

April 2019

Issue 24

# THE SPECTRUM SHOW

Magazine

**TIMEX 2048**  
THE SPECTRUM CLONE

**K-MOUSE**  
KEMPSTON MOUSE INTERFACE

PLUS: THE GRUMPY OGRE  
AND MIND YOUR LANGUAGE



INCLUDES MATERIAL  
NOT IN THE VIDEO SHOW

NEWS FLASHBACK  
GAME REVIEWS  
FEATURES  
HARDWARE



# CONTENTS

## GAME REVIEWS

- 01 Ad Astra
- 02 Nick Faldo Plays The Open
- 04 Salamander
- 06 Monty Is Innocent
- 10 Space Junk
- 11 Meteroids
- 16 Ooze
- 17 American 3D Pool
- 18 Mike Read's Pop Quiz
- 19 The Black Hole
- 20 Gee Bee Air Rally
- 21 Deathstar Interceptor
- 28 Crystal Kingdom Dizzy
- 30 Slap Fight
- 31 Brainstorm

## FEATURES

- 12 **Timex 2048**  
The Portugese Spectrum clone.
- 22 **K-Mouse**  
A modern mouse interface.
- 24 **Mind Your Language**  
Spectrum programming languages.
- 32 **The Grumpy Ogre**  
More adventuring nonsense.



## 22 CLICK AND POINT

Testing out the K- Mouse Turbo Interface



## 12 TIMEX 2048

The Portugese Spectrum clone



### HELP WANTED

Fancy writing a game review or feature?

Get in touch via the website.

# EDITORIAL

Welcome to issue 24 of The Spectrum Show Magazine. Thank you for downloading and reading.

This issue takes a sideways step in the way in which it is produced and instead of the trusty Microsoft Publisher, I am instead trying out the new beta of Affinity Publisher.

It may seem a massive job to move the entire content and templates across to a new system, but once Affinity was setup with master pages, it was fairly simple to get the page layouts ready for content.

Anyway, back to the Spectrum and my request last issue for your letters. Sadly, not a single letter/email was received, so it seems we have no readers. If that is the case, then the question has to be asked, is it worth continuing? As usual, answers on a post card (for those that remember that saying!) or for you more modern readers (if indeed we have any at all), answers on emails.

With the generous funds from Patreon, my next large purchase was a machine I had been trying to get hold of for a while. Luckily Piotr Szymanski, Who supplies many reviews for this magazine, knew a few people selling such items in his home country of Poland. Within a few weeks I was in contact with a seller and my lovely Timex 2048 was on it's way.

Before I had actually bought it, Piotr had sent the feature on page 12, in fact it was this feature that prompted the purchase, and once I get it up and running, there will be a feature on the show.

By the time you read this it will be 2019, and although work started on this issue back in late 2018, there have been a few delays that put back publication. Not only did we have Christmas and New Year, but also multiple house moves and all the hassle and excitement that goes with it.

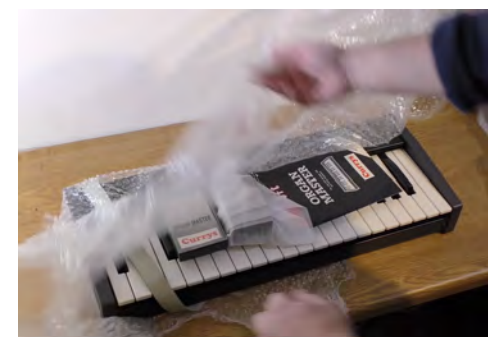
Since then things have progressed and a house move (or in this case 2 moves) is definitely happening.

I am certainly looking forward to setting up the new office with all my Spectrum stuff on display. Arranging the microphone, TV and monitors and playing my first games in the new room. That though could be months away, and for now things are split

between storage and various boxes in various houses. Although my friends will probably never read this, I want to thank them for their help.



Until then I will have to move things from place to place as I need to film them which obviously adds more time onto things. Games have to be dug out, photographed and then put back, and camera and lights have to be continually setup rather than having them available all the time. But as they say in show business, the show must go on.



Another new addition to the family also arrived in January, this time very kindly donated by a fan of the show. This wonderful piece of hardware is something I have been looking to get for a while, but either the prices on eBay were way too high, or the actual item was damaged. Now it has been delivered and un-boxed, the Echo Keyboard is now waiting to be setup, tested and reviewed.

Both this and the 2048 can be seen un-boxed on Patreon.

Talking of Patreon, I find I am enjoying the short, un-scripted format I sometimes use for that, especially the Friday "glass of wine, some time and a Speccy" pieces. There is no planning, no writing of script or editing. I just grab some games, a glass of wine and play. Surely that's what the Spectrum was all about.

I was chatting to Geoff recently about the ever-increasing prices on eBay, and the trend is sadly continuing. I am not

sure if there are a few new sellers who don't know the market, or if there a few unscrupulousness (and foolish) sellers who think someone will buy a copy of Bruce Lee for £35.

Another trend I noticed recently too is the sale of games in cellophane wrappers. Sold as "brand new still sealed", these game demand a high price, but in all my years of buying games from various shops over 30 years, I have never seen a Spectrum game in cellophane.

Maybe someone has bought a new cellophane wrapping machine and is trying to con people into thinking the games are new, but as mentioned previously, from someone who bought 3 games per week for a few years in 1983/4, none of them ever came in cellophane. I also think there is someone selling games with newly printed covers. I recently received a game with the inlay printed on Kodak paper (the Kodak logo visible on the reverse!)

Back to positive things, and as I type this, the next series of The Spectrum Show has gone live. Episode 80 had the largest audience over the first month I have ever had which really gave me a boost, so the next series has a lot to aim for.

The next series has some great features too, two have already been mentioned here, but there are plenty of good things coming your way.

Hold onto your RAM pack....

Want to support the show and this magazine?



Why not become a patron.

[www.patreon.com/thespectrumshow](http://www.patreon.com/thespectrumshow)

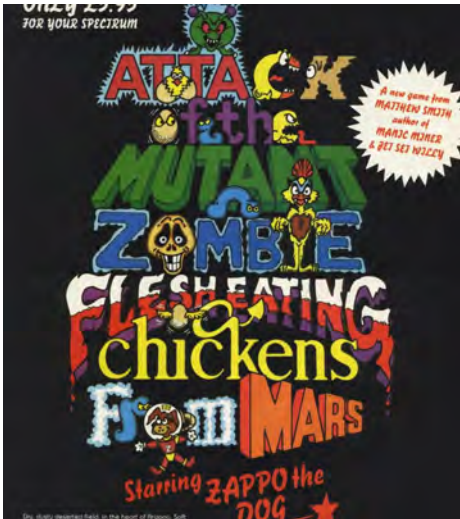


SMITH RETURNS

Adverts for Mathew Smith's brand new game have started to appear in many popular magazines. The wackily titled Attack of the Mutant Zombie Flesh Eating Chickens from Mars is sure to be a massive hit following on from Manic Miner and Jet Set Willy, Smith's other top selling titles.

The star of the game is said to be a new character named Zappo the Dog and Software Projects were pushing this game with full page, full colour adverts.

As we know, the game never actually made it to release, with a game called Star Paws by the same company, re-named as the re-written, botched together final result, released some time later.



SAGA SINK

Saga System, the producer of Spectrum peripherals has gone into liquidation.



Known for their excellent keyboard replacements and latterly for their thrown together set of peripherals called The Compliment, the company blame their demise on the recent machines produced by Amstrad, as they have a good keyboard, and moving the updated and larger circuit board and included tape deck into a new housing would be difficult.

Saga were one of a few replacement keyboard producers, the most famous of which were DK'Tronics with their iconic black case. Saga opted for a beige coloured case, mimicking the colour and layout of more expensive and professional PC keyboards.

Other keyboard companies must also be struggling now that Amstrad have finally given the Spectrum a decent offering.

CRL HORROR

CRL are continuing to produce adventure games based on classic horror stories. The last one, Dracula, was cleverly marketed as being suitable for those aged 15 or older, and they are using the same stunt for their latest effort, Frankenstein.



Continuing with the horror theme, and CRL have also announced that another horror game, Jack The Ripper, will also soon be release, this time having an 18 certificate.

It seems they are learning from the video market, where any old rubbish marked as an 18 certificate would at least attract some punters.

DOMARK 007

Domark have won the rights to produce a game based on the next James Bond Movie, The Living Daylights.

Having previously written A View To A Kill, some members of the press were surprised that they would be given another chance, but Domark promise a more action based game than before.

The best accessory for your micro



The Rotronics Portable Case

Here is the ideal portable work station for home, school or work. Specially made for most home microcomputers, it contains your ZX81 or Spectrum within a smart executive style case with removable lid for convenience in use. The individually tailored foam insert securely protects your

micro, printer, cassette recorder, tapes and manuals during transit. A scalpel is provided to modify the insert for expansion units and an alternative insert can be supplied if you change your hardware in the future. The case is also available with uncut foam inserts. All components remain fully operational within the case via inter-

connections routed between the double layers of foam, so there are no unsightly leads. This is the first case designed for easy use with each component positioned for convenient operation. The overall dimensions are 138mm x 700mm x 363mm.

Spectrum Joystick Interface

Revolutionary design allows standard (9 pin) joystick to be used with any Spectrum software. Easily programmed in seconds - no links or cassette software required £24.45 (p+p 50p). Spectravideo "Quickshot" Joystick £9.45 (p+p 50p).



ZX Panda

The best 16K RAM for the ZX81. Anti-wobble design with LED power indicator. 16K Expandable RAM Pack £18.50 (p+p 50p). 16K Plug-in Module for above £13.95 (p+p 50p). 32K Giant Panda including Module £31.45 (p+p 75p).

Order Form

- Trade Enquiries Welcome  
Please send me (tick appropriate box)
- ☐ Rotronics Portable Case at £36.99 (inc. £2.50 p+p) for ZX81/Spectrum/Uncut Foam (please delete as necessary)
  - ☐ ZX Panda 16K RAM Pack at £19.00 (inc. 50p p+p)
  - ☐ ZX Panda 16K Plug-in Module at £14.45 (inc. 50p p+p)
  - ☐ ZX 32K Giant Panda including Module at £32.20 (inc. 75p p+p)
  - ☐ Spectrum Joystick Interface at £24.95 (inc. 50p p+p)
  - ☐ Spectravideo "Quickshot" Joystick at £9.95 (inc. 50p p+p)

All prices inclusive of VAT  
I enclose a cheque/PO for £ \_\_\_\_\_ made payable to SMT.

Name \_\_\_\_\_  
Address \_\_\_\_\_  
SU 3/84

Please allow 28 days for delivery. Send to (no stamp required)  
**FREEPOST** Greens Norton Towcester Northants NN12 8BR



# AD ASTRA

Gargoyle Games 1987

Anyone who watches the show will know I love shooters and this one is a very early favourite.

It's a tough game though but it does have some nice graphics considering the time when it was released.

There is a story that involves protecting shipping lanes in deep space but who cares about that stuff, lets get onto some shooting.

That familiar start screen and beeps... ah yes, it all comes flooding back to be. Seeing an animated loading screen (even if it was after the game had loaded) seemed magical to me.

On to the game then, and the first treat is the huge rolling planets, or moons, or whatever they are on the first wave. These cannot be shot and to dodge them you just place your ship at one corner of the screen, wait until a planet appears, which will target your position, then move to the other corner and repeat. Once you get this bit conquered, it becomes easy. But there are more levels to contend with and in between these sections are various other aliens to destroy.

These swarm towards you in 3D, firing as the get closer. Dodging the shots is tricky until you get used to the 3D effect, which is really nice by the way. Firing back using your impressive laser, will destroy them. After a few sets of these, it is back to the planets and so on.

The aliens do change each section and you do get other attack patterns for example large ships that drop square blobs, and flying saucers that take a lot of shots to get rid of.

The graphics are great, especially for a 1984 game. There are some very impressive 3D effects throughout and some nice sounds too. The ship explosion is excellent.

As you get close to a space station, a code is shown on screen and shortly after you are asked to enter it which completes the level. Once complete you have seen everything in the game.



It does start again using the same aliens but with different colours to try and fool you.. and this then keeps repeating.

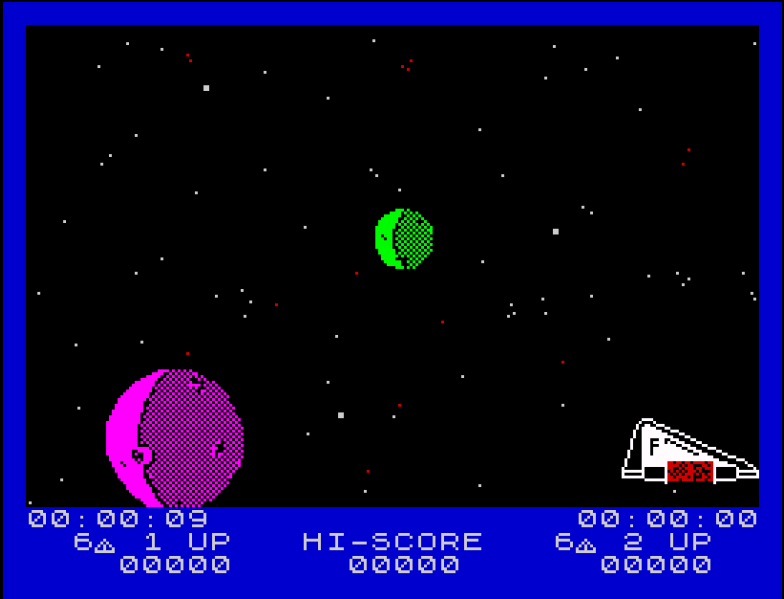
The game, as I said earlier, is tough but really enjoyable and during the review I got further than I have ever done before, racking up a 6 minutes and 2 seconds of playing with a score of 8460.

I lost my last life while filming for the show due to one of the game's annoyances.

The alien shots can hang around at the bottom of the screen, and they are the same size as the background stars so it is all too easy to hit them without actually seeing them. This can be very irritating and costs you lives.

This then is a fast action packed game with a nice

variety of aliens and attack patterns that will keep you busy for a while. It was great to play this again and I'm just nipping off to have another go.



The Spectrum Show

# The Nick Faldo Plays Open

Mind Games 1985

As golf games go on the Spectrum, the quality varies greatly from poor, type-in quality to average with annoying controls. I think for any player of computer golf, they have been spoiled by stunning 3D landscapes and realistic ball mechanics, but for us Spectrum fans, we have to use our imagination just a little bit more.

NFO is a strange game and I suppose the mechanics, layout and gameplay have been changed to suit the limitations of the 8-bit machine.

The screen never changes, the player view never changes and the graphics are mediocre at best. But let's get to the game itself.

Once you choose your control preference and the game type, you are presented with the first hole. The control has been designed to mimic a mouse, with a moving hand pointer that is used to pick the different options. The top half of the screen is the overhead of the player position and limited view of the course. The bottom half contains all the controls.

From left to right: Power of shot, club choice, map view and wind indicator. Bottom row is the direction of shot, silly animation and feedback window and hole number and stats.

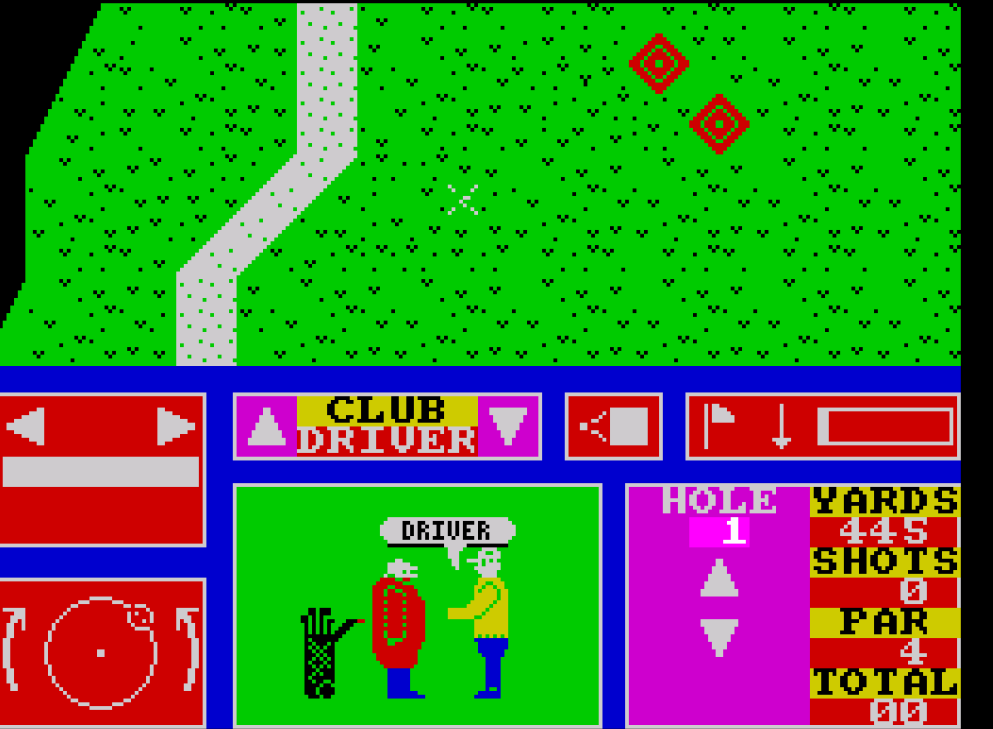
Using the map view will allow you to set the direction of your shot, which uses a rotary style control. The overhead view never changes angle, so you have to set the direction accordingly. Based on the distance to the hole, which is never shown once past the first shot, you use the map view to guess your choice of club and the power needed. Once happy, you click the middle lower window.

Here is where the silly stuff happens. A speech bubble pops up asking the caddy for the club. He will answer with either

'OK' or 'Are you sure'. If it's the later,

The Spectrum Show

you click again to get the club, or choose another



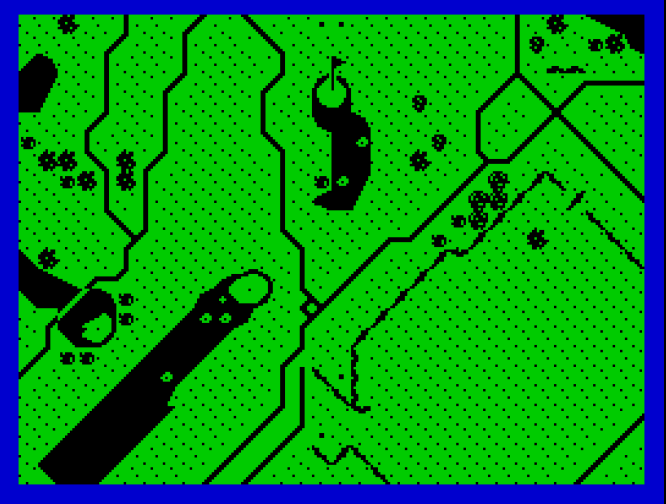
club if you want to take the advice.

The player swings and the ball in the top half of the screen moves to its new position and the screen tries to scroll at the same time. Once landed, you continue this until you land a put.

The graphics are bland, do have colour and areas you can identify such as trees and bunkers. The player and caddy are a bit naff to be honest, but I see the idea of this interaction to represent a guide.

Sound consists of just a 'thud' for hitting the ball and the ball landing, so nothing really exciting.

As with most golf games, this is not a quick blast, it's a long,



supposedly relaxing game that you can enjoy for a few hours. The game, once you get into it is quite good, and once you get used to the clubs and power options, you become a better player.

One for golf fans only though.

# SALAMANDER

Konami 1987



Salamander was released into the arcade by Konami in 1986. It's a fast paced horizontal shooter with power-ups, multiple weapons and end bosses. It also had vertical sections, adding a lot of features to keep the player alert.

The game was very popular and there was even albums released featuring the music from the game.

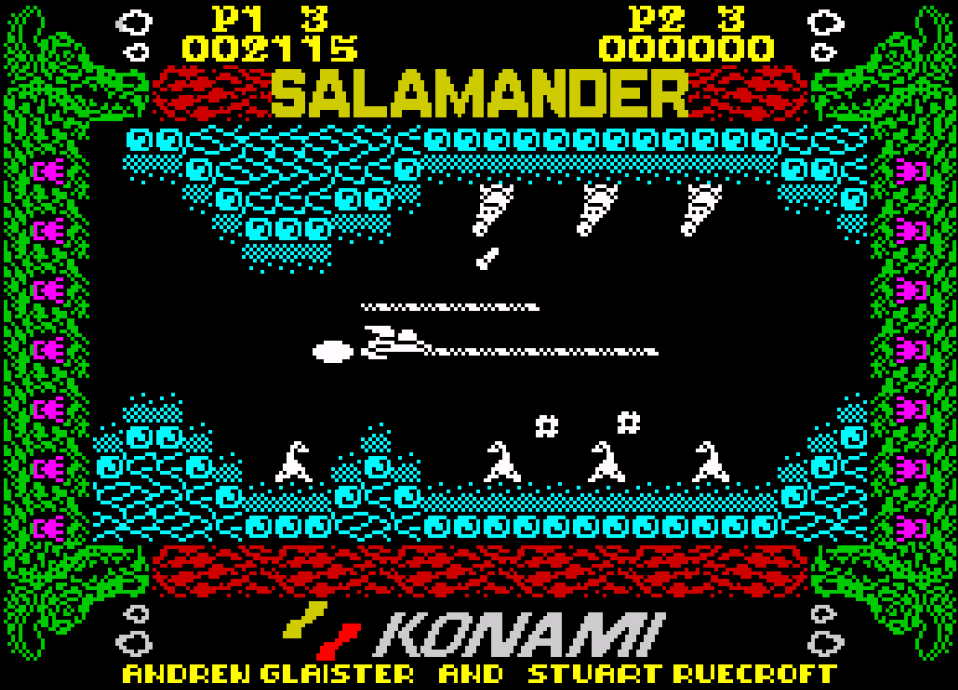
The Spectrum version was released in 1987 with many subsequent budget releases including the one I have, from Hit Squad.

The first thing that hits you, considering the arcade version had albums released, is the poor music. This game is for the 128k machines and it seems the AY chip has been ignored.

The screen size is reduced by the large border too, a typical trick to keep the game speed up, and to be honest it does run a good pace, however, the game-play is hard.

My first two or three attempts ended in Game Over without even passing the first two large snakes. A few more tries and I finally got past them, having to shoot them in a certain place. This is really tricky, but does mimic the arcade game. The level layout is different to the arcade too, so being familiar with that won't help you here.

There are no background graphics and obviously sound has been cut back a lot and the game is a bit of a let down for me. On the arcade version I could get to the first end boss, but on this version, it seems overly hard to make any progress at all.



As you shoot fleets of aliens, they drop power-ups, and these range from multiple shots, outriders and lasers, the usual stuff. And you will need these to get far in the game.

The big issue is when you get killed, you lose all your power ups and this can leave you in trouble later in the game.

Things move smoothly and control is responsive but the difficulty level is a bit too high for me, and I found myself losing interest quickly. I like a game that lets you make progress, even if that's by trial and error, but this game seem to

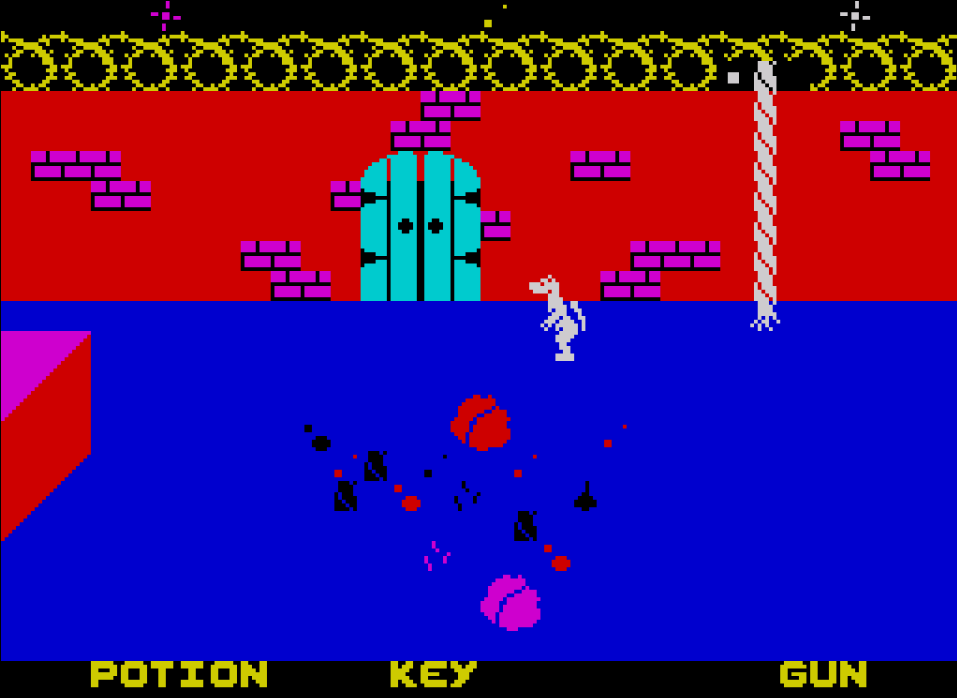
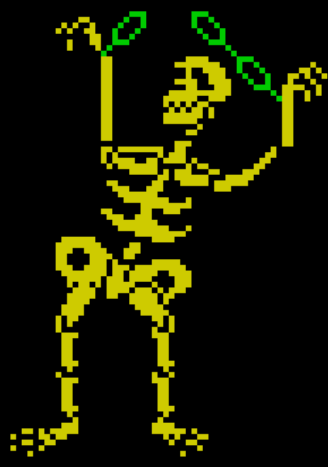
set out to destroy you at every opportunity, and throws game-play out of the window.

To see later levels I had to watch the RZX playback and it does have the vertical sections included, but the aspect ratio used made these parts look very difficult.

Overall then, a very frustrating game, at least for me, and one I won't be coming back to. If you are a hard core gamer, you may like to give it a try though.

# MONTY IS INNOCENT

Gremlin Graphis 1985



Monty has been very naughty and is in jail but his friend Sam Stoot is on his way to break him out. You control Sam in his brave rescue bid and to do this, Sam has to first find a key. Once he has this he then has to locate the correct cell (there are 8 keys and 8 cells!) to be able to free Monty.

Yes, there is a lot of running about!

If you're not fast enough as well, you die before you even have a chance to work out what to do right at the start so this is very bad game design.

The game is the follow-up to the first game, Wanted Monty Mole and is a different beast all together. No platforming action here, just a lot of moving from screen to screen trying to work out what to do.

The pseudo 3D effect can be confusing, and you often find yourself stuck against one of the walls or parts of the scenery.

There are various things that appear such as police men and touching these will kill you unless you have a gun. To get the gun you have to find the armoury.

The chasing enemies are a real pain, but you can cheat a bit by exiting and re-entering the screen. They then vanish and re-appear after a short time.

Avoiding these is the main aim as one touch and Sam snuffs it.

If you get into one room, which is a prison cell,

you are stuck forever - at least I could never find a way out. Another instance of bad game design.

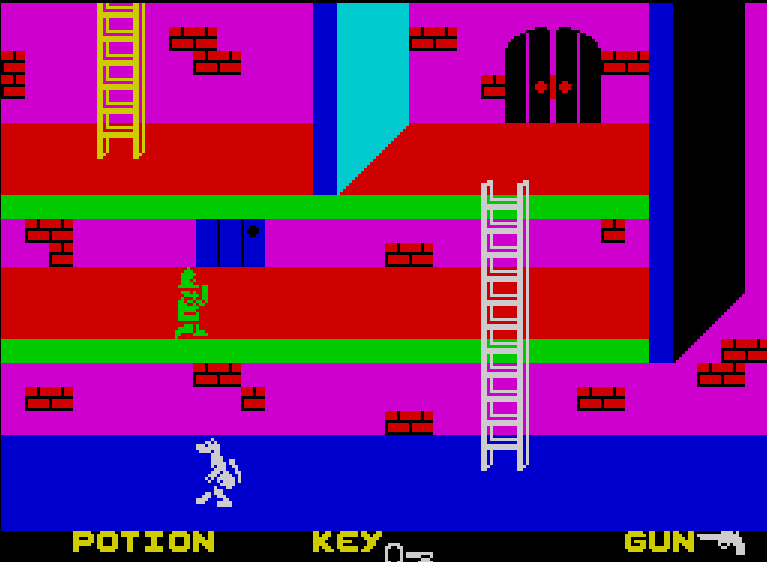
Control is responsive, but the game is just a continuous round of enter room, avoid nasties, move to next room.

The screens are nice to look at with some very simple 3D effects, and the game map is quite small. The RZX playback completes the game in just over a minute, so I guess they had to throw in those annoying enemies to try to slow the player down.

For 1985, I think this should have been better, and possibly stuck to the platform formula of the first game.

If you like wondering about continuously seeing the same screens, and being killed unfairly, then this is the game for you.

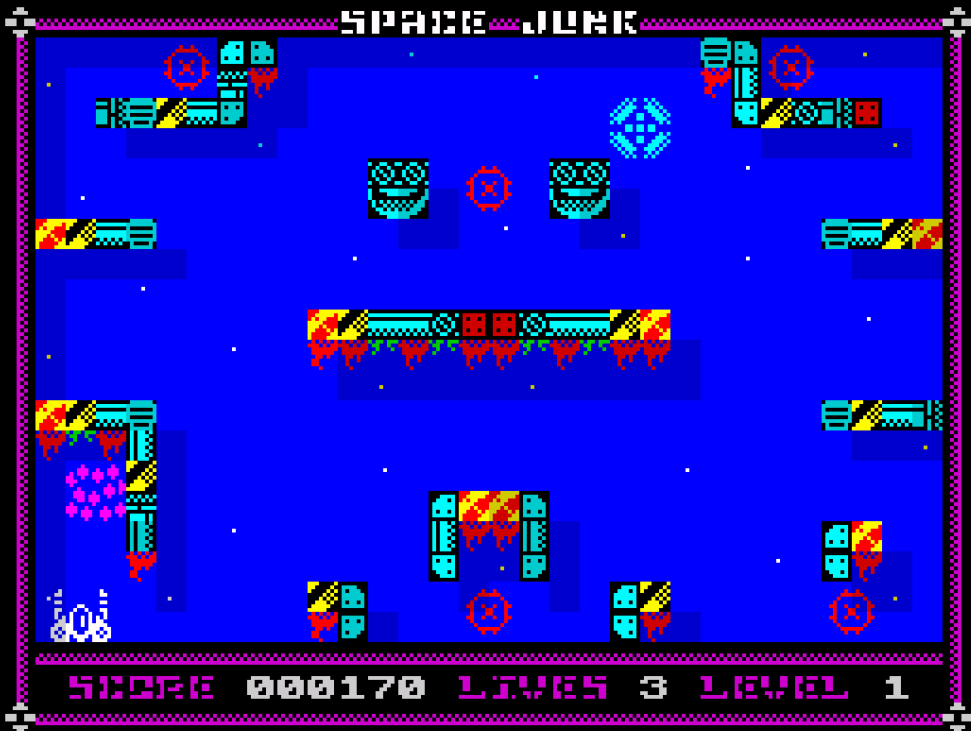
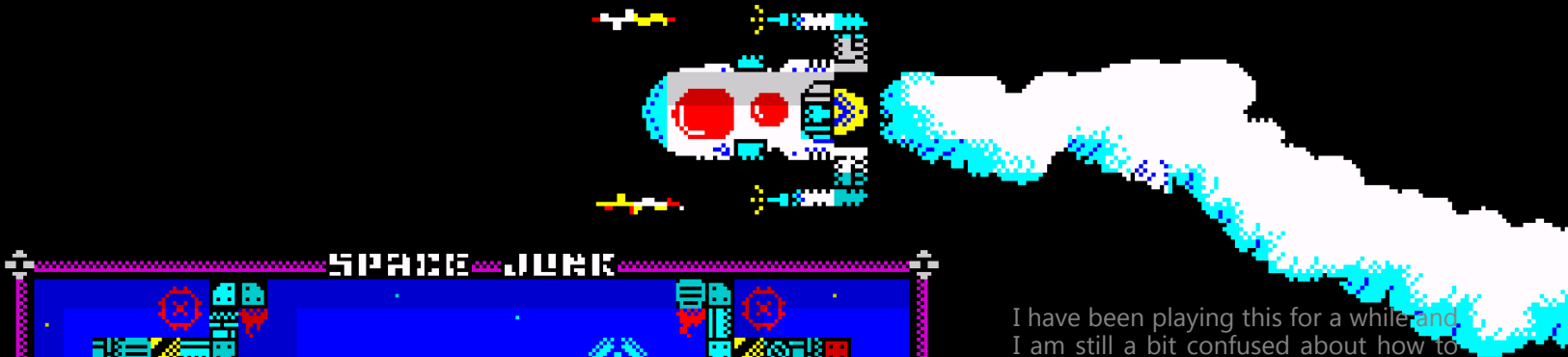
Otherwise, I would give it a quick try and then move on.





# SPACE JUNK

Miguetelo 2017



Space Junk is very polished game that has a simple concept, but a very different control system to other games of this type.

The aim is to destroy all of the generators, which may sound easy, but because of the way the ship is controlled, it can be very tricky to accomplish this.

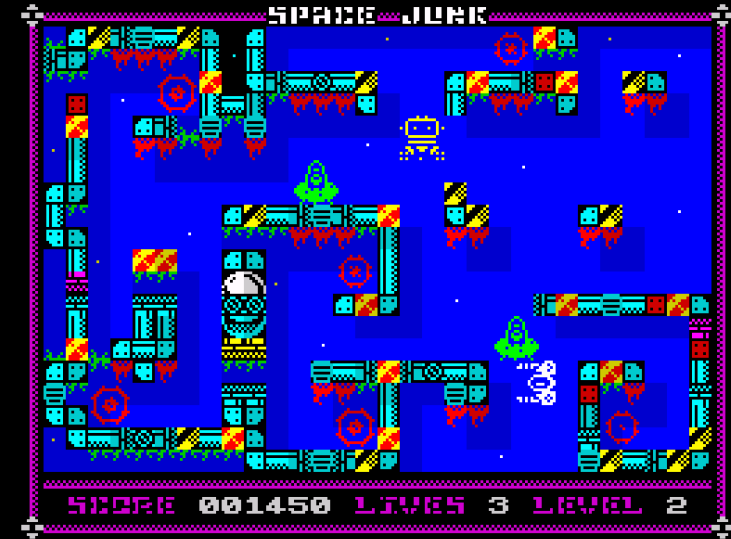
I have been playing this for a while and I am still a bit confused about how to get the ship facing the right way. However it does after some prodding of the direction keys and this allows you to continue. I am sure if you play this enough, you will get the hang of it, but for a quick blast of around 30 minutes, I was still not able to accurately control the ship. That though, does not distract from this game, as you still want to go back for just one more try.

The graphics are really nice, and the music that plays along really helps set the game.

As the game progresses more enemies get added and the screen layout changes to give you more of a challenge.

The only negative thing I have to say is that when you lose a life, all of the previously destroyed generators on the current level are reset which can be a bit demoralising.. especially if you only have one left.

A great little game then, and one definitely worth tracking down and playing.



Although the game uses the usual four directions and fire, the ship rotates on its axis, meaning it is not always facing the correct way to destroy a generator.

# METEOROIDS

DK'Tronics 1982

If you haven't guessed by the title, this is a version of the arcade classic, Asteroids.

For those not familiar with the game, you control a spaceship that can rotate, fire, thrust, and in the arcade version but sadly missing from this one, hyperspace to another area of screen.

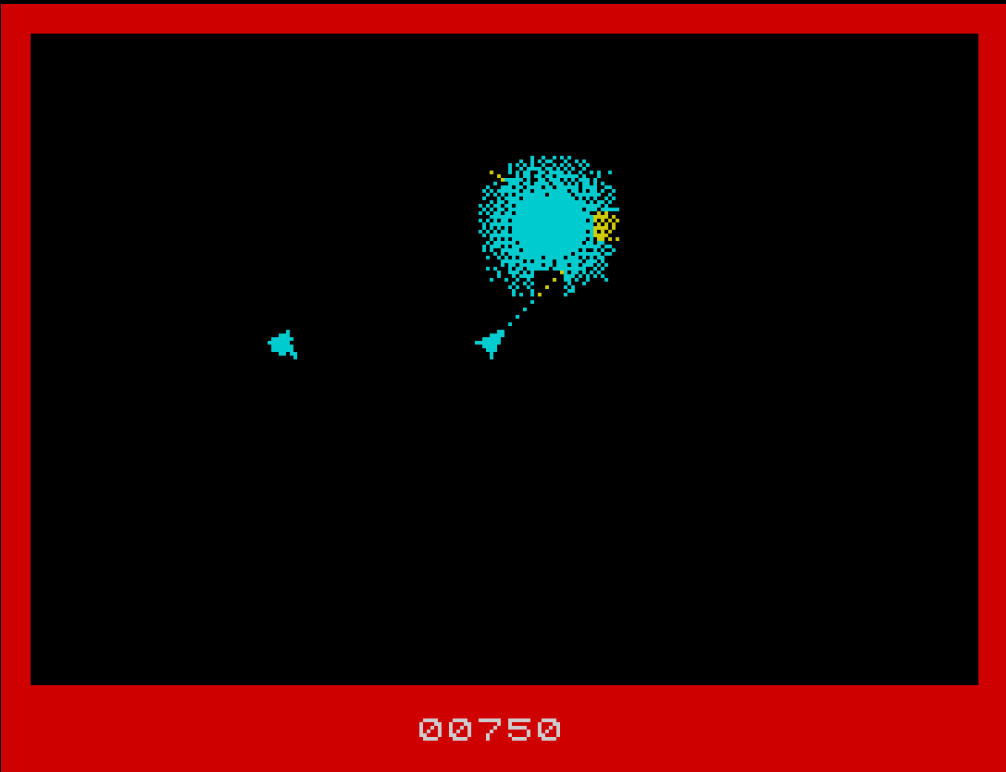
This is a Don Priestley game, the same person who wrote Flunky, Maziacs and Trap Door, but this is a very early effort and it shows.

The ship only has 8 rotation points, and the controls are a bit unresponsive at times. I suppose this is down to the fact the Spectrum does not have vector capabilities, and the speed of the processor and memory limit at the time meant programming a drawing routine was out of the question. Instead the author opted to use character graphics.

Every thing moves is character-based jumps and although the game play is much the same, the asteroids do not represent their arcade counterparts. They are not line drawn, but are solid.

Sound is used well though, with some nice zapping sounds and explosions, something frequently missing from 16K games.

The thrust moves you in the direction you are facing, and the inertia means



you slow down gradually, a nice effect that again is often missing in other versions.

As each asteroid, sorry, meteoroid is hit, it breaks into small parts but this is where things get annoying. If you hit one of the larger meteoroids close to your ship, it splits into 8 or 4 pieces. These are positioned around the

original meteoroid, meaning they can generate right on top of your ship.

To get a good game then, it is best not to use the thrust and not to hit meteoroids that are close to your ship.

For a game that is just over 4k in size, it's playable, but certainly not the best version of this classic game.



Mutant Caterpillar Games is the place to go to for tested, working, refurbished 8-bit and 16-bit hardware and software. Every single item from cassette to computer is guaranteed working.

Do you need a computer repaired? We've repaired Sinclairs, Amstrads, Commodores, Acorns, Atari STs, Amigas... and we'll always have a go at something if it's broken - drop us a line and maybe







# TIMEX COMPUTER 2048

## THE SPECTRUM COMPATIBLE WITH A DIFFERENCE

In 1984 Sinclair Research Ltd. released the ZX Spectrum+. It was the old 48k model hardware in the new case - the only thing that changed was computer's appearance and the addition of a reset switch. The rubber keys were replaced by clunky plastic variants and the multi-coloured legends replace by just white ones.

Over in Portugal though, things were moving on..



In the same year the Portuguese branch of TIMEX launched the Timex Computer 2048 (TC 2048). This was a Spectrum clone with many hardware improvements over the UK version and a whole different look.

The keyboard does look familiar in layout, but the legends are white or black and the lower keypad legends are in black blocks – which does look nice and make them easier to spot. The keyboard is based on the Brother EP-20 electronic typewriter giving a more positive feel. Obviously, the Sinclair branding and famous rainbow stripe have gone, replaced by a simple logo at the bottom left and a small power LED top right.

At the back there is little change other than the addition of a composite output, labelled Monitor. On the left is the joystick port which is Kempston compatible but does have problems as we shall see later and on the right a power switch.

Internally though there are a few changes; A new ULA chip providing extra graphics modes of 256 x 192 multicolour and 512 x 192 monochrome along with a larger speaker. Unchanged is the CPU, number of colours, memory size and BASIC interpreter.

Other earlier TIMEX computers like the Timex Sinclair 2068 (TS2068) and Timex Computer 2068 (TC2068) were not fully compatible with most Spectrum software, in fact most didn't load or run. The 2068 did have a cartridge port (not compatible with Interface 2 carts) that did have a special emulator available. This emulator included the original Spectrum ROMS to improve compatibility.

### Differences & Upgrades

Better keyboard based on Brother EP-20 electronic typewriter.

A new ULA chip with extra graphics modes

(256x192 with multicolour, 512x192 monochrome).

A composite video output.

A built-in Kempston joystick port.

An on/off switch.

A power LED.

A bigger speaker.

The Timex Computer 2048 is much more compatible and at least 90% of Spectrum software works without any problems. Incompatible programs, mainly games usually crash or are impossible to control (keyboard is locked or the program reads non existing keypresses). Fortunately, many of those programs can be fixed.

The standard Sinclair BASIC doesn't have commands that support extra graphics modes. To activate the new modes, you have to use OUT commands:

- OUT 255,2 - enables multicolour mode (different colour for every horizontal line inside character square),
- OUT 255,6 - enables hires mode (512x192),
- OUT 255,0 - enables standard mode.



If you want to write programs that use the hires mode you can try Basic64 by TIMEX. It's an extended version of BASIC, loaded from tape or disk, dedicated for Timex computers.



## FEATURE

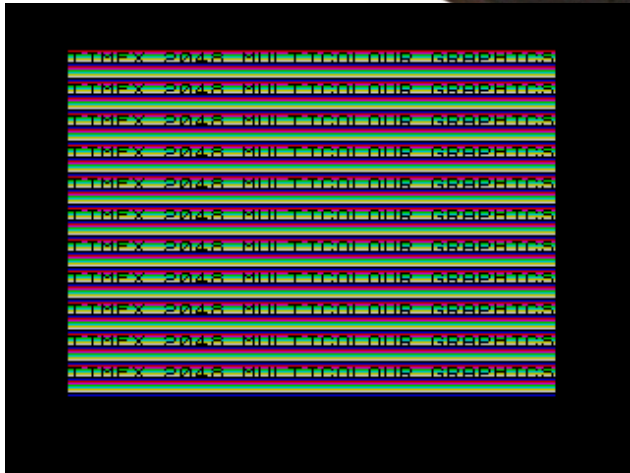
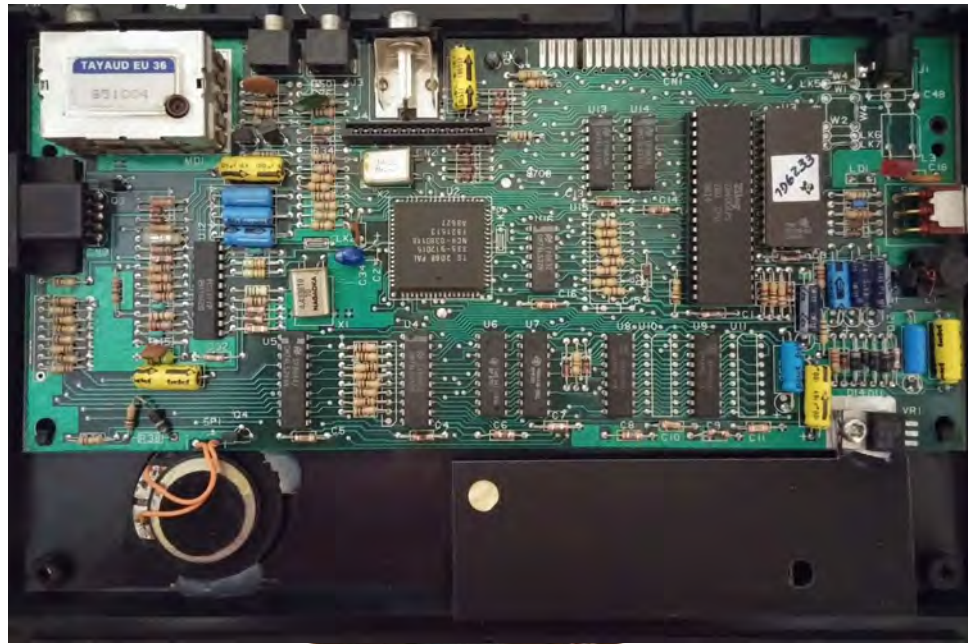
## Timex 2048

Unfortunately there are not many other programs that use the new graphics modes. I found only 2 demos (Timmy, TC2048 Hi-Res Colour Demo), 1 game (Snake 2068) and 3 utilities (ColorPRINT, ColorTILE and Timex Studio).

Initially the Timex 2048 was available only in Portugal but in 1986 five thousand computers<sup>1</sup> were imported to Poland (in the following years more were imported). Official TIMEX peripherals, like floppy disk drive FDD 3000 and the tape recorder Timex 2020, were also available. They sold quickly and became very popular with Timex users. The Polish monthly magazine Bajtek printed many type-ins for Timex 2048 and FDD 3000. The latter became the leading disk drive in Poland and many games were modified to run from disks.

The Timex 2048 has two construction errors. First is an inverted polarity in the Kempston joystick port which causes the auto-fire in many joysticks to not work. Second is a missing /IORQGE line in the edge connector. There were few versions of mainboards and this error isn't present in all of them. Those construction errors can be fixed, more information is available at Jarek Adamski page<sup>2</sup>.

Just like many old computers the Timex 2048 may require maintenance. Aging capacitors often cause a lack of colours in composite video output and trouble with loading programs from tape. There are 14 capacitors to replace and after that the problems should be solved.



# Timex Computer 2048 Technical Data

CPU: Z80A 3.5Mhz

RAM: 48 kB

ROM: 16 kB

Graphics: 256x192 with 15 colours, 512x192 with 2 colours

Sound: 1 channel

Keyboard: 42 keys

## Built-in BASIC: Sinclair BASIC

I/O ports: TV RF output, monitor output, Kempston joystick port, EAR and MIC sockets, edge connector.

Power supply: 9V/0.8A

The computer case may become dirty and require cleaning but beware: The Timex case is very sensitive to organic solvents, so it's not recommended to use them as a cleaning agent - water and soap is a better solution. When your Timex is refurbished you can try to modify it by replacing TV modulator with RGB video output too.

According to many users the Timex 2048 is more reliable machine than the Spectrum and thanks to many improvements it's also more convenient to use.

If you have a chance to buy it (and incompatibility issues and construction errors don't put you off), don't think twice.



Feature by Piotr "PopoCop" Szymanski

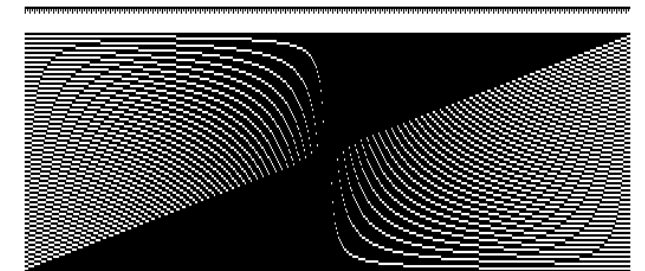
Thanks to Klaud, Pear and Trojacek for help with the maintenance part.



```
Text in 64 columns:
#0123456789ABCDEFGHIJKLMNPOQRSTUVWXYZabcdefghijklmnopqrstuvwxyz#
```

Text in 85 columns:  
#0123456789ABCDEFGHIJKLMN0PQRSTUVWXYZ0123456789ABCDEFGHIJ#

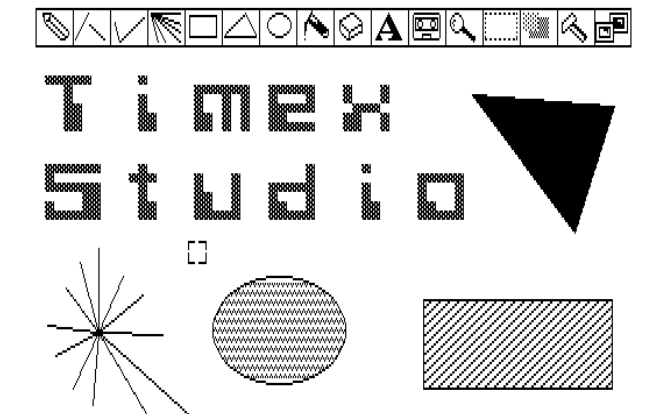
Graphics in 512\*192 mode:



```

0:RANDOMIZE USR 31488:REM          © 1985 TMX PORTUGAL LD&MD
    BASIC_64 V 1.0
5 RANDOMIZE USR 31488
6 SCREEN$ 1
10 LET a$="Text in 64 columns.": PRINT #4,a$
15 LET b$="#0123456789ABCDEFHGHIJKLMNOPQRSTUUVWXYZabcdefghijklmnopqrstuvwxyz"
nopqrstuvwxy$": PRINT #4,b$," "
20 LET d$="#0123456789ABCDEFHGHIJ#"
30 LET c$="Text in 85 columns.": PRINT #5,c$: PRINT #5,b$,d$
, " "
35 PRINT #4,"Graphics in 512x192 mode:"
40 PLOT #0,111: LINE 511,0
50 FOR z=0 TO 511 STEP 2: PLOT #z,110: NEXT z
60 FOR x=0 TO 511 STEP 4: PLOT #x,109: NEXT x
70 FOR n=0 TO 100 STEP 2: PLOT #511,100: LINE -511,-n: NEXT n
80 FOR j=0 TO 100 STEP 2: PLOT # 0,0: LINE 511,j: NEXT j
90 PAUSE 0: CLS *

```



<sup>2</sup> <http://8bit.yarek.pl/computer/zx.tc2048/index.html>



# Ooze

Bubblesoft 2017

Arcade Games Designer has the flexibility to produce a wide range of game styles with numerous different mechanics, and every now and again a game comes along that uses that tool to create something new and interesting.

I have, I hope, produced some new things with it, like Toofy In Fan Land (now available free and also to buy), and this game takes a little bit of that I think.

Ooze was written by Bubblesoft and released in 2017 and is a platform game with a difference.

Despite trying, I couldn't find instructions but from reading comments on forums the idea is to rescue your blobby friends.

To do this you have to move around the maze, collect keys that open other areas, and eventually succeed in your task.

The game starts with some nice music, and once in, the game mechanic is what first throws you.

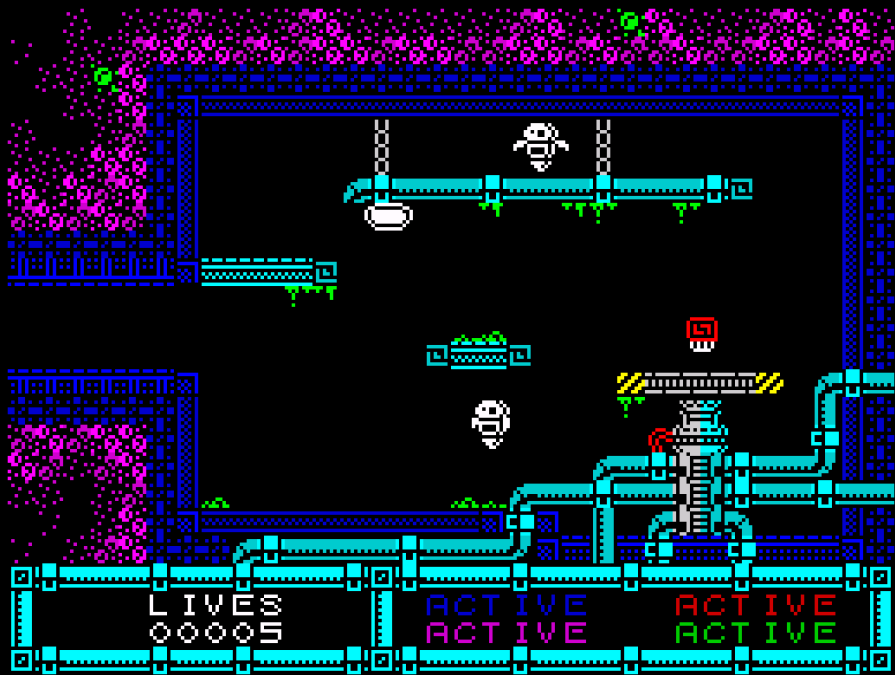
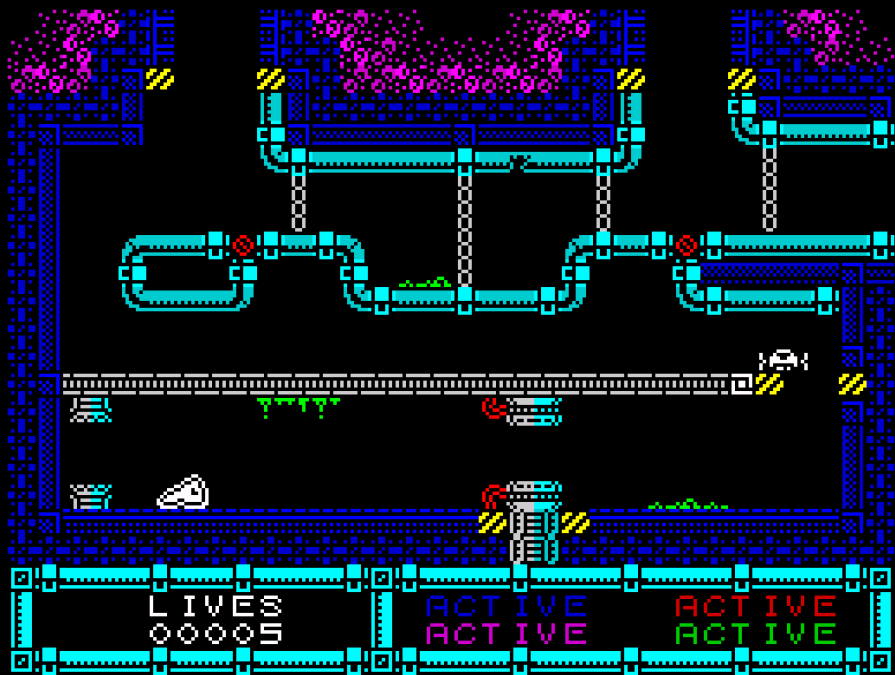
To get around you have to avoid static and moving nasties by bouncing to the upper or lower walls using the fire button.

This gives the game a little bit extra compared to normal platform games, and gets you thinking differently about how to get through a screen.

Some of the things that kill you are a bit hard to determine. Some are just background graphics, others will explode your blob, so you will have to take care when moving around.

You can move in mid air, which is a vital trick to master if you want to get far. Many of the crushing obstacles can only be passed using this technique.

The game is hard, or should that be tricky! You have to be very patient and plan your moves carefully, no rushing about.



The graphics are great, well drawn and colourful, and like all games produced with Arcade Games Designer, the sprites are smooth.

Control is good and sound is well used with some nice music on 128k machines.

A nice game then... but one that needs patience..



# AMERICAN 3D POOL

Zeplin Games 1992

There are several snooker and pool games for the Spectrum but only a few claiming to be 3D. This game manages to pull off the 3D look, but there are some compromises.

The initial view is top down, showing the table and of course the balls. This is where the first problem is, and it is to do with colour clash. Because the game is in colour rather than monochrome as some games use, the collection of balls is just a mess of colour.

This issue continues into the 3D view, which we will come to soon.

To play a shot, you first select the starting place in the 'D'. Using up, down, left, right and fire controls, you then move the target to where you want to play to. Holding down the fire key then moves a power meter up, after which you get to apply spin if needed by using the left, right, up and down keys

When this is done, the view changes to a 3D view, and the colour clash on this section makes it sometimes impossible to see what balls are what colour.

The shot plays out in the 3D view and then switches back to the top view for the next shot.

The game plays in typical fashion, you get a few attempts at each ball and have to pot them in order, obviously avoiding the black.

Ball movement is smooth and quite realistic, with inertia added, and the angles seem to be calculated well. The game plays out with a few sound effects, mainly for the power meter and the click as the balls collide.

The game does offer a choice of Pool or Billiards, with an added option of playing trick shots.

FRAMES 00 BALLS 05 SHOTS 01 HI-SCORE 00

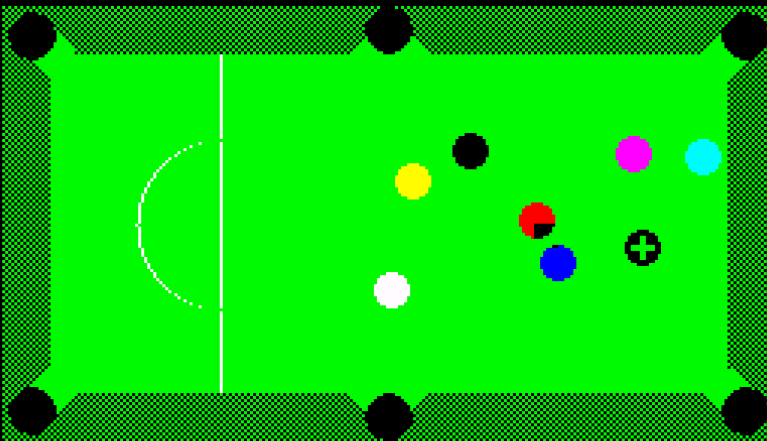


SPIN POWER

The graphics in 3D view are really nice apart from the colour clash, and this isn't a bad game really.

If you like playing Pool on computers, give this a go, otherwise I think you may find it annoying that you can't see what is going on on the table.

FRAMES 00 BALLS 05 SHOTS 02 HI-SCORE 00



SPIN POWER





For those not from the UK, or those younger than 40, the name Mike Read will probably mean very little to you. He was a very popular radio disc jockey in the 80's and went on to do several television shows, one being Pop Quiz.

Pop Quiz saw two teams of famous pop stars answering questions on music in a given time limit, with several different rounds to take part in. The board game and computer game soon followed.

Initially you are asked to pick two team members and a specialist category. These are shown as icons and can be Rock, classical, mystery etc.

The computer then picks two players for it's own team before the game begins.

There are several banks of questions included, which is a good idea, as just having the same questions could soon become boring.

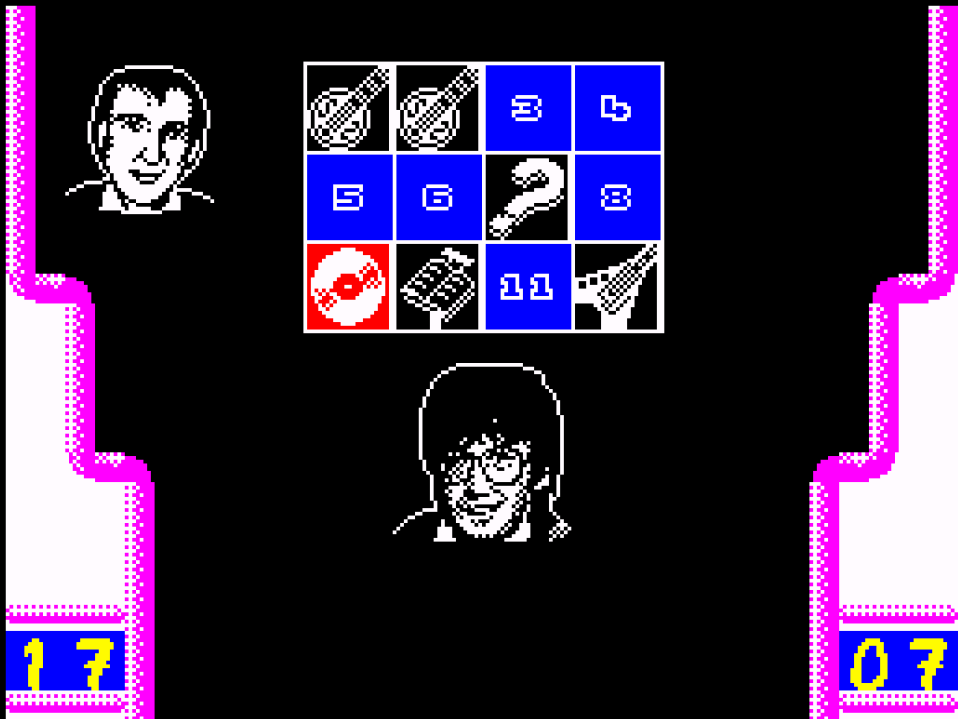
The screen layout has Mike in the middle with a speech bubble over his head. This is used to show everything including the questions and various dialogue throughout the game. On the left-hand side is your team and on the right are the three members of the computer's team.

Round One is the Jukebox, a square of 12 boxes behind which are questions on various subjects. After choosing a box the question scrolls across the speech bubble and you are presented with four possible answers. A timer ticks down giving you a short amount of time to get it right.

If you get it wrong, the other team can have a go for one point.

Round two is spot the star, and Mike reads out a piece of information about a celebrity. Guessing the right answer will get your three points. If you fail another piece of information is given away until someone gets it right.

Round three is called Your Scene and



you get a question on your specialist subject. You can have a hard question for 2 points or an easy one for one point. Again you are given four possible choices.

If you get an answer wrong, you do not find out the correct one, which is a shame.

The next round is Guess The Year. No prizes for guessing what this is about, and this is followed by a quickfire round. Here you are given 45 seconds to answer 9 question (check).. If you get a question wrong, you lose two seconds.

We finally get onto the last round, which is back to the Jukebox.

The graphics are well drawn and look good, with the caricatures working well, although there is no animation. Sound is used well with a nice intro tune and white noise for applause.

It is a game I enjoyed playing because of the time period it is obviously set. Many of the popular music questions were about songs or groups I knew, but there was also some classical music and writer questions thrown in.

Not a bad way to spend 30 minutes.



Quest Microsoftware 1983

Quest Microsysoftware, the company behind this early 16K game, produced only one other before changing their name to the more familiar Fantasy Software – responsible for games like the Pyramid and Doomsday Castle. The other game was Violent Universe.

Back to this game then and the idea is to patrol a black hole that is being used by aliens for bad things, like taking over the universe and probably steeling all the Monster Munch or other corn - based snack.

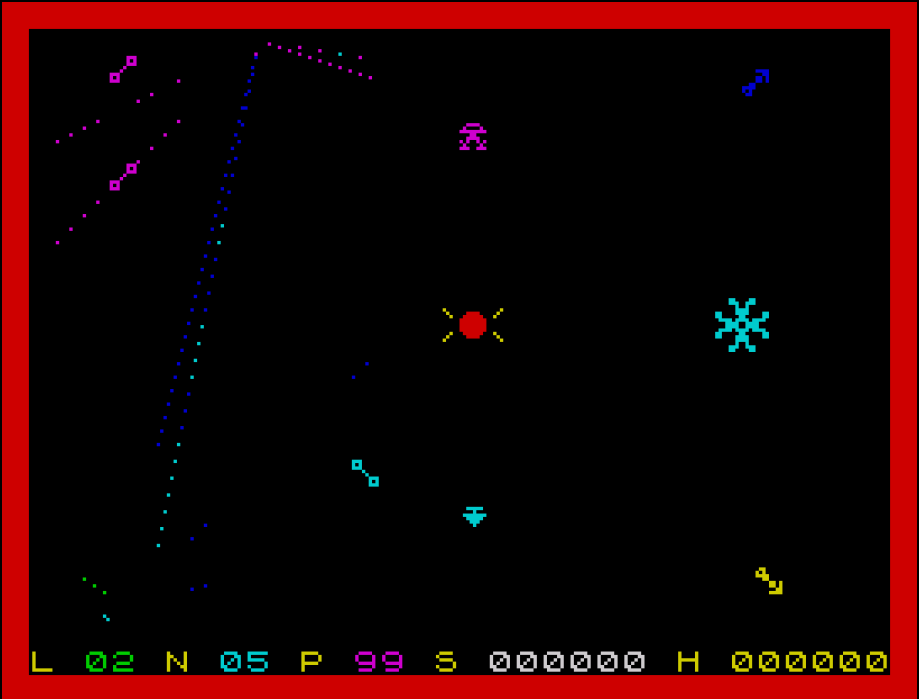
As with many early games you have to destroy as many as possible and that's the whole game. It does differ from other games though, but not in a good way. The game has terrible controls, which makes it very difficult to play.

I can understand trying to introduce a new control method to make the game different, but when those controls are almost impossible to use, then it defeats the whole point.

You move your little ship in all four directions, but can only, as far as I can tell, stay on the left-hand side of the screen.

As aliens fly about you have to blast them. Yep, simple, but not so simple because you have different weapons and of course the black hole to contend with. One weapon bends into towards the black hole, one bends away from the black hole and one that fires straight. Using a combination of these you have to destroy the various aliens.

The main problem is you just spend the time stabbing at any key really, because of the poor layout, and hope that one of your shots will be good rather than trying to calculate which shot to use.



a



The keys are Z for left, Symbol shift for right, X for up and M for down, with the weapons being C, N and Caps Shift, what a mess!

The graphics are small but move well and the sound is very familiar to anyone who has played The Pyramid or Doomsday Castle. They work well and are better than the usual beeps founds in early 16K games.

If it wasn't for the control this could be

half decent game and sadly there is no joystick option.

Another problem is the pixels left behind after you explode, should you happen to get hit by one of these aliens. The dots do not hamper you, but can make spotting aliens tricky as they remain on screen.

For an early 16K game, this could have been so much better with decent controls. As it is, it's just an interesting attempt at a shooter.



# Gee Bee AIR RALLY

Activision 1988

Apparently I'm a lunatic who wants to fly the GeeBee.. at least according to the manual.

The GeeBee is a flying event held, in this case, in Ohio, and sees pilots from around the world competing in various tests of skill.

The game has eight levels with four courses in each, the last one being a special event such as low-level flying or balloon popping.

After the intro screen and somewhat terrible music there is an option to select the control options and eventually the game begins.

The first event is a straight air race. Pretty much the same as every level apart from the fourth, as mentioned previously. Here you have to fly a set course, avoid the other planes and complete the course as fast as possible.

The controls are simple, left, right up and down. The throttle is automatic, so once you press it to take off, you leave it alone for the rest of the race. The plane even lands itself at the end, should you make it that far.

Once in the air, your plane, looking rather nice, flies over a scrolling landscape made up of strips, the usual and cheap way on the Spectrum to represent 3D movement.

The speed and altitude dials seem to just flap about, giving no aid to navigation, so it's best to just ignore them.

There are signs or posts on the ground showing which way to fly, but I found it easier to just follow the other planes.

As you approach them, you just have to be careful not to hit them, otherwise... well, we'll come to that bit soon..

The engine noise is a bit weak with the only other sound being when you hit something, so you'll be playing just listening to this..



If you reach the end of the course, the colour scheme changes and you set off again.

If you get to the fourth course, the special event is balloon popping. Here you fly low and pop the balloons. There are still other planes to avoid and also what looks like telegraph poles. Either way you have to be careful. These are tricky to miss, as they are at the same level as the balloons, and usually appear in the line of flight, giving you little time to move.

This is where I had my first crash. Tumbling out of the plane, spinning

through the air and landing in a pig sty.

The game play is a little repetitive and once you play through a few levels, there is little to bring you back.

The graphics are nice, but the sound really should have been better, offering improvements for 128k owners.

# DEATH STAR INTERCEPTOR

System 3 1985

No doubt you will guess what this game is just by the title, and I remember buying this as a kid in the hope of re-creating the Star Wars game I saw in the arcades.

The first thing that amazed me was the speech... wow.. a Spectrum talking, however it soon gets annoying after you have heard it for the hundredth time that day.

The first section proved tricky back then and you had to guide your ever-moving ship into the thing in the middle of the screen, whatever it is. The manual says it's a star gate. Stabbing at the keys, if you eventually make it then it's onto the next part, and now it starts to get like Star Wars.

Here you shoot at incoming tie fighters. These zoom in and swirl about nicely, with some impressive 3D graphics. They shoot back too and this is a fairly hard part of the game. The death star slowly approaches as you fight your way forward.

The sound is used well here, with the scream of the tie fighters as they approach and the explosions if you hit them. The only thing missing is a firing sound which is a bit of a let down.

Get past this level and it's the one everyone waits for, the trench sequence. Here we get a nice effect of the moving trench with laser turrets to avoid and you can either fly around them or shoot them.

As you get further, ground-based tanks appear as well as more tie fighters, and even though you have 5 shields, as shown bottom right of the screen, it is very difficult to get far here.

Watching the RZX playback things get really tricky as you close in on the exhaust port.

Shooting this and your ship flies away before the usual and inevitable thing happens. After that we get a nice rendition of the Star Wars music, further proving the game's influence.

A difficult game then, but one to keep

trying, as you certainly want to get to the end part yourself.. and it won't be easy.





# K-MOUSE TURBO

The modern mouse interface for your Spectrum

## Click Click...

Back in the day there were several mice available for the Spectrum, but their use was very limited. Usually to just the software that came with them. Sadly there were very few software titles that took advantage of this new control method.

Jump forward 30 years and a modern interface is available but the main difference now is, there are many modified games and programs that work with it.

The K-Mouse Turbo an impressive interface with many options, and since my original video review it has been changed slightly, but we'll get onto that later.

The small manual gives you all the information you need to set it up and the interface itself is about the same size as a joystick adaptor. It has a through port, composite video output, joystick port and PS2 connector.

The interface can be used with a joystick and a mouse, but not at the same time, it will switch to which ever is being used, detecting either a fire button press or a mouse button press.

It is compatible with all models of Spectrum and will work with most, if not all, modern storage interfaces such as the DivIDE.

I don't have any PS2 mice, so I used a normal USB to PS2 adaptor and it seemed to work fine as you would expect.

Once everything is connected you turn on and use the divIDE as normal to load the games or utilities you want to use.

The website that supports the device provides downloads of many games that have been adapted to work with the interface, emulating the Kemptson Mouse.

Initially it was very sensitive, at times too sensitive to use, but this can be easily fixed by a combination of the mouse buttons allowing you to drop the interface back to non-turbo mode.

Playing games with the mouse may sound odd, but there are many games that actually suite this method, in particular Arkanoid-style games. Here moving the bat becomes much easier and more natural.

Another style of game is the first person shooters like Operation Wolf. Here the game is made much easier than trying

to use a joystick or keyboard with more accurate control

As you can tell, it won't make you a better game player though and it does take a little while to get used to the movement.

There are also utilities that get the modification treatment. Art packages, music packages and others. I have to admit though, I failed to get some of them working, mainly because they were 128 programs and I was using this on a 48k model.

I spent a good few days with this, playing games like Lemmings was so much more fun... the cursor was easy to move making for a more accurate game.

Bloodwyche was also a game I tested. This dungeon master-like game works well with the mouse, as this style of game really needs that input type.

The interface, so I found, was difficult to track down, both Velesoft and the original maker (now named Byte Delight) seem not to sell them.

I was lucky to grab my old version quite cheap from eBay, as they are a bit expensive, running in around 45 pounds brand new when you can get them.

Overall then, a great little interface with a lot of options considering you get a joystick port, mouse port and composite video out. If you can grab one cheap they are a nice addition to any collection.



## Where To Get Them

Old versions:  
<https://www.sellmyretro.com>

New version:  
<https://www.bytedelight.com>



## New Version

A new version of this interface has been made since my review. The newer, smarter looking board removes the composite output(which wasn't very good anyway) and PS/2 socket and moves the joystick port to the back.





# MIND YOUR LANGUAGE

George Beckett continues his voyage through Spectrum

## programming languages

In the previous article, we got a first taste of logic programming on the Spectrum, using Micro-PROLOG. Unless you had seen logic programming before, you were probably surprised by the way a Micro-PROLOG program is written (as a series of facts and rules) and run (by submitting a query). The examples we looked at were relatively trivial in their capabilities and did not go much further than we could easily do with a pen and paper so, in this article, we will look at a more impressive program that will hopefully convince you of the potential for problem solving with Prolog.

However, before we look at these programs, we need to get to grips with the key data structure of Prolog: the list; and learn how to create, examine, and manipulate lists. Up until now, we have written relationships (facts and rules) with only simple attributes—starting a family tree for the British Royal Family with rules such as:

```
Henry-vii grandparent-of Mary
```

—and so on. However, complicated models can quickly get out of hand, if we have to introduce each new object one at a time. This is one place where lists can help. Consider the rule:

```
(Elizabeth Henry-vii) parents-  
of (Arthur Margaret Henry_viii  
Mary_tudor)
```

If you think of this as describing the fact that Elizabeth is the mother of four children and Henry VII is father, then you will see that in one rule we have addressed what would have taken eight rules using only simple objects.

The two arguments of ‘parents-of’ in the above rule are called lists and are fundamental to the way Prolog works. In the previous article, we were able to get by without knowing about lists—in part, because the SIMPLE module, provided with Micro-PROLOG, hides some of the list syntax from us. However, if you look back at the version of the British Royal Family Tree database that we created in E-PROLOG, without the SIMPLE module, you will see significant use of lists.

A list in Prolog is a (space-separated) sequence of terms inside parentheses. The following are all valid Prolog lists:

```
( Monday Tuesday Wednesday  
Thursday )  
( likes dog biscuit )  
( a (b c) e (tree) )  
( X Y )  
( )
```

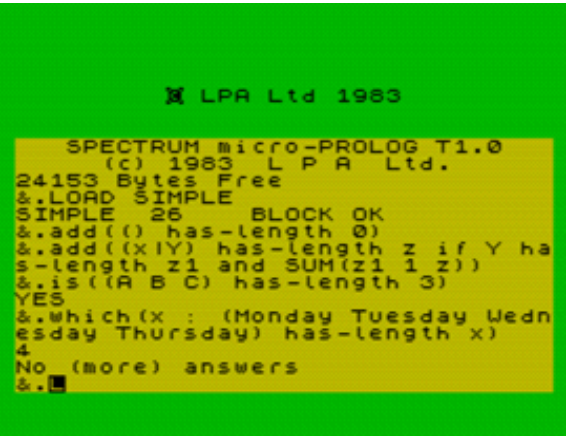
You can see, from the examples above, that lists can contain a variety of elements; including other lists, variables, or even nothing at all. In fact, the empty list is very useful, as we will see later on.

However, the flexibility provided by lists comes at a cost, in terms of accessing the elements. If we go back to our list example, it is straightforward to check whether (Elizabeth Henry-vii) are the parents of (Arthur Margaret Henry\_viii Mary\_tudor), but not to check if Elizabeth is the parent of Mary\_tudor. That is because we have not defined any facts or rules that explain the relationship between Mary Tudor and Elizabeth: to do this, we need to learn how to access the elements of a list using a special Prolog symbol ‘|’ that separates the head of a list from its tail with a little help from the unification operation (that we discovered in the previous article).

Any (non-empty) list can be represented by a pattern of the form ( x1 x2 ... | Y ), where: the elements x1, x2, and so on, before the pipe symbol, are elements of the list and are called the head; and the Y after the pipe symbol is a list of the remaining elements that is called the tail. Using the ‘|’ symbol with unification allows us to access the elements of a list. For example, the query:

```
( x y | z ) = ( Monday Tuesday  
Wednesday Thursday )
```

—would result in the variable x being matched to Monday, y being matched to Tuesday, and the list (Wednesday Thursday) being matched to z. Unfortunately, ‘|’ and unification cannot



on their own deal with lists of unknown length: for this, we also need recursion.

Possibly the most common use of recursion and the partition operation is to work out the length of a list, as follows:

```
add ( () has-length 0 )  
  
add ( (x | Y) has-length z if Y  
has-length z1 and SUM(z1, 1,  
z) )
```

Similarly, we can write a recursive rule to check if an element belongs to a list, as follows:

```
add( x belongs-to (x | Z) )  
  
add( x belongs-to (y | Z) if x  
belongs-to Z )
```

With these new rules, we can begin to interrogate our compact, list-form family tree—for example:

```
add( x parent-of y if Z1  
parents-of Z2 and x belongs-to  
Z1 and y belongs-to Z2 )  
  
add( x mother-of y if (x x1)  
parents-of Z and y belongs-to Z  
)
```

In the first rule, we use ‘belongs-to’ to check instances of the ‘parents-of’ relationship to see if the candidate parent is in the first list and the candidate child is in the second list. For the ‘mother-of’ rule, we assume that the mother will always be the first element of a two-element list, so we do not need to partition the list into a head and tail.

The above is a lightning tour of lists. At this point, you may wish to pause and read Chapter 3 of the Micro-PROLOG Primer, which has a somewhat gentler-paced introduction to lists.

Armed with our new understanding of how to handle lists in Prolog, we can tackle some more challenging

problems. For the first of these, we look at the well-known Crossing The River problem, in which you have to work out a sequence of moves to get a farmer, a fox, a goat, and a cabbage across a river (say, from the north bank to the south) in a small boat, with the restriction that the farmer can only take at most one item at a time across the river and that they can never leave the fox and the goat alone (as the fox will eat the goat) nor the goat and cabbage alone (as the goat will eat the cabbage). You probably heard of this puzzle as a child, and may have had to think carefully to get a solution. Crossing The River is the kind of problem that Prolog can solve quickly and easily, with a suitable set of rule and fact definitions.

The problem involves four ‘objects’: the farmer; the fox; the goat; and the cabbage, which can be on one bank or the other of the river. We could describe this with a four-element list, which records the location of each object in turn. So, for example, the list ( N N N N ) could describe the situation when everyone (everything) is on the north river bank; and ( N S S N ) would describe the situation when the farmer and the cabbage are on the north bank, but the fox and goat are on the south bank—though note this second state is unsafe because the fox will eat the goat. Then, to solve the problem, we need to find a sequence of moves that transforms the list ( N N N N ) into ( S S S S ) without any unsafe moves.

We can define safe states using rules, such as:

```
( X y2 X y4 ) safe-for-goat  
  
( y1 y2 y3 y4 ) safe-for-goat  
if y2 opposite y3 & not y1 EQ  
y3
```

—and the equivalent for the cabbage. The first rule identifies that the goat is safe if the goat and farmer are on the same side of the river (represented by same variable). The second rule identifies that the goat is safe if the fox and goat are on different sides of the river, with facts for opposite:

```
S opposite N  
  
N opposite S
```

The last condition of ‘safe-for-goat’ rule—which checks that the farmer and the goat are not on the same side of the river—is not strictly necessary, though it reduces the potential for Prolog to revisit already ruled-out moves when generating solutions to the problem.

We then need to define the four

possible moves that can be made:

```
(farmer rows himself) transforms  
((X y2 y3 y4) to (Y y2 y3 y4)) if  
X opposite Y  
  
(farmer rows fox) transforms ((X  
X y3 y4) to (Y Y y3 y4)) if X  
opposite Y  
  
(farmer rows goat) transforms ((X  
y2 X y4) to (Y y2 Y y4)) if X  
opposite Y  
  
(farmer rows fox) transforms ((X  
y2 y3 X) to (Y y2 y3 Y)) if X  
opposite Y
```

Notice that we enforce the fact that the farmer must be with whatever they want to row across the river by repeating the same variable. Also, be aware that the lists ‘(farmer rows himself)’ and so on are not going to be accessed element by element: they are written in this way to be more readable. We could achieve a similar result without lists, using ‘farmer\_rows\_themself’. Similarly, the ‘to’ term is simply included to improve the readability: it could be omitted without affecting the program.



Figure 16: Micro-PROLOG solution to Crossing the River problem.





## FEATURE

Having created a scheme for recording the possible states, along with rules for valid moves and unsafe states, the next step is to define the sequence of moves that will solve the problem and to do this we use recursion, as follows:

```
( ) results-in (N N N N)
(x | Y) results-in Z if Y
results-in Z1 &
    x transforms (Z1 to Z) &
    Z safe-for-goat &
    Z safe-for-cabbage
```

This recursive definition of ‘results-in’ defines the base case, in which all the elements will be on the north side of the river if no moves have been made. Then, the recursive step describes how an existing sequence of moves can be extended, only if the new move remains safe (for the goat and cabbage).

Having defined these various rules, a solution to the problem can be obtained with the query:

```
one(x : x results-in (S S S S))
```

Remember the 'one' query produces solutions one at a time and asks if you wish Prolog to search for further solutions. If instead we used 'which', Prolog would produce a couple of answers and then time out trying to find further solutions.

The above program takes around 15 seconds to produce an answer on the ZX Spectrum. Though notice that the answer is backwards, in that the sequence of steps begins at the end of the list and works backwards to the beginning. This is a simplification that allows us to easily use list partitioning in the 'results-in' rule: it's much easier to extend a list at the front than at the end.

You can search for further solutions one at a time, though you will see that the solutions soon begin to have redundant steps in them—such as the farmer rowing them-self back and forth across the river. This highlights a weakness in our program (which some might call a bug), in that it is possible for a solution to revisit a previous state, even though we know this does not help us towards a solution. In the extreme case, Prolog might get stuck in a loop—for example, rowing the farmer and goat back and forth across the river. Each new extension is valid, though the problem never reaches a solution.

To work around this weakness requires a different formulation of the problem, in which the intermediate states are recorded and the recursive definition of the path rules out any new move that returns to a previous state. You can work through this more robust version of the program in Chapter 13 of Clark and McCabe's book<sup>2</sup>, though note it is less intuitive than the version above, so may take you some time to understand.

```
A>b:
B>:-prolog
E-Prolog ver. 2.3      (August 1, 1985)
> (LOAD STD.PRO)

> (LOAD RIVERS.PRO)

> (extend ((H N H N)) ?x ((S S S S)) (S S H S) (H S H
N) (S S S H) (H N S H) (S H S H) (H N H N))
More?? y
Yes. ?x = ((S S S S) (H S H S) (S S H S) (H S H
N) (S S S H) (H N S H) (S H S H) (H N H N))
More?? y
Yes. ?x = ((S S S S) (H S H S) (S S H S) (H S H
N) (S H S S) (H N S H) (S H S H) (H N H N))
More?? n
> █
```

Figure 17: Crossing The River solution in E-PROLOG, on ZX Spectrum +3.

In Figure 17, you can read a version of Clark and McCabe's solution in standard Prolog—that could be run in the E-PROLOG environment on CP/M. I have included some comments to try to help you follow what is going on though, even so, the best way to understand the program is to type it in and do some experiments. If you do wish to run it in E-PROLOG, then you will need to load the definition of the 'NOT' relation from the file STD.PRO first: for example, by executing "(LOAD STD.PRO)". Having done so, you can run the program with a query such as:

```
(extend ((N N N N)) ?x (S S S
S))
```

You will find the program is fast, taking around 5 seconds. This is in part because the algorithm does not waste time on looping solutions and possibly because the standard syntax produces a leaner implementation than the SIMPLE module.

<sup>2</sup> The 'Crossing the River' solution is not included in the Micro-PROLOG Primer written for the ZX Spectrum. You will need the generic "micro-PROLOG: Programming in Logic" for this.

```
((illegal (?x ?y ?y ?z)) [Fox would eat goat]
  (opposite ?x ?y))

((illegal (?x ?y ?z ?z)) [Goat would eat cabbage]
  (opposite ?x ?z))

((opposite N S))

((opposite S N))

((to (?x ?x ?y ?z) (?w ?w ?y ?z)) [Farmer rows fox]
  (opposite ?x ?w)
  (NOT (illegal (?w ?w ?y ?z)))))

((to (?x ?y ?x ?z) (?w ?y ?w ?z)) [Farmer rows goat]
  (opposite ?x ?w)
  (NOT (illegal (?w ?y ?w ?z)))))

((to (?x ?y ?z ?x) (?w ?y ?z ?w)) [Farmer rows cabbage]
  (opposite ?x ?w)
  (NOT (illegal (?w ?y ?z ?w)))))

((to (?x ?v ?y ?z) (?w ?v ?y ?z)) [Farmer rows themselves]
  (opposite ?x ?w)
  (NOT (illegal (?w ?v ?y ?z)))))

((belongs-to ?x (?x | ?Y)))

((belongs-to ?x (?z | ?Y))
  (belongs-to ?x ?Y))

((ends-at (?x | ?Y) ?x))

((loop-free (?x | ?Y)) [Check we do not return to previous state]
  (NOT (belongs-to ?x ?Y)))

((one-step-extension (?x | ?Y) ?Y) [Next possible step]
  (ends-at ?Y ?z)
  (to ?z ?x))

((extend ?x ?x ?z) [Base case for recursion]
  (ends-at ?x ?z))

((extend ?x ?y ?z) [Recursive extension of possible solution]
  (one-step-extension ?x1 ?x)
  (loop-free ?x1)
  (extend ?x1 ?y ?z))
```

Figure 18: Standard Prolog solution for the Crossing The River Problem.

To become proficient in Micro-PROLOG (or Prolog, more generally), there is quite a bit to learn. You need to understand how Prolog resolves a query, how it uses unification to evaluate potential solutions, as well as how to exploit concepts such as backtracking, cuts and recursion to your advantage. It is not possible to do that in a couple of articles, though there are a number of books that can provide the information you need. If you are interested to learn more, in addition to the Micro-PROLOG Primer, I would recommend Tom Conlon's "Learning Micro-PROLOG: A Problem-solving Approach", which should be relatively easy and cheap to buy from online auction sites.

More from George next issue







Evgeniy Barskiy,  
Dmitri Ponomarjov,  
Oleg Origin (Russia),  
Sergey Kosov,  
Marco Antonio del Campo

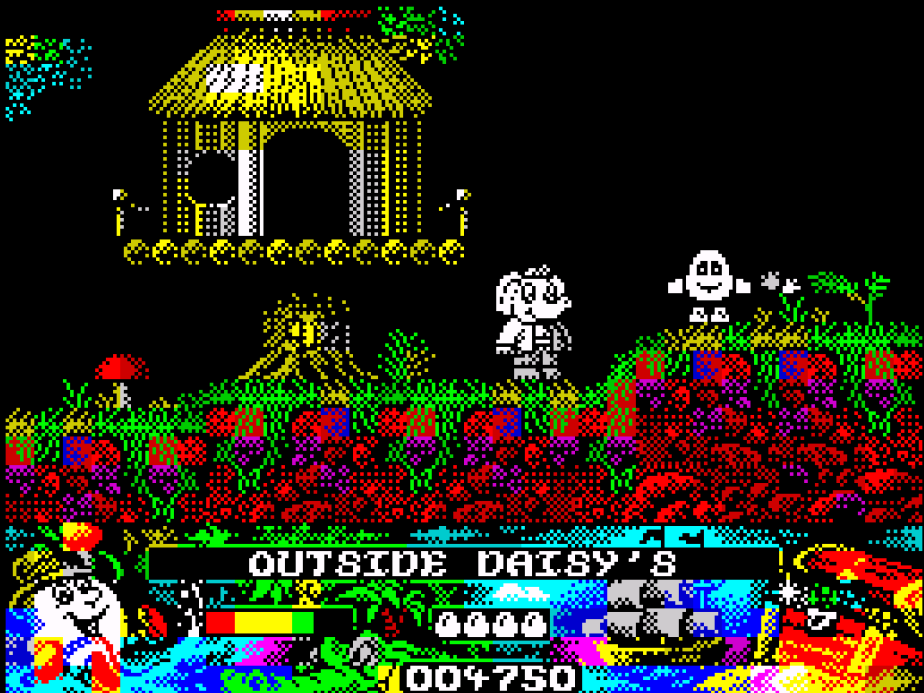
This excellent game is a re-write of the original 1992 game by Codemasters, and indeed they have allowed this game to be released adding extra weight to it.

This is a stunning remake too with beautiful and stunning graphics and added 128k music, in fact 6 tracks are included.

The game follows the usual Dizzy format, seeing the main character going on little quests and meeting many little characters along the way. Each character will either just chat, give a hint or send our hero on a quest.

Each character is well drawn and there is even CJ , who has a little joke with Dizzy. Touches like this really make a difference and the game oozes quality.

To find many of the locations you have to jump off screen in the hope you find something, which is a bit scary and could have been avoided, but I



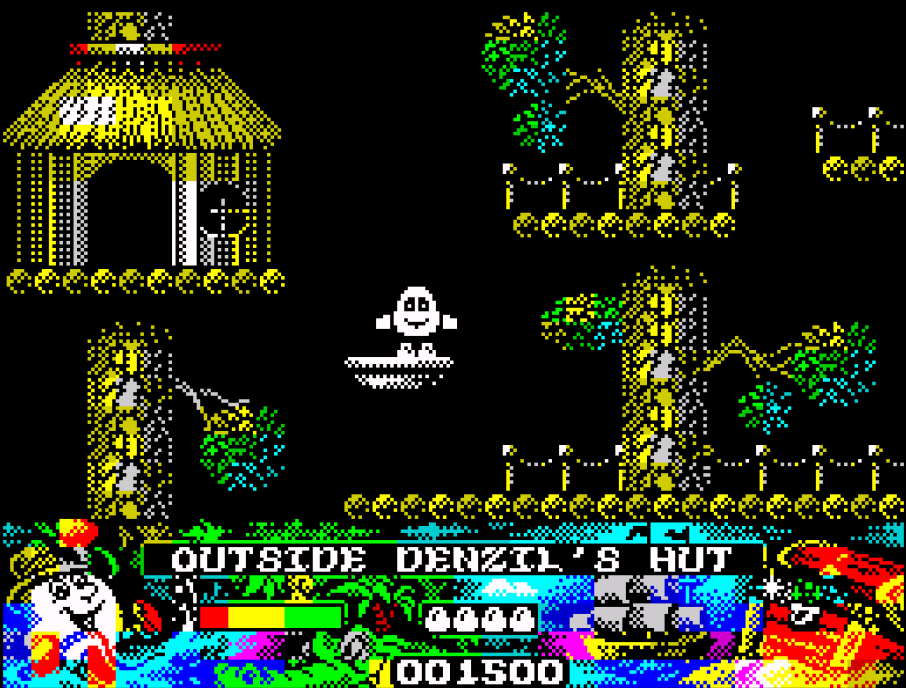
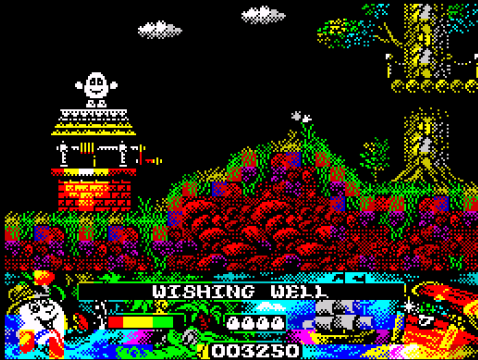
suppose it adds a bit more mystery and sense of adventure.

This jumping into thin air is the case when trying to find the screwdriver, in an early quest. I searched all screens I could and found nothing. Then I decided to jump into thin air.. and suddenly I was walking on clouds that then allowed me to drop down into new screens.

The music certainly helps the game along, and I spent ages playing this. It somehow just distracts you from life and lets you get involved in the game and the quests.

The graphics are excellent, the music is great and control is easy and forgiving.

This is highly recommended.



Features:

- New original 50 FPS engine, written from scratch
- New original graphics, inspired by Amiga version
- Colourful and detailed illustrations between levels
- 136 totally reworked locations
- 6 beautiful AY-melodies
- Detailed uncut scenery texts from Amiga.

# SPECTRUM

COMPUTING



ZXDB DATABASE  
POWERED SOFTWARE  
SEARCH



CLASSIC GAMES,  
HARDWARE, MAPS AND  
MAGAZINE REFERENCES



UPDATED WITH  
CURRENT SOFTWARE  
RELEASES

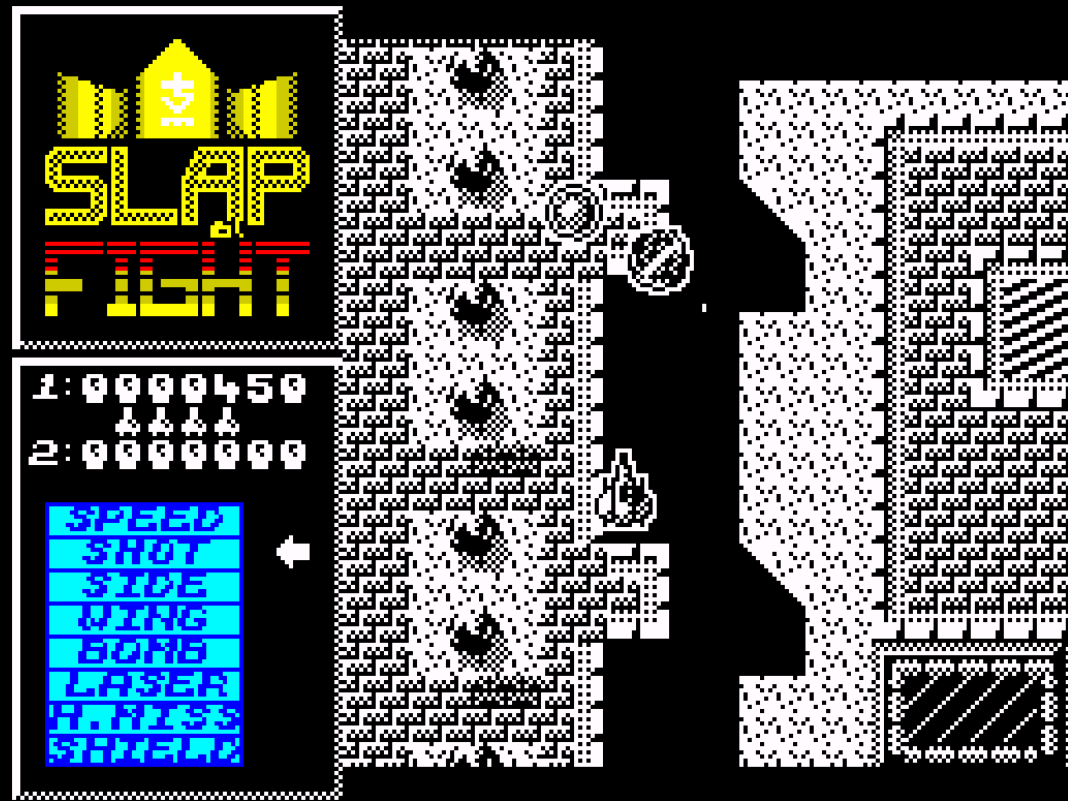


[spectrumcomputing.co.uk](http://spectrumcomputing.co.uk)





Imagine Software 1987



Slap fight was an arcade game released by Taito in 1986. It was a difficult vertical scrolling shooter with large colourful graphics, detailed backgrounds and hard-as-nails gameplay.

The usual power-ups are available too, along with boss battles and the bullet-hell experience that some players love.

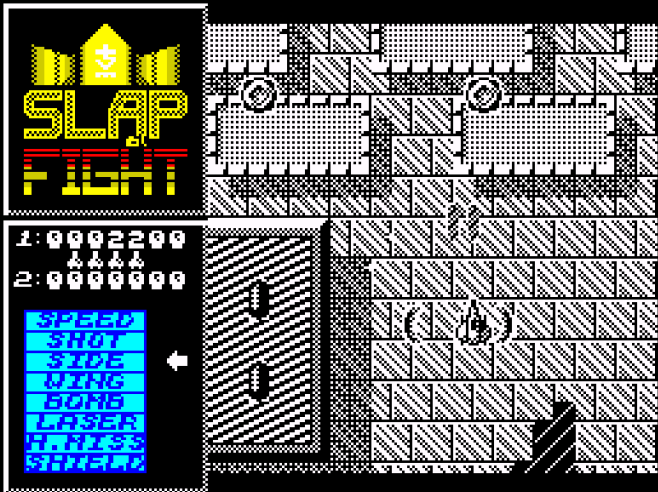
The Spectrum version was released by Imagine in 1987. As most of you will know, I love shooters so I was really looking forward to getting into this game.

The game is in monochrome, which although allows for smooth scrolling and fast action, can sometimes make it difficult to see enemy shots. In fact it can be almost impossible to see your

ship during some stages of the game.

The backgrounds are detailed and look nice, but do tend to blend into nothingness as the action hots up, and the enemies start to flood the screen. Houses look like pipes that look like bunkers that look like enemy aliens. Sometimes you just keep firing and hope for the best.

The screen ratio has been changed by the addition of a side panel to give a more arcade like feel, but this restricts movement and can make things tricky.



As you hit enemies, they sometimes leave behind stars, again these are sometimes difficult to see. These stars allow you to upgrade your ship with various powerups.

On the left side of the screen is a list of options and as you collect stars, an arrow points to the option you can have. To select one you just press space. If you are playing with a joystick, this obviously means you still need the keyboard.

Some background objects block your shots, but it's not clear which ones, so really it's down to playing the game a lot until you map the game in your mind so you can avoid them because, although they block your shots, they do not stop the enemy or their shots – a bit unfair I think.

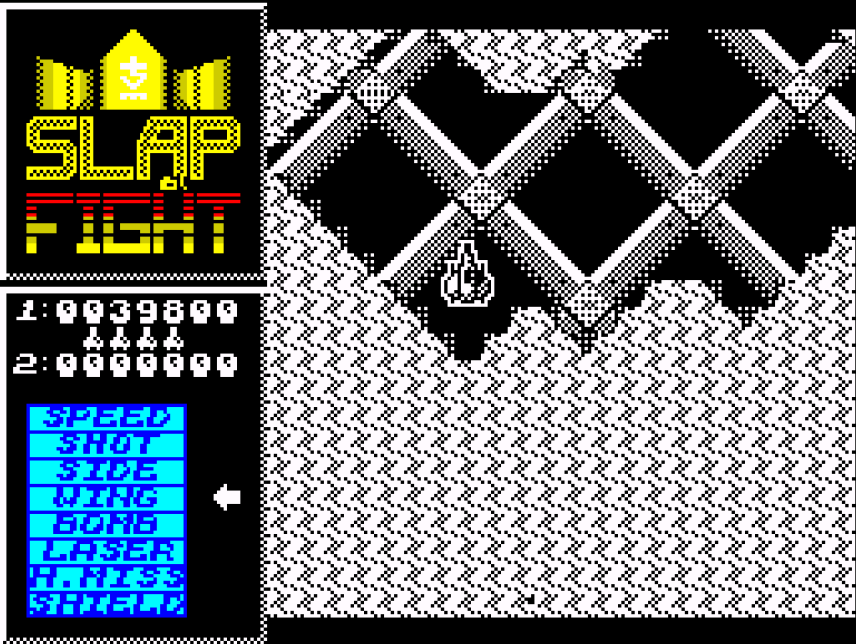
The big let down though is the sound. Even on 128k machines, it is pretty poor. Just simple bleeps when firing and short bursts of white noise for explosions. We should really have more for a game released in 1987.

The action is fast and control is crisp, but the difficulty of the arcade has been transferred, making it just that bit too hard to make it enjoyable, at least for me because of the colour scheme.

I tried many times to make progress, each time being the victim of unseen enemy shots which soon became frustrating.

Watching the RZX playback, the game does look challenging, which is how arcade games are designed, they should encourage players to keep putting money into them, but home versions should not have that goal.

For me then, a disappointing game, and one you should only try if you are prepared to put a lot of time into it and who enjoys a really challenging game.



# BRAINSTORM

Micromega 1983

This is a very simple memory game, the sort of thing that has been around for years and is relatively easy to implement – which is why it can be found in various type-ins.

This however, is a commercial release.

The idea, is to locate the number shown at the bottom of the screen by entering a two digit code. The code represents a box displayed at the top of screen, one block in a grid of many.

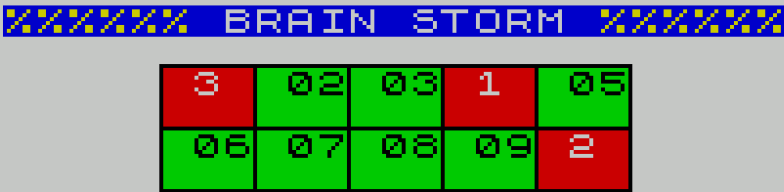
Each time you select a block, the number hidden behind it is shown for a short amount of time.

If it is the correct one you were looking for, it remains visible and you have to find the next one in the sequence.

There is a limit on how many chances you get, so you have to remember which numbers you have seen behind the blocks and hopefully complete all of the numbers in the given limit.

It's not a fast paced game, as there is no time limit, and it's not particularly skillful. You just need to recall where the numbers where behind the grid of boxes.

As the levels get harder, there are more boxes.



You now have to find 4  
Which rectangle would you like  
to open? Enter 2 digits

Goes Left: 02

Graphics are not worth mentioning, because it's just a series of boxes. The sound consists of standard beeps.

It is annoying that you cannot enter the next guess until a series of beeps have finished, and this can mean you enter the wrong number.

If you know the next number is behind box 01 for example, and type 01 before the beep have stopped, you could end

up typing 1 – and then have to follow it with another number that will make it a wrong guess.

It's a slow paced game of memory and there is not a lot more to say about it.

If memory games are your thing – here's one to try.



# GRUMPY OGRE'S ADVENTURE PAGE

Welcome back to strange places where your mind wanders freely and your brain shifts into a higher gear.

Well, here we are in the new year and another issue means one thing, more adventuring.

One of the big debates that went around during the heyday of Adventures, was the inclusion of graphics. Obviously the hard core adventurer wanted nothing to do with this new fangled artistry, and only words would do.

This was born from the early days of the game, played late at night on old mainframe computers that did not have graphic capabilities. To grab the player's attention, the text had to be rich, descriptive and imaginative.

As computing power moved on and the home micros began to grow in popularity, adventure games were an easy step for developers. There was no requirement to produce, animate or move graphics, no sound and if they wanted, they could just use the built-in keyboard routines.

Why was there a need to add graphics in the first place? Who knows! Maybe to bring in other players who did not want



a page a text as a game possibly. What ever it was, the use of graphics slowly infiltrated games to the point where, in the later days, they were used to actually sell the games. Look no further than the games from Magnetic Scrolls for proof of that.

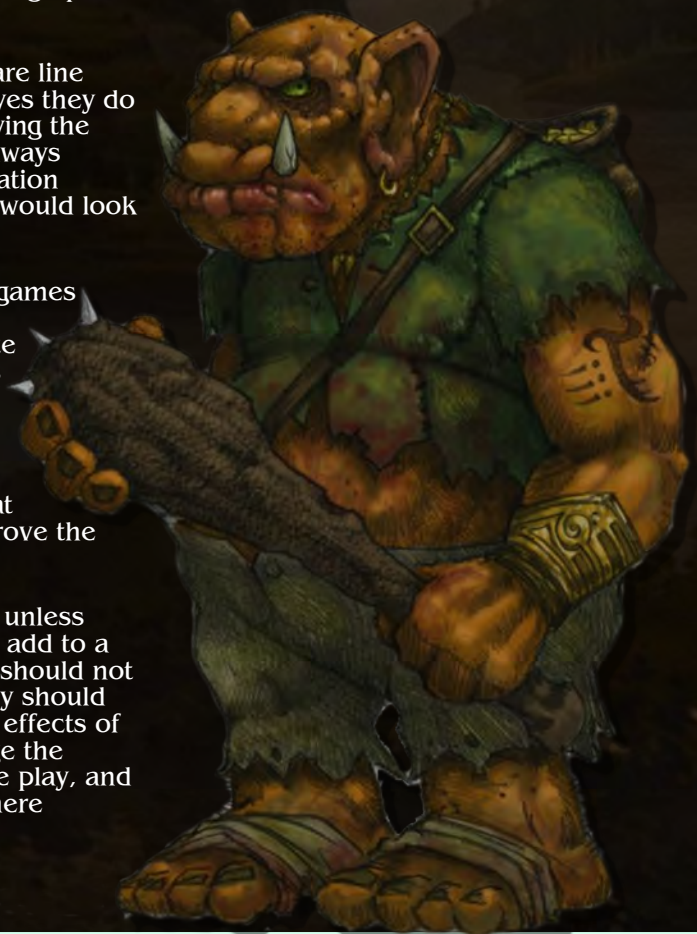
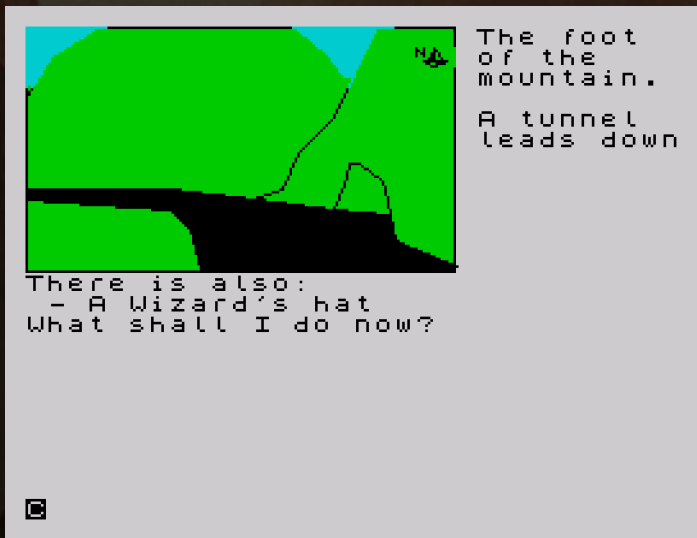
I am not saying they should not have used that to sell the games, but with limited memory on the Spectrum, the space would be better used for more puzzles, objects and locations.

One of the first graphic adventures on the Spectrum may come as a surprise to you, it was The Hobbit from Melbourne House. This ground breaking game was released in 1982 and was much admired by the game playing public for not only taking Tolkien's world and cramming a lot of it into just 48K, but also for the quality of graphics it used.

Looking back now, yes they are line drawn and slowly filled, and yes they do take a while to draw, but playing the game for the first time was always exciting. Wondering what location would come next and how it would look on screen.

Compare this game to other games released in 1983, and the difference is quite plain. The others had much smaller graphic areas, and many had very badly drawn blocks that didn't really improve the game.

Some argue that unless graphics actually add to a game, then they should not be included. They should give clues, show effects of puzzles or change the direction of game play, and not just be sat there looking nice.



Examples of early graphic games such as Magic Mountain by Phipps Associates or Kentilla by Micromega show just how bad they were and what little they brought to the game. This changed however as programmers got more cunning.

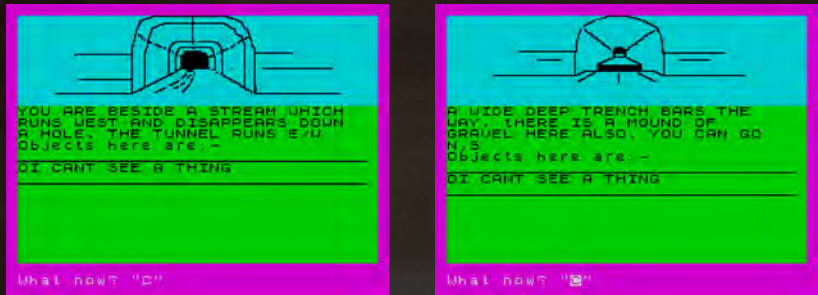
An often used trick in early games was to re-use all or parts of the image for multiple locations. This was used in many games including Smugglers Cove from Quicksilver. This technique does use less memory but leaves the player thinking what was the point.

One game (probably more) used this method much to my annoyance, and had two identical locations. Look back at a previous rant to find that one because I'm not going to waste my time on it.

As memory tricks and compression techniques became more common, along came games such as Jewels Of Babylon with excellent graphics and decent gameplay, although there were flaws. The Marvel series also proved you could make games look good and play well.

Despite having excellent graphics though, games like this often had to resort to short, uninteresting location descriptions, instead relying on the graphics to paint a picture.

Isn't that missing the point



though? Creating a world in the players imagination, letting them visualise the places they are visiting, letting them make their own magical and dangerous environments.

Adding graphics then, in my opinion, takes away that magical vision players get while exploring these wondrous places.

As graphics grew to be more important than they should be in interactive fiction, games used more of them, eventually reaching the dizzy heights of Dungeon Master and before it, Shadowgate.

The clue though, is in the name. Originally called adventures, they moved to Text Adventures and are now known as Interactive Fiction. Come on folks, the clues are there!

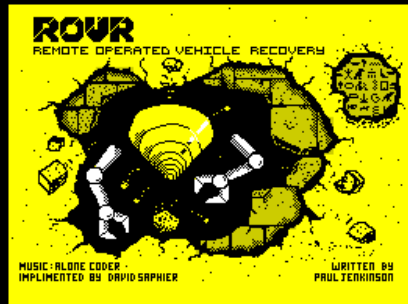
It's almost the equivalent of reading "Lord Of The Rings" and moving gradually to "Join The Dots" books. Have our brains stopped working, have we lost our imagination? Can we no longer imagine fantastical places where we are free to do what we please (as long as it fits into the Verb Noun restriction)?

I suspect time is the problem. Yes, that precious thing we have less of the older we get. I remember playing Shades for hours over weekends. Sometimes from 7pm to 2am. Now, sadly we simply can not invest that amount of time into our ever more busy lives.

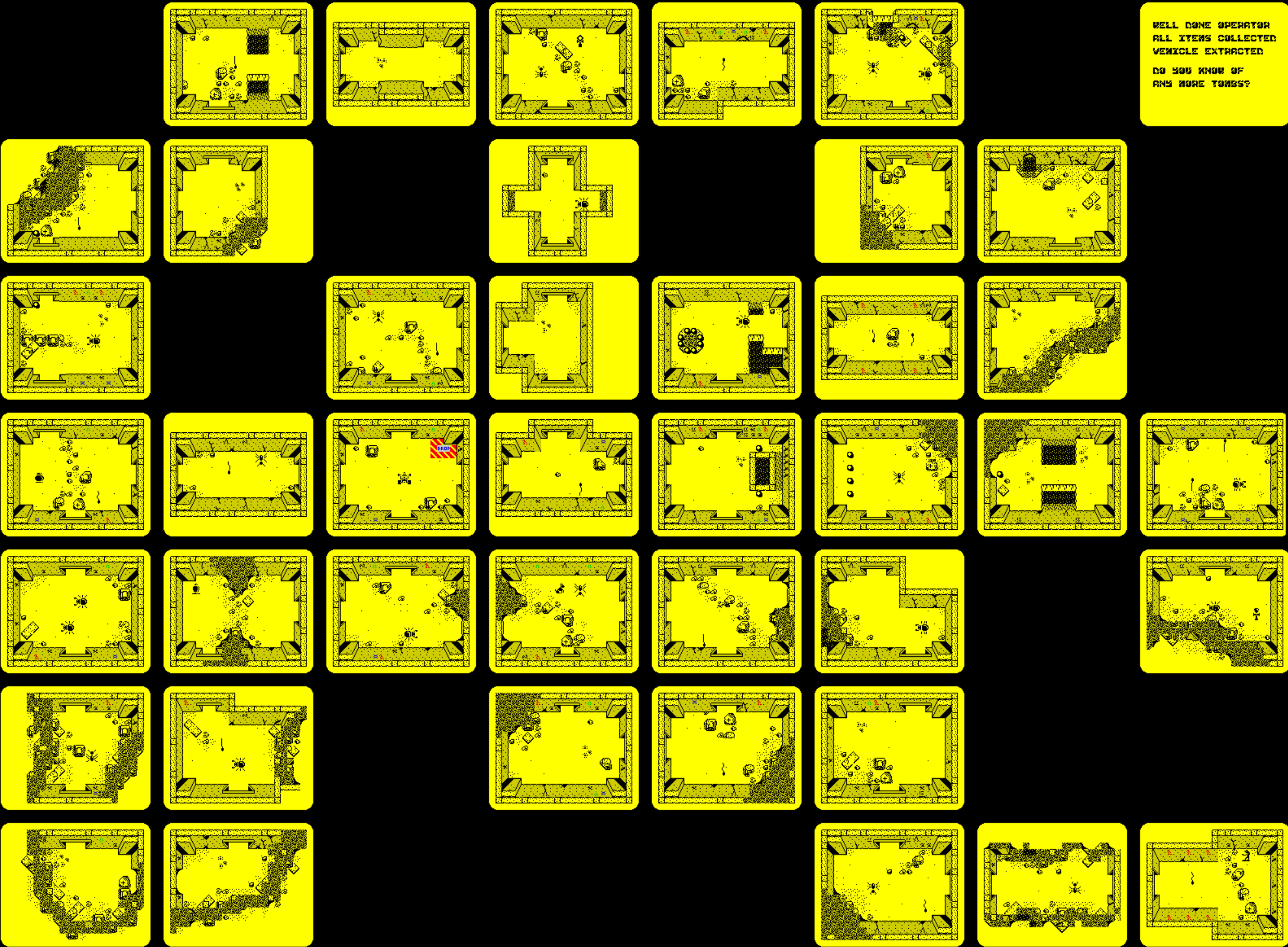
Sad times for adventure games. At least I can sit here, grog in hand, waxing whimsical about these etchings, and remembering a time when I could lose myself in other worlds for hours, sometime days. Gone are such times for me.

Tarra.

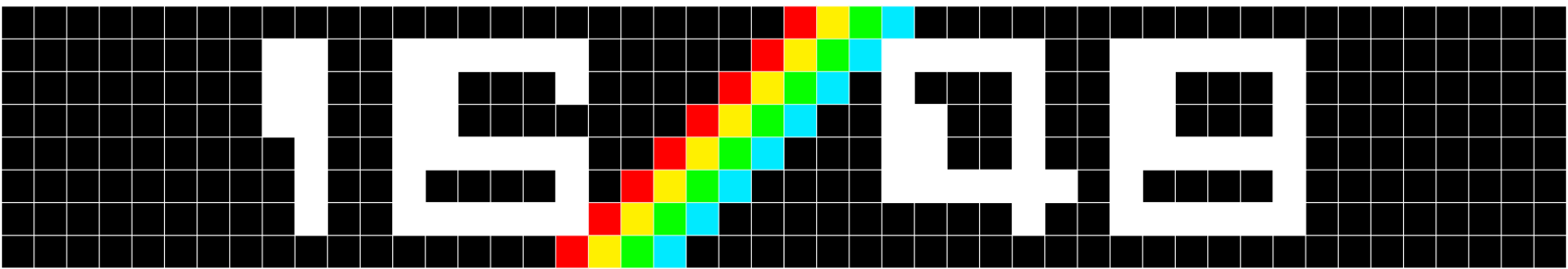




Map created by Pavero, 2018  
<http://maps.speccy.cz>







# Issue #3 February 1984

## Contents

As usual this issue starts off with a contents listing showing a pretty packed tape.

## Spider

This simplistic game has you playing a spider trying to eat a lot of flies. There is another spider and a wasp to avoid. The game plays much like light cycles, with you and the other spider leaving trails as you move around the screen. If the spider runs into a dead end though, it regenerates and continues to move. This BASIC game uses a few machine code routines for large type found in previous issues of the tape.

## Editorial

A quick mention of George Orwell to start with, as this issue was released in 1984 and then follows a few thanks and promises of good things to come. There is mention of a new multi-part adventure that we shall see later on the tape.

## Readers Letter

Using a neat scrolling routine, this letter also utilises a 42-character display to offer some POKES for readers.

## Elements

An educational program that deals with up to 100 elements. You can choose the number and then can view or be tested on them. This program uses a 64-character routine, making the text a bit tricky to read and takes ages to draw on screen.

## Machine Code Routine

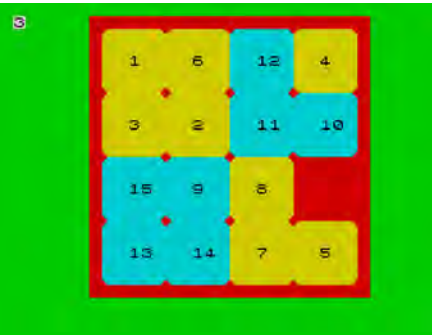
This useful scrolling routine will let you scroll the screen in pixels up and down or left and right. You can also specify the size of the scroll area, top, middle or lower thirds.

## The Long Way Home

This is the first part of their new multi-part adventure game. For 48k users, the game has instant graphics which look quite nice, but the game's response time to anything other than directions is a bit long. This takes the edge away from the game itself. The game also beeps while trying to work out a response, which not only wastes processor time but soon gets very annoying.

## Unknown Puzzle

This is an un-named (at least when loaded) sliding puzzle game. You move blocks into the space using the cursor keys and have to get them in the right order.



## Dungeons and Green Men

The adventure section gives hints for Golden Baton after first giving an overview of the game and a quick review. To get hints though, you have to enter the last 6 digits of the publishers (Digital Fantasia) telephone number.

## Vortex

This reader's game is a version of snakes and ladders and is a bit odd in the way it is played. You press a key to roll the dice and the player moves. There are teleports to deal with but no visible score on screen, so there is no indication of progress. You have to get to 100 and then back again, but there is no real skill involved, you just press a key to roll the dice.

## Reviews

3D Desert Patrol from CRL, 3D Combat Zone from Artic Computing and 3D Tanx from DK'Tronics are reviewed. As usual we get a screen shot and review text written over it. This gives a good view of how the game actually looks along with short text details and opinions.

## BASIC Renumber

This is a nice little tool for all the BASIC programmers out there. It allows you to renumber all or blocks of code in your programs maintaining any GOTO, GOSUB, LINE, LIST, RESTORE and RUN commands.

## Compo Winners

Animation competition winners are shown including a walking elephant that proceeds to take a dump on screen. There is also a steam engine which looks quite nice and the creator wins an RD Digital Tracer.



## ABOUT 16/48

16/48 was a tape-based magazine that began publication in November 1983. It wasn't the first magazine of this type for the Spectrum, that was Spectrum Computing.

16/48 came attached (with glue) to a large A4 sized card with a paper magazine-like style on the front, and a list of contents on the back.

The magazine ran from November 1983 to June 1985.





A collage for 'TSS THE SPECTRUM SHOW' featuring a film strip with various retro gaming and computing images. The film strip includes: a Spectrum hardware box, a racing game, a game cover for 'Planet of the Apes', a game titled 'CIDEISA', a person typing on a keyboard, a game with a large eye, a computer setup with an Atari 2600, a game with a grid of colorful blocks, and a game with a blue knight. The background is dark with faint text like 'HARDWARE', 'FEATURES', 'GAMES', and 'ARCADE CLONES'. A copyright notice at the bottom reads 'Magazine copyright Paul Jenkinson'.

[illegible]