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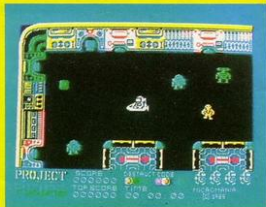
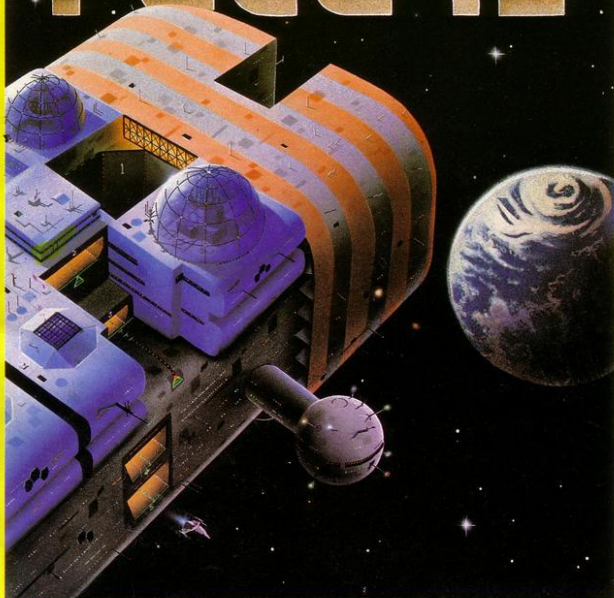


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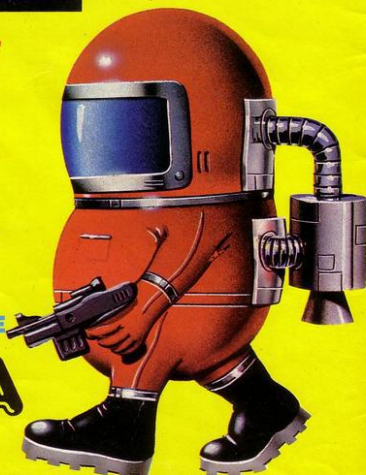
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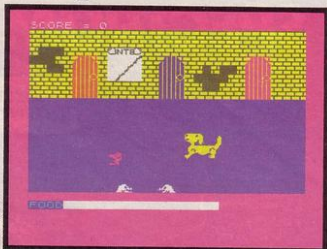
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Soft Spot

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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.

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*4: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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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:

Sinclair Programs,
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Priory Court,
30-32 Farringdon Lane,
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,
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Cover illustration—Ivan Hissey

Interactive BASIC Programming for 48K ZX Spectrum & Spectrum + ATTENTION ALL SPECTRUM USERS!

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- * **An educational program which shows real inventiveness - better still it teaches Sinclair Basic.**

- Popular Computing Weekly 7/3/85

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7	STARTRK	24	PAWEL	37	TRUCK
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9	KNOCK OUT	26	LAZER	39	MYSTICAL
10	BRIDGE	27	CARGO	40	CHAMPION
11	ALUN ATTACK	28	ALUN	41	GALAXY DEFENCE
12	ALUN LANDER	29	THE RACE	42	CYBER
13	MAZE LATER	30	THE SHELLE	43	ITIMORLE
14	WICKEDTOP	31	MONCH	44	BANGS JUMP
15	MATSONARY	32	MONCH	45	ATTACKO
16	LEWISPH	33	MONCH	46	BOBBL
17	ATTACK TRACK	34	HELL	47	SPACE WISSON

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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.

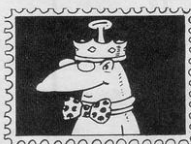
You probably will not believe me, but it is done by running really slowly and jumping well before the line and on a certain part of track after the jump line. The measuring man at the bottom is unable to find you, so your score rockets while he searches for you.

**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
1. jump 11.76
s. putt 33.16

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.

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 Moin-drot'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 brilliant 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: Ithron 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 recommend 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.**

Please complete this form and enclose it with any program which you send to us for possible publication.

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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.

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.

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.

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!

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



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!

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 mi-



crodrive 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**

across onto the dummy fourth screen, turn round, return to the third screen and enter the hole from this direction.

**Clive Sims,
Felixstowe, Suffolk.**

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

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

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!

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

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 MacClean, 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 Vright, 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!

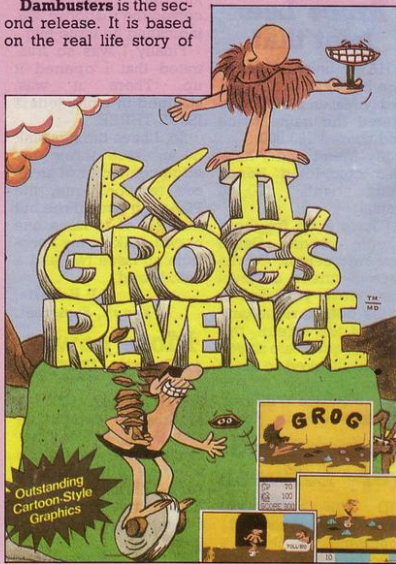
US GOLD has released two new Spectrum games for the summer, both will cost £7.95.

BC2, Grog's Revenge is a sequel to **BC 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

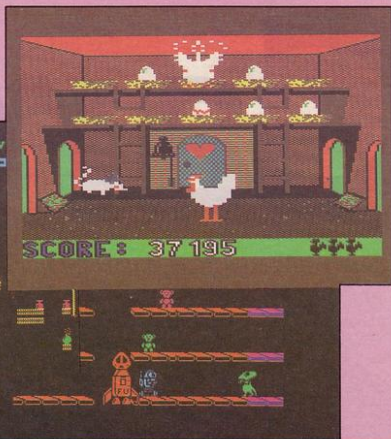
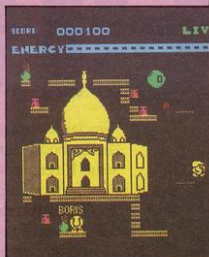
peripherals. They are designed to work with most well known joysticks, including Sinclair, Kempstor and Protek.

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

SHOULD YOU BUY THIS?

DON'T Buy This! Fire-bird 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**.

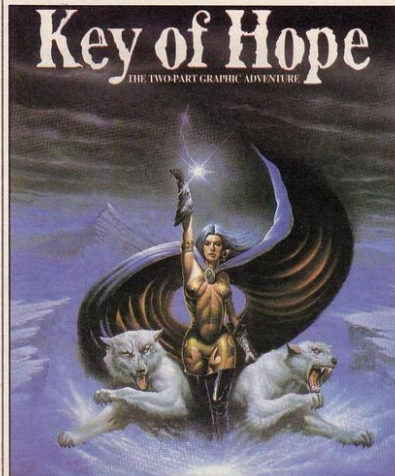


Despairing? Hope arrives

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!

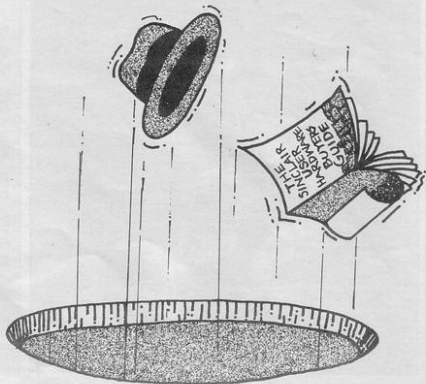
Sinclair User is giving away a FREE 24-page booklet on the front of the June issue. It's crammed with information, prices, features, suppliers and star ratings of all the available Spectrum and QL add-ons. So you'll never again buy an overpriced joystick or non-compatible printer.

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AFTER MIDNIGHT

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 **Skrimmel** the Sly. **Skrimmel** seems very friendly, offers help and advice,

but keeps stealing all your possessions. Watch out whenever he looks too happy.

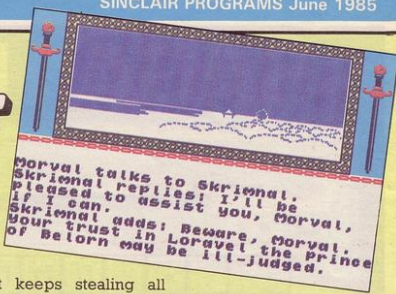
Runestone incorporates a number of different quests. You can aim to collect the stolen treasures of **Belom**, defeat the orcs and denizens of the northern wastes or destroy the fearsome **Kordomir** the dark. Movements are made in real time, so if you wish to embark on a quest it is important to start 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. Suc-

cess 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. Remem-

ber 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 yesterday 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 regarders. 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?

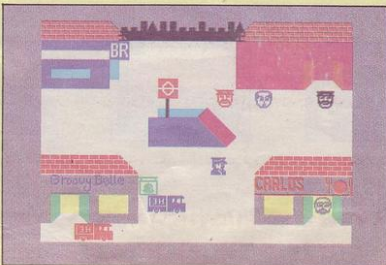
The game claims to detail a day in Clive's life as he makes his way to Buck House to receive the award of Dame Commander of the British Empire. To do this successfully he must cross

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 Micro-mega, 230 Lavender Hill, London.

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



COMBAT LYNX

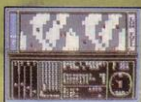
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BRIAN JACKS CHALLENGE

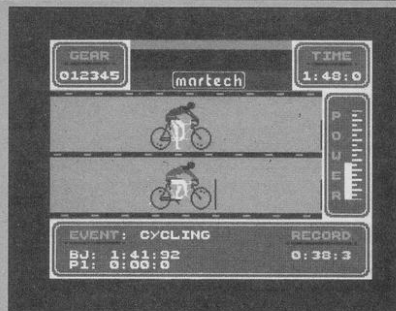
COULD you make it as a sporting superstar? **Brian Jacks Superstar Challenge** gives you a chance to work out whether you could or, whether your index finger could.

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 rou-



te 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-around 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.

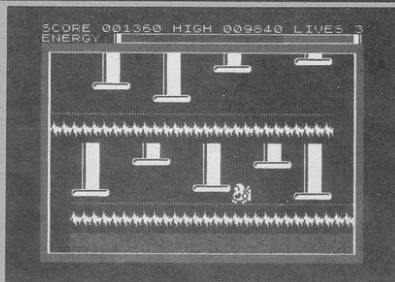
There are faster shoot 'em ups on the market, there are more graphically attractive shoot 'em ups on the market, there are better shoot 'em ups on the market. **Moon Cresta** is produced for the 48K Spectrum by Incentive Software, 54 London Street, Reading.

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

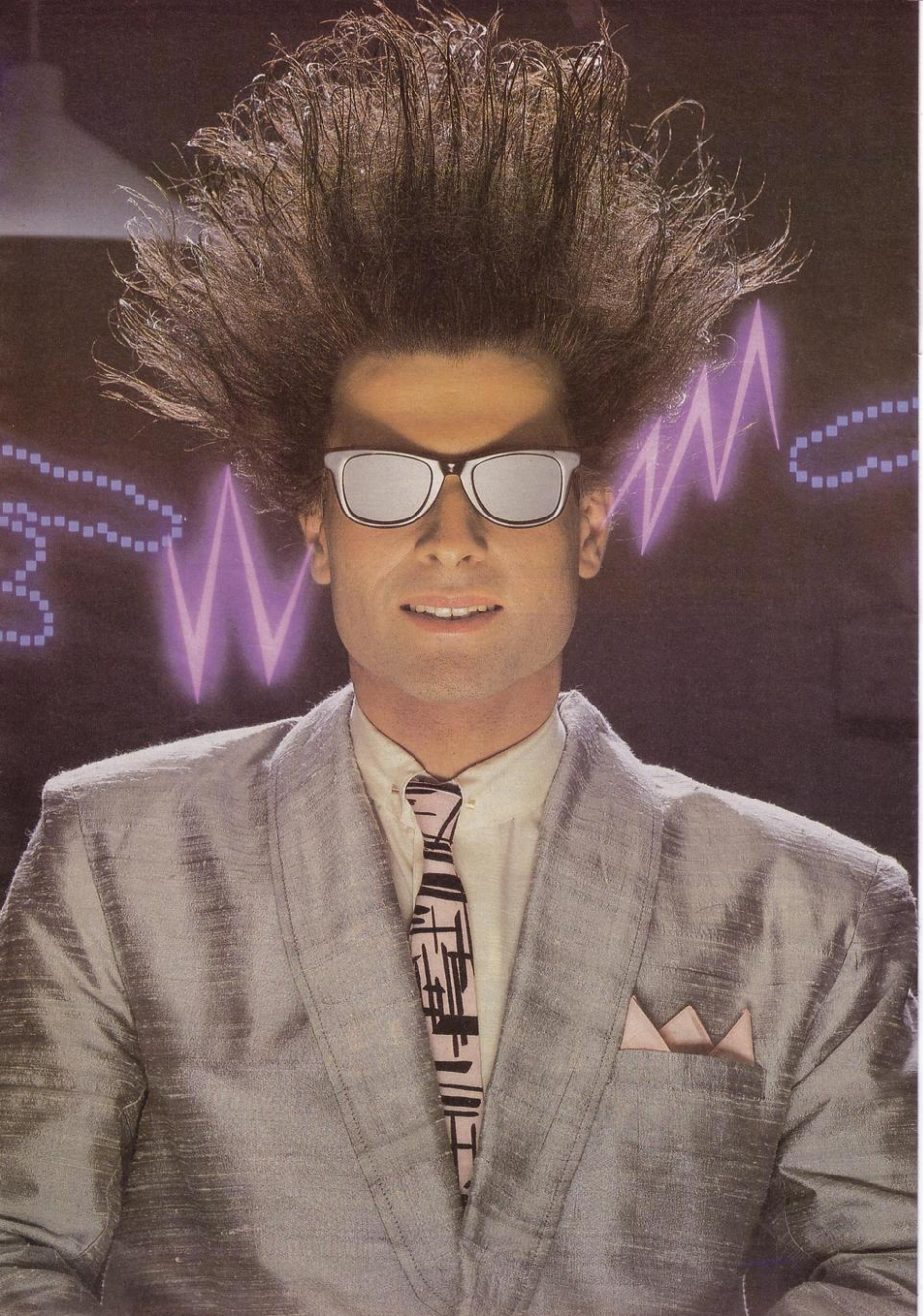
each screen. Moving platforms, lifts and bouncing aliens are the main problems to be

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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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.

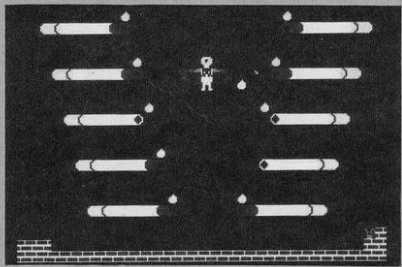
Once out of the maze like garden you are far from home and dry. You must then wander through the scrubland, through the underground, avoid going through hell, wander through the mansion and

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

```

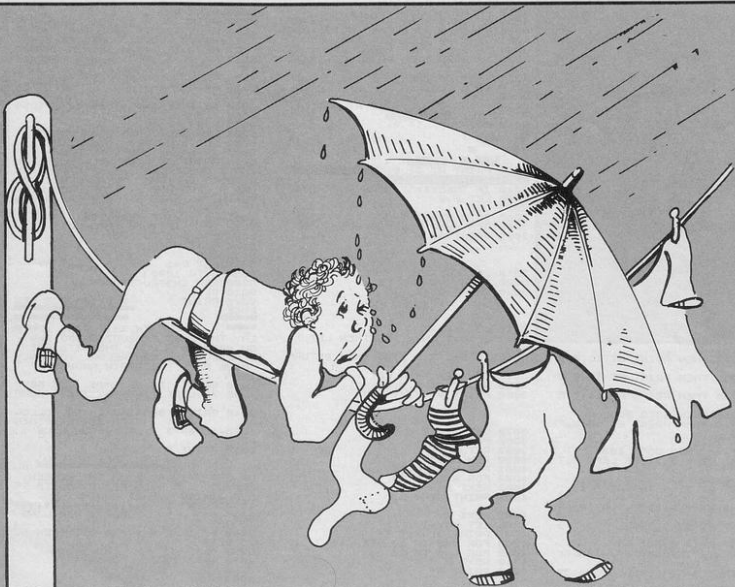
100-1010101010101
1 LET S=0
2 LET T=100
3 LET D=1
4 FAST
5 CLS
6 REM DEFINE VARIABLES
7 LET S=0
8 LET T=100
9 LET D=1
10 LET A$=""
11 LET E=0
12 LET B$=""
13
14
15
16
17
18
19
20 LET C$=""
21
22
23
24
25
26
27
28
29
30 LET D$=""
31
32
33
34
35
36
37
38
39
40 LET E$=""
41
42
43
44
45
46
47
48
49
50 LET F$=""
51
52
53
54
55 LET F$=""
56
57
58
59 LET X=7
60 LET Y=0
61 PRINT AT 11,0;"$
62 REM DISPLAY TITLE
63 PRINT AT X,Y;"$
64 PRINT AT 0,7;" QUOZIEHODOS
65 REVENGE:"
66 PRINT AT 21,0;" WRITTEN BY
67 MARTIN (1984)"
68 SLOW
69 FOR N=0 TO 200
70 NEXT N
71 CLS
72 PRINT AT 0,0;"DO YOU REQUIRE
73 INSTRUCTIONS Y/N?"
74 IF INKEY$="Y" THEN GOTO 900
75
76 IF INKEY$="N" THEN GOTO 100
77
78 GOTO 100
79 REM MAIN GAME
80 CLS
81 PRINT AT 0,0;"$
82 PRINT AT 0,0;"$
83 IF D=1 THEN PRINT AT 11,0;"A
84
85 IF D=2 THEN PRINT AT 11,0;"B
86

```



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.



```

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;"(iup)"
112 NEXT S: NEXT A
120 PRINT AT 18,0; INK 0; PAPER
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;
"0": AT 12,1; INK 2;"E": TAB 3;
INK 1;"C": TAB 5; INK 4;"I":
TAB 7; INK 1;"E": TAB 9; INK 3;
"I": TAB 11; INK 1;"E": TAB 13;
INK 0;"C": TAB 15; INK 0;"I":
TAB 17; INK 2;"E": TAB 19; IN
K 3;"C": TAB 21; INK 0;"E": TA
B 23; INK 2;"I": TAB 25; INK 4;
"E": TAB 27; INK 1;"C": TAB 29
; INK 0;"E"
135 PLOT S,80: DRAW 247,0
140 PRINT AT 13,1; INK 2;"EH":
TAB 3; INK 1;"DD": TAB 5; INK 4;
"I": TAB 7; INK 1;"EH": TAB 9;
INK 3;"I": TAB 11; INK 1;"EH":
TAB 13; INK 0;"DD": TAB 15; INK
0;"I": TAB 17; INK 2;"EH": TAB
19; INK 3;"DD": TAB 21; INK 0;"
EH": TAB 23; INK 2;"I": TAB 25;
INK 4;"EH": TAB 27; INK 1;"DD":
TAB 29; INK 0;"EH"
145 REM GAME
150 LET SC=0: LET X=14: LET Y=B

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#="" THEN LET X
=X-1: INKEY#="" 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#="g" 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 RAY 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;" "

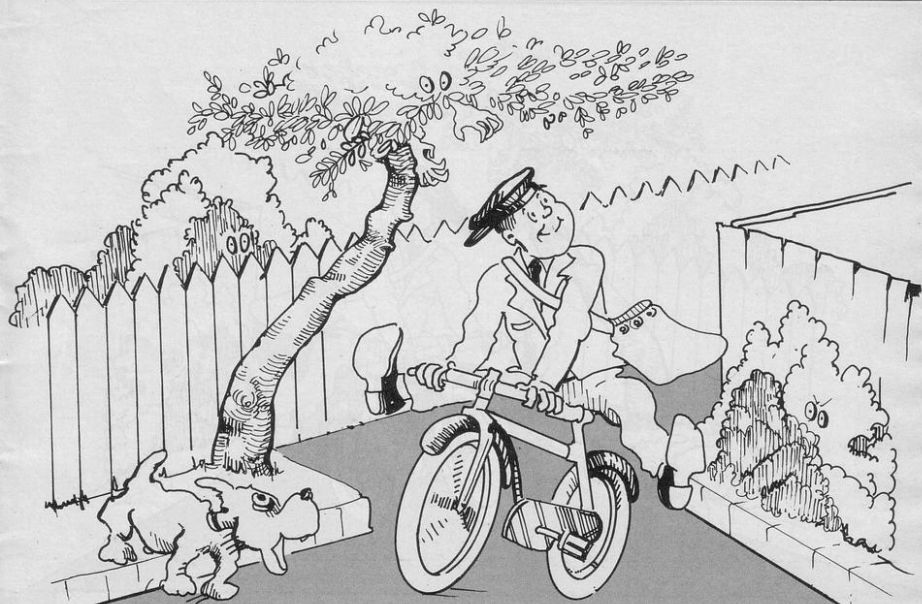
290 GO TO 170
1000 PRINT AT R,RX;" " : AT R-1,
RX;" "
1010 LET SC=SC+10
1020 GO TO 170
2000 PRINT AT 10,11; FLASH 1; I
NK 0; INVERSE 1;"GAME OVER"
2005 PAUSE 100
2010 IF SC >= HC THEN LET HC=SC

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#="" THEN GO TO
25
2050 IF INKEY#="" 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 "D"+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;"REWIND
TAPE TO VERIFY"" "" ""
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 stereotypes...

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

```

1 LET H$=0
2 F0KE 23658,B: LET N$="MIKE
MCAULAY": LET BC=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 250,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

```

```

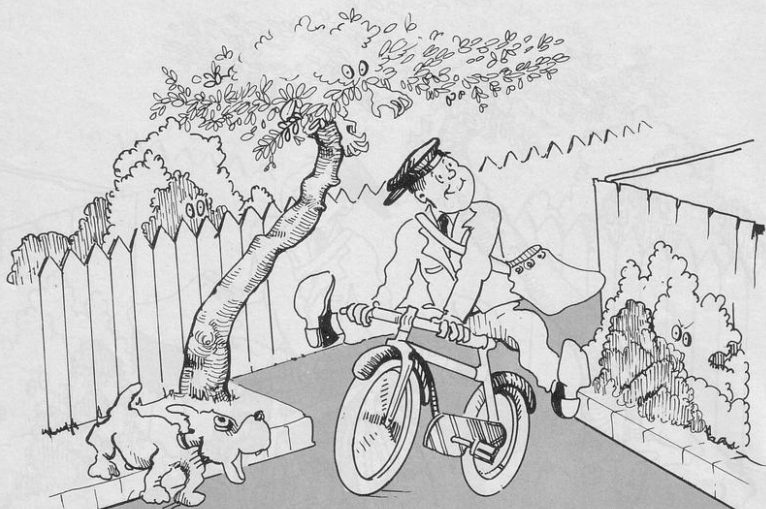
280 FOR X=30 TO 149 STEP 30
290 PLOT 220,X: DRAW -0,10
295 NEXT X
297 FOR X=0 TO 5: BEEP .05,20:
NEXT X: GO SUB 5000
305 PRINT AT 4,9;" ": AT 3,10;
" ": AT 3,9; INK 2; PAPER 6;"I"
310 LET X1=0: LET Y1=0
320 LET X=21: LET Y=10
330 INK 0: PRINT AT 0,0;"DELIV
ERY$:";D: AT 0,11;" "
331 IF C=1 THEN PRINT AT 3,9;
PAPER 6; INK 3;"I": GO TO 333
332 PRINT AT 3,9; INK 2; PAPER
6;"I"
333 IF W <= 100 THEN PRINT AT
0,31;" "
334 IF H >= 1 THEN LET L=L+1
335 PRINT AT X,Y; INK 2;"H"
337 LET XX=X: LET YY=Y
340 LET A$=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 Y1=0
390 LET X=X+X1: LET Y=Y+Y1
394 LET W=W-1: IF W <= -1 THEN

```

```

PRINT AT 0,29;" ": 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;" "
1030 IF ATTR (X,Y)=120 AND ATT
R (3,9)=50 THEN LET X=XX: LET Y
=Y: 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 X
2005 PRINT AT M,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

```



```

5,10
2025 IF ATTR (Z,V)=58 THEN BEE
P .08,10: LET W=M-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: "E"
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: 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: "E"
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: " "
6065 PRINT AT 20,17: " ": AT 5,1
7: " "

```

```

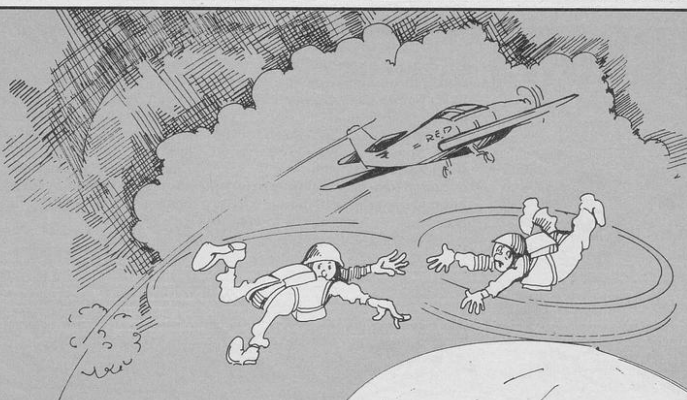
6060 RETURN
7005 LET R=R+1
7007 IF R>6 THEN GO TO 8000
7008 CLS
7010 FOR X=0 TO 20: BEEP .02,X:
NEXT X
7020 PRINT AT 6,12: "WELL DONE":
AT 12,10: FLASH 1: "BONUS WAGES=
":W
7120 LET SC=SC+W: LET P=P+3: LET
D=D: LET W=SK
7360 IF P>3 THEN LET H=1: LET M
=M+5: LET T=T-20
7370 PAUSE 200: GO TO 5
7499 BORDER 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 BEER .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 US: LET N=#US
8320 IF LEN US>12 THEN BEEP .5
7: PRINT AT 21,0: "I SAID 12 MA
X NUMS!!!!!!!!!": 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
6,60,60,126,255,255,255,126,
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 stereotypes ": 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 "NS
9590 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

```



```

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:"O - 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: (102
:2*150)"": AT 0,16: (104)"": 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 21,0: INK 2: (2*1
sd)"

```

```

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

```

RED DEVILS



```

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"

```

```

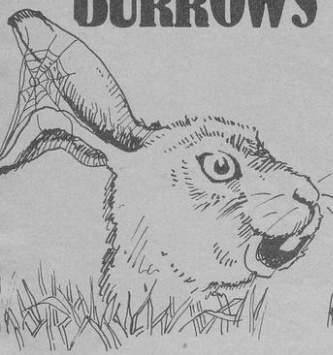
1600 PAUSE 0: GO TO B
9999 SAVE "red devils" LINE 1

```

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 O.

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.

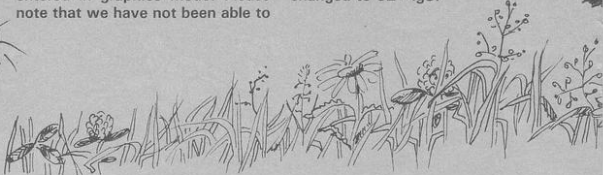
Burrows has been written for the 48K Spectrum by T. Sherwood from West Bromwich.

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 g15.

Line 7056. The last section shows 32 spaces, these should be changed to 32 x 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:m#(1): AT x1+1,y1:b#(1): L
T x=m#1: 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 b=b+(y>b)-(y<b)
320 IF ATTR (a,b)=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#(1)
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 i: 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=1-i
1025 PRINT AT x,y: " ": AT x+1,y
: " "
1030 IF li<1 THEN GO TO 4000
1050 GO TO 7500
1500 LET k=k+1: LET j=b
1510 PRINT AT k-1,j: " ": AT k,j
: INK 0: PAPER 4: INVERSE 1: G1:
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

```

```

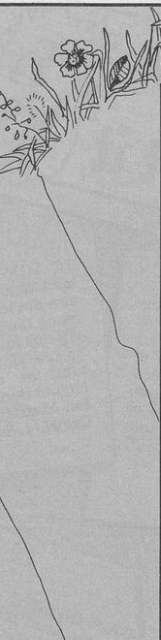
k,j: " ": LET k=k+1: PRINT INK 0
: PAPER 4: INVERSE 1: AT k,j:"E":
: GO SUB 50: GO TO 1520
1530 PRINT #0: AT 0,15;- LEN STR
# s: PAPER 1:s
1540 IF k=20 THEN PRINT FLASH
1: INK 0: PAPER 3: AT 21,j:"E":
POKE z+5,13: POKE z+24,29: RANDO
MIZE USR z: LET e=e+1: IF e=14
THEN GO TO 7020
1599 RETURN
4030 PRINT #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
L5
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
1,118,60,36,255,206,127,251,95,24
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 F E F E F E F E F E F E F E
F E": LET s#=" "
6200 POKE z+3,255: GO TO 8500
7009 IF s# THEN LET h=s
7010 LET li=3: LET s=0
7020 LET e=0

```

```

7050 RANDOMIZE i: CLS
7055 PAPER 0: INK 2: FOR i=0 TO 18
STEP 2: PRINT AT i,0:"IHIIHIIH
IHIIHIIHIIHIIHIIHIIHIIHIIHIIHIIH
IIHIIHIIHIIHIIHIIHIIHIIHIIHIIHII
": NEX
T 1
7056 PRINT INK 0: PAPER 3: INVE
RSE 1: AT 21,11: " "
: 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
1,0: " ": AT 1,31: " ": 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=+ ( INT ( RND *18)):
LET n=+ ( INT ( RND *18))
7075 PRINT AT i,j: PAPER 4: INK
0: INVERSE 1: "E": AT n,j+1: INK
6: INVERSE 0: PAPER 0: "J": LET
j=j+2: NEXT k
7100 INK 7
7150 RANDOMIZE i: LET x=1: LET y=
5
7530 LET a=15: LET bay: 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: AT 0,25:
7620 FOR j=1 TO 11: PRINT #0: PA
PER 1: "A": NEXT j: PRINT #0: A
T 1,25: "FOR j=1 TO 11: 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

```



```

8500 CLS : INK 2
8510 FOR i=-50 TO 40 STEP 6: PLOT
T 168,135: DRAW 87,1: PLOT 168,1
35: DRAW -168,1: 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 1,j: DRAW
1,j: NEXT m: NEXT k
8545 PLOT 156,66: RESTORE 8590:
FOR k=1 TO 3: FOR m=1 TO 5: READ
1,j: DRAW -1,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:"0
0"
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:"=
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 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#=#+ CHR# 0
9820 PRINT " " : d# :
9822 FOR j=1 TO 11-LEN d#: PRINT
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#(j)=k#: PRINT k#
9845 RANDOMIZE USR 2
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



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 — 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,
Whitstable, 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.

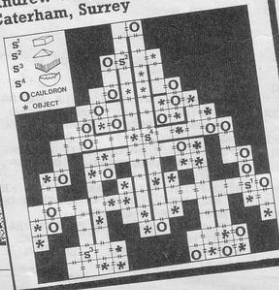
S Bourne,
Whitstable, Kent.

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.

ALIEN 8 MAP
Andrew Carpenter,
Caterham, Surrey



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

Michael Rimmer,
Manama, Bahrain.



SEARCHING for a cassette recorder compatible with the ZX-81 can be like looking for a needle in a haystack. The **Tele-ton 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.

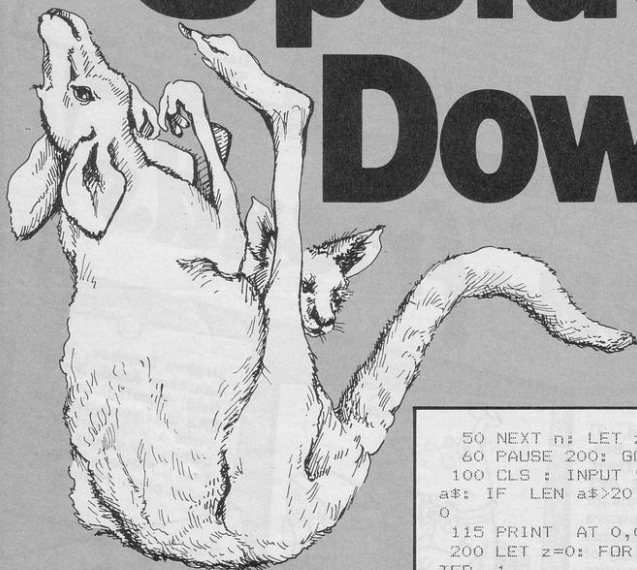
Alan Panter, 10 Bridge Road, Dewsborough, Northants, NN14 2IF is 10 years old and owns a 16K ZX-81. He would like to find a penfriend with whom he could exchange tips, news and programs.

O O Ademiya, 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=SIDWAYS
"
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

```

Upside 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 8x8 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 replotting 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 Upside 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.

60 Re-starts program after a PAUSE.

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.

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.

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.

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

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

As line 60.

50 Loops back to 30 for next

460

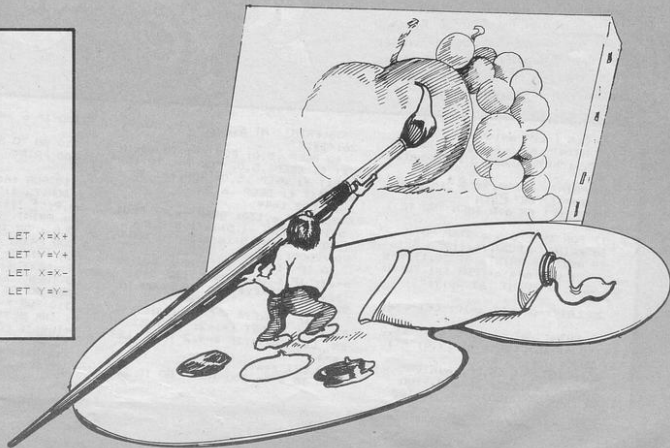
BEGINNER

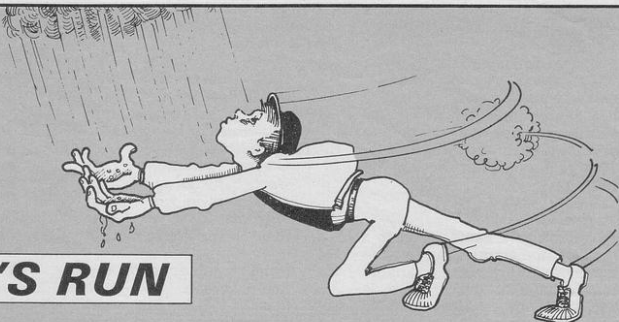
MINI ARTIST

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.

```
PROGRAM LISTING FOR MINI-ARTIST:
10 GOTO 20
20 CLS:PRINT "MINI-ARTIST"
30 INPUT "DRAW A LINE (Y/N):";A$
40 IF A$="Y" THEN GOTO 50
50 IF A$="N" THEN GOTO 20
60 INPUT "X1 Y1 X2 Y2: ";X1,Y1,X2,Y2
70 IF X1<X2 THEN X=X1:Y=Y1
80 IF X1>X2 THEN X=X2:Y=Y1
90 IF Y1>Y2 THEN Y=Y2
100 IF X1=X2 THEN GOTO 110
110 FOR Z=X1 TO X2
120 FOR A=Y1 TO Y2
130 PLOT Z,A
140 NEXT A
150 NEXT Z
160 GOTO 30
170 GOTO 20
END
```





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.

```

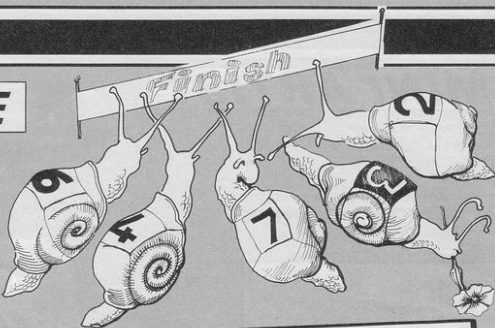
1 REM "ET"
2 LET HS="ZX-81 COMPUTER"
3 LET HS=10
4 LET A=15
5 LET Z=0
6 CLS
7 LET B=INT (RND*30)
8 PRINT AT 21,0," "
9
10 PRINT AT C,B,"O" AT C-1,B"
11 IF A+3<B AND C=18 THEN GOT
12 LET C=C+1
13 IF C=20 THEN GOTO 14
14 IF INKEYS="5" AND A<0 THEN
15 LET A=A-1
16 IF INKEYS="8" AND A<28 THEN
17 LET A=A+1
18 PRINT AT 16,A," " AT 17,A,"
19 " AT 18,A," " AT 19,A,"
20 " AT 20,A," "
21
22 IF A+3=B AND C=18 THEN LET
23 Z=Z+1
24 GOTO 20
25 CLS
26 PRINT AT 2,2,"YOU ARE 0:50"
27
28 PRINT AT 4,2,"YOUR SCORE="
29
30 PRINT AT 6,2,"PLEASE ENTER"
31
32 IF Z<18 THEN LET HS=AS
33 IF Z=18 THEN LET HS=AS
34 PRINT AT 6,2,"HIGH SCORE BY"
35 " HS
36 IF Z<18 THEN LET HS=Z
37 PRINT AT 8,2,"HIGH SCORE: 0:50"
38
39 PRINT "FOR ANOTHER GO PRE
40 ANY KEY"
41 IF INKEYS="" THEN GOTO 58
42 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":
11 AT 2,1:"KEYS:1 AND 3 ALTERNATIN
12 G"
13 PRINT AT 20,9:"A":m
15 INPUT "BET":q
16 IF q<1 OR q>m THEN GO TO 1
17
18 FOR f=m TO m-q STEP -5
19 PRINT AT 20,11:f" "
20 NEXT f: PRINT AT 20,11:m-q
21 " : LET m=m-q: FOR f=1 TO 10
22 NEXT f: PRINT AT 20,9:"
23
24 LET s=0: LET a=10: LET b=a
25 PRINT AT 16,0:"S": AT 17,0
26 " AT 18,0:"A": AT 19,0:"R":
27 AT 20,0:"T"
28 PRINT AT 16,25:"FINISH"
29 PLOT 10,150: DRAW 0,-100
30 PLOT 200,150: DRAW 0,-100
    
```

```

36 PRINT AT 5,26:"YOU": AT 9,
37 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 -(s/(1.5)),0
60 LET b=b+.5+(s/(1.5))+(q/3000)
+(m/2000)
70 IF INKEYS="" THEN LET s=
s-.2: IF s<=0 THEN LET s=0
71 IF INKEYS="" THEN GO TO
80
75 IF INKEYS="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:"C": 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
510 FOR f=1 TO 7: PRINT PAPER
f: INK B: "(10*iqB)YOU ARE SKINT(
9*iqb)": PORE 255/2,255: 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$="B")-(INKEY$="S")
60 PRINT AT 0,X,"V":AT 9,X,"
70 LET F=PEEK (PEEK 16399+256+
PEEK 16399)
80 IF F=236 THEN GOTO 150
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,"S"=:=:=
130 SCROLL
140 IF S=99 THEN SCROLL
150 GOTO 41
160 FOR X=0 TO 9
170 PRINT AT 0,X,"SHIP DESTROYE
D"
180 SCROLL
190 NEXT X
200 IF S=99 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
  
```



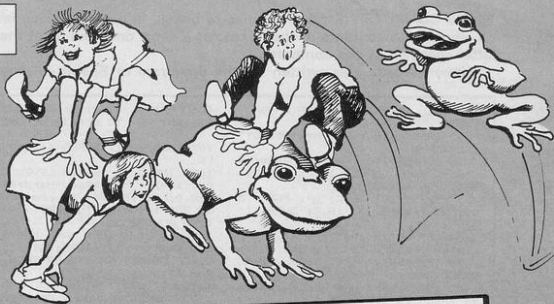
BEGINNER

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: "A"
70 IF L=2 THEN LET A=A-1: PRI
NT PAPER 4: AT A+1,B: "M"
80 IF L=3 THEN LET B=B+1: PRI
NT PAPER 4: AT A,B-1: "N"
  
```

```

90 IF L=4 THEN LET B=B-1: PRI
NT PAPER 4: AT A,B+1: "A"
95 IF SCREEN$ (A,B)="A" THEN
GO TO 1000
96 IF SCREEN$ (A,B)="M" THEN
LET SC=SC+1: BEEP .1,40
100 PRINT AT A,B: INK 2: "lgB"
"
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 "S: "FROGS": BEEP
.1,6: BEEP .1,8
1010 STOP
1020 PRINT FLASH 1: "FROGS": PRI
NT S: PRINT "YOU MUST EAT ALL OF
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
  
```



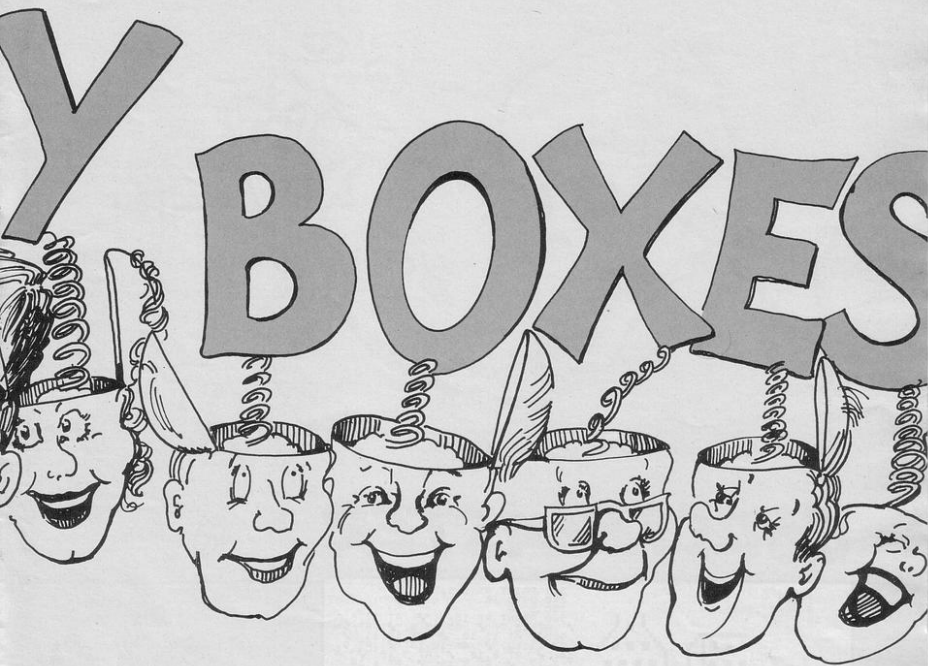
THE COMPUTER displays a series of boxes, in each of which is hidden a letter of the alphabet. You are shown the contents of the boxes for a short time and must then identify correctly the box containing a letter specified by the computer.

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
0 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 at the 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
5: 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
1130 LET LC= LEN A#: IF LC=0 OR
A#="" THEN LET M#="SUCCESSFULL
COMPLETION": GO TO 5000
11305 IF LC=0 THEN RETURN
11310 LET RD= INT ( RND *LC)+1: L
ET L#=#(RD): LET A#=#( ( TO RD-1
)+A#(RD-1 TO )
11320 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#1: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:"LEFT TO BET:": AT 5,4:"SHD
TS LETTER:": AT 5,18:"CHANCES:": A
T 7,12:"SCORE:"
2030 PRINT AT 20,3:"Level:":P#,
"Hi-scores":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
,26:1D: AT 5,15:STS: OVER 1: INK
1:" " AT 7,18: INK 7: OVER 0:(
INT SCR AND SCR>0)+0: DVER 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#=#+
CHR# A: NEXT A: LET A#=#+1:"": L
ET L= LEN A#: LET B#=#+
2210 RETURN

```

```
3000 LET L=17: LET STS=STS-1: IF
STB<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 A=CH:
GO SUB 1300: GO SUB 2100: RETURN
```

```
3065 IF C# = "H" 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# = "H" 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
X" 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:
"%"
```

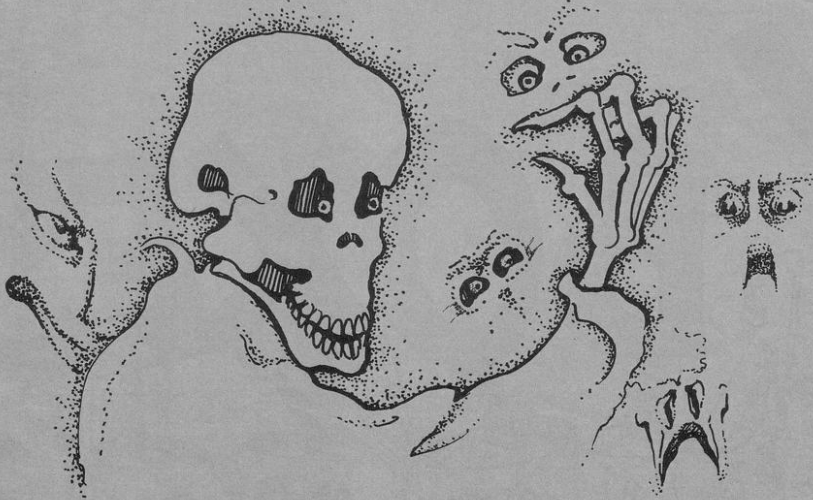
```
5060 LET M# = ("YOU MUST HAVE CHEA
TED" AND PR >= 90)+("WELL DONE Y
OU HAVE A GOOD MEMORY" AND PR >=
70 AND PR<90)+("AN AVERAGE EFFD
RT" AND PR >= 60 AND PR<70)+("NE
EDS IMPROVEMENT" AND PR >= 45 AN
D PR<60)+("A PRETTY POOR EFFORT"
AND PR >= 30 AND PR<45)+("GO BU
Y A ZX81" AND PR >= 20 AND PR<30
)+("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# 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 " : IN#
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

```

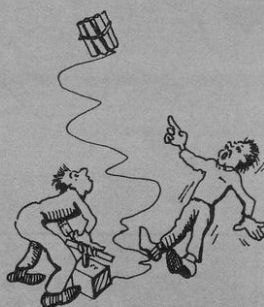
1000  GOTO 500
1010  DD00  GOTO 500
1020  DD00  GOTO 500
1030  DD00  GOTO 500
1040  DD00  GOTO 500
1050  DD00  GOTO 500
1060  DD00  GOTO 500
1070  DD00  GOTO 500
1080  DD00  GOTO 500
1090  DD00  GOTO 500
1100  DD00  GOTO 500
1110  DD00  GOTO 500
1120  DD00  GOTO 500
1130  DD00  GOTO 500
1140  DD00  GOTO 500
1150  DD00  GOTO 500
1160  DD00  GOTO 500
1170  DD00  GOTO 500
1180  DD00  GOTO 500
1190  DD00  GOTO 500
1200  DD00  GOTO 500
1210  DD00  GOTO 500
1220  DD00  GOTO 500
1230  DD00  GOTO 500
1240  DD00  GOTO 500
1250  DD00  GOTO 500
1260  DD00  GOTO 500
1270  DD00  GOTO 500
1280  DD00  GOTO 500
1290  DD00  GOTO 500
1300  DD00  GOTO 500
1310  DD00  GOTO 500
1320  DD00  GOTO 500
1330  DD00  GOTO 500
1340  DD00  GOTO 500
1350  DD00  GOTO 500
1360  DD00  GOTO 500
1370  DD00  GOTO 500
1380  DD00  GOTO 500
1390  DD00  GOTO 500
1400  DD00  GOTO 500
1410  DD00  GOTO 500
1420  DD00  GOTO 500
1430  DD00  GOTO 500
1440  DD00  GOTO 500
1450  DD00  GOTO 500
1460  DD00  GOTO 500
1470  DD00  GOTO 500
1480  DD00  GOTO 500
1490  DD00  GOTO 500
1500  DD00  GOTO 500
1510  DD00  GOTO 500
1520  DD00  GOTO 500
1530  DD00  GOTO 500
1540  DD00  GOTO 500
1550  DD00  GOTO 500
1560  DD00  GOTO 500
1570  DD00  GOTO 500
1580  DD00  GOTO 500
1590  DD00  GOTO 500
1600  DD00  GOTO 500
1610  DD00  GOTO 500
1620  DD00  GOTO 500
1630  DD00  GOTO 500
1640  DD00  GOTO 500
1650  DD00  GOTO 500
1660  DD00  GOTO 500
1670  DD00  GOTO 500
1680  DD00  GOTO 500
1690  DD00  GOTO 500
1700  DD00  GOTO 500
1710  DD00  GOTO 500
1720  DD00  GOTO 500
1730  DD00  GOTO 500
1740  DD00  GOTO 500
1750  DD00  GOTO 500
1760  DD00  GOTO 500
1770  DD00  GOTO 500
1780  DD00  GOTO 500
1790  DD00  GOTO 500
1800  DD00  GOTO 500
1810  DD00  GOTO 500
1820  DD00  GOTO 500
1830  DD00  GOTO 500
1840  DD00  GOTO 500
1850  DD00  GOTO 500
1860  DD00  GOTO 500
1870  DD00  GOTO 500
1880  DD00  GOTO 500
1890  DD00  GOTO 500
1900  DD00  GOTO 500
1910  DD00  GOTO 500
1920  DD00  GOTO 500
1930  DD00  GOTO 500
1940  DD00  GOTO 500
1950  DD00  GOTO 500
1960  DD00  GOTO 500
1970  DD00  GOTO 500
1980  DD00  GOTO 500
1990  DD00  GOTO 500
2000  DD00  GOTO 500

```

```

331 PRINT AT 8,5,"!"
340 GOTO 30
350 STOP
360 PRINT AT 10,5,""
370 PRINT AT 10,5,""
380 PRINT AT 10,5,""
390 PRINT AT 10,5,""
400 PRINT AT 10,5,""
410 PRINT AT 10,5,""
420 PRINT AT 10,5,""
430 PRINT AT 10,5,""
440 PRINT AT 10,5,""
450 PRINT AT 10,5,""
460 PRINT AT 10,5,""
470 PRINT AT 10,5,""
480 PRINT AT 10,5,""
490 PRINT AT 10,5,""
500 PRINT AT 10,5,""
510 PRINT AT 10,5,""
520 PRINT AT 10,5,""
530 PRINT AT 10,5,""
540 PRINT AT 10,5,""
550 PRINT AT 10,5,""
560 PRINT AT 10,5,""
570 PRINT AT 10,5,""
580 PRINT AT 10,5,""
590 PRINT AT 10,5,""
600 PRINT AT 10,5,""
610 PRINT AT 10,5,""
620 PRINT AT 10,5,""
630 PRINT AT 10,5,""
640 PRINT AT 10,5,""
650 PRINT AT 10,5,""
660 PRINT AT 10,5,""
670 PRINT AT 10,5,""
680 PRINT AT 10,5,""
690 PRINT AT 10,5,""
700 PRINT AT 10,5,""
710 PRINT AT 10,5,""
720 PRINT AT 10,5,""
730 PRINT AT 10,5,""
740 PRINT AT 10,5,""
750 PRINT AT 10,5,""
760 PRINT AT 10,5,""
770 PRINT AT 10,5,""
780 PRINT AT 10,5,""
790 PRINT AT 10,5,""
800 PRINT AT 10,5,""
810 PRINT AT 10,5,""
820 PRINT AT 10,5,""
830 PRINT AT 10,5,""
840 PRINT AT 10,5,""
850 PRINT AT 10,5,""
860 PRINT AT 10,5,""
870 PRINT AT 10,5,""
880 PRINT AT 10,5,""
890 PRINT AT 10,5,""
900 PRINT AT 10,5,""
910 PRINT AT 10,5,""
920 PRINT AT 10,5,""
930 PRINT AT 10,5,""
940 PRINT AT 10,5,""
950 PRINT AT 10,5,""
960 PRINT AT 10,5,""
970 PRINT AT 10,5,""
980 PRINT AT 10,5,""
990 PRINT AT 10,5,""
1000 PRINT AT 10,5,""

```



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.

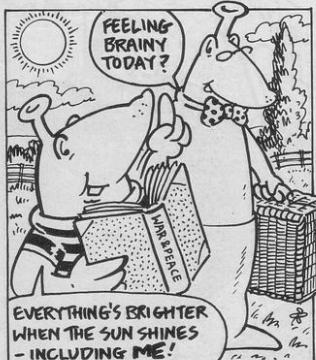
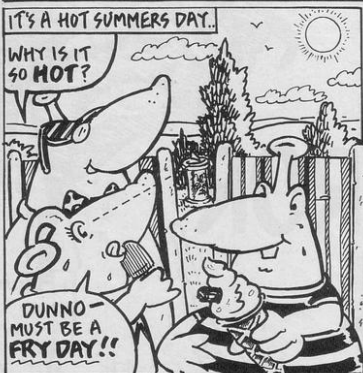
```

600 CLS
610 PRINT ""
620 PRINT ""
630 PRINT ""
640 PRINT ""
650 PRINT ""
660 PRINT ""
670 PRINT ""
680 PRINT ""
690 PRINT ""
700 PRINT ""
710 PRINT ""
720 PRINT ""
730 PRINT ""
740 PRINT ""
750 PRINT ""
760 PRINT ""
770 PRINT ""
780 PRINT ""
790 PRINT ""
800 PRINT ""
810 PRINT ""
820 PRINT ""
830 PRINT ""
840 PRINT ""
850 PRINT ""
860 PRINT ""
870 PRINT ""
880 PRINT ""
890 PRINT ""
900 PRINT ""
910 PRINT ""
920 PRINT ""
930 PRINT ""
940 PRINT ""
950 PRINT ""
960 PRINT ""
970 PRINT ""
980 PRINT ""
990 PRINT ""
1000 PRINT ""

```



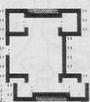
S P R O G S



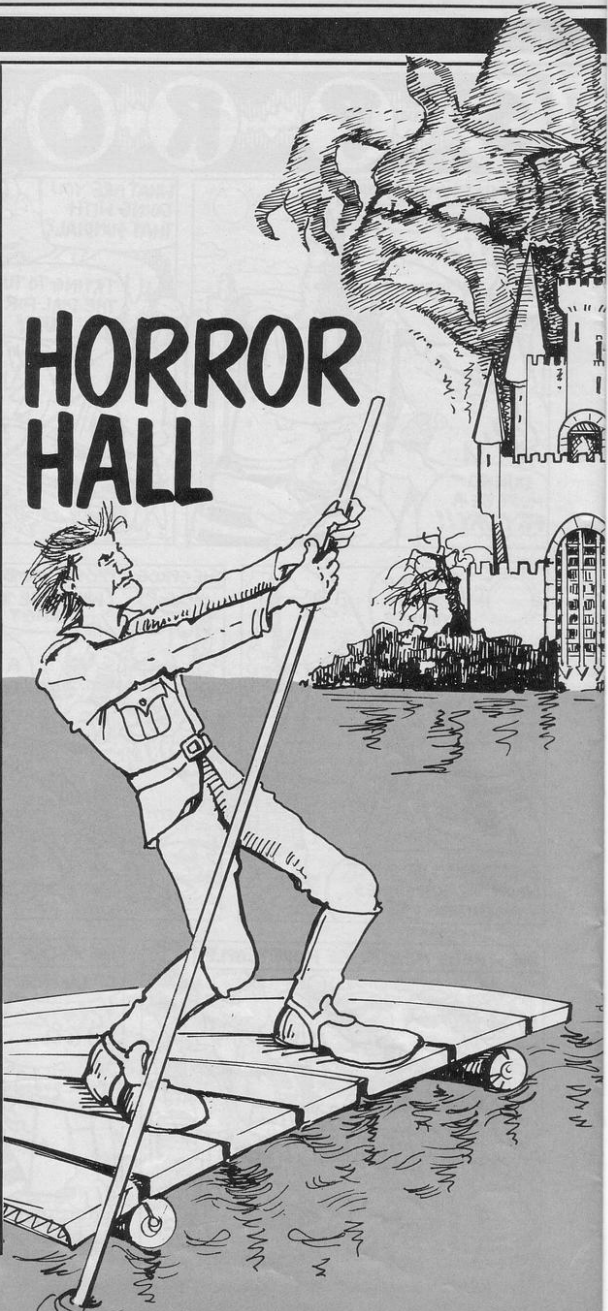

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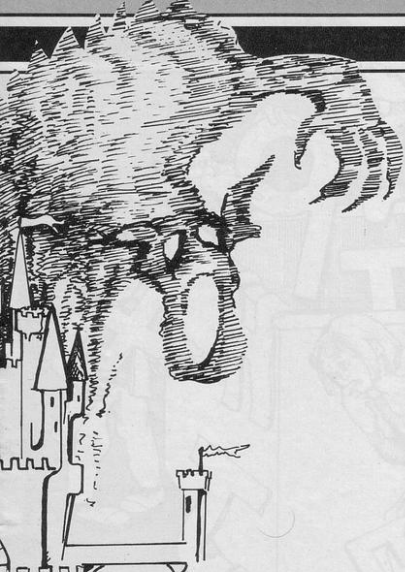
10 LET A=0
11 LET O=30
12 LET P=18
13 LET Z=19
14 PRINT AT 21,0:"BY H.ESSERS"
15 FOR D=0 TO 21
16 PRINT AT D,0:
17
18 NEXT D
19 IF A=0 THEN GOTO 15
20 LET Z=8
21 LET O=31
22 LET P=19
23 PRINT AT 2,10:
24 PRINT AT 3,10:
25 PRINT AT 4,10:
26 PRINT AT 5,11:
27 PRINT AT 6,11:
28 PRINT AT 7,11:
29 PRINT AT 8,12:
30 PRINT AT 9,12:
31 PRINT AT 10,10:
32 PRINT AT 11,10:
33 PRINT AT 7,5:
34 PRINT AT 9,9:
35 PRINT AT 10,10:
36 PRINT AT 11,6:
37 PRINT AT 12,10:
38 PRINT AT 13,10:
39 PRINT AT 14,10:
40 PRINT AT 15,16:
41 PRINT AT 16,10:
42 PRINT AT 17,10:
43 PRINT AT 18,10:
44 PRINT AT 19,10:
45 PRINT AT 6,7:
46 PRINT AT 6,9:
47 PRINT AT 6,
48
49 PRINT AT 21,31:"X"
50 LET P=0
51 PRINT AT 3,18:
52 PRINT AT 3,11:
53 PRINT AT 10,11:
54 PRINT AT 10,18:
55
56 LET X=21
57 LET Y=12
58 SLOW
59 IF X<>18 AND X<>19 THEN GOTO 102
60
61 GOTO 109
62 PRINT AT X,Y:
63 LET Y=Y+(INKEY="B" AND Y<3)
64 IF INKEY="S" AND Y>0)
65 LET X=X+(INKEY="R" AND X<2)
66 IF INKEY="L" AND X>0)
67
68 GOTO 150
69 LET X=X+1
70 GOTO 150
71 LET Y=Y-1
72 GOTO 150
73 LET X=X-1
74 GOTO 150
75 LET Y=Y+1
76 PRINT AT X,Y:
77 IF PEEK(256+PEEK 16399+PEEK
78 K 16398)=CODE THEN GOTO 183
79 IF PEEK(256+PEEK 16399+PEEK
80 K 16398)=CODE THEN GOTO 183
81 IF PEEK(256+PEEK 16399+PEEK
82 K 16398)=CODE THEN GOTO 5000
83 IF PEEK(256+PEEK 16399+PEEK
84 K 16398)=CODE THEN GOTO 118
85 IF PEEK(256+PEEK 16399+PEEK
86 K 16398)=CODE THEN GOTO 118
87 IF PEEK(256+PEEK 16399+PEEK
88 K 16398)=CODE THEN GOTO 118
89 IF PEEK(256+PEEK 16399+PEEK
90 K 16398)=CODE THEN GOTO 118
91 IF PEEK(256+PEEK 16399+PEEK
92 K 16398)=CODE THEN GOTO 118
93 IF PEEK(256+PEEK 16399+PEEK
94 K 16398)=CODE THEN GOTO 118
95 IF PEEK(256+PEEK 16399+PEEK
96 K 16398)=CODE THEN GOTO 118
97 IF PEEK(256+PEEK 16399+PEEK
98 K 16398)=CODE THEN GOTO 118
99 IF PEEK(256+PEEK 16399+PEEK
100 K 16398)=CODE THEN GOTO 118
101 IF PEEK(256+PEEK 16399+PEEK
102 K 16398)=CODE THEN GOTO 118
103 IF PEEK(256+PEEK 16399+PEEK
104 K 16398)=CODE THEN GOTO 118
105 IF PEEK(256+PEEK 16399+PEEK
106 K 16398)=CODE THEN GOTO 118
107 IF PEEK(256+PEEK 16399+PEEK
108 K 16398)=CODE THEN GOTO 118
109 IF PEEK(256+PEEK 16399+PEEK
110 K 16398)=CODE THEN GOTO 118
111 IF PEEK(256+PEEK 16399+PEEK
112 K 16398)=CODE THEN GOTO 118
113 IF PEEK(256+PEEK 16399+PEEK
114 K 16398)=CODE THEN GOTO 118
115 IF PEEK(256+PEEK 16399+PEEK
116 K 16398)=CODE THEN GOTO 118
117 IF PEEK(256+PEEK 16399+PEEK
118 K 16398)=CODE THEN GOTO 118
119 IF PEEK(256+PEEK 16399+PEEK
120 K 16398)=CODE THEN GOTO 118
121 IF PEEK(256+PEEK 16399+PEEK
122 K 16398)=CODE THEN GOTO 118
123 IF PEEK(256+PEEK 16399+PEEK
124 K 16398)=CODE THEN GOTO 118
125 IF PEEK(256+PEEK 16399+PEEK
126 K 16398)=CODE THEN GOTO 118
127 IF PEEK(256+PEEK 16399+PEEK
128 K 16398)=CODE THEN GOTO 118
129 IF PEEK(256+PEEK 16399+PEEK
130 K 16398)=CODE THEN GOTO 118
131 IF PEEK(256+PEEK 16399+PEEK
132 K 16398)=CODE THEN GOTO 118
133 IF PEEK(256+PEEK 16399+PEEK
134 K 16398)=CODE THEN GOTO 118
135 PRINT
136 IF X<>18 AND X<>19 THEN GOTO 102
137
138 NEXT U
139 IF X<17 THEN GOTO 1050
140 PRINT AT I,O:
141 LET O=1
142 IF O=30 THEN LET O=0
143 PRINT AT L,P:
144 LET P=1
145 IF P=0 THEN LET P=30
146 GOTO 300
147 PRINT AT X,Y:
148 CLS
149 PRINT AT 10,8:"YOU ARE DROU
150 NED IN THE MORT..."
151 PRINT "YOU FOUND $",A
152 STOP
153 IF X>17 THEN GOTO 500
154 IF X=INT Z AND Y=INT C THEN
155 GOTO 810
156 PRINT AT Z,C:
157 LET Z=Z+(.5 AND Z(X)-1.5) AN
158 D Z(X)
159 LET C=C+(.5 AND C(Y)-1.5) AN
160 D C(Y)
161 PRINT AT Z,C:
162 IF INT Z=X AND INT C=Y THEN
163 GOTO 510
164 IF PEEK(256+PEEK 16399+PEEK
165 K 16398)=CODE THEN GOTO 385
166 IF PEEK(256+PEEK 16399+PEEK
167 K 16398)=CODE THEN GOTO 1100
168 IF PEEK(256+PEEK 16399+PEEK
169 K 16398)=CODE THEN GOTO 1100
170 IF PEEK(256+PEEK 16399+PEEK
171 K 16398)=CODE THEN GOTO 1100

```



HORROR HALL





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.

```

2030 PRINT AT X,Y:
2031 LET X=X+(INKEYS="6")-(INKEY
S="7")
2032 LET Y=Y+(INKEYS="8")-(INKEY
S="5")
2040 PRINT AT X,Y:
2044 IF PEEK (256+PEEK 16399+PEE
K 16398)=CODE THEN GOTO 2030
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 5000
2051 IF PEEK (256+PEEK 16399+PEE
K 16398)=CODE THEN GOTO 5000
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 3070
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
2059 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
2069 IF D=1 THEN GOTO 2200
2100 LET E=E-.5
2105 PRINT AT 3,15: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+1.5 AND G(X)=1.5 AN
D G(Y)
2205 LET T=T+(.5 AND T(Y)=1.5 AN
D T(Y))
2210 PRINT AT G,T:
2215 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
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 4005
2230 IF PEEK (256+PEEK 16399+PEE
K 16398)=CODE THEN GOTO 4010
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 X=X+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
3090 FOR U=0 TO 21
3302 PRINT AT U,0:
3304 NEXT U
3305 PRINT AT 10,0: "THE BOMB HA
S BEEN SET AND YOU ARE DEAD"
3306 PRINT AT 13,0: "AU FUREUR
"
3310 STOP
4000 LET T=T+.5
4001 LET T=T+.5
4005 LET T=T+.5
4010 LET G=G+.5
4015 GOTO 2210
4020 LET G=G+.5
4022 GOTO 2210
4100 FOR U=0 TO 15
4110 PRINT AT X,Y:
4120 PRINT AT X,Y:
4130 NEXT U
4140 CLS
4150 PRINT AT 18,0: "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=G+.5
4230 LET T=T+.5
4240 GOTO 2200
5000 LET A=A+10
5005 PRINT AT G,T:
5010 LET G=G+
5020 LET T=T+
5030 GOTO 2030
5500 PRINT AT Z,C:
5501 LET Z=C+1
5503 PRINT AT Z,C:
5504 PRINT AT G,T:
5510 GOTO 100
5900 FAST
5910 GOTO 3

```

```

332 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 1155
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
345 IF PEEK (256+PEEK 16399+PEE
K 16398)=CODE THEN GOTO 1120
399 REM AT Z,C:
399 REM *****
440 IF X=INT 0 AND Y=INT U THEN
GOTO 510
441 PRINT AT 0,U:
445 LET 0=0+(.5 AND 0(X)=1.5 AN
D 0(X))
446 LET 0=1(.5 AND W(Y)=1.5 AN
D U(Y))
447 PRINT AT 0,U:
448 IF INT 0=X AND INT U=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 1535
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

```

```

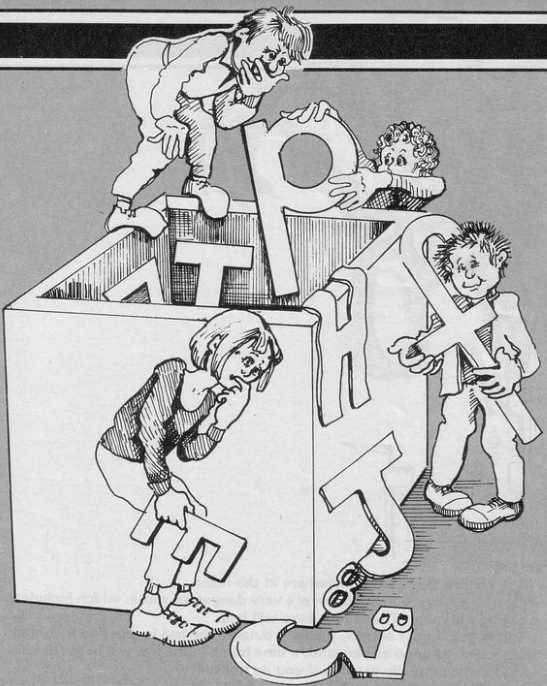
489 PRINT "
500 GOTO 2030
510 FOR D=1 TO 10
511 PRINT AT X,Y:
512 NEXT D
513 CLS
514 PRINT AT 13,0: "YOU HAVE BEE
N KILLED BY A GHOST"
515 PRINT "YOU FOUND $":A
516 STOP
610 STOP
1000 PRINT AT X-1,Y-1:
Y-2:
1005 PRINT AT X-1,Y-1:
Y-2:
1010 PRINT AT X-1,Y-1:
Y-2:
1015 PRINT AT X-1,Y-1:
Y-2:
1020 FOR S=1 TO 10
1021 NEXT S
1022 PRINT AT 10,0: "YOU WALKED O
N A MINE"
1030 PRINT AT 10,0: "YOU FOUND $":A
1030 STOP
1050 LET P=30
1060 LET L=18
1070 LET I=19
1080 LET 0=0-1
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 PRINT "
1170 PRINT AT 0,U:
1180 GOTO 445
1190 LET 0=0+1
1200 GOTO 457
1210 LET U=U+1
1220 GOTO 457
1230 GOTO 457
1240 GOTO 457
1255 LET U=U+1
1260 GOTO 457
2000 LET G=G+
2001 LET T=T+
2002 LET X=X+
2003 LET Y=Y+1
2010 LET G=G+
2011 LET L=L+

```

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.



```

100 REM *****INSTRUCTIONS*****
1100 GOTO 4000
1200 GOTO 4500
1300 REM *****SCREEN MATHS M*****
1400 REM *****
1500 X=0 TO 21
1600 PRINT AT X,0
1700
1800 NEXT X
1900 PRINT AT 0,4: "COPYRIGHT BY
2000 V.YATES"
2100 GOSUB 1000
2200 LET A=0
2300 LET B=1
2400 REM *****REVERSE OF CIPHER*****
2500 FOR C=0 TO 25
2600 B=CHR$(B)
2700 B=CHR$(25-B)
2800 B=CHR$(B)
2900 C=C+1
3000 PRINT AT A+1, B+10: B$
3100 C=C+1
3200 IF C=INKEY$ THEN GOTO 70
3300 PRINT AT A+1, B+10: B$(A+1)
3400
3500 IF C#="5" AND B=1 THEN LET
3600 B=2
3700 IF C#="8" AND B=4 THEN LET
3800 B=5
3900 IF C#="6" AND (A+1) < 4 THEN
4000 A=A+1
4100 IF C#="7" AND (A+1) > 1 THEN
4200 A=A-1
4300 IF INKEY$="0" THEN GOTO 330
4400
4500 IF C#="0" THEN GOSUB 500
4600 IF A#="123456789ABCDEF" AN
4700 B#="7" AND B+10 > 3000
4800 GOTO 60
4900 IF A$(A+1)+B$=" " THEN RET
5000
5100 FOR C=1 TO 15
5200 IF A$(C)="" THEN GOTO 531
5300 GOTO 3000
5400 REM *****SPACE BACK*****
5500 REM *****SPACE FORWARD*****
5600 FOR C=0 TO (A+4)+5-1: STEP
5700
5800 LET A$(D)=A$(D-1)
5900 NEXT C
6000 LET B$(D)=""
6100 GOSUB 1000
6200 RETURN
6300 REM *****SPACE FORWARD*****
6400 FOR C=0 TO (A+4)+5-1: STEP
6500
6600 LET A$(D)=A$(D+1)
6700 NEXT C
6800 LET B$(D)=""
6900 GOSUB 1000
7000 REM *****SPACE UP*****
7100 FOR C=0 TO (A+4)+5-1: ST
7200
7300 LET A$(D)=A$(D-4)
7400 NEXT C
7500 GOTO 530
7600 REM *****SPACE DOWN*****
7700 FOR C=0 TO (A+4)+5-1: STEP
7800
7900 LET A$(D)=A$(D+4)
8000 NEXT C
8100 GOTO 530
8200 REM *****SPACE UP PUZZLE*****
8300 GOTO 530
8400 REM *****SPACE MATH*****
8500 PRINT AT 21,0: "*****MATH*****"
8600
8700 PRINT AT 11,10: "*****1 TO
8800 1) AT 12,10: "*****2 TO 3)
8900 2) AT 13,10: "*****3 TO 12)
9000 3) AT 14,10: "*****4 TO 16)
9100 4) AT 15,10: "*****5 TO 21)
9200 PRINT AT 15,10: "*****6 TO 1
9300 6) AT 16,10: "*****7 TO 21)
9400 PRINT AT 17,0: "*****
9500
9600 RETURN
9700 REM *****YOU HAVE TO ARRANGE THE
9800 LETTERS AND NUMBERS INTO ORDER, E

```

```

2000 LET NO=0
2001 LET J#A#4+5
2002 IF C=1=J OR (C-2)=J OR (C
+3)=J THEN LET NO=600
2004 IF C-1=J OR (C-2)=J OR (C
-3)=J THEN LET NO=550
2005 IF C-4=J OR C-8=J OR C-12=J
THEN LET NO=700
2006 IF C+4=J OR C+8=J OR C+12=J
THEN LET NO=800
2007 IF C=1 OR C=2 THEN LET NO=50
2008 GOTO 40
2009 REM *****SUCCEED*****
2100 NEXT A TO 30
2101 NEXT B
2102 CLS
2103 PRINT AT 4,1: "CONGRAT
2104 U.L.A.T.I.O.N.S."
2105 PRINT AT 9,10: "YOU SUCCEEDED
2106
2107 PRINT AT 12,10: "AGAIN (Y/N)"
2108
2109 IF INKEY$="" THEN STOP
2110 IF INKEY$="N" THEN STOP
2111 PRINT AT 12,10: "AGAIN (Y/N)"
2112
2113 GOTO 3000
2114 REM *****ROOM NO. AND LE*****
2115 LET D$=""
2116 LET A$=""
2117 LET C$="123456789ABCDEF"
2118 LET A$=INT (RND*(LEN C$))+1
2119 LET A$=C$(A$)
2120 LET D$=D$+C$(A$)
2121 LET C$=C$(1 TO A-1)
2122 LET D$=D$+C$(A+1 TO LEN C$)
2123 LET C$=C$(A+1)
2124 LET D$=D$
2125 GOTO 3015
2126 GOTO 3015
2127 PRINT AT 3,5: "QUIT (Y/N)"
2128 IF INKEY$="" THEN GOTO 307
2129 IF INKEY$="N" THEN GOTO 305
2130 IF INKEY$="Y" THEN GOTO 305
2131 GOTO 3010
2132 GOTO 3010
2133 PRINT AT 3,13: "
2134 FOR M=1 TO 10
2135 NEXT M
2136 PRINT AT 3,5: "*****
2137 PRINT AT 3,11: "*****
2138 FOR A=1 TO 40
2139 NEXT A
2140 CLS
2141 GOTO 3030
2142 PRINT TAB 8: "PUZZLE BY V.YA
2143
2144 PRINT AT 2,0: "THE OBJECT OF
2145 THIS PUZZLE IS TO ARRANGE THE L
2146 ETTERS AND NUMBERS INTO ORDER, E

```

```

0-123456789ABCDEF WITH THE SPAC
2- IN THE BOTTOM RIGHT HAND CO
4005 PRINT
4010 PRINT " " KEYS "
4011 PRINT
4015 PRINT "8), 50 LEFT
4020 PRINT "6), 50 DOWN
4025 PRINT "7), 50 UP
4030 PRINT "9), 50 RIGHT
4035 PRINT "0), POSITION SPACE"
4040 PRINT "0), QUIT"
4045 PRINT AT 19,0: "PLEASE WAIT.
4114
4115 PRINT AT 21,0: "*****COPYR
4116 *****
4120 GOTO 3000
4130 GOTO 3000
4140 PRINT AT 19,0: "PRESS ANY KE
4151 LET N$="COPYRIGHT V.YATES"
4152 PRINT AT 21,0: "*****YOU H
4153 *****
4154 PRINT AT 21,0: "*****1 TO 32)
4155 LET N$=N$ TO 1)+N$(1)
4156 IF INKEY$="" THEN GOTO 4500
4157 GOTO 30
4158 REM *****VARIABLES*****
4159 REM *****
4160 REM *****
4161 REM *****
4162 REM *****
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4495 REM *****
4496 REM *****
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4499 REM *****
4500 REM *****

```




SINCLAIR PROGRAMS COMPUTER HOLIDAY

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.

The Advanced Holiday: Down from £154 to £139. Aimed at those with an extensive knowledge of programming, including simple machine code. The course takes you inside computers to show how they work, the particular facets of each machine's processor, operating system and memory. Other advanced computer work includes digital electronics, robot control, vision

BASIC COURSE: £134 + VAT

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

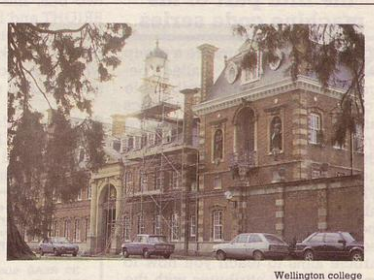
Harrogate	12-17 years	20, 27 July 3, 10, 17, 24 August
Crowthorne	12-17 years	20, 27 July 3, 10, 17, 24 August

EXCLUSIVE SINCLAIR PROGRAM: £144 + VAT

Wellington College, Crowthorne	12-17 years	3 August
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Special Sinclair Program: Down from £164 to £144.

Will be set at the same level and cover the same subjects as the Advanced Course. It will also fea-



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, simply complete the form below, make sure your parent or guardian has signed it, and post it to Dolphin Holidays.

See you at Wellington College!

I would like to attend a SINCLAIR PROGRAMS/
DOLPHIN computer camp.

I have ticked my choice of camp and dates.

<input type="checkbox"/> 1 DOLPHIN COMPUTER CAMP	<input type="checkbox"/> 2 ADVANCED COMPUTER CAMP	<input type="checkbox"/> 3 SINCLAIR PROGRAMS COMPUTER CAMP AVAILABLE ONLY ON AUGUST 3rd
<input type="checkbox"/> 20th JULY <input type="checkbox"/> 3rd AUGUST <input type="checkbox"/> 17th AUGUST	<input type="checkbox"/> 27th JULY <input type="checkbox"/> 10th AUGUST <input type="checkbox"/> 24th AUGUST	<input type="checkbox"/> 20th JULY <input type="checkbox"/> 3rd AUGUST <input type="checkbox"/> 17th AUGUST

NAME

ADDRESS

..... PHONE

PARENT'S SIGNATURE

What time of day is best for Dolphin to phone?

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—5AFFFH). It is easier to understand than the display file because the 768 bytes it contains have a direct relationship to the 32 x 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 0011000 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
6,248,199,16,242,122,254,32,200,
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 CDL INC HL
7E 100 LD A, (HL)
E6C7 110 AND C7H
82 120 ADD A, D
77 130 LD (HL), A
10F8 140 DJNZ CDL
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
1B88 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 tech-



nique 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 40 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 x 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).

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. Re-

```

10 REM Paper/Ink colour reverse
20 LET S=0: FOR I=64000 TO 640
21: 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
5,15,71,62,7,166,7,7,128,71,62
,192,166,128,119,35,124,254,91,3
2,230,201,2610
50 CLEAR 63999: LIST : RANDMI
ZE USR 64000: STOP
70 SAVE "reverse" CODE 64000,3
0

```

```

10 : PAPER/INK COLOUR REVERSE
210058 20 LD HL, 5800H
3E3B 30 NEXT LD A, 38H
A6 40 AND (HL)
AF 50 RRCA
OF 60 RRCA
47 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
3E0C 160 LD A, COH
A6 170 AND (HL)
80 180 ADD A,B
77 190 LD (HL),A
23 200 INC HL
7C 210 LD A,H
FEBB 220 CP B
20E6 230 JR NZ,NEXT
C9 240 RET

```

Program two

membering 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 used 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).

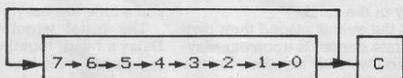


Figure one

SUPERTEST

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 tax-

ing and most of us found that midway through this event co-ordination of our hands and eyes were stretched to new and hitherto unknown limits.

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 co-ordination. 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 beau-

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

The inside

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



ing and most of us found that midway through this event co-ordination of our hands and eyes were stretched to new and hitherto unknown limits.

The 1500 metres, known to be

tifully 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.

EST

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

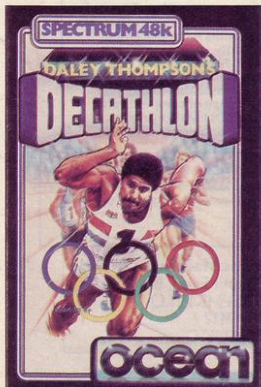
story

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; initially 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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- NEW BRAIN
- SINCLAIR QL
- *Special interface.

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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
```

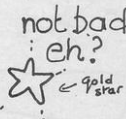
```
110 GO TO 25
```

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!

NOW THERE ARE HI-RES PROGRAMS FOR THE 16K ZX-81

3

FORTY NINER

In 1849 the Great American Gold Rush started. Almost everyone who could sold up everything and dashed to the west coast to look for this precious metal – including you!

You must excavate this precious metal – but can you survive the giant rats and that vicious Gremlin which will come to infest your mine? Can you trick the snakes into leaving their comfortable nests and destroy the rats for you? Can you keep the Gremlin at bay?

Riches await you – but so do the hazards!



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

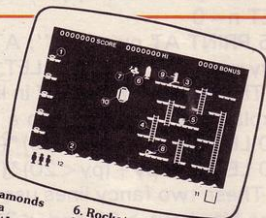
ROCKET MAN

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!

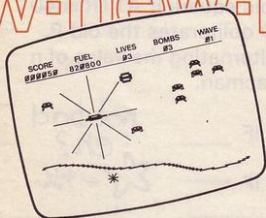
There is an expanse of shark infested water between you and the Diamonds and a strange breed of Bubble that seems hell bent on getting you in it! Somehow you must cross it...

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. Bubble
- 11. Fuel Gauge
- 12. Men remaining



Z-XTRICATOR

A long time ago, in a galaxy far, far, away a terrible war took place between two hostile races. Any prisoners taken could not expect to live very long in the hands of their captors. Their only hope lay with a group of valiant warriors – the XTRICATORS – whose task it was to rescue fellow beings from the alien planet's surface. You are about to take on the role of such a warrior...

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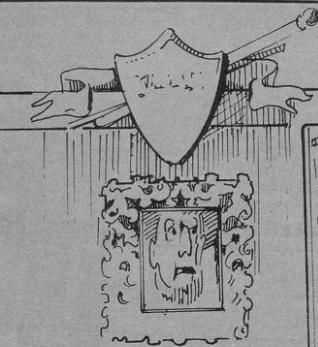
1 Knight Lore	Ultimate
2 Jet Set Willy	Software Projects
3 Lords of Midnight	Beyond
4 Decathlon	Ocean
5 Manic Miner	Software Projects
6 Hobbit	Melbourne House
7 Matchday	Ocean
8 Sabre Wulf	Ultimate
9 Alien 8	Ultimate
10 Skooldaze	Microsphere

↑ 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.

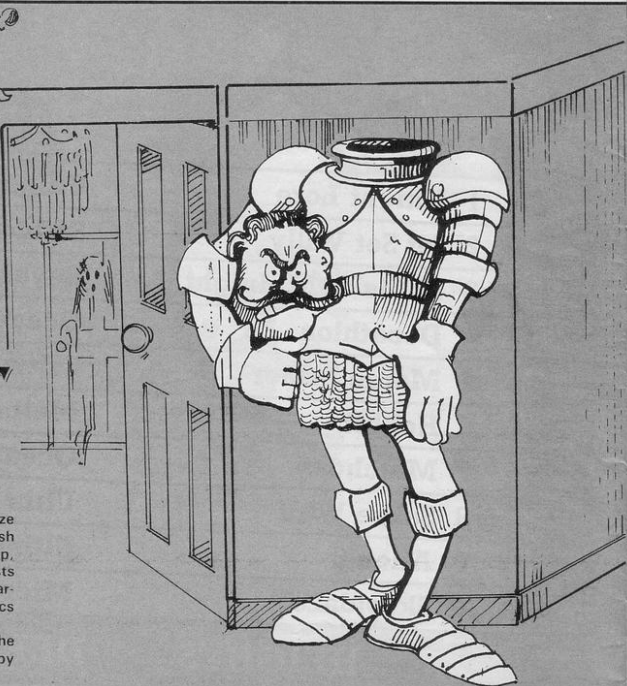
Winner of this month's chart prize is Alexander Turnbull of Edinburgh, Scotland.



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 OR
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 OR
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: BRIGHT
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 0
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
-ME D-U-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#="D" 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+
1: FOR A=0 TO 7: PRINT OVER 0:
INK A: AT Y,X:"E": AT Y,X:" ": A
T Y,X: "M": 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+.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 0011100, BIN 001
00100, BIN 11001111, BIN 1001100
1, BIN 10011001, BIN 11001111, 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$(M)="A" THEN PRINT B
RIGHT 1; OVER 0; INVERSE 0; FLAS
H 0; PAPER 0; INK 5; AT N,M;"C":
7563 NEXT M
7564 NEXT N
7570 DATA "AAAAAAAAAAAAAAAAAAAAA
AAAAAAAAA"
7571 DATA "A A
A A"
7572 DATA "A AA A A A
AA A A A"
7573 DATA "A A A AA AA A
AA A A A"
7574 DATA "A AA AAA A A
AA A AAA"
7575 DATA "A A A A AA
A A A"
7576 DATA "A A A A A AA
AA AA A"
7577 DATA "A AAA A A
A A A"
7578 DATA "A A AA
AA AA A A"
7579 DATA "A AA A A AA A
A A"
7580 DATA "A AA A AA AAA
A AA A A"
7581 DATA "A A AA A A
A A A"
7582 DATA "A A A
A A"
7583 DATA "A A AAA A
A AA A A"
7584 DATA "AA AA AA A
A AA A"
7585 DATA "A AAA AA A A
A A A"
7586 DATA "A A A A
AAAAAAAAAAAAAAAAAAAAA
AAAAAAAAA"
7590 RETURN
7599 CLS : REM SCREEN2
7600 FOR N=4 TO 21: READ A$: FDR

```

```

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 "AAAAAAAAAAAAAAAAAAAAA
AAAAAAAAA"
7606 DATA "AA A AA A
A AA"
7607 DATA "A A A AAA AAA
A A A A"
7608 DATA "AA A A AAA A
A A A"
7609 DATA "A A A A A A
A A A"
7610 DATA "A A AAA
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 AAA 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"
7617 DATA "A A A AA A A
A A AAA"
7618 DATA "A A AAA A A A
A A A A"
7619 DATA "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 "AAAAAAAAAAAAAAAAAAAAA
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.



```

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 31:"-----"
: AT 19,0: INK 6:"-----"
120 PRINT AT 0,2: BRIGHT 1: IN
K 5:"Score 0": AT 0,16:"High "1s
B
130 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#B)+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#B)+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 0,9: 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
=: 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
10000, BIN 00010000, BIN 10010010
1, BIN 10010011, 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
left 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;"
G...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*RI
G HT ~O~JUMP: PAUSE 0: CLS
100 PAPER 5: CLS : PRINT INK 2
: AT 15,0:"IIIIIIIIIIIIIIIIIIIII
IIIIIIIIIIIIIIIIIIIIIIIIIIIIIII
IIIIIIIIIIIIIIIIIIIIIIIIIIIIIII
IIIIIIIIIIIIIIIIIIIIIIIIIIIIIII
IIIIIIIIIIIIIIIIIIIIIIIIIIIIIII
IIIIIIIIIIIIIIIIIIIIIIIIIIIIIII
IIIIIIIIIIIIIIIIIIIIIIIIIIIIIII
IIIIIIIIIIIIIIIIIIIIIIIIIIIIIII
IIIIIIIIIIIIIIIIIIIIIIIIIIIIIII
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
11"
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

```

```

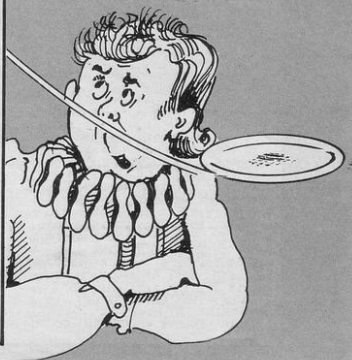
=26: GO TO 100
400 GO TO 125
1000 IF INKEY$="p" THEN LET y
=y+1
1010 IF INKEY$="q" THEN GO TO
1500
1020 RETURN
1500 FOR n=13 TO 10 STEP -1
1530 LET x=m: PRINT AT x,y:"AB
": AT x+1,y: INK 1:"CD": AT x+2
,y:" ": BEEP .05,n: LET b=b-1:
PRINT : INK 0: AT a,b:"J " : PR
INT INK 2: AT 15,y-1:"IIII": NE
XT n
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.

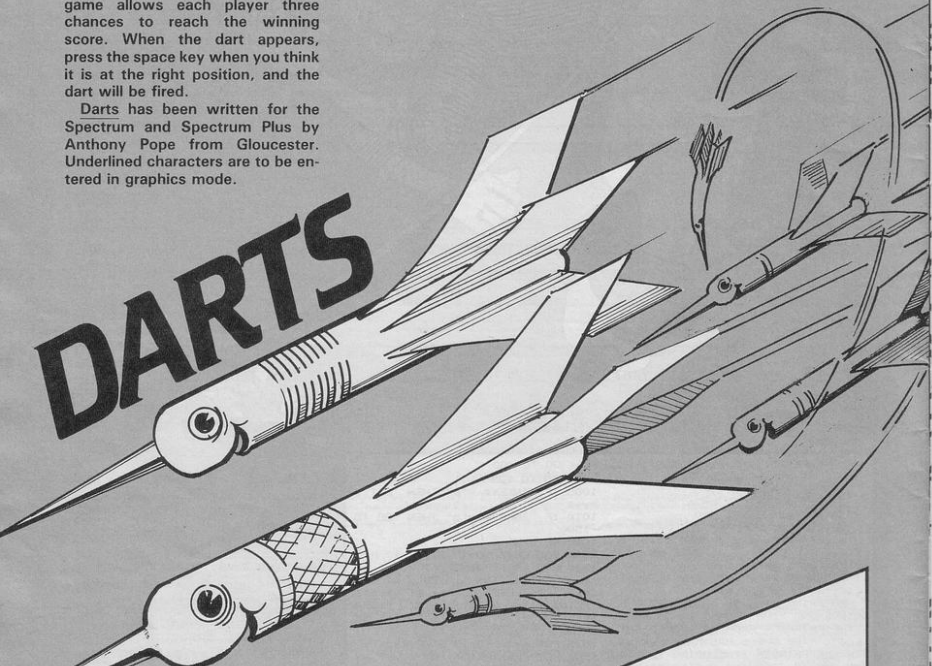
Spell Breaker was written for the Spectrum or Spectrum Plus by James Foggo, aged 13 of Worthing, West Sussex.



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.

DARTS



```

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: " 1
NK 5: "E 20": AT 17,27: "E 20":
AT 10,27: INK 3: "E 30": AT 16,2
7: "E 30": AT 11,27: INK 4: "E 4
0": AT 15,27: "E 40": AT 12,27:
INK 6: "H 50": AT 14,27: "H 50":
AT 13,27: INK 2: (IGB) "Z0"
60 LET z=0: LET x=31: LET y=0
70 PRINT AT x,y: "ABC"
80 IF INKEY$="" THEN GO TO
400
90 PRINT AT 0,5: "SCORE:";sc:
AT 0,18: "DARTS:";ida
100 IF x=18 THEN LET z=1
110 IF x=3 THEN LET z=0
120 IF z=0 THEN LET x=x+1
130 IF z=1 THEN LET x=x-1
140 PRINT AT x-1,y: " "
150 PRINT AT x+1,y: " "
160 IF da=0 THEN GO TO 200
170 GO TO 70
200 PRINT AT 5,7: "YOU'RE SCORE
D ";sc: "I": PAUSE 100
210 IF sc=180 THEN FOR m=1 TO
3: FOR n=0 TO 20: BEEP .01,n: BO
RDER RND *7: NEXT n: FOR n=1 TO
10: BEEP .03,-n: NEXT n: NEXT m
220 INPUT : "ANOTHER GO ?";g$
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
0,0,0,0,0,3,255,3,0,0,0,0,240,
255,240,0,0
550 DATA 7,7,7,7,7,7,7,15,15,
15,15,15,15,15,31,31,31,31,31
31,31,31,63,63,63,63,63,63,63,6
3,127,127,127,127,127,127,12
7: RETURN
600 SAVE "Darts!" LINE 1

```


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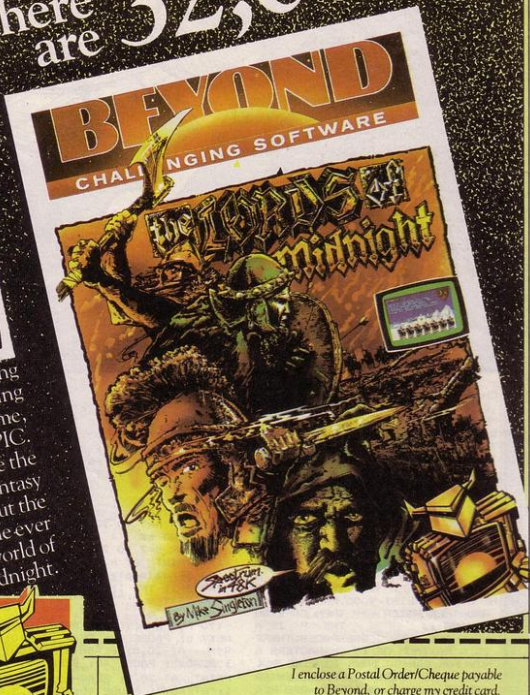
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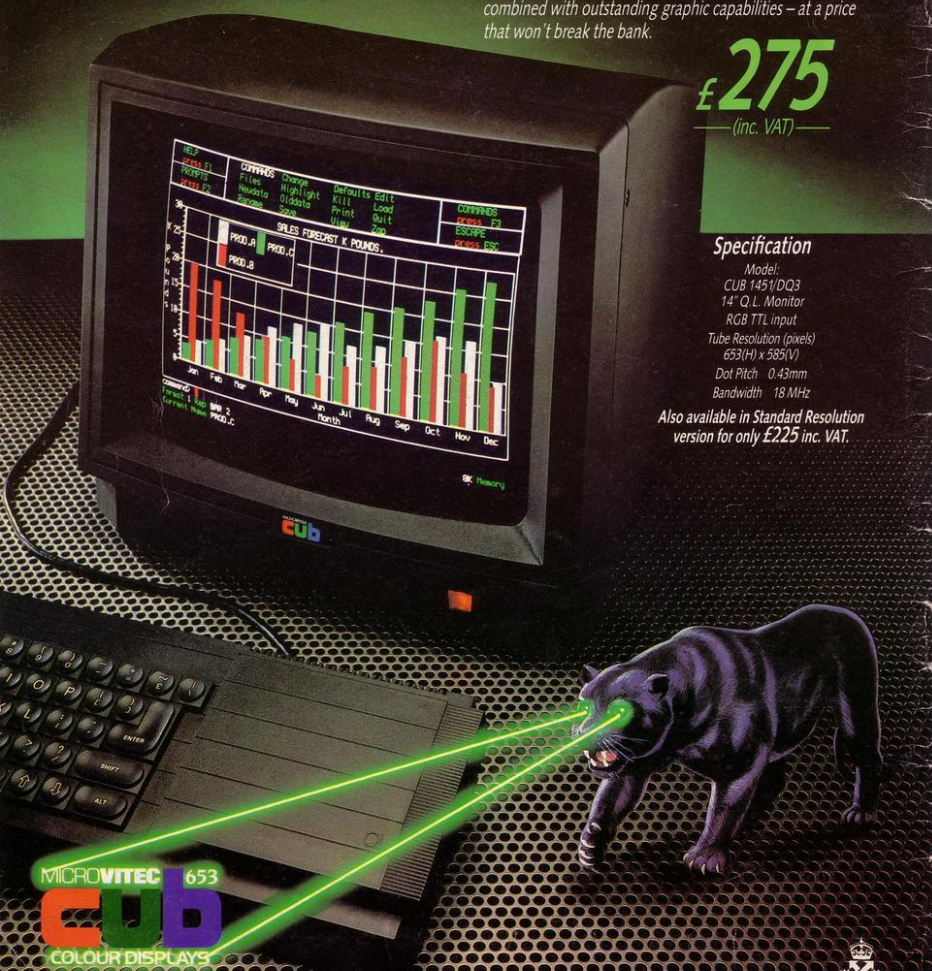
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