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17-23 October 1985

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Vol 4 No 42

THIS WEEK'S NEWS

- PANDORA'S PROGRESS
- ACORN: GOOD TIMES, BAD TIMES

SPECIAL ADVENTURE ISSUE

- WAY OUT HINTS & TIPS



Strike Force Harrier is the title of a highly realistic simulation from Mirrorsoft.

The program, launched first on the BBC, is a sophisticated replication of the flight characteristics of the vertical take-off plane.

Price for the game is £9.95.

Beyond answers Telecom's call

BRITISH TELECOM has increased its involvement with entertainment software by buying Beyond Software, previously a division of the publishing group EMAP for,

apparently, a six figure sum.

Beyond, which produced chart topping titles including *Lords of Midnight*, *Shadowfire*, and *Spy vs Spy*, will now become a division of

New Information Services, BT's electronic publishing arm. EMAP will not retain any share of Beyond.

BT will not, however, be merging Beyond with its own software company Firebird. The two will be run entirely separately.

"Beyond will be a sister company to Firebird. The two will maintain their own names, and although there

will be some common management functions, we won't be changing the Beyond image," said Dr Ederyn Williams, general manager of New Information Services.

The deal will not affect Beyond's proposed range of titles this autumn. Its agreement with US Company First Star for *Superman* and other titles has been transferred to

continued on page 5 ▶



DOMARK is set to publish a game based on the successful Friday the Thirteenth horror movie series next month.

The programming is being carried out by ASK, a team previously acclaimed for its educational programs.

"It'll be something of a computer nasty, but we're not going to overstep the mark," said Domark's Dominic Wheatley. The object is to stay alive, and save as many other characters as possible.

At £8.95, Friday the Thirteenth will be available for the Spectrum, Commodore 64 and Amstrad machines.

MICRO MAGIC



Find out if you have won an Amstrad 6128 this week or at least some special *Popular Computing Weekly* cassette labels. Enter your personal Micro Magic number into our special computer program on page 40.

INSIDE ▶ FOLLOWING MOLES WITH WORMS - LEVEL 9 ON PAGE 14 ▶

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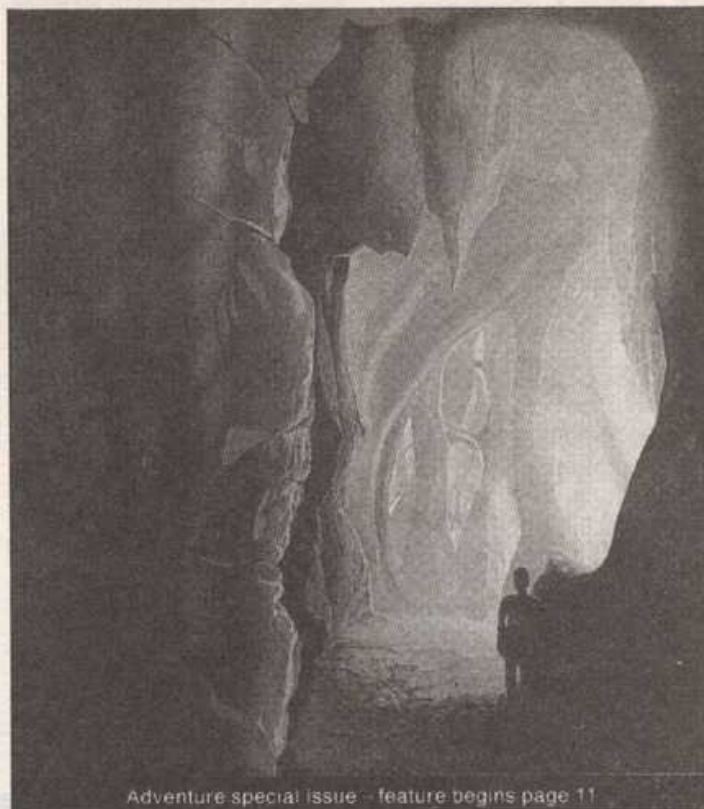
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EDITORIAL

About now the adverts, special offers, bundling deals and other marketing devices will begin. Now is the time that people start to think about Christmas presents and when the bulk of micro computer sales occur. Now is the time the potential micro purchaser must be persuaded to buy one machine rather than another.

Just after Christmas we and other magazines will get quite a lot of phone calls from people who have bought (or been bought) a micro that, they have discovered, has little software support in general and more specifically has no software to rival that which they see on other people's machines.

Several major chain stores, the kind of places where most of the Christmas selling takes place, are already stocking machines which they know lack and will lack almost any software support whatsoever in the new year.

True enough, the machines in question are cheap, and obviously that attracts people to them, but a cheap machine with no software is, for most people, merely a waste of money.

It may be that some people imagine that because all they really want from their machine is to learn to program, it really doesn't matter how much software it has - the purists who are interested in 'educating' themselves and their children rather than playing games. Those people are almost always mistaken, however, even those who learn and become adept at Basic soon find plenty of reasons to buy commercial software.

If you're likely to be buying a computer this Christmas, don't just listen to the salesman, take along a copy of the top twenty chart from this magazine - are any of the titles there available on the machine you are thinking of buying? If they aren't you should wonder why.

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'The Enterprise has the most flexible graphics system I have ever seen, by far the best on any home computer' - Jon Ritman

Commodore announces £90m loss for 1985

COMMODORE International has now announced a net loss of \$114m (around £90m) for the fiscal year ending June 30th 1985. This compares with a \$144m (£110m) profit in 1984. In the fourth quarter of 1985 alone, Commodore lost \$124m (£96m) compared with a \$33m (£26m) profit for the corresponding period in 1984.

Irving Gould, chairman of Commodore International, said, "Earnings during the fourth quarter were negatively impacted by promotional deals and lower sales."

He added that Commodore

expects an upturn in fortunes before Christmas.

"Commodore has recently begun shipping the 128 and Amiga computers, and we will realise the benefit from full retail distribution. We anticipate a profit for the quarter to December 1985."

As Commodore does not apparently split its financial results between the UK and US, it is difficult to estimate the contribution made by the UK division.

"Since the time covered by the figures, Commodore UK has brought in measures to improve the UK performance," said a spokesman for Commodore in this country. "Also there are products like the Commodore PC, and the bundled packages which are on sale in Europe only, and doing quite well."

Acorn gains £1m from Canada but loses £22m

GOOD news for Acorn at last comes in the shape of an order for over £1,000,000 - worth of BBC micros in Canada, but at the same time the company has recorded a loss of over £20m for the year ending June 30, 1985.

Ontario's Ministry of Citizenship and Culture has bought 1,000 BBC systems, including disc drives, monitors and printers, to use in the province's community centres.

Acorn has been pushing to get into the Canadian market

for over a year and the American version of BBC has been up against stiff competition with nine other micros.

Following the purchase BBC machines are now being tested in schools and universities throughout Canada.

One of the things that apparently swung things Acorn's way was software. "In particular we benefited because we could offer a huge range of software, having fitted the micros with UK operating systems," said Joe Black, sales director of Acorn's Education, training and consumer division.

"Altogether we listed 500 titles which we specifically recommended written by Acorn, the BBC and other software houses."

Despite two financial rescues earlier this year, Acorn has announced a loss of £22.2m for the year to June 30. Olivetti, which now owns 79.8% of Acorn, apparently estimated losses of £20m when it increased its stake in the company.

These figures compare with a profit of £10.8m in 1984, on a turnover of £93.2m.

This year's turnover was down 16% to £77.9m.

Sinclair's portable to feature 68000?

SINCLAIR Research's portable computer, code-named Pandora, will definitely be appearing next year, the company says, but Sinclair is keeping its plans flexible about the configuration of the machine.

The machine which eventually appears under the Pandora label now seems likely to be based on QL rather than Spectrum technology as originally planned.

The Pandora is now apparently scheduled for an April release with a price of around £300.

"Our portable computer development programme is



Sinclair's Alison Maguire

going ahead," said Alison Maguire, Sinclair's new marketing manager. "However, our conception of how the machine fits in with the rest of our range can change."

ten with the new Gilsoft utility Patch which enables graphics and text to be portrayed simultaneously. It will be released first for the Spectrum in November at £7.95.

Silversoft will also be releasing the Amstrad version of *Bored of the Rings* next month.

"We are firmly committed to 68000 series technology," she continued.

The apparently greatly increased sales of the QL since its price cut to £199 could well be acting as encouragement for a 68000-based Pandora.

Originally Sir Clive hoped that the portable would be launched in January or February next year.

"I don't know exactly when we'll introduce it," said a Sinclair spokesman. "Sir Clive didn't envisage last summer turning out the way it did. It'll still be 1986, but not the beginning."

The £50m plan to build a wafer-scale integration plant is also still going ahead, despite Robb Wilmot's departure from the Sinclair board. Wilmot had been masterminding the plan to raise the £50m.

"Robb Wilmot assisted in the development of a business plan for the wafer-scale integration plant but this was put on the back burner because of Sinclair's preoccupation with other things during the summer, and also because fund-raising is based on confidence," the spokesman continued.

Sherlock in new Delta 4 game

ROBIN OF Sherlock is the latest title from parodists Delta 4 Software, now being published by Silversoft.

Robin of Sherlock is written by Fergus McNeill, who was largely responsible for *Bored of the Rings*. Robin sets the player as a Sherlock Holmes-style character in a Sherwood-style forest, and involves much puzzle solving. The yellow brick road and Dorothy from *The Wizard of Oz*, pseudo nuns, smurfs masquerading as gnomes, cordless telephones, the Flying Squad and Professor Moriarty also put in appearances.

Robin of Sherlock was writ-

Swords and Sorcery due out at last

SWORDS AND SORCERY, PSS's long-awaited Dungeons and Dragons style, micro game may yet appear this Christmas.

The game has now been delayed for over a year, but it now looks as though it could finally be released in November.

"It was delayed largely because the initial idea for the game was too ambitious," said a spokesman for PSS.

A Spectrum version is scheduled first, followed by Commodore and then Amstrad. All will cost £9.95.

Beyond answers Telecom's call

◀ continued from page 1

British Telecom. Beyond's Monolith label has also been transferred, although some negotiations are continuing over *Nexus*.

"Nexus is a company in its own right, which licenses its titles to Beyond," said Bill Delaney, Beyond's managing director. "Therefore it must be entirely satisfied by the terms of the takeover."

"Here at Beyond it will be business as usual - it's simply

that the bank has changed. We're probably with a bigger bank now," he continued.

All Beyond's staff will remain with the company, but it won't move premises until the New Year. As part of New Information Services, Beyond will be under the same umbrella as MUD (which BT finances) and Program Express, as well as Firebird.

British Telecom, which was recently privatised, is diversifying into electronic publishing largely because of saturation in the home and business telephone market. "We cannot continue to just enjoy growth in the telecommunications market, especially as we no longer have a monopoly," Ederyn Williams explained. "Ventures such as Prestel and Yellow Pages have led to a necessary diversification into electronic publishing, which includes microcomputing."

One of the major aspects of Beyond which attracted BT was the contract with First Star in the States. "We were keen on the First Star link," Ederyn Williams said. "We

◀ Beyond's MD Bill Delaney



Mastertronic goes MAD with new games series

MASTERTRONIC is to introduce a new range of games, departing from its usual policy of releasing games at £1.99 only.

The Mad range of titles will cost £2.99 each, and three programs comprise the initial release in the series.

Spellbound, *Hero of the Golden Talisman* and *The Last V8* are all arcade strategy games. Mad is an acronym standing for Mastertronic Added Dimension.

"The titles are more advanced and complex than usual," explained Alison Beesley of Mastertronic. "*Spellbound* is written by David Jones, who wrote *Finders Keepers*, and is based on a

feel that the software market will have a transatlantic character. Indeed Firebird has two people out in the US now launching *Elite* over there."

"We're delighted to have made this deal - Beyond has a number of valuable assets and unreleased products.

Finders Keepers character, the magic knight. It uses a window and menu system and is fairly light-hearted in character."

The Hero of the Golden Talisman is an arcade adventure involving exploration over a number of screens, while *The Last V8* has you trying to control a souped-up old 50s motor car.

Spellbound is being released for the Spectrum, while the other two will be put out for the Commodore 64. They should all be in the shops by next week.

Ultimate's C64 latest

ULTIMATE PLAY The Game's latest offering will be a Commodore 64 game, *Imhotep*, due for release next week.

Set in ancient Egypt, the game features the adventures of Imhotep and the tasks he is given by the Gods.

Imhotep will cost £9.95.

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Con trick

Good for Vincent Oliver (*Letters* October 3) I think that everybody with any real interest in the future of the micro industry should support him and other 664 owners. No matter how good a company Amstrad is, or how good its products are, it cannot kick sand into its customers' faces and expect to get away with it.

People with good memories will recall that Sinclair did a similar thing back in 1981, when the company continued trading ZX80s at £100 literally days before it launched the ZX81 at £70. But being, perhaps, the first case of its kind in the British micro industry there was not enough noise made about the scandal.

Now, however, consumers, hopefully with the backing of the micro press, have enough power to stop these outrageous commercial con tricks. I think that companies like Acorn and Sinclair are finally learning that customers *must* be treated with respect.

Amstrad is relatively new to the industry, but that is still no excuse for its refusal to even correct its mistake. So, if we want to stop this sort of thing happening again we must keep nagging Amstrad until it does the only honourable thing, and offers up-grades to disappointed 664 owners.

Laurence Scottford
15 Tenterden Close
Eastbourne
East Sussex

Fear the worst

With reference to the 'Great Value' item in the letter column of September 19, I would like to express my thanks to Ivor Spital for confirming that I am not a 'sucker'. However, I am still trying to work out what I should be, I have the feeling that continuing to be a sucker may be the better option. Perhaps I should take comfort in the fact that I supported British industry, I think, and stopped Amstrad making a loss on an obvious, and which could have been, expensive

mistake on its part.

I do agree that the 664 did appear to be very good value until Amstrad went one better and provided its own competition. Prospective buyers of the 6128 may like to reflect on the possibility of a '6256' at an even lower price for Christmas!

As to the continued support for the 664 machine, only time will tell, but I fear the worst.

Finally, whilst typing this letter, the shift key on my machine has decided to die in sympathy with its brother 664 micro computers.

CJ Turner
Shade Oak
14 Penny Lane
Guarford
nr Malvern
Worcs

£1m bingo?

After reading the issue of October 3, I have only one question: when are you going to introduce £1,000,000 bingo?

Robert Robertson
39 Milwood Drive
Mossend
Lanarkshire

At the same time as our readership reaches 4,000,000 and we introduce the Pouting Popular Pretties on page 3.

Excellent machine

I have just read Graham Taylor's favourable review of the Ibico LTR-1 printer, and thought your readers may be interested in my experience of this excellent little machine.

The LTR-1 has been available for some time at less than £100 from Typewriter Centre shops in the W Midlands area. Although it does look a little plasticity it is very solidly made; much better, I think, than the popular Brother HR5. The printer mechanism is beautifully made by ALPS, well-known for their printer/plotter units as used by Commodore, Atari, Tandy, etc. In fact the mechanism in the Ibico is virtually identical to that in the Atari 1027 printer (which retailed not so long ago at over £250), so mechanical spares and ink rollers may be fairly easy to obtain.



I have found that the boldest printing is obtained using a very smooth, soft paper, such as that marketed by Brother for use with their EP series of printers or for the HR5. The printing density is a little uneven (but still good) because the print head is not fully re-inked between each character.

Using a less smooth paper, such as typing bond, will give a rather less dense print - it takes less ink off the print head, but the variation in density will also be less.

With a little ingenuity, it should be quite possible to modify a paper roll holder (such as the ones available from Brother) and fix it to the rear of the Ibico to allow the use of 100ft rolls of A4 width paper.

To print the £ symbol, the Ibico expects to receive character code 123; on the Spectrum this corresponds to the left-hand curly bracket (Extended/shift/F).

From *Tasword* on the Spectrum it is possible to underline side-headings, if these are less than half a line long. Simply re-configure one of the control graphics characters to give a Carriage Return and place this control character immediately after the heading. Then type in the required number of underline characters. The Ibico will print the side-heading, do a carriage return without a line feed, then underline the heading.

Finally, don't be put off by the slow printing speed; even 12 cps is over 100 words per minute.

David Branston
25 Cole Valley Road
Hall Green
Birmingham

Micro waves

Tomorrow's World was in its prime - sadly a few years past now - the finest example of an educational/scientific entertainment TV programme.

It carefully walked a tightrope between woosh-goes-the-rocket triviality and mind-numbing detail, the result of which was genuinely entertaining and informing half hour.

The production team of *Micro Live* should maybe take a look at some of those classic recordings. The first programme of *Micro Live's* new autumn series was almost totally lacking in sparkle with little to interest either the casual viewer or the micro enthusiast.

Just who are they making the programme for? The present up-market business slant will lose both the home micro audience and the interested general public faster than they imagine. Business micros make boring television.

Whenever I see Lesley Judd, I instinctively reach for the *Blue Peter* sticky-backed plastic. 'Very useful', she chirps after a look at computer maintenance contracts. Yes, it would be if I had a system worth over two grand... home micro maintenance never mentioned. More features like the speech synthesis demos and interviews with living legends like Bill Gates are needed... he produced the most interesting insight of the evening when suggesting that the present generation of microcomputers, 'for the price... don't satisfy.' A pity he wasn't allowed to continue.

The people behind *Micro Live* have set themselves the most difficult of tasks - they want to reach everyone across the computing spectrum and some beyond.

In doing so, I fear they are pleasing no-one.

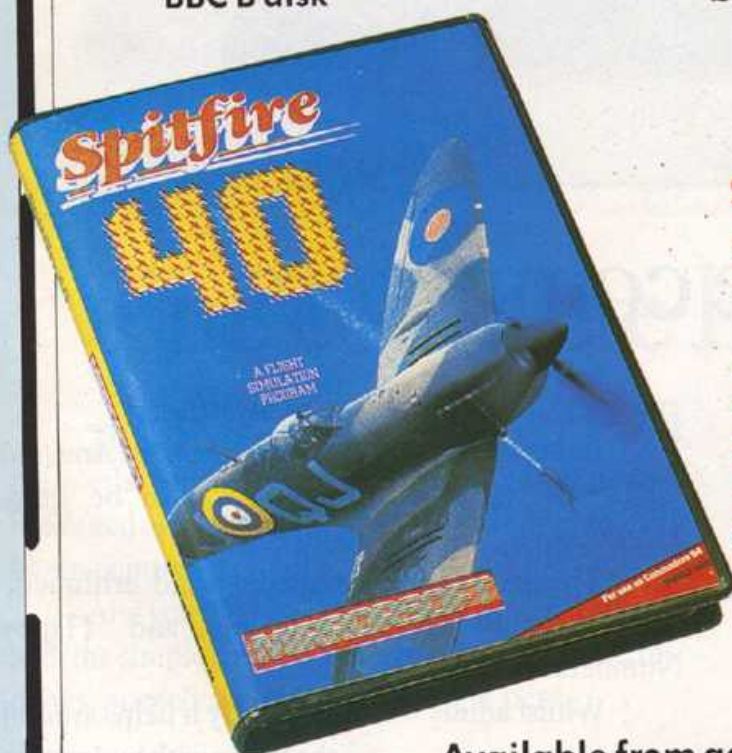
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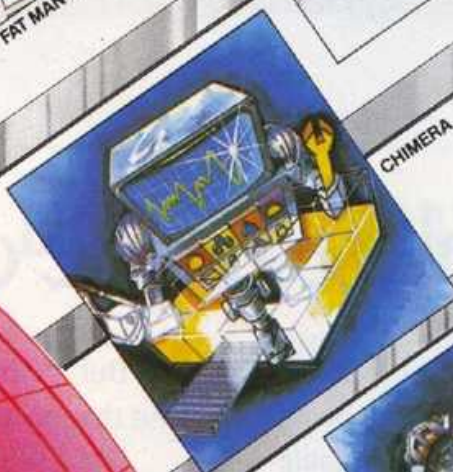
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Reviews



More is less

Program Blue Max 2001 Micro Spectrum 48K **Price £5.95** **Supplier** Cases Computer Simulations, 14 Langton Way, London SE3 7TL.

Blue Max 2001 is the sequel to *Blue Max*, quite a popular and successful title for the 64. This time you play the role of fearless Max Chatsworth IX who is directly descended from our original hero of the same name. This time around the mission is to penetrate the enemy defenses of the Time Masters who have captured Earthbase Gamma IV and are relentlessly pursuing you in strange craft intent on your destruction as you fly through the lunar-like landscape.

Apart from a jolly tune and a few beeps and blurps, the sound is not worth holding your breath for but the graph-

ics are quite impressive, consisting of bridges, craters, alien buildings and for some strange reason - cars! Bombing buildings amasses you points, along with despatching your pursuers with guns mounted, it seems, all around your strange helicopter like craft.

On beginning the game you start with a full fuel supply and 40 bombs, and they are replenished at certain locations around the planet. I quite liked the explosive effect of the bombs as they hit the ground and missing selected targets left a lifelike scar on the surface.

Just as a shoot'em up it's fine, although these days games are becoming a bit more sophisticated in plot and technique so if you're looking for a classic - don't look here. A worthy sequel? - not convinced!

Andy Moss



Myth is hit

Program Sorcery Micro Enterprise **Price £7.95** **Supplier** Entersoft, 37 Bedford Square, London WC1 3HW.

This is it - *Rambo* for mages. A sorcerer must be sent to rescue his captive compatriots from enemy territory; a hostile landscape inhabited by hooded guards, floating boars' heads, flying tadpoles and a host more. It will be tough going - will you accept the challenge?

I say that you will. And when you've run out of power, or time, or drowned in the

water... I think you'll start all over again, because *Sorcery* is addictive in extremis. Three times I've pulled the plug to write this review - twice I've reloaded immediately. And I'm a hardened reviewer.

Game play is brilliantly well balanced; never impossible yet highly frustrating. It's fiendish to map the screens and it's testing to remember quite which object can do what where, ranging from frying baddies to unlocking doors. If only all arcade adventures were like this.

The game is also beautiful to look at, with colours so vivid they border on the psychedelic, and the spot sound

Learn chess

Program White Knight Micro BBC B **Price £9.95** **Supplier** BBC Soft, 35 Marylebone High St, London W1.

Like chess? Learning chess? Then you'll love *White Knight Mk. 12!*

White Knight has been among the top micro chess programs for some time. Mark 12, for the BBC micro, is even better than its illustrious predecessors. For a start it plays darned good chess. The games can be fairly fast because while you figure out your own move the program makes an educated guess at what you will do (actually it only assumes you think two moves ahead and so it is not very flattering!) It is there fore planning its own reply before you have even moved. This can mean a pretty rapid game.

But playing is only part of the delight of this fine program. It will also help you learn the game. It can check any move for legality so you can try things out away from public view. The program can be forced to play itself - fun to watch if you slip in a few calculated moves of your own during the game and leave it to get out of the mess! You can even set up chess problems and let the program work out solutions.

The program allows you choices of colour for displaying the board pieces, choice of playing white or black pieces, moving by cursor keys or standard algebraic notation and a range of playing options. If you set it up to play its very best game you'll have a long evening ahead of you and a tough time beating it. For regular play I've seen nothing remotely like it.

Dave Watherson



What rabbit?

Program Magic Micro Spectrum 48K **Price £8.95** **Supplier** Macmillan Software, 4 Little Essex Street, London WC2R 3LF.

Abracadabra! Nothing. Shazam! Less. *Load.* That's it, because now the conjuror's mystic machinations have joined forces with the micro in a package containing cassette and booklet.

I put on magic shows for the family as a kid - how they suffered as I predicted cards and vanished coins. A lot of those tricks are in the book, but they can make respectable parlour magic if well done; 90% of conjuring is patter - just as 90% of computing is jargon!

effects and opening music are excellent. But most important is the humour.

From the trapped wizards waving their arms to the bubbles and floating peaked hat as you sink beneath the waves after missing elevation over water, the game has oodles of character.

This is possibly the Enter-

I never had the computer as a prop, a high-tech familiar, 'though. The program contains a number of tricks, predicting numbers or chosen cards - hardly surprising considering the computer's number crunching ability. One trick is bugged and won't work at all. Others are merely logic puzzles or optical illusions.

I'd be wary of magic involving a micro - after all, to many people the speed of a processor is pretty magical itself. But junior Paul Daniels' could do worse than intersperse a few of these tricks among more traditional fare. And it's nice to see the Spectrum used for something other than alien-zapping, even if a bit more originality could have been applied.

John Minson

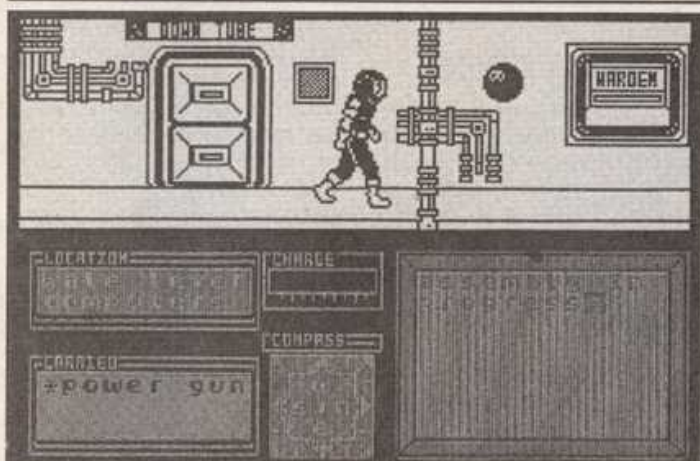


prise's finest yet; it starts to show just what a good machine it makes one more optimistic about future programs, maybe some originals even, written specifically for the machine - meanwhile this is a superb conversion.

John Minson



Adventure Reviews



Hello John

Program *Marsport Micro*
Spectrum Price £9.95 **Supplier** Gargoyle Games, 74 King Street, Dudley, West Midlands DY2 8QB.

With a determined tread Commander John Marsh stepped through the automatic door

into the corridor of Marsport. "Sometimes," he thought, "one man can succeed where an army fails." Succeed? The safety of the Terrans depended on his success. And his safety depended on finding a weapon somewhere within the hive of corridors before the insectoid Sept caught up with him. The mission had started...

I have a sneaking suspicion that somewhere, lost through

the mists of time, lies a direct line from Commander Marsh to Cuchulainn, hero of Gargoyle's previous pair of Celtic adventures. Both are brave, beautifully animated... and stomp about in a fashion that makes Rambo look like Nureyev.

Still, there's nothing wrong with that. Anybody who failed to indulge themselves in the age of Irish folk heroes because they thought they didn't like past fantasy (big-ots!) can throw themselves into an equally well realised future. It's a future full of problems to solve; mapping which you mustn't neglect or the use of four 'camera directions' will soon confuse you; and most importantly there's zapping.

The Sept are wonderfully horrible, and despite the ultra-wide screen view, have the unpleasant habit of appearing with minimal warning just as you round a corner, compensating for the ease of targeting them. It's

enough to make you jumpy but John Marsh's steps remain resolute.

As you're drawn deeper into the labyrinth you'll discover a variety of useful, sometimes invaluable, objects such as gun passes, charge units and factor units which allow you to manufacture new objects from component pieces. There are storage lockers and sealed doors to impede progress. Why did I ever volunteer for this mission?

I suppose it was because I have an aversion to being colonised by overgrown ants, led by a gross monstrosity with a deadly flicking tail. I suppose it's because I believe in freedom, decency and truth. It could be because this is such a great game. And it's definitely because I've got John Marsh on my side - God bless his intergalactic Doc Martens!

John Minson



Old soul

Program *Souls of Darkon Micro*
Amstrad Price £7.95 **Supplier** Tasket, 13 High Street, Bridlington YO16 4PR.

They say that magic was once as well respected as nuclear physics is today. But what happens when the old and new combine - a high technology society dabbles in powers that belong to the past? On the planet Megron it led to the unleashing of a terrible evil, the power of Darkon!

Into such a scenario you step, a bionic warrior with your robotic companion who will occasionally warn you of impending danger. At first the landscape is soft and gentle, an almost primitive deserted world, but littering it are the artefacts of an advanced civilisation.

Though hardly original, this basic premise of *Souls of Darkon* is sound enough and sets up memories of several SF novels and films. It's most stylishly presented too. At the top of the screen a text description, below a hi-res graphics window; to its right a log of your activities with

inputs below.

With its original typeface and somewhat stylised two colour illustrations it all looks very modern - a trifle Conran really. However, there will always be the debate over text vs words. At one location it is raining so hard that I sheltered under a tree (ie, an

open invitation to *Climb Tree*) but had the downpour stopped by the next location or was it just not mentioned?

There were one or two other discrepancies that I encountered which stopped the world being real. Despite the trendy presentation, possibly because of it, I found it all a bit

neutral and uninvolved. Still, you may think differently and it seems to have many of puzzles and reasonable variety. Perhaps it was all that rain dampened the fire of my enthusiasm.

John Minson



Gosh girls!

Program *The Secret of St Bride's Micro*
Spectrum Price £6.95 **Supplier** St Bride's School, Burtonport, Co. Donegal, Ireland.

Here's something rather ripping. I woke this morning with the strangest feeling - just like being the new girl at school. Then I remembered - I am the new girl at school!

"St Bride's is set in the most beautiful Irish town and it's like I've stepped back in time, to an age when school was all blackboards, mortar boards, the three R's - and adventures! It's a really spiffing feeling.

"Still, there's something queer about it all and I intend to find out what. I think I'll

explore the place properly; look around the rooms, examine things, maybe even indulge in a little disguise (because you know what a good mimic I am). After all, when I scouted around last night I could swear we were locked in; the first thing's going to be that old oak door.

"I know that Ireland's the land of fairy folk but I've not met one dwarf yet, thank goodness. *St Bride's* is so fresh and original it's shaken me out of that boredom I fell into during the hols. And maybe it's the air but it all seems so vivid!

"I've been knocked over sideways by absolutely oodles of strange happenings, odd messages and other bamboozling events.

"How nice to know that I don't have to be a mighty male warrior because girls just want to have adventures

too. And now I'm going off on one of my own and it's got oodles of charm and spunk.

"Love to all - especially Rags, the dog,

For ever yours Trixie.

"PS - Apparently there are some *Unexpurgated Caves* I'll be able to find soon, which are rather like some old mainframe caverns I once knew, only very silly! I've seen a bit of them and they look fun!

"PPS - Uncle Bobby's got a terrible grump on at the moment, he says that *St Bride's* is taking pot shots at *Colossal Caves* which is terribly bad apparently.

"He says that adventures should be taken seriously and that *St Brides* isn't a new adventure at all. I just think he's a sour puss though."

John Minson



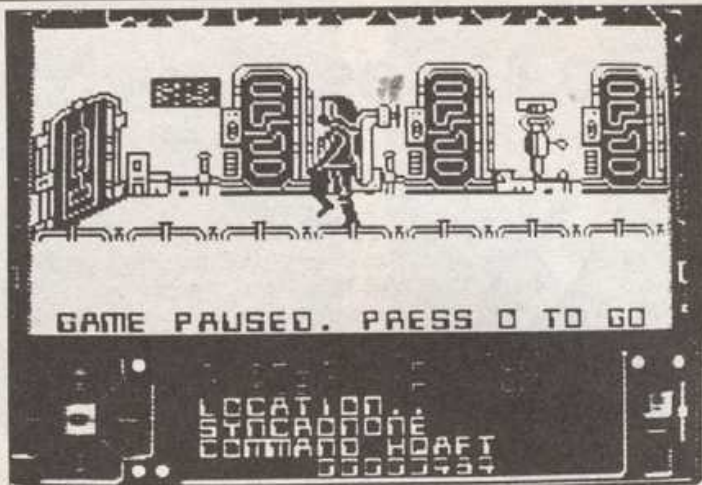
Adventure Reviews

Into space

Program *Astro-Clone Micro*
Spectrum Price £7.95 **Supplier** Hewson Consultants Limited, 56b Milton Trading Estate, Milton, Abingdon, Oxon OX14 4RX.

Trouble with clones is once you've seen one you've seen 'em all! Still, that's not true of Steve Turner games because his sequel to *Dragonorc* has done far more than blast Maroc the mage into space.

What he has done is revive those Seiddab warriors, nasties of an earlier Hewson's trilogy, and provided a tripartite game in which the earthlings strike back and set out to crush the alien menace in the wilds of space. You don't get multiple lives - you just get lots of clones. Lots of



clones so you can afford to lose a few. And you will!

The immediately recognisable part is the Ground Combat Phase, where you roam the rooms of one or other of eight planetoid bases, trying to neutralise their deadly power. Magic is replaced by a

laser gun, which is operated via a roving sunsight.

To get there you have to clear the airspace of Seiddab ships in the time honoured shoot 'em up style, with some beautifully scrolling starscapes.

You also have to command your forces round the strate-

gic map to keep the enemy at bay. So three very distinct skills are called for.

Much as I've admired Steve Turner's previous games this one doesn't seem so immediately pleasing. Maybe it's because it takes longer to get to grips with the greater challenge, but I also found that often screens were cluttered in both space and especially ground shoot 'em ups, with too little room to move around.

There's also greater complexity of movement, with one set of icon driven instructions for moving around, others for arm movement, which takes some getting used to. All in all it's a very busy game. Persist and I'm sure it has many rewards, even if they're not quite so immediately as in previous games.

John Minson



Sunny Spain

Program *Terrormolinos Micro*
Spectrum Price £7.95 **Supplier** Melbourne House, Castle Yard House, Castle Yard, Richmond TW10 6TF.

Dear All, Remember how you enjoyed struggling up the social ladder to the heights of *Hampstead*? Well, here we are in its sequel and it's more a ride in a runaway lift to the bargain basement of the Costa Narmanaleg.

Quite why we booked this I have no idea. I think it was because the hubby had dreams of all those topless lovelies he ogles every week on the TV holiday programmes. Of course he said it was because it was good value - but it's not that cheap!

Still, they did say they'd let us have a camera though they don't really let you have anything here - it's a constant struggle to succeed. You know the hubby's no David Bailey. He's struggling to get ten good shots but all he does is snap himself falling off ladders. I think we'll be lucky to survive the fortnight.

Love Beryl.

John Minson

Trio

Program *Knight Games I Micro*
Spectrum 48K Price £3.50 **Supplier** Black Knight Computers Ltd., PO Box 132, Chislehurst, Kent BR7 6LJ.

Knight Games I isn't a recreation for medieval nobles, nor even a chess program, but a compilation from Black Night Computers.

Elevator and *Spectrabug* are both short and simple arcade types. In the former you race against time to defuse bombs in a sort of manic multi-story car park with lifts, the other pits your skills against the clock in collecting flashing blocks.

Tomb of Syrinx is longer; a multi-screen maze to zip around and nasties to zap while collecting musical notes and pieces of a guitar. With tiny figures and minimalist graphics, these won't warm the cockles of many hearts, let alone set the earth on fire. Still, at only £3.50 they're just about competent and may assume uncritical computing newcomers or ultra-Puritans who can't stand all this five star sophistication.

John Minson

Odd Manner

Program *Madcap Manor Micro*
Spectrum 48K Price £5.50 **Supplier** Gilsoft, 30 Hawthorn Road, Barry, South Glamorgan.

This adventure takes you back to the year 1933, you play the role of the famous Belgian, Inspector Le-Gles. After a hard week at the office, Lord

cover, have put an illustrated adventure and an expanded text only adventure on one cassette. However, the copy I played only contained the text adventure.

From what I saw of the initial screen, the graphics looked quite good, however the text did not live up to my expectations, advertised as crammed with atmosphere and humour, I thought at first I was playing the wrong game, where I asked myself, was the atmosphere, certainly not in

You are curled up in bed safe and snug at home. It is pleasant to relax after a hard day at the office/job centre/down the mine. (Delete which is inapplicable)

You can also see: -
An alarm clock

What next?

GET UP

You get up, go and do what you have to do, then get back into your nice warm bed.

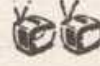
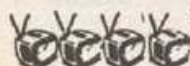
Give me your command.

Algernon Stingy has invited you down for a long weekend at his country estate. While you are there, some dastardly villain has stolen Lady Ditchley's priceless ruby ring. Naturally, you are asked to find it.

Once again Gilsoft, according to the blurb on the back

the brief text descriptions. I was disappointed with this game, especially after playing, Gilsoft's recent release, *The Hollow*, I only wish the standard in *Madcap Manor* had been the same.

Roger Garrett



From myths to Moles

Martin Croft (ageless) visits dead famous Level (9)

If there were an Adventurer's Hall of Fame, you can be certain that the Austin family would be in there along with *Popular's* own Tony Bridge and Infocom, the American software house responsible for *Zork* and a whole host of other titles.

The Austin's family firm, Level 9, is widely considered to be Infocom's British equivalent, producing high quality, challenging adventures that have a cult following. While Level 9's packaging is much simpler than Infocom's, the price is also far lower – under £10 as opposed to nearly £40.

Another similarity between the two companies is that both have moved into bookware, with games based on the works of best-selling English authors. Infocom has Douglas Adams' *The Hitch-Hiker's Guide to the Galaxy*, while in this country Mosaic has just published *The Secret Diary of Adrian Mole*, which Level 9 wrote around Sue Townsend's adolescent, angst-ridden creation.

So, suitably armed with my new Adri-

an Mole notebook, I made the trek down to the Austins' new location, in a picture-postcard village just outside Weston-Super-Mare.

“Commercially, we're very happy with Mole,” says Pete Austin, dynamic force behind the company – he and his brothers, Mike and Nick, work on programming and creating the games, while sister Margaret handles the distribution, PR and mail order side of the business.

“We're very happy with it as a design as well,” continues Pete. “It's a very large adventure – a four part game on most micros, with each of the four loads being three months in Adrian's life. It's a 12 part game on the BBC because of memory restrictions.”

The Austins are particularly pleased with the Commodore version of Mole, because, as Peter explains, “We've achieved a split screen on the Commodore without any flicker – a programming first, we think.”

Mike, the trouble-shooter when it comes to tough programming problems, explains how a little lateral thinking solved this one. “We've used sprites to make a black bar over the flickering bit of the screen, so you can't see the join.”

“In Mole, we have two tasks running at the same time – one is playing the game, the other is controlling the screen. There's a third task on the Spectrum, Amstrad and MSX, controlling a 100 character buffer. This means you can play the game in picture mode without taking hours.”

“I've done an awful lot of research on Sue Townsend,” Pete says. “I had to find out everything I could about her because I had to copy her writing style.”

The Mole game looks certain to become one of the top selling games this Christmas – especially since Commodore UK has signed an exclusive distribution deal with Mosaic.

Commodore is using the game as part of its Christmas Compendium promotional package – obviously they have faith in Level 9's pulling power!

Part of the reason Level 9 games are so well known is that the company is always striving for perfection.

“We have a new text compressor,” Mike enthuses, “which gives us near enough 50% compression – but additionally it eliminates the need for a key word table, which effectively reduces the finished code to 40% of the original.”

A key word table is a list of the words the adventure understands – Mike claims that with the new compressor, they can handle 500 to a 1000 words.

“It's totally impossible to run our stuff on a Commodore type machine without compression,” states Pete. “Infocom put their games on disc so they don't have to worry about compression – but disc games require access to minis or main-

frames, and Infocom are supposed to have spent over \$1,000,000 on DEC mainframes.”

At the moment, Level 9's development work is done on Torch micros – but Pete says, “We may change to 68000 based machines at some point, possibly the QL, which will become an entry level 68000 machine once the ST and the Amiga are on the market.”

Mike begs to differ: “We'll probably go for the 520ST, because it has a nice keyboard, it's cheap, and it will have a large installed user base in the US.”

“The game we will be producing next year will all be in four separate loads, because we are going Infocom hunting,” Pete claims. “When we have brought out games that are demonstrably better than Infocom's, we will start selling them to the States. We know that next year's games are going to have more text, because they hardly fit onto a 5" disc.”

Level 9 is also branching out into a different area – Pete is working on a scenario for a multi-user, play by modem adventure game, for an as yet un-named company. Instead of running on a micro, and so having to fit into a very limited amount of memory, the database and interpreter will be on a mainframe, which players can contact using their own micros and a modem.

The game will be set in Arthurian England, and will contain some 10,000 locations, with space for up to 1,000 players who will start off as what Pete calls “lowly beings”.

Geographically, the fantasy England will correspond closely to the area around Level 9's new location; Glastonbury is not too far away, nor is Cadbury, rumoured to be the site of Camelot.

The game will also feature a realistic calendar, with one real month equalling a year in game time, according to Pete. “For example, there will be a Druid's Grove where you have to pick mistletoe on Midsummer's Day, which will happen once a month. If you are not logged on at the right time, then tough – the Druid's Grove is closed until next year!”

At the same time as Pete is working on that project, he will be designing a massive game for Level 9.

“A large part of both projects will be working out how to handle artificial intelligence for the non player characters and monsters.”

The next adventure to be released as a Level 9 game will be *The Worm in Paradise*, the fourth in the popular Silicon Dream series, which is scheduled for October 23.

Following that, the sequel to *Red Moon*, which Pete calls *The Price of Magic* and Mike insists should be *Red Moon Two*, is due before Christmas.

In 1986, Level 9 will return to Middle Earth games – Pete is tired of science fiction. The first game for next year, he says, “will be a *Hobbit* basher, a humorous adventure so big it will make *The Hobbit* look small”.



The ruralist Level 9 team

an Mole notebook, I made the trek down to the Austins' new location, in a picture-postcard village just outside Weston-Super-Mare.

“Commercially, we're very happy



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Help? ? ? ? ? Disable TIR
Machine skill VITAL. Doctor: ultimate risk scenario. Your intervention urgently requested. ? ? ? ? ?
The Master reports 'promising' results. (LIVE ALIVE cortical preparation.) O Mine/Factory S
= C/A as weapon. X

Who's?

Time Instant Replay Unit + brain
Force futile. Weapon Skills NA

$Zi(Ur_2(\bar{A}^{13}C_5H_5N)_3O_4Fl_3)OH_2 \cdot 16H_2O$ } 2nd Moon Rjar.
Use invisible cat + code: string ◇ etc. Full cerebral combat status needed

TRY COMBAT NOT READY FOR BRAIN



Blue print (part) supplied. Ky-Ai-Nargath construction. MEGA SECURE
all times. Halt Heatonite prod. Access via VDU Programme concealed in game Pack Who would think of a Police box?

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The Adventurer's Accomplice

Welcome to the *Popular Computing Weekly* bumper collection of adventure tips. We believe it's the most ever assembled in one magazine. The adventures are deliberately not in alphabetical order; if you really want a clue you'll have to hunt for it!

Red Moon

Need the coins? - Wave the horseshoe.
Blinded by flashing lights? - Drop the black ball.
Cloaked statue upsetting you? - Try wearing the cloak.

Bored of the Rings

Stuck at willow tree? - Shout for help.
Problem with a Basilisk? - Wear the sunglasses.
Want to open the box? - Use the magic scissors.

The Helm

Psyak a menace? - Shine torch.
Can't find the tiny key? - Sieve flour.

Subsunk

Tap a problem? - Plunge basin.

Adventure Quest

Balrog in your way? - Smite bridge with sword.

Quann-Tulla

The crane kills you? - Carry lead ball.
High voltage - Shocking! - Wear cloak.

Kentilla

Statue stops you progressing? - Insert rod.
Stone door a worry? - Open bottle.

Castle Blackstar

Wraiths deadly? - Try saying 'friend' to a mirror.
Need to fly? - Use the broomstick and say 'Abracadabra.'

Zork-1

Cyclops blocking your way? - Feed him.
Not found the Scarab? - Dig harder!

Snowball

Slipping on the ramp? - Use the cat.

Gremlins

Stripe eluding you? - Post flashlight.
Pipes a problem? - Joint the pipes.

Pen and the Dark

Need some objects from the stores? - Type 'Nuts'; Type 'Searchlight' etc. then use the code, which is G2556.

Four Minutes to Midnight

To drive bus - Find Sue.
To save Dave - Recruit Dave then out.
To take Sue through tunnel - Knock her out and carry her.

In Search Of Angels

Need Notebook - Search Miller's pockets.
Can't find Miller - Try the Thames.

Ice Station Zero

Guard a problem - Push crates.
To get rid of bird - Play recorder.
To escape natives - In at fossilised tree.

Greedy Dwarf

Killed in the dark - Find tinderbox and lamp.
Spider kills you - Use Elvin sword.
To return from muddy maze - Say 'KAZAD'.

Hampstead

Looking for a credit card - Sit on bench.
Cabinet a problem - Open desk in furniture department.

Planetfall

Need a key - Curved bar over crack.
Need the lower elevator card - Try Robot.

Hitchhikers Guide

Don't know what to do with fluff - Find the flowerpot.
Flying brick kills you - Lie down.

Castle Blackstar

Boat sinking - Bail boat.
Oil runs dry - Go East from island.

Swiss Family Robinson

Stuck at first location - Go below.
Stuck below - Go topside.

Transylvania

Need the key from goblin - Feed frog with flies.
Want to read a message - Use acid from witches hut.

Witches Cauldron

Looking for red ribbon - Try the padded cell.
Need a skeleton key - Use skeleton.
Need a wand - Find the pencil.

Mordens Quest

To cross quicksand - Drop blanket.
Underwater you must - At basin go N.N.N.SE.UP.DOWN.N.E. then Fill aqualung.

Bored Of The Rings

To get rope - Say Hog.

Castle

To cross chasm - Fly chasm then flap arms.
Animal a problem - But it.
Insect runs away - Use jar.
To go past wall - Go hole - with torch.

Fantasia Diamond

Brown door closed - Knock.
Secret Door - Ask Boris to pull lever.

To open tapdoor - Hit it.

Great door closed - Talk to sentinel.

Golden Apple

Smell the flowers - You'll sneeze but . . .
To get lamp - Pull lever.
Sleeping a problem - Cover mouth with hankie.

Hulk

To get rid of bees - Wave fan.
To find gems - Dig under all domes.

Inferno

Wind blows you back - Crawl South.
To find stone - Dig in third circle.

McKenzie

To get out of cell - Do an inventory.
Laser gun won't work - Power pack.

Urban Upstart

To get past fan - Give lager.
Stuck in jail - Wait.
To enter Town Hall - Carry red tape.

Spiderman

To get past Hydraman - Freeze him.
Need the Bio-Gem - Cast web from hall.
Mystified over Mysterio - Feel around.

Twin Kingdom Valley

Trapped in Dungeon - Use the diamond.
To find secret passages - Have a drink at Watersmeet.
Strength failing - Have a swim.

Colossal Adventure

To get bird - Need cage
To kill dragon - Fight Dragon
Witts End - "Drop Gazette" - then keep going South.

Adventure Quest

Wolves - Get off the ground.
To climb tree - Must have something that no one wants (nothing).
Desert - Carry water and when worm gets close - wait.

Lords of Time

To get keys - Pander to narcissistic vanity to improve your attraction.
To get diamond - Be cruel to be kind, in a willowy way.
To change time-zones in clock - Turn cog 1 (etc).

Snowball

Nightingales - Keep a closed door between you and them.
To reach Trapdoor - Stand on a coffin.
To get out of mortuary area - Climb up (or down) from inside lift.

The Adventurer's Accomplice

Return to Eden

To avoid explosion - Dig at molehill then Go down and sleep in cave
To pass Leviathan - Need fungus when brick coloured bird appears - Drop sweetpea get egg plant egg enter house get fungus.

Erik the Viking

To launch ship - Blow horn to summon help.
To mend leak - Need hammer, nails and planks (smash tables).
Maelstrom - Throw plug.

Red Moon

To get crown - Search outside locations.
To drain lake - Turn handle
Rat - Don't go near it.
To open tower door - Say 'Humak'.

Emerald Isle

To get out of parachute - Release parachute.
To enter palace - Need ermine robe
To make canoe - Need manual, axe and log.
Darkness - Do not go down the mine without a light.

Golden Baton

To find sword - Exam leaves.
To find rope - need sword Chop briars.
To find ring - at oak tree Throw rope Climb rope Get ring.
To find key - Wear ring Rub ring.

Time Machine

To enter house - need glove (worn) Smash window.
To find key - Exam painting.
To find crowbar - need key Open drawer Exam drawer.

Arrow of Death (Part 1)

To find rope - Exam courtyard.
To reveal secret passage - At kings chamber keep turning coat of arms.
To find coins - Exam bed Cut pillow (need sword) Exam purse.
To get armour to top of scree (ledge) - Tie rope (to hook) Hook armour Get rope.

Arrow of Death (Part 2)

To find flint - Dig at southernmost featureless plain (no shovel needed this time).
To reach narrow ledge - need weird shrub at edge of chasm jump.
To get down from bridge - need helmet (worn) and shrub at middle of bridge, hold rope, cut rope.

Escape from Pulsar 7

To find light rod - Move couch.
To find key - Exam Couch.
To find circuit board - at crewmans quarters (south) Close door Go bunk Move pillow.

Dust! - on bunk by air vent Go vent after watch shows even number.

Feasibility Experiment

Lions - need leather shield to stay alive and need scimitar to kill lions.
To get brazier - need gauntlet (worn).
To kill gladiator - need short sword.
To get down from lip of chasm - Tie rope (to tree).

Wizard of Acryz

To secure spectacles - Fit chain.
To find chain - get painting.
To find sword - Exam stair.
To progress to next part of game - Go chest (linen).

Perseus and Andromeda

To find discus - Give water to beggar.
To find helmet - At cave Exam statue, Throw discus (at statue).
To find sandals & shield - Need discus, Pray at temple and altar.
To fly - At on pedestal need sandals (worn) Wait.

Ten Little Indians

To stop train - Wait.
To get down from old wharf - Stamp foot then swim.
To get into garden - At gate tower Tie rope, Climb rope.

Waxwork

To find aqualung - Answer question at Cousteau exhibit then search hall of mirrors.
To find gun & bullets - Exam jacket To find key - Exam seats (at leisure lounge)

Circus

To find starting handle - at field need shovel Dig.
To find flashlight - Open boot.
To make safety net - Exam rope Get net then Erect net.

Mountains of Ket

To earn more money - Buy axe Chop Log Sell logs (to cartographer) then Sell axe.
To progress East from village - Need horse.
To make friends with dog - Feed dog

Temple of Vran

To return through sacred ground - Kill wart when it throws acid the first time.
To move elephant - Elephant follows you when you have peanuts.
To cross quicksand - need bow, cane and vine

Final Mission

To leave first cell - Stand chair Smash window Up.
To leave second cell - Drop ring under hole in roof.
To kill slime - At cubby hole Wait (6 times!) then Drop soap.

Spoof

To reach lighthouse - Answer phone Follow Dave after saying Yes
To get down after taking golden fleece - Down rope.
To get grail - In Inn Talk.
When changed into frog - go straight to witch's hut to find cure.

Robyn Hode (Runesoft)

To get key - at Great North Road (Nobleman present) - Rob man.
To get bow and arrows - In well Exam niche.
Village Square - this is a trap the villagers are King's soldiers.
Small Hamlet - Give gold.

The Journey

To make friends with elf - Give knife.
To make friends with warrior - Kill some 'hostiles'.
To make friends with the wizard - Give him the wand.

Volcanic Dungeon

To extinguish flames - Need dragon's tear.
To take Medusa's head - Need magic sack.
To cross collapsed bridges - Need magic carpet.

Woods of Winter

To get Light at start of Game - Tie rope to bucket at edge of pit, lower bucket.
To wear slippers - Eat mushrooms.
To open Box - Drop box from top of tree.

Tir Na Nog

To banish (temporarily) Sidhe - need 2 weapons carried. Lunge.
To open X-door - Need bones.
To pass wights - Need jewel of same colour as cave.
To finish game - Drop the 4 parts at altar then drop Calum's hammer.

Dun Darach

To get money (fast) - in Ludum save (to tape) frequently.
To get Scrolls from thieves - Give philtre to all three.
To stop thieves robbing you - Carry a licence.

Castle Blackstar

To enter castle - At drawbridge Fire arrow
To raise portcullis - Turn wheel in equipment room
To lower chandelier - Turn wheel in store room
To scare away eagles - Play violin (need bow)

Pharaoh's Tomb

To enter cave - Push rock then Yes
To pass through magic panel - Rub ring (need ring (worn))
To pass through secret passage - Need

The Adventurer's Accomplice

Cloak (worn)

Magic Mountain

To open door (by Bamboo) – Pull bamboo
To get your lucky sign – Dwarf Tell fortune
To catch lizard – Need soft shoes

Knight's Quest

To make friends with dwarf – Kill elves (need sword).
To make friends with dragon – Feed dragon or give food.
To pass giant – Need dragon with you.
To get on to ferry – must not have dragon with you.

Colditz

To cross floorboards – Remove floorboards first.
To get key – Open drawer.
To find tunnel – Move bunk.

Greedy Gulch

To find long poles – In barber's shop lift board (need light).
To get mao – In assay office get Zeek.
To find water – Use pump (three times).

The Hobbit

To get out goblin's dungeon – Thorin or Gandalf must carry you.
To answer Gollum – Don't kill as soon as you met him!
To pass through magic door – Need ring (worn) wait until Elves open door.

Hampstead

To find UB 40 – In lounge exam room.
To find key – In kitchen exam room.
To ride bike – Need bicycle clips Catch train from Platform 1.

The Village Underworld

To climb pylon – Need rubber suit (worn).
In freezer – Need fur coat (worn).
At bottom of hole – The numbers on the sign are the directions of safe exits as on Spectrum cursor keys eg 8 = East.
To buy battery – Need coin at shop "Buy battery".

Tower of Despair

To find dagger – Pray at altar.
To escape 'flying beasties' – Need horse (ridden) keep going East.
To escape forest – At statue replace crystal.

Cuddles

To escape play pen – Drop bowl.
To escape nanny – Throw brooch.
To pass soldier – Give doll.

Four Minutes To Midnight

To start game (safely) (i) Go West Press Off (ii) go in and Recruit Dave then Out.
To refuel van – Press On go East Fill van.
To climb cable (from lift) – must be

alone need gloves (worn).

Quantulla

To breathe easily – Need airmask To pass through docking tube – Need badge (worn) (at cockpit press blue).
To enter wiring circuits safely – Need shock cape (worn).
To get cred – Drop glue first.

Ice Station Zero

Wolves – need (loaded) gun – Fire gun.
To jump onto ice floe – Only two objects carried.
To climb glacier – Need ice pick.
To pass Yeti – Need match & primus Light primus Throw primus at outside cave.

In Search of Angels

To find notebook – At river search body.
To get plane reservation – Give notebook (to Omega).
In Brazil, in car – When attacked at Long Winding Road – '7' – '5' – '3' the at Outside City – '3'.

Faerie

To pass bull – Do not have red sweater.
To find knife – Exam rucksack.
To cross bridge – Say Good morning.
To go in coral pool – Need boots (worn).

Secret Mission (Scott Adams)

To get visitor's pass – Sit in chair Press red Press white Get up Get pass.
To break window in visitor's room – Need tape recorder.
To deactivate camera scanning window – Need saboteur's pass and corpse

Adventureland

To get key – At cypress tree climb tree.
To get out of maze – Need Persian rug
To pass bear – Scream.

Sorcerer Of Claymorgue Castle

To enter castle – In moat Hold breath Swim down (twice) East.
To open West wall in plain room – Pull west
To get up and down stairs – Walk up Walk down.
To lower chandelier – Cast Unravel (then get out until it has worked!).

Gremlins

To re-enter bedroom – Throw knife.
To stop bulldozer – Weld controls.
To find tape – In hardware dept. exam counter.

Subsunk

To get key – Need stainer (worn) on mattress Jump.
To stop flood – Need sucker & broom Insert sucker at basin Plunge basin
To open hatch – Pour acid first need battery.

Changeling

To get key – Need green bottle & wine at the kitchen throw bottle Throw wine Get key.
To find staff – Need Arthame at clearing Draw circle.
To find Ring of stones – At field carpeted with yellow flowers exam field.
To kill snakes – Exam pit Light fire (need axe & flint) burn bone.

Time Quest

To find tinder-box – At rocky slope feel grass.
To find diamond ring – In cabin slide table Feel crack
To find crown – At Inner Cave need shovel dig
To progress to next part of game – At On a plateau say Thequill

Crystal Quest

Before alarm goes off – Go to main deck Press blue twice.
To find Spacesuit – In cabin Exam bed Get key Unlock wardrobe.
To use transporter – Need spacesuit (worn) at transporter room Set coordinates Beam down.
To beam back up to spaceship – Beam up (no communicator needed).

Espionage Island

To leave plane – Need parachute (worn) Pull lever then Pull cord then Drop parachute.
To find beads – In plane wreckage Feel corner Pull string.
To kill guard – Throw knife

Planet of Death

To cut vine – Use flint.
To cross ravine – Use floorboard.
To leave prison – Kick bars Up.
To get mirror – Get man Drop man Use laser Get mirror.

Ship of Doom

To make sonic screwdriver – Insert battery into rod.
To open glass case – Point sonic.
To melt ice – Press red (button) at console.

Inca Curse

To pass fire – Need magic blanket smother fire.
To get up from sand dungeon – Use rope.
To go down thro' porthole – Need ring and blue stone then to go West need red stone.
Do not get "knives" – (Score increments 100 when taking Knives but decrements 400 when dropped)

Eye of Bain

To get free in hut – Lift pole.
To cross ravine – Need whipping post Jump or Vault.
To get honey – Neet net (worn).

The Adventurer's Accomplice

To pass beast – Need Ruby "Fire".

Ground zero

To get ladder – In garage Get ladder.
To stop house being looted – Close door when you leave.
To pass queue – Drop money.
To get bread – Give radio.

Quest Adventure (Hewson)

To swim river – Need ring (worn).
To find long key – Kill mindflayer (in mountains).
To open door at castle Oops – Unlock door with long key open south.
To drop bomb, cushion and grail safely – Cushion must be present in location.

Velnor's Lair

To pass Spider – Need torch & tinderbox at entrance, Light torch Burn web.
To pacify crocodiles – Feed croc (any dead monster).
To find telescope – Exam rags.
To pacify sharks – Use trident.

Kentilla

To recover sword when stolen or dropped and lost – Say Kentilla.
To get rope – give chief sword Cavezat Say Kentilla to recover sword.
To cross river – Throw rope Swing across.
To find damp moss – Exam river (drop moss at scorched plain to dry it).

Bored of the Rings

To enter Morona Gate (end of Part 1) – Drop pepper.
To get coin – at Troll's machine insert battery Get coin.
To get out of maze – Must have map.
To pass gays – Drop poster.
To get rope (Part 3) – Say hog.

Quest for the Holy Grail

To enter Camelot – Need baseball glove (after unlocking door).
To stop wide oak door closing – Need wedge (carried).
To pass Eugene – Need Jester's hat (worn).
To pass rabbit – Need phrasebook, armaments book and paper and grenade. Read book before you reach rabbit then at cave entrance Throw grenade.

Sandman

To find brass key – At bottom of stairs lift mat.
To kill vampire – Need hammer & stake
To get gun – Shoot target.

Pen and the Dark

To leave space ship – Read letter Exam screen (until ship lands) Go aft.
To get ski suit – Exchange voucher.
To get ID card and dossier – need thermometer & stone in pen exam

thermometer Throw stone then return to Courtney's office.
To enter crawler – Go crawler.

Mindbender

To leave cell – Open trap Press button Leave.
To move around after power cut – Open manhole before powercut.
Lift to West of foyer – This is a trap! Do not enter this lift.

Mordon's Quest

To find Mordon – Climb drainpipe then return to hall.
To cross quicksand – Drop blanket.
To pass through waterfall – At altar sacrifice frog need frog & dagger.
To use transporter – Beam (object).
To survive more than 6 moves under water (with Aqualung) – At Basin go N N N SE UP SE then go Down NE then Fill Aqualung.

Eye of Vartan

To get flute and axe – Steal flute Steal axe.
To get hemlock – Pick hemlock.
to get acorns – Gather acorns.
To pass bear – Need staff Strike bear Explore cave.

Smuggler's Cove

To find barrel – at mound of earth Exam mound then Smash barrel (need hammer).
To get lifebelt + crisps to lake – Float crisps where steam disappears into hole.
To pass east of altar – Move candle.

Robin of Sherwood

To leave cell – Stand Pris when guard appears Grab ankle Choke guard Search guard Get sword Slide bolt Open grate Go out.
To find Bow and Quiver – Enter waterfall.

Forest at World's End

To cross chasm – Drop log.
to get into boat – Climb into boat to cross river – Row boat then climb out of boat.
To get down precipice – Blow horn.

Jewels of Babylon

To reach Beach – climb down ladder row north.
Crab – At rock pool return to Canyon (crab follow you) at canyon shout.
Lion – in jungle give fish to lion.
Cannibals – at cannibals village give watch.

Message from Andromeda

To open panel – In mirrored room Point rod at plate.
To get down from blue room – need sphere Place sphere on dish.
To clear rocks – at East end of cavern – Drop explosive go to West end of

cavern Press button.

Heroes of Karn

To kill swamp lizard – need tinderbox light gas.
To pass firegates – Must have drunk white potion.
To find ruby – Need box in snake room open box.

Warlord

To get into pool – Jump into pool to leave pool climb out.
to get meat – Need iron give iron to trader.
To pass guard – need salt give salt to guard.

Funhouse

To pass gate – Climb gate.
To leave pit – Exam water.
To enter ghost train – Drop ticket.

Adventure 200

To get thro' narrow opening – Must not have Axe.
To pass troll – Throw coin.
To stop Farmer killing you – Water plant (with seawater) after you have been up plant.

Valkyrie 17

To make rope – Tie sheets.
To leave hotel – Tie rope in Room 21.
To learn how to ski – Read book.
To get money – Pawn necklace.

Marie Celeste

To open grille – Need screwdriver unscrew grille.
To get down from catwalk – need rope & cord tie rope (to cord).
To open safe – Need electric device.
To get out of cell – Lean out insert card.

Traveller

To enter doors – Open door Yes.
To find Power pack – At white door (Exits N-SE) Open door get pack.
To open doors in Main Control Room – Pull lever.
To load gun – Insert pack.

Alter Earth

To find key – Move stone (stone changes into a key!)
To find Aqualung – Need spade Dig sand.
To make hanglider – At edge of sheer cliff (need aluminium tubing & canvas triangle) Assemble hanglider.

Danger Mouse

To find rope – In forest need shovel.
To Chop log – At woodpile need axe.
To find ring – At stepping stone need bottle.
To pass cat – Need red herring.

Many thanks to Roger Garrett and all at the Adventureline club for their work in compiling this list.

PO Box 40, Stetchworth,
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Adventure

For our adventure special issue – a full size adventure for the QL by Philip Sproston

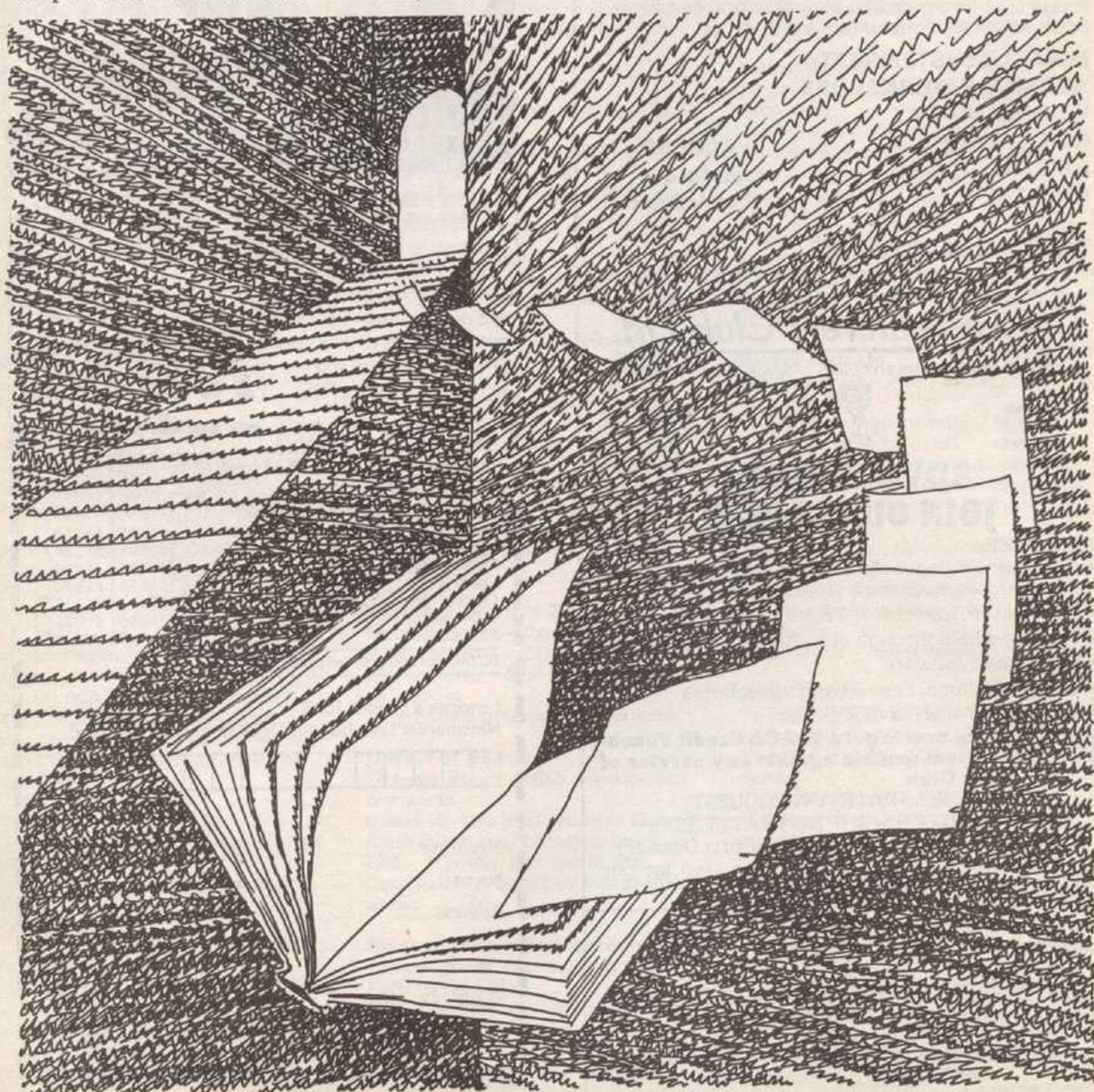
Adventure is a graphic adventure where you must find all the pieces of an ancient treasure chest. The program includes user defined characters, pixel movements and a text window, with full instructions on-screen. It is easy to play, but not so easy to beat!

The pieces are hidden in an old under-

ground building consisting of ten levels. These pieces must be placed in a special order to work out and reveal the secret passage on Level One, so that you can get out of the building. Within the building there are various things to help you, but there are others not so nice. How far can you walk is determined by your ability. If you reach 0%, then you are

dead – and have failed in your quest.

The remainder of the listing and program notes will be published next week. Meanwhile, if your fingers don't feel up to it, copies of the game can be obtained by sending a formatted microdrive, plus £3.50 to Philip Sproston at the following address; Quantum Soft, Marloes, Borrowby, Thirsk, N Yorkshire YO7




```

100 REMARK ADVENT
110 MODE B:PAPER 0:CLS:PAPER #1,0:INK 4:CLS#0
115 OPEN #6,SCR:WINDOW #8,512,255,0,0:PAPER #8,0,0:
    CLS#9:MODE B:WIND
DW #8,144,50,309,96:PAPER #8,7:WINDOW #0,449,39,32,
    216
120 AT 2,9:PRINT 'WELCOME TO ADVENT':AT 4,12:PRINT
    'PLEASE WAIT':AT
5,4:PRINT 'WHILE CHARACTERS ARE DEFINED'
190 GO TO 2000
200 DEFINE PROCEDURE USR
210 FONT=167722
220 OLDBASE=PEEK_L(FONT)
230 NEWBASE=RESPR(B75)
240 FOR C=0 TO 875 STEP 4
250 POKE_L NEWBASE+C,PEEK_L(OLDBASE+C)
260 END FOR C
270 END DEFINE USR
300 DEFINE PROCEDURE NEWSET
310 POKE_L FONT,NEWBASE
320 END DEFINE NEWSET
350 DEFINE PROCEDURE OLDBSET
360 POKE_L FONT,OLDBASE
370 END DEFINE OLDBSET
400 DEFINE PROCEDURE POKEIN
405 RESTORE 600
410 READ A
420 IF A=999 THEN
430 END DEFINE
440 END IF
445 CURSOR 188,100:PRINT A:
450 CHARBASE=NEWBASE+10*(A-32)*9
460 FOR C=1 TO 9
470 READ B
480 POKE CHARBASE+C,B
490 END FOR C
500 GO TO 410
600 DATA 97,124,68,68,68,124,68,68,68,124
605 DATA 98,0,16,40,76,116,68,68,100,24
610 DATA 99,56,68,68,56,16,16,16,28,28
615 DATA 100,16,40,58,124,84,84,68,68,124
620 DATA 101,16,16,56,40,124,68,68,68,124
625 DATA 102,124,68,68,68,124,40,56,16,16
630 DATA 103,48,72,4,116,84,68,56,0,0
635 DATA 104,56,68,68,68,68,68,68,68,56
640 DATA 105,120,88,104,88,104,88,104,120,0
645 DATA 106,0,100,24,24,56,104,104,8,8
650 DATA 107,68,108,124,124,124,124,56,56,16
655 DATA 108,56,56,16,80,124,20,16,40,108
660 DATA 109,124,68,124,16,124,84,16,40,108
665 DATA 110,56,56,16,20,124,80,16,40,108
670 DATA 111,4,8,8,16,16,32,32,64,64
675 DATA 112,124,0,120,68,120,80,72,0,0
680 DATA 113,124,0,68,68,68,68,56,0,0
685 DATA 114,64,32,32,16,16,8,8,4,4
690 DATA 115,124,64,88,84,92,84,88,64,124
695 DATA 116,124,0,124,16,16,16,124,0,124
700 DATA 117,124,0,124,64,112,64,124,0,124
705 DATA 118,124,4,116,68,116,20,116,4,124
706 DATA 65,56,68,124,68,68,68,68,0,0
707 DATA 66,124,68,68,120,68,120,68,124,0,0
708 DATA 67,124,68,64,64,68,68,124,0,0
709 DATA 68,120,68,68,68,68,68,124,0,0
710 DATA 69,124,68,64,112,64,68,124,0,0
711 DATA 70,124,64,64,112,64,64,64,0,0
712 DATA 71,124,68,64,88,68,68,124,0,0
714 DATA 72,68,68,124,68,68,68,68,0,0
716 DATA 73,124,16,16,16,16,16,124,0,0
718 DATA 74,4,4,4,4,4,68,60,0,0
720 DATA 75,64,64,124,80,72,68,68,0,0
722 DATA 76,64,64,64,64,64,64,124,0,0
724 DATA 77,68,108,84,84,68,68,68,0,0
726 DATA 78,68,68,100,84,76,68,68,0,0
728 DATA 79,124,68,68,68,68,68,124,0,0
730 DATA 80,124,68,124,64,64,64,64,0,0
732 DATA 81,124,68,68,68,84,72,116,0,0
734 DATA 82,124,68,68,68,124,72,72,68,0,0
736 DATA 83,124,68,64,124,4,68,124,0,0
738 DATA 84,124,16,16,16,16,16,16,0,0
740 DATA 85,68,68,68,68,68,68,124,0,0
742 DATA 86,68,68,68,68,68,68,108,16,0,0
744 DATA 87,68,68,68,68,68,84,108,0,0
746 DATA 88,68,68,56,16,108,68,68,0,0
748 DATA 89,68,68,68,56,16,16,16,0,0

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750 DATA 90,124,4,8,16,32,64,124,0,0
751 REMARK NUMS
752 DATA 48,124,68,68,68,68,124,0,0
754 DATA 49,16,48,112,16,16,16,124,0,0
756 DATA 50,56,68,4,28,32,64,124,0,0
758 DATA 51,60,68,4,28,4,68,60,0,0
760 DATA 52,64,64,64,72,124,8,8,0,0
762 DATA 53,124,64,124,4,68,68,60,0,0
764 DATA 54,124,68,64,124,68,68,124,0,0
766 DATA 55,124,68,4,8,16,16,16,0,0
770 DATA 56,124,68,68,56,68,68,124,0,0
772 DATA 57,124,68,124,4,4,68,124,0,0
999 DATA 999
1000 STOP
2000 INK 3:CSIZE 2,1:USR:POKEIN:NEWSET
2010 RANDOMISE:CLS:CSIZE 0,0:INK 7
2015 INK 5:AT 7,6:PRINT 'PRESS "I" FOR INSTRUCTIONS'
    :AT 10,5:PRINT
PRESS "A" TO START ADVENTURE':INK 7
2025 AT 0,0:PRINT 'n n n n n n n n n n n n
    n n l':FOR C=2 TO
    17 STEP 4
2030 AT C,0:PRINT 'l':AT C,36:PRINT 'n':AT C+2,0:
    PRINT 'n':AT C+2,36
    :PRINT 'l':NEXT C:AT 18,0:PRINT 'n n n n n n
    n n n n n n n n'
2035 KEY$=INKEY$
2040 IF KEY$='I' OR KEY$='i' THEN
2042 INSTRUCT:GO TO 2010
2045 END IF
2050 IF KEY$='A' OR KEY$='a' THEN
2052 GO TO 2100
2053 END IF
2055 AT 0,0:PRINT 'n n n n n n n n n n n n
    n l n':FOR C=2 TO
    17 STEP 4
2060 AT C,0:PRINT 'n':AT C,36:PRINT 'l':AT C+2,0:
    PRINT 'l':AT C+2,36 :PRINT 'n':NEXT C:AT 18,0:PRINT
    'l n n n n n n n n n n n n n n n n n n n n n
    l':GO TO 2015
2090 REMARK GAME
2100 CLS:AT 2,15:INK 4:PRINT 'ADVENT':AT 3,15:PRINT
    '#####MESSAGE
    E "WELCOME TO ADVENT":FOR C=1 TO 30
2105 BEEP 1000,50-C,5,2,15,4,4:END FOR C:MESSAGE
    "HI THERE I'M YOUR INFO WINDOW":FOR C=1 TO 30
2110 BEEP 1000,-C+100:END FOR C:MESSAGE 'I AM HERE
    TO GIVE YOU INFO
    DURING THE GAME':FOR C=10 TO 50
2120 BEEP 1500,-C+10:END FOR C:MESSAGE 'EXCUSE ME
    NOW WHILE I SET UP
    THE GAME':AT 2,15:PRINT
    :AT 3,15:PRINT ' :CSIZE 3,1:C
CURSOR 70,91:INK 2:PRINT 'THINKING':CSIZE 0,0:INK 7
2150 DIM A$(20,20):DIM I$(8):DIM O$(8):O$=
    :DIM J$(8):DIM U$(8):DIM
    I(8)
2160 DIM H$(2,7):H$(1)='NOTHING':H$(2)=H$(1):DIM
    K$(5,35):DIM N$(5):D
    IM M$(5):DIM K$(5):DIM F$(3):DIM G$(3):DIM H$(3):DIM
    X$(3):DIM Y$(3):DIM Z(
    3):DIM @$(5):DIM R$(5):DIM S(5)
2170 FOR C=1 TO 8
2180 I$(C)='opqrstuv':C:END FOR C:K$(1)='YOU FIND
    A PIECE OF SPELLB
    OX':K$(2)='A BOMB TICK! TICK! BANG':K$(3)='OH! A
    JAM BUTTY SUPPLY':K
    $(4)='EEEEEEEEE! AN "ORRIBLE MONSTER":K$(5)='OH! A
    DEAD, LOST PROGRAM
    ER'
2190 FOR C=1 TO 3
2200 RAN 10:J(C)=R:RAN 10:K(C)=R:RAN 10:F(C)=R:RAN
    10:X(C)=R:RAN 10:
    Q(C)=R:END FOR C
2210 FOR C=4 TO 5
2220 RAN 10:J(C)=R:RAN 10:K(C)=R:RAN 10:Q(C)=R:END
    FOR C
2230 FOR C=6 TO 8
2240 RAN 10:J(C)=R:END FOR C
2250 FOR C=1 TO 10
2260 LEVEL C
2270 FOR V=1 TO 8
2280 IF J(V)<C THEN GO TO 2320
2290 RAN 20:D=B:RAN 20:E=B
2300 IF A$(E,D)<>' THEN GO TO 2290

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2310 U(V)=D:I(V)=E
2320 IF V>5 THEN GO TO 2600
2330 IF K(V)<>C THEN GO TO 2380
2340 RAN 20:D=B:RAN 20:E=B:IF A$(E,D)<>'
    THEN GO TO 2340
2350 M(V)=E:N(V)=D:FOR W=1 TO V
2360 IF K(V)=J(W) AND N(V)=U(W) AND M(V)=I(W)
    THEN GO TO 2340
2370 END FOR W
2380 IF V>3 THEN GO TO 2500
2390 IF F(V)<>C THEN GO TO 2440
2400 RAN 20:D=B:RAN 20:E=B:IF A$(E,D)<>'
    THEN GO TO 2400
2410 S(V)=D:H(V)=E:FOR W=1 TO V
2420 IF F(V)=J(W) AND S(V)=U(W) AND H(V)=I(W)
    THEN GO TO 2400
2430 END FOR W
2450 IF I(V)<>C THEN GO TO 2510
2460 RAN 20:D=B:RAN 20:E=B:IF A$(E,D)<>'
    THEN GO TO 2460
2470 Y(V)=D:Z(V)=E:FOR W=1 TO V
2480 IF I(V)=J(W) AND Y(V)=U(W) AND Z(V)=I(W)
    THEN GO TO 2460
2490 END FOR W
2500 IF V>5 THEN GO TO 2600
2510 IF Q(V)<>C THEN GO TO 2600
2520 RAN 20:D=B:RAN 20:E=B:IF A$(E,D)<>'
    THEN GO TO 2520
2530 R(V)=D:S(V)=E:FOR W=1 TO V
2540 IF Q(V)=J(W) AND R(V)=U(W) AND S(V)=I(W)
    THEN GO TO 2520
2550 END FOR W
2600 END FOR V:END FOR C:J(1)=K(1):U(1)=N(1):I
    (1)=M(1):CLS:MESSAGE "
    OK I'M READY NOW":GO TO 8000
2700 DEFINE PROCEDURE RAN (ABC)
2710 B=INT((1 TO ABC)
2730 END DEFINE
2750 DEFINE PROCEDURE LEVEL(LV)
2760 LOCAL C:RESTORE 10000+(100*(LV-1))
2770 FOR C=1 TO 20
2780 READ A$(C):END FOR C:END DEFINE
2785 DEFINE PROCEDURE UPSCREEN
2790 LOCAL C:FOR C=1 TO 3
2800 IF X(C)=L THEN A$(Z(C),Y(C))='k'
2810 IF F(C)=L THEN A$(H(C),G(C))='c'
2820 END FOR C:FOR C=1 TO 5
2830 IF K(C)=L THEN A$(M(C),N(C))='d'
2840 END FOR C:FOR C=2 TO 8
2850 IF J(C)=L THEN A$(I(C),U(C))='i'
2860 END FOR C:M$='N':FOR C=1 TO 3
2870 IF Q(C)=L THEN M$='Y':GO TO 2890
2880 END FOR C
2890 END DEFINE
2900 DEFINE PROCEDURE SCREEN
2910 AT 0,0:PAPER 2:INK 7:PRINT
    '#####
2920 PAPER 2:PRINT 'a':PAPER 0
2925 FOR V=2 TO 19
2930 X$=A$(C,V)
2940 IF X$=' ' THEN PRINT ' :GO TO 3300
2970 IF X$='a' THEN PAPER 2:PRINT 'a':PAPER 0:GO
    TO 3300
3000 IF X$='g' THEN INK 5:PRINT 'g':GO TO 3300
3030 IF X$='e' THEN INK 4:PRINT 'e':GO TO 3300
3060 IF X$='f' THEN INK 2:PRINT 'f':GO TO 3300
3090 IF X$='b' THEN INK 4:PRINT 'b':GO TO 3300
3120 IF X$='j' THEN INK 5:PRINT 'j':GO TO 3300
3150 IF X$='c' THEN INK 6:PRINT 'c':GO TO 3300
3180 IF X$='d' THEN INK 6:PRINT 'd':GO TO 3300
3210 IF X$='h' THEN PRINT 'h':GO TO 3300
3240 IF X$='i' THEN INK 6:PAPER 3:FLASH 1:PRINT
    'i':FLASH 0:PAPER 0
    :GO TO 3300
1270 IF X$='k' THEN PRINT 'k';
3300 INK 7:END FOR V:PAPER 2:PRINT 'a':PAPER 0:END
    FOR C:PAPER 2:INK
    7:PRINT '#####':PAPER 0
3310 AT 0,25:PRINT 'LEVEL:':L:AT 2,23:PRINT
    'TIME: :AT 4,
24:PRINT 'YOU HAVE: :AT 5,24:PRINT '1)
    :INK 2:PRINT H$(1):INK 7

```


Opening credits

Create opening and closing titles for your latest video epic on the BBC computer – with the help from **Andrew Heptonstall**

With the reduction in price of video recorders and cameras, people increasingly produce their own video films. Here are two programs that will enable you to add opening and closing captions at the start and end of the video film, if you own a BBC computer.

To wire the computer up with the video recorder, you should connect the R/F Out on the BBC to the R/F In on the VCR (video cassette recorder) and the

R/F Out on the VCR to the aerial socket of a television. (See Diagram 1.)

You must then tune the TV into the VCR using its test signal, and then the VCR into the computer. When this is done, you will be able to see the BBC's output on the TV screen.

Run the "Opening Titles" program, and press play/record on the VCR. When the screen is clear, press stop on the VCR and record your film in the normal way using your video camera.

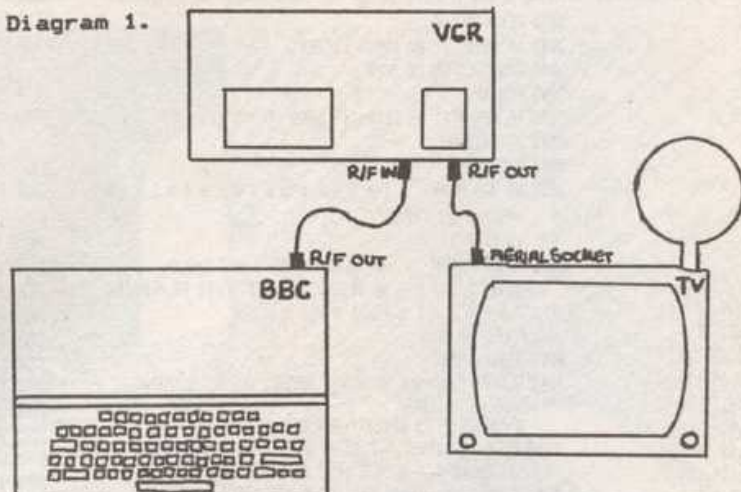
Then connect the computer up again (as in Diagram 1) and load and run the "Closing Titles" program, and record the output as before. The results of your efforts can be checked by rewinding and playing the video cassette.

By using the same wiring methods, you can record anything – even animation if you write the appropriate software.

Program Notes

Obviously all the entries in the programs can be changed to allow you to enter the name of the video film and the names of the people that did the jobs. Up to three names for each job can be entered in the "Closing Titles" program, and should be placed between the last three inverted commas in the lines between 200 and 280. The first set of inverted commas contains the job title.

Diagram 1.



```

10REM *****
20REM * Opening Titles *
30REM * By *
40REM * A.Heptonstall *
50REM * 1985 *
60REM *****
700%=400
800%=10
90DIMB$(5)
100MODE7
110VDU23;B202;0;0;0;
120PROCtitles
130END
140DEFPROCpause
150TIME=0
160REPEAT UNTIL TIME>0%
170ENDPROC
180DEFPROCtitles
190PRINTTAB(7,10);CHR$141;CHR$130;
"John Smith Productions"
200PRINTTAB(7,11);CHR$141;CHR$130;
"John Smith Productions"
210PRINTTAB(15,13);CHR$141;CHR$130;

```

```

"Present"
220PRINTTAB(15,14);CHR$141;
CHR$130;"Present"
230PRINT"*****"
240PROCpause
250PROCscroll(10)
260PRINTCHR$141;CHR$129;"
The life cycle of a Beetle"
270TIME=0:REPEATUNTILTIME>P%
280PRINTCHR$141;CHR$129;"
The life cycle of a Beetle"
290PROCscroll(11)
300PROCpause
310PROCscroll(13)
320PROCpause
330PROCpause
340ENDPROC
350DEFPROCscroll(X%)
360FORR%=1 TO X%
370TIME=0:REPEATUNTILTIME>P%
380PRINT
390NEXT
400ENDPROC

```



```

10REM *****
20REM * Closing Titles *
30REM * By *
40REM * A. Heptonstall *
50REM * 1985 *
60REM *****
70D% = 400
80P% = 10
90DIMB$(5)
100MODE 7
110VDU 23;8202;0;0;0;
120PROC titles
130END
140DEFPROC pause
150TIME = 0
160REPEAT UNTIL TIME > 0%
170ENDPROC
180DEFPROC titles
190PROC scroll(25)
200PROC info("Presented By",
"Fred Bloggs", "", "")
210PROC info("Written By",
"Will Jones", "Robin Hood", "")
220PROC info("Computer Workshop",
"Barrie Heptonstall", "", "")
230PROC info("Camera and Sound",
"Joy Stick", "Lisa Apple", "")
240PROC info("Researched by", "Poly Bag",
"Algernon J. Baker Jnr", "Snoopy")
250PROC info("Produced and Directed By",
"John Smith", "", "UUU")

```

```

260PRINT
Copyright John Smith Productions"
270TIME = 0: REPEAT UNTIL TIME > P%
280PRINT TAB(15) "MCMLXXXV"
290PROC pause
300PROC scroll(25)
310PROC pause
320ENDPROC
330DEFPROC scroll(X%)
340FOR R% = 1 TO X%
350TIME = 0: REPEAT UNTIL TIME > P%
360PRINT
370NEXT
380ENDPROC
390DEFPROC info(A$, B$(1), B$(2), B$(3))
400A% = 0
410PROC scroll(4)
420PRINT CHR$141; CHR$134; SPC(2); A$
430TIME = 0: REPEAT UNTIL TIME > P%
440PRINT CHR$141; CHR$134; SPC(2); A$
450REPEAT
460A% = A% + 1
470PROC scroll(1)
480PRINT CHR$141; CHR$131; SPC(2); B$(A%)
490TIME = 0: REPEAT UNTIL TIME > P%
500PRINT CHR$141; CHR$131; SPC(2); B$(A%)
510UNTIL B$(A%) = "" OR A% = 3
520PROC scroll(6)
530IF B$(3) <> "UUU" THEN PROC pause
540ENDPROC

```

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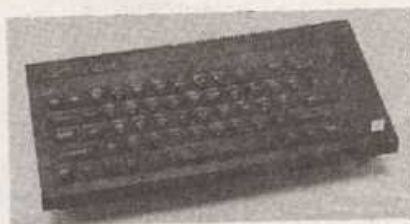
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Fill in the blanks

Make your own adventures with this program for the Spectrum by **Hugh T Walker**

This program sets out to give a skeleton framework on which a Basic adventure game can be written by filling in the blanks (hence the title).

When the listing has been entered and tested, the dummy locations and object data may be deleted as these are only included as an illustration of the program's operation and as a means of testing it. The program may then be cleared and saved to tape, from whence it may be loaded as a utility, thus saving about two hours sheer slog when starting to create your next masterpiece.

Naturally, the simple variables and arrays in the initialising routines will need to be re-defined to tailor the program to the particular needs of the new creation, with appropriate alterations to the Data lists in Lines 9000 et seq..

The Command Analyser (or Parser) should be adequate for most needs but it should be noted that as this uses an expression to control the *Go to* or *Go sub*

it is not suitable for the finished game to be compiled.

The intransitive verb routines are called by *Goto* instead of the more efficient *Gosub* because most of these verbs may end in the game being restarted and the program does not *Run* to restart.

The reason why the program does not *Run* to restart is so that, once the programmer is satisfied that the verb and object arrays are complete, the initialising routines and Data lists may be deleted - making sure that they have been initialised before you do this! This will gain a considerable amount of memory for game development, of course, within the limitations of those verbs and objects and subject to the program not being *Run* nor *Cleared*. This latter condition gives an indirect degree of protection.

The finished game may be further protected by *Poke 23659,0* since I have avoided using the Spectrum Rom routines for input and *Cls* - it is neces-

sary to, temporarily, remove this protection in the 'Save' routine (Lines 4200 et seq.) but the additional protection of *Poking* both *Repper* and *Repdel* to 1 will leave the hacker with a keyboard that, if not impossible, will be very difficult to use. There are, of course, more subtle means of protection available to machine-code initiators, but this is Basic!

Program Notes

Line No	
10 to 90:	Reserved for title <i>Rems</i> and <i>Def Fns</i> .
100 to 900:	Reserved for subroutines called during game.
1000 to 1090:	General Status Table (eg. Have you won? or Are you dead?)
1100 to 1990:	Get next command, analyse it and act on it if valid.
2000 to 2045:	Move to new location - if valid exit from old location.
2050 to 3990:	Reserved for transitive verb subroutines - blocks of 50 lines each.
5000 to 5990:	Spare (eg, use for Combat routine and/or amplify verb routines eg, EXAM)
6000 to 6090:	Location descriptions and location-dependent status tables - blocks of 10 lines per location.
6100 to 6990:	Spare (eg, more locations ??)
7000 to 7990:	End Game messages and Play Again? routine (+ potential

```

1 REM *****
2 REM ***ADVENTURE BLANK**
3 REM *****
4 REM ***** @ *****
5 REM *****
6 REM *** Hugh T Walker **
7 REM *****
8 REM *****21.5.85*****
9 REM *****
10 GO TO SE3
11 REM *****
100 REM *** CLEAR SCREEN ***
101 REM ***ADVENTURE BLANK**
110 FOR F=0 TO 21
120 PRINT AT F,0,,
130 NEXT F
140 PRINT AT 0,0;
150 RETURN
199 REM *****
200 REM *** GET COMMAND ***
201 REM *****
210 PRINT
211 REM *** UNFINISHED ***
212 REM *** COMMAND ? ***
220 IF LEN A$>4 THEN LET B$=A$:
IF B$="AND " OR B$="THEN" THEN
LET A$=A$(5+(B$="THEN") TO ): LE
T AG=1: GO TO 220
230 IF AG THEN PRINT A$: RETURN
250 REM *** NEW COMMAND ***
260 PRINT "WHAT NOW?"
270 LET A$=""
280 LET INP=0
290 PRINT FLASH 1;">"
300 IF INKEY$<>" " THEN GO TO 30
310 IF INKEY$=" " THEN GO TO 310
320 LET C$=INKEY$: BEEP .005,10
330 IF CODE C$=13 OR CODE C$=12
THEN GO TO 400
340 IF CODE C$=7 THEN PRINT CHR
$ 8;" " : GO TO 200
350 IF CODE C$=64 THEN LET C$=T
$
360 IF CODE C$<32 THEN GO TO 30
370 PRINT CHR$(C$); FLASH 1;">"
380 LET A$=A$+C$: LET INP=INP+1
390 GO TO 300
400 IF NOT INP THEN GO TO 300
410 IF C$=CHR$ 13 THEN PRINT CH
R$ 8;" " : LET T$=A$: RETURN
449 REM *** DELETE ***
450 LET INP=INP-1

```

```

460 LET H$=A$(1 TO INP)
470 PRINT CHR$(8); CHR$(8); FLASH
1;">" : FLASH 0;" " : CHR$(8);
480 GO TO 300
499 REM *****
500 REM ***DEFAULT MESSAGES**
501 REM *****
510 PRINT "DON'T BE SILLY"
520 LET A$="": RETURN
999 REM *****
1000 REM ***MAIN LOOP***
1001 REM *****
1002 REM *****
1003 REM *****
1004 REM *****
1005 REM *****
1010 POKE 23692,255: REM Suppres
s Scroll
1020 INK 9
1030 IF UN THEN GO TO 7E3
1040 IF DD THEN GO TO 7100
1099 REM *****
1100 REM *** NEXT COMMAND ***
1101 REM *****
1110 LET AG=0: GO SUB 200
1120 LET GO=0: LET NO=0
1130 LET TV=0: LET Q=0
1140 DIM B$(4)
1150 LET A$=A$+B$
1199 REM *****
1200 REM ***STRIP OFF WORDS***
1201 REM *****
1210 FOR G=1 TO LEN A$-INT PI: I
F A$(G)=" " THEN LET B$=A$( TO G
): LET A$=A$(G+1 TO ): GO TO 130
0
1220 NEXT G
1250 PRINT "I DON'T UNDERSTAND T
HAT": LET A$="": GO TO 1E3
1299 REM *****
1300 REM ***ANALYSE WORDS***
1301 REM *****
1310 IF B$=" " THEN GO TO 120
0
1320 IF B$="AND " OR B$="THEN" T
HEN GO TO 1250
1350 IF TV OR NO THEN GO TO 1600
1399 REM *****
1400 REM ***MOVEMENT INPUT***
1401 REM *****
1410 FOR T=1 TO 4: IF B$=W$(T) O
R B$=Z$(T, TO 4) THEN LET GO=T:
GO TO 2E3
1450 NEXT T
1499 REM *****
1500 REM ***INTRANSITIVE VERBS*

```


8000 to 8090: spare space)
8000 to 8090: Print title screen, set up permanent colours etc.
8100 to 8290: Initialise variables and Read Data for arrays which do not alter during game
8300 to 8390: Instructions or scenario.
8400 to 8990: Reset variables and arrays which alter during game, for each new game: Either by Loading a saved game or by re-initialising and calling main loop (at 1000) via 'LOOK'-routine at line 4000.

9000 to 9490: Data lists for arrays initialised by Lines 8100 to 8290
9500 to 9890: Data lists for arrays initialised by Lines 8500 to 8590.
9900 to 9950: Save "adventure" to auto-run at line 8000 & Verify.
In lines 4200 et seq & Lines 4250 et seq, the array X\$() is a 'dummy' array used to collect together any simple variables and short arrays which need to be saved, thus reducing the number of files which need to be saved. The dimension of X\$() and the routines in which it is assembled and disassembled will have to be altered according to the particular

needs of each individual game.

The commands to Save and Load are entered as '*SAV' and '*LOA', respectively, to allow the verbs Save and Load to be used in the game.

Note: The analyser reads only the first four letters of each word - words of less than four letters have spaces added to allow them to be recognised. Naturally, if the verbs Save and Load are not to be used as transitive verbs, the asterisk is unnecessary and 'SAVE' & 'LOAD' may be substituted.

More details and the final part of the listing, next week.

```

1501 REM *****
1510 FOR U=1 TO IVN: IF B$(U)=U$ (U)
    THEN GO TO 3950+50*U
1550 NEXT U
1599 REM *****
1600 REM ***TRANSITIVE VERBS***
1601 REM *****
1610 IF TV THEN GO TO 1700
1620 FOR V=1 TO TVN: IF B$(V)=V$ (V)
    THEN LET TV=V: GO TO 1800
1650 NEXT V
1699 REM *****
1700 REM ***NOUN INPUT***
1701 REM *****
1710 IF NO THEN GO TO 1800
1720 FOR N=1 TO OB+NN: IF B$(N)=N$ (N)
    THEN LET NO=N: GO TO 1800
1750 NEXT N: GO TO 1200
1799 REM *****
1800 REM ***IT=LAST NOUN***
1801 REM *****
1810 IF NO=OB+NN THEN LET NO=LN
1849 REM *****
1850 REM ***GET NEXT WORD***
1851 REM *****
1860 IF NOT NO OR NOT TV THEN GO
    TO 1200
1899 REM *****
1900 REM ***EXECUTE COMMAND***
1901 REM *****
1910 IF NO<OB+NN-2 THEN LET LN=N
    O: GO SUB 2E3+TV*50: GO TO 1E3
1919 REM ***GET/DROP ALL***
1920 IF TV>2 THEN GO TO 1250
1930 FOR O=1 TO OB: LET NO=O
1940 IF TV=1 AND CA>3 AND O(NO)=
    LC THEN PRINT "THERE'S TOO MUCH
    HERE FOR ME STRENGTH GUV, GIV
    E US A BREAK!": LET A$="": FOR F
    =1 TO 50: NEXT F: GO TO 1900
1950 IF TV=1 THEN IF O(NO)=LC TH
    EN GO SUB 2075
1960 IF TV=2 AND NOT O(NO) THEN
    GO SUB 2120
1970 NEXT O
1990 LET TV=0: GO TO 4E3
1999 REM *****
2000 REM * EXECUTE MOVEMENT *
2001 REM *****
2010 IF NOT GO THEN GO TO 1250
2020 IF NOT L(LC,GO) THEN PRINT
    "YOU CANNOT GO THAT WAY": LET A$
    =": GO TO 1E3
2030 LET LL=LC
2035 LET LC=L(LC,GO)
2040 LET UN=L(LC=0 AND NOT O(5))
2045 GO TO 4E3
2050 REM ***GET***
2055 IF NO>OB THEN GO TO 1250
2060 IF NOT O(NO) THEN PRINT "YO
    U ALREADY HAVE IT": GO TO 500
2065 IF O(NO)<>LC THEN PRINT "IT
    IS NOT HERE": GO TO 500
2070 IF CA>3 THEN PRINT "YOU CAN
    T CARRY ANY MORE": GO TO 500
2075 LET CA=CA+1
2080 LET O(NO)=0
2090 IF O THEN RETURN
2095 GO TO 4E3
2100 REM ***GET***
2105 IF NO>OB THEN GO TO 500
2115 IF O(NO) THEN PRINT "YOU DO
    NOT HAVE A": O$(NO): GO TO 500
2120 LET O(NO)=LC
2130 LET CA=CA-1
2140 IF O THEN RETURN
2145 GO TO 4E3
2999 REM *****
4000 REM ***DESCRIBE LOCATION***
4001 REM *****
4002 IF UN THEN GO TO 4040
4004 GO SUB 100: PRINT "YOU ARE
    "
4005 GO SUB 6E3+LC*10
4010 PRINT "EXITS: ";

```

```

4012 LET G=1: FOR F=1 TO 4
4014 IF L(LC,F) THEN PRINT Z$(F)
    : " ": LET G=0
4016 NEXT F
4018 IF G THEN PRINT " NONE"
4020 PRINT "YOU SEE "
4022 LET G=1: FOR F=1 TO OB
4024 IF LC=O(F) THEN PRINT TAB 8
    : "A": O$(F): LET G=0
4026 NEXT F
4028 IF G THEN PRINT "NOTHING SP
    ECIAL"
4040 IF TV THEN RETURN
4045 GO TO 1E3
4050 REM ***Look-synonym***
4055 GO TO 4E3
4100 REM ***Inventory***
4105 PRINT "YOU HAVE "; LET CA=
    0
4110 FOR F=1 TO OB
4120 IF NOT O(F) THEN PRINT TAB
    9: "A": O$(F): LET CA=CA+1
4125 NEXT F
4130 IF NOT CA THEN PRINT TAB 9:
    "NOTHING"
4140 GO TO 1E3
4150 REM ***Help***
4160 PRINT "NO! SHAN'T! DON'T WA
    NT TO!"
4170 GO TO 1E3
4200 REM ***Save***
4205 PRINT "READY CASSETTE."
4210 LET X(1)=LC: LET X(2)=CA: L
    ET X(3)=LL: LET X(4)=UN: LET X(5
    )=DD: LET X(6)=LN
4215 FOR F=1 TO OB: LET X(6+F)=O
    (F): NEXT F
4220 PRINT "THERE ARE 2 FILES TO
    SAVE "
4225 PRINT " DATA 1": SAVE "DATA
    1" DATA L(): REM EXITS
4230 PRINT " DATA 2": SAVE "DATA
    2" DATA X()
4235 GO TO 4E3
4250 REM ***Load***
4255 GO SUB 100: PRINT "THERE A
    RE 2 FILES TO LOAD "
4260 LOAD "DATA1" DATA L()
4265 LOAD "DATA2" DATA X()
4270 LET LC=X(1): LET CA=X(2): L
    ET LL=X(3): LET UN=X(4): LET DD=
    X(5): LET LN=X(6)
4275 FOR F=1 TO OB: LET O(F)=X(6
    +F): NEXT F
4280 GO TO 4E3
4300 REM ***Quit***
4305 PRINT "REALLY WANT TO QUIT?
    (Y/N)"
4310 PAUSE 0
4315 IF INKEY$="Y" THEN STOP
4320 IF INKEY$="N" THEN PRINT "S
    TOP MESSING ABOUT THEN!": BEEP .
    5,-30: GO TO 1E3
4325 GO TO 4310
5999 REM *****
6000 REM *LOCATION DESCRIPTIONS
6001 REM *****
6010 PRINT "IN A LARGE CAVE": RE
    TURN
6020 PRINT Z$(1): " OF THE CAVE."
    : RETURN
6030 PRINT Z$(3): "OF THE CAVE.":
    RETURN
6040 PRINT Z$(4): "OF THE CAVE.":
    RETURN
6050 PRINT Z$(2): " OF THE CAVE."
    : RETURN
6060 PRINT "FALLING INTO A DEEP
    PIT!"
6062 LET DD=1: RETURN
6070 PRINT "AT A LONG TUNNEL."
6072 LET L(7,1)=8 AND NOT O(5):
    RETURN
6080 REM *** WIN ***
6099 RETURN

```


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In space no-one can hear you type

Explore the mystery of Space Station Zebra on the CPC464 written by **Bob Baxter**

Space Station Zebra, a science research vessel orbiting the Poll galaxy, suddenly ceases all communications with Mankind. The Science Council issues your orders - to investigate and secure the station, gather infor-

mation and evidence by any means at your disposal, then return with it. The alternative is to destroy Zebra.

They called on the best, so it's up to you. Remember, in the Universe, all is not what it first appears.

The program notes, plus the rest of the Basic listing next week. Meanwhile, if you don't want to wear your fingers out typing, I can supply tape copies for £2.85 including postage. Write to me at PO Box 17, Burnham-on-Sea, Somerset.

```

10 REM *****
20 REM # SPACE STATION ZEBRA #
30 REM
40 REM # (C) B.BAXTER '85 #
50 REM *****
60 REM
70 MODE 1:CLS:FLAG=0:SC=0:LOCATE 1,25:PRINT"Do you require the story? (Y/N)?"
80 A=INKEY$:IF A="" THEN GO
90 IF A="Y" THEN GOSUB 4660
100 REM # GET NAME & lower case (1) #
110 CLS:LOCATE 1,24:INPUT"Your name for your casket please! ";N$
120 FOR X=1 TO LEN(N$):IF MID$(N$,X,1)="" THEN 140
130 NEXT X:LEN(N$)+1
140 N1$=LEFT$(N$,X-1):N2$=LEFT$(N1$,1)
150 FOR X=2 TO LEN(N1$):A=ASC(MID$(N1$,X,1)):IF A>64 AND A<91 THEN A=A-32
160 N2$=N2$+CHR$(A):NEXT X:PRINT:PRINT"Thank you "N2$:FOR T=0 TO 350:NEXT T
170 REM # COMMAND TABLE (2) #
180 DATA GET,DROP,GD,USE,CHARGE,LIGHT,READ,RUN,REPORT,BREAK,OPEN,LOOK,EAT,DRINK
190 DATA DESTROY
200 CO=15:DIM CO$(CO):FOR I=1 TO CO:READ CO$(I):NEXT I
210 REM # SUPPLY TABLE (3) #
220 DATA WATER,1,0,15
230 DATA TEA,1,0,1
240 DATA WHISKEY,0,0,0
250 DATA PANCAKE,0,1,5
260 DATA CAT,0,1,20
270 DATA MILKY BAR,0,1,7
280 DATA PEANUTS,0,1,7
290 CM=7:DIM CM$(CM),CT$(CM),CH$(CM),CS$(CM):FOR J=1 TO CM:READ CM$(J),CT$(J),CH$(J),CS$(J):NEXT J
300 REM # LIFE-FORM TABLE (4) #
310 DATA Ghost,Plasma Being,Absorber,Horan,Moon Beast,Poltergeist,Gremlin
320 LF=7:DIM LF$(LF):FOR X=1 TO LF:READ LF$(X):NEXT X
330 REM # OBJECT TABLE (5) #
340 DATA PACK,"An energy pack.",0,33
350 DATA UNIT,"A portable charging unit.",0,8
360 DATA PEN,"A pocket light pen.",0,20
370 DATA ENGINEERS,"Engineering Log",200,39
380 DATA BUZZ,"A Buzz Word.",0,9
390 DATA DISCS,"The Computer Discs",200,40
400 DATA PIPE,"A length of bent pipe.",0,44
410 DATA BOX,"A black box.",0,28
420 DATA COMMUNICATOR,"A ships communicator.",0,23
430 DATA SUIT,"An E.V.A. suit.",0,13
440 DATA TOOLS,"A set of mining tools.",0,41
450 DATA BRODIE,"A Brodie special.",0,15
460 DATA BAG,"A travel bag.",0,16
470 DATA RECORDER,"A voice recorder.",0,17
480 DATA HEAD,"A human head.",0,21
490 DATA MEDICAL,"The Medical officers Log.",200,60
500 DATA GUN,"A packet of gun.",0,26
510 DATA FOODPACK,"An empty foodpack.",0,12
520 DATA TOOL,"A welding tool.",0,48
530 DATA BOOT,"A space boot.",0,18
540 DATA HARNESS,"A space harness.",0,50
550 DATA LINE,"A safety line.",0,10
560 DATA BEACON,"A space beacon.",0,42
570 DATA VISOR,"A broken visor.",0,31
580 DATA HANDLE,"A small spare handle.",0,25
590 DATA FLASK,"An oxygen flask.",0,27
600 DATA CATAPULT,"A space catapult.",0,19
610 DATA LOGBOOK,"Zebra's Logbook.",400,14
620 DATA CLASP,"A small magnetic clasp.",0,9
630 DATA SPARES,"A few engineering spares.",0,4
640 DATA WATER,"A glass of water.",0,34
650 DATA TEA,"A cup of tea.",0,7
660 DATA WHISKEY,"A bottle of whiskey.",0,11
670 DATA PANCAKE,"A cold pancake.",0,47
680 DATA CAT,"One dead cat.",0,43
690 DATA BAR,"A Milky Bar without the kid.",0,59
700 DATA PEANUTS,"Roasted peanuts.",0,49
710 DATA BACK,"A backpack unit.",0,45
720 DATA REMAINS,"Some human remains.",100,3
730 DATA RECORDS,"The Science officers records",250,6
740 DATA OBJECT,"A mysterious object.",0,32
750 DATA JACKET,"An old torn jacket.",0,22
760 DB=42:DIM DB$(DB),DB$(DB),LD$(DB),SD$(DB):FOR L=1 TO DB:READ DB$(L),DB$(L),SD$(L),LD$(L):NEXT L
770 FOR X=4 TO 20:LO(X)=INT(RND(1)*60)+1:NEXT X
780 FOR X=21 TO 42:LO(X)=INT(RND(1)*60)+1:NEXT X
790 REM # SURVIVAL CONDITION (6) #
800 ST=100:TH=100:HU=100:IN=0:FP=0:RP=1:CA=0:SC=0:EN=100:FLAG=0
810 P=0:DARK=0:LIT=1:OFF=0
820 WINDOW 1,40,1,25:CLS
830 IF EX=1 THEN ST=ST-(INT(RND(1)*5)+5)
840 IF ST<=0 THEN 4120
850 IF ST<0 AND ST<25 THEN PRINT:PRINT"I feel very weak!";PRINT
860 IF IN<99 THEN 4120
870 IF IN<60 AND IN<100 THEN PRINT:PRINT"This pain is bad!";PRINT
880 TH=TH-2:HU=HU-1:IF P=LIT THEN EN=EN-1
890 IF TH<=0 THEN 4120
900 IF TH<0 AND TH<10 THEN PRINT:PRINT"GASP!!! COME ON!!! GASP!!!";PRINT
910 IF TH<10 AND TH<25 THEN PRINT:PRINT"I feel like a beer!";PRINT
920 IF TH<25 AND TH<50 THEN PRINT:PRINT"My throat is dry!";PRINT
930 IF HU<=0 THEN 4120
940 IF HU<0 AND HU<10 THEN PRINT:PRINT"COME ON!!! I'M STARVING!!!";PRINT
950 IF HU<10 AND HU<25 THEN PRINT:PRINT"when do we eat!!!";PRINT
960 IF HU<25 AND HU<50 THEN PRINT:PRINT"my stomach just rumbled!";PRINT:PRINT
970 IF EN<25 AND EN<50 THEN PRINT:PRINT"The light is fading!";PRINT
980 IF EN<=0 THEN PRINT:PRINT"The light's gone!";PRINT:P=OFF
990 IF P=LIT OR (RM<39 AND RM<47) THEN DARK=1
1000 IF P=OFF AND (RM<39 AND RM<47) THEN DARK=1
1010 IF DARK=0 THEN 1070
1020 X=INT(RND(1)*3)+1:ON X GOTO 1030,1040,1050
1030 PRINT:PRINT"There's no light here.";GOTO 2350
1040 PRINT:PRINT"It's too dark to see.";GOTO 2350
1050 PRINT:PRINT"I need lights.";GOTO 2350
1060 REM # ROUTE MAP (7) #
1070 ON RM GOTO 1120,1170,1210,1230,1250,1270,1290,1310,1330,1350,1370,1390,1410
1080 ON RM=13 GOTO 1430,1450,1470,1490,1510,1530,1550,1570,1590,1610,1630,1650
1090 ON RM=25 GOTO 1670,1690,1710,1730,1750,1770,1790,1810,1830,1850,1870,1890
1100 ON RM=37 GOTO 1910,1930,1950,1970,1990,2010,2030,2040,2060,2080,2100
1110 ON RM=49 GOTO 2120,2140,2160,2180,2200,2220,2240,2260,2280,2300,2320
1120 PRINT:PRINT"Zebra's airlock is ready but the hatches need manual operation to open. It's too late to quit. Route:- S. or N. to Sparrow."
1130 N=1:S=2:E=0:W=0:U=0:D=0: REM 1
1140 SC=0:FOR X=1 TO DB:IF LO(X)=1 THEN SC=SC+SD(X)
1150 NEXT X:IF SC=1350 THEN 4160
1160 GOTO 2350
1170 PRINT:PRINT"You are at the junction of the outer ring walkway. There is a strange light that shows the way but it flickers and dims. Route:- N.S.E.W."
1180 IF FLAG=1 THEN 1200:PRINT:PRINT"I SENSED ZEBRA TREMBLE!!"
1190 PRINT:PRINT"ZEBRA KNOWS WE'RE HERE!!"
1200 FLAG=1:N=1:S=5:E=4:W=3:U=0:D=0:GOTO 2350: REM 2
1210 PRINT:PRINT"A mist covers the floor here. The lights poor and there is blood on the walls. Cables and conduits hang broken from the panels. Route:- S.E.W."
1220 N=0:S=19:E=2:W=0:U=0:D=0:GOTO 2350: REM 3
1230 PRINT:PRINT"There's blood on the floor. The cables are covered in slime. Take care! It is slippery under foot. Route:- S.E.W."
1240 N=0:S=20:W=2:E=7:U=0:D=0:GOTO 2350: REM 4
1250 PRINT:PRINT"More mist here! This lobby area shows a sign of battle. Blood and tissue covers the seats. There is a strange atmosphere. Route:- N.S.E.W."
1260 N=2:S=14:E=20:W=19:U=0:D=0:GOTO 2350: REM 5
1270 PRINT:PRINT"This is an observation lounge. The great shutters are now closed again at the manysters. The scopes are all in place and untouched by intrusion. The re is mist covering the floor. Route:- S.E."
1280 N=0:S=10:E=3:W=0:U=0:D=0:GOTO 2350: REM 6
1290 PRINT:PRINT"The walkway curves to the south. All the panels have been torn open. There is a lot more blood on the floor. Go easy! Route:- S.W."
1300 N=0:S=8:E=0:W=4:U=0:D=0:GOTO 2350: REM 7
1310 PRINT:PRINT"This is a lounge area, unused recently. There is no sign of past activity here. The observation windows are open to the stars. Route:- N.S.W."
1320 N=7:S=9:E=0:W=25:U=0:D=0:GOTO 2350: REM 8
1330 PRINT:PRINT"I am located at a refreshment area. The dispensers are reading 'EMPTY'. Cartons and packets litter the floor. Route:- N.W."
1340 N=8:S=0:E=0:W=13:U=0:D=0:GOTO 2350: REM 9
1350 PRINT:PRINT"This is a dispatch area. The containers are marked 'Company' and 'Private' some are opened with their contents spilled out on the floor. Flasks lay everywhere. Route:- N.S.E."
1360 N=6:S=11:E=19:W=0:U=0:D=0: GOTO 2350: REM 10
1370 PRINT:PRINT"Entering the main shuttle bay. Two ferryclass shuttles sit resting in their bays with outer hatches open ready to board. A corpse lays by the hatch of one, burnt beyond recognition. It's dangerous here. Route:- N.S.E."
1380 N=10:S=12:E=22:W=0:U=0:D=0:GOTO 2350: REM 11
1390 PRINT:PRINT"Video screens fill the walls and a sign reads 'Visitors Embarkation Centre'. The place seems cold and lonely and out of place on Zebra. The register is empty! Another route leads south but which is sealed. Route:- N.E."
1400 N=11:S=0:E=13:W=0:U=0:D=0:GOTO 2350: REM 12
1410 PRINT:PRINT"This is a junction. The route south has been sealed off. A sign over the hatch reads 'Under Construction - VACUUM'. Route:- N.E.W."
1420 N=23:S=0:E=9:W=12:U=0:D=0:GOTO 2350: REM 13
1430 PRINT:PRINT"This is a junction on the inner ringway. Burn marks cover the entire walkway. The cables, conduits and panels are melted and there are remains of sort s. There's been a great battle here. Route:- N.S.E.W."
1440 N=5:S=23:E=16:W=15:U=0:D=0:GOTO 2350: REM 14
1450 PRINT:PRINT"CREWS QUARTERS' marks another junction. The walkway ahead is covered in more of the slime, dripping from the cables. Route:- S.E.W."
1460 N=0:S=22:E=14:W=18:U=0:D=0:GOTO 2350: REM 15
1470 PRINT:PRINT"The floor is torn up here. The sign to the officers quarters is broken and the lamps are smashed. The overhead cables are hanging loose and the walkway to the right is littered with broken conduits. Route:- S.E.W."

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1480 N=0:S=24:E=17:W=14:U=0:D=0:GOTO 2350: REM 16
1490 PRINT"The walkway ends here with another hatchsealed against space. There'
s two roomshere, one to the left and another to theright. Route:- N.S.W."
1500 N=20:S=25:W=16:E=0:U=0:D=0:GOTO 2350: REM 17
1510 PRINT"The walkway divides. A hatch to the westis sealed, the sign reads 'VA
CUUM' Thereare claw marks on the hatch. Something has tried to get out here!
Route:- N.S.E."
1520 N=19:S=21:E=15:W=0:U=0:D=0:GOTO 2350: REM 18
1530 PRINT"Sleeping quarters. The bunks are unaade and dirty washing litters the
floor. Thesleeping bags are cold. Route:- N.S.E.W."
1540 N=3:S=18:E=5:W=10:U=0:D=0:GOTO 2350: REM 19
1550 PRINT"The badge on the door showed it was the comsanders quarters, but it w
as empty! no furniture or signs of being occupied.It was an empty shell! Route
:- N.S.W."
1560 N=4:S=17:E=0:W=5:U=0:D=0:GOTO 2350: REM 20
1570 PRINT"Sleeping quarters. It's a mess here, thebunks are overturned with torn
sleeping bags and clothing everywhere. There are paw marks in the blood and ti
ssue stuck to the walls. Route:- N."
1580 N=18:S=0:E=0:W=0:U=0:D=0:GOTO 2350: REM 21
1590 PRINT"Crews locker/shower cubicles. Graffiti on the wall declares 'Gravity
is a myth-the Earth sucks!' Pin-Up's cover every wall, some Human! Route:- N
.E.W."
1600 N=15:S=0:W=1:E=23:U=0:D=0:GOTO 2350: REM 22
1610 PRINT"The Mess deck was as such a shambles as everywhere else. It was usual
ly occupiedaround the clock, but was quiet now. A staircase goes to decks one
and three.Route:- N.S.E.W.U.D."
1620 N=14:S=13:E=24:W=22:U=36:D=26:GOTO 2350: REM 23
1630 PRINT"The hatch has been torn out! What used to be the exec's shower room
is now all a mess. The remains of an officer lays against a unit. The head is
missing theident showed it to be Lysac 2nd officer. Route:- N."
1640 N=16:S=0:W=23:E=25:U=0:D=0:GOTO 2350: REM 24
1650 PRINT"This used to be the officers quarters. Now it is burnt to charcoal.
What's leftof a laser lays on the floor. Somethinghas been here more powerful t
han man! Route:- N.E.W."
1660 N=17:S=0:W=24:E=8:U=0:D=0:GOTO 2350: REM 25
1670 PRINT"Level one store has been sealed off fromthe rest of this deck. All t
he hatches have the warning of 'Vacuum' above them.The construction crew must ha
ve stopped work here. Slime leads to an airduct in the corner and goes down. Rou
te:- U.D."
1680 N=0:S=0:W=0:E=0:U=23:D=39:GOTO 2350: REM 26
1690 PRINT"Broken glass and instruments showed thiswas the Medical centre. The e
quipment ismaashed and useless. Route:- S.E."
1700 N=0:S=28:E=35:W=0:U=0:D=0:GOTO 2350: REM 27
1710 PRINT"The hatchways off this junction lead us closer to our goal. The hatc
h ahead is marked, as usual, 'VACUUM' Still at it they were. There is more of
the slime. Route:- N.S.E."
1720 N=27:S=29:E=30:W=0:U=0:D=0:GOTO 2350: REM 28
1730 PRINT"The sign read 'Computer Centre' althoughthere were no computers worki
ng now. Thereason for being here was gone. The lifeless equipment answered my
questions. Route:- N.E."
1740 N=28:S=0:E=31:W=0:U=0:D=0:GOTO 2350: REM 29
1750 PRINT"They'd named this 'Turkey Crossing' withsome foresight, burnt cables c
overed the floor like entrails.. Route:- S.E.W."
1760 N=0:S=31:E=32:W=28:U=0:D=0:GOTO 2350: REM 30
1770 PRINT"There's two bodies in the control room. Neither of them wore officers
uniforms, and both had their throats cut. Both hadbeen dead a long time. More s
lime! Route:- N.E.W."
1780 N=30:S=0:E=36:W=29:U=0:D=0:GOTO 2350: REM 31
1790 PRINT"The junction had been fatal for someone.A bundle of charred remains i
ooked very inhuman. There were claw marks on the walls everywhere. Route:- S
.E.W."
1800 N=0:S=36:E=33:W=30:U=0:D=0:GOTO 2350: REM 32
1810 PRINT"Strange! the junction is untouched! Route:- S.E.W."
1820 N=0:S=37:E=34:W=32:U=0:D=0:GOTO 2350: REM 33
1830 PRINT"Construction was well underway at this junction, the hatch bore the
same dangersign 'Under Construction - VACUUM' in a red marker. The area was cove
red in dust Route:- N.S.W."
1840 N=35:S=38:E=0:W=33:U=0:D=0:GOTO 2350: REM 34
1850 PRINT"The Star Room used to be an observatory.Not so anymore, the equipment
was a pileof molten metals. The opticals would notlook at the stars again. Rou
te:- S.W."
1860 N=0:S=34:E=0:W=27:U=0:D=0:GOTO 2350: REM 35
1870 PRINT"The indicator shows Level 3 Lobby. Badlydecomposed corpses lay on the
floor all Human. Route:- N.D.E.W."
1880 N=32:W=31:E=37:S=0:U=0:D=23:GOTO 2350: REM 36
1890 PRINT"Nothing wrong in the Radio Shack except that every piece of equipment
was dead! No sign of any damage apart from slime on the floor. Route:- N.E.W."
1900 N=33:S=0:E=38:W=36:U=0:D=0:GOTO 2350: REM 37
1910 PRINT"Very little damage revealed this was theScience lab. Apart from broke
n glass and a few small flaskson the floor there isnothing to show trouble. Rou
te:- N.W."
1920 N=34:S=0:E=0:W=37:U=0:D=0:GOTO 2350: REM 38
1930 PRINT"The duct is big enough to take a man butthe floor is slippery. Route
:- N.U."
1940 N=40:S=0:E=0:W=0:U=26:D=0:GOTO 2350: REM 39
1950 PRINT"There's two inspection hatches here, oneon the left and another on th
e right. A trail of slime goes forward. Route:- N.S.E.W."
1960 N=43:E=42:W=41:S=39:U=0:D=0:GOTO 2350: REM 40
1970 GOTO 4380: REM 41
1980 GOTO 4380: REM 42
1990 PRINT"There are several small vents here, someof the grills have been gnawe
d. There isa strange mist covering the floor. Route:- N.S."
2000 N=44:S=40:E=0:W=0:U=0:D=0:GOTO 2350: REM 43

2010 PRINT"A junction of the airduct. A high pitch whistle fills the air. there
is Danger!here. Route:- N.S.E."
2020 N=45:S=43:E=46:W=0:U=0:D=0:GOTO 2350: REM 44
2030 GOTO 4380: REM 45
2040 PRINT"Another junction with sealed hatches. A faint whistling fills the air
. There's blood on the floor. Route:- E.W."
2050 N=0:S=0:E=47:W=44:U=0:D=0:GOTO 2350: REM 46
2060 PRINT"The shaft goes vertical here and emptiesinto a room. The grill has be
en torn offits hinges. Route:- W.U."
2070 N=0:S=0:E=0:W=46:U=48:D=0:GOTO 2350: REM 47
2080 PRINT"This is the engineering stores level 1. Containers have been torn ope
n spilling parts everywhere. They are difficult to climb over. Route:- N.D."
2090 N=49:S=0:E=0:W=0:U=0:D=47:GOTO 2350: REM 48
2100 PRINT "Level 1. Engineering the sign read 'NO UNAUTHORISED PERSONNEL' The
sign was up-side down! The walkway curves here. Route:- N.S.E."
2110 N=50:S=48:E=54:W=0:U=0:D=0:GOTO 2350: REM 49
2120 PRINT"A rest area reveals a battle took place here. Blood mixed with slime
covers thewalls and floor. There are articles of torn clothing amongst the de
bris but no bodies. Strange! Route:- N.S.E."
2130 N=51:S=49:E=58:W=0:U=0:D=0:GOTO 2350: REM 50
2140 PRINT"A series of sealed hatches on the left and right reveal a junction.
A hatch is open. Route:- S.E."
2150 N=0:S=50:E=52:W=0:U=0:D=0:GOTO 2350: REM 51
2160 PRINT"This area is the food bar. An engineer sits at a table with his thro
at cut and his hands missing. Covered in slime, heded in fear. Route:- S.E.W."
2170 N=0:S=57:E=53:W=51:U=0:D=0:GOTO 2350: REM 52
2180 PRINT"The walkway is lined with small carriersparked against the wall here,
one is on its side. Burnt remains lay beside it. Route:- S.W."
2190 N=0:S=56:E=0:W=52:U=0:D=0:GOTO 2350: REM 53
2200 PRINT"There's several hatches here, all sealeddue to construction going on
behind themA faint whistling fills the walkway. Thecables are all intact for a c
hange. Route:- N.E.W."
2210 N=57:S=0:E=55:W=49:U=0:D=0:GOTO 2350: REM 54
2220 PRINT"A large explosion here has damaged much of the docking bay. It was o
bvious thatsomeone had tried to get a shuttle away in a panic. The wreck was pil
ed against the outer doors. No sign of bodies. Route:- N.W."
2230 N=56:S=0:E=0:W=54:U=0:D=0:GOTO 2350: REM 55
2240 PRINT"A real battle took place hear. The crewsoffered their last defence ag
ainst this unknown enemy, burnt remains is all thatis left of them, about fourte
en in all. What carnage! Route:- N.S.W."
2250 N=53:S=55:E=0:W=57:U=0:D=0:GOTO 2350: REM 56
2260 PRINT"The engineering control deck is in a badway, there's little equipment
left, noneof it working and there's blood all overthe place. There's a hatchway
that leadsup to level 3. The power room doors areopen! Route:- N.S.E.W.U."
2270 N=52:S=54:E=56:W=58:U=59:D=0:GOTO 2350: REM 57
2280 PRINT"There's no radiation warning light above the door. The catwalk surrou
nding the crucible is dripping in slime. The giantflask is open and EMPTY! The
heart of Zebra has GONE! Route:- E.W."
2290 N=0:S=0:E=57:W=50:U=0:D=0:GOTO 2350: REM 58
2300 PRINT"The chief engineer lays at the bottom ofa secondary panel with his th
roat cut. The switches revealed the last attempt of a brave man. The destruct
sequence had been set, but it was now aborted. A staircase leads up. Route:-
U.D."
2310 N=0:S=0:E=0:W=0:U=60:D=57:GOTO 2350: REM 59
2320 PRINT"The office was still intact. No evidenceof intrusion here. It had al
ready got what it came for. Route:- D."
2330 N=0:S=0:E=0:W=0:U=0:D=59:GOTO 2350: REM 60
2340 REM # RESPONSE FRAME (B) #
2350 PRINT:PRINT"Observations:":PRINT:I=0:IF DARK=1 THEN PRINT"Blackness.":GOT
O 2420
2360 FOR X=1 TO 20:IF LG(X)<>RN THEN NEXT I:GOTO 2400
2370 IF POS(0)+LEN(DB$(X))<35 THEN PRINT DB$(X).":GOTO 2390
2380 PRINT:PRINT DB$(X).":
2390 I=1
2400 IF I=0 THEN PRINT:PRINT"Not a lot!":PRINT
2410 WINDOW 1,40,12,25:PRINT
2420 X=INT(RND(1)+5):ON X GOTO 2430,2440,2450,2460,2470
2430 PRINT:PRINT"Okay! "N2", What now?":GOTO 2480
2440 PRINT:PRINT"what now? "N2"?":GOTO 2480
2450 PRINT:PRINT"Come on! I want ideas! "N2":GOTO 2480
2460 PRINT:PRINT"what now?":GOTO 2480
2470 PRINT:PRINT"Come on! I'm in a hurry! "N2"
2480 REM # INPUT ROUTINE (V) #
2490 EVERY 2000,2 GOSUB 4070: REM # IMPATIENCE #
2500 IN$="":V$="":N$="":PRINT:PRINT CHR$(246):
2510 AS=INKEY$:IF AS="" THEN 2510
2520 IF ASC(AS)=13 AND IN$="" THEN 2510
2530 IF ASC(AS)=127 THEN PRINT CHR$(8) CHR$(16):
2540 IF ASC(AS)=127 THEN IN$=LEFT$(IN$,LEN(IN$)-1):GOTO 2510
2550 PRINT AS:IF ASC(AS)=13 THEN 2580
2560 IF ASC(AS)<65 AND ASC(AS)>91 AND ASC(AS)<>32 THEN 2500
2570 IN$=IN$+AS:GOTO 2510
2580 PRINT:PRINT
2590 IN$=IN$+" "
2600 FOR X=1 TO LEN(IN$):IF MID$(IN$,X,1)="" THEN 2620
2610 NEXT:GOTO 2490
2620 V$=LEFT$(IN$,X-1):N$=RIGHT$(IN$,LEN(IN$)-X)
2630 FOR X=1 TO 20:IF V$=CD$(X) THEN 2660
2640 NEXT:PRINT"I don't understand ""V$""": "N2":GOTO 2490
2650 REM # REACTION SEQUENCES (10) #
2660 ON X GOTO 2690,2760,2810,3050,3300,3380,3950,3490,3600,3690,820,3790
2670 ON X-13 GOTO 3790,4050
2680 REM # GET (11) #
2690 FOR X=1 TO 20:IF DB$(X)=LEFT$(N$,LEN(DB$(X))) THEN 2720

```


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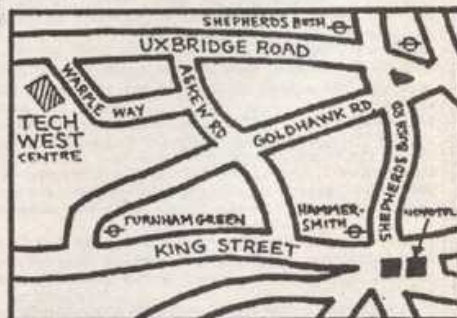
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A tight squeeze

Just the thing for those graphic adventures – an all-purpose graphics compression routine by Adrian Warman

A trend in software today, particularly graphic adventures, is to have high-resolution pictures to accompany text information. This article considers a way in which high-resolution images can be stored in a format other than their 'pure' bitmaps. In doing so, it will be shown how compression by factors in excess of six times can be achieved.

The algorithms are presented in a pseudo-Basic, in order to preserve machine-independence. However, notes are provided to make the set of listings easier to understand.

The Problem

Bitmap high-resolution displays have the snag of requiring large amounts of Ram for their storage. For example, the BBC computer takes up to 20K for its highest resolution, and the Commodore 64 take 8K plus extra for colour information.

The easiest method of keeping a copy of a display is to store the bitmap in its entirety. Unfortunately, if the screen contains comparatively little information, or if the image is regular or repetitive, then there could well be a large amount of redundant information being stored. For example, consider a circuit diagram on a sheet of paper. The actual amount of ink used is very small in comparison to the paper area taken. When memory is important, a smaller storage use can be very advantageous.

The Algorithms

The algorithms presented below attempt to provide an alternative method of storing bitmap information. However, there are a number of points which must be kept in mind. Firstly, although the algorithm can achieve an excellent degree of compression, there are patterns which can vastly increase the storage used in comparison to simple bitmap storage.

Secondly, although the expansion algorithm ('*xpand*') is quite fast, the compression algorithm ('*shrink*') can take some time. This effect is dependent on exactly how the algorithm is implemented. Running the same algorithm on the same machine but in different languages, I have timed compression for the same image as taking from six to 30 minutes. Decoding takes roughly the same time as reloading the entire bitmap; again this is language dependent. To show the worth of the algorithm, it is interesting to note that the image that gave the above timings was compressed into less than an eighth of its pure bitmap size.

The compression is achieved through a very simple process. It is assumed that

the screen pixels are either 'on' or 'off'. The actual number of adjacent pixels on the row in the same state is recorded, rather than each individual bit.

Starting from the base corner of the bitmap display, the 'status' of the current dot is inspected. For a simple mono-colour display, it is assumed that the integer value '0' represents 'off', and '1' represents 'on'. For colour displays, the status could be (say) the colour number found at the dot position.

Once the status is established, the algorithm searches along the row, looking for adjacent dots in the same status. If the status changes, the count so far is stored in a file. If a mono-colour display is used, only the count need be stored. For multi-colour displays, it is suggested that the old colour number be stored along with the count. (For more informa-

```
1000 rem shrink algorithm
1010 :
1020 :
1030 width=320
1040 height=200
1050 :
1060 :
1070 rem see notes.
1080 :
1090 :
1100 rem see notes.
1110 open file 1,"storage",
    sequential,write
1120 count=0
1130 state=0
1140 :
1150 :
1160 for row=0 to height-1
1170 for col=0 to width-1
1180 :
1190 :
1200 gosub 2000
1210 if found=state then
    count=count+1:goto 1270
1220 :
1230 print file 1:count
1240 count=1
1250 state=1-state
1260 :
1270 next col
1280 next row
1290 :
1300 :
1310 close file 1
1320 :
1330 stop
1970 :
1980 :
1990 rem inspect pixel
    at (row,col).
2000 found=pixel(row,col)
2010 rem row=y-value,
    col=x-value.
2020 rem convert if
    necessary.
2030 return
```

tion on this, see the program notes below.) The change of status is noted, and the count restarted. This continues until the end of the display is reached.

When the display pattern consists of lines or dots or blocks, this technique generally results in a significant size reduction compared to pure bitmap storage. However, for some images (for example, Figure 1) continual changing of dots in close proximity will mean excessively large storage files. In general, it appears that if the numbers being stored in the file have an average value less than the number of screen display bits per byte, then the algorithm is not producing a worthwhile amount of compression. Unfortunately, there seems to be no way of predicting whether a given display is suited to compression, except by trying it.

Finally, the Basic conforms mostly to Microsoft standard in order to emphasise the fact that the algorithms are *not* machine-dependent. One exception is that variable names have been chosen that do not necessarily differ in the first two characters. It was decided that the user could better understand the flow of the algorithms by the use of meaningful variables; and besides, it was unlikely that the names would suit everybody. Any other difficulty would concern the sequential files or graphics, but these are fully explained in the notes below. As long as your computer can do high-resolution displays, and manipulate simple sequential files, the algorithms will work.

Program Notes

Naturally, graphics commands vary from machine to machine, so certain assumptions have to be made regarding the plotting and inspection of points. For this reason, some lines within the algorithms contain references back to the notes for explanation of exactly what is required. As long as it is possible to plot lines in foreground and background colours (the latter possibly being interpreted as 'resetting points on the line), as well as to use a function to inspect the status of individual points, there should be no difficulty.

'Shrink' Algorithm

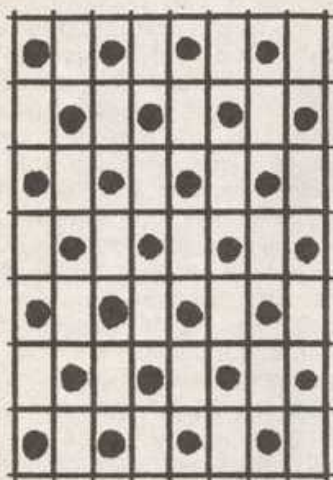
1030-1040 – 'Width' and 'height' are set up here, and used throughout the algorithm. If your screen has different dimensions, simply alter the numbers accordingly.

1070 – Some languages require that the hi res screen be active at the time of performing any graphic command. If so, suitable commands should be added here.

1100-1119 – Even in Microsoft, there is little standardisation regarding sequential files. This line simply opens a sequential file which can be written-to, with the file-name 'storage', and referenced within the program by the term 'file 1'. Replace this line by the equivalent on your system.

1120-1130 – Start values assume that no pixels have been found, and that the program is currently looking for pixels in the background colour.

Figure 1.



1160-1170 - Loops 'row' and 'col' control the inspection of each point on the hi res screen.

1200 - Call a subroutine to inspect the contents of the current pixel. 'Found' is set to '1' or '0' depending on whether the pixel is set or not.

1210 - If the pixel found is in the same state as its predecessor, increment the count, and loop round for again.

1230-1250 - The current pixel is in a different state. Output the count to the sequential file (Line 1230), restart the count, and set the new status being looked for. If multi-colour is being used, the current colour should be filled along with the count, and the new colour found labelled as the new state.

1270-1280 - The end of the loops to inspect each pixel row by row.

1310 - Close the sequential file.

2000 - The function *Pixel* (*x*, *y*) is assumed to return a number that reflects the state of the pixel at (*x*, *y*). This has been placed in a subroutine since it will probably need to be altered for the specific system. The only restriction is that 'found' must be set to '0' if the pixel is in the background colour, and '1' if in the foreground colour. If the display is multi-colour, then the *Pixel* function will probably return the colour number instead, and this should be assigned to 'found', for use as described in the notes.

'Xpand' Algorithm

1000 - 'Width' and 'height' are declared as in the 'Shrink' algorithm.

1070 - Some languages require the graphic screen to be active while drawing or plotting. If so, suitable commands should be added here.

1100-1110 - This line simply opens a sequential file which can be read from, with the file-name 'storage', and referenced within the program by the term 'file 1'. Replace this line by the equivalent on your system.

1120-1150 - 'Status' is initialised and assumes that the first group of pixels will be in the background colour. 'Xnow' and 'ynow' are the pixel co-ordinates of the start of the current block of pixels in the current colour. 'Ynext' is the y-value of the end of the block, and is required to be defined by the algorithm at this point.

1180 - EOF is a function usually present in most Basics. It simply returns True or False depending on whether the file contains no more data (EOF stands for End Of File).

1210 - This line gets the next value of 'count' from the file. 'Count' holds the length of the new block of pixels. If a multi-colour system is being used, the line should be replaced by (for example): Input File 1: Status, Count.

1230-1250 - Calculate the column number of the end of the next block. It is possible that a wrap-around effect could occur if the current block 'falls-off' the end of the row. Line 1250 tests for this condition, and if found modifies the end co-ordinates of the block.

1270 - If the current block lies completely on the current line, then go and draw it.

1290-1320 - The next block does not lie entirely on the current row, and so it must be split into two. These lines set up the start and end co-ordinates of the block sub-sections, and call the subroutine to draw the line in its correct colour (depending on the state).

1330 - Skip over the case when the block lies entirely on the current row of the screen.

1350-1360 - Draw the entire block, since it fits entirely on to the current line. The start and end co-ordinates are set up in a similar fashion to the above.

1390-1410 - Make the end of the current block to be the start of the new block. Since we have reached the end of the current block, the status must be changed. For single colour displays, the Line 1410 remains unchanged, since state zero becomes state one, and vice versa.

However, for multi-colour screens, the line can be omitted entirely, since the correct value of 'status' will be read in from the converted Line 1210.

1430 - Repeat this process until the file is empty.

1460 - Close the sequential file.

2000 - This subroutine draws a line from (*xstart*, *ystart*) to (*xend*, *yend*), in a colour which is dependent on 'status'. It is necessary for the user to code this subroutine suitably for the chosen system, but the main workings should be clear. First of all, the colour of the line is determined and set from 'status' (Lines 2000-2010). Finally, the line is drawn using the co-ordinates supplied.

```

1000 rem xpand algorithm
1010 :
1020 :
1030 width=320
1040 height=200
1050 :
1060 :
1070 rem see notes.
1080 :
1090 :
1100 rem see notes.
1110 open file 1,"storage",sequential,read
1120 status=0
1130 xnow=0
1140 ynow=0
1150 ynext=0
1160 :
1170 :
1180 if eof(file 1) then goto 1460
1190 :
1200 :
1210 input file 1:count
1220 :
1230 xnext=xnow+count
1240 :
1250 if xnext>=width then xnext=xnext-width:
      ynext=ynext+1
1260 :
1270 if ynext=ynow then goto 1350
1280 :
1290 xstart=xnow:ystart=ynow :xend=width-1:
      yend=ynow
1300 gosub 2000
1310 xstart=0 :ystart=ynext:xend=xnext
      :yend=ynext
1320 gosub 2000
1330 goto 1390
1340 :
1350 xstart=xnow:ystart=ynow :xend=xnext
      :yend=ynext
1360 gosub 2000
1370 :
1380 :
1390 xnow=xnext
1400 ynow=ynext
1410 status=1-status
1420 :
1430 goto 1180
1440 :
1450 :
1460 close file 1
1470 :
1480 stop
1490 :
1490 rem draw a line.
2000 if status=0 then rem set black ink.
2010 if status=1 then rem set white ink.
2020 rem see notes.
2030 move xstart,ystart
2040 draw xend,yend
2050 return

```


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A knock-out

A while ago we had a plea for a cheat routine for Elite's *Airwolf*, a game that I and many others find so difficult that it is barely loadable. Steve Palmer of Denham has come to the rescue of Spectrum owners with this routine he worked out. First type this:

10 Border 0; Paper 0: Load: Clear 23999: Randomise Usr 23296. Save it to tape with Save "AW" Line 10 then New. Then enter this.

10 For A=23296 TO 23346: Read Z: Poke A,Z: Next A

20 Data 6, 4, 197, 205, 86, 5, 193, 16, 249, 221, 33, 0, 64, 17, 0, 27, 62, 255, 55, 205, 86, 5, 221, 33, 192, 93, 17, 63, 162, 55, 62, 255, 205, 86, 5, 62, 200, 50, 73, 178, 62, 1, 50, 100, 169, 50, 150, 169, 195, 195, 230.

30 Save "AWC" Code 23296, 70.

Run this, start recorder again and press any key. Then type New. Load your two new programs and play your copy of *Airwolf* from the beginning - it should load and give you an easier game. As Steve says, "Two hundred lives and the walls cut down to size." He also has a tip for the *Dark Star* high score table - when you get the high score hold Caps Shift and Symbol Shift down and press the keys 1 to Enter in order to see a message from the programmers. He also says, "Select the change fame format and press six - can anyone see anything different about this? Finally can I thank Chris Green for his map of *Airwolf* which we will send in later." I'm looking forward to it Steve.

Neil O'Sullivan and Graham Kellaway of Enfield have sent these codes in to get to the different boxers in *Frank Bruno's Boxing*. For boxers 2 and 3 enter your name as WHO. For boxers 4-9 enter name as GAK. The winning ceremony is counted as box-

er number 9. 1 - just press enter; 2 - BGIOBON6; 3 - MAMINCON6; 4 - N7CINIGNI; 5 - C1C1NMEC8; 6 - A4JIOCC18; 7 - M8DIIAAB8; 8 - I2HINO8L3; 9 - O3HII9BN5. Very close behind comes a letter from Alan Brown of Duns in Warwickshire who hasn't got through as many rounds but offers these tips - "To beat the Canadian Crusher use alternate high and low punches. For Andra Puncheredov use a high punch with your left fist when he dodges to the left. For Frenchie - work up your K.O. power and keep punching when he falls down so that you knock him out as he gets up (is that in the Queensbury rules?). Can anyone beat my Canadian Crusher knock out time of 0.38.20?"

One of the stalwarts of the columns contributors, someone to whom we owe many of our very best cheat routines, is Paul Miller. Here is a selection of tips from the latest letters from Paul, and there will be lots more to come over the next few weeks. Where would we be without him?

System 15000 - some codes. L.T. Perry & Co, 493 5429, Infra or Vin 15; Satatel 222 2196, St. 421; Solicitors 930 7269, CCYRP 455; Big Apple Inc. 010121297658 58; Craig Comm. 837 1099; Elwood Bro 01012129766868, EBU 1657; BoonSecurities 343 1408, CD = 7Y4Y.

Starion - In sector 1 the first anagram is Bible and the date 1968. The second is EEC and 1957. The next is diamond and dates from 1897. The last is relativity and 1905. (Let's have a lot more solutions to this game - there are a lot of anagrams floating around in space and some of the answers are pretty obscure).

Alien Swarm - Poke 24266, number of lives.

Blue Thunder - Poke 41006, number of lives.

Dead Racer - Poke 27150,0

infinite lives.

Hall Of Things - Poke 32717,0 no wounds, Poke 35923, starting amount of magic.

Fantastic Voyage - 10 Clear 30791: Load "Voyage" Code: Poke 54492,0 (infinite divers): Poke 54227,0 (stops infection): Border 0: Randomise Usr 53248.

Black Hawk - Poke 34695,183 infinite lives.

Cavern Fighter - Poke 31683,0: poke 31684,0 infinite lives.

Pinball Wizard Poke 51566,0

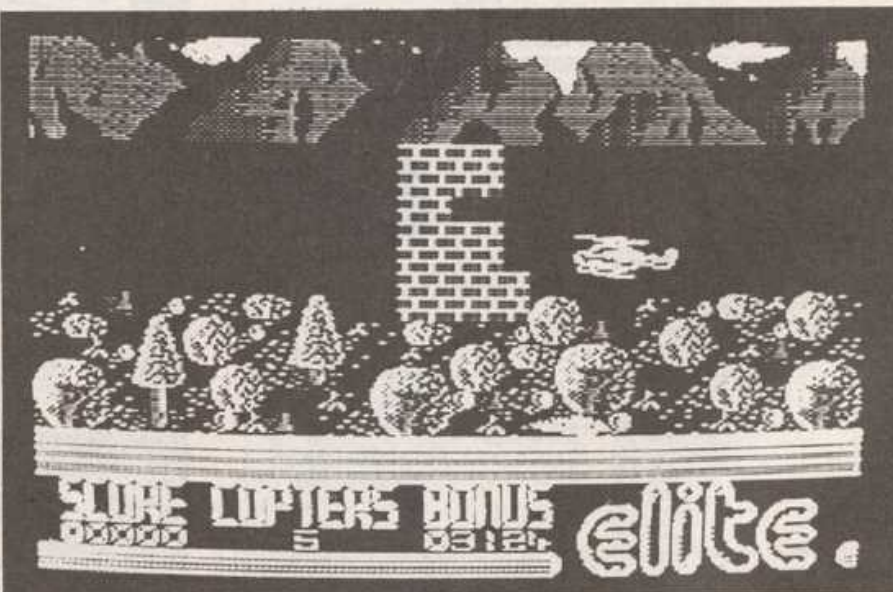
Finally let's get BBC owners off the hook because here without any further ado is the completing part of Dave Noble's complete solution to *Castle Quest*.

"Climb the long ladder to the top. Jump left. Climb down to gold brick and get it. Climb up the ladder and travel left jumping the gaps to the point where the troll appears. He will take the brick and put in in the room with two ladders down to it. Go down the

and the water will kill her. If she just quivers and recovers she was not close enough!

Continue left to the wand and enter the location where the wand is, holding the stool. Pick up the wand and drop the stool and bucket. Stand on stool and jump out. Climb up ladder to left and up. Pick up gold coins in this passage. Restore the aqualung. Enter the water and go to the ladder used before. Drop the aqualung. Pick up the ruby and the sword. You should now be carrying Sword, Ruby, Gold Coin, Brick and Wand. Go up the ladders and travel left to the point before the troll where the wizard appeared. Go down this short ladder. You should see a passage entrance and a ladder past it to the left.

"Throw the item being half through it. Jump to left into passage and jump left to the top of the ladder. Restore the sword and pick up the item which was thrown.



Airwolf from Elite

ladder he doesn't use and get the brick back - move to the left and troll will reappear. Avoiding him go through the passage out of which the troll appears and cross the bridge. Continuing left returns you to the initial start position. Trap the monkeys as before and get them to go past both spiders. When past drop the torch and restore the bucket. Walk down the steps and jump left across the gaps to the point where the sound of the witch's approach begins. When the witch gets as close as possible throw the bucket at her

"Make sure you are holding the sword. Go down the ladder to the mezzanine just above the level on which the yellow guards are pacing. Along to the left is a short ladder. Go down this and scroll the screen to the left so you are on the right hand side. When only one guard is in sight step off to the left and kill him. Walk right and kill the second guard and drop the sword. Restore the wand. Continue walking right to the point where you should drop into the water and you have done it!"

Tony Kendle

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Tony Bridge's Adventure Corner



Market forces

Young Carruthers enjoyed being a Troll. Of course his talons felt awkward in his Doctor Martens, but looking in the mirror, he felt that his bristly snout, twitching as it was above two terrible tusks, was quite fetching. . .

Well, a good adventure evokes a certain amount of atmosphere, but this may be taking things a little too far! The last two or three years have seen an incredible increase in the popularity of adventures, and this surely comes as no surprise to the observer of the computer software scene.

Our hero, young Carruthers, is actually a bit of a maverick - most adventurers would rather dream of being the all-conquering hero.

The first adventurers, running massive mainframes were set in underground complexes and the player explored vast subterranean landscapes in search of treasure and molto scores. Striding forth, lantern held high in one hand, sword ready in the other, players could indulge all their fantasies of dragon-slaying and treasure-seeking - but now with the added fillip of lots of lateral thinking and logical puzzling in order to solve the many problems.

It was thus entirely evident that once home computers gained enough memory, then as surely as *Cave* followed *Colossal*, adventures would become a major pastime (though speaking of memory, I once saw a perfectly playable adventure on the ZX81!).

From the early days of text-only, we have seen adventures like arcades, grow ever more sophisticated as programmers pushed against the boundaries of their machine's capabilities - how often have you seen the phrase "what more can be done with the ZX81/Spectrum/BBC?", or even more hopefully, "You'll never see a better program on the. . ." Famous last words indeed!

During the last year or so, two major trends in adventure software have become evident. The first is the graphic adventure.

America does not seem to have been hit by the graphic revolution as we have here in Europe - there, just about all software is disc-based and adventures rely heavily on disc access to call up

details of each location. Apart from leaving every available byte free for the framework of the program, thus allowing very flexible play, this random access allows much detailed location descriptions and more sophisticated character inter-reaction than can be hoped for with the serial access of tape.

Bowing to 'market forces', British adventure houses now find it mandatory to include graphics in their programs - so much so that the phrase 'text-only' is now often taken to mean 'text-plus-graphics', with 'graphic adventures' denoting that other booming creature, the arcade adventure, of which more later.

In *The Corner*, I've tried to remain aloof from the 'text v graphic' debate, which has raged since *The Hobbit* made its first appearance. Although *The Corner* seems to have gained a reputation of being one of the last bastions of pure text adventures, this is not to say that I don't enjoy graphic adventures. But it is sometimes with regret that I look at modern trends.

Even given the memory-saving compaction routines of authors like Level 9, and the fact that in good adventures you should be able to turn off the pictures, nevertheless, there must surely amongst all those bytes given over to coloured pixels, lurk an abundance of locations and problems that will never now be seen. Is it my imagination, or do the latest Level 9s, as just one example, lack just a

this has been the cause of the upsurge in popularity of adventures, or the effect of it, I'm not sure, though I am sure that, as adventures have gained in popularity, so pure arcade shoot 'em ups have declined. Every computer gamer loves the vicarious thrill of a good zap, but now that arcade games seem to have reached a level of sophistication that makes it difficult to see what else can now be achieved with the present generation of machines, adventures offer a far more open environment - the player's own imagination.

Arcade games have recently adopted the trappings of adventures, and there is now a third category of computer game: the arcade adventure. I have occasionally mentioned these in *The Corner*, and recently covered *That's The Spirit* in detail. Arcade adventures are, I'm sure, a valid though rather distant relation of the logic-puzzle adventure.

The second major trend of recent adventuring has been the do-it-yourself adventure. The software scene is, or was, before the big money moved in, much more of a cottage industry on this side of the Atlantic, and although most of the small companies who worked from a bedroom just three or four years ago are now large corporate bodies, there are still many individuals writing adventures.

Although there has always been a trickle of adventures coming from the

You are standing at the end of the road before a small brick building. Around you is a forest. A small stream flows out of the building and disappears down a valley.

You see:
Nothing much.

What now ?

You are in a valley in the forest, beside a stream tumbling along a rocky bed.

You see:
Nothing much.

What now ?

Colossal Cave

little of the old atmosphere? In this particular case, the adventures are still of the highest quality, but it is true to say that others use graphics in their adventures to hide the true awful nature of the game.

Still, there's no denying that graphics can look very pretty and serve to frame the adventure in a nice wrapping. Occasionally too, the picture holds some clue not evident from the text, and this is all part of solving the puzzle.

So, adventures with added graphics have been, in my view, one of the major trends of the past year or so. Whether

one-man software house, the trickle became a torrent with the release of *The Quill*, the tabula rasa adventure utility. I feel this is one of the most important programs yet released for the home computer user.

Although accomplished programmers tell us otherwise, for us would-be adventure-writers, mere mortals as we are, the coding of an adventure is the most difficult part of the process and most of us are discouraged from writing them even though we have in our minds a superb scenario. *The Quill* takes care of the machine-code, leaving us to construct

Tony Bridge's Adventure Corner

the storyline – and this is where the a.p. (see above) is finally vindicated, because that story really is the hardest part of writing an adventure. We've seen some truly awful *Quill'd* programs, many competent ones, but only a small handful that could stand beside the truly great adventures. As much if not more care has to be taken with the presentation of the *Quill'd* adventure. The *Quill* in its standard form has many drawbacks, and it so to Gilsoft's credit that the company has a policy of continually updating the utility.

The utility has encouraged a whole army of 'front-room' adventure-writers, and this can only be a good counterweight to the serried ranks of dandified, glossily-advertised big name software houses, many of whom have the laughably reactionary policy of refusing to assess *Quill'd* adventures!

Adventuring has become a hobby in its own right, and nowhere is this more clearly seen than in the rapid increase of the number of clubs and newsletters over the past year. Unfortunately, many people had cause to regret their first exposure to an adventure club, receiving only silence for their fiver sent off in good faith. But worthy enterprises like Henry Miller's Adventurer's Club Ltd., Nick Walkland's *Orcsbane* fanzine/helpline and the joint effort from Roger Garrett and The Adventurer's Guild,

Adventureline, have brought pleasure to many adventurers and are now well-established. These clubs and others have been the subject of a recent Corner, and will be updated soon. Suffice to say that in the absence of the late much-lamented *Microadventure*, the newsletters from these clubs are everything the adventurer needs when resting from the latest adventure.

More evidence of adventures as a hobby, if required, can be seen in the number of Helplines and Adventure columns in computer magazines. Helplines fulfill more than just a need for help when stuck – they also introduce adventurers to each other.

The most pleasant part of my job over the last three or so years has been reading letters from all over the world, from Canada to Australia to Portugal and Malta and Poland – most of course, require help, but other correspondents are happy just to chat about our hobby.

Future trends? Despite what distributors would have us believe, pure text adventures will always be with us, and as memory becomes cheaper, so will adventures grow and become more interesting, particularly as disc hardware becomes more common in this country.

But graphic adventures too are here to stay, and the opportunities to involve the player more closely with the plot will increase as does memory. The use of

icons to make a speedy computer/player interface is now established and will become more sophisticated.

Getting into pure graphics, I feel that the arcade adventure will remain just a distant cousin of the text (with graphics) adventure.

But there is no reason why an adventure should not be conducted entirely in graphics – the early 3D maze games are an indication of the way that this particular trend could go. Novagen's *Mercurian* allows the player to descend from his spaceship (after zapping the general locality of aliens) and 'walking' around the subterranean complex doing all the usual lamp-getting and treasure-seeking. The zapping part of the game is sensational, but the version I saw some time ago was a little short in the adventure department. With more Ram to play with, this kind of adventure could become a major trend.

Finally, don't forget the Trolls! They will always be with us, and rather than betraying a paucity of imagination on the part of the writer, those fantasy worlds of Dragons, Elves and magic swords are simply frameworks for worlds in which anything can happen. As long as the best adventure-writers can continue to suspend our disbelief for a few hours whilst we explore their worlds, then adventures will remain a challenging and important branch of computer software.

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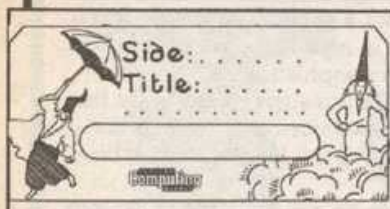
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- 4) If you have won a prize you can claim it by filling in the coupon on the back of your special **Micro Magic** card. Then send

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10 INPUT "Input your personal Micro Magic number:"
15 FOR x=1 TO 3
20 LET y=2 * (x+27)
30 LET y=y * 27
40 LET y=2 * x + 1050
45 NEXT x
50 IF y=195640 THEN GOTO 70
55 IF y=1120664 THEN GOTO 80
60 PRINT "Your matching Micro Magic number is:"
65 PRINT "Better luck next week!"
65 GOTO 50
70 PRINT "You're matching Micro Magic number is 195640"
75 PRINT "You have won an Amstrad CPC6128!"
75 GOTO 70
76 STOP
80 PRINT "You're matching Micro Magic number is 1120664"
85 PRINT "You have won cassette labels!"
85 GOTO 80
    
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Micro Magic: Week 3 Program listing

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

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

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

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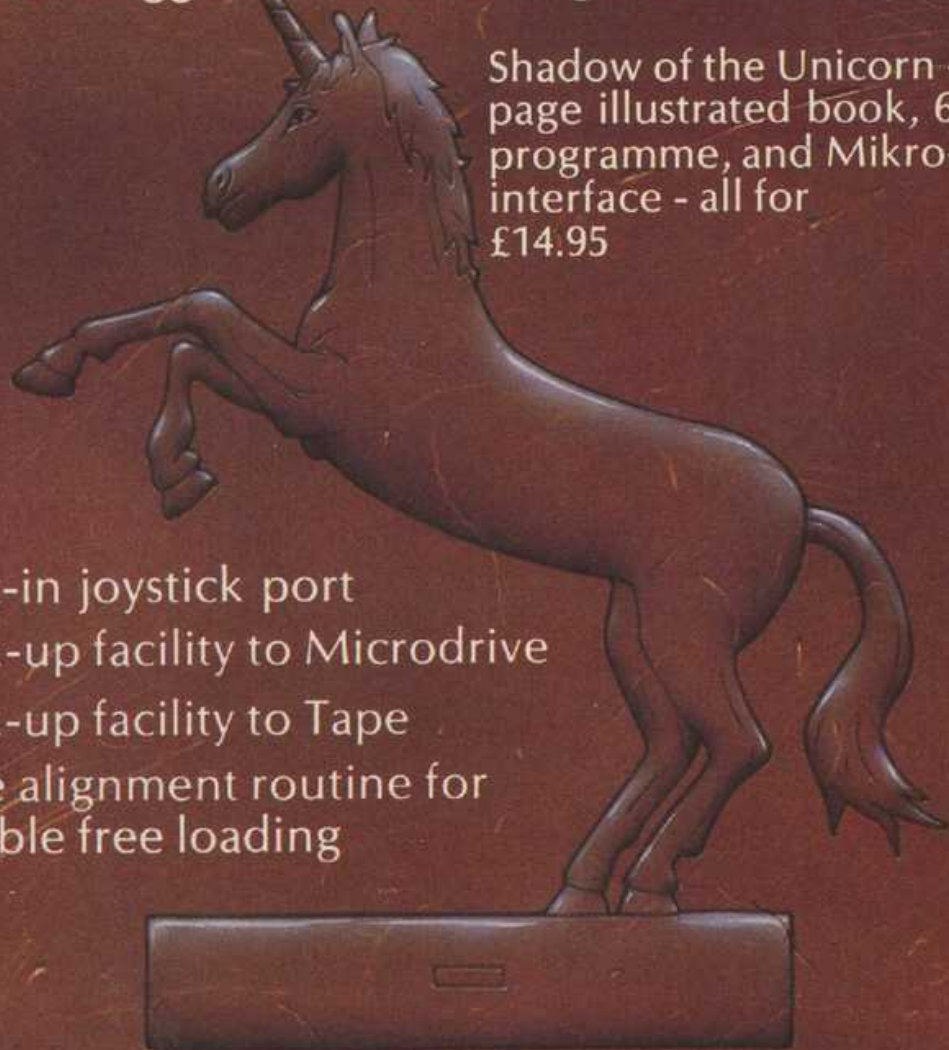
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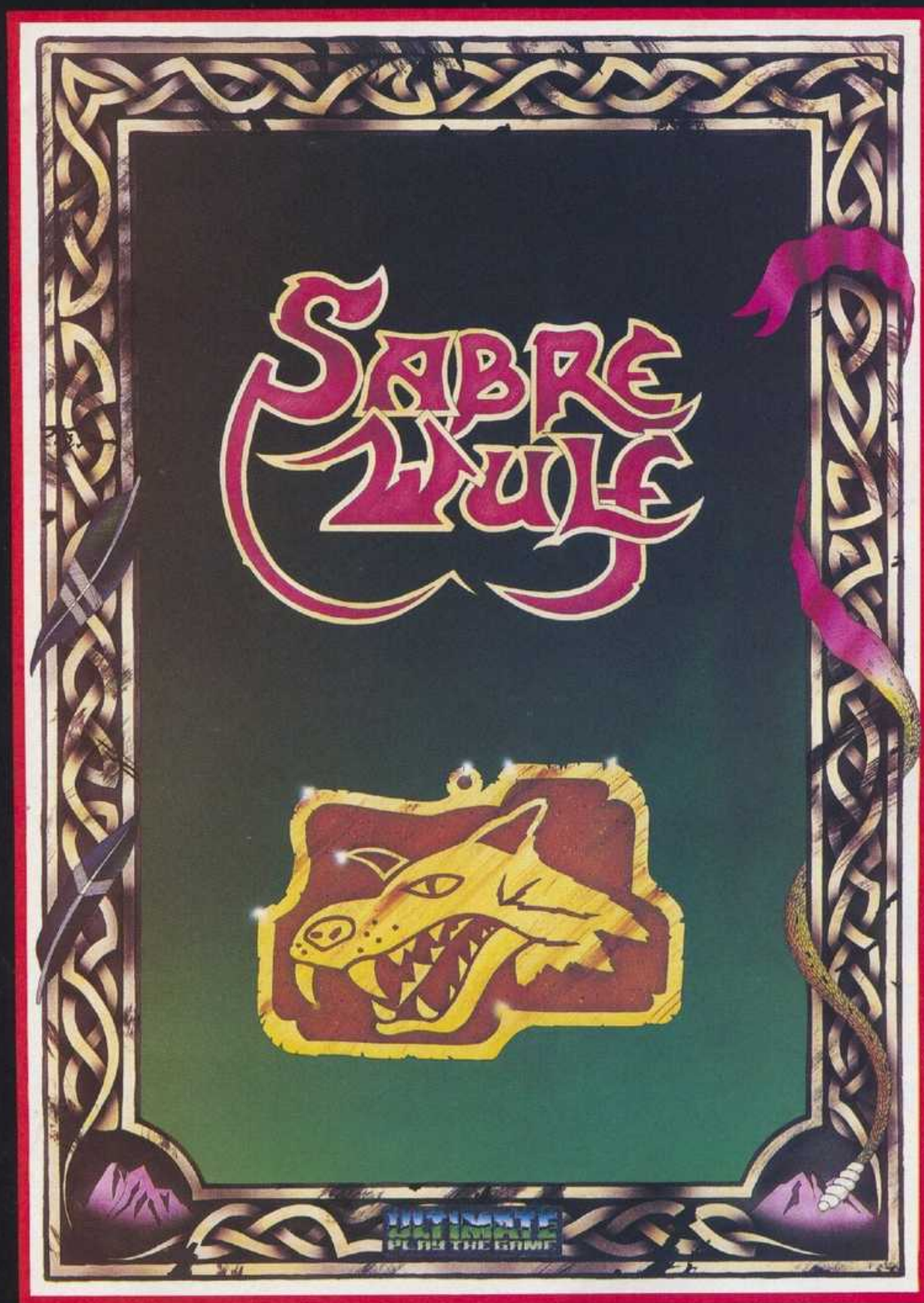
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Peek & Poke



Spectrum tips

M Payne of Coventry, writes:

Q You mentioned on your page some time ago that you would like readers to send in tips for their micros. Well here are some tips for the Spectrum.

1. To find out the contents of a cassette tape; use **VERIFY "XXX"**
2. To activate auto-scroll; use **POKE 23692,0**
3. To test your Rom, unplug all peripherals (except the TV) then use this:

10 Let C = 0: For B = 0 TO 16383: Let C = C + Peek B: Next B: Print C

If the Rom is OK then the answer 1926175 should be printed.

How's that?

A Not bad! The first one suffers from the obvious drawback that you have to read the whole tape at normal speed, but that's what you deserve if you forget what is on a tape!

The third one takes a little time to produce the correct answer (2 minutes 26 seconds to be precise), but should be quite useful in deciding whether there is a problem with the Rom. Keep those tips coming.

Heading to come

Gill Cooper, Rayleigh, Essex, writes:

Q I have a Spectrum and also the games *Combat Lynx* and *Fighter Pilot* (amongst others). I wonder

if you know of any company that sells keyboard overlays for such multiple key games (like the one supplied with *Lords of Midnight*)?

A Print 'N Plotter products certainly produce keyboard overlays for the Spectrum which can be customised to your needs. These can usually be obtained from most good computer shops.

The price is quite reasonable too.

It seems a pity that the suppliers of 'multi-key' games do not follow the example set by Beyond Software and supply the overlay with the software - the cost can hardly be prohibitive.

Shop around

Christos Giannikos, of Athens, Greece, writes:

Q I saw in Vol 4 No 5 that the cost of the QL microdrive cartridges has

come down from £4.95 to £1.99 each as from February 1.

However, a friend of mine was charged £4.95 for each cartridge at a London shop on March 1.

Just why did he have to pay the old price and who is setting the prices? I think Sinclair must be the one setting the highest price anyway.

A Basically each retailer is able to charge whatever price suits him or her best. Although Sinclair may have reduced its prices to the retailers, you should remember that they may still have large stocks that were obtained at the old prices.

This is simply another example of the old saying that it is essential when buying to shop around.

Most of the larger stores selling computer accessories will normally reduce their prices immediately after a manufacturer announces a price cut, but the smaller shops sometimes only follow somewhat later.

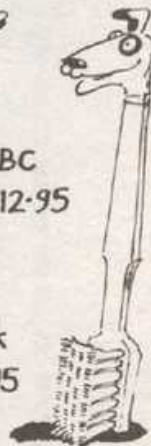
The Secret Diary of Adrian Mole aged 13 $\frac{3}{4}$ Sue Townsend

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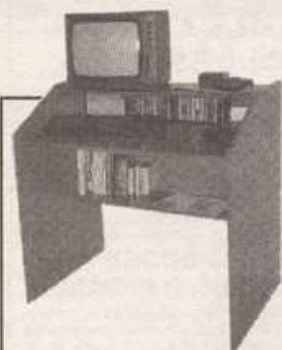
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DIARY

Event	Dates	Venue	Admission	Organisers
Commodore Horizons Show	October 26-27 10.00am-6.00pm	Tech West Centre Warple Way London W12	£2.00 adults £1.00 children (in advance)	Editionscheme 01-348 6866
East of England Computer Fair	November 11	The Cresset Centre Peterborough		East of England Enterprises 0733 234540
Electron and BBC Micro User Show	November 14-18 10.00am-6.00pm November 17 10.00am-4.00pm	New Horticultural Hall London SW1	£3.00 adults £2.00 children	Database 061-456 8383
Acorn User Christmas Show	November 22-23 10.00am-6.00pm	Central Hall London SW1	£2.00 adults £1.00 children (in advance)	Editionscheme 01-348 6986

MODEM 300 baud plus Tandy colour computer with printer and terminal software. Ideal for bulletin boards, all for £100 ono. Tel: 01-821 1710 after 5pm.

SINCLAIR QL (JM) with Centronics interface, V2.0 software, Psion, Chess £260. Also Microvitec med res QL monitor £190. Tel: 01-366 1706 after 6pm.

AMSTRAD disc drive, only 8 weeks old, with 3 blank discs, still in box £150 ono. Tel: 0630 57129.

CGP 115 4 colour printer for sale, Amstrad, BBC, QL etc compatible, only £50. May possibly exchange for other Commodore 64 hardware eg 1541 disk drive. Please write to Garry Hawkins, 35 Nicholls Court, Thorplands, Northampton NN3 1YP.

AMSTRAD colour computer 464, £50 of s/w, 1 month old £260. Work Tel: 01-213 5927.

SHARP M2 80K, 48K memory, built in monitor and recorder, manual, basic, lots of s/w (ideal for beginner) £160. Tel: 01-985 1211 ask for Ralph.

AMSTRAD green screen complete and printer, still boxed, computer desk, some s/w £275 no offers. Tel: Radlett 7431.

AMSTRAD CPC 464, colour monitor, joystick, s/w (over £50 worth), guaranteed, mags £250 all. Tel: Sheffield 581272.

AMSTRAD CPL464, colour monitor, 5 months old, with S/W, selling £250. Tel: 01-837 3611, ex 211. Eves 01-552 5956.

AMSTRAD CPC464, green screen, Quickshot II joystick, 12 games, £200 ono. Tel: Kings Langley 62469.

AMSTRAD CPC464, green monitor, still under guarantee, S/W, joystick, manuals plus cash adjustment. Tel: Dunfermline (0383) 723604.

AMSTRAD languages, Pascal £11, Forth £14. Tel: 060-3 402 089.

DISC DRIVE Teac, 40 track, 100K, complete with manual, power cable, BBC micro, £166. Now only £100 ono. Tel: Tim, 01-519 7907.

SEIKOSHA GP100A printer excellent condition, boxed, £110. Interface for BBC £5. Commodore 64/20 £10. Wanted non working Spectrums for spares. St Albans 81203.

ONE MONTH old CPC464 colour computer with colour monitor, software (Sorcery, Hobbit etc) and joystick. All boxed. Ring now. A bargain at only £280 ono. Tel: 0342 834705 (Surrey).

CGL SORD M5 computer 20K with manual and games, hardly used, still under warranty. £50 ono. Tel: 0702 (Southend) 541639.

SINCLAIR QL with stacks of books, mags and programs including new bundled software, Chess 2kull etc. Tel: 0352 711117 evenings (Llwyd). As new or will swap. Price £320. Tel: 0352 711555.

VIC 20 starter pack for sale plus £70 of software and books plus Quickshot II joystick. Sell for £60. Tel: Kevin on Barnsley 746413. Buyer must collect.

Spectrums for Sale

SPECTRUM add ons interface plus m/ drive, including 8 cartridges and s/w, £90. Saga I 8L/30ad, £30. DK Transi progr J/S interface, £60 all in v.g.c. Tel: 0258-56248.

48K SPECTRUM, in Saga keyboard, Data light pen fitted, £50. VTX 5000, modem £25, Kempton interface £15. Tel: 01-804 6750, ring any time.

48K SPECTRUM + with Ferguson cassette recorder, Ram Turbo interface, Quickshot II joystick, £80, software + Spectrum six pack, loads of magazines, bargain £110 for the lot. Tel: 06333-65317.

48K SPECTRUM 12" B/W TV, 2 tape R/C, tapelader, reset switch, software including white lightning, LOM bored, books + 200 mags, lots of Hacking software, worth £395, sell £185. Tel: 061-205 5263.

48K SPECTRUM, Alphacom printer, Wafadrive plus WAFAs, Protek interface, Quickshot II Currah speech unit, £300 worth of software, total £1,000, going for 2350 ono. Tel: Jason (04254) 78753 Ringwood after 5 pm.

48K SPECTRUM Hiphacom Printer, Wafa Drive, tape recorder, light pen, software, a giveaway at £350. Worth £640. Contact: S. Middleton, 72 Heiston Walk, Leeds LS10 4MW. Tel: 774492.

SPECTRUM + and data recorder, Kempston Program Interface, Quickshot 2, software includes Hypersports, Pajamarama, Automania, Softaid, Everyone's a Wally, Wizard's Lair + more. All orig. Cost £250 + sell £150. Tel: Alex 061 9629387.

SPECTRUM PLUS + Recorder + VTX 5000 Modem + Ram Turbo Joystick interface + sound booster + on/off switch + load/save switch + £180 original software + magazines for sale, only £200. Tel: (East Grinstead) 0342 27072.

SPECTRUM PLUS as new with software, leads, manual etc. Purchased June 1985 still under guarantee, only £100 for quick sale. Tel: Clacton (0255) 814523 eves.

48K SPECTRUM, cassette recorder, Saga keyboard, £230 of original software, Centronics Parallel printer interface, books and magazines, worth over £500 and all still in boxes, vgc, £200 ono. Tel: 0909 478837.

SPECTRUM 48K + programmable joystick interface + joystick + £250 of software, £130. Tel: Blackpool (0253) 403994.

SPECTRUM + and Interface II for sale, over 45 software titles plus a Rom cartridge (Chess) all boxed with some computer magazines thrown in too, £140 or C64 & CN2. Will not split. Tel: 0733 237663.

48K SPECTRUM with Alphacom printer, 5 rolls of paper, cassette recorder, over £100 of s/w, Currah Microspeech, joy-

stick interface, books and mags, excellent condition, worth £450, will accept £250. Tel: 0482 501983.

48K SPECTRUM with DK Tronics keyboard, Dixons TR12 tape recorder, leads, manuals, many software titles, a bargain at £99. James Barker, 30 Pine-wood Close, Southwell, Notts NG25 0DD. Tel: 0636 813589.

Tandys for Sale

TANDY DMP 100 printer, 50 cps, serial and parallel ports, graphics capability, including leads. Cost £300 a year ago, swap for Atari 800XL or 48K Spectrum, or sell for £120. Tel: Dean on 021-523 9710 after 5pm.

APPLE II PLUS, 2 disc drives, language card (64K), 80 column card, Senal interface, word pro, Pascal, games, £650. Tel: Medway 0634 44896.

64K TANDY colour computer II with extended basic, CCR-81 cassette recorder and electronic book. Worth £255 will sell for £140. Tel: Brentwood (0277) 211909. Unwanted gift in very good condition.

APPLE TELEMED 2, communications card & s/w for linking Apple 2 or 2E to Micronet 800, Prestel etc. £65. Tel: 0276 685151 eves.

Wanted

WANTED for Spectrum! The Quill and The Illustrator, will give Night Shade, Spy vs Spy, Dun Darach, Sabre Wulf, Strange Loop and Hurl! Ring 0749 72423, Now!

520 ST I Am Looking For Tips and Advice On All Aspects of ST Programming. Please contact Paul Taylor, 97 Shelley Street, Kingsley, Northampton NN27K2 or Phone 0604-71780.

EXCHANGE Korg SAS 20 keyboard, stand, cartridges etc. Cost £600. Wanted BBC system or WHY? 01-908 1460.

BROTHER HR-5 boxed with paper and ribbons, Centronics interface, under guarantee. Will accept first offer of £120. G. Pegler, The Cricketers, East End Road, Bradwell on Sea, Southminster, Essex CM0 7PT.

WANTED for Oric Atmos 48K. 1) Oric Microdisc system, 2) Oric or compatible modem for Prestel and bulletin board use. Call Ian on Rugby 2062 with details.

SWAP Seikosha 700-a colour printer for bi-directional NLQ matrix printer with Centronics and serial ports. Immaculate condition. Tel: Lowestoft 0502 518625, Or sell £220.

SWAP DKtronics speech for Amstrad computer for Pascal and an assembler monitor for Amstrad. Tel: Mansfield 556823.

SWAP electric bass guitar (three months old) for 16K memory expansion and printer for a Vic 20. Tel: Roy, Swanley 86485.

ADVENTURE

HELPLINE

Fourth Protocol on Spectrum. Answers to Plumb's question: Where did it happen, and how was traitor recruited? Christina Bishon, 111 Salisbury Road, Wavertree, Liverpool L15.

Espionage Island on Spectrum. How do I use the plastic explosive and how do I get past the tank. Lisa Crouch, 50 Hulley Road, Macclesfield, Cheshire SK10 2LL.

Castle of Terror on C64. I'm in the castle, but I can't kill the knight or get behind the bookcase or anything. Help! Jim Stranger, 35 Cumnor Road, Sutton, Surrey SM2 8DW.

Mindbender on Spectrum. I can get the password. What next? David McCall, 20 Manse Crescent, Stanley, Perth, Scotland.

Red Moon on Spectrum +. How do I get past red line. How do I increase power of incantations. How do I move around flood areas? Paul Brock, Flat 3, 97a Southwark St, London SE1.

Emerald Isle on Amstrad. What next after the canoe? Andrew Walton, Finlow Hill, Cottage, Over Alderley, Macclesfield, Cheshire.

Mountains of Ket on Spectrum. What do I do after entering the mountain? David McCall, 20 Manse Crescent, Stanley, Perth.

Quest on Vic20. Any help at all. Vilmore Rochester, 18 Lavanor Rd, London SE15.

Fantasia Diamond on Amstrad. How do I get across the river and how can I open the black window? Colin Newmarch, 166 Nelson Rd, Whitton, Middx.

Return to Eden on BBC. Can't get past snowballs, engines keep getting fried. Simon Lawrence, 9 Paynes Down Rd, Thatcham, Newbury RG13 4RT.

Castle Quest on BBC B. I don't know what to do with the wand after I have killed the witch. Matthew Roberts, 2 Sumburgh Rd, London SW12.

Twin Kingdom Valley on Electron. I can't get out of the underground maze. I keep going to the hall of the mountain king. Michael Nodding, 52 Auckland Terrace, Shildon, Co. Durham DL4 1AT.

Tir Na Nog on Commodore 64. I need help with everything. Philip Hames, 4 Warfelton Crescent, Saltash, Cornwall.

Upper Gumtree on Commodore 64. Keep dying from cut hand, what command do I use to get bandage? Stephen Lynch, 147 Bell Lane, Hendon, London NW4.

Dragoncore on Spectrum. I can't get to Camulodm, the Druids Sanctuary and open the door in the Cursed Crypt. I have 1 crown. Peter Martin, 16 Mich. Karaolis St, Stroncolos, Nicosia, Cyprus.

Colossal Adventure on Spectrum. How to find Pirates Chest and deal with him. S F Lovell, 16 Skimpans Close, North Myrms, Hatfield, AL9 7PB. Tel Hatfield 63308.

Land of Illusion on Atmos 48K. How do I open the door to the Barthog's Castle? How do I cross the pit? Michael Nesbit, Alexandria Court, Cornwall TR7 2QF.

ADVENTURERS

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WARGAMERS SERIES

The PSS Wargamers Series has been created to combine elements of a strategy game like chess with the added excitement of graphic arcade sequences. The games require skill and mental agility and are designed for the person who wants a serious but stimulating game. The strategic level of the game is played on a map system, whilst the tactical elements of the game can if wanted be played in an arcade style.

COMMODORE AND AMSTRAD

BATTLE of BRITAIN

THE SCENARIO

The Battle of Britain took place between July and October of 1940, and was the German Luftwaffe's attempt to defeat the R.A.F. and gain air superiority prior to Operation Sealion – the invasion of Great Britain scheduled for the summer of that year. The ensuing battle has gone down in history as one of the most courageous of WWII culminating in the defeat

of the Luftwaffe and the cancellation of Operation Sealion. In the famous words of Winston Churchill: "Never has so much been owed by so many to so few"

The Game

You are in control of Fighter Command and the computer simulates

the operations room. Your task is to deploy your aircraft against the incoming squadrons of the Luftwaffe, whilst bearing in mind the problems of limited flying time, ammunition, available landing strips

and the size of the incoming force. You can also test your arcade skills by actually flying a Spitfire in air to air combat or firing an anti aircraft gun in ground to air battles.

Designed by Alan Steel
Written by Alan Steel, Ian Bird
Graphic Help from Paul Hutchinson

Battle of Britain will soon be available for Atari & Spectrum.

FEATURES

1. OPTIONAL ARCADE SEQUENCES
2. 3 LEVEL GAME OPTION
3. CAMPAIGN GAME OPTION
4. FULLY DETAILED INSTRUCTION BOOKLET
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BATTLE FOR MIDWAY

'Battle For Midway' puts you in command of the US Pacific fleets six months after the attack by the Japanese on Pearl Harbour.



WARGAMERS SERIES

BATTLE FOR MIDWAY
Computer & Video Games
— Commended by its readers for Best Strategy Game at the Golden Joystick Awards 1985

THEATRE EUROPE
ZZAP! 64 June '85
Gold Medal Award
"...the atmosphere generated by this excellent game is incredible...virtually unrivalled by anything else available on the 64..."

THEATRE EUROPE — THE GAME

Theatre Europe simulates the first 30 days of the war. In addition to being able to command either side, the player is able to choose the style of his opponent (The Computer).



Charts

Amstrad

1	(1)	Way of the Exploding Fist (Melbourne House)	£9.95
2	(7)	Chiller (Mastertronic)	£1.99
3	(2)	Frank Bruno's Boxing (Elite)	£8.95
4	(6)	Lords of Midnight (Beyond/Amsoft)	£9.95
5	(3)	Nonterraqueous (Mastertronic)	£1.99
6	(8)	Beach-head (Access/US Gold)	£9.95
7	(-)	Finders Keepers (Mastertronic)	£1.99
8	(-)	Alien 8 (Ultimate)	£9.95
9	(-)	Locomotion (Mastertronic)	£1.99
10	(10)	Starion (Melbourne House)	£9.95

Atari

1	(2)	Rescue On Fractalus (Activision)	£9.95
2	(1)	Chop Suey (English Software)	£9.95
3	(-)	Music Construction Set (Electronic Arts/Ariolasoft)	£9.95
4	(-)	Pinball Construction Set (Electronic Arts/Ariolasoft)	£9.95
5	(3)	Seven Cities Of Gold (Ariolasoft)	£9.95
6	(-)	Battlezone (Quicksilver)	£7.95
7	(-)	Blue Max 2001 (Datasoft/US Gold)	£9.95
8	(-)	Air Wolf (Elite)	£9.95
9	(-)	Emerald Isle (Level 9)	£8.95
10	(-)	Red Moon (Level 9)	£8.95

BBC

1	(1)	Match Day (Ocean)	£9.95
2	(4)	Beach-head (Access/US Gold)	£9.95
3	(2)	Combat Lynx (Durell)	£8.95
4	(5)	Jump Jet (Anirog)	£9.95
5	(3)	Revs (Acornsoft)	£14.95
6	(-)	Alien 8 (Ultimate)	£9.95
7	(6)	Elite (Acornsoft)	£12.95
8	(-)	Bored Of The Rings (Silversoft)	£8.95
9	(9)	Repton (Superior Software)	£7.95
10	(-)	Knight Lore (Ultimate)	£9.95

Commodore 64

1	(10)	Spy vs Spy II (First Star/Beyond)	£9.95
2	(1)	Frank Bruno's Boxing (Elite)	£7.95
3	(4)	Way Of The Exploding Fist (Melbourne House)	£9.95
4	(2)	Summer Games II (Epyx/US Gold)	£9.95
5	(6)	Barry McGuigan's World Championship Boxing (Activision)	£9.95
6	(3)	Sky Fox (Electronic Arts/Ariolasoft)	£9.95
7	(7)	Beach-head II (Access/US Gold)	£9.95
8	(-)	Wizardry (The Edge)	£9.95
9	(5)	Karateka (Broderbund/Ariolasoft)	£9.95
10	(8)	Now Games (Virgin)	£8.95

Spectrum

1	(4)	Fairlight (The Edge)	£9.95
2	(1)	Daley Thompson's Super Test (Ocean)	£8.95
3	(2)	Way Of The Exploding Fist (Melbourne House)	£9.95
4	(3)	Fighting Warrior (Melbourne House)	£9.95
5	(-)	Sorderons Shadow (Beyond)	£9.95
6	(-)	Marsport (Gargoyle Games)	£9.95
7	(5)	Frank Bruno's Boxing (Elite)	£8.95
8	(-)	Graham Gooch Test Cricket (Audiogenic)	£9.95
9	(-)	Hacker (Activision)	£7.95
10	(7)	Nightshade (Ultimate)	£9.95

All figures compiled by Gallup/LeisureScope

Top Twenty

1	(1)	Way of the Exploding Fist (Spectrum/C64/Amstrad)	Melbourne House
2	(2)	Frank Bruno's Boxing (Spectrum/C64/Amstrad)	Elite
3	(9)	Fairlight (Spectrum)	The Edge
4	(3)	Daley Thompson's Supertest (Spectrum)	Ocean
5	(4)	Fighting Warrior (Spectrum)	Melbourne House
6	(-)	Hacker (Spectrum/C64)	Activision
7	(5)	Now Games (Spectrum C64)	Virgin
8	(-)	Spy vs Spy II (C64)	First Star/Beyond
9	(20)	Graham Gooch Test Cricket (C64)	Audiogenic
10	(10)	Beach-head (Various)	Access/US Gold
11	(7)	Action Biker (Spectrum C64)	Mastertronic
12	(-)	Sorderons Shadow (Spectrum)	Beyond
13	(-)	Marsport (Spectrum)	Gargoyle Games
14	(6)	Summer Games II (C64)	Epyx/US Gold
15	(-)	Chiller (C64/Spectrum)	Mastertronic
16	(13)	Barry McGuigan's World Boxing (C64)	Activision
17	(16)	Hypersports (Spectrum/C64/Amstrad)	Imagine
18	(14)	Finders Keepers (Spectrum/C64/Amstrad))	Mastertronic
19	(-)	Elite (C64/BBC/Amstrad)	Firebird
20	(8)	Sky Fox (C64)	Electronic Arts/Ariolasoft

Figures compiled by Gallup/LeisureScope

Readers' Chart No 46

1	(1)	Way of the Exploding Fist (Spectrum/C64/Amstrad)	Melbourne House
2	(-)	Fairlight (Spectrum)	The Edge
3	(3)	Daley Thompson's Supertest (Spectrum)	Ocean
4	(-)	Frank Bruno's Boxing (Spectrum/Commodore/Amstrad)	Elite
5	(9)	Summer Games II (Commodore 64)	US Gold
6	(-)	Spy vs Spy (Spectrum/Commodore)	Beyond
7	(-)	Barry McGuigan's World Ch'nship Box'g (Commodore 64)	Activision
8	(2)	Hypersports (Spectrum/C64)	Imagine
9	(10)	Red Moon (Various)	Level 9
10	(3)	Frankie goes to Hollywood (Spectrum/64)	Ocean

Winning phrase No 46: "Eastenders soap, fishy plot, were you right?" from Hazel Williams of Sevenoaks. Honourable mentions to A. Cunningham for "Massed people of Tottenham rise up - why?" and T Burdis for "Alf Garnett - Speight's memory of home."

Now voting on week 48 - £25 to win

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

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

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

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

Voting for Week 48 closes at 2pm on Wednesday October 23 1985. Entries received after that time will not be eligible for inclusion in that week's voting. The judges decision is final. Only one entry per individual per week will be allowed.

Name	My top 3: Voting Week 48
Address	1
.....	2
.....	3
My phrase is:	

New Releases

VIOLENT

Imagine *Way of Exploding Fist* played not against a bunch of skilled but civilised monks close to Zen enlightenment, but a motley selection of thuggish, mythical creatures. These include a particularly vicious man/dragon entity that strikes below the belt and punches with its wings.

Plot is: rescue the princess by seeing off assorted baddies and figure out what to do with the odd magic potions that litter your path. The fighting is the thing, though.

Fight controls are reduced to retreat / forward / jump / duck / high / middle and low blows. You come equipped with what looks like an enormous stick, but is apparently a sword. Either way there is much smashing of heads and bodies.

The graphic detail and animation is excellent, I particularly liked the way the nasties continue to swing and swipe with their swords even after they have left you dead on the ground - as though taking out their aggression on thin air.



Watch out for the bloke with the wings ... he's, well, hard.

In fact, *Fighting Warrior* may be the most violent computer game I've ever seen. Spectrum sound is used well to give the effect of really hard blows and there is none of *Exploding Fist's* meditative music and post-combat bowing. It should do well, not as subtle as *Fist*, but a welcome release, nevertheless, except for those of a nervous disposition.

Program *Fighting Warrior*
Price £7.95
Micro Spectrum
Supplier Melbourne House
Castle Yard House
Castle Yard
Richmond
TW10 6TF

PACKAGED

More bundles - definitely this season's thing.

This time it's Creative Sparks which has four old titles on one tape for £7.50.

These are two - one package for the Commodore 64, one for the Spectrum.

The Spectrum tape includes *Orc Attack*, *Stagecoach*, *Tower of Evil*, and *River Rescue*. Of these *Tower of Evil* is a multi-screen kill - everything, *Stage Coach* is a dodge things with ropey graphics, *River Rescue* is a conversion of a once classic Vic-20 game into a Spectrum equivalent and *Orc Attack* is another conversion from the Atari originally I think where you man castle battlements cutting to ribbons all who attempt to climb them.

Of the four programs I would rate *Orc Attack* and *River Rescue* as well worth a few plays and the others as

Pick of the week

BATTLEFIELD ATTACK

Mirrorsoft will shortly launch *Strike Force Harrier*, a detailed simulation of the famous bouncing aeroplane, which will eventually be issued on a number of machines (including, people have gasped, the Amiga). More mundanely, it is now available for the BBC and Electron.

Strike Force Harrier is one of those 'real' simulations where there are lots of keys to grapple with and a lot of flying techniques to master. Not that it's 'just' a simulator - there is a complete battlefield attack program with the overall objective of destroying an enemy HQ using both Harrier and other forces.

Most important of all though, there are things to blow to bits in the sky and on the ground which means that even if you aren't that concerned about the minutest replication of Harrier handling characteristics, you still have a good reason to buy the program.

It took, I must admit, several thousands of millions of

pounds worth of scrapped Harriers before anyone in the office managed to achieve take off but nevertheless it soon became clear that *Harrier* is going to be *Revs* in the skies, ie, the flight simulation for the BBC as *Revs* was the racing car simulation.

Graphically it is good, excellent even, with a rate of screen up-date much faster than Mirrorsoft's earlier *Spitfire 40*.

Provided you don't make the mistake of assuming that this is a quick to play, blast-away, but realise it's a complex simulation that will require quite a lot of studying of manuals on your part, you could find this one of the most engrossing games you'll ever play on the BBC. I'd kill for an Amiga version.

Program *Strike Force Harrier*
Price £9.95
Micro BBC
Supplier Mirrorsoft
Maxwell House
74 Worship Street
London EC2A

'only if you're really bored'.

That leaves the package reasonable value overall.

Program *Sparklers Specials*
Price £7.50
Micro Spectrum
Supplier Thorn EMI
Thomson House
296 Farnborough Road
Farnborough
Hampshire
GU14 7NF

FIREFIGHTER

The *Great Fire of London* is part of Virgin's Rabbit range of cheap(ish) games. It is unusual in several ways - not least in the game objective - you play the part of the Lord Mayor of London during the great fire. Your task is to organise teams of firefighters efficiently and attempt to stop the fire spreading in as short

This Week

Program	Type	Micro	Price	Supplier
3D Boxing	S	Amstrad	£9.95	Amsoft
3D Grand Prix	S	Amstrad	£9.95	Amsoft
G.A.C.	Ut	Amstrad	£22.95	Incentive
Factfile Arithmetic	Ed	BBC	£3.95	Kosmos
Factfile Gen Know.	Ed	BBC	£3.95	Kosmos
Factfile Nat His	Ed	BBC	£3.95	Kosmos
Factfile Scotland	Ed	BBC	£3.95	Kosmos
Factfile Spelling	Ed	BBC	£3.95	Kosmos
Factfile Sport	Ed	BBC	£3.95	Kosmos
Strike Force Harrier	S	BBC	£9.95	Mirrorsoft
Interchart	Ut	BBC	£36.80	Computer

Spreadsheet	Ut	C128	£24.95	Concep
Mindshadow	Ad	Commodore 64	£9.95	Audiogenic
The Magician's Ball	Ad	Commodore 64	£7.95	Activision
Henry's House	Arc	Commodore 64	£9.95	Global
Computer Christ. card	Ut	Commodore 64	£2.99	Activision
Adrian Mole	Ad	Spectrum	£9.95	Virgin Games
Big Ben Strikes agn.	Arc	Spectrum	£6.95	Mozaic
Grump G. Supersleuth	Arc	Spectrum	£7.95	Artic
Riddler's Den	Arc	Spectrum	£7.95	Gremlin Graphic
Key: Ad - adventure	S - strategy-simulation			Electric Dreams
Arc - arcade	Ut - Utility			
	Ed - education			

New Releases



Program *The Great Fire of London*
Price £3.99
Micro Spectrum
Supplier Rabbit
 2-4 Vernon Yard
 119 Portobello Road
 W11 2DX

AVERAGE

QL arcade programs are moving slowly from absolutely dire to OK, but completely unexciting.

There are two ways of reviewing a new QL games title; as a game on its own or relative to other software for the machine.

On former criteria, *QL Hyperdrive* is a fairly average version of *Turbo* that compares with an average Commodore 64 version of the same game (with lousier sound of course). On the latter criteria, it is probably the best action game for the QL so far.

For those not familiar with *Turbo*, it is a road racing game. Your viewpoint on the action is from behind your and other people's cars. The

road disappears to a point in the middle of the screen giving an illusion of distance. Race your car around the circuit and try to pass all the other cars - don't crash and accumulate points.

It's quite fun to play and the graphics, although a little jerky at times, are quite large and detailed.

If you have a QL, then I suppose comparisons with other machines are largely irrelevant, so in that sense I'd say this program is well worth taking a look at.

Program *QL Hyperdrive*
Price £14.95
Micro QL
Supplier The English Software Company
 1 North Parade
 Parsonage Gardens
 Manchester
 M60 1BX

SOUNDTRACK

The Magicians Ball is an adventure being issued on a number of micros including the Amstrad, Spectrum and Commodore 64. The main initial point of interest is the fact that *Tubular Bells* has been licensed to form a soundtrack to the game.

On the Commodore this music is quite nicely presented - I have doubts about what it'll be like on the Spectrum, though. The exact bit of the music you get depends on where you are in the adventure and, perhaps, how well you are doing.

In the end though it's the adventure that matters and here I'm a little doubtful. It has the usual plot idea: really really nasty Magician who invades nice world of very attractive princesses and locks



up nicest princess of all so that she can be rescued. The format is text (a nicely designed 'runescript' typeface) and small graphic pictures of each location.

The first locations feature plenty of action; you'll find five locked doors and half a dozen other puzzles to solve without trying, as well as an enormous number of weird objects and dubious looking people. It will understand sentences like *Throw coin through door* but I find it irritating that on being told *There is a small envelope*, *Take envelope* generates *I don't know the word envelope* whilst *Take small* generates *You have the small envelope*.

On balance, I think it'll probably turn out to be an above average adventure. The music does add something, but isn't really relevant (although the concept of music as soundtrack is an interesting one).

Buy it if you're an adventure lover. If you're uncommitted, it probably will not convert you though.

Program *The Magicians Ball*
Price £7.95
Micro Commodore 64
Supplier Global Software
 PO Box 67
 London SW11 1BS



a time as possible.

You have a time limit of four game days and a variety of tools to assist you in your task. Water pumps put out fires in a small area but must be frequently replenished by taking them to the river. Demolition gangs can clear four to seven cells (areas of the city) and gunpowder gangs blast away cells that aren't burning to create a fire breach.

To use each defence, first of all you must find it/them in the city and move to the section of cells you wish to clear. The screen display is simple - London is made up of a series of standard designs for houses and walls, burning buildings are shown by the use of a flash. Though simple it works quite well and there is a facility included to design your own city.

Basically it's a kind of strategy game - what do you use where to the best advantage - but the real time and scrolling map give it a nice touch of extra tension. One of those occasional games where relative technical simplicity becomes irrelevant compared to the addictive and original virtues of the game.

This Week

Activision, 15 Harley House, Marylebone Road, London NW1, 01-486 7588. **Amsoft**, Brentwood House, 169 Kings Road, Brentwood, Essex, 0277 230222. **Artic**, Main Street, Brandesburton, Driffield YO25 8RL, 0401 43553. **Audiogenic**, 39 Sutton Industrial Park, London Road, Reading, Berks 1AZ, 0734 664646. **Computer Concep**, Gaddesden Place, Hemel Hempstead, Herts HP2 6EX, 0442 63933. **Electric Dreams**, 31 Carlton Crescent, Southampton, Hampshire SO1 2EW. **Global**, PO Box 67, London SW11 1BS. **Gremlin**

Graphic, Alpha House, 10 Carver Street, Sheffield S1 4FS, 0742 753423. **Incentive**, 54 London Street, Reading RG1 4SQ, 0734 591678. **Kosmos**, 1 Pilgrims Close, Harlington, Dunstable, Bedfordshire LU5 6LX. **Mirrorsoft**, Mirror Group, Holborn Circus, London EC1P 1DQ, 01-353 0246. **Mosaic**, Upper Street, Islington, London N1 1RQ, 01-226 0828. **Virgin Games**, 10-14 Vernon Yard, Portobello Rd, London.



Success at the ST

The success of the much discussed Atari ST would seem to depend on the amount of software that can be seen to be produced for it, and at the PCW show there were a good selection of programs to be seen in various states of completion. What the casual observer may not have realised is the problems that the various software houses have experienced in trying to program the ST.

Firstly, the 520ST is still not finished, contrary to the impression given in the adverts, no *GemWrite*, and no *GemPaint*. The latter are only just finished on the IBM, while very little has been seen at all of the Basic. The supplied operating system, still loaded from disc after every reset, is not in a very good state. The main problem is with the discs - they are incredibly slow.

The problem seems to be caused because some of the software is written by Atari, and some by Digital Research. Atari is doing the low level code, that is the routines that directly access the disc, keyboard and screen, while DR is doing the higher level routines, like *Load*, *Save*, and of course *Gem* itself. Atari claims its discs are just about the fastest around, but presumably because of the DR code that calls it, they work at very slow speeds. For example, opening a file for reading takes around three seconds, and closing it takes another three - it makes the QL microdrives seem suddenly fast.

The root of the problem is that while most of Atari's code is written directly in assembler, DR writes using the C language. While this is fine for more complex routines, basic operations like 'print a character' should always be written in assembler, but on the ST the basic routines are written in C, adding a large overhead to the simplest of operations. Using C also explains the size of the ST's Roms - the Mac Rom does much more, but being written

in assembler only takes 64K.

Another problem is bugs - in the current version, which is supposed to be the last version before being Rommed, creating files on disc is fraught with danger. If you *Create* a file that already exists, the old copy will not always be deleted, so you end up with two files with the same name. If you delete one of them, the machine usually crashes, so the obvious thing to do is delete the file before you *Create* it - well, this has no effect, as *Delete* doesn't always work as well. How such serious bugs can remain in software supposedly close to release I don't know. It is very difficult to debug your own software when the operating system on which it is running is still being debugged itself.

If you're programming using just *GemDos*, and not the Wimp environment of *Gem* itself, it's generally straightforward, and the documentation is acceptable. However, the idea of the ST is that all programs should use the graphic features of *Gem*, including windows, mice and so on, and that's when the fun really starts. The *Gem* manuals are written by DR, which is unfortunate. They describe how to call *Gem* from C, but make very little mention of machine language. In fact, the only references to machine-code all refer to the 8086/88 family used in the IBM and clones, which is not much use on the ST. To be fair there is one sentence which mentions the 68000, but it is completely inaccurate! In fact, there is not one sample program listing available written in 68000 assembler, which makes the struggle worse.

The documentation is massive, and can be separated into around ten A4 binders. Trying to find a particular piece of information can take a lot of searching, assuming of course that the information is actually there. For me, as a programmer, the most useful document is the source code listing of what will be the Rom, but this too is limited as certain sections are missing.

The ST hardware seems finished, and while containing nothing as revolutionary or technically complex as the Amiga, it does seem to work. The firmware is another story though, as DR seems to be in some difficulty doing the 68000 version of *Gem*, as well as the bundled software. Many companies want to do ST software, but their interest may soon wain if the machine is not finished properly and selling soon. It wouldn't take much for them to switch their interest and effort to machines like the Amiga and other anticipated cheap 68000 machines.

Andy Pennell

Dicey business

Puzzle No 179

Did you know that if two dice are thrown, you are more likely to throw a total of seven than any other total, and least likely to throw either a two or a twelve?

In fact, there are 36 different throws possible, of which six will result in a total of seven, and just one throw in each case will result in totals of two or 12. This will be familiar to players of Backgammon.

Suppose that instead of having two dice you throw four, and that instead of the total of all dice having to equal seven, a winning throw is one in which this total can be obtained by the combination of any two, three or all four dice. For example, a throw of a five and three ones would count since the five and two of the ones total seven. The fact that the fourth dice brings the total to eight doesn't matter.

Under these conditions, what are the odds of a winning throw?

Solution to Puzzle No 174

The numbers were 497 and two. Their product is 994 and their sum is 499. An infinite number of solutions can be found simply by inserting additional 'nines' into the middle of the larger number, eg, 4997 and 2, 49997 and two, and so on.

```
10 FOR X=100 TO 999
20 FOR Y=1 TO 9
30 LET P=X*Y
40 LET S=X+Y
50 P$=STR$(P)
60 S$=STR$(S)
70 IF LEN(P$)>LEN(S$) THEN GOTO 140
80 R$=""
90 FOR F=1 TO LEN(S$)
100 R$=MID$(S$,F,1)+R$
110 NEXT F
120 IF R$=P$ THEN PRINT X,Y
130 NEXT Y
140 NEXT X
```

In the program the two values *X* and *Y* are tested by means of two For/Next loops. For each pair of values the product and sums are found and are converted into strings *P\$* and *S\$*. The order of digits in *S\$* is then reversed into string *R\$*. If this string is then equal to *P\$* then a solution has been found.

Winner of Puzzle 174

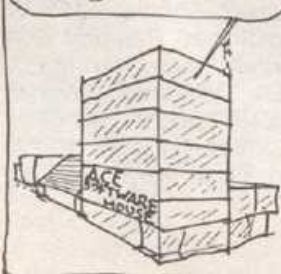
The winner is Alison Matulko of Lymm, Cheshire, who received £10.

Rules

The closing date for Puzzle 179 is November 13.

The Hackers

This one could be our big break in the artificial intelligence market!



and the beauty is, it'll only need a few simple changes to your 'Master-Butcher' expert-system Ben. Here are the details.

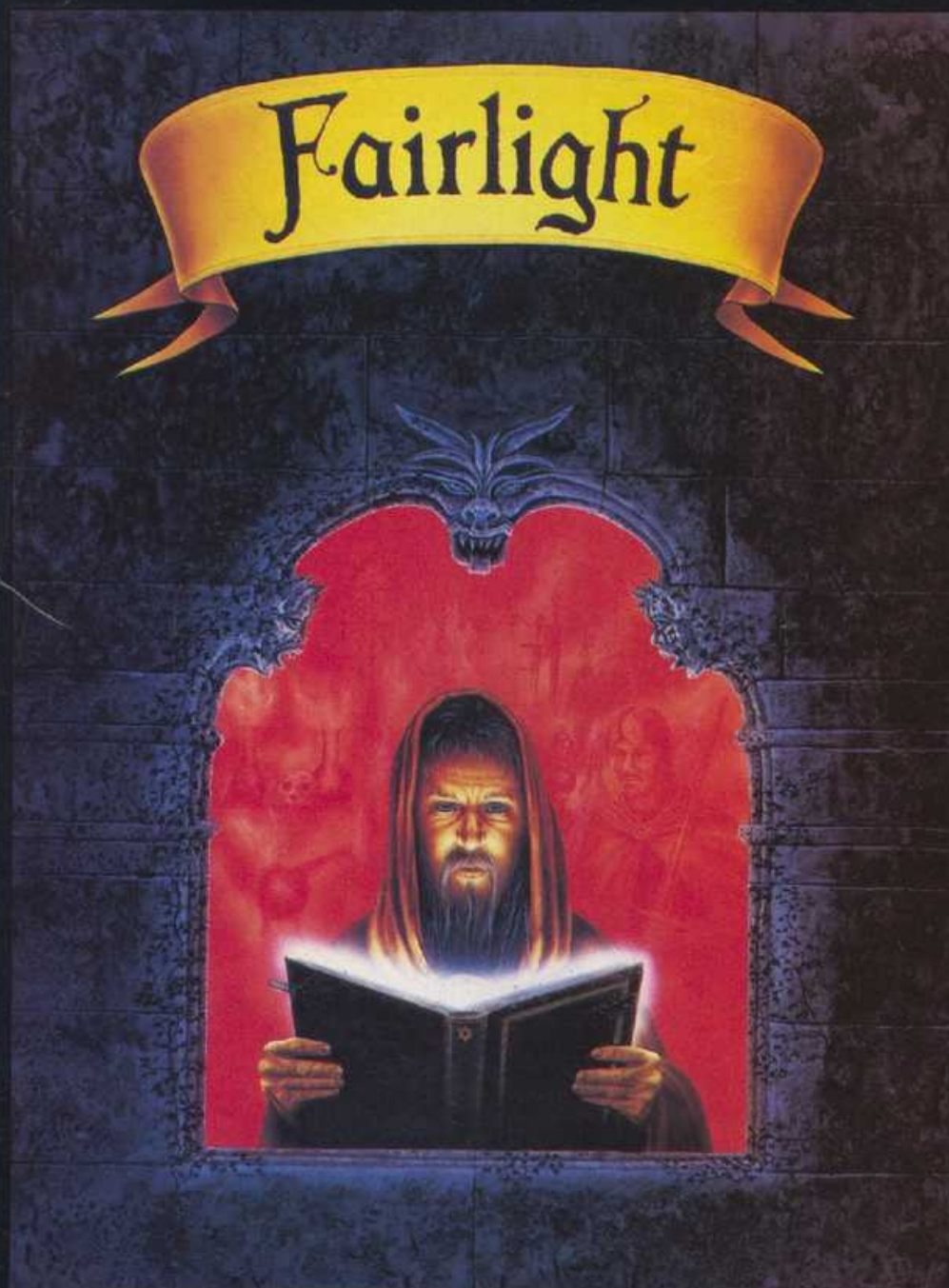


Oh, and when you've finished, just take it round to the department of surgery at the medical school.



48K Spectrum

chronicles of the land of fairlight
1. a prelude: the light revealed



BY BO JANGEBORG

(author of 'The Artist')

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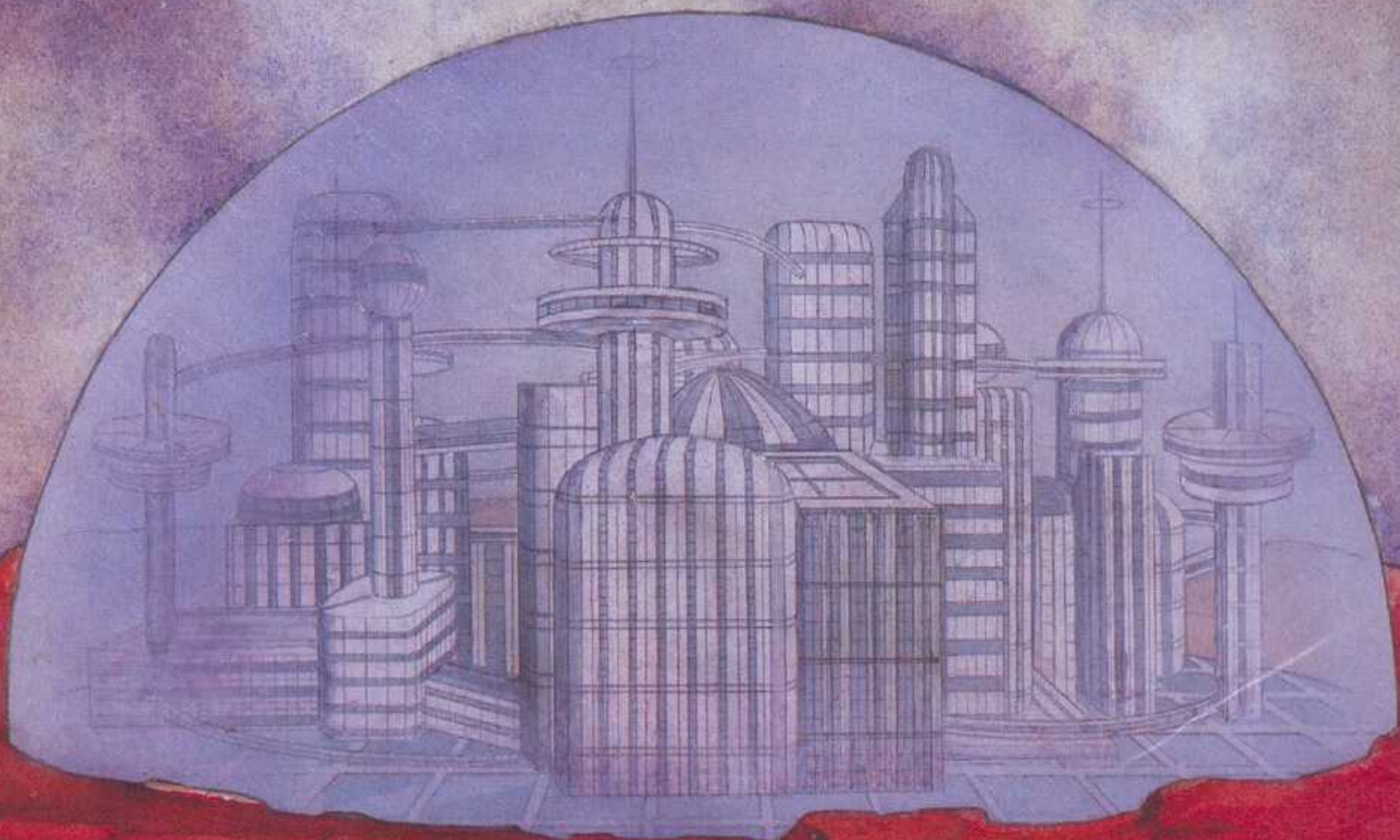
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