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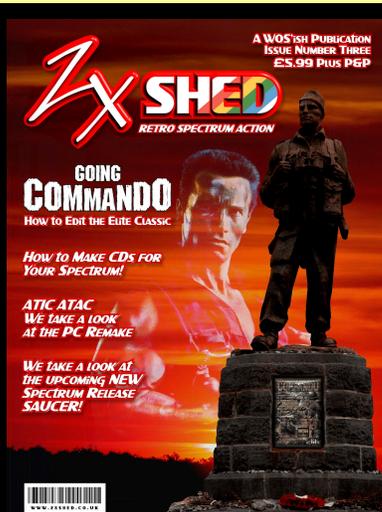
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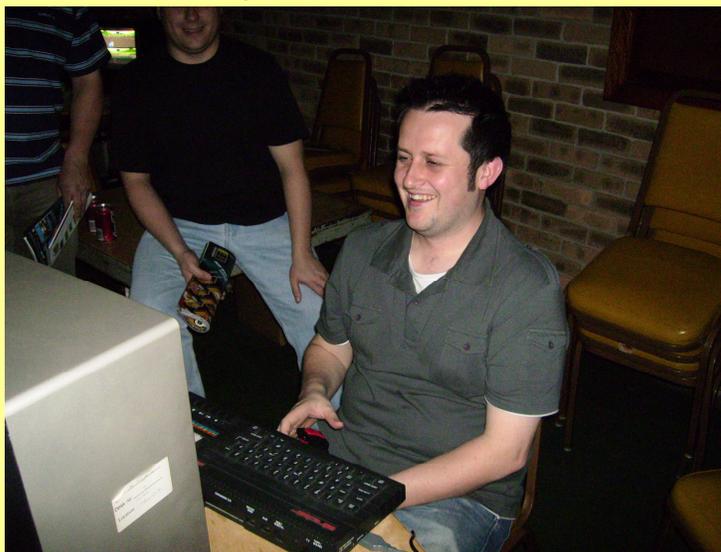
It's been a great year for games – Jonathan Cauldwell has been his usual rampant self, banging out cracking new titles in his sleep, and of course now we have Bob Smith back in full creative flow. But the big news is that Joffa Smith is back on the scene and announced that he is working on a new title. Keep an eye out for the next issue where we will be reviewing the new game as well as some other goodies from Joffa. In addition, we can now tell you that Firefly II is also planned for next year. The current working title is "Buzz saw". Think large robotic spider/crab - et al.

As for other happenings – there was the retro-fusion event that was attended by my good self. I went along to grab interviews, photos, etc. Unfortunately, things didn't work out that way. Well, you see, there was a bar. Things were going well until a certain member of the Retro Gamer team decided to buy lots of drinks. It's not fair to name him, so I'll refer to him as Martyn X. The reputation of ZX Shed was at stake and large

amounts of alcohol were consumed. On the plus side, ZXS definitely won.

It was whilst I was putting the finishing touches to the re-vamped version of this issue that I heard the sad news of Jim Langmeads passing. As many of you know, Jim was a regular visitor to WoS, and his Specky Spoilers site was a vision to be proud of. Look out for a full tribute in a future issue.

Lee Fogarty
Editor



Martyn X wonders who nicked his pint.

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CONTACT US

Got something to say? You can contact any member of the ZX Shed team at contact@zxshed.co.uk

If you'd like to make a submission to the magazine, check out the website! <http://www.zxshed.co.uk>



Mr. Anonymous has been at it again! This time, the classic Commando gets his treatment. In the first of a mega-series, we show you how to edit the game.

Making levels in Commando is easy, real easy. Even the most novice of Spectrum users can have a go.

The good news is that we don't have to worry about the enemy soldiers. They will interact with the scenery automatically. For the majority of the time, all that is required is for you to look up the code for the graphic you require and decide which column to locate it. There are some small exceptions to the rule however, such as having to slot the different components that make up bridges and rivers together with predetermined amounts of space.

At the end of this series we will print a list of graphical codes for reference. The graphical code for a tree is \$83 and for a single grenade it is \$0F.



Level 1 before we start

We will place the tree in column 10 (ten) and the grenade in column 1 (one). In hexadecimal notation the equivalent of 10 is \$0A and 1 is \$01.

Let's put them into place then:

```
$83, $0A ; Here's the tree in column $0A
$0F, $01 ; Here's the single grenade in column $01
```

Putting these items one after another means that they will appear on the same **ROW**. That's all very well until we want to put objects at different heights on the screen.

In order to achieve this we use Land Space and a quick glance at the table shows the code of Land Space to be \$00. Inserting Land Space tells the program to move up the screen before commencing to draw a new object. How far we move

up the screen depends on the value we give to Land Space. The value can be a number from \$00-\$FF (0-255). The smaller the number, the less we move and likewise, the greater the number, the further we move and the more land we have to traverse before reaching the next object.

Examples

```
$00, $42 ; Example 1
$00, $CE ; Example 2
$00, $6A ; Example 3
```

Let's update our program then:

```
$83, $0A
$00, $33 ; Here's our "space"
$0F, $01
```

This means that there will be a nice amount of walking space between our tree and the next object, a single grenade. In this case it works out to be approximately half a screen worth of space.

Now that our program is starting to grow we better start to keep an eye on it so load up your copy of Commando and open your assembler.

I will be using Spin's assembler. EmuZWin has a built in assembler and works in a similar fashion. For other users such as those using Spectaculator I recommend that you first type out the program using notepad and then use Pasm0. (Full instructions at end of this tutorial) <http://www.arrakis.es/~ninsesabe/pasm0/>

Note: during testing "graphical corruption" will occur but do not worry. At this stage we are testing the design only.

The code for level 1 starts at \$9236.

```
org $9236 ;this is the address of the start of level one
defb $83, $0A ;a tree
defb $00, $33 ;space
defb $0F, $01 ;a single grenade
```

```
defb $00, $FF ;this is just some 'extra' space so as not to clutter our level with the original game data which is still in memory
```

With Spin, go to Tools>z80 assembler and the assembler will open showing a new page. Now type the following but press the TAB key before entering each line.

Load up your original game of Commando then go back to the assembler window and press ALT+A to assemble the data. If all has gone well, the assembler will report NO errors and you can now start the game.



How Level 1 should look now

Hey, look at that! There's our tree and grenade but what's this?!? When we get killed the game resets. This brings us to an important lesson about spawn points:

\$22 Spawn Point/Level End

This (\$22) will be followed by either \$00 or \$01. \$22, \$00 signifies a spawn point i.e. after death you will regenerate at this point. \$22, \$01 signifies that you would like the level to end and fight the last remaining barrage of soldiers.

An important point to remember here is that ALL new games must start with \$22, \$00. Upon death the program backtracks to the last instance of \$22 and then adds two so it knows where to restart from after you lose a life. At the end of a level, the last piece of code will always be \$22, \$01 and thus adding two here will always point to the start of the next level.

However, at the beginning of level one we have no previous 'Level End' code and thus must enter a spawn point first. Failure to do so will result in a crash.

So we can see that we need to start our level with \$22, \$00 and our program now reads thus:

```
org $9236 ;start of level
one
defb $22, $00 ;this will ALWAYS
be your first
line

defb $83, $0A
defb $00, $33
defb $0F, $01
defb $00, $FF
```

Another point to remember with spawn points is that if we have an instruction such as the alarm sounding or NME with rocket launchers in action (explained later) then we must initiate these again after a spawn point has been reached.

Next, let's add a sandbag position.

\$8A, \$8B, \$8C Sandbags

A simple case of deciding which column you want the sandbags to appear in. Just take into consideration that the end sections take up two columns and the middle one three columns.

Example 1

```
$8A, $00 ;
$8B, $02 ;a full width sandbag
defensive position
starting at column
$00

$8C, $05 ;
```

Example 2

```
$8B, $1D ;draws a semi width
(left and middle
sections only) sandbag

$8A, $1B ;defensive position at
the RHS of the screen
```

Example 3

```
$8A, $00 ;draws a very wide
sandbag defensive

$8B, $02 ;position starting at
column $00

$8B, $05 ;The second $8B won't
contain an NME
soldier though as
they
```

```
$8B, $08 ;appear only every
other instance of $8B.
This example contains

$8C, $0B ;two enemy soldiers
behind the sandbags
```

That seems simple enough so we will draw the full width sandbag position to the right of the screen starting in column \$14.

Our program now becomes:

```
org $9236
defb $22, $00
defb $83, $0A
defb $00, $33
defb $0F, $01
defb $00, $26 ;I've added a
bit more space
thus

;moving up the
screen again

defb $8A,$14 ;draw sandbags
LHS in column
$14

defb $8B,$16 ;draw sandbags
middle with NME
starting at
column $16

defb $8C,$19 ;draw sandbags
RHS in column
$19

;i.e. 3 columns
after the middle
section

defb $00, $FF
```

Now you've got the hang of sandbags let's add a trench.

\$23, \$24, \$25 Trenches

Exactly the same principle as for sandbags except the middle section takes up four columns.

Example 1

```
$23, $05 ;
$24, $07 ;draws a full width
trench starting at
column $05

$25, $0B ;
```

Example 2

```
$23, $09 ;draws a very wide
trench starting at
column $09

$24, $0B ;this example will
have the full quota of

$24, $0F ;four NME soldiers as
for every middle
section

$24, $13 ;drawn ($24) there
will be an NME
positioned

$24, $17 ;there unlike the
sandbags

$25, $1B
```

As the sandbags are to the right we will place the trench to the left starting in column three.

```
org $9236
defb $22, $00
defb $83, $0A
defb $00, $33
defb $0F, $01
defb $00, $26
defb $8A, $14
defb $8B, $16
defb $8C, $19
defb $00, $40 ;Adding a bit
more
space to move up
the screen again

defb $23, $03 ;draw a trench
LHS in column
$03

defb $24, $05 ;draw a trench
middle with NME
in column $05

defb $25, $09 ;draw a trench
RHS in column
$09

defb $00, $FF
```

Another grenade bonus is required now I think. We will we also add a boulder with NME, a mortar and another tree too. These all follow the same principle whereby you just need to decide which column to place the object in.

```
org $9236
defb $22, $00
defb $83, $0A
```

```

defb $00, $33
defb $0F, $01
defb $00, $26
defb $8A, $14
defb $8B, $16
defb $8C, $19
defb $00, $40
defb $23, $03
defb $24, $05
defb $25, $09
defb $00, $37 ;Added more
                space after the
                trench
defb $10, $0A ;draws a triple
                grenade in
                column $0A
defb $83, $12 ;draws a tree in
                column $12
defb $87, $05 ;draws a boulder
                with NME in
                column $05
defb $12, $00 ;draws a right
                mortar in column
                $00
defb 00, $FF

```

When you test out the above you will immediately notice that the new items are all on the same row. This is because we didn't add any space in between drawing the objects. We only added it after drawing the trench and the next four items appear one after another with no space between. When you want objects on the same row just don't add any space.

Next, we will add a cliff.

\$82 \$26 Cliff and Cliff Edges

In normal circumstances the screen comprises of columns numbered from \$00 (LHS) to \$1F (RHS). When dealing with Cliffs we can also add \$80 onto the column to "mirror" the image.

Note that the last column we can start drawing a cliff (due to the size of the graphic) so that it fits on the screen without overlap is \$1A. This also applies to other larger objects.

Example

```

$82, $10 ;draw a cliff in
          column $10
$82, $8A ;draw a cliff in
          column $0A and mirror
          it by adding $80
          ;Result is a nice big
          cliff.

```

To complete the cliff we add cliff edges. With cliff edges we use the same system as for cliffs.

Example

```

$82, $10 ;draw a cliff in
          column $10
$82, $8A ;draw a cliff in
          column $0A
          and mirror it by
          adding $80
$26, $09 ;draw a cliff edge in
          column
          $09
$26, $96 ;draw a cliff edge in
          column $16 and
          ;add $80 to mirror
          the image.
          ;Result is a nice big
          cliff with cliff
          edges.

```

However, when we are drawing cliffs at the edge of the screen it is normal practice that we wish for soldiers to jump off them and attack. To allow this we must make a slight change to the numbers we add onto the column value for the cliff edges. For single cliffs you add \$40 onto the column and to mirror the image add \$C0.

Example

```

$82, $9A ;draw a mirrored
          cliff in column $1A
          (adding $80 to
          mirror)
$26, $59 ;still drawing a
          cliff edge in column
          $19 but now adding
          $40

```

Or

```

$82, $00 ;draw a cliff in
          column $00
          i.e. LHS of screen
$26, $C6 ;draw the cliff edge
          in column $06 but
          mirror it by adding
          $C0

```

Now watch as the soldiers jump off the cliffs to attack.

To allow jumping from double cliffs, a normal and a mirrored cliff side by side, you add \$60 onto the column and when the image is mirrored you add \$20.

Example

```

$82, $80 ;draw a mirrored
          cliff in column $00
          (adding $80 to
          mirror)
$82, $06 ;draw a cliff in
          column $06
$26, $EC ;draw a mirrored
          cliff edge in column
          $0C
          ;adding $C0 to
          mirror then $20 to
          allow cliff jumping
Or
$82, $1A ;draw a cliff in
          column $1A
$82, $94 ;draw a mirrored
          cliff in column $14
          (adding $80 to
          mirror)
$26, $73 ;draw a cliff edge
          in column $13 (add
          $60 to allow cliff
          jumping)

```

I've chosen to include the single cliff that soldiers can jump off and place it at the RHS of the screen.



Cliff jumping for beginners

Well, that's enough to be getting on with for this issue. Next issue, we will be looking at POW, caves, transport and much more!

LOST TREASURES

Welcome to Lost Treasures, a look at some titles that may have been ignored when originally released for several different reasons, either because they weren't released by a major software house or because they didn't get the exposure they deserved.

Software Projects are one of the most well known Spectrum games companies. Their biggest hits include Manic Miner and Jet Set Willy among others. They did release a couple of other titles, however, that didn't achieve the fame of Matthew Smith's iconic creations. Two of these are Ometron and Push Off.



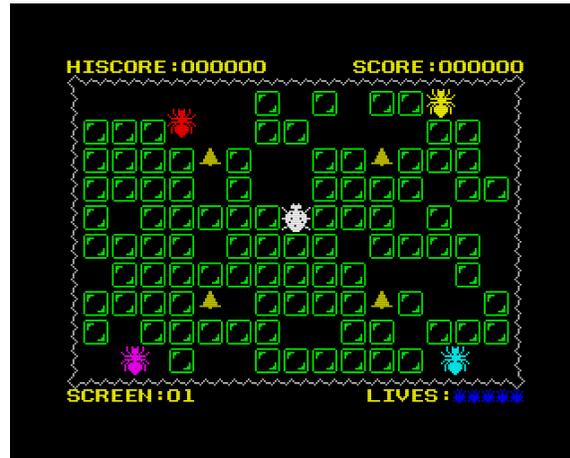
In Ometron, you are in control of a powerful laser cannon at the centre of a landing grid in space. Enemy craft are continually flying towards you and you must shoot them down before they collide with the platform. If that happens, you will lose a life.

This is basically a vector graphics shooting game. It is fun to play and not too difficult. The alien spaceships are easy enough to destroy. The controls are C, V and Space. They are very easy to get to grips with and are ideally suited to playing on an emulator because of the modern PC keyboard layout.

Artic Computing are one of the most underrated software houses in the history of the Spectrum and one of their better games is 'Mothership'. This is an unofficial conversion of the Sega arcade game 'Buck Rogers: Planet Of Zoom' and it is far



One thing I noticed was that if an enemy ship is getting too close, you can simply move the cannon so it is off-screen; only the ships that are visible pose a threat. Overall, it is a fun little blaster but nothing special.



Now we come to Push Off. This is a puzzle game where you take control of a ladybird named Bertha. Life in your garden would be very peaceful if it wasn't for the constant worry of being eaten by the other insects that live there.

Luckily Bertha can defeat the annoying insects in two ways. Firstly, she can create bricks, or use existing bricks, and throw them at the enemies, squashing them. I can only assume that she has ingested vast amounts of PCP. The second method is to ring one of the bells, which will cause the other insects turn into wobbly jellies (?) and then eat them before the effect wears off. I imagine that this game would be easier to play on a real 48K as the controls are very awkwardly positioned on a PC keyboard. Aside from that, this game provides a few minutes diversion from the boredom of real life. Try it, you may enjoy it.

superior to the official US Gold version which appeared the following year.

Firstly it is a lot faster and secondly it uses excellent sound effects to generate a real sense of excitement and provide a fast moving alien-blasting experience.

Five skill levels are available and even at level one you will really feel the adrenalin as the endless waves of aliens come screaming towards your fighter (and yes, it does sound like they're screaming at you). You start off on the surface of the planet where you have to destroy 16 enemy ships before your fuel runs out; otherwise you won't be able to take off. Once you pass the first stage you will face even more destroyers, and then you will take off where you will have to battle yet more ships while dodging asteroids as well. Eventually you will come in contact with the Mothership but at that point you will probably be so mentally overwhelmed by the game that you will instantly be shot down.

All major joysticks are supported in this game. An excellent, fast action, kill-or-be-killed blaster that does exactly what it says on the box. Well-recommended.

Flying Shark

Firebird Software Ltd

Original Price: £7.95

Release Year: 1987

Richard - To rewrite a classic arcade game for the ZX Spectrum was always going to be a daunting task even for someone as incredibly talented as Dominic Robinson. The arcade machine has a large screen to display the action, there are hundreds of colours and loads of sprites are flying quickly and smoothly all over the place. Yet within 10 minutes of starting to play you forget all that, you forget that the action is in a central corridor down the middle of the screen, you forget that there are only 2 colours being used and you forget that the number of sprites on the screen at any one time is kept to a minimum to ensure smooth rapid movement.



For those of you that don't know Flying Shark is a vertical scrolling shoot-em-up where you basically just destroy everything put in front of you. The back cover on the basic says 'develop your strategy', I say 'if it moves shoot it, if it doesn't move shoot it anyway in case it decides to move'. You will 'learn' the game as the waves pre-programmed and as such the planes/boats/tanks come from the same place every time, but I guess that's half the fun.

The action is relentless, this is one of those rare games where you can load up for a 10 minute blast or go for a prolonged session of mindless violence, the satisfaction level is equally as high. In the days of GTA and Half Life we forget just how simplistic and yet so much more fulfilling these old games are, just disengage brain and set trigger finger to auto-fire.

I tried hard to find something about this game I could criticise, if you were to be picky you could mention the small display area, but to be honest you just don't notice it. Or perhaps you could pick on the fact that only 2 colours are used and the sprites can be difficult to pick out but they not and two colours works really well. No in game music, well just dig out the soundtrack of '633 Squadron' or 'The Great Escape' and play that in the background, perfect!!

All in all, this is a simple arcade game coded to perfection, the emphasis is on the gameplay and playability is the prime concern. Dominic hasn't tried to dazzle us with flashy tricks and clever technical screen jiggery-pokery but concentrated on getting it right and staying faithful to the original. For that he must be warmly applauded.

Marks

Playability - 9

Graphics - 8

Sound - 8

Instant appeal - 9

Addictiveness - 9

Overall - 86%

Basin 12b

Arjun - This latest instalment (well at the time of review anyway) from the creative shed of Paul Dunn (aka Dunny) continues the saga of the superb BASIC development tool - BASin. Crammed with a host of features and bug-fixes this instalment will have the collective Speccy programming community drooling over it, I swear.

Editor + Emulator + Tools = BASin

But first, for those who have been living much of their lives under a warm blanket in a dark cave somewhere, a brief overview of BASin. To sum it up in one line - BASin is an integrated development environment (IDE) for Sinclair BASIC. Apart from offering a swanky full screen editor, it offers some fantastic tools that will allow you to add "value" to your programs.

The first thing that strikes you when you fire up BASin is the twin windows - one for your coding (the editor) and the other that displays the result of execution of your program (the emulator window). The emulation is extremely accurate according to Dunny, which should come as no surprise since the core is the very same as the one used in that excellent emulator Spin. You can rest assured that many of the BASIC tricks that worked on the original Speccy will be reproduced accurately in BASin.

The Editor

The code editor is a superb piece of work that offers syntax highlighting (customizable), full editing capabilities like cut, copy & paste, many display fonts to choose from, syntax checking, error reporting, et al. The editor also features some excellent debugging tools like breakpoints, tracing, watch variables, etc - in other words standard debugging features one can expect from any good debugger.

I mentioned display fonts, and this is one of the newest features in BASin. Now, instead of the bog standard Sinclair font that everyone is familiar with, you can choose from a host of great fonts (including many from veteran spec chums Damien Guard and Paul Van Der Laan) that are pleasing to the eye. There are also some neat touches that aid in programming. For instance, on the status bar below the coding window is a syntax helper that tells you what parameters are required by the keyword/command that you are typing in as well as a short description of

the parameter. So, if you are typing in the LET command, the syntax helper will tell you what the Speccy expects in order for it to be a valid statement. Nice!

Another neat touch is the print ruler at the bottom of the screen. As any spec chum would know, the Speccy display allows 32 characters to be printed on one line on the screen. As a result, if you are printing a long text on the screen you need to ensure that the words split correctly at the end of the 32 character mark. Well that's what the ruler is for – it tells you when you are at the line limit allowing you to format your text properly.

Debugging programs is a snap with BASin. No more hair-pulling and wild wails whilst bug hunting! Just use *breakpoints* to figure out the program flow, *watch* the variables to see they are taking on the right values and *trace* the bug to its origins! Hurray!

The Tools

One of the great features of BASin is the host of additional tools that Paul has thoughtfully integrated into the IDE. Not all of them are ready, but those that are, simply rock!

For instance, the UDG/Character set editor is one of the single most useful tools. Designing graphics for your programs is so much easier because not only can you redefine the graphics set, but also have BASin *add* them to your program on the fly – complete with the whole FOR-NEXT-DATA-READ shebang that one has to resort to code for the UDG's. Yep – BASin does that for you. Couldn't be simpler!

There is an assembler (also taken from Spin) that does the job quickly and painlessly. Although at first looks it may not look much, don't let that fool you! It's a pretty good one and one that will suffice for many BASIC projects.

The Tape Creator is yet another new addition that will allow you to create .txz or .tap files of your programs. You can do this by either using the current program in memory or by telling BASin which files to include from the hard disk. A very handy tool indeed!

Also in the works are a compiler, a BEEP composer that will allow you to visually compose music for your programs, and a screen paint box that will allow you to design splash screens (or any screen related stuff for that matter). No doubt, knowing Paul's obsession with getting everything just right, they will turn out to be indispensable and useful tools for the BASIC programmer in the near future.

One of the biggest new features is the extremely helpful and well written BASin manual (different from the fully indexed integrated Sinclair BASIC manual – did I tell you that? No? Well there you go!) That details every feature of BASin.

BASin has really gone from strength to strength with every release and is turning out to be an extremely competent and professional tool geared towards spec chums ranging from those taking their first steps in BASIC (who'll find it the most useful) to those who are experts in BASIC. A truly fantastic product that goes beyond all expectations! I, for one, can't wait for the next release with all those wonderful tools that Mr. Dunn

has promised! Attaboy!

Atic Atac

Publisher: Retrospec

Release date: 18th May



How it was... the game we all know & love .

BEN: I have a confession to make, so promise you won't laugh? Now, I know I can't be the only one and we're all friends here so that's why I don't feel silly for saying this. When I first played Atic Atac back in 1983... it scared me. Now stop laughing, I must have only been about six years old. But it did scare me quite a lot actually. I remember looking at the cassette inlay and not liking the look of that ghost and as for the thing in the trapdoor, well, I'd rather not think about that.

Loading the game was also a bit of a scary experience too. It was the loading screen you see. The cassette inlay was a photocopied affair (ahem) and I just wasn't prepared for the image in colour (those eyes!). To take my mind off the horrors of the cassette inlay and the loading screen (they're looking right at me!), I read the instructions and the story. I don't care what anyone else thinks, some of the story still gives me the chills today. Especially this bit...

**Footsteps... Something's coming down the corridor...
Something large... Something cold... I must run quickly...
QUICKLY.**

And then there was the game itself. Dashing through the rooms, corridors and cellar of the haunted castle as the wizard, the knight or the serf. Avoiding or dispatching the spirits, collecting keys, food and other vital objects. Locating the three pieces of the ACG key to unlock the main doors in the start room and get the hell out of there. Back then I regarded Atic Atac as something of a rarity.

Not every game released managed to have a real atmosphere about them.

REVIEWS

So, I loved it (despite those eyes!) and played it again and again, mainly trying to get further in the game, but sometimes just exploring. So I couldn't help but wonder whether those people at Retrospec could actually make any improvements to the game. Obviously they could add pretty colours and all the bells and whistles that you care to mention but would it improve the game? I downloaded it to find out and I'm glad I did.

the ACG key. In order to do this, you need to pick up other items and carry them with you to help you on your way. For example, you can't get through the locked blue doors without first opening them with the blue key. One room has a pretty persistent vampire that follows you around... but didn't you see a crucifix in some other room? Once you have located each of the pieces of the key, you need to get back to the start room and open the door and run for your life.



Look familiar?

Uh-ho – energy is running a bit low there!

Once the game had been installed, I loaded it up by clicking the familiar looking key icon that had been placed on my desktop. A brief, but attractive Retrospec logo popped up and then I was treated to what has to be one of the best introductions to a remake I have ever seen. As the atmospheric melody played and the cartoon style graphics illustrated the back story that unfolded, I found myself asking the question, "Did I just download this... for free?" In my opinion, the back story is what the original game lacked and it's good to see that the team took their time to come up with something that looks and sounds so good. It's funny too and says to me that they wanted this game to be something special from the outset. Was I disappointed that the loading screen with its spectres was gone? Not in the slightest, the intro is great and they've even managed to keep me happy by including... those eyes!

The introduction gives way to the title screen. From here you can start the game, redefine the keys, and mess with some of the options. You can select to play the game in full screen or windowed modes, as well as changing the volume levels and choosing whether you want the text in English or Spanish.

Once you choose to start the game, a final menu gives you the chance to choose your hero. Will you be the knight, the wizard or the serf? Just like the original, your choice will affect the game as the castle layout will change; each character has a different weapon and can only use the secret passages that they know about. Once you've decided, the game starts.

The objective of this arcade adventure game remains the same. You have managed to get yourself locked in a haunted castle and need to explore its many rooms to find the three pieces of

The first thing that hit me about the game itself is that although everything has been updated the game manages to retain all of the charm of the original. The best way to describe it is like this, it's as if the team got the balance of familiar and new ingredients just right. They knew what we loved and kept all that stuff in but also saw exactly what could be changed without marring the game. Play the game, listen to the supernatural movie style soundtrack, then lose a life and you'll see what I'm talking about. The 'get ready' sound is still there and that is something that has always stuck in my mind from the original. Once you start playing you'll hear all of the original sound effects plus many more. The graphics have been given a wonderful make over too.

The rooms and sprites are all presented in full colour but every single one is recognisable as it's counterpart in the original game.

I don't want to go into too much detail as to what has been updated and improved as it would spoil the surprise. And there are lots of surprises in this game. I only discovered one feature while I was writing this review and I suspect there are others that I haven't encountered yet or didn't notice as I dashed around the castle looking for keys, spanners and crucifixes (oh yes, the vampire, and Frankenstein's monster are present and even scarier than before). At first I found myself running from one room to another and wanting to go back to the last room to see whether I really did see what I thought I saw.

It's hard to fault this game. It really is. It's obvious that the team, led by coder Richard Jordan, with John Blythe giving us the pretty pictures and Matt Simmonds providing the music,

REVIEWS



thought enough of the original to produce a remake of this calibre. Perhaps they could have added a few features that weren't in the original. A difficulty setting perhaps, and a save game feature would have been nice. But then, would it have been the same game? What I didn't like in the remake was what I was never that fussed about in the original.



Woo – scary pumpkin

All in all, this is a beautifully presented game that has retained all of the best bits, all of the replay value and all of the (ahem) spirit of the original.

Marks

- Playability - 9
- Graphics - 9
- Sound -9
- Instant Appeal - 10
- Addictiveness - 9
- Overall – 92%

GameX

Written by Jonathan Cauldwell

Release Year: 2006

Publisher: Cronosoft

Price: £2.99 (Cassette)

Richard - The one man Spectrum games industry has been at it again. But time he's really gone too far. He's released 16 games all in one go and to make it even more impressive all in one game!! The latest creation from Jonathan Cauldwell's magic keyboard is called GameX and is Jon's take on the stock market. The premise is very simple, you play a simple Pac-man clone to build up points and avoid losing lives to avoid being taxed. Once you have cleared the screen you can use the points to buy shares in any of the 16 games listed on the right hand side of the screen. Once you've allocated your points to games you then play the games to get as high as possible on the scoreboard.

Admittedly they're not the most complex games you'll ever see but Jon's only got 48k to play with after all so don't expect to see an Elite or Starion clone amongst them. On the other hand the majority of them are surprisingly addictive with a few well known favourites lurking in their midst. Missile Command, Moon Lander and Pac-man are just three you'll find but I won't reveal anymore as part of the fun is discovering the new games.

Once you master the games it becomes a strategy game where you have to maximise your use of points to ensure you get as many games as possible in your portfolio which will allow you in turn to build up more points for the high score table. Personally I never worried about that and just enjoyed discovering all the games and pretty much marvelled at the fact that Jon managed to squeeze 16 games into 48k.

This is a game (games?) which has all the best attributes of a piece of Jonathon Cauldwell software. Clear, colourful, neatly laid out screens, smooth sprites and pleasant unobtrusive sound effects. Jon's games are never technologically groundbreaking (though 16 games in one is pretty impressive) but they do have that addictive factor that is so much more important than flashy graphics and thumping soundtracks. Given that I'm surprised no-one else is really producing anything of similar quality or does Jon just have the magic touch? In light of recent events it appears there could be some money in new Spectrum games so if you've even felt you could write a game of a similar standard then I would suggest that now is the time to do it. Retro is not dead and anyone who says so is plainly talking soft.



Marks

- Playability - 9
- Graphics - 9
- Sound -8
- Instant Appeal - 10
- Addictiveness - 8
- Overall – 88%

**LEGENDS MAY SLEEP
BUT THEY NEVER DIE!**

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NEVER EQUALLED**



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The Code Shed Guide to: BASIC – Part III

Welcome to part 3 of this guide! Hope you've the concepts of Parts 1 and 2 all safely tucked away in some corner of your brain, 'cos we'll be using some of it (the concepts, not the brain) in this edition. In case you are rusty with some of the concepts, it would be worth your while to quickly go over Parts 1 and 2 to brush up on things before proceeding further.

```
      Dash it!

1) Play game
2) Redefine Keys
3) Instructions
4) Credits

Press key for left

(c) 2004 Arjun Nair
```

Redefining Keys

Okay, with that out of the way, let's head on to some more exciting things in the game we are developing. First up is the key redefinition module. Here is the code first then I'll explain the bits in detail:

```
8400 REM *** Redefine keys ***
8405 LET k$(1)="" : LET k$(2)="" : LET k$(3)="" :
LET k$(4)=""
8406 PAUSE 10 : FOR f=1 TO 50 : NEXT f
8410 PRINT AT 15,7; INK 7;"Press key for left":
PAUSE 0
8420 LET k$(2)=INKEY$
8430 IF k$(2)="" THEN GO TO 8420
8435 BEEP 0.1,20
8440 PRINT AT 15,7; INK 7;"Press key for
right": PAUSE 0
8450 LET k$(1)=INKEY$
8460 IF k$(1)="" THEN GO TO 8450
8465 BEEP 0.1,20
8470 PRINT AT 15,7; INK 7;"Press key for up
": PAUSE 0
8480 LET k$(3)=INKEY$
8490 IF k$(3)="" THEN GO TO 8480
8495 BEEP 0.1,20
8500 PRINT AT 15,7; INK 7;"Press key for down
": PAUSE 0
8510 LET k$(4)=INKEY$
8520 IF k$(4)="" THEN GO TO 8480
8525 BEEP 0.1,20
8530 PRINT AT 15,5; INK 7;" Keys Redefined!
": PAUSE 100
8540 RETURN
```

If you remember, if the user selected option 2 from the main

menu, that would call the key redefinition sub-routine at line 8400 and the above code lists the routine in its entirety.

First in line 8405 we reset all values in k\$ to null and so overwrite any previous data in them - starting from a clean slate so to speak.

Line 8406 is an interesting one. It actually does nothing more than delay proceedings. It does this in two ways. First it **PAUSEs** program execution by 1 second and then it further slows things down by going into a loop for another half a second or so (approx). What's a loop you ask? It's just a simple mechanism of repeating whatever you want for a limited number of iterations.

In BASIC, this is done via the **FOR-NEXT** statements. The **FOR-NEXT** (known so since every **FOR** must have a matching **NEXT**) has the following format:

```
FOR variable = start value TO end value
< BASIC statements that need to be repeated >
...
NEXT variable
```

This is how it works: The *variable* is used to keep a running counter with its initial value being the *start* value. The statements between the **FOR** and the **NEXT** are repeated until the counter hits the *end* value whereupon BASIC wearily moves on the statements following the **NEXT** statement.

For example, let's say you had to print out all the numbers from 1 to 100. Using a **FOR-NEXT** loop you could do this very simply via:

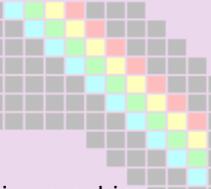
```
FOR f = 1 to 100 : PRINT f : NEXT f
```

The logic is quite simple. Since the **FOR-NEXT** combo automatically iterates f through values 1 to 100, we simply print the value of f.

I mentioned that by default the **FOR-NEXT** statement increments the counter by 1. You can change this behaviour so that the counter is incremented by some other value. This is done by tagging a **STEP** qualifier to the **FOR** statement, like so:

```
FOR variable = start TO end STEP increment
```

Note that *start*, *end* and *increment* values can be negative values too. However, keep in mind that if the *increment* is negative then *start* value should be greater than *end* value. For



example if you wished to print the numbers from 1 to 100 in descending order, you could do that simply by:

```
FOR f = 100 TO 1 STEP -1: PRINT f: NEXT f
```

Well in line 8406, we are doing nothing between the **FOR-NEXT** pair, so BASIC listlessly whiles away its time doing nothing but iterating through the value of f 50 times.

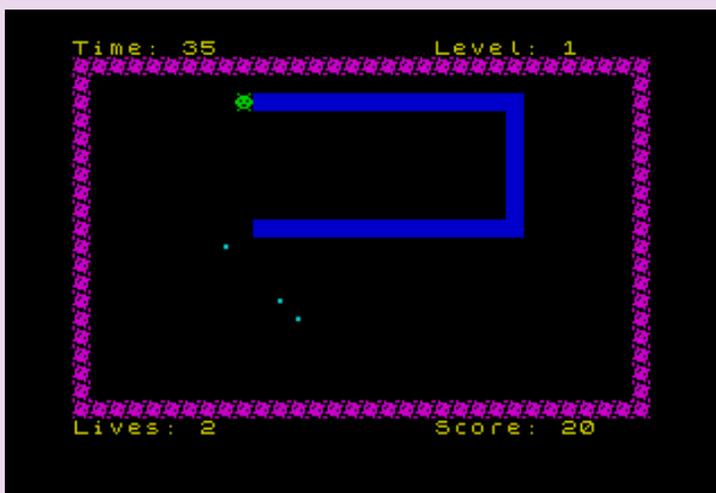
But why are we delaying BASIC? The reason is that we want to give sufficient time for BASIC to recover reading keys from the main menu sub-routine before we start reading keys again in the key redefinition sub-routine. If we didn't do this, things might happen so fast (who said BASIC is slow??!) that as soon as the user presses option 2 in the main menu, BASIC jumps to the key redefinition sub-routine and reads in the key again (which will be 2 in this case). By slowing things down a bit we are letting Speccy take a quick breather before plunging on.

In line 8410, we print a quick message to tell the user to press the key he desires to move left and then we wait till he does so via the **PAUSE 0** statement.

Once the user presses a key we hit line 8420 where we quickly assign the key pressed (got via **INKEY\$**) to the second element in k\$ - that is k\$(2). Note that our first element is the key to move right - you could change the order of statements so that the right key is read re-defined first.

Line 8430 performs a sanity check to see if k\$ actually holds some value because **INKEY\$** can return a null value if no key is pressed. This is a superfluous statement in the current context because I've used **PAUSE 0** to wait for key presses anyway so **INKEY\$** will return some key value. Anyhow, it doesn't harm to have the check in there but feel free to remove this if you desire.

If found all and good we emit a short **BEEP** to let the user know that the key has been redefined. Similarly, the other keys are likewise re-defined and now the four elements in k\$ will hold the value of the four direction keys that the user has chosen. We'll see shortly how we will use them to move the character around depending on which key the user has pressed.



Creating the graphics

Okay, let's break up the coding monotony by creating graphics for the game. There are 7 separate sets of graphics that we require - one for Krapz the alien, four for explosion effects, one solid block, and one to represent the quanta particles. Sinclair BASIC allows you to create up to 21 UDG's (User Defined Graphics) for your BASIC needs. If you want more in BASIC you'll have to think about redefining the entire character set (which is 96 characters). However, for most purposes 21 is quite enough and in our case 7 is all we need.

BASin has a nifty UDG Editor, which you will find in the Tools menu. We'll use this to create our UDG's (I'll call them sprites from now on). Since there is no way I can explain creating the sprites from scratch via this tutorial, I'll explain how to modify the existing sprites of the game. The process is the same in either case.

Run the game, and when the menu comes up, press ESC to break into the game - do NOT do a Force Break from BASin (this clears the charset). Bring up the UDG Editor from the Tools menu.

You should see the Editor window listing all the 21 characters, and the first seven should list the sprites being used in the game. On the left of the editor window is the magnified view of the current sprite being edited. Click on the squares to set or reset them. You can edit any of the 21 characters this way. Once you've created/modified the graphics to your hearts content, it's time to get them into the game. What you have to do is change the data in memory by manually POKEing in the new data of your sprites. Don't Panic! BASin makes it easy for you by doing all the hard work, so we'll let it take care of the tedious detail. Here is how:

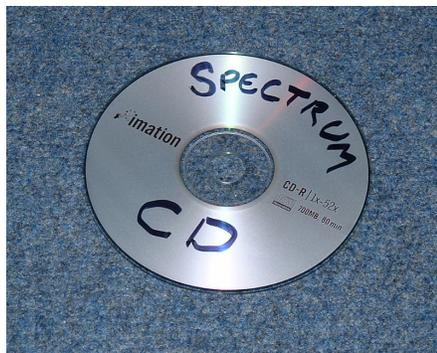
1. Click on the Send option on the UDG Editor menu and select "As BASIC data"
2. Put 7 in the "number of chars to send" box and 1 in the "chars per line" box.
3. Tick the "Include POKE code" box
4. Put 6060 in the "start at" box and 5 in the "step" box.
5. Review the numbers and press Okay.

BASin will now generate the BASIC statements required to modify the UDG data in the memory automatically! Scroll to line 6060 to see the results. So, how do you print the sprites on the screen? Simple, just switch to Graphics mode and press the alphabet corresponding to the sprite you've created. For example, our Krapz can be invoked by going into graphics mode and pressing 'A'. If you are wondering how to get into Graphics mode in BASin, you can set the key for this in BASin by going to Option>BASin>Programming Aids>Graphics Modifier and selecting the key you want. Mine is set to go into Graphics mode whenever I press the Scroll Lock key.

That's all there is to it, really, as far as designing the sprites for the game goes.

In the next edition of Code Shed, we'll take a look at how to animate the sprites we have designed and make things move around and explode! Stay tuned!

How To.....Play CD's On Your Speccy



It's a question that gets asked over and over again... How do I save my games to CD & play them on my machine? Well, Graham Richards has the answer.

More and more tapes in our collections are degrading, and games that used to load first go are now sounding a little tired, especially if they've been stored in the loft for 20 years! For those of us who are not so keen on emulation, and who prefer real-media gaming on original machines, the best way to preserve our games is to record them onto audio CDs. These can be easily backed up, time and again, long after the tapes have turned to dust. (Sounds like some scare-mongering advertisement!)

For this, you will need:

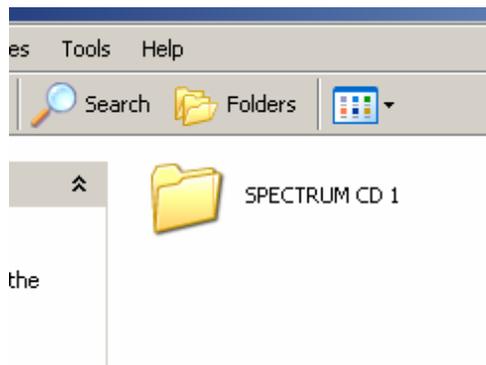
- A ZX Spectrum (48k,+,or +128k)
- A selection of Speccy games on cassette
- A PC or Laptop with soundcard inputs or mic socket
- A tape recorder (or spectrum 128+2, +2a)
- Mains powered speakers with headphone socket
- A CD player
- Audiolab cleaning lab 1.0 or better
- Steinberg WavelabLite 1.3 or better

Before we start burning off our entire Spectrum games collection to CD, we're going to have to turn them into WAV files. For this we need to connect a tape recorder (Or 128+2) to our PC.

This can be linked to either the soundcard line-in socket, or if you don't have one of these, then the microphone socket will do the job just fine. (Looks weird doesn't it!)



You're also going to need some software to manage your file, and for this, I'd recommend 'Magix Audio Cleaning Lab Deluxe' or, 'Audiolab' for short, as it has an easy to understand interface, and can manage many files. You can however use any audio software that exports uncompressed WAV files.

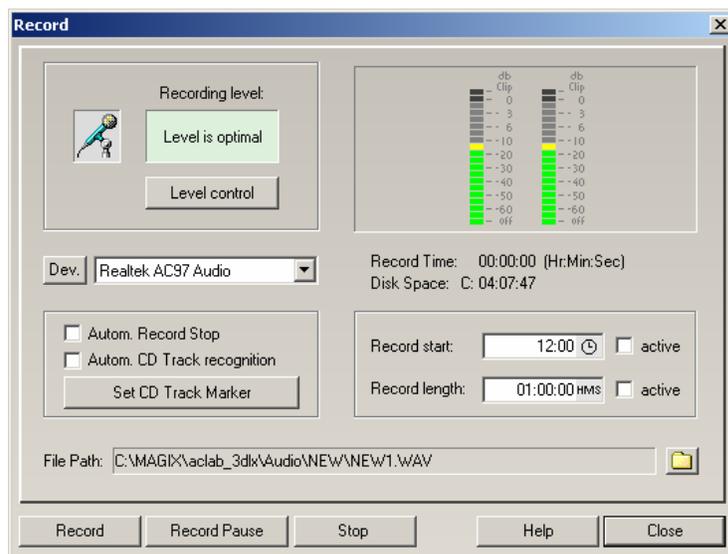


STAGE ONE:

Firstly, create a new folder on your PC, where your WAVs will be saved. I've called mine, 'SPECTRUM CD'

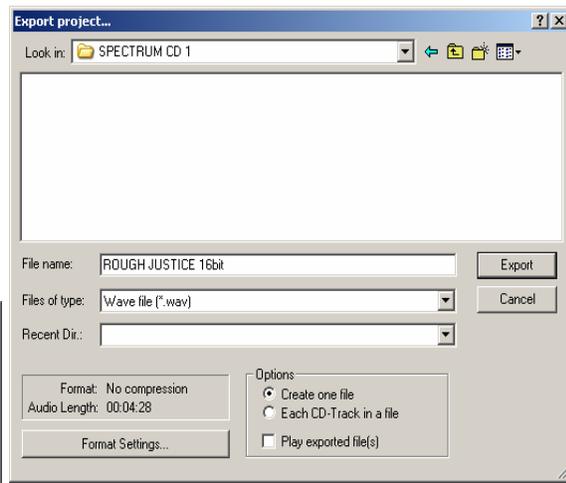
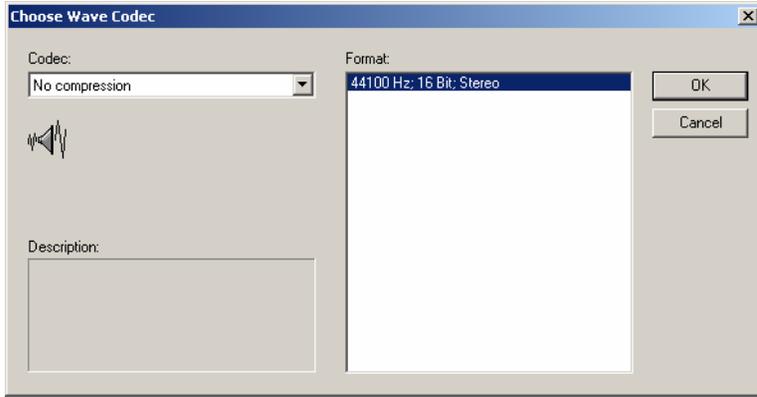
Now it's time to load in Audiolab and record your first Speccy game. Select the 'Record Audio' option, and then choose your method of audio entry from the 'Level Control' dialogue tab. All that's left at this moment is to queue-up your tape recorder, press the Play button, then hit, 'Record.'

On Audiolab, remember that the best results are achieved when the volume bar is just in the yellow.



Adjust the volume on the tape recorder, to achieve this. (Cor, those were the days!) Also remember to de-select the Autom. Record Stop and Autom. CD Track recognition. You'll find parts of your program disappearing if you don't!
If using other software, try the tape recorder at half volume or use a 128+2 so that the volume is pre-set.

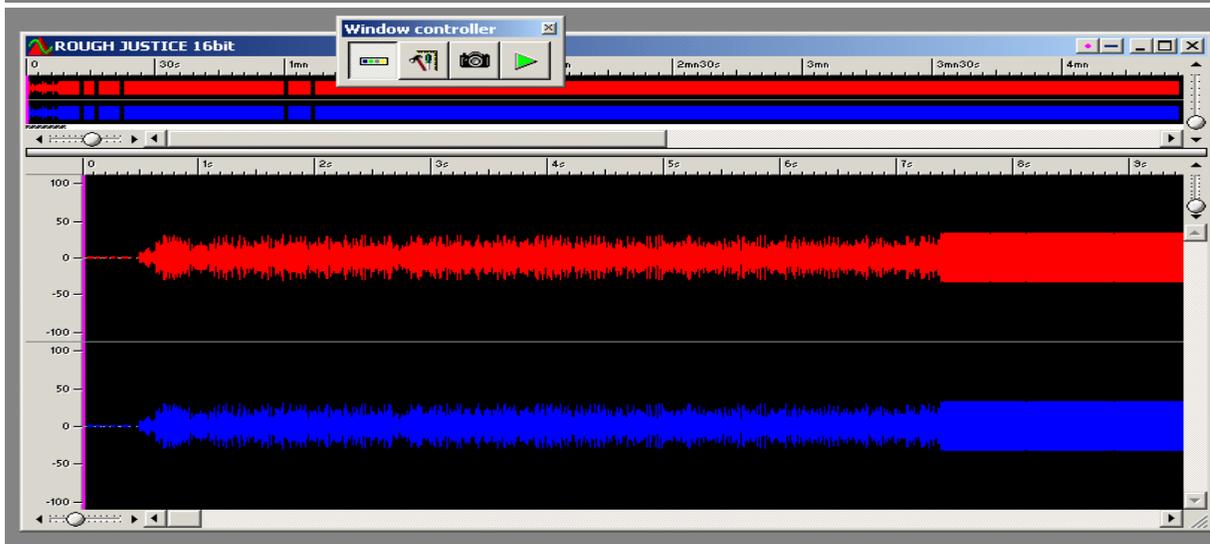
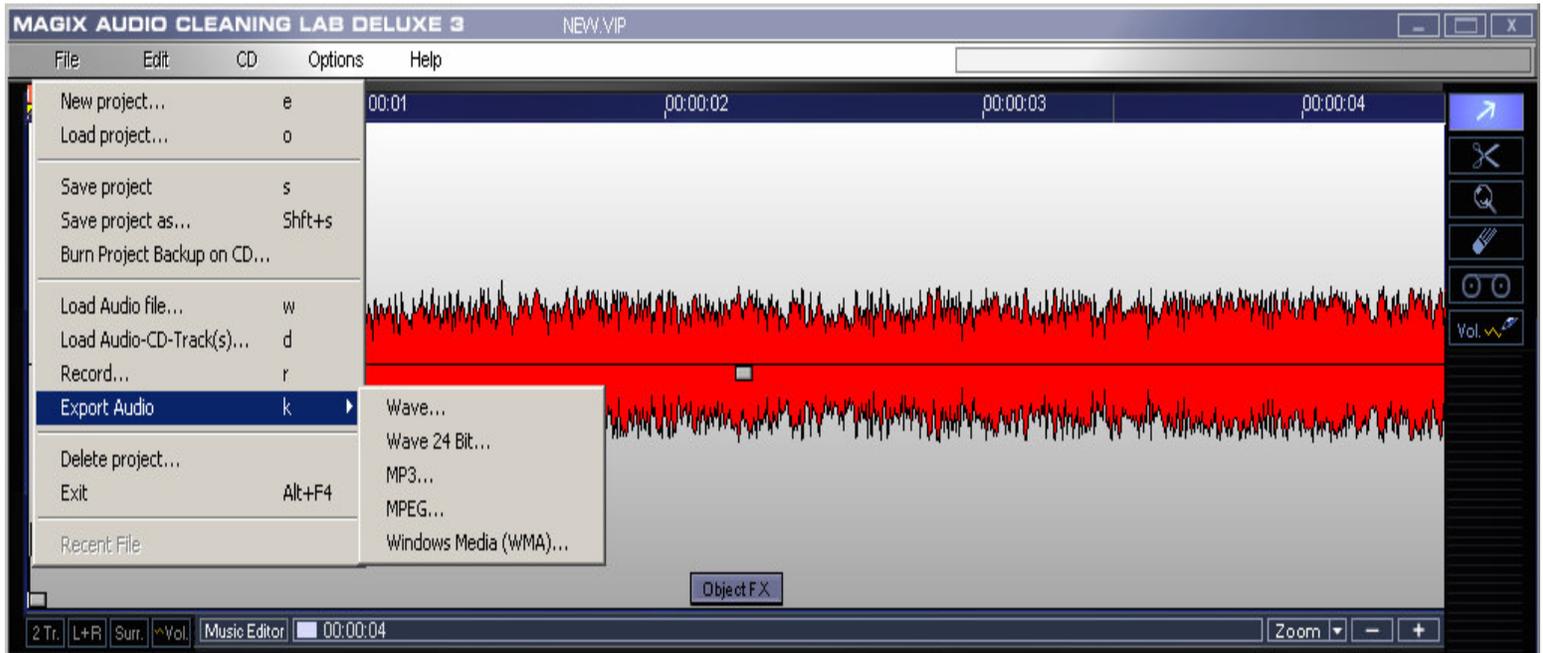
Once the Audio is recorded, it can be trimmed if necessary, and then exported to your chosen folder.



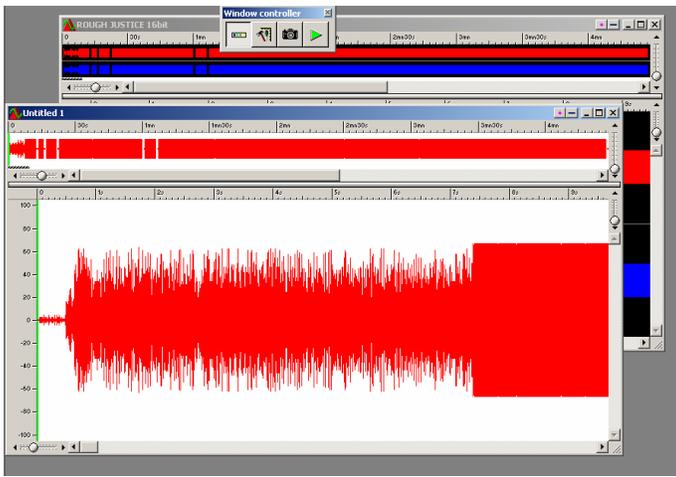
Here, I've chosen, 'Rough Justice' by Jonathan Cauldwell. At this point, it is a good idea to specify in your titling, that the file is still 16bit.

STAGE TWO:

So, we've saved it, but we can't play it just yet, as the result is (If we've been using Audiolab) a 16bit stereo file, and this just won't do for what we want...We need to do something about it! Load in WavLab and open the game file you just created. You will see the game's sound wave in stereo.



To Remedy this, go to the, 'File/Edit Audio Attributes' dialogue and change the Bit Resolution to 8bit. Press Ctrl+A to select the sound wave and drag it off the screen. A stereo icon will be displayed, but will change to mono, as soon as you hit CTRL again. Release the mouse button, and a new Mono file will be created!



Save this new file as 'Name8bit.WAV' or something like that, just to distinguish it from your previous save. You can now delete the 16bit version of the file.

Hey, you can play this 8bit file in most emulators...But for us classical gamers, it's not over yet.

Repeat stages One and Two, until you have about 10 of your favourite games, ready to go!

STAGE THREE:

It's no good just burning this lot to a CD as it stands, as Speccy's just don't play WAVs, and neither do most cheapo CD players, so we're going to have to burn them as Audio CDs. Media player will suffice for this, or even Easy CD creator, but try to avoid 'Record now', as it has the nasty habit of adding 'noise' to your final burn. Again, I'll be using Audiolab, as it has a rather convenient, 'Export Audio CD' button, and it kindly

adds up the minutes of your WAVs, so you don't overrun on time. (70mins is about usual).

Firstly, load all your 8bit Wav files into the software, and click on, 'Burn CD'. All the games will be saved within their own CD track. You may want to write the titles down on the CD case, so you know what's on it... (Hey this is just like when I used to pirate games for my mates at scho... Erm, heh, not really!)

Before you sit back and let your PC do its thing, you may find it a good idea to change the speed of the recording to x1, as some stand-alone CD players don't like quickly burnt discs. Now make a cup of tea, or read through the WOS forums while it churns away to itself.



STAGE FOUR:

Nearly there. Now, connect your CD player to the speakers, and connect the speakers to the Speccy via the headphone and ear sockets.

Turn the speaker volume up to Max (or just below) Type

Load "" and select a track. Bingo! (Or Agent X, or whatever.)

Your games should load first go every time, so long as the original tapes were in good order! Have fun with it, folks.

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For more details contact adjb@zxsoftware.co.uk

The ZX Spectrum Book 1982-199x

"...for former 'Spec-Chums', this unique tribute to the colour clash of yore will prove hard to resist."
EDGE Magazine

"...We're looking forward to the excellent looking *The ZX Spectrum Book* by Andrew Rollings..."
GAMES™ Magazine

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- 256 pages of Spectrum games history.
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The bad news...

- Limited print run of 1000 copies. When they're gone, they're gone.

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<http://www.zxgoldenyears.com>

Cheaters Corner

Viktor Drozd returns from another hacking spree..

Movie From Imagine Software Ltd is a nice Ultimate 3D style detective romp.

Immunity	64788,195
Enemies Don't Shoot	59856,201
Infinite Bullets	65111,113
Freeze Enemies	59349,17
Freeze Dogs & Balls	64307,201

Cronosofts excellent Platform Designer has spawned a few modern day classics. One of which is **Mpthrilla: The Metal Miner** which is bizarrely based around Metallica mp3's!!

Infinite Lives	35332,182
Infinite Time	33946,182
Immunity	34981,0

Saint And Greavsie from Grandslam Entertainments. A crap footie quiz! Ah well, here's some pokes anyway. Anyone fancy fixing the bug that claims the loser actually won?

Infinite Answer Time	34164,183
No Fouls	39990,195 40126,58

Traffic control now with **Sbugetti Junction** from Bug-Byte.

Level Always Complete	62793,208 62850,58
Infinite Time	62759,0

Onto a rather nifty (and colourful) Spanish game now—**Slowglass** by Slowglass.

Infinite Lives	27812,183
Infinite Power	28726,42
Immunity	27173,195

Spi Droid by Vinsoft was reviewed in the YS Crap Game Corner. Unfortunately, it wasn't that crap! Scoring 75%...

Infinite Lives	25623,106
----------------	-----------

Turrican is a great game from Rainbow Arts. Full of colour and amazing graphics. Add to that the huge

gameplay!

Can Fly	31022,195
---------	-----------

With Turrican being so popular, it was only a matter of time before we got **Turrican 2**

Level 1:

Infinite Lives	58658,58
Infinite Shields	42204,58
Infinite Time	24717,58
Immunity	58547,201
Can Fly	25861,58

Level 2:

Infinite Lives	58916,58
Infinite Shields	43903,58
Infinite Time	37874,58
Immunity	58808,201
Can Fly	38997,58
Infinite Lives, Shields & Time	61933,0

Level 3:

Infinite Lives	60056,58
Infinite Shields	41005,58
Infinite Time	37597,58
Immunity	59954,201
Can Fly	37901,58
Infinite Lives, Shields & Time	40962,0

Level 4:

Infinite Lives	57614,58
Infinite Shields	41846,58
Infinite Time	37783,58
Immunity	57512,201
Can Fly	37951,58
Infinite Lives, Shields & Time	41803,0

Level 5:

Infinite Lives	25487,58
Infinite Shields	27227,58
Infinite Time	24705,58
Immunity	44489,201
Infinite Lives, Shields & Time	27184,0

Level 6:

Infinite Lives	57557,58
Infinite Shields	39742,58
Infinite Time	36593,58
Immunity	57490,201
Infinite Lives, Shields & Time	39699,0

Level 7:

Infinite Lives	44794,58
Infinite Shields	31728,58
Infinite Time	28537,58
Immunity	44727,201
Infinite Lives, Shields & Time	31685,0

Level 8:

Infinite Lives	56744,58
Infinite Shields	31669,58
Infinite Time	26822,58
Immunity	56642,201
Can Fly	27942,58
Infinite Lives, Shields & Time	31626,0

Level 9:

Infinite Lives	54164,58
Infinite Shields	33310,58
Infinite Time	28420,58
Immunity	54062,201
Can Fly	29535,58
Infinite Lives, Shields & Time	33267,0

Level 10:

Infinite Lives	62310,58
Infinite Shields	35231,58
Infinite Time	29827,58
Immunity	62201,201
Can Fly	30923,58
Infinite Lives, Shields & Time	35188,0

Level 11:

Infinite Lives	53981,58
Infinite Shields	35031,58
Infinite Time	29831,58
Immunity	53970,201
Can Fly	30923,58
Infinite Lives, Shields & Time	30935,0

We're all out of space for this issues so be sure to join us next time!

THE SPECTRUM

In this column, we look at classic games from years gone by and see how they hold up against later competition. For this first feature, we crank the year back to the ZX Spectrum's debut year of 1982 to look at the games that were released then and see how time has treated them.

Football Manager

(Addictive Games)

Flight Simulation

(Psion)



It's a goal! Listen to the crowd bleep



Fly off into the wild blue yonder

Being written entirely in BASIC, this was a game that never really impressed anyone from a technical standpoint. Still, machine code snobbery was yet to arrive on the Spectrum scene, and word of mouth enthusiasm about how the game played was enough to boost sales to a staggering 300,000 copies. So, how does it hold up now? Pretty well, I'd say.

It's fairly bereft of options but author Kevin Toms achieved that delicate balance that gives you a real feel of involvement in your team's fortunes yet doesn't overwhelm you with options that are critical to your success: You pick and choose your team from your squad, arrange transfers, possibly take out a loan to buy more players and that's that.

The highlights, although widely ribbed at the time for their simplicity, still deliver the tension as you have to wait and see whether your players can by turns pull off a miraculous victory or throw away a huge advantage. It still leaves you wanting more, after every match and I think that's all very faithful to the sport of football.

Verdict: A much copied formula that's been very much embellished in later games, but this still has the basics.

Another top seller that dominated the charts for nearly a year, this game brought the feel of flying a light aircraft to the home computer. It scored well against the early competition too, having reasonably fast responses, and a good graphical view of the horizon with a few scenic lakes to fly around as well as the obligatory runways.

Today, it looks very basic when you compare it against the top PC flight simulators though, and even some of the ones that appeared in the latter years of the Spectrum with only a small control panel and a few token instruments. The lack of much in the way of flying options also serves to limit the game play too. Once you've mastered the arts of taking off and landing, that's pretty much it.

During the next few years, a whole host of combat flight simulators came onto the Spectrum scene and ousted this game from the front line although it was always regarded, alongside Digital Integration's Fighter Pilot, as one of the more faithful flying simulations.

Verdict: Still a reasonable simulation, if very simplistic, compared to subsequent releases. Gets a trifle dull without combat or serious navigational challenges.

Penetrator

(Melbourne House)



Deep into enemy territory the colour clash just gets worse

Philip Mitchell must have been one of the busiest programmers in the early years of the Spectrum. Between creating *The Hobbit* and *Sherlock*, he turned his hand to this game which was one of the first games of true arcade quality to come out on the Spectrum. Based closely on the arcade hit *Scramble* it added radars that slowly track you down until you're bombarded with a barrage of accurate missile fire. Best of all, the game also came with an editor that allowed you to change the landscape and the distribution of enemy missiles and radars allowing for pretty much unlimited game play.

The graphics have stood up rather well with the line drawn landscape and nicely animated radars still looking good. There is a lot of colour clash though, as radars tend to leave their attributes behind them colouring in the landscape as it scrolls across.

The game also seems quite short these days, and rather easy although that can be remedied somewhat by using the editor. My last grip is the odd choice of keys (P doubles up as both right and fire) which don't exactly sit easily, although given that there weren't any joysticks with two fire buttons in those days that can almost be forgiven.

Verdict: An elegant scrolling shooter that still plays just as well as ever.

Time Gate

(Quicksilva)



In Space, nobody can hear the sound effects

I remember this being pretty much the star of the Spectrum scene when it first came out at the end of 1982. *Penetrator* was good, but that was just a 2D game and a fairly obvious copy of an arcade favourite. Instead, *Time Gate* offered a 3D moving star field, with an interrupt driven engine roar continually blasting away in the background, whilst you fought furious dogfights with alien spacecraft. All this against a back story of time travel in a desperate mission to save the human race by wiping out the alien planet before they'd even reached space!

Looking at it now though, the game seems terribly dated and simplistic. Graphically, the 3D is only a fudged affair: The star field moves in fixed lines, the alien spacecraft move around in character-square sized jumps, and the perspective of your ships weapons just seems wrong. The rope-mat planets just look downright awful, and your spacecraft cockpit looks uncannily like an 80's clock radio.

There's no real depth to the game play either. You just warp through the sectors until you find the time gate; and sometimes you don't even have to fight a single alien spacecraft to complete the game.

I'd like to find something positive to say about this game, as it was a real favourite all those years ago, but that's hard work. About all I can think of is the graphical hyperspace effect as the stars stretch out into lines, reminiscent of the *Millennium Falcon's* jump in *Star Wars*.

Verdict: Time has done this game no favours.

Arcadia

(Imagine)



Are those the arrows of outrageous fortune?

Imagine were one of the first big names on the Spectrum games scene and this was their very first hit. Another game aspiring to arcade quality, this fast and furious multi-level shooter cleared the decks of tired space-invader clones and delivered the message that the Spectrum was a games machine to be reckoned with. It gave the spectrum's sound capabilities a thorough working over and surviving the twelve levels were a serious challenge.

Nowadays, the graphics look very poor with vast amounts of flicker and colour clash. Only in the environment in which the game was launched, where UDG-figures were the standard to which most game graphics went, did this ever look good. That said, the game still plays fairly well, although on a lot of the levels the only way to play is to shoot out all but a couple of the aliens and hide in the corner whilst the time runs down.

Verdict: A reasonable shoot-em-up for its day, but very much eclipsed by later games.

The Hobbit

(Melbourne House)

This was the first major commercial tie-in for the Spectrum and unlike many later efforts was universally lauded for both its faithful translation of the book to the computer game format, but also for its innovative parser that went beyond the standard verb-noun text

adventure convention for the time and the interactive characters such as Thorin and Gandalf that populated the game.



Oh no! Not the goblins dungeon again

Looking at it now, it's a fairly small adventure compared to later games on the Spectrum scene, especially Level 9's giant blockbusters with their hundreds of locations and rambling text descriptions.

By contrast, the Hobbit relies a lot for atmosphere on the book with only a small amount of text for each location. The graphic illustrations aren't brilliant for the most part and are also rather slow to draw which leaves you waiting a lot, especially when you pass through the same places often; the worst of which is illustrated above. The parser, although reasonably advanced, is also very finicky with you having to type in some long and complicated sentences to do fairly simple things sometimes.

There's also an irritating randomness to proceedings: Thorin and Gandalf will sometimes just decide to be uncooperative and escaping from the dreaded goblins dungeon without getting immediately recaptured requires a lot of luck.

It also has to be said that it's been over a decade since text adventures were a commercially viable genre.

With that out of the way though, I'm still fond of this game as it introduced me to text adventures and would still serve as a good game for beginners, especially those who enjoy the works of Tolkien, as you can get a long way in it fairly easily and it does tie in nicely with the book.

interview

One of the companies up and running on the coattails of the retro-gaming craze is Monument Miniatures. Their line of work is not producing games though; no they make miniatures of all your favourite game characters from the 8 bit era. We invited Graham Richards into the Shed for a fresh cup of tea and biccies to talk about his business plan of world domination in the miniature market.



G: At the moment, it's not exactly what I'd call a business. Not yet. My wife, Patricia, helps me out with designs and ideas, and she takes most of the photos for the website, and there's another sculptor in the wings (David Tarron) who, time permitting, will be working on some creatures from the Quake series of games. I am hoping for this venture to grow, but I already have a full time job. If I can afford to go part-time on this, then I'll definitely be putting the extra time into Monument.

Z: [Do you contact the copyright holders and ask for permission when making your sculptures or maybe it does not apply?](#)

G: Copyright laws are always tricky things. I would never intend to tread on anybodies toes, so whenever possible, I e-mail the copyright holder and ask their permission to create a sculpture based on their creations. All my miniatures come under the heading of "Garage kits" which means they are limited production runs (no more than 500) with only small profits granted. This ensures that nobody should take offence (unless they are really mean!) When I use logos or screenshots on the packaging, I always state that they are still the copyright of the respective owners.



However, all the actual figures are copyrighted to me, and I state that nobody has permission to copy or re-cast them.

Cronosoft have been very helpful, and have allowed me to create figures based on any of their releases, although my attempts to contact Jonathan Cauldwell himself have so far drawn a blank. [\[Hint, hint Mr. Cauldwell ;-\)\]](#)

Z: [When did you first become interested in model making and tell us a little bit about the models available at "Monument Miniatures" and the process involved in making them.](#)

G: Like many model makers, I started out quite young (9 years old- bless) with plastic Air fix kits. My first was a Horsa gilder, which I kept for a year or so before it was "flown" one-too-many times! My first sculpt however, was a 2 ½ Inch model of the space shuttle Narcissus from the film, Alien, which I made when I was 11. When I realised that this was something I could actually do and improve upon, I went a little sculpting crazy and made many varied types of monsters and aliens. Even a "Grey" alien (You know the sort, big head, big black eyes) long before anyone else had the idea.

Anything which promotes the continued use of classical machines and what they stand for is a good thing,

When I ran out of film/TV monsters, I stopped sculpting for a few years, and continued a few other hobbies (including playing and programming ZX Spectrum games) It was then, whilst playing R-Type, that I suddenly realised that what I really wanted on my shelf, was a scale model of the end-of-level boss, Dobkeratops! So out

came the Sculpy, Milliput, Fimo and dental tools, and off I went. Dobkeratops still isn't finished, but I reckon he'll be worth the wait.



All the miniatures are made with a mix of the above materials, but are cast in durable polyester resins from silicone rubber moulds. Pewter figurines are likely to follow at a later date.

Z: What's your favourite figure you have made (or will be making)?

G: My favourite at the moment is the Pink Demon from Doom, although Mukor was something of a personal indulgence. I reckon that when Dobkeratops (Dobey) is finished, I'll be clearing that shelf-space for him.

Z: What figures/models do you have lined up for the future?

G: For the near future, there'll be a couple more Dizzies and Horaces, 2 Elite ships, Bomb Jack and hopefully some more Cronosoft characters. Next in line though is Cool Spot (by popular demand.) I'd also like to make some more obscure Manic Miner characters like a Wacky Amoebatron or an Alien Kong beast! We shall see.



Z: Tell us about your first computer experience (Speccy, C64, other?), what games did you like or other programs?

G: Fortunately, computing was very much a family affair in the Richards' household (Just like on the boxes of classic machines, where the whole family is gathered around, going, Wow!) As a surprise, Dad bought an Atari 2600 in 1980 (or thereabouts) with Space Invaders, Adventure and naturally, Combat. Adventure was, and still is to this day, my favourite game. Well, it was Dads idea to advance things a little, and in 1982 he discussed buying a machine that his friends at work were speaking of, a machine with games that featured individually thinking and acting characters. The 48k Spectrum was proudly brought in, with the game, Valhalla. This was promptly Loaded, although we spent many minutes staring at a static picture of Hell, before we realised that the game had crashed!

Most of the early games he bought remain my all-time Speccy favourites, including Ant-attack, Codename Mat and Lords of Midnight.

Z: You mentioned that you program on the Speccy - is it just a hobby or are there games "out there" with your name on it?

Like many model makers, I started out quite young (9 years old- bless) with plastic Air fix kits.

G: I'm afraid I've not yet had a game released. But maybe later on in the year! Cronosoft (yes, them again!) have suggested that they may be interested in a PAWed adventure called, "The Tomes of Torrinoth" which I started writing in 1994 (But gave up as I thought no one played Speccy games apart from me!) When I'm up to date on my figures, I will finish that one off and send it to Chaosmongers (of Cronosoft)

There is another game lurking in limbo ... A GAC adventure called, "The Maggot invasion." It's a really awful game that I sent off to the CRASH Powertape and never got it back. I really hope that one never rears its ugly head! That would be embarrassing. Maybe when Tomes is done, I'll finish off some other games ... Dracula's Legacy (arcade), Fighting fish (beat-em-up), Alien Races (race game). All in various stages of completion.

Z: What do you think about emulation/the retro revival "movement"?

G: Anything which promotes the continued use of classical machines and what they stand for is a good thing, whether it is new games for old machines or old games on new. Personally I don't use 8 bit emulators much, except for compiling code, though I do occasionally use MAME for playing arcade favourites. 8 bit machines are marvellous for focussing ideas into workable programs, as they stimulate the imagination in ways that just aren't possible on big-spec computers. Love 'em.

We ask for articles, and get next to nothing. We ask for your photos & get next to nothing. We ask for letters & get none. We asked for your crap jokes and suddenly we have tapped into your mentality.

Dead Funny

An old lady was very upset as her husband Albert had just passed away.

She went to the undertakers to have one last look at her dearly departed husband. The instant she saw him she started crying.

One of the undertakers strode up to provide comfort in this sombre moment.

Through her tears she explained that she was upset because her dearest Albert was wearing a black suit, and it was his dying wish to be buried in a blue suit. The undertaker apologized and explained that traditionally, they always put the bodies in a black, but he'd see what he could arrange.

The next day she returned to the undertakers to have one last moment with Albert before his funeral the following day. When the undertaker pulled back the curtain, she managed to smile through her tears as Albert was resplendent in a smart blue suit.

She said to the undertaker "Wonderful, wonderful, but where did you get that beautiful blue suit?" "Well, yesterday afternoon after you left, a man about your husband's size was brought in & he was wearing a blue suit. His wife explained that she was very upset as he had always wanted to be buried in a black suit," the undertaker replied.

The woman smiled at the undertaker. He continued, "After

that, it was simply a matter of swapping the heads"
Lee Fogarty.

Commodore Bashing

Q. What do you call a Commodore 64 at the bottom of a pit?

A good start
Anon.

More Commodore Bashing

It is the day of the annual World of Spectrum V Lemon 64 football match, and Martijn, the WOS team coach, enters the changing room to find his team are all moping around looking thoroughly unmotivated.

"What's up you guys", he asks, "We're going to give the Commodore guys a good kicking yet none of you seems interested". "That's just it", reply the team, "None of these Commodore forumites can kick a ball and we always win easily. Where's the fun in that? We'd all rather just be down the pub talking about Spectrum games."

Martijn thinks for a second, then agrees. "Okay, I'll leave MeltheBell to face the Lemon 64 team single handed, while the rest of you go down the pub. Is that okay?" So they all agree and with that the rest of the team head off to the nearest public house for a few drinks and a game of Chaos while Mel prepares to face the Lemon team alone. Half-way through the first game Lee Fogarty rings Martijn on his mobile to ask how the match is going.

"We've been playing for ten minutes and it's going well so far," says Martijn, "Mel's just dribbled the ball from the half-way line past

the entire Lemon 64 team and tapped the ball through the goalkeeper's legs to score. We're winning 1-0!" With that the rest of the WOS team breathe a sigh of relief and carry on with their game of Chaos.

An hour and a half later the Spec-chums are on their way back from the pub and Lee calls Martijn again to ask how the match finished. "Okay", he replied, "Lemon 64 grabbed a last-minute equaliser, but we still drew the game 1-1." The Spec-chums agree this is not a bad result under the circumstances, and head off to the changing room to congratulate MeltheBell. When they get there, they find MeltheBell is sitting with his head in his hands, looking distraught.

"I've let you all down guys, I'm sorry," says Mel. "Hey don't worry Mel," they reply, "It was 11 against 1 and you very nearly won. You didn't let us down at all." "No you don't understand," retorts Mel, "I got sent off after 12 minutes..."
Anon

Yellow Belly

I went to the doctors yesterday because I thought I was watching too much television. He asked, "What are the symptoms?" I said they were a yellow cartoon family.
Bethan

Did We Do Commodore Bashing?

Q. What's the difference between a commode and a Commodore64?

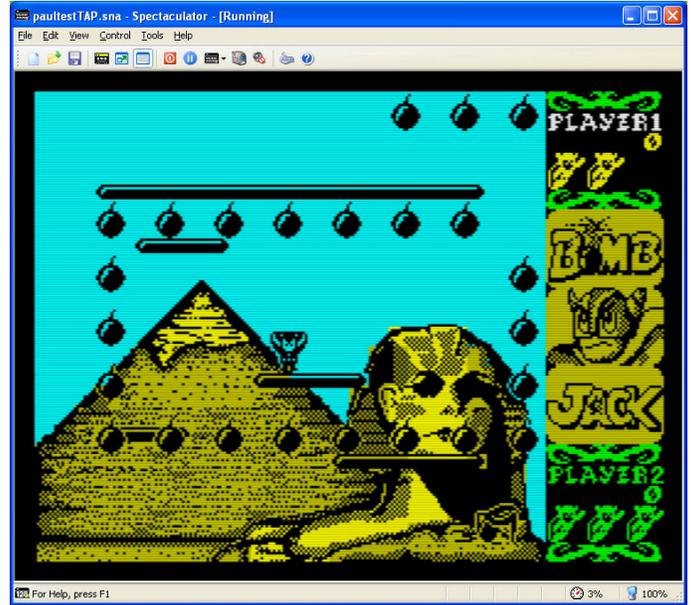
A. Umm....ahh....hmm....
Arjun

Bomb Jack Editor

Paul - One of my favourite games on the Spectrum is Bombjack. The first one of course, I was never a fan of the sequel at all. I longed for a new Bombjack with different levels, same gameplay however but just a few different levels for something different.

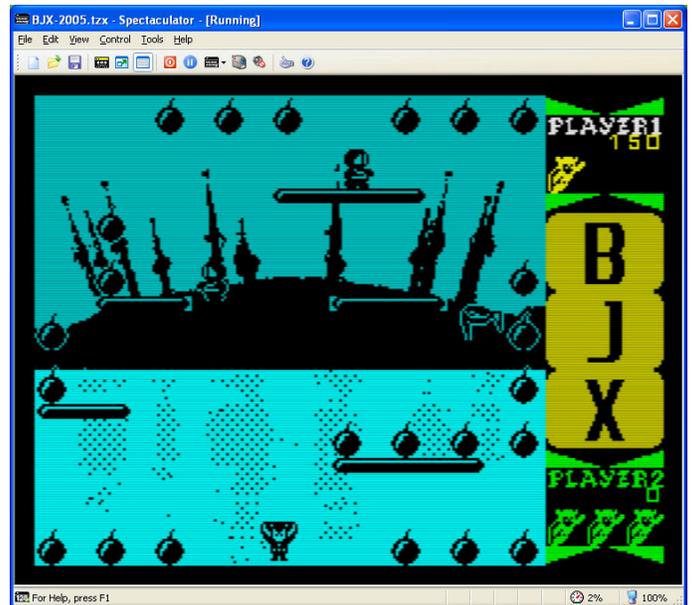
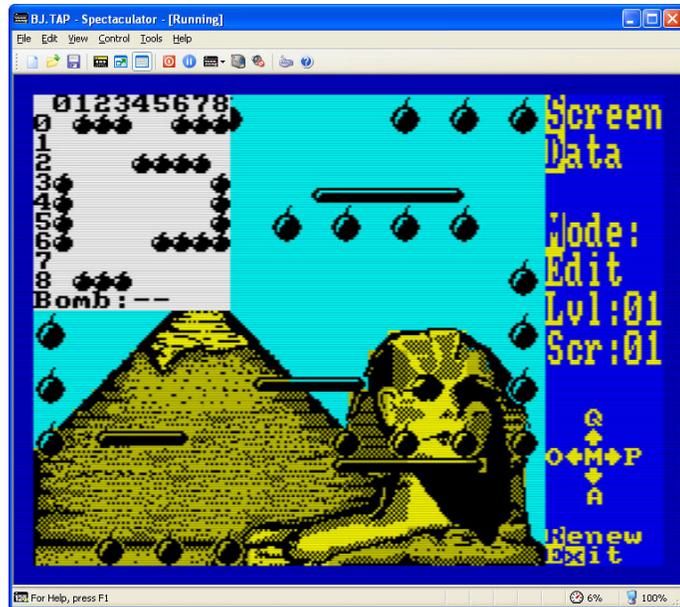
After discussing this with someone on World of Spectrum one of the forum members 'Bad Beard' decided to give it a go. A few months later I was surprised and happy as hell to see a Bombjack Editor!

different order, also as the bombs are numbered you can decide to be really evil and put the fizzing bombs in a very difficult order for the player to get.



Released recently this editor really is brilliant for any Bombjack fans out there. We have lots of new Manic Miner games out there, its great to see some different versions of another classic such as Bombjack. The editor is really easy to use; you activate the Multiface on the emulator, load up Bombjack and then activate the editor.

You can't add extra barriers to the levels, if a level has 5 barriers you can edit the 5 barriers but not include any extra or delete any. But what you can do is to put two barriers together to form one or shrink some barriers down to a small size to create a brand new level. Some advanced programmers (namely Allen.D) have used the utility to create a brand new game and have also loaded in their own backgrounds and graphics.



With the editor you can switch the background graphics to a different order; you can change the position and order of the fizzing bombs and also change the length and type of the pipes on the screen. Its so easy to create a new screen from scratch and to position the bombs in a totally

Bombjack was one of the most playable games on the Spectrum and is so easy to pick up and to keep playing. To be able to play whole new sets of levels and different positions and layouts of the bombs is a dream to any Bombjack fans out there. I'm very grateful to Bad Beard who created the editor, just hope he now creates a Commando editor and a few others! ;-). The download is absolutely free and a link is on the forums under Development. I can't wait to see many other levels/ creations made with this editor.

PREVIEW

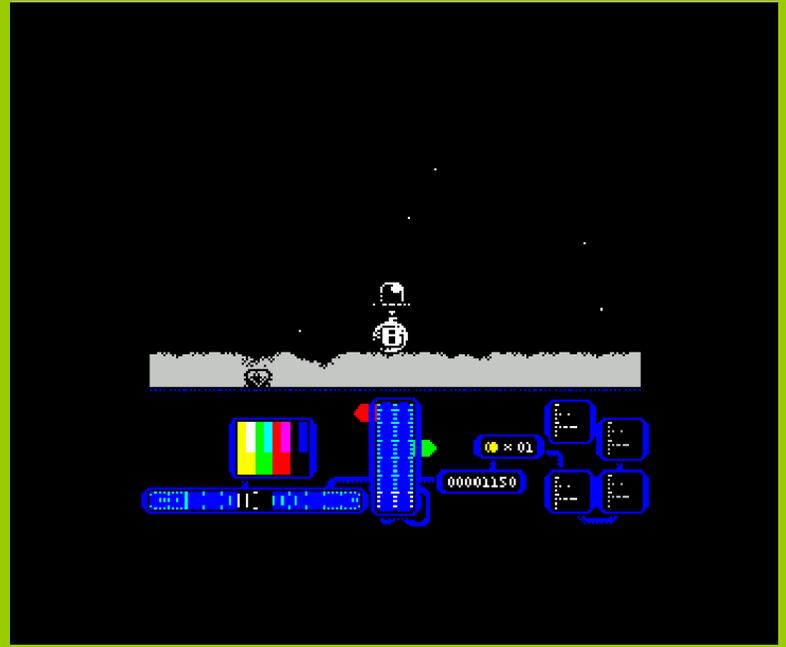
PREVIEW

PREVIEW

Who would have believed that after all this time, Joffa Smiff would be back creating games? It seems that he hasn't lost his touch as our preview of Saucer shows. It's shaping up to be a classic.

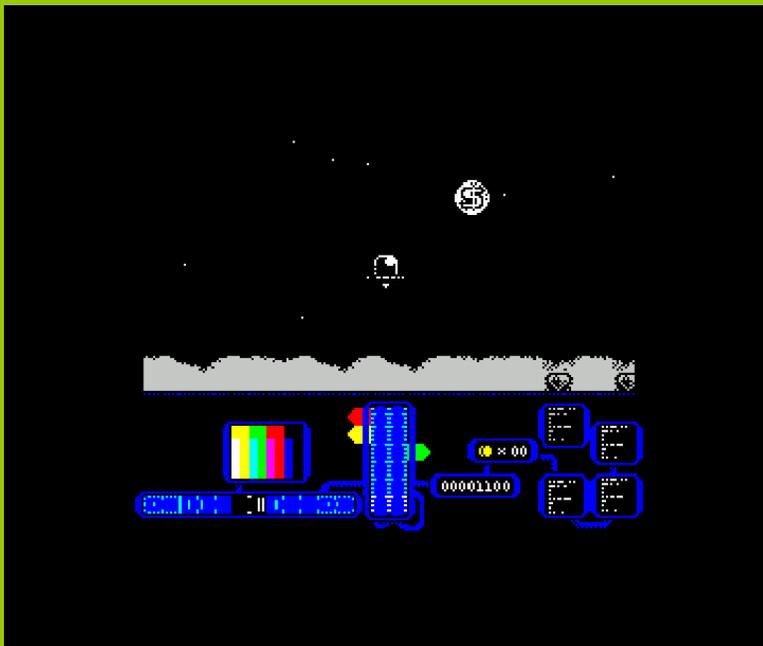


Fly around to shoot the bubbles and collect coins



Drop the bomb to kill all on screen baddies

The aim of the game is simple—stay alive! The game gets harder as time goes on - there aren't levels as such, just a huge landscape. You can fly around the screens shooting the bubbles and collecting coins to boost your power and weapons agility, or jump into your buggy and mine diamonds. You'll be quite surprised at how powerful your little saucer can become. There maybe a few 'big' baddies to kill along the way. The demo plays really smoothly with virtually no slow down with additional bubbles floating around.



Collect the coins to boost your power



Drilling for diamonds

The demo we played is already very enjoyable. The spot effects are excellent and the game play is simple. It doesn't take long to pick up the rules and find yourself immersed in the game. We look forward to the full review copy to land in our in-box!

Another programmer making a great name for himself is Bob Smith. After the release of Farmer Jack, Bob hasn't rested and is currently working on the sequel to the fantastic Stranded. Cunningly titled Stranded 2.5

Stranded-2.5 is the kind of game Bob wanted Stranded to be when he first designed it nearly 20 years ago, but didn't have the knowledge or talent to create at the time. So the top-down view of the original has been replaced with by a 2.5D view (hence the title) and the player is now a fully masked character, allowing for the tiles to be more detailed than before - such as having the direction of each conveyor clearly shown on it, and the text on the exit tile.

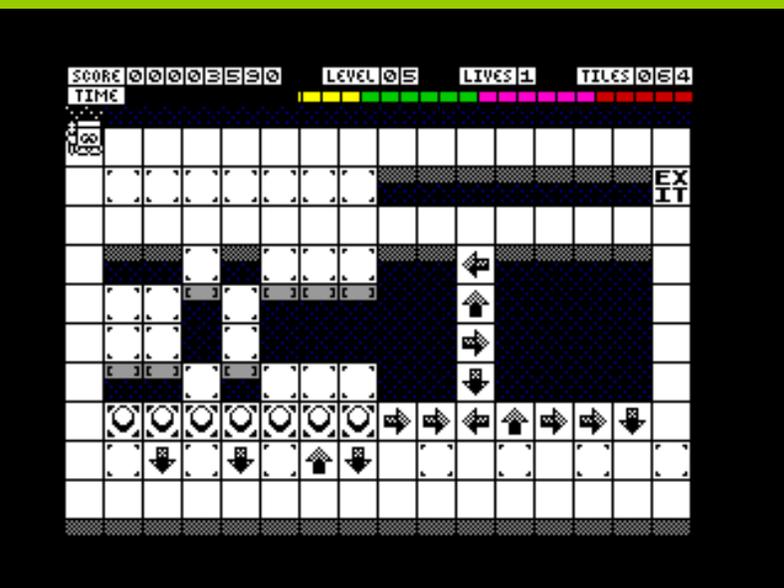
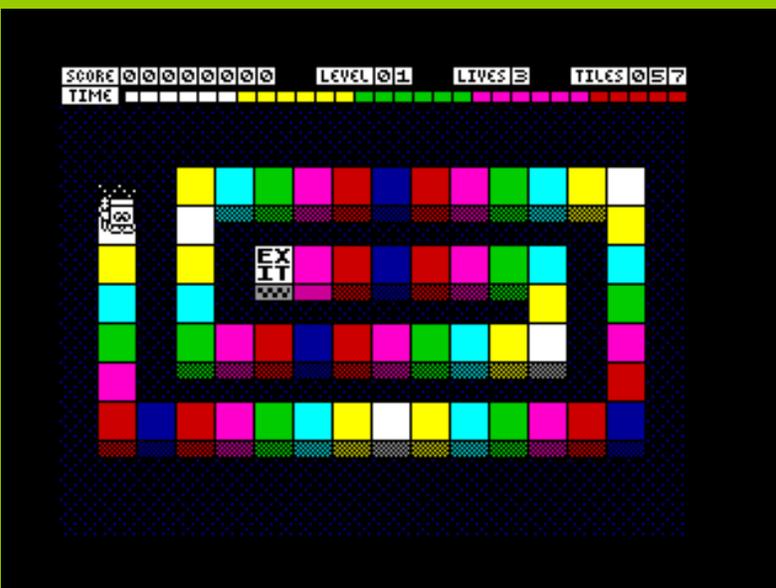
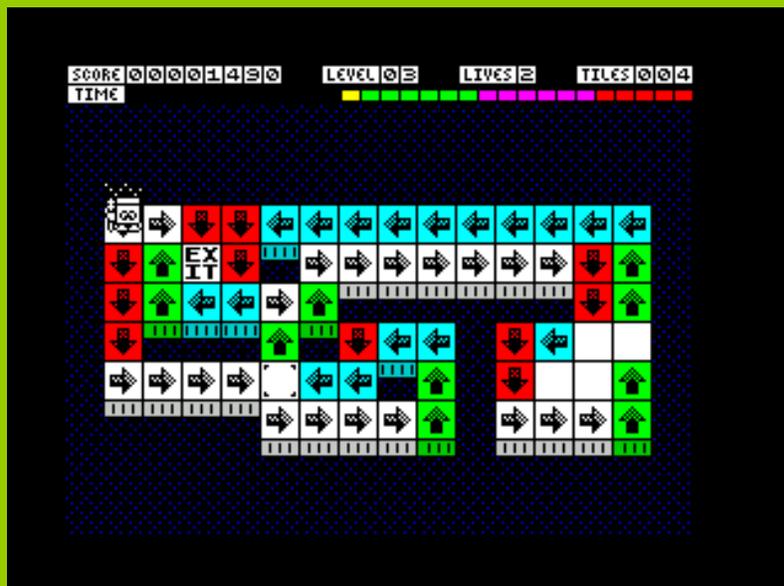
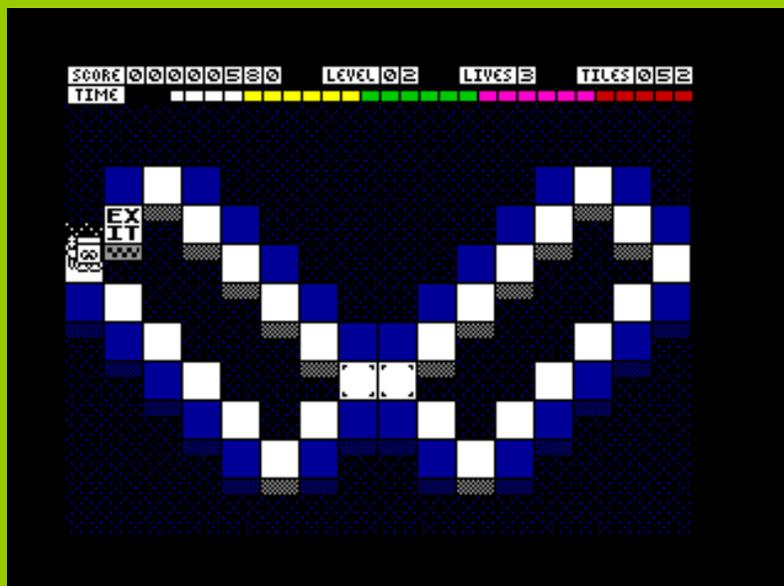
This doesn't mean it's simply a straight conversion though, as S2.5 has expanded the range of tiles to include conveyors which rotate at different rates, switches which control other tiles, and tiles which must be passed over multiple times before they disappear, to name three. The inclusion of switches allows more puzzles to be included, and the rotating conveyors add a further sense of timing to the levels.

The HUD has also been redesigned to be clearer, with the amount of time left on a level now being plain to see, as are the number of tiles left to be crossed.

Indeed, with the HUD being smaller, the game-area has been increased by an extra 2 rows to allow for more complicated levels.

Hopefully Lee du-Caine will be on hand again to provide the 128K music for the game after the fantastic work he did for Farmer Jack..., and that Cronosoft will once again be publishing it.

The story this time around is that Moosh has imprisoned Tysch after breaking the bridge between their worlds and, far from being evil, Tysch's bridge was built to promote trade & friendship. With that now gone, both worlds are suffering, and Tysch must try to escape the prison before he can return home and repair the damage done.



Picture the scene: It's the 1980s; you're at home having just come back from the computer shop having picked up the latest Crash Smash. The tape is running, a fancy title page is on the screen and you can't wait to get stuck in. However, upon loading, all is not well. The game you've bought seems to have playability reminiscent of that type-in you saw in Sinclair Programs the other week and you wonder how the magazines could have raved about it? Were they blinded by the spiffy graphics and programming techniques, or just taken in by the hype and the necessity of hanging on to their advertising revenues? Or did you just miss something vital? You sigh, yank out the power cord, and dig out the same game you were playing last week for another bash instead. We relive those moments here.

Airwolf



news I made one more Herculean (or should that be Masochistic?) effort and finally completed the game after much swearing and thumping of keyboard.

I suppose the creators deserve some credit for the detailed background graphics which still look rather good. It also made me play it to the finish, so perhaps it could even be described as addictive in its own peculiar way? Then again, I shouldn't be too charitable as I never found it a pleasant experience and only really finished the game through some misguided sense of duty.

Despite the cautionary words from Sinclair User, the other rave reviews and the TV tie-in brought in the punters and the game sold by the bucket load. A few years down the line it went on to spawn a sequel that was, if anything, even worse. Luckily for us though, none of the magazines gave it anything other than poor reviews.

They said:

Crash: A *Crash Smash*. 90%. "Addictive, playable and fun."

Sinclair User: 3/10. "Best avoided."

YS: 4/5. "One for the masochists."

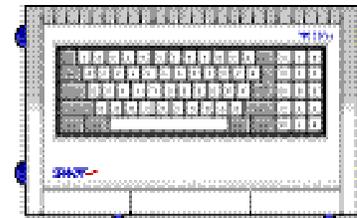
Matt: My memories of playing this game for the first few times were that I couldn't even get past the second screen for ages: You flew along, this barrier came down, you crashed into it, and you died. After a while I figured you could shoot holes in it, however it regenerated fairly quickly, so you had to do it in a hurry. Once you'd got through you were faced with... another barrier! This was came from left to right and also regenerated rapidly, although you could sneak around it into the next screen and fly back across to get past before it regenerated.

I grimly struggled through the next five screens shooting some square boxes and dodging past gun turrets and radar dishes before giving up in disgust, presuming that I'd never get into the game properly.

Little did I know at the time though that there were only twelve screens to the game and that I'd actually nearly finished it! At last it made sense that the game was so unforgiving: You could play it through in a couple of minutes if you could manage the split second timing needed to avoid all the traps. Upon this



SAM coupé



I've had a Siemens Pocket Reader since they first appeared a few years ago. It's a small optical device, which is powered by two AA batteries. The reader is easy to use; you just use it like you would a pencil. When the reader end comes into contact with the text you wish to OCR a small switch is activated which starts the scanner. Moving the scanner over the text and the reader stores it a character line at a time in the reader's EPROM memory. It can store 20 A4 pages of text, and it will not lose any of its data when the batteries are removed or go flat. It was designed for use with the PC but, Sam has the Comms interface and with the following Sam Basic program you can send the commands to the reader, to erase data, change the language, re-call the data and you should be able to upload data to the reader. The commands are sent to the reader via the RS232 link on the Sam's comms interface. This Sam Basic is a demo and an idea; I think it has some potential to be developed further.

from readers EPROM

```

8 REM proc calls: get_config - get readers
current config data
9 REM
10 REM
11 MODE 3
12 LET mr=&F8EC: REM MODE register 1 AND 2
14 LET sr=&F9EC: REM Status register
16 LET csr=&F9EC: REM Clock select register
18 LET cr=&FAEC: REM Command register
20 LET rhr=&FBEC: REM read holding register
22 LET thr=&FBEC: REM transmute holding
register
24 LET acr=&FCEC: REM Auxillary control
register
26 LET isr=&FDEC: REM Interrupt status
register
28 LET imr=&FDEC: REM Interrupt mask
register
30 REM
32 LET ctu=&FEEC: REM counter hi byte
34 LET ctur=&FEEC: REM counter hi byte
preset
36 LET ctl=&FFEC: REM counter lo byte
38 LET ctlr=&FFEC: REM counter lo byte
preset

```

```

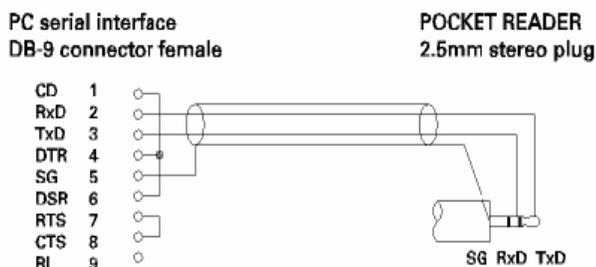
40 REM
42 REM ===== COMMANDS =====
44 LET CMD_CONNECT=0
46 LET CMD_DISCONNECT=1
48 LET CMD_GETCONFIG=2
50 LET CMD_CONFIG=3
52 LET CMD_GETBLOCK=4
54 LET CMD_NEXTBLOCK=5
56 LET CMD_REPEATBLOCK=6
58 LET CMD_ERASEALL=7
60 REM ===== RESPONSES =====
62 LET ACK_CONNECTED=&80
64 LET ACK_DISCONNECTED=&81
66 LET ACK_CONFIG=&82
68 LET ACK_READY=&83
70 LET ACK_DATA=&84
72 DIM batt$(4,7): LET batt$(1)
="Empty",batt$(2)="Low",batt$(3)="Average",bat
t$(4)="Full"
74 DIM lang$(5,8): LET lang$(1)
="Deutsch",lang$(2)="English",lang$(3)="Franca
is",lang$(4)="Espagnol",lang$(5)
="Italiano"
80 REM
200 REM ===== Retrieve Text =====
202 REM
204 DEF PROC Retrieve
205 LET TextStart=81920,TextPos=TextStart
210 init
220 sendbyte CMD_GETBLOCK
222 LABEL more_text
225 sendbyte 0:sendbyte 0: REM wanted
Baudrate
227 readbyte: IF b=ACK_CONNECTED THEN GO TO

```

pocket reader

PC connection cable

circuit diagram / Schaltbild



Link up is the same for the Sam

(Edwin Blink & SPT winter 2004 - Pocket reader Sam BASIC)

```

1>REM Siemens Pocket reader test
2 REM Basic Test program file name "PR-9"
3 REM proc calls: init - setup uart and
connect to reader
4 REM proc calls: abort - shut down
uart and disconnect reader
5 REM proc calls: Eraseall - erase data
from readers eprom
6 REM proc calls: lang_cfg - setup
languages on readers menu ect.
7 REM proc calls: Retrieve - get text

```

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227
230 IF b=ACK_READY THEN GO TO no_more
235 IF b<>ACK_DATA THEN PRINT "Text read
error": GO TO no_more
240 readbyte: LET c=0: REM get length,reset
checksum
245 FOR r=0 TO b-1:readbyte: LET c=(c BAND
(255-b)) BOR (b BAND (255-c)): POKE
(TextPos+r),b: readbyte: LET c=(c BAND
(255-b)) BOR (b BAND (255-c)): NEXT r
250 readbyte : IF b<>c THEN PRINT "Crc
error, Retrying":sendbyte CMD_REPEATBLOCK: GO
TO more_text
255 PRINT MEM$(TextPos TO TextPos+r-2);,,:
LET TextPos=TextPos+r:sendbyte CMD_
NEXTBLOCK: GO TO more_text
260 LABEL no_more
265 abort
270 IF TextPos=TextStart THEN PRINT "No
Text retrieved": GO TO end_retrieve
275 PRINT CHR$ 13;CHR$ 13; TextPos-
TextStart;" Byte Text retrieved. Save (Y/N) ?"
280 GET k$: IF k$<>"Y" AND k$<>"y" THEN GO
TO end_retrieve
285 DO : INPUT "Filename(Enter for
DIR):";k$: IF K$="" THEN DIR PEEK DVAR 7: LOOP
290 SAVE k$ CODE TextStart,TextPos-TextStart
292 LABEL end_retrieve
294 END PROC
296 REM
300 REM ===== Config / Setup Languages
302 REM
305 DEF PROC lang_config
310 init
315 sendbyte CMD_CONFIG
320 sendbyte 1: REM MODE 0/1 SCANNER/
Translator
325 sendbyte 1: REM Menu Language
330 sendbyte 1: REM Text Language
335 sendbyte 1: REM Target Language
340 readbyte
345 IF b<>ACK_READY THEN PRINT
"Configuration Error"
350 abort
360 END PROC
362 REM
364 REM
400 REM ===== Eraseall =====
410 DEF PROC Eraseall
415 init
420 PRINT "Are you really sure (Y/N)": GET
k$
430 IF k$="Y" OR k$="y" THEN sendbyte
CMD_ERASEALL
440 readbyte
450 IF b<>ACK_READY THEN PRINT "Failed to
erase text"
455 abort
460 END PROC
500 REM ===== readbyte =====
510 DEF PROC readbyte
520 FOR w=1 TO 500: IF (IN sr) BAND 1 THEN
LET b=IN rhr: ELSE PAUSE 1: NEXT w: LET B=-1:
REM READ byte with TIME OUT
530 END PROC
600 REM ===== send byte =====
610 DEF PROC sendbyte b
620 IF (IN sr) BAND 4 THEN OUT thr,b: ELSE
GO TO 620
630 END PROC
650 REM ===== init =====
652 DEF PROC init
654 OUT acr,&88: REM power up UART
655 OUT imr,&00: REM no interupts
656 OUT csr,BIN 01000100: REM 300 baud
658 OUT cr,&10: REM select MR1 reg
660 OUT mr,&03: REM no parity, 8 bits
662 OUT mr,&07: REM no fancy stuff, 1 stop
bit
664 OUT cr,&20: REM reset reciever
666 OUT cr,&30: REM reset transmitter
668 OUT cr,&45: REM clear errors, enable
Reciever, Transmitter
669 IF (IN sr) BAND 1 THEN LET b=IN rhr: GO
TO 669: REM flush reciever fifo
671 FOR r=1 TO 50
672 sendbyte CMD_CONNECT
673 PAUSE 10: IF (IN sr) BAND 1=0 THEN NEXT
r
674 readbyte
676 IF B=ACK_CONNECTED THEN PRINT "Connected
": ELSE PRINT "Failed to connect": STOP
678 END PROC
700 REM ==== abort ====
710 DEF PROC abort
715 IF (IN sr) BAND 1 THEN LET b=IN rhr: GO
TO 715: REM flush reciever fifo
720 sendbyte CMD_DISCONNECT
730 readbyte
740 IF b=ACK_DISCONNECTED THEN PRINT
"Disconnected"
750 OUT acr,0: REM power-down UART
770 END PROC
800 REM ===== get_config =====
805 DEF PROC get_config
810 init
820 sendbyte CMD_GETCONFIG
825 readbyte
830 IF b<>ACK_CONFIG THEN PRINT
"Communication error": abort
832 PRINT
840 readbyte: PRINT "Mode ";b
842 readbyte: PRINT "Menu Language ";
lang$(1+b)
844 readbyte: PRINT "Text Language
";lang$(1+b)
845 readbyte: PRINT "Target Language
";lang$(1+b)
846 readbyte: PRINT "Free memory ";b;" %"
848 readbyte: PRINT "Battery State
";batt$(1+b)
850 readbyte: PRINT "Firmware Version ";
b;".";
852 readbyte : PRINT b
860 abort
870 END PROC
4999 STOP
5000 SAVE "PR-9"

```

The Unofficial Pocket Reader Homepage can be found here:-

<http://www.8ung.at/pocketreader/>

ZX SHED

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Please note for legal purposes that the ZX Shed definition of the word 'Soon' may differ from that of the Oxford English Dictionary. Deal with it.