

08

Spectrum computing today

PRICE LIST (prices checked 20 April 2004)



New:

PC-PSU with supply for 2 Floppies and MB02	36,00 €
MB02-Printerlead	13,00 €
Proface AT Extern (Interface for connecting PC-Keyboards to Spectrum)	69,00 € KS
Proface AT Intern (internal interface)	62,00 € KS
Melodik AY-Soundbox (unboxed)	24,00 € KS
+2 Cassette recorder	36,00 €
Floppy Disc drive (1,86 with MB02, 720k with Opus, 780k with +D) Please specify	24,00 €
PSU for +2A/B and +3 or PSUI for +2 (also 48k and 128k) Please specify	29,00 €
FDD lead for 2 drives	4,00 €
Multiface 128 (works also on 48k Spectrums)	26,00 €
Dust Cover 48k+/128k	8,00 €
Plus 3 Tapelead	9,90 €
Normal Tapelead	3,00 €
Spectrum +2 Lightpen	36,00 €
Spectrum +3 Lightpen	27,00 €
Phaser Gun with Software (Tape or +3)	19,00 €
SCART-Monitor cable (choose for 128k/+2 or +2A/+3)	25,00 €
VGA-BOX (connect Spectrum 128/+2 to VGA monitor)	49,00 €
VGA-BOX Multi purpose (Connect any PC monitor to Spectrum 128/+2)	79,00 €
+3 drive belt	2,00 €
Silver paper for ZX Printer	5,00 €
Keyboard membrane 48k	11,00 €
Keyboard membrane Spectrum +/128k, new quality, not aging	21,00 €
Spectrum keyword stickers	8,00 €

Used:

Sinclair ZX Spectrum 128k, complete with all cables	129,00 €
Sinclair ZX Spectrum +2, complete with all cables	79,00 €
Sinclair ZX Spectrum +2A, complete with all cables	69,00 €
Sinclair ZX Spectrum +3, built in 3" drive, complete with all cables	99,00 €
Sinclair Spectrum 48k (Gummy), complete with all cables + Introduction Tape	64,00 €
Sinclair Spectrum 48k +, complete with all cables + Introduction Tape	64,00 €
+3 Drive (tested)	29,00 €
Interface I	69,00 €
Microdrive	25,00 €
Wafadrive	39,00 €
Opus Discovery Diskinterface with 1 x 720k Drive (new ROM)	119,00 €
Joystick interface	1-Port 3,00 € 2-Port 11,00 €
Joystick (many different)	2,50 €
Sinclair SJS-Joystick (+2/+3)	6,00 €

Consumables:

Microdrive Cartridges (ex-software)	3,50 €
Wafadrive Cartridges	16K= 7,00 €, 32K= 7,50 €

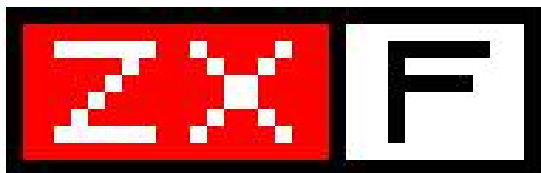
Also we have a lot of Software offers and books. Please contact us and we will send you our pricelist.

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Tel./Fax: 0049 711 775033 email: sintech@online.de <http://www.sintech-shop.de>



Spectrum computing today

SUMMER 2004 Issue 8

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If you enjoy ZX F and you want it to continue then consider yourself duty bound to let me know this (mail@cwoodcock.co.uk or by the feedback form). All other feedback will be gratefully received too.

ZXF now has a voluntary purchase scheme. If you have downloaded and enjoyed an issue of ZX F, and if you are able to afford to, please consider paying £1 for your issue via the Paypal button on at the ZX F website ('magazine' page).

If you would like to contribute to future issues of ZX F - even if it's just to write a letter - **please do**; contact me again by the email address below.

Editor: C Woodcock (mail@cwoodcock.co.uk)

Website: www.cwoodcock.co.uk/zxf

Contributors this issue: Kevin Bennet, Matthew Harrodine, Matthew Westcott, John King and Thomas Eberle. A big thankyou also to all letter writers and news contributors.

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Welcome readers old and new to ZXF magazine. Did you know there's now nearly a thousand of you? Crikey.

This issue, we report on the implementation of support for Sami Vehmaa's ZXCF

Compact Flash interface in two emulators:

Fuse and

the

very

last

version

of

Ramssoft's

RealSpec.

It's really

good news that

this excellent

interface is

receiving emulation

support and you will

find a short tutorial on

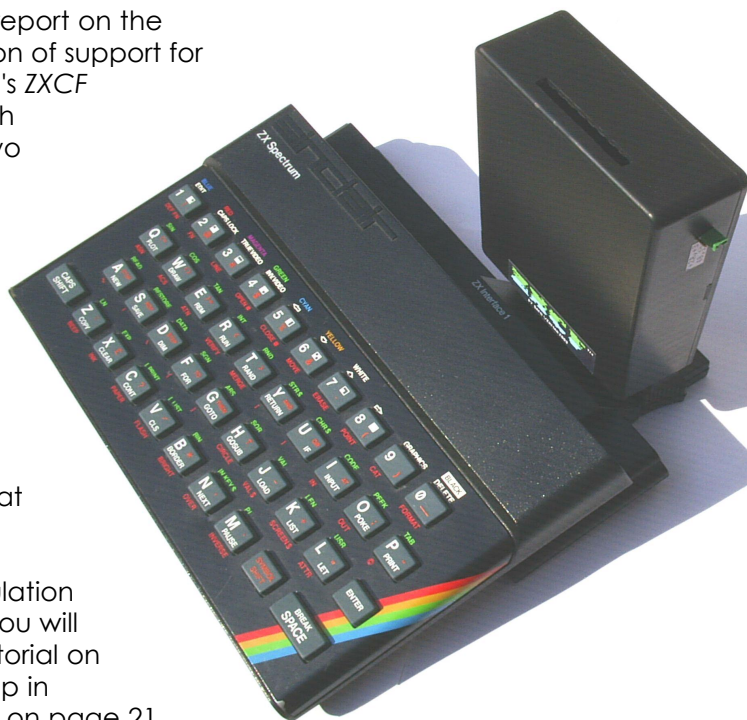
how to set it up in

RealSpectrum on page 21.

I received my own ZXCF interface a few weeks back and I must say I can't remember ever plugging something into the back of my Spectrum that transformed it quite so radically. My *Plus D* interface in 1990 or thereabouts would be the closest I ever got to this I guess, but the *Plus D* is just a storage device device (when a disk drive is connected, of course) and the ZXCF is so much more.

For starters, before you even go anywhere near the slot at the back with a Compact Flash card, the interface gives you an enormous memory boost. A whopping great 1MB in my case. Just like that. The interface's operating system, *ResiDOS* (written by +3e creator Garry Lancaster) allows you to access this memory straight away via its very own Task Manager program, which itself is called up in an instant at the press of the interface's NMI

button. Spectrum programs can be swapped in and out of the computer's 48K from the interface



RAM using the task Manager - up to 16 programs can be kept running together, in fact. The interface has its own internal battery (good for three years apparently, after which you'll need a friend with soldering skills to replace it) to power the on-board RAM, by the way; get half-way through a game of *Scrabble*, turn off the Spectrum, come back a week later and your game will be there waiting for you.

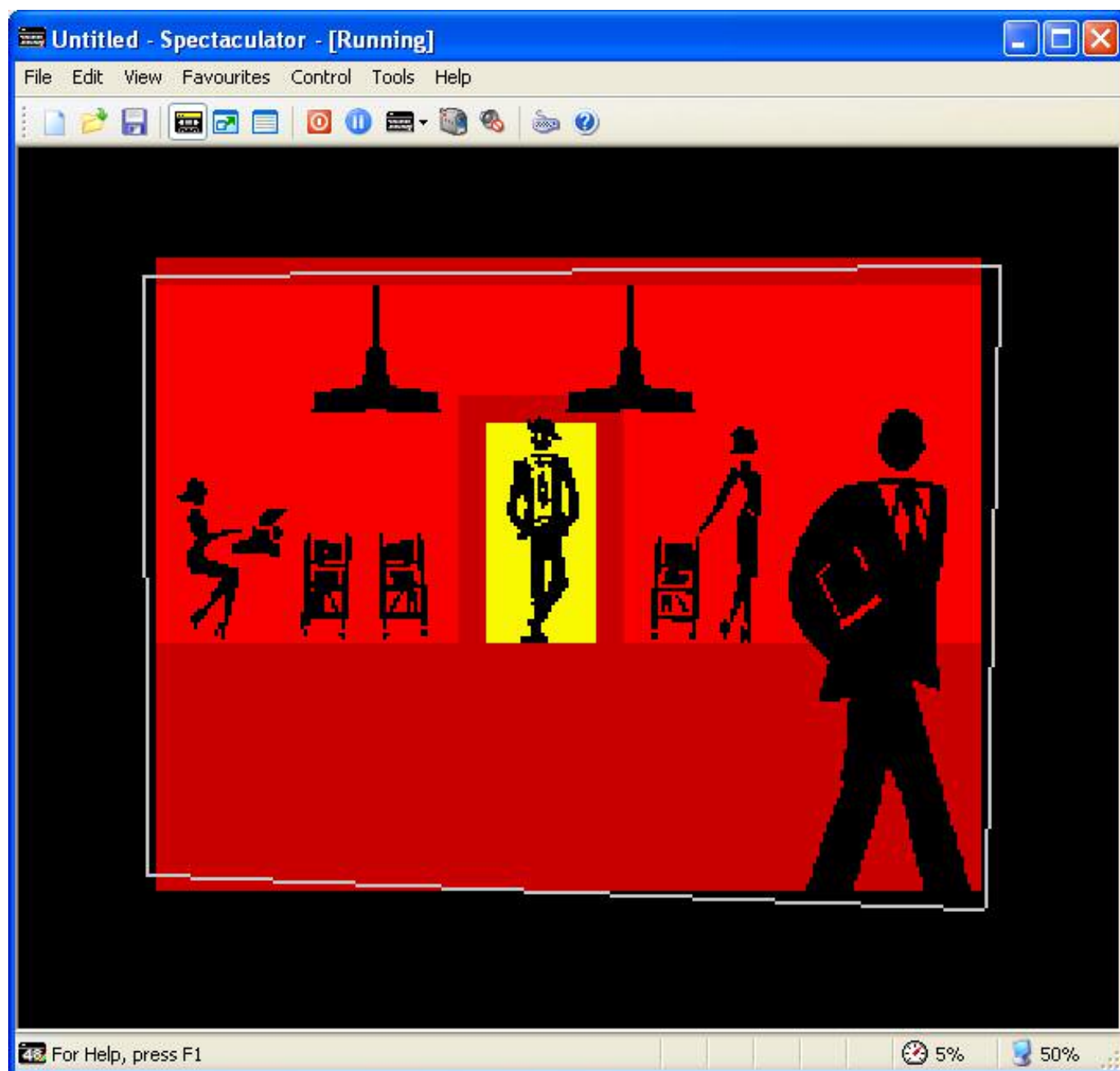
And when you do add in a Compact Flash card, of course, any of these programs can be snapshotted to it for permanent storage. Although actually that's the very least that's possible. The capacity of CF cards these days is almost limitless; using *ResiDOS* you can create as many partitions as you want for either files or swap data. *Swap data?* Well *ResiDOS* has been designed with the intention that one day people will write programs

specifically for it - to put all of that storage space to use within a game. Full motion video is Matthew Westcott's proposal for what you could do with it. And then there's sampled audio - think *Starglider 128* rather than *Ghostbusters*.

Better still in my opinion would be bigger games - not necessarily larger playing areas, you understand, but rather much more detailed ones. The need to rely on tiled graphics for walkabout games would be virtually eliminated, for example - every screen could be as complex as a loading screen if you wanted it to be. Text adventures could be supported by detailed graphics - perhaps even digitised photographs - rather than the spartan vectors we're used to.

These sorts of possibilities aren't going to appeal to all within the Spectrum community, of course, and we must accept that different people want different things from their hobby. For many programmers, for example, the challenge is increasingly to see just how much they can squeeze out of 48K; limitless memory simply doesn't interest. Also, the desire to write for a machine which can still be found in many households around the world is likely to be higher than the desire to write for a system owned presently by just a handful of people.

But the challenge is still a valid one. just what is the Spectrum capable of when memory is not an issue? Perhaps it's more of an artistic question than a technical one where games are concerned. Has the Spectrum really been explored graphically or have we just been fooled by the endless copies of a few ideas into thinking that all that can be done has been done? For a long time now I've felt there to be plenty of artistic styles worth



exploring on the Speccy - take the converted piece of 'Catch me if you can' artwork above, for example.

It's the way we imagine Spectrum software to be that now limits our vision of what it *could* be. With ZXCF we now have all we need to start thinking and creating outside of the box. And now that it's supported in emulation there's nothing stopping anyone from getting to grips with this new

technology and perhaps even starting to program with it. It's not a replacement for the old challenges; it's a new challenge altogether.

Next issue I'll be getting to grips with the interface and ResiDOS in more depth. Until then I strongly encourage you to have a play in *RealSpec* or *Fuse* and start getting your heads around the potential. I think it would be great also if other emulator

authors could consider implementing ZXCF in their programs too. Best of all would be an emulator that could read from and write to CF cards connected to a PC - now that would really get things going!

Until December...

Colin Woodcock

mail@cwoodcock.co.uk



A-BIKE ON ITS WAY

>Sinclair unveils world's smallest folding bike

He's still at it; Sir Clive Sinclair revealed in July his latest attack on congestion. The result of a five year research partnership with Hong Kong's **Daka Designs**, the **A-Bike** will go on sale next year for around US \$300 (£162). Folded, the bike takes up less than 0.03 cubic metres and folding or unfolding takes less than 20 seconds. It weighs just 5.5Kg - which is 2.5 Kg less than the nearest competitor - but it can support up to 112 Kg in rider weight. And although those wheels look tiny, Sir Clive promises they're no harder to peddle than any ordinary bicycle.

The unveiling took place in Singapore, a city that is used to mixed modes of transport; reportedly a number of groups have already approached the partnership regarding distribution.

If the venture is a success, the next step will be to develop an electric motor for the cycle, said Sir Clive, showing that he's not giving up on the dream he's nurtured for the past twenty years. Go for it, Uncle C.



Reuters

MORE PLUGINS TO COME

>C64 and Sega Megadrive joysticks on the way

Christmas is a-comin'... And the treat in store for our good friends in the land of Commodore this year will be this fancy new C64 joystick containing no less than 30 classic C64 games, including the **EPYX** Games series and a number of **Hewson** classics, such as *Uridium*, *Cybernoid* and one of my own all time favourites *Nebulus*.

Expected to retail at around the £30 mark and due to hit the European high street in October, the **C64DTV** (Direct-to-TV) is being brought to the market by new Commodore brand owners **Tulip**. Learn more at www.commodoreworld.com

Meanwhile, fans of the 16-Bit Sega Megadrive are also due for a treat; a similar, plug-it-in your telly control pad in



the proper Megadrive style is due to be released later this year by electronic games company **Radica**, again for around the £30 mark. It will contain six full Megadrive games: *Sonic The Hedgehog*, *Golden Axe*, *Altered Beast*, *Dr Robotnik's Mean Bean Machine*, *Flicky*, and *Kid Chameleon*.

No news as yet of a similar offering for the Spectrum. ZXF has written to **Amstrad** asking if anything is planned, but so far has yet to receive a reply. For the moment, at least, no news will have to be treated as good news.

RETRO GAMER

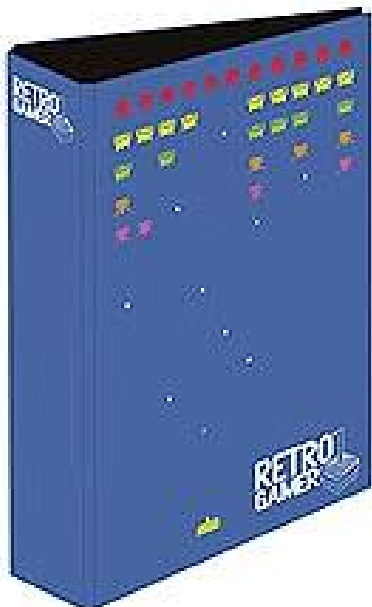
>Live Publishing's retro warrior goes monthly

First it was quarterly, then it was bi-monthly, then it was every six weeks, and finally, inevitably Live Publishing's **Retro Gamer** has gone monthly in its publication schedule. Issue 2 has sold out (again) and publishers **Live Publishing** are now targetting the US market as well as UK readers - hence the movement of 'Sinclair' on the front cover to fifth place (after Commodore, Sega, Nintendo and Atari - the formats Americans will be most familiar with) from first place. Don't worry - editor Martyn Carroll is a big Spectrum fan.

In recent issues **RG** has promoted ZXF also, featuring an interview with yours truly in issue 4 and information on the new ZXF book, **The ZX Spectrum on Your PC** in issue 5. The Spectrum continues to receive a high profile generally; full marks all round, by the way, for the Spectrum program listing in issue 5 (nice to see the magazine properly embracing its heritage) - I believe it's been reported there was a typo in there too, which, of course, is absolutely right and proper ;) There was also a very comprehensive article on Manic Miner remakes in issue 6.

Now that **RG** is a regular publication a range of branded merchandise is being sold from the magazine's website at www.livepublishing.co.uk/content/retrogamer.shtml. A snazzy range of T-shirts will enable you to be picked out by other retro enthusiasts during the summer weeks and, of course, there's the obligatory magazine binder. Each binder holds 12 issues and would have taken three years to fill on the original publication schedule. They cost £6.99 apiece.

What things lie in store for us as the retro band-wagon gathers its pace? So far, there's no sign of any challenger to **RG** from the stables of any of the other well-established magazine publishers, although **Edge** magazine did recently acknowledge the existence of the Spectrum in a feature on Sinclair aesthetic design. Interestingly, this particular feature was published in the preceeding issue by just a plain black page with the Spectrum rainbow logo in the bottom-right corner. Iconic status, you see. Pay attention Amstrad.



Left: The Retro Gamer binder keeps 12 issues of the magazine in pristine condition (and in years to come will add £££s to your collection's value when you flog it on ebay).

Right: The Retro Gamer 48K T-shirt, modelled here by an absolutely typical Spectrum user.





SPECTRUM DIAMOND

>Matthew Smith documentary

The look of nostalgia. You'll find plenty more of that in this well-crafted documentary, online at **Classic Computers Online**. Made for an Italian TV audience, **Spectrum Diamond: The Myth and legend of Matthew Smith** features an endless lineup of talking heads gazing into that distant spot over the interviewer's left-hand shoulder where Willy dances once again. Most of the 50 minute film is in English with Italian subtitles, so the biggest obstacle to enjoying it is likely to be the download size: at a whopping great 400MB the **CCO** server quickly went belly-up and download times started to get quoted in days rather than hours. Thanks are due, then to **Matthew Westcott**, who stuck the download out until the end and then converted it into a **BitTorrent** (<http://bitconjurer.org/BitTorrent/>) file, which you can find at <http://stuff.bluecanary.mine.nu/speccy/matthewsmith/>

TELE +50



NOTCON '04

>Watch Gasman talk Spectrum

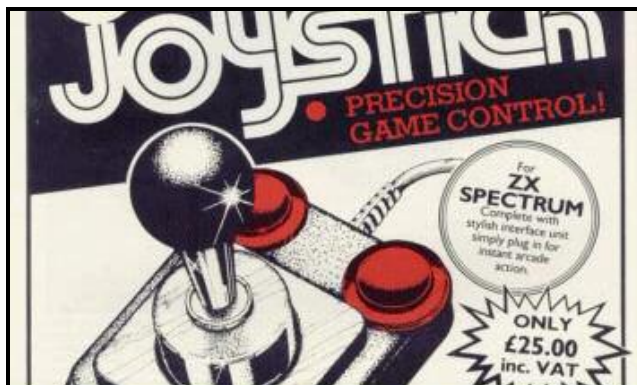
Billed as "an informal, low-cost, one-day conference on things that technologies were perhaps not intended to do," **NOTCON '04** took place on June 6th at Imperial College Union and was attended by **AY Rider/Demotopia** maintainer **Matthew Westcott**. At the event, Matthew introduced a good-natured audience to some of the goings on in the world of a computer long-forgotten to most of the delegates, presenting his **Loosing Victoria** demo and a rather impressive piece of ZX streaming video.

The good news is you can watch the presentation in full at www.ejhp.net/notcon/ The text of the talk is also available online at www.zxdemo.org/article.php?id=8

SECOND YSRNRY DOCUMENTARY RELEASE

>1983 is here

Last issue we spoke with Nick Humphries about part one of his Your Sinclair Rock'n'Roll Years video - 1982. Part two is now nearing completion also (at the time of writing, that is; you lot might well have your grubby mits on it already by the time you read this); ZXF got a sneaky look at an early edit - minus the soundtrack - and is happy to announce this new chapter to be just as fascinating and well-polished as its predecessor.



People would get an idea to make something and would try to sell it themselves in the hope that they've hit the next big thing.



Some of the inventions flew, others turned out to be too specialised to succeed.



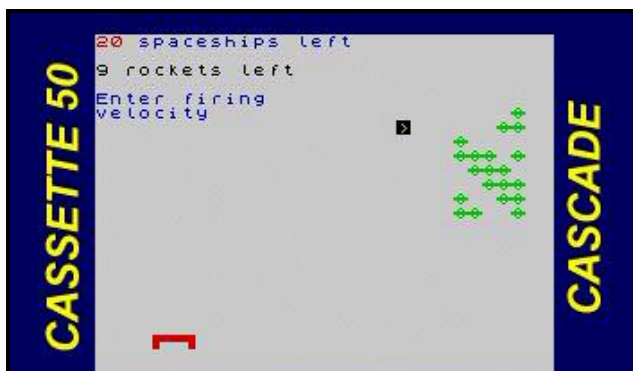
Pop groups even started putting games on their vinyl records, although the games themselves usually turned out to be very poor.



The Commodore 64 was launched this year as a serious business and home office machine.



Spectrum BASIC was so easy to learn that people would quickly knock up some games in their bedrooms before selling it themselves.



Not all BASIC games were as good, as buyers of the globally-slated Cassette 50 soon discovered.

ZXF NEWS

>New website; new book; free game

After months of messing about with it, the new ZXF website is finally online. It will probably appear on first inspection more of a tweaking and polishing than a complete redesign, but it's involved a fairly major overhaul, nonetheless.

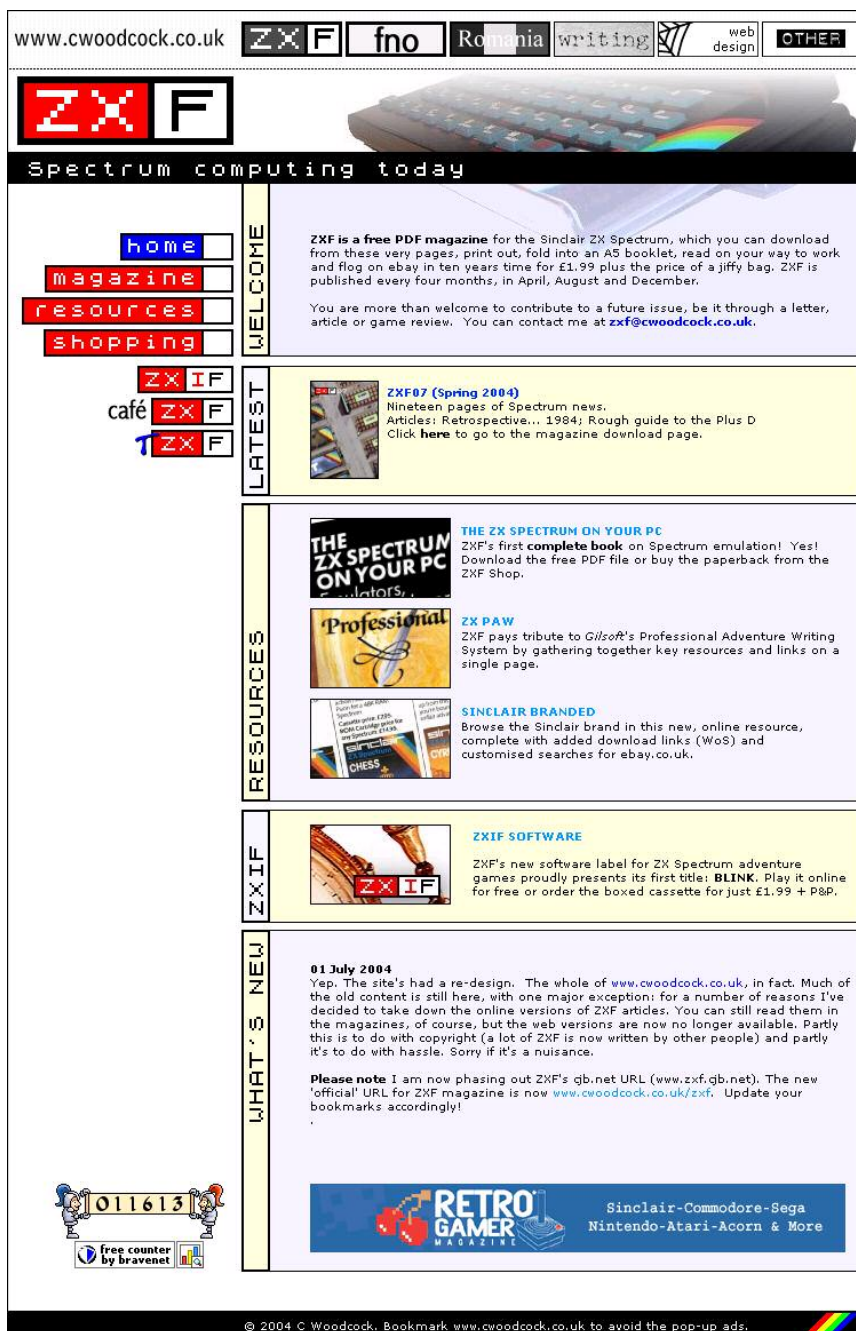
First things first: the official web address of the site has changed and is now

www.cwoodcock.co.uk/zxf. The old address of **www.zxf.cjb.net** is still valid and will continue to work for a while, but I encourage you all to use, bookmark and distribute the former, since this will avoid the rather nasty Gator installers that kept on popping up with the cjb URL. I'm really glad to say farewell to those.

The site features, amongst other things, the new **ZXPAW** area dedicated to **Gilsoft's** wonderful **Professional Adventure Writing System**. The **Sinclair Branded** site is still some way from anything approaching completion, but as a faster there are links to the 1983 Sinclair Research Software and Peripherals Catalogue I PDF'ed back at the beginning of the year. And those of you who miss the HTML version of the 1984 catalogue (which was part of the old ZXF site) can rest easy - the web pages will soon be republished at WoS by arrangement with Martijn.

ZXIF continues to have its own area in the new site. I know there haven't been any new ZXIF releases so far this year - I've been a tad busy in recent months - the label is not forgotten, however, and work is continuing on ZXIF02 - '**43 minutes**'. In fact, since it's now a year since **Blink** - ZXIF's first adventure game - was released, I've moved this title into the public domain and it can now be downloaded for free as a TZX file either from the ZXF website or from WoS. You can still purchase a cassette version if you want that Real Cassette Feeling, however.

Last of all, there's a new area for **TZXF**, the ZXF-on-a-tape project that's



www.cwoodcock.co.uk ZXF fno Romania writing web design OTHER

ZXF

Spectrum computing today

home
magazine
resources
shopping

WELCOME

ZXF is a free PDF magazine for the Sinclair ZX Spectrum, which you can download from these very pages, print out, fold into an A5 booklet, read on your way to work and flog on ebay in ten years time for £1.99 plus the price of a jiffy bag. ZXF is published every four months, in April, August and December.

You are more than welcome to contribute to a future issue, be it through a letter, article or game review. You can contact me at zxf@cwoodcock.co.uk.

LATEST

ZXF07 (Spring 2004)
Nineteen pages of Spectrum news.
Articles: Retrospective... 1984; Rough guide to the Plus D
Click [here](#) to go to the magazine download page.

RESOURCES

THE ZX SPECTRUM ON YOUR PC
ZXF's first complete book on Spectrum emulation! Yes! Download the free PDF file or buy the paperback from the ZXF Shop.

ZX PAW
ZXF pays tribute to *Gilsoft's* Professional Adventure Writing System by gathering together key resources and links on a single page.

SINCLAIR BRANDED
Browse the Sinclair brand in this new, online resource, complete with added download links (WoS) and customised searches for ebay.co.uk.

ZXIF

ZXIF SOFTWARE
ZXF's new software label for ZX Spectrum adventure games proudly presents its first title: **BLINK**. Play it online for free or order the boxed cassette for just £1.99 + P&P.

WHAT'S NEW

01 July 2004
Yep. The site's had a re-design. The whole of www.cwoodcock.co.uk, in fact. Much of the old content is still here, with one major exception: for a number of reasons I've decided to take down the online versions of ZXF articles. You can still read them in the magazines, of course, but the web versions are now no longer available. Partly this is to do with copyright (a lot of ZXF is now written by other people) and partly it's to do with hassle. Sorry if it's a nuisance.

Please note I am now phasing out ZXF's gb.net URL (www.zxf.gb.net). The new 'official' URL for ZXF magazine is now www.cwoodcock.co.uk/zxf. Update your bookmarks accordingly!

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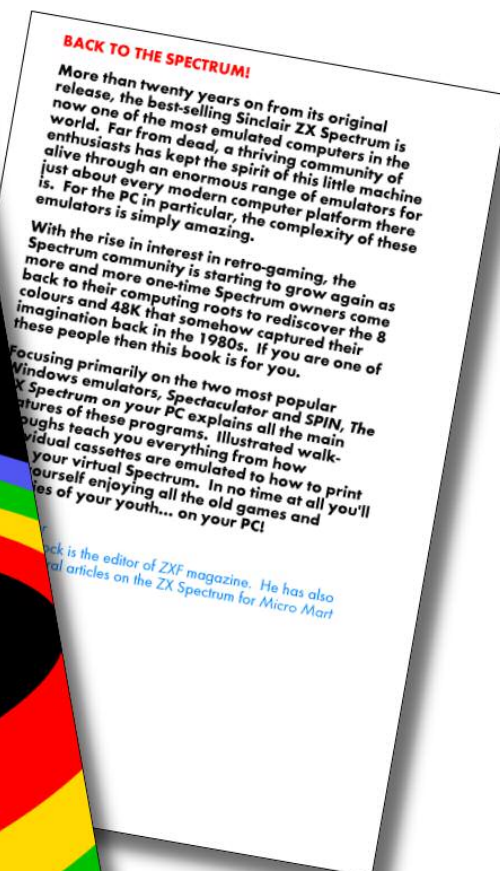
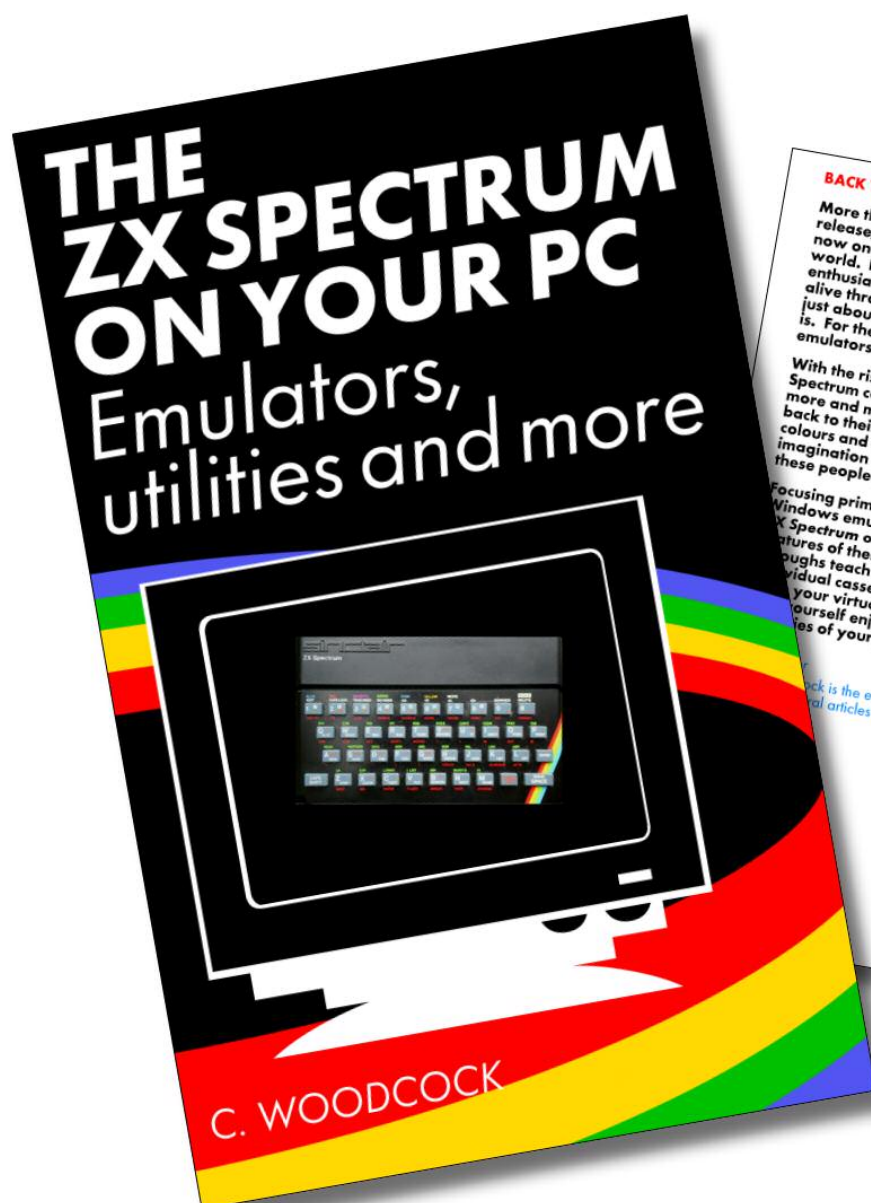
RETRO GAMER
Sinclair-Commodore-Sega
Nintendo-Atari-Acorn & More

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also got a way to go before it sees the light of day. But we're getting there.

The other main ZXF project since ZXF07, of course, is the new PDF ebook, **The ZX Spectrum on Your PC**. Published at the end of June, the book is targetted at ex-Spectrum users only now starting to look at emulation and wandering what it's all about. Despite what some of you might think, it is all rather bemusing to newcomers. Well, it took me a while to work it all out...

Available as a free 3.5MB PDF download (many thanks to **WoS** for hosting the file) and fashioned in the style of the old Granada Publishing books for the Spectrum, the book is also available to



buy as a paperback from ZXF's online shop at www.cafeshops.com/zxf thanks to Cafepress.com's recent addition of books to their enormous range of customisable merchandise. I have to say to anybody thinking of creating a similar book themselves, receiving my paperback copy through the post was one of the coolest experiences I've ever had! The quality of the finished product is superb.

The paperback costs US \$11.99 (\$10 of this is the fee charged by Cafepress.com for the service), but non-US customers should be aware that they'll have to pay a \$7 shipping charge on top. The

total cost for most of us, therefore, is likely to be US \$18.99, which works out as around about £10.50 by today's exchange rates.

From the comments ZXF has received from its readers, **The ZX Spectrum on Your PC** has reached its target audience and gone down well there. Coverage in both **Retro Gamer** and **Micro Mart** has helped (thanks Shaun). A few long-time Spectrum fans and contributors have expressed disappointment by the range of emulators covered in the book, however - a total of eleven are referred to (**SPIN** v0.5 and **Spectaculator** v6.3 are the main emulators

discussed), which, of course, is only a drop in the ocean compared to what's out there - and the lack of depth in the section referring to tape preservation has left at least one scene supporter feeling unappreciated in his efforts. Not at all the intention, of course.

As I write this now it's just over two weeks since **The ZX Spectrum on Your PC** was announced and, during this time, it's been downloaded nearly 700 times.



SIR ALAN SUGAR RECRUITS

>New BBC show to feature Amstrad boss



The BBC have chosen noneother than **Amstrad** boss **Alan Sugar** to take up the reigns of their new series **The Apprentice**, coming soon to UK TV. The programme is inspired, of course, by the hit US reality TV series of the same name in which **Donald Trump** took a group of hopefuls through their paces, firing one at the end of each episode until there was just one left... and the prize of a \$250,000 job. From the look of things, Auntie Beeb has no intention of changing this formula one jot for the UK version; they describe Sugar as "champion of enterprise initiative and philanthropist extraordinaire."

NEW FACE PLATE PROJECT

>RWAP seek support for new batch of face plates

We all know about keyboard membranes, of course. Their demise on a regularly used Spectrum is as inevitable as Winter. Insofar as getting hold of new membranes is an issue, we're fortunate that, for the moment at least, they're quite easy to obtain (**RWAP Services** in the UK; **Sintech** in Germany). In fact, membranes manufactured in recent years are reported to be much more durable than their 1980s predecessors. From the Spectrum+ onwards, replacing a membrane was a simple matter of unscrewing a few screws, but for the original 48k model, however, replacing your membrane *and* maintaining a pristine face plate was a high-on impossible task. The initial approach taken by Sinclair to fixing the faceplate to the Spectrum, after all, was basically to glue it there. It would come off, but it would bend in the process. And so it is that many of our machines bare the scars of bent face plates.

New face plates do come around occasionally on **ebay**, but you can be certain there will never be one up for sale when you actually need one. Which is why **RWAP** are currently looking into the possibility of getting a whole new batch manufactured to sell from their site. If they go ahead with the plan, it could result in a load of tired old Spectrums being given a whole new lease of life.

Understandably, RWAP aren't all that keen to shell out for the cost of manufacture without some sort of confidence in the things actually selling once they're made, so they've set up a special guestbook for potential customers to sign at www.rwapsoftware.co.uk/plates.html - this will be their way of gauging the interest. If you would like to support the project, head over there now.

MORE EBOOKS

>49 type-ins from Hungary

Is this the dawn of a new era in type-in listings? Here we have not one, but two whole PDF books crammed full of listings - 49 of them between the two volumes. There's not much I can say about the programs since the program text and annotations are all in Hungarian, although it's certainly worth pointing out that the download for each book contains all of the games typed in for you and saved as Z80 snapshot files as well as the main PDF itself.

László Nyitrai is the author of the two books, totalling nearly 300 pages between them. They can be downloaded from the new books area of WoS's ftp site:

<ftp://ftp.worldofspectrum.org/pub/sinclair/books/>



HEY HEY 16K

>Spectrum anthem gets a video

If you've been following the Spectrum scene over the last few years you'll no doubt be familiar with this song: **Hey Hey 16K** by **MJ Hibbett & The Validators** was released in 2000 and was - so it's claimed - "the world's first ever true internet single." Since then the song's become something of a theme tune to the scene and now, four years later, it's had a video made for it courtesy of **Rob Manuel**. And it's superb.

The video is a Macromedia Flash movie and can be found at www2.b3ta.com/heyhey16k/ The original song can still be downloaded from www.mjhibbett.net, where you can also buy the album from which the song was taken - **Say it with words**.

POWER OF GENTILE

>New AY group debut

Regular readers of ZXF will no doubt be aware of the achievements of AY chip musicians the **AY-Riders**; the Riders are no longer alone, it seems. **Power of Gentile AY-Chip** have recently released their own collection of Spectrum tunes titled **Just in Influence of Wizardry**. This new group comprises the Riders' own (and newset) member **C-Jeff** as well as **Macros**, **Nik-o** and **Riskej**. In contrast to the Riders' MP3 format releases, **Just in Influence of Wizardry** currently consists of a collection of **Pro Tracker 3** files (with the extension PT3) - a fraction of the size of MP3 files for sure, but you won't get far with Windows Media Player if you want to listen to them. The magnificent **AY-3-8910/12 Emulator** by **Sergey Bulba** experiences no such confusion, however. Download this from http://bulba.at.kz/emulator_e.htm and the tunes themselves are at <http://riskej.nm.ru/magicians.htm>; you'll soon find yourself listening to a very pleasing collection of AY tracks indeed.

SMAX

>New development environment

Chris Cowley, the original author of **vbSpec**, is developing a whole new development system; although the project is in its very very early stages, the concept looks mighty fine and would give us non-ASM programmers finally a chance to realise all those wouldn't-that-look-good-as-a-speccy-game ideas. Chris' post to WoS/CSS is below:

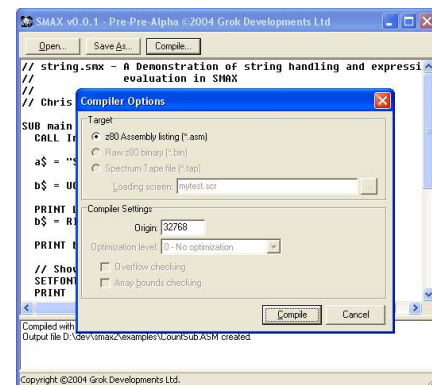
One or two of you may, if you have particularly good memories, recall me alluding to a new speccy-related project that I had in mind a few months ago.

Well, after spending a considerable amount of time reading books which made my brain hurt, and playing around with various bits of code, I've come to the conclusion that I'm not going to get this thing into a usable state any time soon, so I've decided to release what little I've done to see what people think of the idea.

Basically, SMAX, is (or at least, will be, one day) a BASIC cross-development system for the Spectrum. A bit like Visual Basic, but instead of producing Windows applications, SMAX spits out super-fast, optimized, "100% MACHINE CODE" programs for the Speccy in the form of TAP files.

My intention is to ultimately have a host of simple commands for moving sprites around the screen, playing music and sound effects, and maybe even drawing 3D wireframe graphics. The idea being that anyone who knows BASIC (I have based the language on Microsoft BASIC as this is the most commonly used dialect in the world) will be able to write fast, glossy, machine code games with the minimum effort.

However, I've already spent a whole bunch of weeks of R&D effort on it and all I've got to show for my trouble so far is a very buggy, very basic, rudimentary



BASIC compiler that doesn't work well enough to do

*anything practical with at the moment. Writing compilers, I have discovered, is *hard*! And the scope of the project is monumentally huge. In particular, writing library routines is taking up vast amounts*

of time (partially because I'm not exactly the most skilled Z80 programmer the world has ever seen).

*Therefore, if I do ever get it into a state that could remotely be referred to as "finished", then it *will* cost some money to buy. How much money depends on a whole bunch of factors that I haven't worked out yet, the biggest of which will be whether or not anyone is actually*

interested in it.

Anyway, enough waffle, anyone who's interested can look at some screenshots and download a functioning (sort of) "technology preview" at <http://freestuff.grok.co.uk/SMAX/> -- please be aware that I don't want any bug reports at this point. I already know it's very broken!

Opinions (good, bad or indifferent) are very welcome!



FIRST UK CGE HITS CROYDON

By all accounts, the CGE went rather well. Sponsored by Retro Gamer and attended by JSW superstar *Matthew Smith*, attendees are already calling for this to become an annual event. ZXF was unable to attend, but rather liked *Juice's* css report, re-printed below with his permission. You can also read another excellent show report at <http://raww.org>

Here begineth the taleth of a short tripeth to a small suburb of London(eth)...

It was good fun, though the Expo had more of a retro-market feel, than anything else (that said, I'm not entirely sure what an Expo is meant to feel like:) The place was medium-full, and we got to stop and look/tinker with anything we wanted to. The stuff upstairs could have done with better signposting - a pointer to the MS Q&A, and the small market off to the left would have probably improved the traffic to and from those rooms...

There were plenty of arcade machines, and a fair number of stalls, ranging from Binary Dinosaurs "The Enterprise has fried it's power supply", to the Amiga CAPS society. The Repton people were there, giving away free demo CDs, Mame cabinets were scattered hither and thither, and Matthew Smith appeared in a suit and tie, thereby winning himself my "most unlikely thing I expected to see" award. I was half expecting a toga...

Said Hi to him, got a JSW tape autographed (though he was probably sick of autographs by that time; one of the stalls had collared him earlier). He was quite nervous in the initial Q&A session, but quite relaxed in a less formal situation. He did seem to enjoy it all.

Apart from that...

Bumped into Matthew Westcott, who I've decided is kinda like the Candyman. If someone at a convention says "Sinclair" five times in a row, he appears. Hopefully he'll never start waving any pointy nose-picking devices around, though.

We prodded a small kid off the C5 which was doodling around the main hall, and took over for a bit. On pedal-power only, because the owners had underestimated the speed of the beastie, and were afraid of totalling half the attendees. The lack of reverse made things interesting, especially when one of my friends headed towards an imaginary ramp...

The C5 stall also had a bizarre Spectrum mini-tv thingy, which none of us had seen before, shaped like a torch with the screen at the end of one side, rather than mounted in the front. Mucho tempting:)

Chatted for a bit with Witchy, over at his stall, as various things spluttered and sparked and generally did their best impression of an energetically-challenged parrot and he dived around in boxes searching for replacements and repairy bits. Old computer kit is always fun to play with:)

Didn't see Lister, and completely missed the Oliver Twins. Did see people from Retrovision (will any CSSers be at RV 4.5/RV5?). Didn't go to the Tron showing, as it turned out to be tv+video, not a cinema+reels jobbie. We went home and watched the Uber-special-shiny DVD version on my big TV, instead:)

Much fun had, on a nice sunny day. Here's to the next one!

juice... happy to have met the Smith



MINIGAME ADVENTURES

>Text adventure competition

The Minigame 2004 competition is now well underway and you can read more about this in **Kevin Bennet**'s very thorough write-up in **load** this issue. This year, however, we also have a mini text adventure competition.

Hosted by **Paul Allen Panks**, the **1st Annual 1 to 2K Classic Text Adventure Competition** is looking for entries from a vast range of platforms old and new, from the Spectrum and C64 to Windows and DOS submissions. You can find a complete list of platforms, along with the competition rules, at the contest's official web page at

<http://panks.freeshell.org/advcomp.html>
The adventure in its playable form must be 2K or less, so a BASIC program exceeding this could only be submitted if it was compiled to a smaller size.

The competition runs until 29 September.

ANOTHER COMPO

>CC4 August event

Thanks to Kevin Bennet for pointing me in the direction of this summer event, taking place on 21 and 22 of August at the concert hall of Leningrad's Youth Palace, St.Petersburg. The **Chaos Constructions 2004** (CC4) event includes 8-bit entries and specific Spectrum competitions: 512b Intro and 4k Intro, 640k Demo, ZX Spectrum Graphics and ZX Spectrum AY-Music. The number of entries in the latter two competitions is restricted to 30 and 15 respectively, so expect high quality. The organisers will be providing basic Spectrum hardware only - any extra kit is ok, but up to you if you want to bring it.

For those of you unable to make it to Russia this summer, keep an eye on www.zxdemo.org and <http://raww.org> for results information.

Kevin asked me to add "I would like to thank Yerzmyey for his unflagging support and interest in Sinclair and the world of still developing computer devices and artistry in general." Well said.

BETA PDFS

>Super BASIC docs online

If you've ever had the pleasure of programming the SAM Coupe in BASIC then you'll probably agree that it's one of the best BASICs there is. Dr Andrew Wright was its author and he's also the chap responsible for **Beta BASIC** on the Spectrum. Little bit of history for you there.

Evidently a fan of the language, **Steve Parry-Thomas** has been uploading a number of key resources to **WoS** in recent weeks. These include PDF versions of the Beta BASIC manual (version 3) as well as PDF versions of the Beta BASIC newsletter, which makes for fascinating reading. And the PDFs are completely searchable too, so the example programs can even be cut and pasted straight into a virtual Spectrum running BB if you use **SPIN** and its text entry feature in the Keyboard helper. Nice.

CPU TOMFOOLERY

>Not all Spectrums are equal

More than twenty years have passed since the Spectrum's release and now a new fact about it has been uncovered. A tiny difference in timings has emerged between seemingly identical Spectrums, such that a small number of clock-critical demos vary in their execution. Starting as an investigation into an apparent bug in **RealSpectrum**'s timings, a long discussion about this on comp.sys.sinclair concluded that the difference actually had to be down to the CPU chips used. Emulators to date have assumed there to be no difference between 'genuine' **Zilog** Z80A CPUs and alternative chips labelled "SCS Z80A - Italy" or "NEC 780-C"; it

appears this is not in fact the case.

Differing in timing by just one cycle, the alternative CPUs are unlikely to give themselves away in the vast majority of Spectrum titles, but the timing sensitive **Megalomania** demo exposed the masquerading blighters for what they were - on some Spectrums its multicolour bars in the top border wobbled and on others they were steady as a rock. Gotcha!

An option to switch CPUs has now been built in to most emulators under current development.

JSW: THE MOVIE

>55 minute Willy RZX

Since its launch, the **RZX Archive** at www.rzxarchive.co.uk has been growing steadily. And one of the latest files to be added is something of a masterpiece. Weighing in at a mighty 55 minutes long, **Daren**'s complete **Jet Set Willy** recording is a quite remarkable accomplishment - particularly since he only loses one life in the process.

For those of you unfamiliar with the format, RZX is the standard through which keystrokes and joystick waggles to an emulated Spectrum are recorded, allowing you to watch a replication of your jaw-dropping performance at any time. Any RZX-enabled emulator will accept an RZX file (it doesn't matter which emulator it was recorded on).

In this particular case there's been a bit of a helping hand to Daren's Willy control - a new feature being tested for a future version of **SPIN** which allows you to 'roll-back' the recording you're making to any previous point in the game (ie, just before you died) and continue recording from there. The intention is that this can be used to help create as near to perfect RZX recordings as it's possible to make. Apart from just being good at the game, that is.



ORSAM

>Second Spectrum/SAM show planned

The ORSAM 2004 Sinclair and Clones Computer Show will be on Saturday the 6th November at the Alec Bussey Scout Centre, off Rowington Road Norwich, Norfolk, England. Entry and parking are free. Map and travel info on the website.

I would like to thank all those who came to last years Spectrum and SAM event, and all who gave publicity. Those who could not come but wanted to, better luck this year. New this year, the show will include a Quanta QL Workshop, and varying coverage of other Sinclair and related computers and other products. Put faces to Internet names, sell your spare equipment, buy new retro things at sub ebay prices.

The show will start at 10am and end 4pm, traders will have an extra hour either way (i.e. 9am to 5pm). People and magazines are already enquiring about the show, which should be bigger than last year.

Message to Traders: Please can you book your free place now, so that we can give you advanced publicity, and any special product announcements for the show you wish to make.

More details and up to the minute information can be read on the show site:
www.speccyverse.me.uk/orsam/

Tarquin Mills

RANDOM FUN

>Randomseek added to Sinclair search engine

Feeling lucky? The latest improvement to the **Sinclair Infoseek** engine over at **WoS** is a lucky dip option. Click on 'pick a random game or text adventure' on the main archive page and a random game scoring at least five out of

ten and rated by at least three people will be chosen for you. Is there a better way to brush up on your game knowledge and at the same time murder what remaining spare time you have left in your life? ZXF thinks not...

ULTIMATE EDITORS

>Make your own maps

Ultimate fan **MatGubbins** has produced map editors for the classics **Nightshade**, **Gunfright** and **Martianoids** (although the latter he doesn't rate very highly, it would appear). The editors are Spectrum programs and all can be downloaded from his site over at www.angelfire.com/retro/carcass/index.htm You'll need your own TZX files of the original games, of course.

ITALIAN FUN

>Gerard Sweeny tackles Italian hacks

As we know, the Spectrum was popular all over Europe. Apparently **Lo ZX Spectrum in Italia** (my Italian's non-existent, but I reckon I can work that one out) at <http://zxspectrum.hal.varese.it/> has over 1000 titles to download. Most of these, however, are versions of existing Spectrum titles which have been hacked open and had their text translated to make them accessible to an Italian audience. And also they were renamed, which is where the problem lies: if an Italian wants to track down tips for an old favourite, how do they find out what the original name of the game was so that they can search www.the-tipshop.co.uk/ ?

Well as it happens, Mr Sweeny, that jolly pleasant co-maintainer of said website, wouldn't even think of letting his visitors exert themselves in such a manner, which is why he's taken it upon himself to identify the english originals of all of the 'Italianicized' titles. And would you

believe it - of the 1074 games he's downloaded he's already identified over 800 of them.

The remainder he's a bit flumoxed by. Which is where you can help out. Gerard's put together information on all of the unknowns outstanding on a web page at www.the-ipshop.co.uk/Italian/Italian_unknown.htm There you can have a look at these titles and if you recognise any of them - well let Mr Sweeny know.

HELP THE VAULT

>Donations needed by preservation teams

Each update to the **World of Spectrum** archive represents many hours of work on the part of the tape and disk preservation teams. Quite apart from that, this work also costs them hundreds of pounds of their own money. At the moment there remains over 1700 unresolved titles to be properly archived, and when they do eventually appear at WoS, you and I will be able to download and play them for free.

The next update will add 300 or so titles to the archive if **TZX vault** maintainer **Steve Brown** manages to get hold of the funds needed to obtain some 30 titles that include 9 unlisted and 11 MIA (missing in action) games. Donations are also always needed by the STP and SDP (Spectrum Tape/Disk Preservation) teams.

969 copies of ZXF issue 7 have been downloaded at the time of writing. If every reader donated a pound to the cause, therefore, that would go a long way towards resolving a large number of titles. To do your bit for the greatest archive of 8 bit software on the planet, visit one of the following sites and follow the 'donate' links.

<http://tzxvault.retrogames.com/>
www.worldofspectrum.org/stp/
www.worldofspectrum.org/sdp/

BASin

Release 10 by Paul Dunn

By now it should be apparent the extremely high regard I have for this piece of software. When **Paul Dunn** first released this little program as **SPINLife** in 2002 (the very last day of 2002, in fact) there was some general confusion amidst the community as to what exactly it was. A year on a half later and not only do we all get it now, but **BASin** is no longer alone. In the last six months there's been a lot of talk about program development environments - **Tommy Gun** from **Tony Thompson** last issue and now **SMAX** from **Chris Cowley**. Neither of these titles are trying to do *quite* the same sort of thing as BASin, but if we had to categorise these three titles then they'd probably all end up in the same pigeon hole by common consensus - and BASin was there first. As these tools develop, I can't help but think we're watching the beginnings of a new era in Spectrum software.

Release 10 came out at the end of May and 10a, a collection of bug fixes following initial feedback, about halfway through June. All the features of previous releases are still there, but now there is a clear distinction between the programming environment and the resulting output, with a brand new, much more user-friendly editor window (see image right) in which BASIC code can be written and a separate emulator-like window in which the program runs.

Ask and you shall receive. Back in ZXF issue 6 I marvelled at BASin's brilliant UDG editor and rather cheekily suggested a similar toy for creating BEEPed tunes on. At the very last minute before this issue's publication, Dunny pointed me to the graphic below - the 'BEEP Composer' - a work in progress. What can I say, except watch out for release 10b...

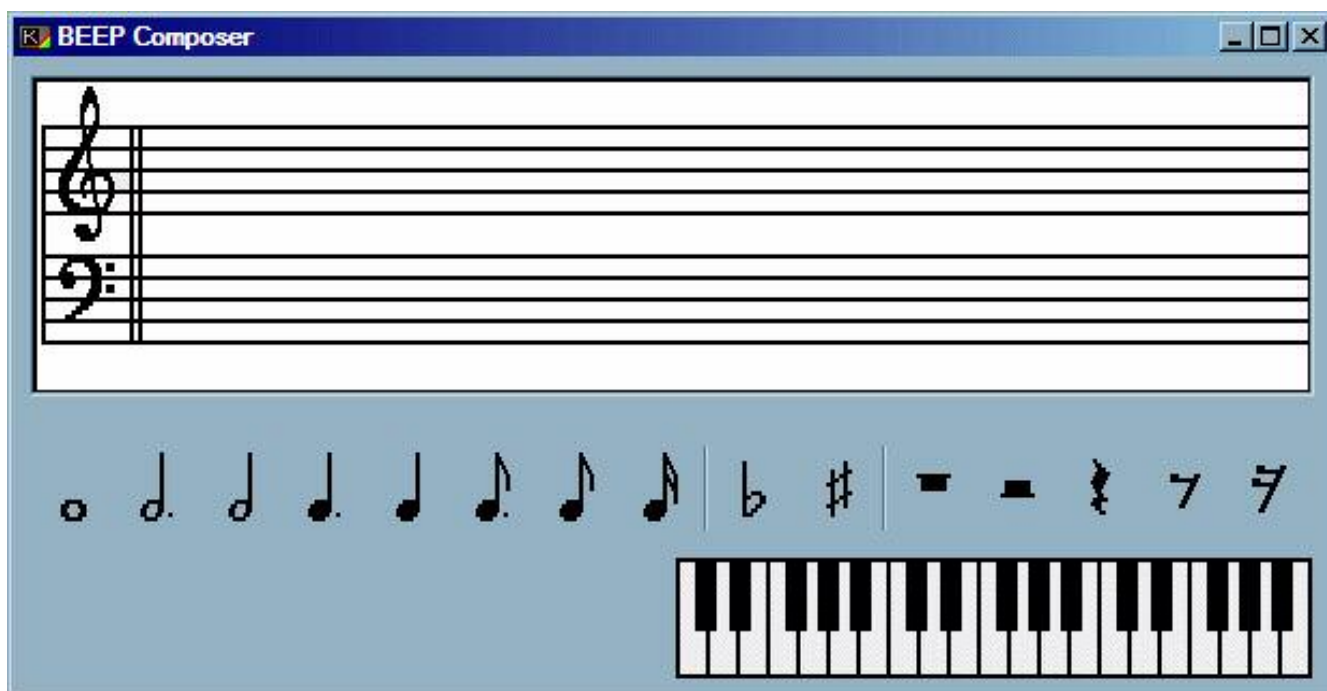
```

8 CLS :
PRINT "FOOTBALL MANAGER" : "@ Copy
PAUSE 300

9 BORDER 7:
INK 0:
PAPER 7:
FLASH 0:
BRIGHT 0:
OVER 0:
INVERSE 0:
CLS :
INPUT "Type your name "; LINE m$
IF LEN m$ > 20 THEN
PRINT "Name is too long (max 20
PAUSE 200:
GO TO 9
10 GO SUB 9000:
GO SUB 8900:
DEF FN P(P)=INT ((P-1)/8+1)
DEF FN r(X)=INT (RND *X+1)
1000 RANDOMIZE
101 GO SUB 2000:
110 IF X$="KEEP" OR X$="KEEP" THEN
GO TO 300
120 GO SUB 4000:
130 GO SUB 8000:
140 GO SUB 8100:
150 GO SUB 8700:
GO TO 100
2000 RESTORE 251
2001 DATA 24,88,126,26,120,72,206,2,4:
FOR i=0 TO 15*8-1
READ a:
POKE USR "a"+i,a
NEXT i
2057 RETURN
2070 PRINT INK 6; AT k(2),k(1);k$(k(3))
LET k(3)=INT (1.5/k(3))+1:
LET r3=(d(2)>k(2)+(d(4)<0))-(d(
PRINT INK h0; AT k(2)+r3,23-(k(2)
LET k(2)=k(2)+r3:
LET k(1)=23-k(2)
2071 RETURN
2080 PRINT INK 6; AT k(2),k(1);k$(k(3))
LET k(3)=INT (1.5/k(3))+1:
LET r3=(d(2)>k(2)+(d(4)<0))-(d(
PRINT INK a0; AT k(2)+r3,(k(2)+8+
LET k(2)=k(2)+r3:
LET k(1)=k(2)+8
2081 RETURN
2090 OVER 0
2093 PRINT INK 6; PAPER 2; AT 0,0;"**
FOR r=1 TO 5+FN r(5):
BEEP .05, FN r(36):
NEXT r
2094 GO SUB 1090
2095 RETURN
3000 BORDER 7:
BRIGHT 1:
INK 6:
PAPER 4:
LET was=6:
LET f$="~~~~~":
LET 1$="~~~~~":

```

4 Kb available to BASIC (36 Kb Used)





EMULATORS



SPIN

Version 0.50 by SPIN Dev Team; www.zxspin.co.uk

It's here at last! The fifth major version of **SPIN** is finally available for download and by jove it's a corker!

ZXF last reported on SPIN 0.5 in issue 4 (spring 2003) - since then co-author **Paul Dunn** has spent a lot of time concentrating on the development of his superb program development tool **BASin**. It didn't leave a great deal of time for SPIN 0.5, although various comments made on discussion forums over the last year have indicated its development was still going in the background.

SPIN 0.5 is an almost complete rewrite of the emulator, something that's immediately apparent when you start fiddling with the various menus and

realise that not all things are where they used to be. The options panel has moved out of the *View* menu to a brand new, custom-built *Tools* menu, for example, and has itself been completely reorganised, with shiny new icons to boot.

In terms of added features, SPIN 0.5 is positively bursting. For programmers, the big attraction is likely to be the in-built assembler and debugger - both of which mean very little to me personally, I'm afraid; as I understand it, debuggers in emulators are increasingly common, but assemblers are extremely rare.

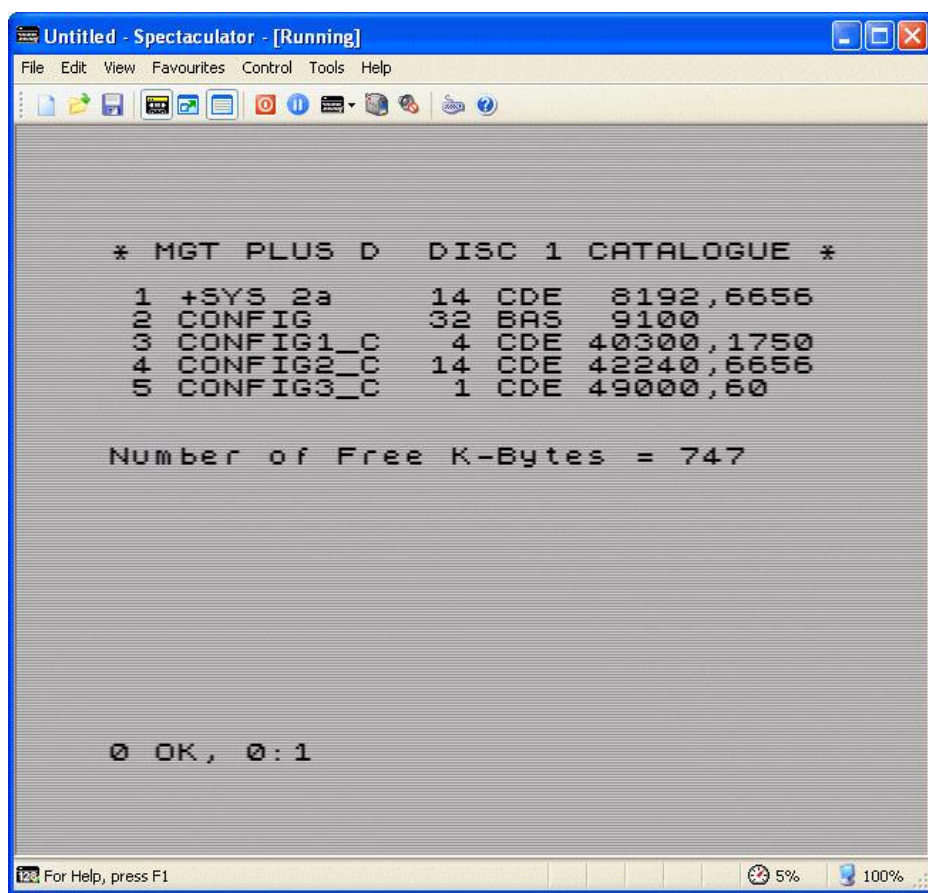
On the recording menu there's now an option to record AVI video as well as RZX

keyboard/joystick input files. And another new feature allows you to load and save different hardware configurations, so you don't have to keep messing about with different hardware and peripheral settings every time you want to change model. Get your emulated 128 set up with an Interface 1, three microdrives and a ZX Printer, for example; save the configuraton and next time you want to set your virtual stuff up like this it's just a menu option away. I can see this feature appearing on other emulators soon!

There's also support now for the **Cheetah SpecDrum**. And - as discussed way back in ZXF issue 4 - the **Sinclair ZX Interface 1** is supported too. You can load .MDR cartridge files into a maximum of eight emulated ZX Microdrives.

And then there are the features that were present in previous versions only I didn't notice them (highly embarrassing when that happens). Fed up with the icons along the bottom of the main window? Now you can change them! Hover your mouse, right click once and lo! Of particular use is a right click on the reset button in the bottom-right hand corner - this turns the options button (the one with the cogs) into a USB 0 reset button: extremely useful for running all those demos! A left click on the button bar restores the originals.

Version 0.5 was released towards the end of June and, within a couple of weeks, four updates had been released to sort out all the various bugs discovered. Don't forget that the bug-finding process is a necessary part of this sort of software release and it makes complete sense for the community who are going to use the software to take part in it. When you find a bug, therefore, *report it* - but make sure you give as much information as you can. Programmers aren't psychic and few computer setups are alike!

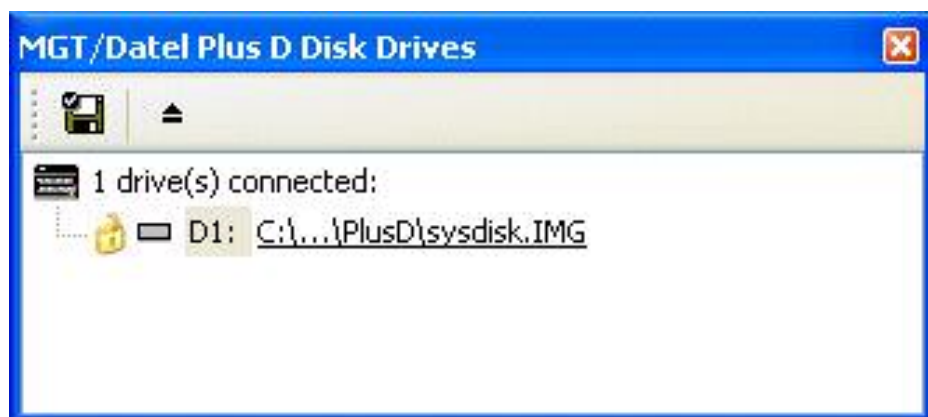


Spectaculator

Version 6.30 by Jonathan Needle; www.spectaculator.com

As discussed last issue, the next big step for Spectaculator is MGT/Datel **Plus D** support, the intention being that this will include support for actual Plus D formatted floppy disks, just like *RealSpectrum* - and even on Windows XP.

Version 6.3 isn't at that level of completion just yet, but it's close - just about all aspects of Plus D support have been implemented except for that real disk access. Nothing's been released yet, but ZXF's been given a sneak preview.



True to his usual form, Jonathan has pretty much implemented it all and completely without drama, by which I mean that everything that is supposed to work does work. You can connect up to two emulated disk drives to the emulated interface - just like the real thing - and *Spectaculator* supports both of the existing file formats developed for this hardware - the **.MGT** and the **.IMG** disk image formats. The system can run on either the original **G+DOS** operating system or the **Uni-DOS** system that was later available via an enhanced ROM.

Of course the Plus D wasn't *just* a disk interface - it was a printer interface too - so an added bonus is the printer redirect - either to a file or a communications port, where you could connect a real printer to receive it.

It's basically a fairly flawless implementation. The next step for users will be to actually source some software for it (although I suspect a large majority of ex-PlusD users will be most interested in converting old disks of theirs). The good news on this front is that the **Spectrum Disk Preservation Project** is now expanding its aim beyond just the **+3** disk images it has previously worked to collect and **.IMG/.MGT** images have been specifically mentioned in relation to this.

In fact, you can still buy Plus D software. **Chevron Software's Outlet** diskzine originally started out life on the ZX Microdrive way back in September 1987, but back issues are now available to purchase on Plus D disk (the Plus D and its predecessor, the **Disciple**, are both compatible with Microdrive syntax). You can get hold of these from the **Fidcal** (new name for Chevron) site at www.fidcal.com/Outlet/ 1 to 5 disks cost £2.00 each, 6 to 11 disks cost £1.70 each and 12 or more disks cost £1.50 each.



FUSE

Version 0.7.0; <http://fuse-emulator.sourceforge.net/>

It's quite an embarrassment to me that I'm completely unable to comment on **Fuse** - the Free Unix Spectrum Emulator by the Fuse Team (headed up by **Philip Kendall**). To say it's an influential emulator is something of an understatement. Aside from the main emulator itself (which has also been ported to MacOS X), an earlier version was ported to the *PocketPC* by **Anders Holmberg** as **PocketClive** and PocketClive itself has been ported to the **Nokia Smartphone**. The Fuse core has also been used at the heart of both **Sprint**, the emulator for the *Peters Plus Sprinter*, and **Mike Wynne's** excellent ZX81 emulator **EightyOne**. Alas, I'm unable to comment on **Fuse** because I don't have a system capable of running it. And looking at the list of features for the latest release of this emulator, it would appear

that the loss is all mine. Check this out:

- Working 16K, 48K, 128K, +2, +2A, +3, +3e, SE, TC2048, TC2068, Pentagon 128 and Scorpion ZS 256 emulation, running at true Speccy speed on any computer you're likely to try it on.
- Support for loading from .tzx files.
- Sound (on systems supporting the Open Sound System, SDL or OpenBSD/Solaris's /dev/audio).
- Kempston joystick emulation.
- Emulation of the various printers you could attach to the Spectrum.
- Support for the RZX input recording file format, including 'competition mode'.
- Emulation of the Spectrum

+3e, ZXATASP and ZXCf IDE interfaces.

Amidst that treasure chest of features, the sharp-eyed amongst you will have spotted some very rare gems. These include TC2048 & 2068 emulation (the European versions of the Timex Sinclair machines), ZXCf/ ZXATASP support (both interfaces by **Sami Vehmaa** - the former is an IDE interface for hard disks or Compact Flash cards, the latter a dedicated Compact Flash interface) and - for the first time ever - **Andrew Owen's** baby, the **ZX Spectrum SE**.

I guess I should point out at this point that there is a rather buggy Win32 port for Windows users, but the functionality of this 'snapshot' is minimal and it therefore mainly serves to remind you of what you're missing out on.

I'm jealous as hell, basically.

EmuZWin

Version 2.5 by Vladimir Kladov; http://bonanzas.rinet.ru/e_downloads.htm

Surely the most frequently updated emulator at the moment, **EmuZWin** continues its development at an alarming speed and currently stands at... (checks WoS) v2.5 Release 2.1 post-FINAL (that's the release after the final one, you understand).

Mirroring slightly **SPIN's** development, version 2.5 includes **Sinclair ZX Interface 1** emulation as well as an assembler amongst the various tools. There have also been improvements made to the Map Builder and the 256 colour GFX Editor

(see the article in issue 7 for more about that feature). And an all-new 'High Quality Magnification' mode smooths out all those pixelated crinkles in the same manner employed by **HighSpec** (and now **RealSpectrum** too, as it happens). If you're into that sort of thing.

Continuing on the theme started in the SPIN review of things I apparently missed in previous versions and only noticed now, EmuZWin has a nifty little progress bar that advances as a tape is played, showing you where you are in the tape. Very handy.

Unlike most other emulators, EmuZWin does not ask you to select any particular model of Spectrum, which can be confusing, particularly when it comes to peripherals. I can turn on both the Interface 1 and the Beta 128 (TR-DOS) interface together, for example (is it possible to do this in 'real life' anyone?), although I don't actually know how to get to the TR-DOS prompt without doing a RANDOMIZE USR 15616 from BASIC. It's obviously a just a different approach to emulation, but it's one that takes a bit of getting used to.

RealSpectrum

Version R14 (0.97.23) by Ramsoft; www.ramsoft.bbk.org

This is it folks - the very last version of **RealSpectrum**. Sniff. Version R14 of **Ramsoft's** masterpiece represents the end of an era; for the Italian duo it's now time to concentrate on bringing its successor - the now mythical **RealX** to fruition. And for that we'll wait with baited breath.

So is the final chapter in the RealSpec saga a conclusion worthy of its plot? ZXF thinks so. In the main part, R14 is a collection of improvements to existing features and a number of bugfixes. There's support for CSW v2.0 amongst other things and there's now a smoothed edges

video option, giving results similar to those obtained by **HighSPEC** (see issue six). But R14 does have one big new feature up its sleeve and it's one that ZXF is chuffed to bits with: support for Sami Vehmaa's **ZXCF** Compact Flash interface. So here's how to set it up.



Load up RealSpectrum as normal. Press Ctrl F4 to bring up the IDE/ATA Configuration panel. At 'IDE Interface' press the left arrow key once or until 'ZXCF' appears. Press the down arrow key to get to 'Hard Disk' and press Insert on your keyboard.



At the IDE/ATA parameters panel press Escape if you are happy with the default size (15.750 MB). You'll now be asked to give your disk a name. Give it one and press Enter. You're now returned to the IDE/ATA Configuration panel. Press escape again...



...and up pops the ZXCF boot-up screen. The first thing we need to do is to format our disk. Enter the following:

FORMAT % ERASE 0,15

Type NEW; on the refreshed boot screen Unit 0 now reads 'IDEDOS-formatted'.



ResiDOS - ZXCF's operating system - doesn't use folders; instead you split your disk up into partitions, six of which can be accessed at once. Type:

FORMAT % DATA "name",size

The name can be up to 16 characters long; sizes above 256 are assumed to be in kilobytes; below in megabytes.



Last of all we need to map our partition to a drive letter. Type:

MOVE % "A:" IN "name" ASN

You can use any letter from A to P to refer to a drive, and ResiDOS can work with six drives at a time. Of course you can unmap a drive at any time in order to map another.



You're ready to go! F2 on RealSpectrum performs an NMI, which brings up ResiDOS's Task Manager: here you can juggle up to 16 48K Spectrum programs, any of which you can save to your drive(s) as a snapshot file.

For more information on ResiDOS, check out Garry Lancaster's pages at: www.zxplus3e.plus.com/residos/



What are you going on about? 

Send your letters, viewpoints, mini articles, etc to zxf@cwoodcock.co.uk, with 'wibble' in the subject line.

FEEDBACK FOR ISSUE 7

Some of the feedback on issue 7, left via ZXF's website feedback form. It's great to get feedback from all around the world. Nice to know also that ZXF is adorning UK bathrooms up and down the land....

An excellent read, as always. I've found the guide to the Plus D particularly useful. Keep up the good work! Best regards Jorge (Spain)

ZXF magazine is like a little ray of light in an otherwise dull world. The articles are well written, the graphics and format are brilliant (it's great that you have gone to the trouble of creating a magazine style that is compact). My only fault with the magazine (more so with no 7 than the rest) is that the margins are a little off. Everything printed on the right hand side of the page could be moved approximately 1cm further to the right (but that could be a combination of my printer and my fussiness). The rest of the magazine is great! Keep up the good work. Stuart (Northern Ireland)

Thanks for yet another great issue if ZXF magazine. I have enjoyed reading it. ZX Spectrum is still alive and doing very well. Greetings Hendrik Bezuidenhout (South Africa)

Excellent magazine !!!! Keep up this good work !!! I read it cover to cover!! I hope someday contribute too, with reviews, news or history of the Microdigital TK90X in Brazil. Only one thing I miss: more pages! (Brazil)

I've got all your issues, printed out and kept in the loo, next to some old copies of 2000AD! I found the TR-DOS bit in the last issue interesting. Excellent read, keep it up. (UK)

Thought it was surprisingly good. Haven't fully read it, but was impressed with the amount of stuff in there that I didn't know about - e.g. the public availability of "The Complete Spectrum ROM disassembly". DTP standard was very good too. Good reading material for the bog! (UK)

First issue I have downloaded after reading about it in Retro Gamer and finding link of WoS. Excellent read and nostalgia for someone still living in the eighties - nothing like playing Jet Set Willy whilst listening to some classic 80's rock music!!! Many thanks. (UK)

Read the article in retro gamer issue four and thought - i will go and download some issues - ended up downloading the lot - what a fantastic idea - i will be donating shortly!

Andy (Age - 33!!!!) - still loves his speccy! (UK)

LETTERS TO ZXF

I just came across your online Spectrum magazine, ZXF, due to reading about it (and your interesting interview) in this month's Retro Gamer Magazine.

I downloaded the latest issue and was glued to my monitor for what seemed like hours!!!

I have to congratulate you on the magazine. It is extremely professionally produced, edited and

written and a great read too!!!

Tomorrow, I will look at the older editions and look forward to that...

I was mainly a ZX81 person myself but followed the Spectrum scene closely. These days I find the new emulators fascinating and it's good to see the retro scene enjoy its new popularity...

Keep up your great work and I will be visiting the site regularly from now on.

I just have one question I'd like to know the answer to... what Publishing program are you using to put together the magazine?

Best Regards

Steven McDonald

Hi Steve (and other readers from RG, by the way). Glad you like the mag. ZXF is put together on Greenstreet Publisher 3 and converted to PDF format using JAWS PDF Creator 2.

Thank you very much for devoting your time for issuing this great publication! It has given me lots of pleasure. Only one complaint - worse jpeg quality compared to the older issues. But I guess it's to make the file smaller.

Another thing I'd like to add is about colour interlacing in the small insert on page 16. Actually, in Russian programs this feature was used widely and there _is_ a way to eliminate the flicker! The emulator UnrealSpectrum (the best one for Russian programs) has an option called "noflic", which merges that blinking screens together producing new static colours. I even saw one game which utilised this technology in the fullscreen.

Now a couple of words about interlacing. Actually, there are two methods. The first one is con-

nected with Spectrum 128 (and clones), having two screen areas in memory which could be switched. Therefore, a program draws something on one screen, then at another, and then switches between them at a fast pace (combined with updating images to get animation). For this mode there is an emulation method allowing to eliminate flickering - in each concrete moment an emulator shows on actual screen not one of two Spectrum screens, but their mix.

There is an editor for this mode: Double Screen Editor v0.5 by 4D, remix by Alone Coder (<http://trd.speccy.cz/system/DBS05.ZIP>). With noflic mode described below it's very useful.

The second method is called 3Color. It allows bigger amount of colours to be used. And, in principle, each pixel could have its own colour in this mode. The theory behind this mode is that any colour could be represented by a weighted sum of 3 base colours: red, green and blue. Therefore, an artist should paint three screens - one completely in red colour, second completely in green and third completely in blue. By correctly placing dots in chosen places, he could create different colour at each 'final' pixel. From combinatorics, we see that 8 colours are possible for ZX. Then, when a program wants to draw this compound picture, it draws these three pictures one after another at a fast pace, therefore we get an impression (combined with hard flickering :) of full-colour picture. Unfortunately, there aren't any methods ready for completely eliminating flickering in this case. Also, creating pictures in this mode by hand is hard, therefore it's often converted from other platforms.

There are editors for this mode:

8 color (3Color) Editor v0.081 by Alone Coder

(<http://trd.speccy.cz/system/8COL0081.ZIP>)

Multi Studio 3Color Editor v2.0p by Omega HG

(<http://trd.speccy.cz/system/MULTS T20.ZIP>)

And here are two albums of 3 Color pictures:

<http://trd.speccy.cz/sbor/3COLOR01.ZIP> and

<http://trd.speccy.cz/sbor/3COLOR02.ZIP>

I want to point out that these two methods are not hardware modifications, they are perfectly possible on any Spectrum.

So, it's possible to eliminate flickering only for the first type of interlacing at the moment. Let's see how it's done. Download UnrealSpecy emulator (the best one for emulating Russian software) from <ftp://ftp.worldofspectrum.org/pub/sinclair/emulators/pc/russian/us022.b.zip>

(you'll also need ROMs:

<ftp://ftp.worldofspectrum.org/pub/sinclair/emulators/pc/russian/usrom.z.zip>)

Then load some game or demo or whatever which uses interlacing of the first kind.

For example, let's stick with "Otkryvashka" (bottle opener).

Get it from

http://trd.speccy.cz/full_ver/OPENS.ZIP

First, run it with the default configuration. You'll see heavy flickering in the main menu. Let's now eliminate it and enjoy enhanced colours! Press Alt-F1 to

bring configuration window. Then click a "Noflic" checkbox like shown in the figure.

Now you should see that magnificent orange and rose colours. I must add that despite noflic cannot fully eliminate flickering on 3Color pictures, it can reduce it a bit anyway.

Well, there are really a lot of interlacing used in recent Russian Spectrum software, so just check it, in many cases you would be able to use that noflic mode.

Also there is mysterious Flash-Colour mode. I know that it's used somewhere in the "Crime of the Santa Claus: Deja Vu" (http://trd.speccy.cz/full_ver/CSC_DV.ZIP), but I can't bring it in. I just know it's a small hardware modification which allows to use FLASH attribute of each character cell somehow for enhancing colours.

Bye!

Ilya A. Palopezhentsev

Interesting interlace information. Thanks Ilya. The picture albums, by the way, contain some amazing visuals. Unreal Specy is pretty much refusing to work on my system at the moment so I had to make do with Spectaculator. Dealing with interlacing doesn't appear to be one of Spectaculator's strong points (to get the best results turn 'Mimic TV Screen' off from the View menu and reduce the zoom to 100%), but even so it managed it just enough to give an idea of what the fully interlaced image would look like. Very clever - definately worth checking out of a lazy afternoon. A bit raunchy too in places - if that helps!

Hello Editor

I'm Chris Coxall and I run the



"Tatung Einstein Web Site" easily found by typing "tatung einstein" into the Yahoo search engine.

The Url

"<http://members.lycos.co.uk/albertstc01>"

Better a mirror site with full page no advertising column at "<http://mysite.wanadoo-members.co.uk/retrocomputer/index.html>"

I try to make the site a resource centre for those who want to develop on the Einstein's hardware and software but look with envy at the advances you have made on the Spectrum scene. IDE hard drives, compact flash cards and a very good emulator for the PC "ES.Pectrum". Whats more an excellent magazine in *.pdf format for hard copy reproduction on the home computer/printer.

Pera Putnik's simple 8bit IDE HD interface and also the 16bit interface seem to have ability to be adapted for the Einstein TC01. Also Roelof Koning's compact flash card add on for Speccy. These appear generic to the Z80 expansion bus so could be used on the TC01. A lot of work on the firmware and software to do for Einey enthusiasts though.

I used to use the Spectrum+3 a lot. Still have four packed away but I haven't the space to justify playing with +3s and also the Einstein at the moment. I picked up the +3s at boot sales for a £1 a piece usually because the internal 3" (or more correctly 3.25 inch drive) was broken. For someone that has an Einstein TC01 and accumulates spare bits for it this was not a problem. The 3" teac drives that came with the TC01 are rugged and shaft driven and look like they will last forever. (A jpg picture of this drive can be found at "<http://mysite.wanadoo-members.co.uk/retrocomputer/3IN>

CHWEB.htm". Download and use this web cam shot if you wish.) The teac drives would simply attach with ribbon and edge connectors to the the +3's external drive port. The power supply came from a PC PSU. Spectrum and Amstrad's internal drive power supply have 12v & 5v the other way round. The TEAC drive fitted would be for drive "B" only. To get drive "A" working on the external drive port I opened up the +3 and wired a soldered link to the edge board connector. (I've placed a jpg web cam shot graphic up on the web site for you to view, download and use if you wish "<http://mysite.wanadoo-members.co.uk/retrocomputer/specbd.jpg>".)

Another thing I did was to connect a centronics plug (printer plug) to the ribbon cable from the the +3's external floppy drive port then attach it to a 4 way data switch box. On three of the outputs-more centronics plugs and ribbon cable to a 3", 5.25" and 3.5" floppy drives. As long as the same format was used for each different sized drive I found these could be switched over safely while powered up and read an write was not in progress. This was all for drive "A" so a drive "B" can still be fitted or more optional drive "B"s with another switch box unit.

The three drive unit was easy to plug in for the +3, Einstein or also the Amstrad CPC 6128 I had.

The TEAC 3" drive can also be installed into a 386 or 486 PC as floppy drive "B", power cable and data cable just as a 5.25" 360 floppy drive would. No use for windows or ms/dos but with CPDRead it will create extended disk image files from Einstein, Spectrum+3 and Amstrad CPC 3" floppies. CPDWrite will create 3" floppies for all three computers

from the disk image files.

I am not a proficient hardware or software engineer more of a tinkerer and dabbler crawling my way up the learning curve. ZXF and the Spectrum scene in general are being helpful. There is always some information where jargon and technicalities are put into english I can understand. It is providing the confidence I need to experiment on with IDE and compact flash for the Einstein.

The Einstein (as with the MSX) was able to emulate a speccy. Details at "<http://www.crashonline.org.uk/36/speclt.htm>". The Einstein needed a hardware add on to do this as there was no tape interface for the TC01.

I have no experience of the speculator of have one to play with but it has got me thinking that the Einstein could be loaded up with an adapted version of +3 basic and dos. The TC01 unlike many retro computers did not boot up into its own version of home basic. A boot disc was needed to load in a DOS usually XTAL DOS (a CP/M clone). Basic programs like any other software was loaded in off the disks. Could a version of +3 basic with adaptations to Einstein hardware be loaded in. The dos part might take some juggling to read +3 disks but a CP/M PLUS o/s is now available for the Einstein and with a utility to read 720kb 3.5" ms/dos disks. Is this an indication that the +3 could run on Einstein hardware? Have the readers of the magazine any ideas?

Best Regards

Chris Coxall

Thanks for your comments Chris.

Mega-tree development disks

Winning bid: **£207.02**

Ended: 29-Apr-04 16:39:41 BST

As reported last issue, April saw the sale of the **Mega-tree** development disks containing the unfinished work on the sequel to Jet Set Willy by Spectrum legend **Matthew Smith**. These eighteen 5.25 inch disks for the Commodore 64 were finally won by 'randysparks' aka **Retro Gamer** magazine. They are creeping up a lot these days, aren't they? The proceeds of the auction are to be donated to **Cancer Research UK**.

The disks were sold untested and uncopied; seller **Stuart Fotheringham** (one of the original Mega-tree development team) promised bidders that that no copies would be made for the "Spectrum community" (not quite sure why the quotes were necessary), so the worry was for a while that their contents could forever go unknown. **RG**, of course, have been perfectly happy to share their investigation of the disks with their readers. The result? A few sprites, a background screen and a load of copied games. Sweet...

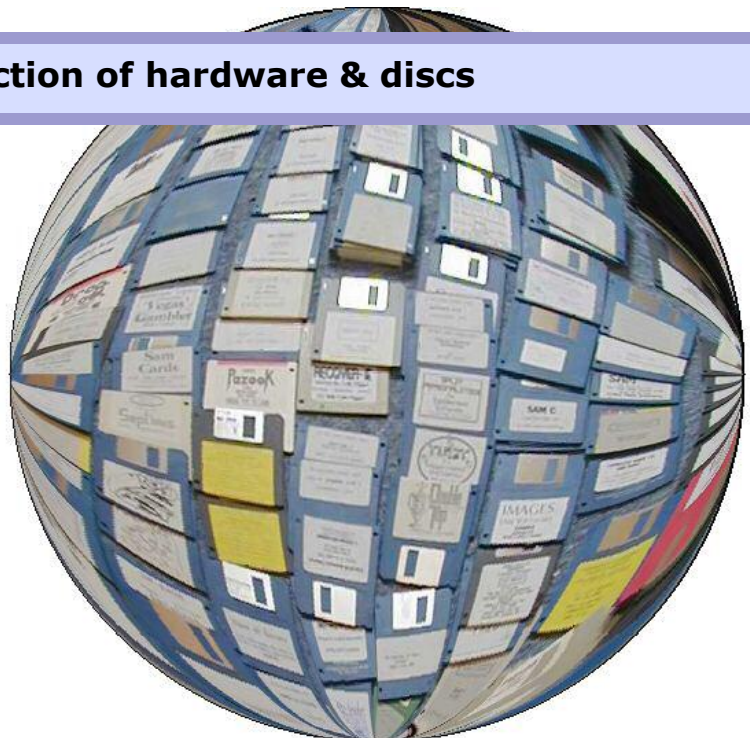


Sam Coupe, boxed & HUGE collection of hardware & discs

Winning bid: **£303.03**

Ended: 18-Jul-04 20:55:31 BST

A dream come true for SAM fans, this lot comprised the largest collection of Coupe gear I've ever seen on **ebay** and included a 512K SAM with dual disk drives, mouse and interface, 1 MB RAM expansion, comms interface, not to mention some 400 SAM disks. Cheap at twice the price. I can't help but feel, however, that the seller should have described his lot as a 'goldmine' rather than a 'minefield'...





Minigame compo

Author: **Various** Price: **Free** Reviewer: **Kevin Bennett**
 Website: <http://www.ffd2.com/minigame/>

The Minigames Competition has been running for a few years now. The competition covers a wide range of 8-bit computers and the quality of the entries is improving all the time. Here Kevin Bennett takes a detailed look at the Spectrum entries for both the 2003 competition and those submitted so far for the 2004 competition.

2003 was the first year that I had been aware of the Minigames Competition although I have had an active interest in Sinclairs since my first Spectrum in 1986. The event is separated into two categories of 1K and 4K entries. The challenge for the programmers is to offer a maximised game code within the category. This has previously led to interesting work where you can really begin to see where the efforts of programmers lie. One excellent example from last year was **ZBlast** by **Russell Marks** as he describes in the additional text file the differences between the 1K and 4K efforts that you can see realised on your screen.

As an introduction to the competition and to put the programmers' efforts into context, here are the mini reviews for last year's entries (details of the games and downloads can still be found on the website.)

Scrolly Stack (4K) Russell Marks

Scrolly Stack is an excellent use of 4K with superbly done stylised and simplistic drawings of a house. The small graphic details of the pieces are appreciated and the images give extra flair to

an extremely small game. (4K)
 Not original, but superbly squeezed into a small amount of resources. Could be an excellent part of a games compodisc, with maybe a few extra options including the 1K mode as an option.

ZBlast SD (4K) Russell Marks

Impressive use of animation/colour and surprising sprite detail and design with solid blast *pwwooop pwwooop* and *crunch* sounds. Fast, with large and simple enemies that get crazy and chaotic with some interesting enemy movement coordination and attack patterns. Within 4K there is the whole presentation of a complete game package, a scrolling starfield title screen with levels and ending. The only criticism - is it too mad to be playable... or more like... do I stand a chance? :o) Very entertaining - an excellent example of code maximisation that could be interesting if expanded and developed in what looks like new efforts for a new market.

[NOTE] *Russell's games are currently available from Cronosoft.co.uk on a compilation from the minigames 2003 competition with other titles on cassette tape or as a free download.*

Semi stack (1K) Russell Marks

Semi stack is excellent because of the use of simple coloured squares like lights. It plays just as well and a little faster than scrolly stack. Interesting use of ZX81-like resources..and in colour too!! (1K)

TinyZB (1K) Russell Marks

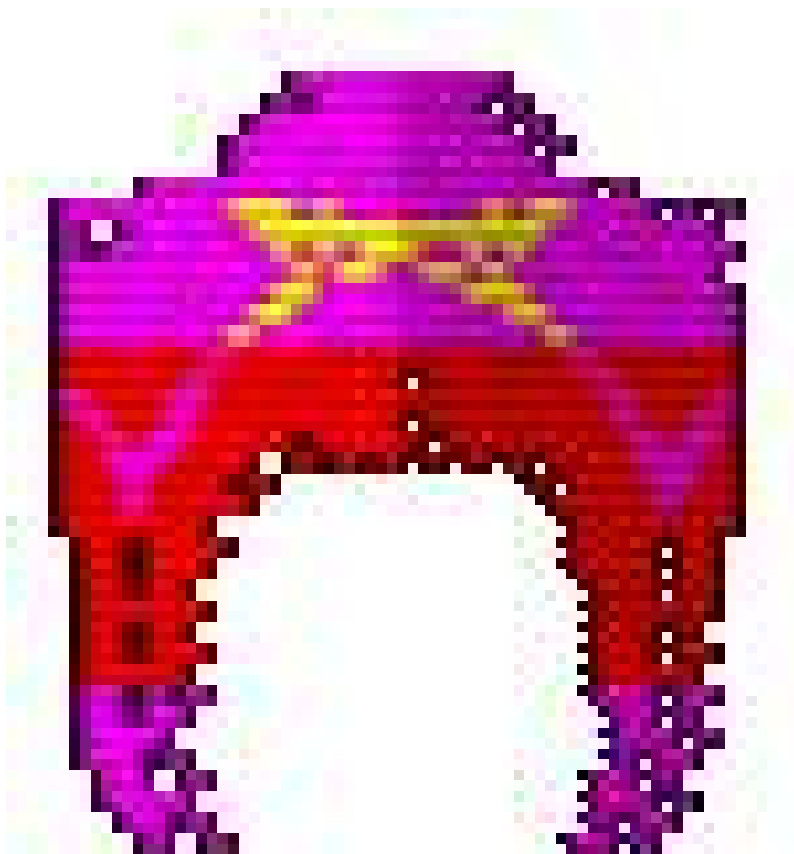
Obviously reduced version, now reminiscent of Space Invaders where you move left or right and fire at the enemy. The graphic design and colour is based on the larger version with sound, but has a reduced sprite selection for the attackers. BUTT! I must complain that someone stole the other second gun as I really did need it :o) A fun demonstration of maximising code that is entertaining, but not such a complete package as it loses its pace and diversity.

Dotathon2 (1K) Russell Marks

Very simple yet interesting vector tunnel type game as seen in previous games like Dan Dare III, yet stands alone superbly due to its smoothness and design. Within 1K is a simple and very smooth game with effective sounds that inform of progress and lives, etc. The only tiny :o) drawback is that there is no intro screen, but what can you expect?!?? A very simple yet enjoyable distraction that has that play again and again aspect. Most interesting is that the game is not dependant on being a reduced version of something else (not that this is a criticism of other people's efforts) that makes it unique in its own right.

Arachno Joe (4K) Dinu Cristian Mircea

Adventurous 4K game with excellent scrolling and surprising scope of graphics/colour and gameplay dynamics with a simplistic yet effective intro screen (using blocks and colour to simulate a city skyline). This is part



of the game's structure with intro and levels of play. Also interesting is that the plot explanation (text supplied) is likely bigger than the game in Kilobytes and it is offered with amusement :o)

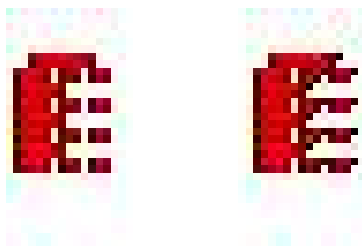
The game is challenging (when you look past what looks like over simplification) due to the game device of your bag that you collect TNT in .. or a cat.. and that you have to offload in the van whilst avoiding the enemy, birds and small planes to save your lives.

2004 [NOTE]

The same author has an entry this year that is another game that has something reminiscent of old chunky computer design seen in the old consoles of Atari and pre Atari.

Kilopede (1K) Jonathan Cauldwell

A competent Centapede-like game within 1K. Excellent use of the system that is not too removed from early Spectrum releases of 20 years ago; yet this is maximised machine code that is smooth and responsive and must be around a tenth of early efforts in K. Not stunning, but impressive and playable. Would have been interesting to see a front screen of some kind, but then again 1K is impressive a task.

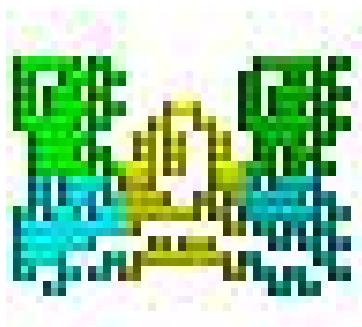


AmusementPark 4000 (4K) Jonathan Cauldwell

An impressive and maybe masochistic attempt at achieving something like Theme Park in 4K of RAM on the Spectrum. All the game elements are there, the researching, building the theme park and balancing the ticket prices with the costs of development with lots of little people wandering about. Impressive squeezing of small graphics and environment intelligence that keeps you playing.

2004 [NOTE]

In ZX[F] issue 7 I reviewed the developed version of this that is available on cassette tape or as an emulator file from Cronosoft.co.uk and called FunPark (for 16K Spectrums). Amusement Park 4000 is also discussed in ZX[F] issue 6 for the 2003 event and also from a Spectrum/Sam show report at the end of last year.



**Maziacs1 (1K) Paolo Ferraris**

An impressive and simple 1K game based on an original that was impressive in 1983 and still carries its qualities. Large block sprites with simple movement in a fun little maze game with colour. A full screen effort that is akin to earlier computers than the Spectrum that is historically interesting. Each time you play the maze it's different, if a little easy. Still fun to play and holds the basic gameplay of the 1983 version.

Pipes (4k) Dominic Morris

Pipes is a Pipemania clone. It features bonus squares, edge flowing and 8 levels which completely wrap around and become even harder - less time and more pieces to flow through. An excellent version of the old Spectrum title Pipemania. It would be interesting to see more from the programmer.

Play Ball! (4K) Paul Grenfell

An excellent game that looks inspired by Wizards Lair from Bubblebus software in the 80s. Considering 4K especially the level graphics are an excellent use of block graphic design with nicely used colour. It plays well with solid graphics, animation and no sprite flicker. The graphics all have their defined characteristics and sense of humour. One I would like to see developed for release as the core potential is already very interesting. A nice little environment for a play as it is.

ZXTictac (1K) Stefano Bodrato

An unimpressive looking game as noughts and crosses or TicTacToe is played so often and still on paper. A computer version seems less responsive. It could be something about primal

marks in the human battle of minds. That said to get anything on the screen is more than I can achieve :o) Excellent to see people efforts and enteries. It works and all within 1K or RAM, what will he achieve by next year?

The current 2004 entries.

At the time of writing this introduction there have only been a few entries as the event has only recently started. So far though the efforts made are excellent. I hope that this though will be an excellent introduction, and from the web link you can then continue to follow the progress: www.ffd2.com/minigame/

This year I also have some programmer feedback to offer, some allow their efforts their own integrity and offer thinking within the supplied text files. In future though, any additional developments from these artists I hope to include in submissions to ZX[F].

Area 51 (4K) Jonathan Cauldwell

Area 51 is Jonathan's first entry this year with another to follow. Immediately you are playing a game like Manic Miner with all the traps and basic gameplay that you would expect. The gameplay doesn't disappoint in a fresh thinking 4K Manic Minery escapade with immediately evident hallmarks of Jonathan's developing work.

The superb stability of image, sprites, animation with the usual excellent details and amusing characteristics and support are supported by the playable game environment. The little mine cart that rumbles amusingly about on one level shows the heart of fun in the application of well worked and magnificently crafted zeros and ones. The use of the screen array is solid and very smooth direct coding of the screen responses that was evident and

a key characteristic of Rough Justice, a previous release reviewed in ZX[F] issue 6.

I started to play again after losing all five lives to try and get further through the well considered screens. After decades of Manic Miner familiarity the game has its own pace, confidence and maturity.

I always appreciate a free download and the pleasure of the game, and as last year the potential for development in and from the Minigames competition could be really interesting. A magnificent Manic Miner-like game that respectfully acknowledges this in the superb silence of its realisation with the obligatory ditty (AY sound) helps create the meandering gameplay with those deaths that you can't quite work out again, again and again.

Falldwon forever (1K) Fikee

Immediately impressive 1K design, I asked where can I buy this 1K computer... I did! The use of the Spectrum ink/ paper bright setting with solid clean block design and excellent animation with a small character was all magnificently considered. The drop shadow like block use made me think I was playing into the area rather than dropping drop through the play area. I found that playing the game was an excellent simple consideration, an accomplishment to other thinking.

Initially I played without any collision detection. After a while I found that the game is a little like the old Zippy game collecting grass in the gardens as you are held by a wall as the screen scrolls to be crushed or find a way out. It gives you that moment extra to panic or survive as the game picks up in pace.

What can you do with 1k, superb implementation that erases the



READY!

question as you find it is not in consideration. I would like to see what Fikee could achieve with more play.

B.A.R.F. (BATTLE AGAINST RIGELIAN FORCES) (4K) Dinu Cristian Mircea (aka GOC)

After ages of Galaxian clones and games like Space Invaders on the Spectrum some may initially wonder why. This impression quickly fades as you see the impressive implementation. The colour graphics move well above your cyan Startrek-like ship that has two kinds of laser pulse weapon. Like Space Invaders and Galaxian your ship picks off the enemy who advance quickly leaving you less time than you thought. Move back and forward utilising short and long range firing to pick off the enemy.

Still thinking a little ofafter ages of Galaxian clones etc... when level two starts. Level two is an excellent diversion that carries the gameplay. Flying attack platforms fire laser beams that weaken and destroy with swooping head piece like craft

and side drones firing as they descend. Anticipation and skill avoiding attacks can destroy the parts of the craft supported by short rapid fire as they swoop in their attack patterns. With the woop wooopp sound effects superbly pitched, the animation and graphics are well drawn, seeing an excellently defined 4K environment.

Stage three is a superbly attempted vortex level where your (TM) Paramount-like spacecraft is viewed from the behind, overhead shortened view as you fly into the vortex with the enemy craft circling out. This is a quite different level as you find yourself circling around, avoiding the enemy and trying to alternate between your firing tactics to pick off the craft. Some appear to be impenetrable to your shots. Picking off craft where you can avoiding their fire ends the level. A tricky diversion.

At times I was aware that this is a 4K game whilst being diverted by the challenge of the game play. Even on my emulator (full screen) the game opened up to a really excellent little environment. Level four is the final level, although the game continues on

from the first. I was immediately attacked by the guardians of a large flying platform like craft that fired rapidly down with the craft itself. The platform fires a large laser beam from its centre opening destroying one of your 5 shields on contact. (Each level has 5 shields)

After absorbing numerous shots a carefully anticipated shot at the centre mouth just before firing destroyed the target and ended the final level. My immediate reaction was that it had been a fun challenge from a 4K game that was superbly implemented. It is interesting to note that the plot lines and thoughts of the entrants of the competition are increasingly amused and of good comedy.

I would like to see this game developed along the strong lines already shown as the 4K game shows simple and excellent devices within its complete form and coding. An epic of teany space exploration as the playability was so developed. Dinu Cristian Mircea's 2nd minigame that I have seen leads me to hope to see more of his work developing. An expanded release would be nice to see.



Anno Domini (4K) Jonathan Cauldwell

The basic line of development is from AmusementPark 4000/ FunPark. The game is a Civilisation like game that I was awaiting with great interest from the knowledge of FunPark alone.

A note from the author:

"...It's a lot harder to design and write than AP4000 was, and the game is far 'clunkier' but if it helps attract attention to the minigame competition then that's great. As always I'll be submitting the source code along with the game for any techies who may be interested."

Introduction

After downloading I knew that the first task was to read the manual. For me this is something I almost never do. Games like Kingdom are detailed in playing and yet simplistic in their graphic style and presentation leaving the clever coded stuff behind the scenes. *Anno Domini* takes the basic graphic idea and presentation and develops the game mechanics in an immediately sophisticated looking and promising 4K environment.

The magnificent block simplicity of earlier hardware design is evident and works like the games it follows more than twenty years on. The maturity of the coding and development becomes evident in this 4K title. As per Johnathan's introduction text the challenge is to report 'errors left in the game' and of course to work out from his instruction how to play the game. This offers a great challenge in 4K.

The Manual

As I was reading through the manual I was impressed at the scope and clarity of the explanation. Clearly blocked, the text shows the depth of elements with all the civilised aspects of a god sim game of this type. The manual is instructive and simple, and leaves you not foolhearted for a camping holiday within the muse.

I smiled though at the challenge and scale of a project that could be epic teany minisquel. The battle of UDG across lands of green and seas of err... blue.

(Editors note: Ancient times have blue and green rather than a spoken memory of it.) Imagine living only a short and brutal existence with all that fresh air and the magnificence of the land. Ah, another supreme being.... hack... massacre....etc..

Getting Started

After having a fiddle to realise the simplicity of the key controls 'I..er me' started again. Having a play to familiarise yourself with the controls and the game mechanics such as menus is a good idea. For example pressing ENTER without thinking looses a good number of turns. :o) I am your humble narrator making myself seem foolish, of course all for your instruction.

Playing

From unit mode (select '1' leave 'ENTER') the technology screen is available, and with an initial gold reserve on screen keys offer presses to increase and reduce research tasks. As with AmusementPark 4000 (last year's 4K entry) balancing research budgets is a key task for success in the game. The scope of the research in this game from the instructions is more significant and money is initially tight. I already wish I had a gut-wrenching ride or bad food in a nice comfy theme park.

The epic of my small footnote in history or the glory of 'I Ceaser' has begun. In this, the early stages after getting your mind around the manual and controls, don't be expect hot action as all things have their simple beginnings.

The Unit screen

When your move starts you are on the unit screen. You start on the unit screen with no city, and when you have built one the unit screen remains your centre of the gameplay. When you have units created these show as moveable from this screen. This is also the map view and shows all the enemy units and cities.

'QAOP' direction keys with 'm' for mine building on a hill and 'b' for a city. As each turn begins you move each of your units in turn one point or use 'SPACE' to leave a unit where it is.

Creating new units

Press '0' to access the city screen and 'c' to change the project. The tally of units has to reach the required amount for a unit to be available. Initially these are settlers or warriors. 'ENTER' returns to the unit screen. ENTER from this screen ends your turn.

Early Strategy

Placing the city in an area may only initially give you one extra point of production and food, but in time as you grow, how you initially placed your city could be more important than you thought. Giving you a possible little edge later.

Initially you can only create one city and travelling to another area with a settler doesn't offer the option of building another at this stage. Warriors are now in preperation for attack and defence, and the local enemy are already looking like they are preparing for battle.

After seeming eons of quiet from the lands

You soon begin to see that there really are a large number of opponents waving swords about like they know how to cut people into teany weany little peaces that mummy may not want to recognise. At this early stage can they really be that dangerous?

Horah! My initial army of two units has captured the enemy's city built too close for comfort. Now I can use the city toggle of 'O' and 'P' whilst in city mode 'O'. Also I have built a mine on a hill next to my level 2 city and due to this have increased production points. After loading the unzipped file and having to work it all out! it is begining to make good sence. Excellent little Johnathan people wandering around in 4K.

After setting a settler unit off down the map some number of squares I have built another city, at this time I have not discovered how far cities have to be from each other to be constructed. After spending my gold for some time on internal infrastructure I am not yet sure of effect, so I am investing 1 unit of gold in each of the areas of Infrastructure, Military and Culture. This I hope may encourage extra results and options. The gold is increasing as I now have 3 cities and therefore more gold.

Battle in foreign lands

ALLLAAAASSSSs!!! WW- Wooooowww and shame! Ohhh OHHHhhhhh... the inhumanity of it



Conflict

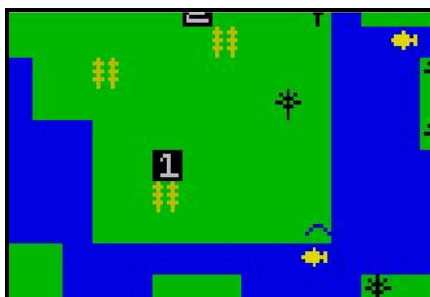
all... In battle my first loss after moving in to support a captured city and to battle. As the number displayed in conflict each with 5 in health and counted down to 0 whilst my oppenent stands. I of course will try and dispatch the foe with another unit near by.

Another fallen! Perhaps my warrior unit that nears from a level 2 city will offer better skills for the fight, and to honour the heart of those who fell brave in battle. A note, in in consideration of battle you scroll the screen a little you can see the level number of the enemy, this is useful stratagy as initially I sent in the units to see what damage they would do without realising the difference. Note also that your men need to be carefully marshalled as they display no such number.



More conflict!

Another death, yet the stronger foe was dispatched by my warrior of mightier skill. The next will be to regain the city lost to the foe that shows now in their colour. Retaken, more deaths and a weakened Warrior unit, this is no easy contest. A settler unit built a city that was not so wisely placed and although out of the



Out of the way...

way of current conflict is slow in progress.

Project work

It appears that you're able to research projects in parallel; this could be due to having more than one city or the level of the city. You choose how the resource is spent by choosing from available options and then start again. I am Still investing in military mostly and I hope for more technologies soon.

After reading again the instructions I am continuing to favour the military investment hoping to turn the game still at its early stages to something more than the small band of people living in a small cluster of cities. The might of the enemy looms.

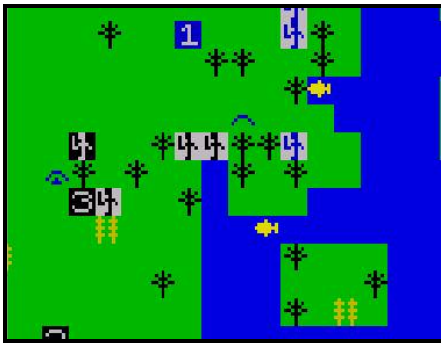


Blue settler

After fighting and being victorious at some cost you realise that the settler units are strong fighters as well as able to establish a city. The advantage to me in this case if I can kill the unit is that the city has been downsized to a level 1 city by the creation of a settler unit. Does this mean that it will produce weaker fighters?

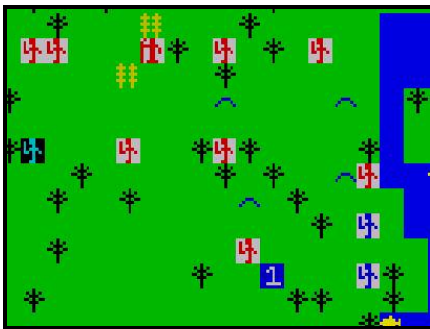
A small boat! As I have a city placed by water, and have been investing I have the option to build a small carrier for one unit. This could prove most valuable as I am in an area of land on the coast of the land.

On the screen you see the level three city I have will I produce tougher fighters? The two warrior



Blue settler

units in the middle of the screen are the victorious that did not fall to the settler unit. The plan is to push up North and take another city as in the top of the image, and right to secure the area.



Red dominance

The area above the target level 1 city of blue is an area of strong red dominance with level 2 and 3 cities. The fight of my area has been costly with red thriving inland. Taking the city 'blue 1' will be quite a battle in this an early escapade for 'I me'... Kevin.

My small ship fought and won (the crew obviously) and brought down a mighty unit of settlers.



Trireme and black dominance

Some damage was done, but now the battle is ended in this area as I have another city to be taken defenseless.

The Trireme is a small unit carrying ship that is in the middle of the image next to the warrior white on black. He is inversed as on the game he is flashing inversed as selected. It could be the ship is not floatable as the enemy built the city on a diagonal to the water. This will be resolved by the two settler units I have developed and dispatched.

A note on research & units

As research totals gather against the required levels make sure that the cities are prepared to produce the right unit as sometimes you find you mistakenly have the wrong unit produced. It can sometimes be useful though to change the direction of the development as required before this time.

The continuing fight as I fight for a hold on my area of land. Already red advances and destroys the Trireme, yet is very weakened. It was quite a battle for a dry docked ship :o)



Trireme and red warriors

A time of evolving and a stand off

After fighting and the near eradication of the blue forces, the initial battle with red was successful. Although large in number they are at bay. The computer bugs though as for the finding, I produced a Settler unit without intending as a warrior

was set, so I moved the unit to the coast, I now have another 2 coastal units who are researching mills. These should bring benefits to my campaigns if I am to survive!



Evolving and a stand-off

With gold now at ten units I have finally stepped up the available research to see what kind of results can be achieved. As the environment evolves through battles and discoveries we will see where this still 4K project leads me the gameplayer and explorer of tiny things. Aha! the mills are not necessarily water driven as I now have an inland option. These technicians of my empire are indeed worthy. Continuing to develop warrior units as possible, at times seemingly overwealmed a great time of empire could be at hand.



Breaking the stalemate

Fighting forward and broadening

my quest for land and a hold on the region. From small starts the might of others is respected, but in light of the increase of the strength of our might and the way of our herats!

Another city taken to the north as planned, lost to red and now at level 2 taken by the might of my army. Ohhh it makes you want to reach for a beverage! Back in a while.... Off to the fridge... ee it's so nice and cold....



Shaping up for a epic battle of opposing forces

Leaving the battle running

After a day's play and writing the

game is opening up with this a 4K version without any development showing excellent promise. I, for 'I am me' is on the verge of defeat or great things with new technologies and increased fortune around the corner. This I hope shows enthusiasm for an excellent game of 4K, and as a free download is worth while having read through this an introduction to the mechanisms of play to have a go.

I would like to see this game developed and Johnathan Cauldwell has said he will consider this if people are understandably enthusiastic. So far this is the longest review, showing the working of Johnathan's workings in code and well implemented devcies with yes, still 4K of RAM.

To sum up

Impressive coding of 4K that really has squeezed something from Mr. Cauldwell's brain that probably plopped out on the floor screaming like an alien-esque movie moment. Play, it's free and again I continue to have excellent fun playing all these entries. Watch as things

continue, I will have a final piece in another issue when it's all done. The link is at the beginning with the introduction. Thankyou for everyone who contributed and contributes to the compotion including the team responsible.

Load

Coming soon

This is what it's all about: some fourteen years ago **Carl Nordlund** started work on a beautiful isometric walkabout called **Ragnar**. Then the **Sam Coupé** and military service came along and the project got shelved.

But now Carl has found and converted those old tapes and is currently dedicating his time to finishing the project. Excellent news. So far, the game looks amazing.

You can follow the game's progress online at:
www.demesta.com/ragnar/

NEW TO THE SPECTRUM SCENE?

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www.spectaculator.com; www.ramsoft.bbk.org; www.worldofspectrum.org/emulators.html

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www.ysrnry.co.uk; www.crashonline.org.uk; www.sincuser.f9.co.uk

The online editions of all your favourite Spectrum magazines: YS, CRASH & Sinclair User.

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TV Game

Author: **Weird Science Software** Price: **£1.99 cassette/free download** Website: <http://wss.sinclair.hu/>

Reviewer: **Kevin Bennett**

What's that you say? Deja Vu? Yes, I reviewed TV Game last issue, but it turns out that Kevin Benett liked the game so much he just had to write his own review. And why not? After all, it is rather good.

This game is the latest presented title from the **Weird Science Software** team who released the excellently simple and playable **Flash Beer Trilogy**. Episode 1 of that title was a 48K game without the 'AY' mad bear drinking ditty of the 2 and 3 and is available as a free download from the WSS web site. When you purchase the complete title you receive in the post a professionally produced cassette. This is also continued with TV game.

So far each of their games have been very competently produced and coded and show an excellent understanding of the Spectrum. Simple and effective sprite design, with an excellent level of overall production. For not much more than a few pounds you have a cassette that you can load into the Spectrum, and TV game can also be downloaded for emulation.

The idea of the solid screen control that was the basic hardware level of old TV games and consoles is big and simple. (Consoles took cartridges for swapping games, and TV games were solid state hardware that you... eerrr well played. There was of course the generic blank screen turn off option or the TV channels available at the time. :o)

Spectaculator v5.1 shows an excellent solid and block-like control of the screen, I can't wait to see this full screen when I can return to Spectrum hardware as it will be just the big simple presentation as intended that is already evident through emulation.

Playing TV Game

Initially the screen options don't offer any real advantage to a bat and ball game until you sit and have a fiddle and explore. If like me all your friends have left you because you can't afford to buy the beer then you can play against the computer. Of course well-beerd friends can play against each other, and if one is married his wife

can split up the inevitable fist fight.

There are five game modes that alter the nature of the game play that is basically Pong... beep...bip.....beep... bip etc.. The colour scheme and graphics also are changed to suggest more of a theme to the mode of game play.

Game mode 1: Tennis.

This is red screen clay tennis with two bats. If you beat the opponent's bat then the large number score tallies one in addition. Very simple and fun to have a ponder with.

Game mode 2: Wall Tennis Left.

This is also a red screen, and is pretty much playing ball against your outside wall yourself to pass some time and play with some coordination. Simple.

Game mode 3: Wall Tennis Right.

EEEErrrrrr... :o) The same as Left, but from the right. If you are a regular ZX[F] reader and have L & R painted on your shoes each day after you have worked out how to put them on then I understand. For me and everyone else of magnificent sophistication.. there you are then. Of course in my sophistication I selected the computer as the right player and watched it playing ball against its garden wall, all by itself.

Game mode 4: Football

Football is green and played with striped football-kit kind of bats and a goal at each end to try and pull off the shot for a score whilst the ball bounces around the area of the screen between you and your opponent. After the fiddling of the previous two and the more engaging tennis mode this is interesting as it offers something more engaging still. Large open goal areas make this an interesting challenge.

Game mode 5: Hockey

Blue graphics on icy white the masochistic teeny



hockey goals are evident as your ball bounces around the large screen area. This could be really competitive and the game mode that starts those fist fights. Anyone who is concerned about my male persona can come round for a good slapping! BITCH.

There are various colour and speed modes available, and also double bat play where you control two bats. Each bat has an independent control one behind the other for additional play strategies and makes the whole game experience again after having fun playing single bat modes alone or with an opponent.

In conclusion

Excellent hardware programming as the colour techniques used and the smoothness of play response/ animation look like an old TV game. I feel I could whip out a Speccy and cassette unit and bathe in the beep.. bweeeeeeep load sophistication of my personal library of software :o) OOhhhhhh PC PC PC PC PCEeeeeeeeeeeeeeeeeeeeeee ZillionGigaFlop Harddrisskkkkkkssss.

Play on emulation... also play on a Spectrum as the basic level of realised design in old times lead to big and impressive artistic works that still take us back to the magnificence of those little works of minimalistic artistry and exploration of more than twenty years ago. With the current activity of the Minigames competition and the releases of people like WSS and Cronosoft (www.cronosoft.co.uk) these little beginnings have begun from the old with interesting results continuing.

Oh, and the TV game has no sound, perhaps the TV it was running on had a broken speaker :o{

Also the WSS Team website has another couple of interesting free download games called **Wiggler** and **Change It** with demos and information that are of interest.

Feedback from the artists

Later in the day after sending an email to Pgyuri of WSS Team I received an excellent reply including some points of interest:

About TV-GAME:

This game has many special techniques but I think they aren't too interesting your readers. I pull out 3 things:

1. One of entry code is 1234. Why ? This is my respect Jet-Set Willy by Matthew Smith. Why again ? When I was young, I met Jet-Set at my grandparents. We loaded this game and - of course - we have no entry table. We tried to enter many times and imagine, on time we passed !!!!! 1234 was the L1 code. What a hazard ! We played with this game around 12 hours ... this was much exciting game after liked Manic Miner. Of course next weekend we couldn't enter this game, we tried around 20 times. 2 chances and load again. I was patient children.
2. A special inform just for your readers FIRST ! At the menu press SYMBOL SHIFT - CAPS SHIFT - V simultaneously. and turn on second bats to full enjoy.
3. It has 128K version which will be downloaded sooner - the orders take it on cassette.

Pgyuri

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3 inch 180K disc drive for +3. Reconditioned with 3 months warranty £10 each. These drives can be supplied with cream coloured facias in place of the black facias if wanted -- just ask.

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Monitor lead to convert +3, +2 and +2A to use an Amstrad CTM644 colour monitor. £4 each.

3 INCH DISCS:

3 inch Blank discs: Second-hand good quality Amsoft or Maxell only supplied. All have been reformatted, verified and relabelled. 80 pence each or £7-50 for ten. Larger quantities available 100 for £65, 1000 for £450.

Sometimes available new 3 inch discs at £1 each, please ask.

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RETROSPECTIVE... 1985

Matthew Harrodine continues his look at the golden years.

Introduction...

In this latest installment of RetroSpective, a year by year history of the Spectrum and Sinclair Research, the Sinclair roller coaster moves turbulently into 1985. Things had not been going well in Cambridge towards the end of 1984 and in the drama of the coming twelve months it didn't get much better as we'll see.

Market Forces...

The entire home microcomputer industry was feeling the pinch. In Europe, the US, and the rest of the world margins were being pushed tighter and there was more and more competition in a shrinking market. The advent of the affordable microcomputer had created a short lived boom, a spike, as consumers grasped the opportunity to own a personal computer. But once you'd got a computer, what then? You didn't need another one and so the situation was unsustainable. In the UK, Sinclair knew things were declining but at least it still commanded the majority share of the market. Unfortunately, Sinclairs' competitors also saw the decline and amidst financial insecurity resorted to almost any tactic to grab customers away.

Acorn fired the first shot in what would end up in a brawl inside a Cambridge bar. The guilty parties being Sir. Clive Sinclair himself and Acorn's Chris Curry, a former Sinclair employee. Acorn's own advertising agency had conducted some research to discover which of several manufacturer's machines were the most reliable. Acorn won, Sinclair lost. Sinclair hit back saying that the figures were not based on like for like sales. However, the final straw came when Acorn used the results in a

national advertising campaign and the fireworks ensued.

Within a matter of weeks though, Acorn couldn't sustain its financial position and 49.3% of the company was sold to Olivetti and a considerable program of downsizing began. Acorn would, however, rise again but that's a different story.

Acorn wasn't the only casualty of 1985, there were some fatalities too. Oric Computer Products failed completely and was placed into receivership, software distributor Tiger collapsed, and despite cutting the cost of its Spectrum modem by almost a third, Prism also failed. Currah (famous for its speech synthesizer) was absorbed into dk'Tronics and several smaller software houses and hardware companies either ceased to be or concentrated their efforts elsewhere.

Cost Cutting...

Prism wasn't the only company to indulge in cost cutting; they were all at it - even the big boys. Commodore halved the price of its Plus4 and the C16 could be had for under a ton meanwhile Atari's very competent 800XL was reduced to £129.99. This put the 800XL on a collision course with the Spectrum+.

So what about the new Spectrum? Well, it was selling steadily, almost healthily given the climate, and this despite a high number of faulty machines being sold to the high street stores. The power supply was dodgy and the keyboards had a tendency to fall apart but nevertheless it was still selling.

If Sinclair hadn't got Spectrum+ stock valued at upwards of £30M it probably would have been OK.

Sadly, it seems 'someone somewhere' over estimated Christmas sales and subsequently Sinclair over manufactured the machine.

It won't have helped that technology itself was on the move...

The New Wave...

In 1985, there was a new breed of machine on the horizon. Available now, albeit at a price, the 16 bit machines had arrived. The year saw launch of both the Commodore/Amiga 1000 and the Atari 520STFM. They weren't direct competitors to the Spectrum but they were a threat to the struggling QL. The new machines succeeded in delivering the QL's promise and that was just too bad for Sinclair and its much maligned QL. Consumers saw the future of the home micro, the QL couldn't compete and the Spectrum could only compete on price.

8 bit wasn't finished though, as we all know it faded away gracefully over a number of subsequent years. Yet, in order for the cheaper 8 bit machines to remain competitive, they had to be enhanced; and that is exactly what the industry did. Amstrad already had the 128Kb, 80 column capable CPC464 and added the CPC664 with built-in disk drive in April. In June, Atari launched the 130XE, an 8 bit ST look-a-like with 128Kb of RAM for only £170. Acorn added an extra 32Kb to its Model B to create the B Plus and within a year would have the 128Kb Master series computer. But where was Sinclair? It was strangely silent and trouble was brewing.

Sinclair becomes Maxwell's



House...

In May, Sinclair hinted at the stock problem (although it blamed the retail sector for the overestimate) and stated that it had eased production back to 200,000 units a month to compensate. In June, the share price collapsed, losing over 65% of its value, and the city experts started predicting tough times ahead.

It didn't take long as by the time July rolled around, Sinclair was around £10M in debt and looking for new money. Then, as if from nowhere, publishing magnate Robert Maxwell appears with a £12M offer for 75% of Sinclair Research. It looks to be a done deal.

Clive was duly 'relegated' to the role of technical consultant whilst Maxwell began the search for a new chief executive. He eventually appointed Bill Jeffrey from within the ranks. It is entirely possible that Sir. Clive was happy at the prospect of returning to his 'drawing board' having admitted a couple of months previously (in Sinclair User) "I don't know much about financial markets".

Maxwell withdraws, Kalm provides the lifeboat...

Almost as quickly as he appeared, Maxwell disappeared again having changed his mind about his offer for Sinclair Research. It isn't completely clear what happened but Maxwell appears to have been warned off by his advisors. With the aid of Stanley Kalm's Dixons Group, which agreed to buy £10M worth of Sinclair stock, Sinclair (and presumably Jeffrey who remained chief executive) was able to broker a deal with the company's bankers and debtors to continue trading, even withstanding a potential further loss of up to £5M.

The mysterious Spectrum 128...

In July, rumours started circulating in the general computing press about the prospect of a 128Kb

Spectrum to compete with the latest 8 bit machines. These weren't exactly strenuously denied but Sinclair was keen to play it low key. This marks a break with tradition, the Sinclair of old would have promised it to your doorstep within 28 days!

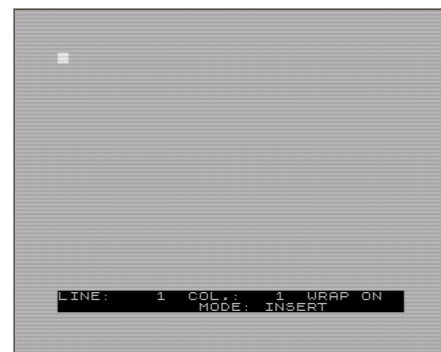
In fact, Sinclair could very easily have launched the Spectrum 128 within quite a short timescale. Instead, for purely commercial reasons, the UK would be denied until 1986. It was in September at Barcelona's Sonimag Fair that the Spectrum 128 was launched onto the Spanish market - manufac-

tured by Sinclair's partner and licensee Investronica. It featured two modes, the 'native' 128Kb mode and a 48Kb compatibility mode. It had a new sound generator, the General Instruments AY-3-8912 as found on Amstrad's CPC and the MSX machines, and a new BASIC command called PLAY to drive it. It featured a RAM disk, an area of RAM set aside and accessed in the same way as any other disk drive. It also did away with the keyword entry that had been the hallmark of the Sinclair machines since the ZX80. Instead, commands were entered letter by





The Spanish 128 lacked the menu system developed for the British version of the machine.



It had a built-in text editor, available by typing EDIT A\$ at the BASIC prompt.

letter with more developed program editing capabilities built in. There was also a calculator. The Spanish machines shipped with a separate numeric keypad that facilitated the editing and the calculator functions. Quite neat. It was also far more expandable with RGB monitor, MIDI, and RS232 connections.

So why wasn't this machine launched in Sinclair's home territory? At an estimated £170-£200 it would have been competition for both the Spectrum+ AND the now discounted £200 QL. Sinclair still desperately wanted the QL to be

a success and didn't want to do anything that would make that less likely. Sinclair also still had a veritable truck load of Spectrum+ machines that needed selling - and they wanted those off the shelves at the expense of the new baby. Quite simply, it was a cynical, strategic, marketing ploy.

Sinclair lives to fight another day...

Phew, it was over. A traumatic year draws to a close on a relative high. The launch of the 128 and the improving sales of the QL following its drastic price cut must have made for a reasonable amount of optimism going into the

Christmas and New Year period. Sinclair Research was still in business and with so many microcomputing companies going to the wall over the last 12 months maybe that was the biggest achievement of all?

1986 will be covered in ZXF09.....

www.museummc.org.uk

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Creating AY tunes is something I'd love to have a go at. I remember once upon a time I thinking it would be as easy as putting a tune together on a midi sequencer. Then I took a look at tracker software and that naive idea jumped over the fence and ran away across the field laughing. Thank God for Matthew Westcott, then, who is here now to take us by the hand...

There are a whole host of tracker programs available for the Spectrum, and Soundtracker, being the oldest, is certainly not the most fully-featured - it just happens to be the one I know. Even if you do end up frustrated by its limitations (and I haven't yet), learning it will be a good stepping stone for tackling one of the more advanced trackers... or so I've heard. One thing's for sure, though - it's a program with an air of mystery about it, ever since Your Sinclair published it on the covertape with rather inadequate instructions.

<ftp://ftp.worldofspectrum.org/pub/sinclair/utls/SoundtrackerV1.1.tap.zip> . I'm aware of a couple of slightly duff versions in existence, the YS covertape being one of them, which suffer from such things as numbers in the sample editor being obliterated when you move your cursor over them - the WOS copy is a good 'un, though.

After loading up Soundtracker, you'll be presented with the screen shown in Figure 1.1. The top part of the screen is the menu area, from where all the other features of the tracker can be accessed via friendly clicky boxes. You can move the pointer around this area with keys Q, Caps Shift, O and P (sorry QAOP fans - the A key is already taken...), and select things with space. Initially, the most obvious thing to do is select Play and listen to the demo tune for a bit, and stop it when you've had enough of that little ditty.

[illegible]

Let's start with a blank canvas. Clicking on 'Other' will bring up a second page of options - your pointer will then be hovering over the 'Return' button, so you can happily swap between the two. From the 'Other' page, select 'Clear song' and confirm with Y. You'll notice that the mysterious digits in the centre have now changed into neat rows of dashes and zeroes, ready to be filled with our handiwork.

For our first lesson, we'll have a go at writing a rendition of Twinkle Twinkle Little Star, as suggested by comp.sys.sinclair's esteemed lurker Dave. But before we do, here's a quick summary of soundtracker theory.

Anyone who hasn't been living in a cave since 1980 will be familiar with the concept of a sample, a snippet of sound that you record from somewhere and then play back at strategic points in a music track, and then get sued over if you're Vanilla Ice. In the world of trackers, tunes are composed entirely from samples, played back at varying pitches. A composer on the Amiga or PC might take a recording of a single piano note, a bass guitar note and a selection of drums, and arrange them on the tracker to be triggered at the correct times and pitches.

So, before we can start keying in a melody, we need a sample or two. However, for Soundtracker on the Speccy a sample is something slightly different, because we don't have the memory or processor power to play around with real sampled sounds. (Actually that's not strictly true - some trackers for the Spectrum based on sampled sound do exist, such as Sample Tracker and Morpheus. But these are of limited use, because you can't really do anything else at the same time - and besides, they're not what we're here to learn about.) The AY chip will, on the other hand, happily generate pure square waves all by itself - so for us, a sample is a graph of how the properties of the square wave vary over time.

The upshot of this is that the sample editor is probably the hardest part of Soundtracker to grasp, which is a bit of a shame as that's where we need to go first.

Select "Samp. Ed." from the menu. You're prompted to select a sample number - we can define up to 15 samples, numbered 1 to 9 and A to F. Press 1 to start creating a sample in the first available slot. You'll be presented with a pair of grids as in Figure 1.2.

The top grid defines how the amplitude (volume) of the note varies over time, otherwise known as

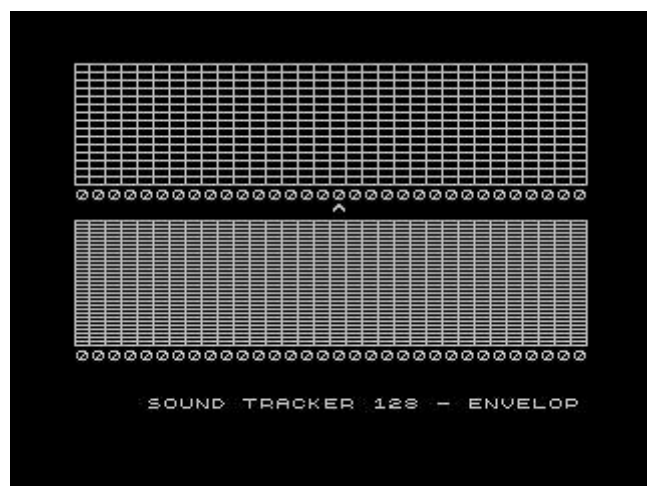


Figure 1.2: Sample editor

the envelope. This is the one we're most interested in at this stage. Each column of the grid represents one fiftieth of a second (one frame), which happens to be the fundamental unit of time for Spectrum trackers - at the lowest level, we squirt data at the AY chip once every frame. Machine code gurus will at this point be thinking "Aha! That means I can drop the music player into an interrupt routine, and then forget about it while I do something more interesting instead!" Everyone

else is free to mutter "Bah, in my day all we had were 10 PAUSE 1: RANDOMIZE USR player: GO TO 10. And we were bloody happy with it too!"

But I digress. What we're after is a note that starts off loud and fades away fairly quickly. Move the little arrow with O and P, and alter the height of each bar with Q and Caps Shift (note that the controls wrap around, so you can get a full height (i.e. full volume) bar by pressing Caps Shift to move the height below zero). Arrange the bars until you have a triangle shape like Figure 1.3. Note that we're only stepping the volume down on every second frame - this happens to produce a nicely resonant note. Feel free to try steeper or shallower slopes if you're curious.

Press 0 to hear the result. This only plays the sample up to the point where the cursor is sitting, so it would be a good idea to move the cursor to the far right first. You'll notice that we do indeed have something that starts loud and fades away,

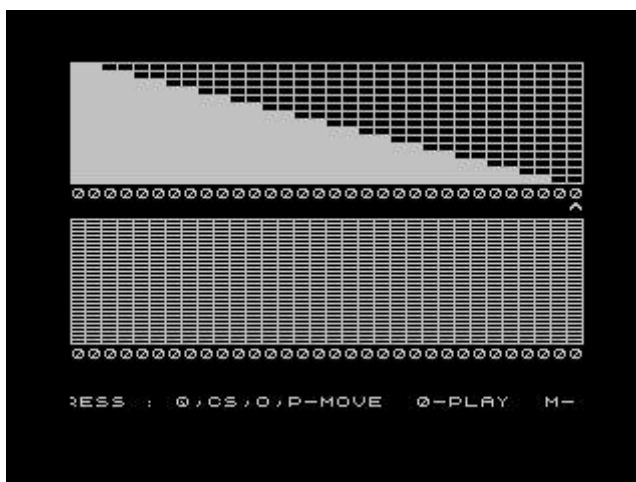


Figure 1.3: Triangular envelope

but there's a lot of white noise in there, like somebody blowing into a bottle.

That's where the lower half comes in - it controls white noise. Press Enter to hop down to the second grid. With the lower grid you can fiddle with the exact makeup of the noise in ways that I'll describe in a future lesson, but this time we just want to get rid of it completely. For this, we turn our attention to the row of zeroes along the bottom. [You were wondering about those, weren't you?] These are the 'mask' bits - setting a bit to 1 will mask out the noise at that point. The M key will toggle it on or off, and holding down P and M is a quick way to zip along the row flipping them all. Incidentally, the row of zeroes in the upper half does the same thing, but masks out the pure tone instead. Not what we want at all.



Once you've got the screen looking like Figure 1.4, press 0 and you'll be rewarded with a nice clean note. Press Enter again, and you'll be taken to the second sample editing screen, with a miniaturised representation of the envelope and another set of numbers to fiddle with. These allow you to vary the pitch of the note, which is handy for producing vibrato effects and other funky

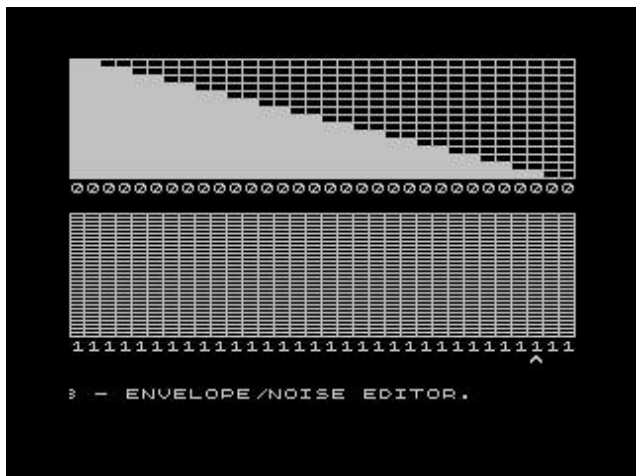


Figure 1.4

things, but we'll leave them well alone for now. Press Enter to finish editing sample 1 - now have a go at inputting the sample shown in Figure 1.5 into slot number 2. This one will give us a longer note, which will come in handy for the 'dah's in 'dat dah, dat dah, dat dah dah'.

Done that? Good. Time to leave the sample editor and tackle the melody, then. The first thing to notice about Twinkle Twinkle Little Star is that there's a lot of repetition in it. If you take the notes of the first three lines:

1. C C G G A A G

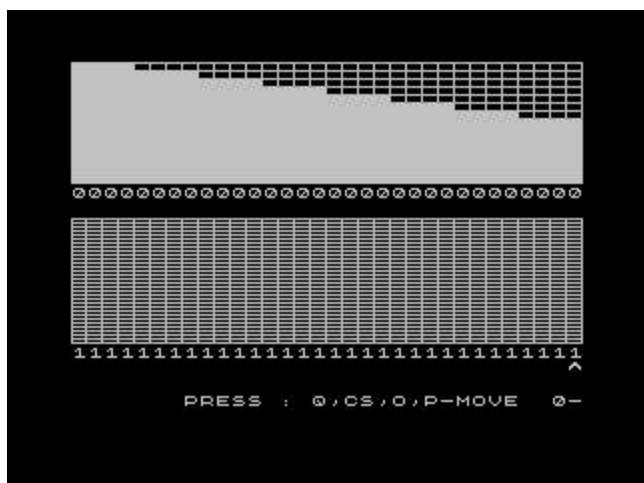


Figure 1.5

2. F F E E D D C

3. G G F F E E D

you can assemble the whole song by playing them in the order 1, 2, 3, 3, 1, 2. And that's exactly what we'll do! In tracker land, songs are divided into equal-sized repeatable chunks called patterns. You work on one pattern at a time, and if you now look at the bottom of the menu area, you'll notice an indicator saying "P:01", telling you that you're currently viewing pattern number 1. The arrows next to it will let you flick between patterns, and a quick bit of browsing will show that there are a total of 31 patterns to play with.

Now, there are essentially only two differences between conventional music notation and tracker notation - firstly, you read tracker notation downwards rather than across, and secondly, gaps between notes are represented by an appropriate number of vertical spaces in the track, because we move down it at a constant rate. To give us a bit of breathing space (and the opportunity to add some twiddly bits later), we'll leave a single row gap between our notes.

With a bit of humming and finger tapping (best graphically represented as O.O.O.O.O.O.O... , where we play a note on each O) we decide that we need 16 rows in each pattern, so go to 'Other' and 'Change patterns length', and enter 15. Yes, I thought that'd catch you out. We start counting from zero, you see. I should mention that 16 rows per pattern is less than you're likely to use in a 'real' composition - 32, 48 and 64 are more usual choices, depending on the time signature of the music - but it happens to work nicely here.

So, after all that preparation, it's finally time to click on 'Edit' and launch ourselves into the tracker proper. This gives us a new cursor in the central portion of the screen, controlled by the cursor keys. The arrow pointer is still controllable with Q/Caps/O/P, but in edit mode, most of the menu becomes inactive - selecting 'stop' will bring you back to work mode at any time.

With our edit cursor hovering over the first dash of row 00, we can drop a note in place. The Z-M keys on the bottom row are our piano keyboard, with S,D,G,H,J being the black notes that we won't need for today's little recital, and Enter being the thing to press if you want to remove a note. Whichever note you pick, it'll be a bit quiet at the moment because we haven't chosen a sample for it yet. The sample number is the first digit to the right of the note, so we'll fill that in with a 1, as shown in figure 1.6.

We're presented with a very low note, because we're in the bottom octave, as indicated by that

"Oct: 1" in the menu area. We'll soon fix that -



Figure 1.6

symbol shift and a number from 1 to 8 will move us to another octave, and some trial and error reveals that C-5 would be a good note to start our tune on. Armed with that starting point, we can go storming ahead with the rest of the pattern, picking out our notes on the left and our dat-dahs on the right:

00 C-5 1000	08 A-5 1000
01 --- 0000	09 --- 0000
02 C-5 2000	10 A-5 2000
03 --- 0000	11 --- 0000
04 G-5 1000	12 G-5 2000
05 --- 0000	13 --- 0000
06 G-5 2000	14 --- 0000
07 --- 0000	15 --- 0000

Now we can leave edit mode and check out our handiwork with the 'Pattern' button - the one directly above 'Play' - which plays the currently viewed pattern. And lo, we're rewarded with the first line of Twinkle Twinkle Little Star, played in an infinite loop at breakneck speed. Oops. Better go to 'Other', 'Delay change', and choose another speed setting - higher numbers are slower, because it's the number of 1/50-second frames to stay on each row. We find that 12 (or C, for those of us with 16 fingers) is a good choice.

After that introduction, you should now have no trouble going ahead and entering the remaining two lines of the song into patterns 2 and 3. The whole song stays neatly within octave 5, so no further faffing around with symbol shift should be required.

And so to put it all together. This is where the 'position' and 'pattern' sliders in the top left of the menu area come in. The user interface for these

can be a bit perplexing the first time you try it, but you've just got to remember that positions are the timeline of your song, and the 'position' slider will let you step forward and backward through that timeline. As you do so, the two indicators beneath it, 'pattern' and 'height', will change to show the settings you've chosen for that position. Height can safely be ignored for today - we'll leave it on zero. Pattern indicates the pattern number we want to play in that position - as previously decided, we'll do this in the sequence 1, 2, 3, 3, 1, 2. So, move to position 1 and set the pattern to one; move to position 2 and set the pattern to two; you get the idea. The song is six positions long, so unsurprisingly enough we need to set the 'length' slider to 6.

At last, we're done. Scroll back to position 1, and select play. Congratulations, you've written your first Soundtracker tune!

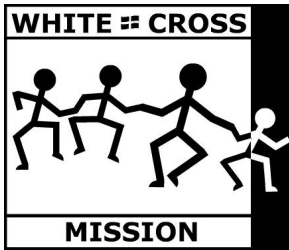
But let's not rest on our laurels. We still have two whole channels completely untouched, so we can add a bit of harmony. You'll be pleased to know that the second and third columns of the tracker display can be filled in in exactly the same way as we've just done with the first. A bit of glockenspiel (or something approximating to it, at least) would go down well, and sample 1 on its own will do the job. Rather than entering a '1' against each note, you can save a bit of work by moving the 'sample' slider to 1, which will make Soundtracker fill it in automatically for every note that you enter. Alternatively, another trick for the lazy is to leave the sample number at 0 for all but the first row - this tells Soundtracker to use the last sample played. It's best not to rely on this too much, though, because you tend to lose track of which sample that was, and end up turning your lovingly crafted melodies into frantic drum solos. Anyway, the following notes are what I came up with for the accompaniment - one note to each row this time (now you see why we left those spaces earlier):

Pattern 1: C-4, G-4, E-4, G-4, E-4, C-5, G-4, C-5, F-4, C-5, A-4, C-5, E-4, C-5, G-4, C-5

Pattern 2: D-4, C-5, G-4, C-5, C-4, C-5, G-4, C-5, G-3, G-4, F-4, G-4, C-4, G-4, E-4, G-4

Pattern 3: E-4, C-5, G-4, C-5, D-4, C-5, G-4, C-5, C-4, C-5, G-4, C-5, G-3, G-4, F-4, G-4

Much nicer, no? Perhaps you could add your own bassline to round the whole thing off. Next time we'll take a look at the more advanced features of samples, and bring in the rhythm section.



After Ceaucescu's death in 1990 over 120,000 children were discovered living in grim institutions. In the county of Jud Bihor in Western Romania, children who had been assessed as 'mentally retarded' at the age of three were sent to an institution in the country village of Cadea. They were housed in old buildings that had broken windows and no heating or plumbing. It was dark and dirty and for the majority of the time the children were confined to their cots. Most of them were tied to the bars by strips of cloth tied tightly around their wrists and ankles.

The children were always dirty, hungry and cold - sixty to seventy died every winter. Their original 'retardation' was the result of early illnesses such as pneumonia and bronchitis, and years of confinement at Cadea only compounded the problem. When they were finally released in January 1991, many could neither walk nor speak. All of the children rocked backwards and forwards in their distress; their eyes were glazed and unseeing. On release, many of the children were sent to hospital buildings in the mountain villages of Remeti and Bratca. It is here that the White Cross started assisting the local Romanian staff in their care.

Since the White Cross has been working with the children, over 600 people have travelled with the Mission to Romania. Some have only been able to give a few days of concentrated work, most average two months and one stayed for four years! Some work with the children, others repair the buildings and yet others deliver goods. Every volunteer is special. They raise their own money for air and train fares, insurance, food and electricity and more than half of them do it all over again and go out for a second or even third time. Old or young, with or without qualifications, the combined work and presence of these many different people has had an amazing impact on the children.

Children with blank, unseeing eyes, rocking in a world of their own are now healthy, laughing and boisterous. The accumulative effect of the White Cross volunteers with their mixture of naivety and experience, their energy, their perseverance, their hopes, their dreams and their many different ways of showing love has created a rainbow effect of bouncy, confident and individual children.

Fundatia Crucea Alba has helped White Cross Mission with the legalities of purchasing small farms, employing assistants and moving children from the mental institutions in order to live a normal family village life. We intend that these farms will be the children's homes for as long as they need. All their lives if necessary.

Buying the farms is only the beginning of a lifetime commitment to those children we take out of State care. Without a regular financial safety net we would be irresponsible if we established too many homes. We do, however, believe that this is the only way forward and are desperate for substantial funding.

The White Cross Mission is a Charitable Trust Registered in England No 1021176

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