



SAM *Revival*

15th April 2012

Unfortunately I suffer from the age old problem of not having enough time to really sit down and get on with SAM stuff and of course the release of SAM Revival magazine is one of the first things that suffers. Of course I've still been shipping hardware, software and back issues of magazines but the lack of time means I've not been able to really concentrate on new developments.

But to get the ball rolling the next couple of issues are all planned out, with a lot of content ready for issues 25 and 26. I'm aiming to get out issue 24 out within the next couple of weeks (with just one article to finish off for the issue and have the interview sections approved by the interviewee before it goes to print). Issue 24 will be released as the Spring 2012 issue, with issues 25 and 26 following as Summer 2012 and Autumn 2012 respectively later in the year.

As a teaser this preview of issue 24 features the full 'SAM Comment' section from the issue, which kicks about some ideas for possible SAM Projects. It's great to see so much input into the magazine from other SAM users and this is reflected not only in the comments section but also the letters pages and the main articles in the magazine. There's a lot more to come with most of the articles for issue 25 being submitted from both developers and users.

All the best,

Colin Piggot



Email: sales@samcoupe.com

Web: www.samcoupe.com

Thanks to the following people for their contributions to the 'SAM Comment' section:

Gordon Wallis and Simon Owen



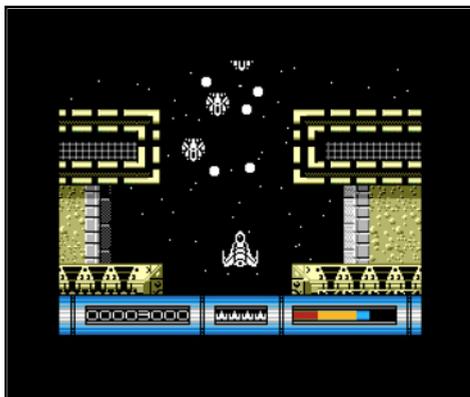
SAM Comment

with *Colin Piggot*

and *Gordon Wallis & Simon Owen*

Continuing my chat with Gordon Wallis about his idea of voxel's on the SAM after seeing a voxel landscape on the ZX Spectrum (as mentioned in the first Comment section last issue) the ideas have been flowing. The general consensus is that MODE 2 would be best for drawing voxels quickly, compared to MODE 4.

Gordon: *"Going by those Spectrum demos, MODE 2 should be ideal for arcade flying games - Afterburner and the like - but might just work for simple flight sims. Maybe even a Legend of Eshan sequel, with a bit more 'realtime' stuff going on. For some reason, the old Spectrum game Advanced Tactical*



Sphera (Enigma Variations, 1990) The most famous MODE 2 game on the SAM - but was it really as bad as people claimed? Like Gordon, I rather liked it too and feel MODE 2 is underused. What are your views towards MODE 2? Write in and have your say!



COMING UP IN SAM REVIVAL

Also in issue 24...

- News from around the SAM Coupé Scene.
- What happened to Sandman's Shadow - information, screenshots and sketches from Gordon Wallis.
- Developer Diary - Lots of info from SAM developers featuring Space Invaders Arcade Machine Emulator (Simon Owen), Wubtris + more (Rob Evans).
- Coupe Correspondence - 7 pages of letters.
- On the coverdisk - full SAM game, "The Witching Hour" by John Vincent (who also painted the fab magazine cover!)

Featuring in issue 25...

- Developer Diary - information, screenshots and sketches from a new SAM game that's under development.
- SAM Modding - Lots of info and photos from several people who've been modding their SAM Coupe.
- Plus the usual news, letters and comments section.



Fighter springs to mind. Who knows, it could spark a rivalry between vectors and voxels for SAM's first solid 3D game."

One style of game that I thought would be good with a voxel landscape was something along the lines of 'Virus' on the ZX Spectrum (also called Zarch on other platforms).

Gordon: "Here's a thought, if MODE 2 could handle a reasonably fast voxel landscape, monochrome sprites would be a very small price to pay, and far less noticeable than those in Sphera. Imagine a first-person shooter in a MODE 2 voxel landscape. Not quite Quake, but probably better than Doom. Set out in the open rather than in dingy old buildings, it could have night and day and, while accurate lighting and shadows would be a problem with a 16 colour palette, 8 colours of 'dark' and 8 of 'torchlit' might be viable."

The problem with the SAM is MODE 2 is often ignored, but with only using 12K of memory for the screen, objects can be drawn quicker and limited by only 8x1 attributes. Gordon's comments sum up the views towards MODE 2 quite well.



A voxel demo on the PC displaying a cave using a height mapped floor and ceiling. Using MODE 2 a similar effect could be possible with 4 pixel wide columns but the SAM would be too slow to process and display something similar at a reasonable frame rate.

Gordon: "Here's a very easy answer to why MODE 2 is ignored: Sphera. Weirdly, I quite liked it, flawed and much maligned as it was. I showed Sphera to a friend at the time, and he thought MODE 2 was a layered mixture of MODE 4 and MODE 1 elements, so it's definitely a convincing graphics mode."



Two games from the ZX Spectrum that could inspire ideas for games on the SAM to use a voxel based landscape? (On the left: ATF by Digital Integration, 1988, on the right: Virus by Firebird Software, 1988)



The thing is, Sphera could have looked even better, as the MSX shows - a good chunk of its games use an 8x1 pixel block mode, particularly the side-scrollers. Compare and contrast the likes of R-Type on the Spectrum, and any of the Gradius (aka Nemesis) games on the MSX - a similar method of cheating the graphics is used, but the MSX looks better due to its 8x1 blocks as opposed to the Spectrum's 8x8 attributes. But if R-Type was well done on the Spectrum, imagine how much better it could have been in SAM's MODE 2.

Next time I have a bit of spare time, I'll take pencil to graph paper and see what kind of craziness I can squeeze out of MODE 2 on the SAM. The scary part is that I'll have to try to remember how to use Flash! as SAMPaint doesn't do MODE 2!"

We'll all be looking forward to see what sort of graphics you are able to cook up!

Something that caught my eye recently in the general retro scene was a Commodore 64 remake of 'Spike'. Originally released for the Vectrex in 1983, Spike was a vector based platform game. I can fondly remember playing this back in the early 1990s at a mate's house as he had owned a Vectrex from launch.

I've wondered for a while if the SAM would be capable of emulating the Vectrex, in fact I found 'To investigate: 'Vectrex Emulator' scribbled on one of my old 'to-do' lists from many years ago!

The Vectrex was a cartridge based console, which used a 1.5MHz Motorola 68A09 CPU, an 8K ROM which contains library functions as well as having the game 'Minestorm' built in. The Vectrex also has 1K of RAM and uses an AY-3-8912 sound chip for sound. The most unusual thing about the Vectrex

was that it was purely vector based with the console incorporating a 9 x 11" monochrome CRT screen. To give games colour each game came with a plastic overlay which would clip in place over the screen.

For emulating the graphics, MODE 2 would probably be best, as just drawing line vectors this would be fastest and good enough colour could be implemented using the 8x1 attributes to mimic the plastic overlays used by the real system.

Sound wise, emulating the AY sound chip with the SAM's SAA1099 has been done countless times, such as for hacked ZX Spectrum 128K Spectrum games and demos, so there would be no problem with the sound.

The main hurdle for a Vectrex Emulator on the SAM would be emulating the 68A09 CPU. A few months ago (before the 'Spike' game on the Commodore 64 had popped out) I had briefly asked Simon Owen (who has to be the most talented person when it comes to writing emulators on the SAM!) about how feasible it could be to get the 68A09 emulated on the SAM based on his work of writing his own 6502/10 CPU core for his past emulators:

Simon: "I hoped it might be easy to change the 6510 emulation to support it, but I think the flags and register are different enough it didn't seem it would be a quick job. I'm sure a lot of the code could still be shared, but it needs fairly specific optimising for flags and registers to make the most of CPU speed. I'm happy that the 6510 core is fairly highly tuned, and I'd be surprised if there was much more speed to squeeze out of it for general use."

So from a very brief look it should certainly be possible to get a Vectrex emulator running on the SAM, but certainly a fair



Spike - a remake of a Vectrex game written for the Commodore 64 by Tristar and Red Sector Incorporated. (Released April 2010)

amount of work to put together a new CPU emulator core for the 68A09, plus all the graphics side of things.

Going off on another tangent, one of the others games I remember playing on the Vectrex was 'Scramble', and as far as I can remember we've never had a Scramble style game on the SAM, which ties in with something that Gordon Wallis had said when

he was passing me some disks of graphics of his old games for the Sandman's Shadow article earlier in this issue - he had actually produced some graphics for a remake of Penetrator!

Gordon: *"Funnily enough, looking over my old stuff to put those disks together, it appears that the sprites for Guardian 3 were originally intended for a SAM remake of the Spectrum game Penetrator (remake in the sense of "I wished someone would do that" rather than someone was actually remaking Penetrator for the SAM).*

When Malcolm MacKenzie put me in touch with Les Quinn, who was making a



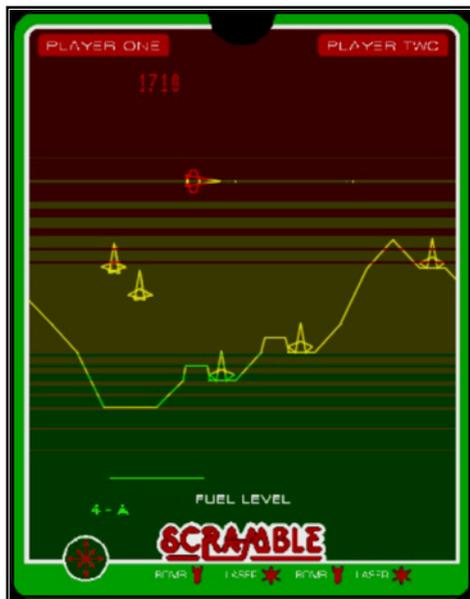
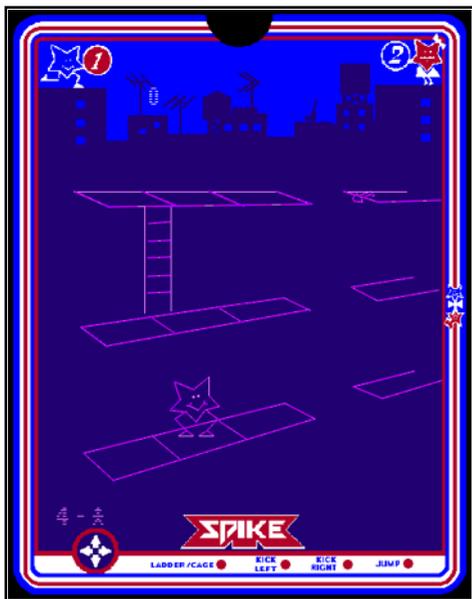
The Vectrex, a cartridge based vector console from GCE with colour provided by fitting a plastic overlay over the screen.

Defender-style game, but needed sprites, I basically tried to shoehorn the stuff I'd done on Penetrator into Guardian 3, and then expand upon it. It didn't work out, and Les wanted me to halve the size of my sprites across the board. That lost so much of their detail and character, I'd got to the point of starting over from scratch, but didn't get very far."

It's certainly one type of game I hope to see on the SAM in the future!

Contributions are always welcome for SAM Revival, both for the paper magazine and the cover disk. Also if you have any suggestions as to what you would like to see featured in the magazine please let me know.

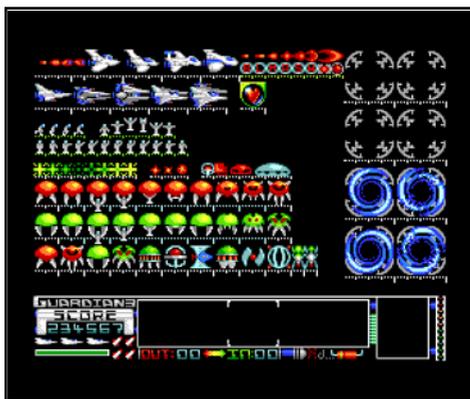
Don't forget the Coupé Correspondence letters page too - if you've anything to say or ask about any aspect of the SAM Coupé please write in. It would be great to have a full letters and comments pages in each issue so please feel free to join in the discussions!



Screenshots from 'Spike' and 'Scramble' on a Vectrex emulator on a PC which use the overlay artwork. MODE 2 on the SAM would be perfect for a Vectrex emulator, for faster line drawing than MODE 4 but with still enough colour capability with the 8x1 pixel attributes for simplified overlay graphics.



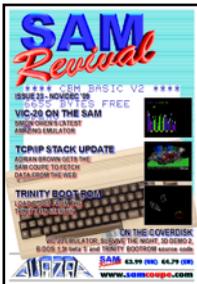
Penetrator - An example of a 'Scramble' clone on the ZX Spectrum. (Written by Beam Software, published by Melbourne House in 1983)



Some of the SAM graphics drawn by Gordon Wallis for Guardian 3, modified from some of his earlier work for a remake of Penetrator.



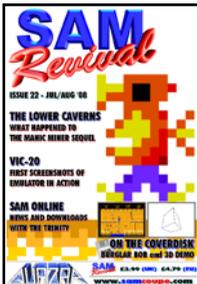
SAM REVIVAL BACK ISSUES



Issue 23

This issue kicks off with news from around the SAM Scene which includes progress on the TCP/IP stack and programs to use it, VIC-20 emulation and new SAM games under development. The Developer diary looks at TCP/IP work, Optimising 3D and B-DOS improvements. A programming article looks at the code behind the BOOT ROM and startup code for the Trinity Ethernet Interface.

On the coverdisk: VIC-20 Emulator (*emulator*),
Survive The Night (*full game*), 3D Demo 2 (*demo*) + more...



Issue 22

This issue starts off with an eight page roundup of all the latest news in the SAM World including: SAMonline, a TCP/IP update, VIC-20 emulator and much more. Feature articles include a look at the 3D wireframe graphics work from Thomas Harte and a look at what happened to the proposed sequel of Manic Miner.

On the coverdisk: Burglar Bob (*full game*), 3D Demo (*demo*)



Issue 21

Feature articles include an interview with David Gommeren and Rob Mies of The Lords. Gavin Smith continues his look back at some of the top SAM games. Thomas Harte introduces us to the 3D graphics he has started, and there is also programming information for using flash cards with the Trinity Ethernet Interface.

On the coverdisk: Batz 'n Balls (*full game*), Tetris (*full game*),
Pac-Man (*full game*), Soul Magician (*full game*) + more...

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