Sinclair Scene

Music *Writer* is a three-part music package for 128K Spectrum users. You enter music in conventional notation with a pointer, and the program files it on disk Ram or tape, or plays it through the sound chip.

Music Writer comes on cassette, with a converter for Plus Three disk and a dozen demo tunes. Our second review copy came in a four ring vinyl binder more than 10" wide and a foot tall (266mm x 330mm). This seems too much for a mail order tape and 20-odd A4 sheets of documentation, but will spur impulse purchases at shops and shows. Garry Rowland announced *Music Writer*, with much fanfare, in January, but it was July before I received a working copy. Much of the intervening time was spent on the manual, but it was worth it.

The manual is laser printed and artistically designed, although the text looks more organised than it really is. It all makes sense when you've played with the program and read the words from start to finish a couple of times. The first part explains classical music notation. Then comes a tour of display icons, with lots of helpful text alongside.

The 23rd page is headed Getting Started (pages are not numbered, but have letters). The 23rd was the first of two page Gs, followed by an appendix of 10 page Xs, packed with information such as further reading, a tempo conversion table (from Italian to English to beats per minute) and a grid relating tempo and measure to bars per minute. Repeat marks, key signatures and eight types of chord are explained, along with a cardboard cut-out 'interval calculator'.

Parts X9 to X12 discuss drive and music error reports, and tricks to enter scores that use compound time, tuplets, grace notes and pause marks. Voice and song memo forms bring up the rear.

Notes and bolts

Music is entered with the Bar Editor and played from the Music Sheet. The Bar Editor shows two staves, with two treble parts on the top one. You enter notes anywhere between the two Cs above and below the treble and bass clef. Single and double sharps are allowed - Cb sounds like B. The time

Timothy Green tunes in to Spectrum Music Writer, revisits the Thor and OPD, and digs out lots of Sam news
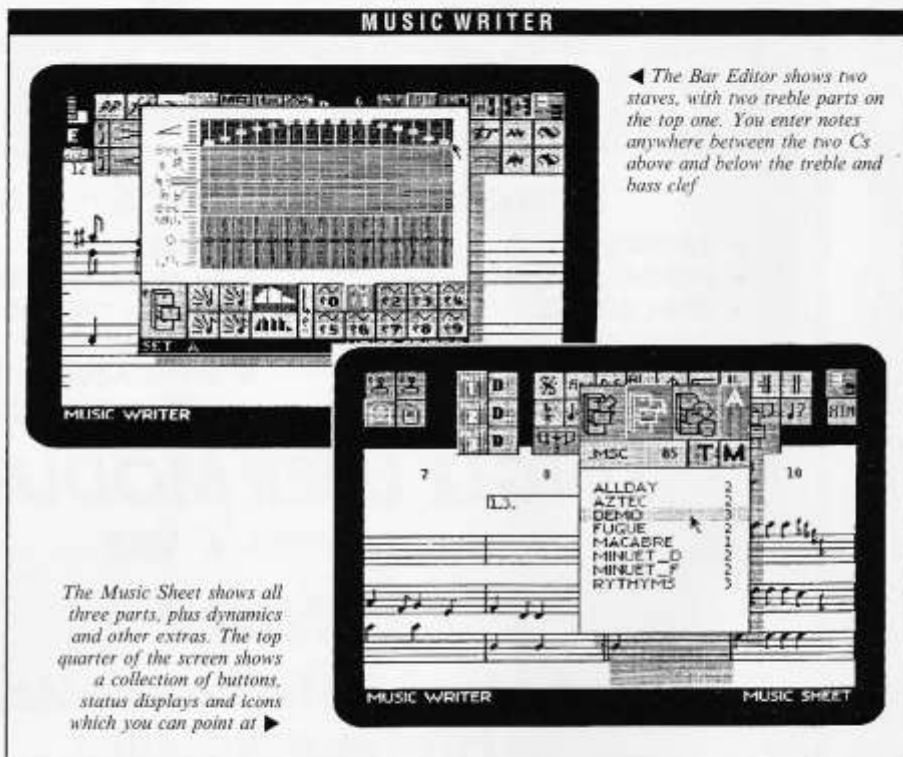
MUSIC WRITER

◀ *The Bar Editor shows two staves, with two treble parts on the top one. You enter notes anywhere between the two Cs above and below the treble and bass clef*

The Music Sheet shows all three parts, plus dynamics and other extras. The top quarter of the screen shows a collection of buttons, status displays and icons which you can point at ▶

signature may be 2/2, 2/4, 3/4, 3/8, 4/4, 4/8 and 6/8. This should satisfy mainstream musos and suit almost all sheet music. However, Miles Walsh afficionados may have to stick with the *Specdrum*.

The arrow keys move a pointer over the whole screen, wrapping at the edges. Press Inv Video, Zero, Joystick Fire or the right mouse button to sound, select or page through things. I'd rather use Space as it's so easy to reach from the cursor keys, or M and N, like *Flash!* Even with keys, the cursor moves fast and is easy to position accurately - and that's high praise indeed.

The Sinclair Spectrum 128 version supports an add-on Kempston Joystick or Sinclair port 1. Amstrad Spectrum users can use either of the inbuilt sockets. Garry uses a mouse, but *Music Writer* crashes if you select Play with common interfaces connected. Kempston joystick and mouse interfaces are minimalist designs, widely cloned. They pre-date Amstrad Spectrums and interfere with Garry's interrupt-driven sound chip server.

Garry cured his Issue B Kempston interface by cutting one PCB track and adding a wire from the Z80 M1L line to pin 6 of IC7, but this did not help my Issue C interface. The modified version would not even let the Plus Three menu appear, so I changed it back. Apparently, Datel's mousetrap works if you add a Nand gate to merge RDL and IORQL.

The pointer software is good. Click on a picture from the menu to select a note or embellishment, then click again on the stave to drop it. You can move individual notes, or scroll the bar left or right. Notes are automatically spaced as you enter them, and a message appears if the measure does not fit the bar.

Notes and rests range from semibreves to demisemiquavers, with optional dots. Notes may be staccato or have accents on chosen notes or the first beat of each bar. Limited crescendo and dimunendo are allowed, along with chromatic glissando, slurs, mordents, ties, triplets, turns and trills. All are shown clearly on screen.

Music Sheet

The Music Sheet shows all three parts, plus dynamics and other extras. It may appear confusing until you learn its visual conventions. The top quarter of the screen shows a collection of buttons, status displays and icons which you can point at. These objects contain coloured text and pictures which

appear to hang down over the rest of the screen. As usual, some of the pictures are instantly recognisable, while others are cryptic even as reminders.

The background colour of a selected icon changes from black to white. Often a menu of several lines or more buttons flops down in response. True Video and the left button de-select, but only if you point at the original icon. Buttons like Load and Play de-select themselves when they have finished.

The bottom half shows three lines of music, in a close approximation of conventional notation. *Music Writer* does not allow 'beaming'. You cannot tie the stems of quavers together in groups, as they are usually printed, and each quaver has its own stem and flag. Flags can be hard to see on a TV - this is inevitable given the requirement to show and scroll three lines of music. Conventional notation contains redundant information, and bar or note spacing often resolve ambiguities. Flags are much more obvious in the Bar Editor as only two staves are shown.

Besides the music, you can store up to 240 characters or six lines of proportionally-spaced text in each file. This is where you put your Opus number, copyright notice, slogan or whatever your musical forebears might have scrawled across the top of the paper. The font is clear and attractive, even from a distance, so I forgive the lack of kerning and attribute corruption when you overflow the line limit. The only editing keys are Enter and Delete, and there's no auto-repeat, so six lines are plenty.

Sounds

You can choose to hear any of one, two or three parts. The sounds are distinctly computerised, but volume and pitch tweaks are used to good effect, and there's as much variety and accuracy as you could reasonably expect from the AY-8912 chip. The demos use short, noisy bass notes to add rhythm.

The Voice Editor divides each sound into 16 steps (Attack, Sustain and Decay sections). Each step lasts 20 milliseconds and allows eight volume levels or detuning by anything from a quarter tone (for Indian music?) to an octave. Tuned 'noise' may be added to one channel.

Bars of three-part music flip across the screen as they are played. Each line shows four numbered bars, with a stripe over the third to show that it's the one playing.
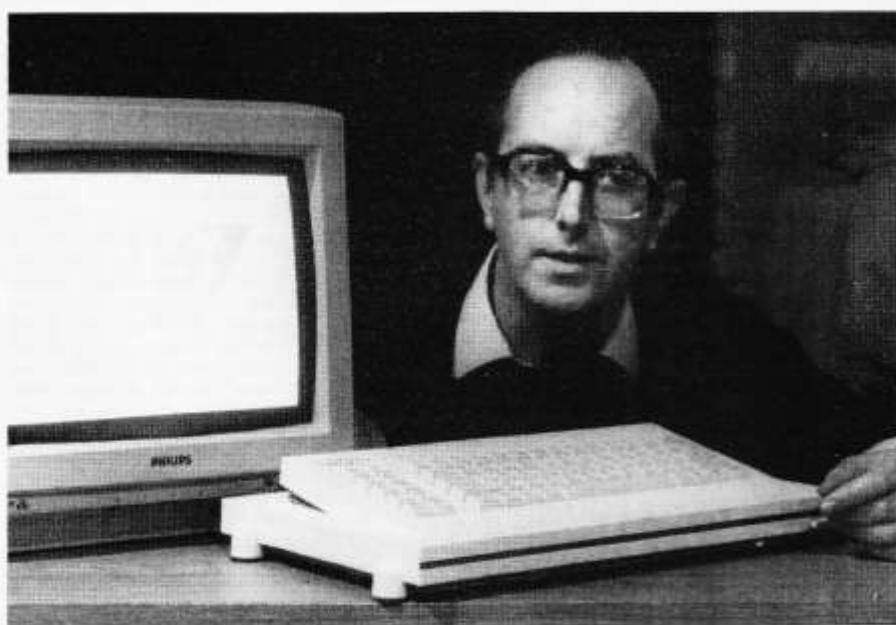
Time-keeping is fine, from 50 to 180 beats per minute - apart from a slight hiccup as complicated screens pan sideways. The Break key interrupts replay.

Notes are fairly accurate and some sounds include a fair amount of pitch bend, which can emphasise or disguise errors near the limit of the chip's range. Good results are possible if you pick the right settings, or listen and tweak as you go along.

TV sound is distorted on many Amstrad Spectrums, unless you retune the modulator or accept a poor display, but you can get a clean feed from the tape/sound socket. I routed this to my tape monitor circuit and got much better results than via the TV speaker.

Music Writer costs £19.95, plus £2 postage. Rowland promises add-on packages for block editing, transposition, pretty printing and maybe Midi. *Music Writer* could become a definitive 128K package; it's already useful to those learning conventional written music. The lack of beaming and poor sounds (by synth standards) may discomfort traditionalists, but it's an impressive debut and is the best Spectrum notation and replay package yet. Creative musos will get more out of Midi, but pay more too.

SamCo surfaces

Negotiations over the sale of Miles Gordon Technology seem to have stalled, but free warranty service is available in the meantime, thanks

to a new support company, Sam Computers Ltd. It is run by former MGT staff, with the apparent approval of the Administrative Receiver, David Hill.

Primary distributor, Hollington Meyers, on (0494) 791591, is still supplying dealers and shops, and can obtain all MGT products. Russell Meyers told *Shopper*: "We are 100 percent behind the product. In the last week of July we sold almost 100, and now the software is coming together too."

All new machines have version 2 of *Sam Basic* in Rom, but many existing users are understandably miffed not to have received the system upgrade promised in May. Alan Miles and Bruce Gordon have now done deals that allow them to sell the latest Rom (version 2.5) direct to former customers of MGT.

The upgrade disk includes *Flash 1.1*, SamDos 2 and *Emulator 3*, plus several dozen utilities and demonstrations developed while MGT was in limbo, waiting for the cash that never came. The *Sam Basic* listing (see the figure *Sam Basic demo*) is a tiny sample, written by Dr. Andy Wright. It displays an animated kaleidoscope.

The bankers lost their bottle, so Samco proposes a £12 charge for the Roms and disks. Some 1,800 UK Sam owners have not returned their warranty cards - now's the time to do so if you want the official upgrade.

The old Rom 10 runs all Sam programs yet released, but future

titles may expect the new Rom, which is faster, easier to extend and more reliable if you write big structured Basic programs. SamCo is mailing details to all Sam users who have returned their warranty card. Alan Miles stresses that any Sam users with hardware problems can still obtain free warranty service (call former MGT engineer Paul Thomas on (0639) 885008 for details).

Sam Software

New Sam software continues to appear, and some of it is excellent. Enigma Variations can supply *Defenders of the Earth* on tape at £11.99 and £14.99 on disk. This is the arcade game that proves Sam is a true match for the ST, with smooth, brilliant graphics and sound. If you own a Coupe, the quality of this program is inspiring - despite a cliched scenario. You play the part of Flash Gordon, zapping robots and scouring the dungeons of Ming the Merciless for trapped sprogs.

Enigma is touting for Sam conversion work for other software houses and eager to collate and publish quality programs from Coupe users. Anco has delayed plans to put *Kick Off 2* on Sam, but Enigma is still keen to do the work.

Enigma has three more Sam code games near completion, including an adventure based on Enid Blyton stories and an equally reactionary vertical scrolling shoot em up in Sam's Mode 2. When

Support for the Sam Coupe is now available from Sam Computers Ltd

Bruce Gordon saw the graphics, his jaw dropped. A while later he reportedly said: "That's exactly what I designed that Mode for." Encourage Enigma on (0423) 501595.

D+H Games is keeping faith with the Coupe, releasing an enhanced version of its Soccer Management title, *Football Director II*, for the new micro. D+H's 256K game costs £19.95 on both disk and tape. That's the same price as the 128K Spectrum version, although the program is said to improve on the ST variant. D+H is on (0462) 816103.

Lerm has released *Sam Address Manager*, its third Coupe product. This £7.99 utility can store up to 5,000 records on one disk and is aimed at home users and small businesses.

I'm still waiting for a review copy of Steve Nutting's *SC Assembler* (trailed in issue 30), but Lerm has sent version *Sam Assembler 2.2*. The new version has a much improved screen editor in a

window of 22 lines of 64 characters. Labels may be up to 14 characters long, with 15K for the symbol table.

Source files are still limited to 32K, but spaces are tokenised to save memory. You can swap between two 32K files in Ram or merge files, as long as the total size is less than 32K. *Sam Assembler 2.2* costs £9.95, or a bargain £3.75 to users of version 1 who send in their old tape. Call Lerm on (091) 253 3615.

Improved Spectrum emulators proliferate. Kobrahsoft, on (078) 130 5224, joins the fray with *CD2*, a tape to disk transfer utility. This transfers Spectrum cassettes with weird loaders into Sam's own disk or tape format for reliable reading. MGT's emulator is sensitive to tape speed and volume levels when handling 'protected' loaders like *Speedlock* and *Alcatraz*, favoured by Ocean and other big publishers. Kobrahsoft says *CD2* is much less fiddly to use and does not require a loud copy of the

original file.

CD2 costs £12.95 on tape, or £14.95 on disk, and requires access to a Spectrum Rom. Kobrahsoft also offers *CT1*, a tape backup utility which is said to work with both Spectrum and Sam cassette files and costs £10.95.

Sam has caught the imagination of the Sinclair subculture, if not the City of London. Other Coupe suppliers have been mentioned in recent *Sinclair Scenes*. They include *Outlet, Coupe Connection, ZX Freakeren, Turbo* fanzine, Dilwyn Jones, Geoff Bobker, and the prolific Dave Tonks. *Everyday Electronics'* Mike Tooley has designed an eight channel analogue to digital converter that fits Sam's expansion port. Serious Spectrum group INDUG has published useful snippets, but there's still no sign of the 'free' Coupe introductory tape offered to subscribers.

Editor Bob Brenchley, on (0452) 412572, has promised copies to some 700 Sam users who

found a flier for *Format* in the box with their new computer. Bob says that he has material for the tape, but does not want to duplicate it until uncertainty about Roms is sorted out. Most of his programs will run on the original Rom 10, but some need Rom 20 or later.

Sam Ramdisk

Shopper reader and Sam guru, Ian Spencer has developed an impressive emulator which packs a 408K expanded Spectrum into a 512K Coupe, while retaining SamDos and *Sam Basic. Specmaker* goes beyond Lerm's *SamTape* with extra features that will appeal to those who have graduated to Sam from Spectrum drives.

Ian has tested an impressive array of Spectrum utilities with *Specmaker*. It apparently runs *Tasword 2* with printer option ZXLPrint, and PCG's DTP trio, *Word Master, Headliner* and *Typeliner*. To get the printer working, change Poke @6 to Move in *Wordmaster*'s Basic loader. The

More Thorts

Reader Joe Miller has written in to follow up my review of *QPac-2* in the July issue. He notes: "I agree with your comments regarding the Thor XVI. However, I do obtain some use from the utilities using the Button functions. Hot key functions can also be accessed by first pressing the Scroll Lock key, selecting the Hot key, then releasing Scroll Lock. This is a little slower than on the QL, but can save a lot of Sys Req keying."

Unfortunately, he does not say what Rom version he uses - I cannot get *QPac* working on our XVI with Argos 6.4.1.

Joe goes on to say that he gets full use of *QPac-2* (including the mouse) on a Thor 21, a QL-derivative with a 68020 processor and 68881 maths coprocessor. He would like to upgrade with extra memory and a hard disk, but says Thor International has not replied to his enquiries.

The Thor 21 was a stopgap. Like the first Thor, it was based on QL parts. Only a handful of machines from the Thor 20 range were sold and it is no longer in production. The Thor 21 uses the original 8-bit QL memory, which severely limits its capacity and speed unless the code it is running has been fetched into the processor's internal cache.

The limit for QL-style 8-bit memory is 640K, and the cache

is just 256 bytes. The best Ram upgrade would use full 32-bit memory, which might boost the speed of Argos tasks by a factor of four to eight times. CST never produced such an upgrade for the Thor 20. The design team in Denmark has sensibly abandoned Sinclair parts and designed a new 32-bit Thor, the XX range.

The Thor XX uses a 16MHz 68020 with a 32-bit bus and system Roms, so it should run 8-16 times faster than the QL. The display offers interlaced modes, giving a resolution up to 1024 by 512 pixels in 16 colours or shades of grey, plus an IBM-compatible EGA mode. QL-style windows up to 512 by 256 pixels can be overlaid on the new windows.

The Thor XX is due to arrive in September, but I have not yet seen it in action. Thor International went quiet after its initial export contract with YC Integral of Moscow earlier this year. You do not need to pay much attention to the news to realise that the Soviet Union is plugging along, but Perestroika is taking much longer than optimists predicted. Boris for Tsar!

The Thor XVI is still available, although it has been re-engineered to cope with the shift from small-scale UK production to automated manufacture at Bruel and Kajaer. Apparently, the main circuit board has been tweaked and then totally redesigned, so memory boards plug straight into current models with

no need for the Pal changes and ad-hoc extra wiring required by early Thors.

Given the small size of Thor International and the move to Denmark, I can understand that it might have difficulty supporting the old UK models. But I was alarmed to hear that it did not respond to Joe's enquiries. I phoned Thor on 33 93 03 05 and got through to boss Helmuth Stuven at the second attempt.

Joe should be able to add a hard disk to his Thor, although the effort required depends on his current hardware and software setup. Rodime no longer makes its 20 megabyte SCSI drives, but their 45 megabyte 3057 and 3058 drives suit the latest Thor Roms.

Stuven suggests you buy the drive directly from Rodime in Scotland, as UK customers can get a better price than he can. You need Argos 6.4.1 (two Eproms, available from Thor International), the latest 1.7 Eprom for the second processor and chips for the SCSI interface, unless you already have one.

The dialling code for Denmark from the UK is 010 45. Danish phone numbers gained a digit in February, which might account for Joe's fax problems. You can get a Group Three fax to Thor International on 32 96 29 28. The old fax number (33 93 82 92) is still connected, but suffers from an erratic exchange, according to Helmuth.

One Per Disk

Dubliner Roy Esmonde owns an ICL One Per Desk, and wants to add disk drives to the microdrive-based machine.

He has heard of the Teledrive, which adds two 3.5" 720K drives to the OPD, but that costs £490 from Disk Drive Ltd, on (0233) 610990. That's more than twice the price of an equivalent QL setup, although it does include the cost of the OPD disk software, amortised to match limited sales.

Roy wonders if *Shopper* readers can recommend a cheaper way to use a single IBM drive with the ICL. Please contact *Sinclair Scene*, or call Roy direct on Telecom Gold 10074:EIM430 if you come up with a solution.

Make Sinclairs look good

Has anyone got a program to convert 32K QL, 6.75K Spectrum or 24K Sam screens into one of the standard file formats used on other machines? Apparently it takes our typesetters hours to scan my grotty dot matrix prints into *PageMaker*, and our editor in chief thinks there must be a better way. Brighten up *Sinclair Scene* and earn a *Shopper* guru mug and Sub (or extension) - just show us an easy way to convert a Sinclair screen into Compuserve GIF, Amiga LBM, Gem .IMG, TIF or HP Laserjet PCL format. Who mentioned a standard?

SAM BASIC DEMO

Computer Shopper October 1990
SAM BASIC demo by Andy Wright

```
100   MODE 4
110   CLS #
120   DIM D$(15,131),a$(131)
130   GRAB a$,0,173,16,16
140   FOR p=1 TO 15
150     PEN p
160     CIRCLE 8,165,6
170     FILL 8,165
180     GRAB d$(p),0,173,16,16
190     PUT 0,173,a$
200   NEXT p
210   OVER 1
220   LET xos=118,yos=84
230   DO
240     LET a$=d$(RND(14)+1)
250     LET x=RND(14)*8,y=RND(11)*8
260     PUT x,y,a$
270     PUT -x,y,a$
280     PUT-x,-y,a$
290     PUT x,-y,a$
300     IF RND(200)=1
310       FOR f=-RND(5) TO RND(15)
320         FOR p=RND(15) TO 15
330           BEEP .01,p+f+10
340           PALETTE p,RND(127)
350         NEXT p
355       NEXT f
360       PAUSE RND(49)+20
370     END IF
380     PALETTE 0,0
390   LOOP
```

Plus D disk options save and load to Ram disk. Kemsoft's similarly excellent *PCB Designer* works fine, though printer routines may need modification to use channel 3.

HiSoft Pascal and Psion's Vu-File and *Vu-Calc* run without modification, like OCP's *Address Manager* and *VAT Manager. Mini Office* works fine - use the snapshot option to save the program, and cassette commands to access the Ram disk. Plus D and Disciple versions of the disk magazine, *Outlet*, runs fine from Ram, chaining between files as if they were loading from disk.

I found *HiSoft Basic 1.0* for 48K Spectrum compiles and prints fine on *Specmaker*. The microdrive version of Picturesque's *EDITAS 2.1* transfers to Ram and runs if you remove line 116. *Specmaker 2.1* does not intercept Verify. *BetaBasic 3.0* prints wonderfully, with printer options and goodies like Sort and Clock working fine. It also converts spelt out commands into ZX keywords, which saves me remembering the Spectrum key layout.

Ian uses a patched 48K Spectrum Rom to run *ZX Basic* (such as Lerm and Kobrahsoft), so you need a 16K Spectrum Rom image to get started. Ian packs in lots of extra code. The 'break' button works as normal in *Sam Basic*, but

acts as reset in ZX Basic, leaving the Ram files intact. The ZX keyboard scan is tweaked to recognise the extra keys for cursor movement, un-shifted punctuation, Edit and Delete.

This fixes most Spectrum programs, but a few (like *The Hobbit*) use their own keyboard scan routine and ignore the extra keys. LPrint, LList and Spectrum programs that use stream number 3 can access the Coupe printer - Move 0 and Move 1 control keyword token expansion, while Move 2 swaps you from *ZX Basic* to *Sam Basic*.

The Ram disk can be loaded from either Basic (you can save Ram files individually on Sam disk), or all together in one composite file. Transfer is quick and easy. In Spectrum Basic you can use Format to clear the disk. Attempts to load and save Basic, Code, Data, Snapshots and Screens can be routed to Ram disk if you use Cassette, Microdrive, Opus, Disciple or Plus D commands. If the first file is a Basic program called 'test', you can load it with Load "", Load "test", Load d1"test", Load *"m";1;"test" or Load 1;"test".

Ian also energises several commands that never worked on the unexpanded Spectrum. CAT shows

the names and types of Ram files. Format (Extend Symbol Shift Zero) clears the disk, Erase adds 'Erase' to the filename, and a separate utility RDUTIL can show a detailed catalogue and reclaim the space used by erased files.

Ian's RomMaker generates five modified Roms. You choose the version to suit your application. Version 1 uses tape exclusively. Version 2 loads from cassette but saves to Ram disk, while version 3 works the other way round. Version 4 is the one you will use most of the time - it saves and loads to Ram. Version 5 loads and runs at least 99 percent of Snapshots made with Disciple, Plus D or Sam's disk emulator.

Specmaker has its limitations. It uses the standard Spectrum loading code, which works fine on standard cassette files, but struggles with the protected loaders used by some modern games. Lerm's *SamTape* is better in this respect, as is MGT's revised emulator, especially if you can be bothered to find the right patch routine. Expanded Spectrum owners can snapshot files and transfer them to Sam in that form.

Sam Specmaker costs £13.45, works remarkably well and comes with nine pages of clear and helpful documentation. Our copy came

Soviet Spectra

Visiting Gorbygrad? Check out the Spectrum clones in 'Computer Play Halls' at Soviet railway stations! Thousands of Russians run pirated software on homebrew Spectrum clones and there are hundreds of UK games titles in circulation. Copyright? No chance.

The craze for DIY Spectrums started in 1988, when enterprising hackers in the USSR mixed an imported Z80A CPU with 70-odd other chips to make a computer that would load, run and display Spectrum and CP/M software. The chip count was high because they could not use a custom ASIC. Even so they had to use some expensive 'Lego' to replace Sinclair's ULA.

Similar machines popped up in Krasnodar, Leningrad, Kiev, Moscow and Novosibirsk. Issue 35 of *Sinclair Amateur Radio News* says the Krasnodar model is popular because it includes a general purpose parallel port, suitable for a joystick or printer.

There are said to be some 20 different kinds of Spectrum-compatible in Leningrad alone,

using anything from 40 chips upwards. The Hobbit is a school model, with a plethora of ports, disks, RS-232, joysticks and a parallel printer. It has 64K of scarce Ram with the option of two 8K Eproms in the bottom 16K, and a 6.75K attribute screen.

These machines are close clones of the Spectrum. They are less ambitious and run at the same speed, with few extra features. They resemble Bruce Gordon's first Sam prototype, built in 1987. That had about 80 chips (most planned to vanish into a 3000 gate ASIC) and was meant to sell for £99, with 16-colour attribute Mode 1 and Mode 2, and 128K Ram, expandable to 256K.

Two years later, a production Sam Coupe has a 10,000 gate ASIC, controlling eight times the colours and colour resolution, and twice the Ram of the first design. You get a lot for the extra £80. It will be a long while before the Russians catch up - unless they start copying MGT ASICs!

from the author, via Andy Wright, but it has since been upgraded and is now available from SD Software. ■

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