O;"▒▒"
210 LET O=O+1
211 IF O=30 THEN LET O=0
215 PRINT AT L,P;"▒▒"
216 LET P=P-1
217 IF P=0 THEN LET P=30
222 GOTO 300
225 PRINT AT X,Y;"▒"
226 CLS
227 PRINT AT 10,0;"YOU ARE DROW
NED IN THE MOAT..."
228 PRINT "YOU FOUND $";A
229 STOP
300 IF X>17 THEN GOTO 500
310 IF X=INT Z AND Y=INT C THEN
 GOTO 510
314 PRINT AT Z,C;"▒"
315 LET Z=Z+(.5 AND Z<X)-(.5 AN
D Z>X)
320 LET C=C+(.5 AND C<Y)-(.5 AN
D C>Y)
325 PRINT AT Z,C;
329 IF INT Z=X AND INT C=Y THEN
 GOTO 510
330 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▒" THEN GOTO 389
331 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▒" THEN GOTO 1100
332 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▙" THEN GOTO 1120
```



A treasure trove lies somewhere in the hall.

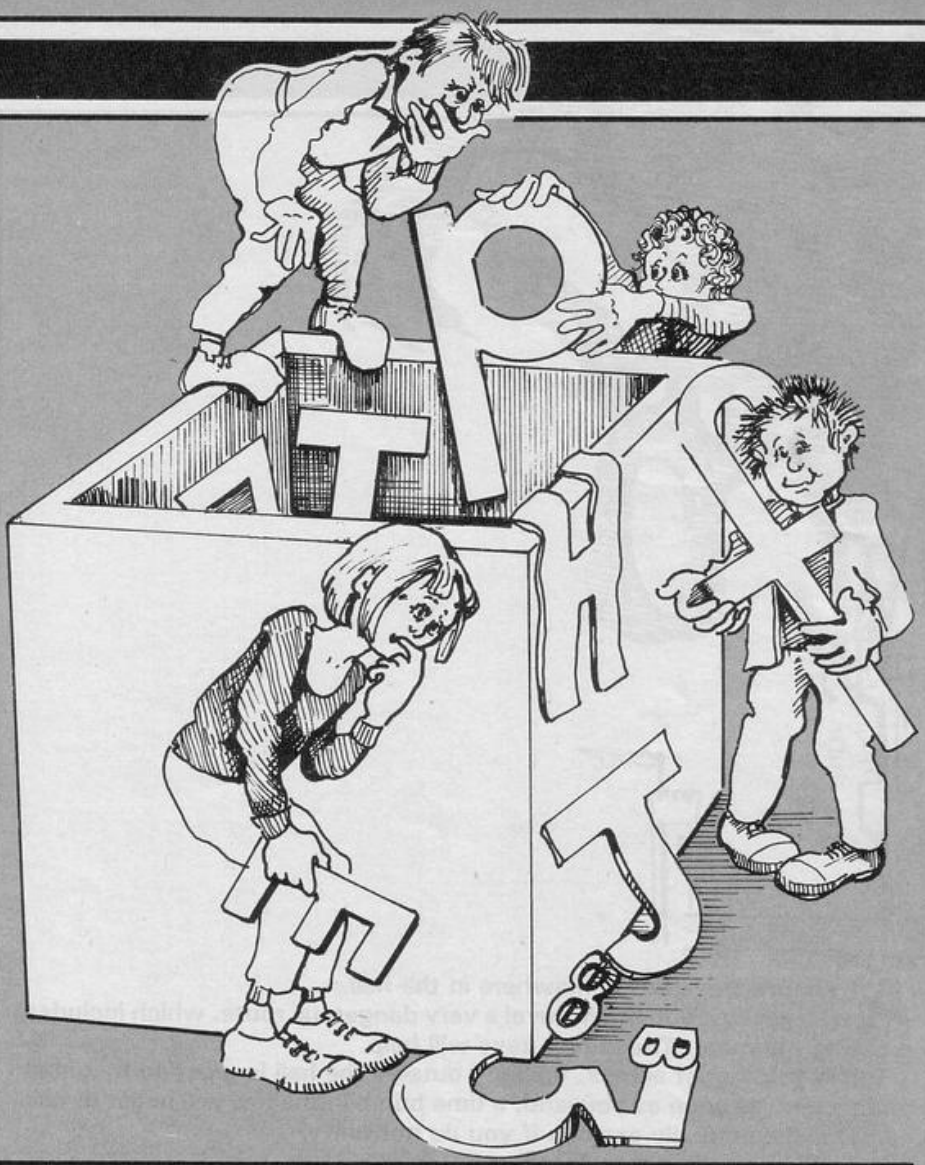
To get to it you must travel a very dangerous route, which includes crossing the moat. The cursor keys will help.

When you do get across, the land outside the hall is guarded by ghost patrols and, as soon as you land, a time bomb in the hall will begin to tick away, and eventually explode if you do not hurry.

Horror Hall was written for the 16K ZX-81.

```
  333 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▄" THEN GOTO 1120
  334 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▀" THEN GOTO 1120
  335 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▌" THEN GOTO 1135
  336 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▐" THEN GOTO 1145
  337 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▄" THEN GOTO 1145
  338 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▀" THEN GOTO 1145
  340 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▌" THEN GOTO 1155
  341 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▐" THEN GOTO 1155
  342 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE ":" THEN GOTO 1135
  346 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▗" THEN GOTO 1120
  389 PRINT AT Z,C;"""
  399 REM ************************
*
  440 IF X=INT Q AND Y=INT W THEN
 GOTO 510
  441 PRINT AT Q,W;"▀"
  445 LET Q=Q+(.5 AND Q<X)-(.5 AN
D Q>X)
  446 LET W=W+(.5 AND W<Y)-(.5 AN
D W>Y)
  457 PRINT AT Q,W;
  458 IF INT Q=X AND INT W=Y THEN
 GOTO 510
  459 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▀" THEN GOTO 489
  460 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▙" THEN GOTO 1520
  461 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▄" THEN GOTO 1520
  462 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▗" THEN GOTO 1520
  463 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▀" THEN GOTO 1520
  464 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▀" THEN GOTO 1500
  465 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▛" THEN GOTO 1545
  466 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▌" THEN GOTO 1535
  467 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE ":" THEN GOTO 1535
  468 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▀" THEN GOTO 1545
  469 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▄" THEN GOTO 1545
  470 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▌" THEN GOTO 1555
  471 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▜" THEN GOTO 1555
  489 PRINT """"
  500 GOTO 100
  510 FOR D=1 TO 10
  511 PRINT AT X,Y;""""
  512 NEXT D
  513 CLS
  514 PRINT AT 10,0;"YOU HAVE BEE
N KILLED BY A GHOST"
  515 PRINT "YOU FOUND $";A
  516 STOP
  610 STOP
1000 PRINT AT X-1,Y-1;"▗▛▖";TAB
Y-2;"▐▟▙▌";TAB Y-1;"▝▜▘"
1005 PRINT AT X-1,Y-1;"▗▛▖";TAB
Y-2;"▐▝▘▌";TAB Y-1;"▝▜▘"
1010 PRINT AT X-1,Y-1;"▗▛▖";TAB
Y-2;"▐▚▞▌";TAB Y-1;"▝▜▘"
1015 PRINT AT X-1,Y-1;"▗▛▖";TAB
Y-2;"▝▀▀▘";TAB Y-1;"▝▀▘"
1020 FOR S=1 TO 10
1021 NEXT S
1023 CLS
1025 PRINT AT 10,0;"YOU WALKED O
N A MINE..."
1027 PRINT "YOU FOUND $";A
1030 STOP
1050 LET P=30
1060 LET L=18
1070 LET I=19
1080 LET O=0
1090 GOTO 300
1100 PRINT """"
1110 PRINT AT Z,C;"▀"
1111 GOTO 315
1120 LET Z=Z+1
1130 GOTO 325
1135 LET C=C-1
1140 GOTO 325
1145 LET Z=Z-1
1150 GOTO 325
1155 LET C=C+1
1160 GOTO 325
1500 PRINT """"
1510 PRINT AT Q,W;"▀"
1511 GOTO 445
1520 LET Q=Q+1
1530 GOTO 457
1535 LET W=W-1
1540 GOTO 457
1545 LET Q=Q-1
1550 GOTO 457
1555 LET W=W+1
1560 GOTO 457
2000 LET G=6
2001 LET T=18
2002 LET X=6
2003 LET Y=11
2010 LET E=6
2011 LET L=0
2030 PRINT AT X,Y;" "
2033 LET X=X+(INKEY$="6")-(INKEY
$="7")
2035 LET Y=Y+(INKEY$="8")-(INKEY
$="5")
2040 PRINT AT X,Y;
2044 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE " " THEN GOTO 2058
2045 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▌" THEN GOTO 3010
2046 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▗" THEN GOTO 3010
2047 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▀" THEN GOTO 3010
2048 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▙" THEN GOTO 3030
2049 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▛" THEN GOTO 3030
2050 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▀" THEN GOTO 5500
2051 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▄" THEN GOTO 3050
2052 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▀" THEN GOTO 3050
2053 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▀" THEN GOTO 3070
2054 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▌" THEN GOTO 3030
2055 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "$" THEN GOTO 5000
2056 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▄" THEN GOTO 4100
2058 PRINT "▀"
2060 IF X=3 AND Y=11 OR X=10 AND
 Y=11 OR X=10 AND Y=18 THEN GOTO
 5005
2065 IF X=3 AND Y=18 THEN GOTO 4
200
2099 IF D=1 THEN GOTO 2200
2100 LET E=E-.5
2105 PRINT AT 3,18;INT E
2110 IF INT E=0 THEN GOTO 3300
2200 IF L=1 THEN GOTO 3000
2201 PRINT AT G,T;" "
2204 LET G=G+(.5 AND G<X)-(.5 AN
D G>X)
2205 LET T=T+(.5 AND T<Y)-(.5 AN
D T>Y)
2210 PRINT AT G,T;
2219 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE " " THEN GOTO 2235
2220 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▀" THEN GOTO 4100
2223 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▌" THEN GOTO 4000
2224 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▗" THEN GOTO 4000
2225 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▀" THEN GOTO 4000
2226 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▛" THEN GOTO 4005
2227 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▌" THEN GOTO 4005
2228 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▙" THEN GOTO 4005
2229 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▄" THEN GOTO 4020
2230 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▀" THEN GOTO 4020
2231 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▀" THEN GOTO 4010
2232 IF PEEK (256*PEEK 16399+PEE
K 16398)=CODE "▀" THEN GOTO 4010
2235 PRINT "▀"
3000 GOTO 2030
3010 LET Y=Y+1
3020 GOTO 2040
3030 LET Y=Y-1
3040 GOTO 2040
3050 LET X=X+1
3060 GOTO 2040
3070 LET X=X-1
3080 GOTO 2040
3301 FOR U=0 TO 21
3302 PRINT AT U,0;"
"
3304 NEXT U
3305 PRINT AT 10,0;" THE BOMB HA
S EXPLODED AND YOU  ARE DEATH "
3306 PRINT AT 13,0;"  YOU FOUND $
";A
3310 STOP
4000 LET T=T+.5
4001 GOTO 2210
4005 LET T=T-.5
4006 GOTO 2210
4010 LET G=G+.5
4015 GOTO 2210
4020 LET G=G-.5
4022 GOTO 2210
4100 FOR U=1 TO 15
4110 PRINT AT X,Y;"▄"
4120 PRINT AT X,Y;" "
4130 NEXT U
4140 CLS
4150 PRINT AT 10,0;"YOU HAVE BEE
N EATEN BY A DRAGON"
4152 PRINT "YOU FOUND $";A
4155 STOP
4200 LET D=1
4210 PRINT AT G,T;" "
4220 LET G=6
4230 LET T=14
4240 GOTO 2200
5000 LET A=A+10
5005 PRINT AT G,T;" "
5010 LET G=6
5020 LET T=14
5030 GOTO 2030
5500 PRINT AT Z,C;"▀"
5501 LET C=C-3
5502 PRINT AT Z,C;""""
5503 PRINT AT X,Y+1;"▌"
5504 PRINT AT G,T;" "
5510 GOTO 100
5800 FAST
5810 GOTO 3
```

PUZZLED



Jumbled letters and numbers are contained in a cube. Test your skills and place them in their correct ascending order.

Puzzled was written for the 16K ZX-81 by V Yates from Mid Lothian.

```
   9 REM  GOTO INSTRUCTIONS
  10 GOTO 4000
  11 GOTO 4500
  15 REM  FILL SCREEN WITH " "
  17 FOR X=0 TO 21
  18 PRINT AT X,0;"
                                "
  19 NEXT X
  20 PRINT AT 0,4;" COPYRIGHT UY
SOFT 1984 "
  30 GOSUB 1000
  40 LET A=0
  50 LET B=1
  59 REM  B$=INVERSE OF A$((A+4)+B
  60 LET F=CODE A$((A+4)+B)+128
  61 LET B$=CHR$ F
  62 PRINT AT A+11,B+10;B$
  69 REM  C$=INKEY$
  70 LET C$=INKEY$
  80 IF C$="" THEN GOTO 70
  85 PRINT AT A+11,B+10;A$((A+4)
+B)
  90 IF C$="5" AND B>1 THEN LET
B=B-1
 100 IF C$="8" AND B<4 THEN LET
B=B+1
 110 IF C$="6" AND (A+1)<4 THEN
LET A=A+1
 120 IF C$="7" AND (A+1)>1 THEN
LET A=A-1
 125 IF INKEY$="0" THEN GOTO 380
0
 130 IF C$="0" THEN GOSUB 500
 140 IF A$="123456789ABCDEF " AN
D A=3 AND B=4 THEN GOTO 3000
 150 GOTO 60
 500 IF A$((A+4)+B)=" " THEN RET
URN
 510 FOR C=1 TO 15
 520 IF A$(C)=" " THEN GOTO 531
 530 NEXT C
 535 GOTO 2000
 539 REM  SPACE BACK
 540 FOR D=C TO ((A+4)+B+1) STEP
 -1
 550 LET A$(D)=A$(D-1)
 560 NEXT D
 570 LET A$(D)=" "
 580 GOSUB 1000
 590 RETURN
 599 REM  SPACE FORWARD
 600 FOR D=C TO ((A+4)+B-1) STEP
 1
 610 LET A$(D)=A$(D+1)
 620 NEXT D
 630 LET A$(D)=" "
 640 GOSUB 1000
 650 GOTO 585
 699 REM  SPACE UP
 700 FOR D=(C) TO ((A+4)+B+1) ST
EP -4
 710 LET A$(D)=A$(D-4)
 720 NEXT D
 730 GOTO 630
 799 REM  SPACE DOWN
 800 FOR D=C TO ((A+4)+B-1) STEP
 4
 810 LET A$(D)=A$(D+4)
 820 NEXT D
 830 GOTO 630
 999 REM  PRINT UP PUZZLE
1000 PRINT AT 21,0;" PLEASE WAIT
 "
1001 PRINT AT 11,10;"▌";A$(1 TO
 4);"▌";AT 12,10;"▌";A$(5 TO 8);"
▌";AT 13,10;"▌";A$(9 TO 12);"▌";
AT 14,10;"▌";A$(13 TO 16);"▌"
1080 PRINT AT 9,10;"PUZZLE";AT 1
0,10;"▛▀▀▀▀▜";AT 15,10;"▙▄▄▄▄▟"
1085 PRINT AT 21,0;"
     "
1090 RETURN
1999 REM  FIND NEW SPACE PLACE
2000 LET NO=0
2001 LET J=A+4+B
2002 IF (C+1)=J OR (C+2)=J OR (C
+3)=J THEN LET NO=600
2010 IF (C-1)=J OR (C-2)=J OR (C
-3)=J THEN LET NO=540
2020 IF C-4=J OR C-8=J OR C-12=J
 THEN LET NO=700
2030 IF C+4=J OR C+8=J OR C+12=J
 THEN LET NO=800
2040 IF NO=0 THEN LET NO=60
2050 GOTO NO
2999 REM  PRINT SUCCED
3000 FOR A=1 TO 30
3001 NEXT A
3002 CLS
3010 PRINT AT 4,1;"C O N G R A T
U L A T I O N S"
3020 PRINT AT 8,10;"YOU SUCCEDED
"
3030 PRINT AT 12,10;"AGAIN (Y/N)
"
3040 IF INKEY$="Y" THEN RUN
3050 IF INKEY$="N" THEN STOP
3060 PRINT AT 12,10;"AGAIN (Y/N)
"
3070 GOTO 3030
3499 REM  RANDOM NO. AND LE.
3500 LET D$=""
3505 LET A$=""
3510 LET C$="123456789ABCDEF "
3515 LET A=INT (RND*(LEN C$))+1
3530 LET A$=A$+C$(A)
3550 LET D$=C$(1 TO A-1)
3560 LET D$=D$+C$(A+1 TO LEN C$)
3580 IF LEN A$=15 THEN GOTO 3700
3590 LET C$=D$
3600 GOTO 3515
3740 GOTO 11
3800 PRINT AT 3,5;"QUIT (Y/N)"
3810 IF INKEY$="Y" THEN GOTO 387
0
3820 IF INKEY$="N" THEN GOTO 385
0
3830 GOTO 3810
3850 PRINT AT 3,13;"N"
3851 FOR M=1 TO 40
3852 NEXT M
3853 PRINT AT 3,5;"          "
3860 GOTO 60
3870 PRINT AT 3,11;"Y"
3880 FOR A=1 TO 40
3890 NEXT A
3895 CLS
3896 GOTO 3030
4000 PRINT TAB 8;"PUZZEL BY V.YA
TES"
4001 PRINT AT 2,0;"THE OBJECT OF
 THIS PUZZLE IS TO ARRANGE THE L
ETTERS AND NUMBERS INTO ORDER, E
G.123456789ABCDEF  WITH THE SPAC
E IN THE BOTTOM    RIGHT HAND CO
RNER."
4005 PRINT
4010 PRINT "    KEYS    "
4011 PRINT "------------"
4015 PRINT
4020 PRINT "5).GO LEFT
            6).GO DOWN
            7).GO UP
            8).GO RIGHT
            0).POSITION SPACE"
4025 PRINT "0).QUIT"
4030 PRINT AT 19,0;"PLEASE WAIT.
.....
4040 PRINT AT 21,0;"      COPYRI
GHT UYSOFT 1985      "
4050 GOTO 3500
4500 PRINT AT 19,0;"PRESS ANY KE
Y....."
4501 LET N$=" COPYRIGHT UYSOFT 1
984    PLAY IT IF YOU DARE.....
.......PUZZLE FOR THE 16K ZX81
"
4502 PRINT AT 21,0;N$(1 TO 32)
4510 LET N$=N$(2 TO )+N$(1)
4520 IF INKEY$="" THEN GOTO 4502
4530 GOTO 12
6000 REM       VARIBLES
6005 REM ==================
6010 REM  A AND B=CURSOR POS.
6020 REM  C,  AND M=LOOP VAR.
6030 REM  A$=NO.'S AND LETTERS
6040 REM     ON BOARD
6050 REM  C$=INKEY$
6060 REM  N$=MOVING LINE
6070 REM  B$=INVERS OF A$ AT
6080 REM     CURSOR POSITION
6090 REM  D=POS. OF SPACE
6100 REM  D=LOOP VAR FOR
6110 REM     SPACE MOVE
6120 REM  J=A+4+B
6130 REM  NO=LINE TO GOTO
6140 REM     SPACE FIND
6150 REM  SAVED AS "0"
6160 REM  WRITTEN BY V. YATES
6165 REM ==================
6165 REM I LINE AT -
6170 REM ==================
6180 REM = MR V. YATES      =
6190 REM = 5 APPLE TERRACE  =
6200 REM = BONNYRIGG        =
6210 REM = MIDLOTHIAN       =
6220 REM = EH19 2BU.        =
6230 REM ==================
6240 SAVE "0"
6250 LIST 6160
6260 IF INKEY$="" THEN GOTO 6250
6270 CLS
6280 RUN
```

SINCLAIR PROGRAMS COMPUTER HOLIDAY

DOLPHIN

Sinclair Programs and Dolphin Holidays have combined to produce a computer holiday offer unique to this magazine.
All participants will have exclusive use of a Spectrum (or a ZX-81 if you so choose), help from a computer expert, access to the camp's extensive software library and to a vast variety of hardware ranging from speech synthesis systems to robot buggies.

Also available on the camps will be an enormous range of sports and activities. Tennis, swimming, sailing and BMX bikes are just a few of the options available when you are not computing.

The Basic Holiday: Down from £144 to £134. This course allows you to learn programming and software applications at your own rate as you solve problems in the fantasy adventure world of our hero, Chan. There are opportunities to explore everything from Logo to machine code and robot building, all at your own pace.

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Wellington college

ture over £30 worth of top quality software free to participants; a visit from the editorial team of *Sinclair Programs* to explain how a computer magazine is produced; on the spot evaluation of your software for inclusion in *Sinclair Programs,* visits from top games programmers and much more.

The Sinclair Program will run at Wellington College, Crowthorne, Berkshire for a week, beginning on August 3rd, 1985. It is open to all readers aged 12-17.

To apply for any of the holidays, simple complete the form below, make sure your parent or guardian has signed it, and post it to Dolphin Holidays.

See you at Wellington College!

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CENTRE	AGE	START DATES
Welwyn	8-12 years	20-27 July 3, 10, 17 August
Brighton	8-12 years	20, 27 July 3, 10, 17, 24 August
Crowthorne	8-12 years 12-16 years	20, 27 July 3, 10, 17, 24 August
Harrogate	8-12 years 12-16 years	20, 27 July 3, 10, 17, 24 August

ADVANCED COURSE: £139 + VAT

Harrogate	12-17 years	20, 27 July 3, 10, 17, 24 August
Crowthorne	12-17 years	20, 27 July 3, 10, 17, 24 August

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Wellington College, Crowthorne	12-17 years	3 August

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Please return this to Dolphin Activity Holidays, Sinclair Programs Camps Offer, Haywards Heath, West Sussex RH16 4ZA. DO NOT SEND ANY MONEY. We will contact you and your parents with more details on receipt of this completed form.

Two tone displays jazz up any game

Tony Rickwood deals with Spectrum colours and explains how to fill in your pictures in the fifth part of his machine code series

SPECTRUM colours are a group of attributes, so called because they are only attributable to the main display of graphics and characters. As you know from your Basic programming, there are other attributes beside colour, namely BRIGHT and FLASH. Also, colours are attributable to both PAPER and INK, depending on whether a pixel of the screen display is on or off. This article aims to teach you how to manipulate all attributes with the help of a few small m/c routines.

Machine code is often the only practical way of controlling attributes in an arcade game. Suppose, for example, that you want to change background colour (PAPER) without changing any other attributes. In Basic, this would mean re-printing the whole screen using the new PAPER colours, with very boring results.

With machine code, we can operate directly on the attribute file, just as the scroll routines seen so far have directly manipulated the display file. A separate file is necessary because the display file can only tell the CPU whether a pixel is ON or OFF.

The attribute file occupies locations from 22528 to 23295 (5800H—5AFFH). It is easier to understand than the display file because the 768 bytes it contains have a direct relationship to the 32×24 character positions on the screen.

In other words, the bytes of the attributes file are scanned in the same sequence as characters are printed on the screen. Each attribute byte uses the first three bits (bits 0,1,2) to determine INK colours, the second three bits (bits 3,4,5) for PAPER colours. The last two bits, bits six and seven, set BRIGHT and FLASH respectively. For example, BIN 00111000 means black paper (code=0), white ink (code=7) with FLASH and BRIGHT off.

Two-tone colour contrast

Program one lists a routine to produce a useful two-tone paper colour background, in this example

```
  10 REM Paper colours (top cyan
;bottom green)
  20 LET s=0: FOR i=64000 TO 640
28: READ n: POKE i,n: LET s=s+n:
 NEXT i
  30 READ sum: IF s <> sum THEN
 PRINT "error in data entry - re
type line 40": STOP
  40 DATA 22,40,33,255,87,6,12,1
97,6,32,35,126,230,199,130,119,1
6,248,193,16,242,122,254,32,200,
22,32,24,232,3162
  60 CLEAR 63999: LIST : RANDOMI
ZE  USR 64000: STOP
  70 SAVE "paper" CODE 64000,29
```

```
                10 ;PROGRAM 1: PAPER COLOURS:
                TOP CYAN: BOTTOM GREEN
1628            40          LD   D, 28H
21FF57          50          LD   HL, 57FFH
060C            60 START    LD   B,12
C5              70 ROW      PUSH BC
0620            80          LD   B,32
23              90 COL      INC  HL
7E             100          LD   A,(HL)
E6C7           110          AND   C7H
82             120          ADD  A,D
77             130          LD   (HL),A
10F8           140          DJNZ COL
C1             150          POP  BC
10F2           160          DJNZ ROW
7A             170          LD   A,D
FE20           180          CP    20H
C8             190          RET  Z
1620           200          LD   D, 20H
18E8           210          JR   START
```

Program one

using cyan top and green bottom. Enter and run the Basic and you find the LISTing of the Basic appearing in black ink on the 2-tone paper.

If you look at line 60 of the Basic, you will see that the LISTing is done before the m/c is executed (using RANDOMIZE USR as usual). This proves that the routine changes the PAPER attributes of all character positions without altering the default INK attributes. Try doing this in Basic!

If you want to use this routine in your own Basic program, just type GOTO 70 to save it to tape, and then insert a line in your program like this:

LOAD "paper"CODE: RANDOMIZE USR 64000.

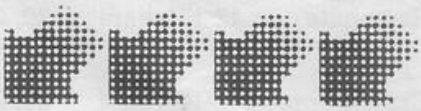
The assembler uses a technique called masking. In effect, every character position has the old PAPER masked out, and the new colour masked in. Before looking at the mask itself, we need to know the codes to be masked in.

Cyan is code five. Ignoring all other attributes to be masked out, this means that we will be masking in BIN 00101000 (hex 28). Green is code 4, for which we mask in BIN 00100000 (hex 20). Line 40 sets register D initially to hold Cyan paper.

As usual, HL is a memory pointer, so in line 50, HL is set to point to the memory location immediately before the start of the attribute file.

As the screen is divided into two halves, we will be dealing with 384 character positions at a time. Using DJNZ loops, this is best thought of as dealing with 12×32 character positions for each paper.

Line 60 loads register B for the outer DJNZ loop in order to count 12 ROWs. The ROW loop starts by stacking the value of B using PUSH BC to avoid confusion with the inner loop counter, which is set up to count 32 COLumns in line 80. The inner loop proper starts in line 90. The first time it is executed will INCrement HL to



point to the first attribute byte which is then loaded into the A register in line 100.

We can now consider the mask itself. A mask hides the bits we do not want to be changed. These are the first two and the last three bits of each byte. So the binary form of a PAPER mask (where PAPER is the attribute we want to be changed) is BIN 1100011 or C7

in hex. So, ANDing the attribute byte in the A register with C7 H wipes over the attribute byte, keeping INK, BRIGHT and FLASH as they are, but wiping clean the PAPER attribute (by re-setting bits 3,4,5). This is done in line 110.

The new PAPER can be added in line 120 and the result loaded back into the attribute file in line 130. Lines 140–160 should be self-explanatory from previous articles.

The whole process from lines 60–160 has to be repeated for the bottom half of the screen to be coloured green. This is done by lines 200–210 which load register D with the new paper colour and then jump back to line 60. First, though, a test is necessary to make sure the bottom half has not already been done. In line 170, the present paper colour is loaded back into register A and compared with the value for green paper (line 180). A zero result means we can exit back to Basic using RETurn with the zero flag set.

To adapt this routine for different paper colours, it is only necessary to POKE the new colours into three locations as follows: POKE 64001,n1: POKE 64023,n2: POKE 64026,n2. n1 and n2 are top and bottom attribute values using PAPER (in decimal, these are Black=0; Blue=8; Red=16; Magenta=24; Green=32; Cyan=40; Yellow=48; White=56).

```
  10 REM Paper/Ink colour revers
e
  20 LET s=0: FOR i=64000 TO 640
29: READ n: POKE i,n: LET s=s+n:
 NEXT i
  30 READ sum: IF s <> sum THEN
 PRINT "error in data entry - re
type line 40": STOP
  40 DATA 33,0,88,62,56,166,15,1
5,15,71,62,7,166,7,7,7,128,71,62
,192,166,128,119,35,124,254,91,3
2,230,201,2610
  60 CLEAR 63999: LIST : RANDOMI
ZE  USR 64000: STOP
  70 SAVE "reverse" CODE 64000,3
0
```

```
                10 ;PAPER/INK COLOUR REVERSE
210058          20         LD   HL, 5800H
3E38            30 NEXT    LD   A, 38H
A6              40         AND  (HL)
0F              50         RRCA
0F              60         RRCA
0F              70         RRCA
47              80         LD   B,A
3E07            90         LD   A,7
A6             100         AND  (HL)
07             110         RLCA
07             120         RLCA
07             130         RLCA
80             140         ADD  A,B
47             150         LD   B,A
3EC0           160         LD   A, C0H
A6             170         AND  (HL)
80             180         ADD  A,B
77             190         LD   (HL),A
23             200         INC  HL
7C             210         LD   A,H
FE5B           220         CP    5B
20E6           230         JR   NZ,NEXT
C9             240         RET
```

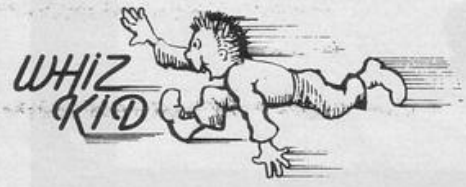
Program two

Reversing colours

Program two lists a routine which swaps PAPER and INK colours. For the assembler, we begin by loading the start of the attribute file into HL (line 20). Lines 30–230 contain the loop which works through all character positions. As the whole screen is being operated on, a DJNZ loop is unnecessary, as we shall see.

Line 30 sets up a mask, this time to preserve PAPER, and re-set INK, FLASH and BRIGHT. Remembering that a mask hides the bits we do not want to change, it is clear that BIN 00111000 will do the trick in this case (hex 38). By ANDing 38H with each attribute byte, we are left with just the paper bits.

Lines 50–70 are read as "Rotate Right (with Carry) contents of Register A" (RRCA). This is like RR (Rotate right) as seen in left and right scrolling, but with the important difference that the carry flag is NOT rotated, as you will see from Figure one.



By doing RRCA three times, bits five, four and three, which are the PAPER bits remaining alone in register A after the mask, are pushed down to occupy bits zero, one and two. In other words, they are changed from PAPER to INK.

Line 80 transfers the contents of the A register to the B register in order to free the A register to accept the mask which will preserve the INK digits (line 90). Any non-ink digits are masked out in line 100. To convert the remaining INK bits (0,1,2) to PAPER (3,4 and 5), they must be shifted three

places to the left. The RLCA is like RRCA except in the opposite sense, and is used three times in lines 100–130 to get the left shift.

We now have two bytes of data, one holding the transposed INK digits in register B, the other holding the transposed PAPER digits in register A. By ADDing A, B in line 140, we arrive at the reversed INK/PAPER combination.

There remains the problem of what to do about the other attributes. If any have been specified then we want them to remain intact. So again, the B register is used as a temporary store in line 150, while PAPER and INK bits of the attribute byte are masked out in lines 160–180. Obviously, the two remaining bits need not be manipulated, so all we now have to do is ADD them to the PAPER/INK combination in register B (line 180).

Now we are finally holding the new attribute byte in register A, we can replace the old for the new in the attribute file by LD (HL), A in line 190. the HL memory pointer is INCremented in line 200 ready for next attribute byte. As the whole screen is being done in one go, and we know that attribute bytes range from 5800H-5AFFH, once the H register contains 5BH, then the last byte has just been processed. If it is not (non-zero using CP), then this test causes the routine to jump back for the NEXT attribute byte (else RETurn to Basic).

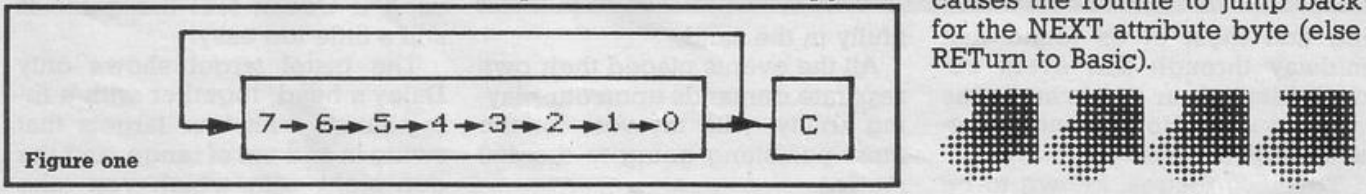


Figure one

SUPERTE

The inside

OCEAN are hoping for another great summer for Daley Thompson as they put Britain's top athlete through his paces in a super test.

Daley Thompson's Super Test will be released shortly and, like its predecessor, **Daley Thompson's Decathlon,** it will contain a wide variety of sporting events.

Decathlon was based on the Olympic games with the ten Decathlon events reproduced in the program. Arcade scenes showed our hero Daley in a stadium packed with spectators cheering whenever he was successful. With each event a board displayed score, qualifying times, energy scales and, for the jumping and throwing, an angle scale.

All the running events were controlled by continuous left to right joystick movement or by alternately pressing two keys on the keyboard. Events such as the 400 metres were extremely taxing and most of us found that midway through this event coordination of our hands and eyes were stretched to new and hitherto unknown limits.

The 1500 metres, known to be an event disliked by Thompson, had an additional scale representing energy. It was not enough in this event to make him run the distance as fast as possible; run too fast and his energy was quickly drained; too slowly and he did not qualify.

Each event required visual coordination. In the long jump, for example, Daley had to run to the take-off line then you controlled the action by depressing a key which held him until the angle scale was at a desired position and released the key. If you timed it correctly, Daley sailed through the air and landed beautifully in the sand.

All the events placed their own separate demands upon our playing ability, with my vote for the most punishing going to the 400 metres.

Events took place over two days and, when you eventually qualified in all of them you were rewarded with a scene depicting Daley upon the winners' box, wearing a gold medal and being serenaded with the theme tune from **Chariots of Fire.**

Ocean have been delighted with the response to Decathlon and in producing Daley Thompson's Super Test they have been able to develop some of the ideas which they were unable to use in the first program.

There are eight new events in Super Test, all of which use the same type of continuous keyboard or joystick control used in Decathlon.

Super Test contains a high dive event in which Daley, under your control, runs along the diving board; you press the key to make him jump and press again to make him somersault in mid air as many times as possible and land vertically in the water. Get it wrong and Daley will do a belly flop.

The scene shows the pool and a panel of judges displaying the score on a board in front of the judging box.

In the tug-a-war Daley is a member of a team of four, battling against another team. Degree of strength; light, medium or bantam, can be selected at the start.

The screen will display a force scale and a time limit may be used if Ocean feel the game is still a little too easy!

The pistol target shows only Daley's head, together with a firing range with four targets that swing in and out of range, and the gun sight with which you take

...EST...

...story

aim.

A bird's eyeview shows the rowing contest with three canoes, one belonging to Daley, sitting on the water. Using the two keys, joystick you must make him go as fast as possible. However, to make it truly competitive and sufficiently hard, the speed of all the other canoes is determined by your own pace; after all, if you are too slow the other canoes may quickly move out of sight.

The cycling event involves Daley racing along on a bike, and this one has been designed to be as gruelling as the 400 metres in the Decathlon.

Next, the slalom run has Daley skiing along the course, zig-zagging through the flag poles. It is your job to get him past the obstacles safely. You view the scene from in front of Daley.

There are two skiing events, the second being the ski jump. This time you watch from the side as Daley races down the ski run under your control and you make him jump before he reaches the end of the slope.

Finally, a goal scoring match sets Daley on the football pitch. You make him run up to the ball and kick it at the goal, which is guarded by a goalie who will dive at it.

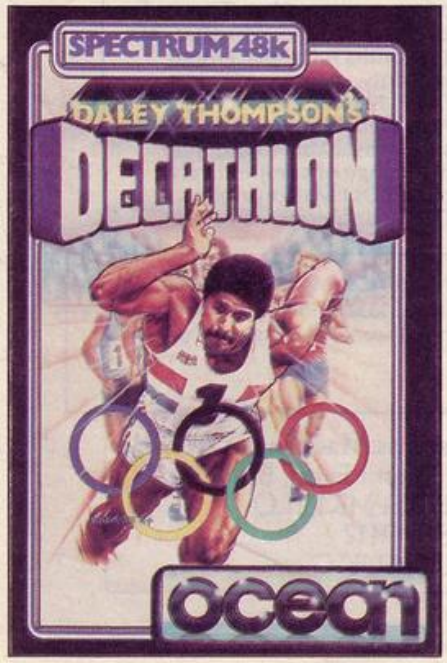
A very important change has been made to the Daley character from the original and he is now shown as a black man instead of white. Ocean describe the former misrepresentation as an 'oversight' which public criticism has inspired them to correct.

Ocean are admired because of their original ideas. David Ward, managing director, smiled at the suggestion that he is the brilliant mind behind the success of the company.

"We don't have a single creative form," he said, "and are always open to new ideas and actively encourage amateur programmers to use our expertise and resources. For many the marketing and general work involved in producing software is daunting. If anyone comes to us with an idea we will help them. We don't just see ourselves as a software house, but as a publishers. People go to them with manuscripts and they publish a book for those people. This is the role in which we see ourselves and this is the direction that our industry must take. This encouragement of new ideas in turn produces further cross media fertilisation."

All the games produced by Ocean are written in Machine Code; initally on a larger business computer. Paul Owens, who has written many of the Spectrum games, explained: "Most software houses have to do this. Programs nowadays require every inch of the machine's memory and this leaves very little space for expanding on ideas and experimenting with different angles. We can store the detail on the bigger computer thereby allowing us greater flexibility to try out new ideas."

Although Ocean are barely two years old they have a string of hit games such as the **Hunchback** games, **Gift from the Gods, Match of the Day** and **Kong.** They are preparing to release at least six new games throughout the summer, including titles such as **Frankie goes to Hollywood** and **Street Hawk.**



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Dear Diary

I'm exhausted. This month has seen the first ever attempt by yours truly to write a proper, full-scale, traditional technical advice column for the magazine.

I suppose I got involved this time because the problem was about Pacman. Experts like me think computer games should provide the maximum in fear and aggression. Pacman does it by changing you between chasing and being chased; that's why it's a classic.

Anyway, I wondered, how does the ghost find you in the Pacman maze?

I started off with a maze of cyan squares on white paper.

```
10 FOR y=1 TO 11: FOR i=1 TO 16: PRINT PAPER 5; " "
;PAPER 7;" ";: NEXT i: PRINT ,,: NEXT y
```

The next two lines set up and then print the start position of Pacman and the monster.

```
20 LET px=3: LET py=3: LET mx=27: LET my=15:
LET n=0
25 PRINT AT py,px;"P"; AT my,mx;:"M": LET
pyy=py: LET pxx=px: LET myy=my: LET mxx=mx
```

The pyy and mxx stuff in line 25 records the old position of the two characters. I'll explain the n in line 20 in a minute

```
30 LET px=px+(px<30)*( INKEY$ ="8")-(px>0)*( INKEY$ ="5")
40 LET py=py+(py<20)*( INKEY$ ="6")-(py>0)*( INKEY$ ="7")
```

These two fancy lines use control keys 8, 5, 6 and 7 to change Pacman's position. The bit about >20 and <30 and >0 stops you falling off the screen.

```
50 IF ( ATTR (py,px))=40 THEN LET py=pyy:
LET px=pxx: GOTO 30
60 PRINT AT pyy,pxx; " "
```

Line 50 checks for walls by throwing you back onto your old square if ATTR is 40 (8* the paper colour for cyan). If you do move, then line 60 obliterates the old P.

The rest of the program controls the monster, though (by alternating the value of n between 0 and 1 in line 65) only every two moves of the Pacman.

```
65 LET n= NOT n: IF NOT n THEN GO TO 25
70 LET mx=mx+(px>mx)*(mx<30)-(px<mx)*(mx>0): IF
( ATTR (my,mx)=40) THEN LET mx=mxx
80 LET my=my+(py>my)*(my<20)-(py<my)*(my>0): IF
( ATTR (my,mx)=40) THEN LET my=myy
100 PRINT AT myy,mxx; " ": IF my=py AND mx=px
THEN PRINT AT my,mx; "*": STOP
110 GO TO 25
```

The extra bits about px>mx and py<my and so on in lines 70 and 80 are to home in the monster onto the Pacman. If he gets caught, then line 100 prints a *.

Anyway, by the time I'd done all this work I was pretty annoyed to hear my sister Eustacia demanding some of the Sinclair Programs money because she'd "helped" me with the Pacman program.

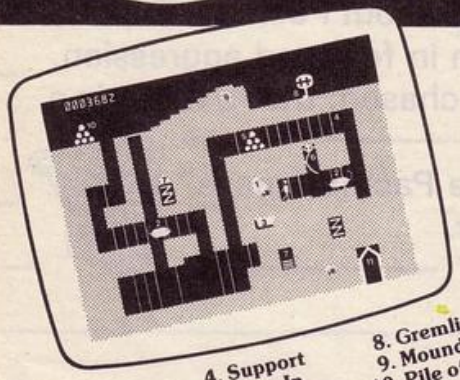
As I told her, if she really had helped me then I'd certainly admit it. After all, I'd never lie about something as important as Pacman.

LOOK!

SOFTWARE FARM

NOW THERE ARE 3

HI-RES PROGRAMS FOR THE 16K ZX-81



1. Nuggets
2. Giant Rats
3. Burrowing Rat
4. Support
5. Cave In
6. Snake
7. Snake Nest
8. Gremlin
9. Mound
10. Pile of Earth
11. Cave

FORTY NINER

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Riches await you – but so do the hazards!

ROCKET MAN

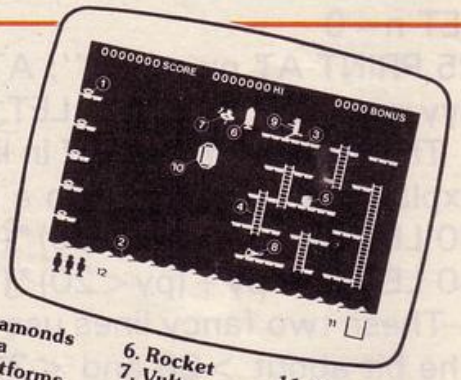
Get rich quick by collecting Diamonds that are simply lying there waiting for you!

Oh . . . I forgot to mention that there are one or two problems!

There is an expanse of shark infested water between you and the Diamonds and a strange breed of Bubble that seems hell bent on getting you in it! Somehow you must cross it . . . .

You have a Rocket Pack to help you (a Vulture on higher levels) but you must rush around the platforms and ladders collecting cans of fuel (legs of lamb with the Vulture) and cursing that weird Bubble. Once you have enough fuel then it's Chocks Away!

Oh . . . but don't run out of fuel on the way – otherwise it's . . . SPLASH!



1. Diamonds
2. Sea
3. Platforms
4. Ladders
5. Fuel Cans
6. Rocket
7. Vulture
8. Leg of Lamb
9. Player
10. Bubloid
11. Fuel Gauge
12. Men remaining

new·new·new·new·ne

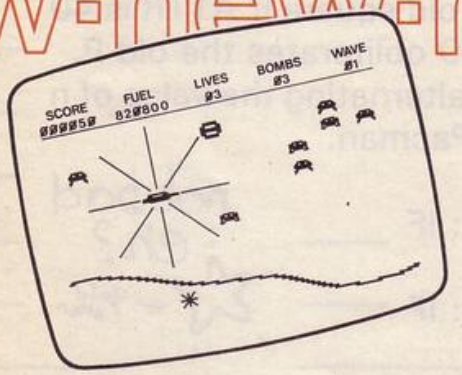


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CHART

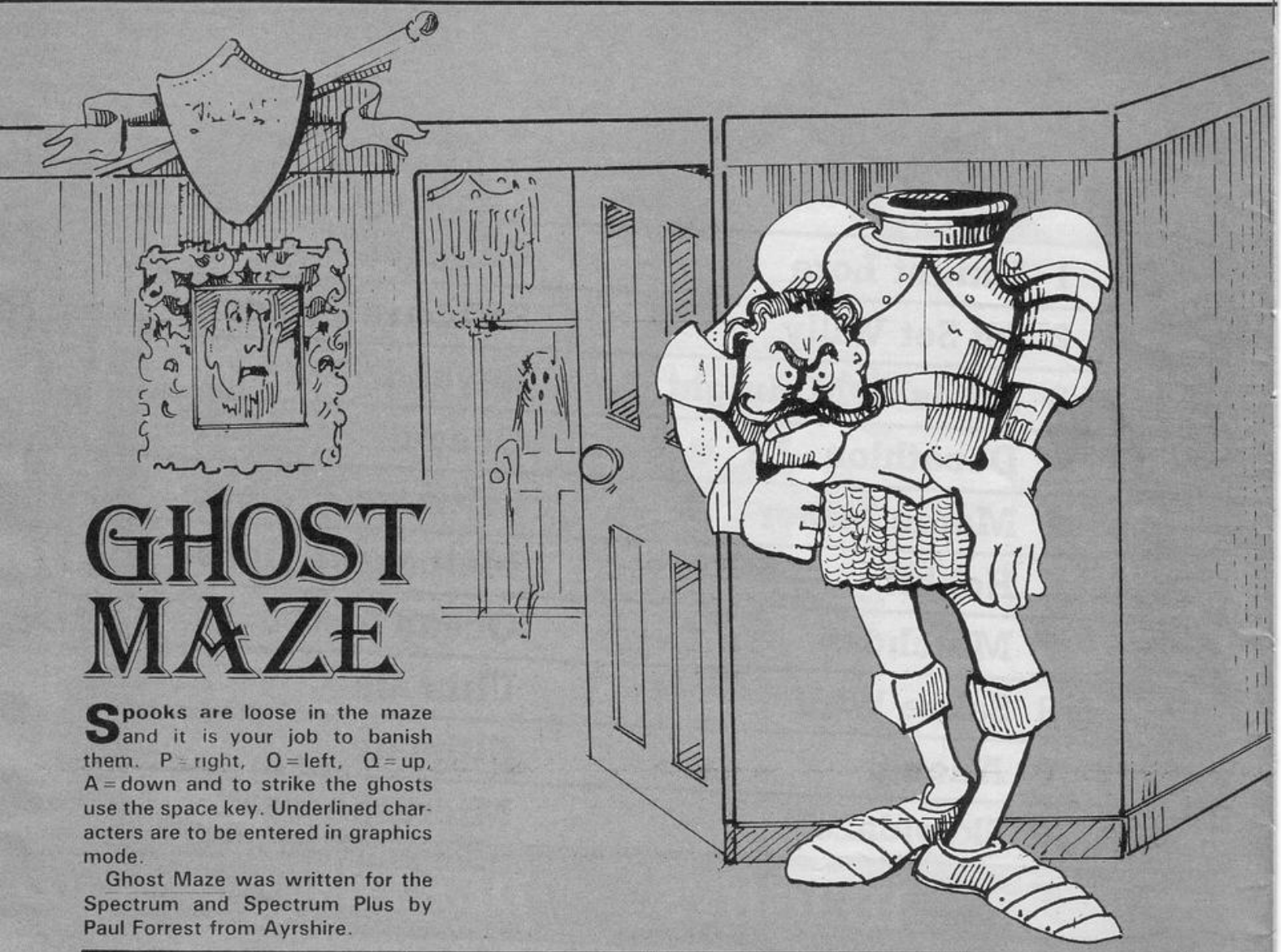
1	Knight Lore	Ultimate
2	Jet Set Willy	Software Projects
3	Lords of Midnight	Beyond
4	Decathlon	Ocean
5	Manic Miner	Software Projects
6	Hobbit	Melbourne House
7	Matchday	Ocean
8	Sabre Wulf	Ultimate
9	Alien 8	Ultimate
10	Skooldaze	Microsphere

↑ HEIGHTS ↓ DEPTHS

1	Make a Chip	Sinclair
2	Chequered Flag	Sinclair
3	Airwolf	Elite
4	Transylvanian Tower	Richard Shepherd
5	Horace goes Skiing	Psion

To register your votes, let us know the program you like most, and the program you hate most. Add your name and address, which will make you eligible for the £10 chart prize. Send your votes to CHARTLINE, Sinclair Programs, Priory Court, 30-32 Farringdon Lane, London EC1R 3AU.

Winner of this month's chart prize is Alexander Turnbull of Edinburgh, Scotland.



GHOST MAZE

Spooks are loose in the maze and it is your job to banish them. P = right, O = left, Q = up, A = down and to strike the ghosts use the space key. Underlined characters are to be entered in graphics mode.

Ghost Maze was written for the Spectrum and Spectrum Plus by Paul Forrest from Ayrshire.

```
   1 REM ****WRITTEN****
   2 REM *******BY******
   3 REM *PAUL**FORREST*
   4 RESTORE : INVERSE 0: FLASH
0: BRIGHT 0: BORDER 2: PAPER 0:
INK 0: OVER 1: CLS : INK 8
   5 POKE 23658,8: GO SUB 7000
  11 INK 5: BRIGHT 1
  12 PLOT 0,158: DRAW 255,0: PLO
T 0,157: DRAW 255,0: PLOT 0,156:
 DRAW 255,0
  19 INK 7: BRIGHT 1
  40 LET SE=0: LET F=0: LET T=0:
 LET G=0: LET S=0: LET X=16: LET
 Y=10
  50 IF SE=1 OR SE=3 OR SE=5 OR
SE=7 OR SE=9 OR SE=11 OR SE=13 O
R SE=15 OR SE=17 OR SE=19 OR SE=
21 OR SE=23 OR SE=25 OR SE=27 OR
 SE=29 OR SE=31 THEN  RESTORE 76
05: BEEP 1,56: GO SUB 7599
  51 IF SE=2 OR SE=4 OR SE=6 OR
SE=8 OR SE=10 OR SE=12 OR SE=14
OR SE=16 OR SE=18 OR SE=20 OR SE
=22 OR SE=24 OR SE=26 OR SE=28 O
R SE=30 THEN  RESTORE 7570: BEEP
 1,56: GO SUB 7560
  90 LET R= INT ( RND *13)+6: LE
T U= INT ( RND *26)+3: PRINT  AT
 R,U;" ": PRINT  INK 7; PAPER 0;
 OVER 0; BRIGHT 1; AT R,U;"B"
  95 PRINT  OVER 0; INK 7; BRIGH
T 1; PAPER 1; AT 0,1;"SCORE = ";
S: PRINT  OVER 0; INK 7; BRIGHT
1; PAPER 1; AT 0,21;"GHOSTS = ";
G
  96 PRINT  OVER 0; INK 0; PAPER
 6; BRIGHT 1; FLASH 1; AT 1,12;"
TIME = ";T
 100 POKE 23672,0: POKE 23673,0
 140 PRINT  OVER 1; INK 6; BRIGH
T 1; AT Y,X; CHR$ 144
 150 BEEP .002,45
 160 PRINT  OVER 0; INK 7; BRIGH
T 1; PAPER 1; AT 0,9;S: PRINT  O
VER 0; INK 7; BRIGHT 1; PAPER 1;
 AT 0,30;G
 161 PRINT  OVER 0; INK 0; PAPER
 6; BRIGHT 1; FLASH 1; AT 1,19;T

 200 LET ZX= INT ( RND *8)
 210 OVER 0: IF ZX=1 OR ZX=6 THE
N  PRINT  AT R,U;" ": IF  ATTR (
R,U-1) <> 69 THEN  LET U=U-1:
 215 OVER 0: IF ZX=2 OR ZX=5 THE
N  PRINT  AT R,U;" ": IF  ATTR (
R,U+1) <> 69 THEN  LET U=U+1:
 217 OVER 0: IF ZX=3 OR ZX=8 THE
N  PRINT  AT R,U;" ": IF  ATTR (
R-1,U) <> 69 THEN  LET R=R-1:
 218 OVER 0: IF ZX=4 OR ZX=7 THE
N  PRINT  AT R,U;" ": IF  ATTR (
R+1,U) <> 69 THEN  LET R=R+1:
 219 PRINT  AT R,U; INK 7; BRIGH
T 1; PAPER 0;"B"
 381 IF T >= 70 THEN  BEEP 2,45:
 PRINT  INK 1; PAPER 7; BRIGHT 1
; FLASH 1; OVER 0; AT 10,8;"G-A-
M-E  O-V-E-R": FOR A=0 TO 69: BE
EP .006,A: NEXT A: STOP
 510 PRINT  BRIGHT 1; INK 6; OVE
R 1; AT Y,X; CHR$ 144
 524 IF  INKEY$ ="O" AND  ATTR (
Y,X-1) <> 69 THEN  LET X=X-1
 525 IF  INKEY$ ="P" AND  ATTR (
Y,X+1) <> 69 THEN  LET X=X+1
 526 IF  INKEY$ ="Q" AND  ATTR (
Y-1,X) <> 69 THEN  LET Y=Y-1
 527 IF  INKEY$ ="A" AND  ATTR (
Y+1,X) <> 69 THEN  LET Y=Y+1
 530 IF  INKEY$ =" " AND Y=R AND
 X=U THEN  LET S=S+50: LET G=G+0
1: FOR A=0 TO 7: PRINT  OVER 0;
INK A; AT Y,X;"E"; AT Y,X;" "; A
T Y,X;"#"; AT Y,X;" ": BEEP .001
,A*9: NEXT A: GO TO 90
 532 PRINT  BRIGHT 1; INK 6; OVE
R 1; AT Y,X; CHR$ 144
 540 IF G >= 10 THEN  LET G=0: L
ET SE=SE+1: LET T=0: PRINT  AT 0
,29;"   ": PRINT  AT 1,19;"   ":
 GO TO 50
 566 LET F=F+0.2
 569 IF F >= 1 THEN  LET F=0: LE
T T=T+1
 570 GO TO 160
7000 FOR B=0 TO 7: READ N: POKE
 USR "A"+B,N: NEXT B
7010 DATA  BIN 00111100, BIN 001
00100, BIN 11100111, BIN 1001100
1, BIN 10011001, BIN 11100111, B
IN 00100100, BIN 00111100
7014 FOR A=0 TO 7: READ N: POKE
 USR "E"+A,N: NEXT A: DATA 145,8
2,0,192,3,0,74,137
7020 FOR A=0 TO 7: READ N: POKE
 USR "B"+A,N: NEXT A: DATA 56,12
4,214,214,254,254,170,170
7024 FOR A=0 TO 7: READ N: POKE
 USR "C"+A,N: NEXT A: DATA 0,255
,129,129,255,129,129,255
7550 REM SCREEN1
7560 FOR N=4 TO 21: READ A$: FOR
 M=1 TO 30: PRINT  AT N,M;" "
```

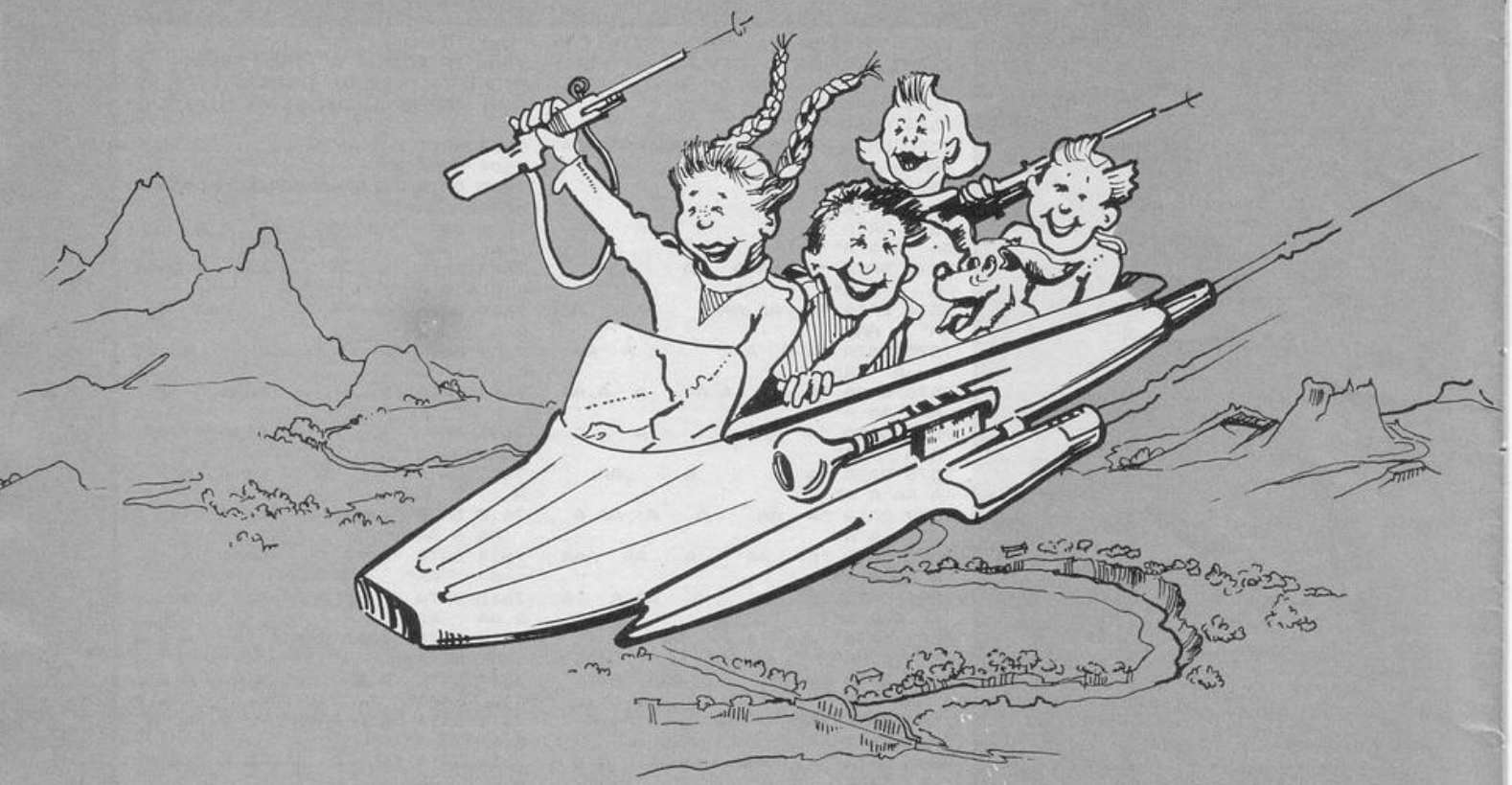
```
7562 IF A$(M)="A" THEN  PRINT  B
RIGHT 1; OVER 0; INVERSE 0; FLAS
H 0; PAPER 0; INK 5; AT N,M;"C":
7563 NEXT M
7564 NEXT N
7570 DATA "AAAAAAAAAAAAAAAAAAAA
AAAAAAAAA"
7571 DATA "A   A
        A"
7572 DATA "A  AA    A    A   A
AA  A A A"
7573 DATA "A   A A  AA    AA  A
AA  A A A"
7574 DATA "A  AA AAA     A    A
AA  A AAA"
7575 DATA "A A  A          A  AA
 A  A   A"
7576 DATA "A       A A    A  A AA
 AA  AA A"
7577 DATA "A  AAA         A    A
 A A  A A"
7578 DATA "A          A     AA
AA AA A A"
7579 DATA "A  AA    A   A  AA A
      A A"
7580 DATA "A   AA    A   AA  AAA
 A AA A A"
7581 DATA "A   A        AA A   A
    A A A"
7582 DATA "A    A       A
      A  A"
7583 DATA "A  A        AAA  A
A  AA A A"
7584 DATA "AA      AA       AA A
 A AA   A"
7585 DATA "A   AAA      AA   A A
  A   A A"
7586 DATA "A   A         A   A
        A"
7589 DATA "AAAAAAAAAAAAAAAAAAAA
AAAAAAAAA"
7590 RETURN
7599 CLS : REM SCREEN2
7600 FOR N=4 TO 21: READ A$: FOR
 M=1 TO 30:
7601 IF A$(M)="A" THEN  PRINT  B
RIGHT 1; OVER 0; INVERSE 0; FLAS
H 0; PAPER 0; INK 5; AT N,M;"C":
7603 NEXT M
7604 NEXT N
7605 DATA "AAAAAAAAAAAAAAAAAAAA
AAAAAAAAA"
7606 DATA "AA  A    AA    A
  A    AA"
7607 DATA "A   A A A AAAA   AAAA
A A A A A"
7608 DATA "AA  A  A     AAA  A
A A A   A"
7609 DATA "A   A A A       A  A
A A A   A"
7610 DATA "A  A      AAAA
  A A   A"
7611 DATA "A   A  AA A AA A  AA
A A AAA A"
7612 DATA "AA   A  A    A  A
A       A"
7613 DATA "AA A  A   AA A  AAA A
  AA A AA"
7614 DATA "AA A      AAAA  A  A
  A    AA"
7615 DATA "A  A A AA A   A A
A AA   AA"
7616 DATA "AAAA A A    A   A A A
  A  A  A"
7617 DATA "A A    A  A AA  A A
A A   AAA"
7618 DATA "A A AAAA     A  A  A
A A A   A"
7619 DATA "A   A  A   A A   A A
AAA    AA"
7620 DATA "AA     AAAAA A A  A
  A  A   A"
7621 DATA "A   AA     A A A    A
  A A    A"
7622 DATA "AAAAAAAAAAAAAAAAAAAA
AAAAAAAAA"
7625 RETURN
```

FIVE DESTROY THE WORLD

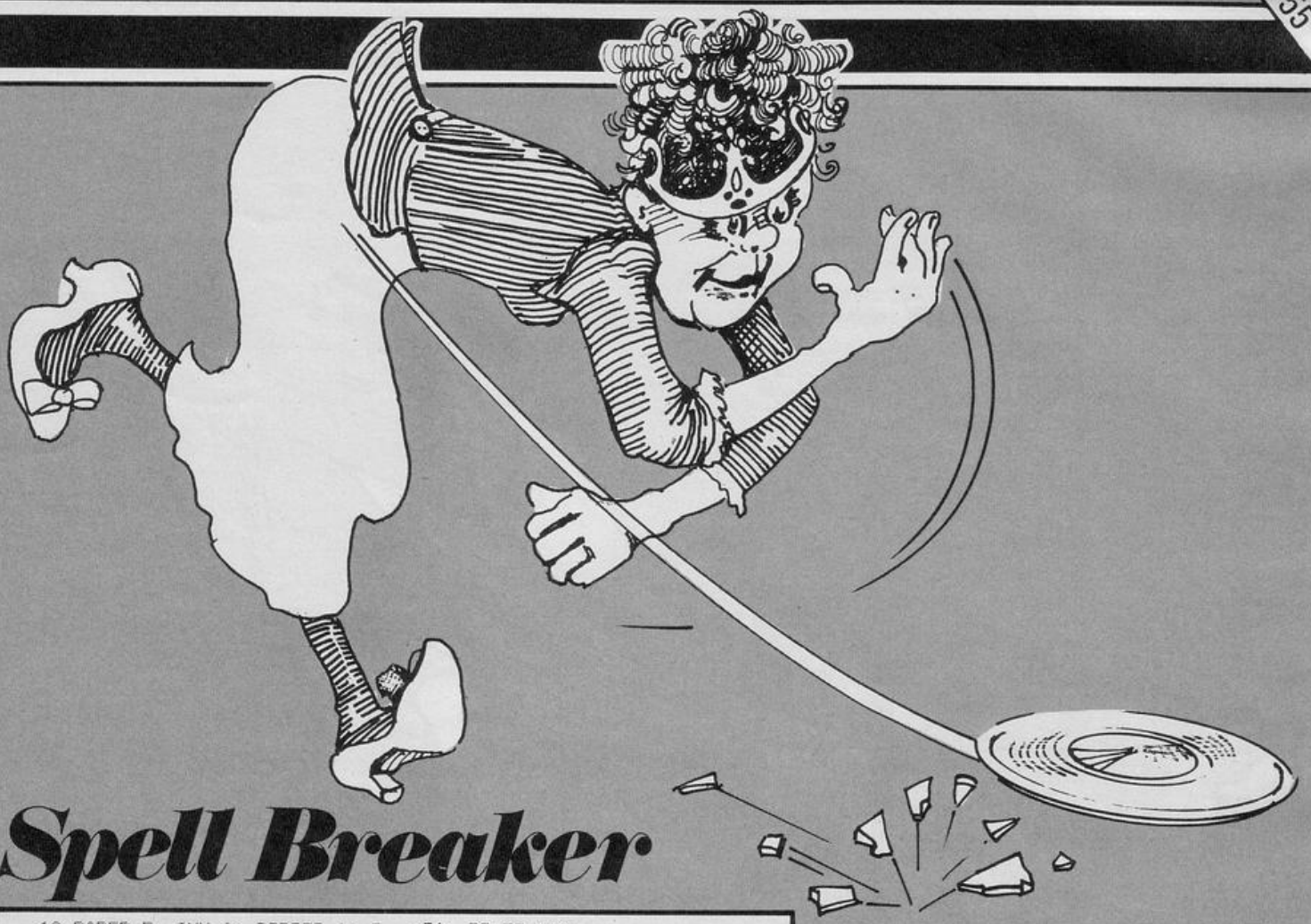
The aliens are invading your system. Save the earth for future generations by shooting them down. As soon as five have landed you are doomed.

Five Destroy the World was written for the Spectrum or Spectrum Plus by Paul Goodwin of Alvaston, Derbyshire.

Turn to page 54



```
  5 GO SUB 520
 35 LET ss=0
 40 FOR n=0 TO 7: READ j: POKE
USR "a"+n,j: NEXT n
 50 FOR n=0 TO 7: READ j: POKE
USR "b"+n,j: NEXT n
 60 FOR n=0 TO 7: READ j: POKE
USR "c"+n,j: NEXT n
 70 LET a=10: LET s=0: LET q=1

 80 LET z=31: LET y=120
 90 PRINT  AT 12,1;"Do you want
instructions (y/n)"
 95 BEEP .1,20: LET a$= INKEY$
: IF a$="y" THEN  GO TO 380
 96 IF a$="n" THEN  GO TO 100

 97 GO TO 95
 100 BORDER 1: PAPER 1: INK 6: C
LS
 110 PRINT  AT 1,0; BRIGHT 1; IN
K 3;"_____________________
_____"; AT 19,0; INK 6;"_____
_____________________
_____"
 120 PRINT  AT 0,2; BRIGHT 1; IN
K 5;"Score 0"; AT 0,16;"High ";s
s
 150 LET c= INT ( RND *30)+1: LE
T b=3
 152 IF c <= 5 THEN  LET w=2000

 153 IF c>5 AND c<26 THEN  LET w
=3000
 154 IF c >= 26 THEN  LET w=1000

 155 LET ch= INT ( RND *2)+1
 160 PRINT  AT 18,a; INK 6;" A "
; AT b-1,c-1; INK 4;"   "; AT b,
c; INK 4; CHR$ (144+ch)
 170 LET x=(a*8)+12
 180 LET a=a+( INKEY$ ="2" AND a
<= 28)-( INKEY$ ="1" AND a >= 1
)
 190 PLOT x,z: PLOT  OVER 1;x,z

 200 IF  INKEY$ ="0" THEN  DRAW
 INK 5;0,y: BEEP .025,20: PLOT x
,z: DRAW  OVER 1;0,y: GO TO 260

 205 GO SUB w
 210 LET b=b+1: BEEP .01,19-b: I
F b=19 THEN  GO TO 230
 212 PRINT  AT 18,a; INK 6;" A "

 214 LET a=a+( INKEY$ ="2" AND a
<= 28)-( INKEY$ ="1" AND a >= 1
)
 220 GO TO 160
 230 BEEP .5,-20
 240 PRINT  AT 18,c-1;"   ": PRI
NT  AT 21,q*2; INK 7; CHR$ (144+
ch): IF q=5 THEN  GO TO 300
 250 LET q=q+1: GO TO 150
 260 IF x=(c*8)+4 THEN  GO TO 28
0
 270 GO TO 205
 280 FOR n=-3 TO -1: PRINT  AT b
,c; INK 1; INVERSE 1; CHR$ (144+
ch): BEEP .04,5-n: PRINT  AT b,c
; INK 2; CHR$ (144+ch): BEEP .04
,b: NEXT n
 290 LET s=s+(b+(ch*2)): PRINT
AT 0,8; BRIGHT 1; INK 5;s: PRINT
  AT b,c;" ": GO TO 150
 300 PRINT  AT 10,12; INK 7;"Gam
e Over": IF s >= ss THEN  LET ss
=s: PRINT  AT 0,21; BRIGHT 1; IN
K 5;ss
 305 GO SUB 600
 310 PRINT  AT 12,6; INK 6;"Pres
s y to play again"
 320 IF  INKEY$ ="y" THEN  CLS :
 BEEP .3,30: GO TO 70
 330 IF  INKEY$ ="n" THEN  CLS :
STOP
 340 GO TO 320
 350 DATA  BIN 00000000, BIN 000
11000, BIN 00011000, BIN 1001100
1, BIN 10011001, BIN 11111111, B
IN 10000001, BIN 10000001
 360 DATA  BIN 00111100, BIN 011
11110, BIN 11011011, BIN 0111111
0, BIN 01011010, BIN 10000001, B
IN 01000010, BIN 00100100
 370 DATA  BIN 00111100, BIN 001
00100, BIN 00111100, BIN 0111111
0, BIN 11111111, BIN 00100100, B
IN 01000010, BIN 10000001
 380 BORDER 2: PAPER 2: INK 7: C
LS
 400 PRINT  AT 2,0;"The Aliens a
re invading your"; AT 4,1;"syste
m,your only hope is to"; AT 6,1;
"blast them before they land"; A
T 8,1;"and colonise the Earth!"

 410 PRINT  AT 10,1; INVERSE 1;
INK 7; FLASH 1;"WARNING..."
 420 PRINT  AT 12,1;"ONLY FIVE A
LIENS HAVE TO LAND"; AT 14,1;"TO
 TAKE OVER !!!"
 430 PRINT  AT 21,1;"Press any k
ey for next page"
 440 BEEP .1,16: BEEP .1,21: IF
 INKEY$ ="" THEN  GO TO 440
 450 CLS
 455 PRINT "ALIEN BLASTER": PRIN
T  AT 0,0; OVER 1;"_____________
"
 460 PRINT  AT 2,0;"To move base
 right press "; INVERSE 1;"'2'"

 470 PRINT  AT 4,0;"To move base
 left press "; INVERSE 1;"'1'"

 480 PRINT  AT 6,0;"Press "; INV
ERSE 1;"'0'"; INVERSE 0;" to fir
e": PRINT  AT 9,0;"There are two
 different aliens, one scores mo
re  than the other."
 485 PRINT  AT 12,0;"The aliens
are worth more the  nearer they
 are to the planet."
 487 PRINT  AT 15,5; INK 5;"B...
Raider": PRINT  AT 17,5; INK 4;"
C...Droid"
 490 PRINT  AT 21,1;"Press any k
ey to start."
 500 BEEP .2,5: IF  INKEY$ <> "
" THEN  GO TO 100
 510 GO TO 500
 520 BORDER 2: PAPER 2: INK 7: C
LS
 530 PRINT  AT 10,9;"Alien Blast
er"
 540 FOR n=-10 TO 40
 550 BEEP .1,40-n
 560 NEXT n: PAUSE 2: BEEP .5,20
: BEEP 1,15: NEXT n
 610 FOR n=20 TO 0 STEP -2
 620 BEEP .1,n: NEXT n
 630 PAUSE 3: BEEP .25,15: BEEP
.25,15
 640 RETURN
1000 LET c=c-1: RETURN
2000 LET c=c+1: RETURN
3000 RETURN
```

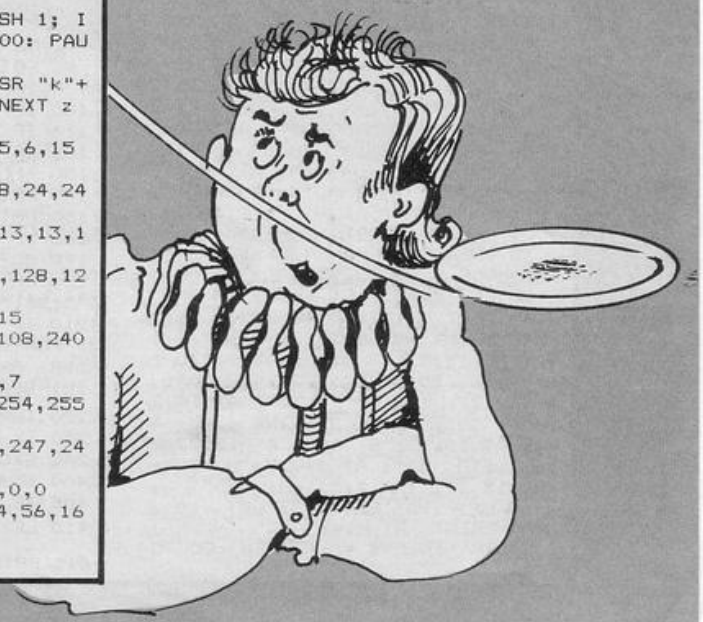


Spell Breaker

```
  10 PAPER 5: INK 0: BORDER 1: C
LS
  20 LET x=13: LET y=0
  30 LET a=14: LET b=26
  40 LET sc=0: LET j=0
  50 GO SUB 8000
  60 PAPER 1: CLS : BEEP .5,0: B
EEP .5,2: BEEP .5,4: BEEP .5,4:
BEEP .5,2: BEEP .5,0
  70 PAPER 1: PRINT  INK 6; AT 1
,10;"SPELL-BREAKER"
  80 PRINT  INK 5;''"YOU ARE A P
RINCE AND YOUR TASK  IS TO FREE
 THE PRINCESS FROM A  WICKED SPE
LL."''"THE SPELL HAS MADE HER HA
TE ALL PRINCES (INCLUDING YOU) A
ND SHE IS THROWING PLATES AT YOU
."''"THE ONLY WAY TO BREAK THE S
PELL IS TO KISS THE PRINCESS.":
PRINT  INK 7;''"USE KEYS: ^P^RIG
HT ^0^JUMP": PAUSE 0: CLS
 100 PAPER 5: CLS : PRINT  INK 2
; AT 15,0;"IIIIIIIIIIIIIIIIIIIII
IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII
IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII
IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII
IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII
IIIIIIIIII"
 110 INK 0: PRINT  AT 0,5;"SCORE
:";SC; AT 0,18;"JUMPS:";j
 120 PRINT  AT 13,28;"EF"; INK 6
; AT 14,28;"GH"
 125 PRINT  AT x,y; INK 0;" AB";
 AT x+1,y; INK 1;" CD"
 130 GO SUB 1000
 135 PRINT  AT 14,0;" "
 137 PRINT  INK 2; AT 15,y-1;"II
II"
 140 PRINT  AT a,b; INK 0;"J "

 150 LET b=b-1: BEEP .05,5
 160 IF b<0 THEN  LET b=26
 200 IF x=a AND y+1=b OR x+1=a A
ND y+1=b THEN  GO TO 2000
 300 IF x=13 AND y=26 THEN  PRIN
T  INK 2; AT 12,28;"K": LET sc=s
c+5: PAUSE 50: PAUSE 0: CLS : LE
T x=13: LET y=0: LET a=14: LET b
=26: GO TO 100
 400 GO TO 125
1000 IF  INKEY$ ="p" THEN  LET y
=y+1
1010 IF  INKEY$ ="q" THEN  GO TO
 1500
1020 RETURN
1500 FOR n=13 TO 10 STEP -1
1530 LET x=n: PRINT  AT x,y;" AB
"; AT x+1,y; INK 1;" CD"; AT x+2
,y;"  ": BEEP .05,n: LET b=b-1:
 PRINT ; INK 0; AT a,b;"J  ": PR
INT  INK 2; AT 15,y-1;"IIII": NE
XT n
1535 FOR m=10 TO 13 STEP 1
1536 LET x=m: PRINT  AT x,y;" AB
"; AT x+1,y; INK 1;" CD"; AT x-1
,y;"  ": BEEP .05,m: LET b=b-1:
 PRINT  INK 0; AT a,b;"J  ": NEX
T m
1538 LET j=j+1: PRINT  AT 0,18;
INK 0;"JUMPS:";j
1540 GO TO 125
2000 PRINT  AT 17,12; FLASH 1; I
NK 3;"GAME OVER": PAUSE 100: PAU
SE 0: CLS : RUN
8000 FOR z= USR "a" TO  USR "k"+
7: READ udg: POKE z,udg: NEXT z

8010 DATA 0,15,16,18,16,25,6,15

8020 DATA 0,0,192,64,192,8,24,24
0
8030 DATA 31,31,31,31,13,13,13,1
3
8040 DATA 224,188,188,188,128,12
8,128,128
8050 DATA 0,3,2,3,0,0,15,15
8060 DATA 240,8,72,8,154,108,240
,240
8070 DATA 0,1,3,3,15,31,3,7
8080 DATA 240,24,248,252,254,255
,48,112
8090 DATA 0,127,127,127,0,247,24
7,247
8100 DATA 129,66,60,0,0,0,0,0
8200 DATA 0,68,238,254,124,56,16
,0
9000 RETURN
```

You are a prince, and your mission is to save the princess from a wicked spell. The spell has made her hate all princes, and so she is throwing plates at you to drive you away. The only way to break the spell is to kiss the princess.

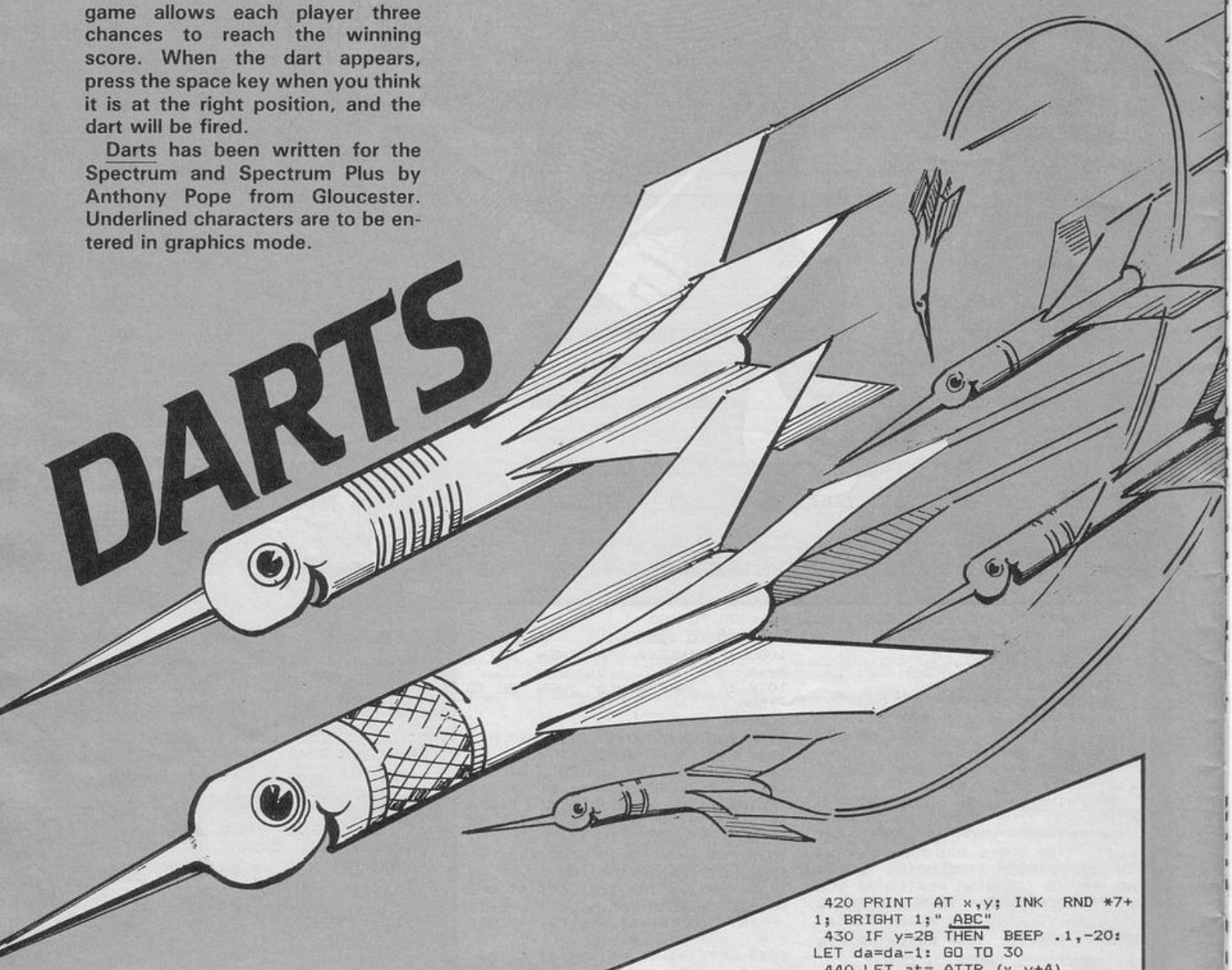
Spell Breaker was written for the Spectrum or Spectrum Plus by James Foggo, aged 13 of Worthing, West Sussex.



DARTS

Try to reach the highest score on the dartboard. This multi-player game allows each player three chances to reach the winning score. When the dart appears, press the space key when you think it is at the right position, and the dart will be fired.

Darts has been written for the Spectrum and Spectrum Plus by Anthony Pope from Gloucester. Underlined characters are to be entered in graphics mode.



```
  1 REM *** DARTS! ***
  5 BORDER 0: PAPER 0: INK 7
 10 CLS : GO SUB 500
 20 LET da=3: LET sc=0
 30 PLOT 0,167: DRAW 255,0
 40 PRINT  AT 8,27; INK 1;"   1
0"; AT 18,27;"D  10"; AT 9,27; I
NK 5;"E  20"; AT 17,27;"E  20";
AT 10,27; INK 3;"F  30"; AT 16,2
7;"F  30"; AT 11,27; INK 4;"G  4
0"; AT 15,27;"G  40"; AT 12,27;
INK 6;"H  50"; AT 14,27;"H  50";
 AT 13,27; INK 2;"(ig8)  60"
 60 LET z=0: LET x=3: LET y=0
 70 PRINT  AT x,y;"ABC"
 80 IF  INKEY$ =" " THEN  GO TO
400
 90 PRINT  AT 0,5;"SCORE:";sc;
AT 0,18;"DARTS:";da
100 IF x=18 THEN  LET z=1
110 IF x=3 THEN  LET z=0
120 IF z=0 THEN  LET x=x+1
130 IF z=1 THEN  LET x=x-1
140 PRINT  AT x-1,y;"   "
150 PRINT  AT x+1,y;"   "
160 IF da=0 THEN  GO TO 200
170 GO TO 70
200 PRINT  AT 5,7;"YOU'RE SCORE
D ";sc;"!": PAUSE 100
210 IF sc=180 THEN  FOR m=1 TO
3: FOR n=0 TO 20: BEEP .01,n: BO
RDER  RND *7: NEXT n: FOR n=1 TO
10: BEEP .03,-n: NEXT n: NEXT m
220 INPUT ;"ANOTHER GO ?";g$
230 IF g$="y" THEN  RUN
240 STOP
400 REM ***** THROW *****
405 IF z <= 1 THEN  LET x=x+.1
410 LET y=y+1
415 PRINT  AT x-.1,y-1;"    "
420 PRINT  AT x,y; INK  RND *7+
1; BRIGHT 1;" ABC"
430 IF y=28 THEN  BEEP .1,-20:
LET da=da-1: GO TO 30
440 LET at= ATTR (x,y+4)
450 IF at=1 THEN  LET sc=sc+10
460 IF at=5 THEN  LET sc=sc+20
470 IF at=3 THEN  LET sc=sc+30
480 IF at=4 THEN  LET sc=sc+40
490 IF at=6 THEN  LET sc=sc+50
492 IF at=2 THEN  LET sc=sc+60
494 IF at >= 1 AND at <= 6 THEN
 LET da=da-1: BEEP .1,2: GO TO
30
496 GO TO 400
500 REM ***** DATA *****
510 FOR x= USR "a" TO  USR "h"+
7
520 READ a: POKE x,a: NEXT x
530 DATA 0,0,120,254,127,254,12
0,0,0,0,0,3,255,3,0,0,0,0,0,240,
255,240,0,0
550 DATA 7,7,7,7,7,7,7,7,15,15,
15,15,15,15,15,15,31,31,31,31,31
,31,31,31,63,63,63,63,63,63,63,6
3,127,127,127,127,127,127,127,12
7: RETURN
600 SAVE "Darts!" LINE 1
```

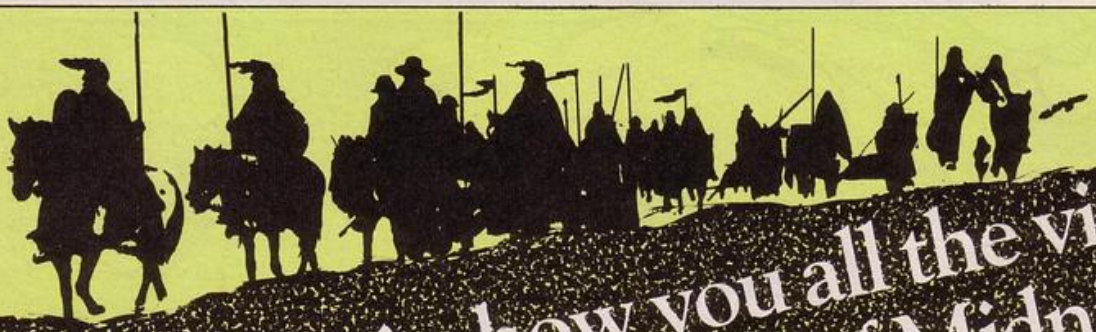
MANIC PUMPKIN

To stay fit and healthy the pumpkin must dash around the vegetable patch eating all the seeds. You can check your progress by timing yourself.

You can select your control keys and all underlined characters are to be entered in graphics mode.

Manic Pumpkin was written by Christopher Price from Portsmouth for the Spectrum and Spectrum Plus.

```
  10 PRINT  INK 9; AT 0,5;"MAZE
CHASERS ": PLOT 30,165: DRAW 100
,0: PRINT "THE OBJECT OF THIS GA
ME IS TO   EAT ALL OF THE DOTS A
S FAST AS  YOU CAN": CIRCLE 100,
70,50: PLOT 100,70: DRAW 50,0: C
IRCLE 100,100,5
  11 FOR v=20 TO 0 STEP -1: BEEP
 .05,v: NEXT v: FOR v=0 TO 20: B
EEP .05,v: NEXT v
  15 PRINT "WOULD YOU LIKE TO MA
KE YOUR OWN MAZE Y/N?": PAUSE 0:
 IF  INKEY$ ="n" THEN  GO TO 20:
 IF  INKEY$ ="y" THEN  GO TO 16
  16 CLEAR : PRINT "WHEN YOU ARE
 READY PRESS          CAPS SHIFT A
ND BREAK.             THEN ENTER T
HE COMMAND LIST 9000.PRESS BREAK
 AND THEN ENTER       THEN CAPS SH
IFT AND 1.            THE 'P' IS A
 WALL AND THE '.'ARESPACES.THERE
 IS A MAXIMUM OF 15 CHARACTERS A
CROS.YOU CAN GO DOWN TO LINE 914
0. AT THIS POINT      PRESS ENTER
 AND THEN RUN.NOW IF YOU ARE REA
DY PRESS CAPS SHIFT    AND BREAK"
                                '
  17 PAUSE 0
  20 PAUSE 200: CLEAR : FOR f=0
TO 20: BEEP .10,f: NEXT f: PRINT
 "WHICH KEY WOULD YOU LIKE FOR:-
  17 PAUSE 0
  20 PAUSE 200: CLEAR : FOR f=0
TO 20: BEEP .10,f: NEXT f: PRINT
 "WHICH KEY WOULD YOU LIKE FOR:-

  LEFT ": INPUT l$: PRINT "
                          RIGHT
 ": INPUT r$: PRINT "
                    UP ": INPUT
u$: PRINT
DOWN ": INPUT d$
  30 PRINT  AT 0,0;"
                          ": PRINT "
   ": PRINT "      ": PRINT "
 ": PRINT "      ": PRINT "      "
: PRINT "      ": PRINT "      ":
PRINT "      ": LET bt=100000
  40 LET s=0
  50 LET x=10
  60 LET y=14
 100 FOR n=3 TO 17
 110 READ a$
 120 FOR m=7 TO 21
 130 PRINT  AT n,m;"."
 140 IF a$(m-6)="p" THEN  PRINT
 PAPER 1; INK 1; AT n,m;" "
 150 NEXT m
 160 NEXT n
 170 FOR b=0 TO 20: BEEP .05,b:
NEXT b: PAUSE 40: BEEP .5,-10: P
RINT  AT 20,5; FLASH 1; BRIGHT 1
;"READY": PAUSE 40: BEEP .5,-5:
PRINT  AT 20,5; FLASH 1; BRIGHT
1;"STEADY": PAUSE 40: BEEP .5,0:
 PRINT  AT 20,5; FLASH 1; BRIGHT
 1;"GO      ": PAUSE 40: PRINT  A
T 20,5;'
 990 POKE 23672,0: POKE 23673,0

1000 PRINT  PAPER 6; INK 2; AT x
,y;"@"
1010 LET xx=x
1020 LET yy=y
1025 IF s=108 THEN  GO TO 2000

1030 IF  INKEY$ ="" THEN  GO TO
1030
1040 IF  INKEY$ =u$ AND  ATTR (x
-1,y) <> 9 THEN  LET x=x-1
1050 IF  INKEY$ =d$ AND  ATTR (x
+1,y) <> 9 THEN  LET x=x+1
1060 IF  INKEY$ =l$ AND  ATTR (x
,y-1) <> 9 THEN  LET y=y-1
1070 IF  INKEY$ =r$ AND  ATTR (x
,y+1) <> 9 THEN  LET y=y+1
1080 PRINT  INK 7; AT xx,yy;" "

1090 IF  ATTR (x,y) <> 63 THEN
LET s=s+1: BEEP .005,( RND *20)

1100 GO TO 1000
2000 LET t=( PEEK 23672+256* PEE
K 23673)/50
2010 PRINT  AT 1,3;"YOUR TIME= "
;t;" SECONDS "
2020 IF t<bt THEN  LET bt=t
2035 PRINT  AT 0,0;"HIGHEST SCOR
E=   ";s
2040 FOR n=0 TO 20: BEEP .05,n:
NEXT n: PRINT "DO YOU WANT ANOTH
ER GO Y/N ?": PAUSE 0: PAUSE 0:
IF  INKEY$ ="y" THEN  RUN : IF
INKEY$ ="N" THEN  STOP
9000 DATA "pppppppppppppp"
9010 DATA "p.....ppp.....p"
9020 DATA "p.pp.......pp.p"
9030 DATA "p.ppp.....ppp.p"
9040 DATA "p...p.....p...p"
9050 DATA "p.pp.ppppp.pp.p"
9060 DATA "p.....p.p.....p"
9070 DATA "pppp.pp.pp.pppp"
9080 DATA "p.....p.p.....p"
9090 DATA "p.ppp.p.p.ppp.p"
9100 DATA "p...p.p.p.p...p"
9110 DATA "p.p.........p.p"
9120 DATA "p.pp.pp.pp,pp.p"
9130 DATA "p............p"
9140 DATA "pppppppppppppp"
9998 STOP
9999 SAVE "maze" LINE 1
```



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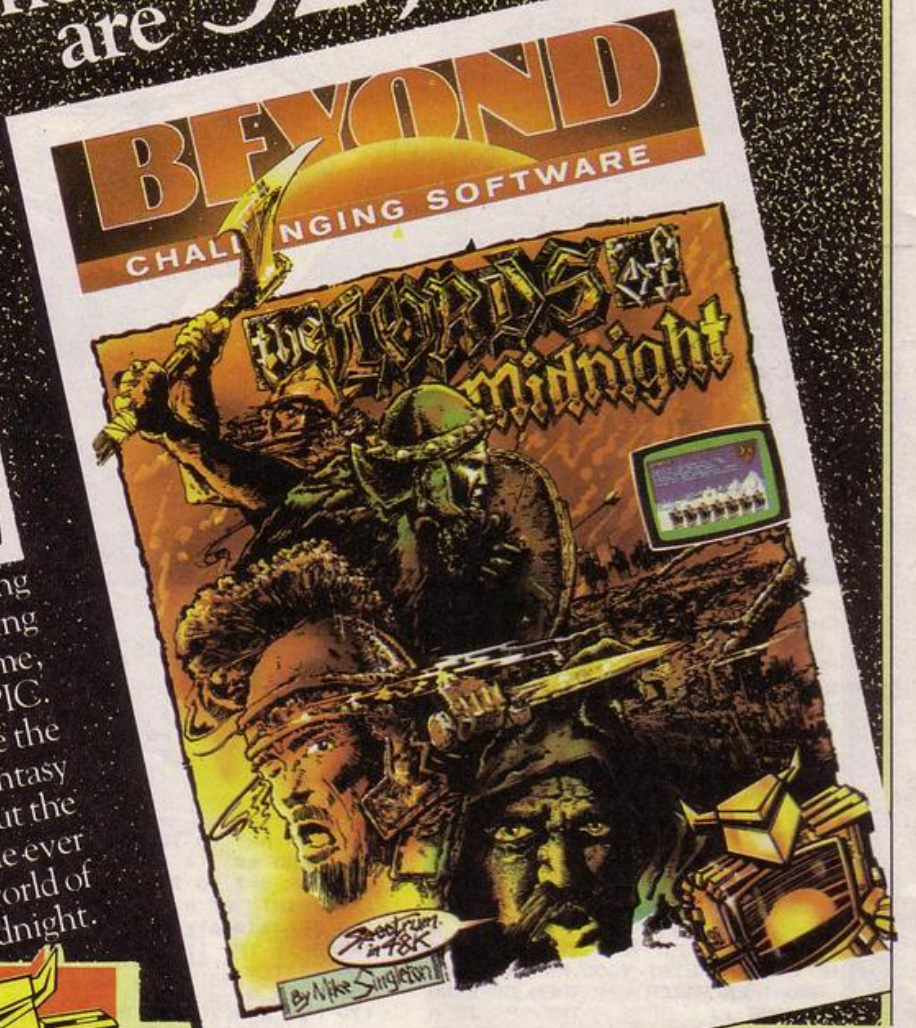

BEYOND

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