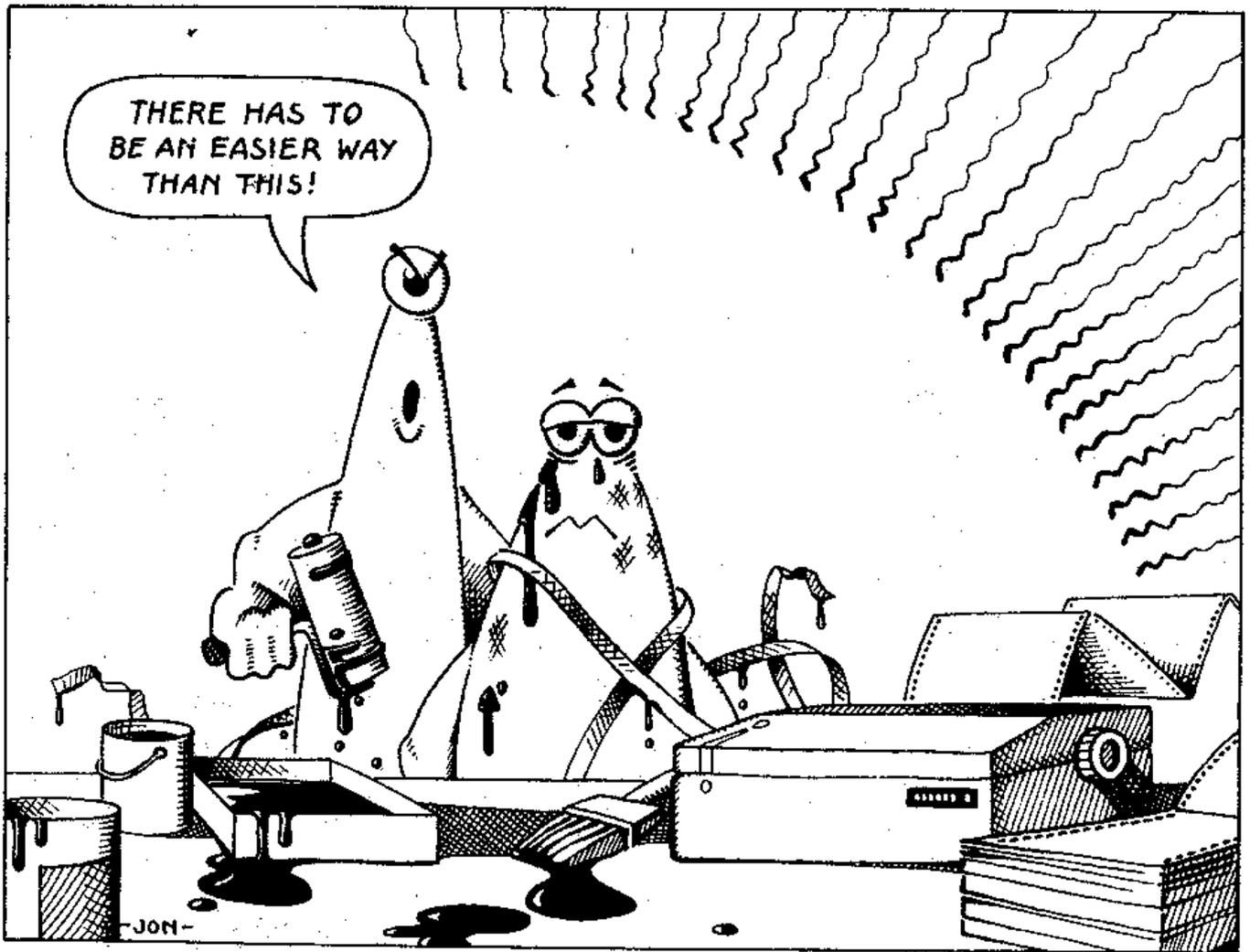


Vol 4 - No 3.

November 1990.

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NEWS ON 4

SOUND SAMPLER FOR SAM

Blue Alpha Electronics have announced plans to produce a sound digitiser for the SAM Coupé. Following the successful launch of their 'Voice Box' speech synthesiser in September they are sticking with sound for their second product.

Release dates have not yet been set but a prototype should be on show at the All Formats Show in London on the 4th of November.

+3 STILL AVAILABLE

Although Amstrad have officially dropped the Spectrum +3 from their range there still seems to be a number in the shops. Several stores contacted by FORMAT said that stocks were available as few had been sold during the summer months.

There also seems to be a large number of second hand or 'shop soiled' machines floating around. At the September All Formats Show there were several stands with large stocks of +3s for sale, unboxed and sold as seen.

NEW TELEPHONE NUMBER FOR SAMCO

Following their move back into the Lakeside offices, previously used by MGT, SAM Computers Ltd have now announced their new telephone number. They can now be contacted on Swansea (0792) 700300 but have asked that, due to the current shortage of staff, people only use the telephone for really urgent matters.

MODEMS FOR SALE

For some time now you have only been able to get hold of the VTX 5000 modem for the Spectrum by joining Micronet which often proved rather expensive. Well now budding 'On-Liners' who wish

to explore the world of Bulletin Boards can buy the VTX 5000 at the ridiculously low price of £15 from B.G.Services of Chessington. B.G. has purchased a large stock of the modems for sale by mail order and you will find his advert somewhere in this issue. B.G. are also producing a small board that allows normal Spectrum interfaces to be connected to +3 and +2A machines. The FIXIT board rearranges the edge-connector lines which Amstrad managed to muddle up when the +3 computer was designed. The FIXIT costs £9.50 including UK postage.

KONIX CALL IN RECEIVER

The welsh based joystick manufacturer KONIX have appointed Peat Marwick McLintock as administrative receivers. The company's debts are reported as being over five hundred thousand pounds and could top one million.

The failure of the company is blamed on the long delays in producing the Konix Multisystem; a games console which was first shown to software companies in early 1989. While interest was high at first the failure of console sales to take off to quite the extent that they have in the U.S. and Japan led to a lack of investment in the project. It is unlikely that a buyer will be found for the company and, as the likes of Commodore and Amstrad already have consoles, the chances of the Multisystem ever reaching the high-street now look very poor.

URGENT we need your news. Clubs, Shows, New Releases, anything you think other people should know about. If you have any news items you want to pass on then send them in. Please mark the envelope NEWS in the top corner.



Two apologies to start off this months editorial. Firstly to some overseas readers who may have received last months issue a little late. This was caused by a misunderstanding between us and the Post Office and delayed all our Airmail and half our other overseas post. We have taken steps to ensure it wont happen again. The second apology is to those who ordered SPI interfaces when the advert first appeared. Production problems (pcb being made mirror image) led to some delay in sending out units from here. Production is now up and running and everyone should have received their interfaces by now. On this subject would readers please note that orders for the SPI must be sent separate from orders for back-issues or tapes as the SPI production and dispatch is being handled totally separate from our normal operations.

A couple of regular items are missing from FORMAT this month. Nev Young has been tied up moving south of the border and so there is no Help Page this month. He has promised it will be back next month without fail. His new address is:-

Nev Young,
FORMAT Help Page,
70, Rainhall Road,
Barnoldswick,
Lancashire,
BB8 6AB,
ENGLAND.

Nev has complained that the Post Office have not been redirecting all his mail (even though they charge enough for the service) so if you have written to him in the last month it may be worth sending a copy to his new address just to be on the safe side.

The other item missing is the much loved series from Clyde Bish, I'm afraid a program was missing from the latest article and a replacement disc didn't arrive in time. Don't worry - normal service will be resumed next month. Still it does prompt me to say to all writers that its best to record files twice on disc or tape so that there is less chance of an error causing problems. I often edit articles just before they appear in print so, if something is amiss, it can be too late to do anything.

Christmas is coming, the lights are already going up in Gloucester town centre, so I'm looking for things to fill our bumper Christmas issue. If you have any computer-related jokes send them in on a post card as soon as possible. Any used in the Christmas FORMAT will earn the sender two months extra subscription. You can send as many as you like so find a post card and get writing. Any cartoons printed will earn the artist four months extra subscription, send cartoons flat in a stiff envelope and enclose a SAE if you want them returned.

Many readers have phoned or written asking about items of software that they need but are unable to find produced by the commercial software companies. It struck me that there must be many programmers out there that are stuck - unable to think of what program to turn their talents to. If you think your programming skills need a little testing then contact FORMAT, we might well be able to provide some good ideas for you to work on.

Until next time,

Bob Brenchley. Editor.

SHORT SPOT

By:- John Wase.

Firstly, I apologise for missing some things out this month. I have a combination of beginning of University term, (where my teaching load is maximum) and a recurring back problem which has meant that I have not been able to do as much as I would have liked this issue.

First, a snippet from Morten Larsen of Olstykke, Denmark. He writes about a most irritating discovery of his. I'm afraid, Morten, that this is not entirely new: quite a lot of people also know about this. However, it's well worth repeating for the benefit of those who don't....

Morten writes that the Spectrum 48K issue 2 (and all the others, for that matter) inserts "wait states" into the execution of any machine code program placed between addresses 16384 and 32767, because the ULA has to read video RAM (16384-23295) and when this happens, the CPU is prevented from reading the entire 16K block from 16384. Incidentally, this is known as contended RAM. He has examined the phenomenon with the following program:-

```
Start: DI
      LD B,62
      LD DE,0
Loop  DEC DE
      LD A,D
      OR E
      JR NZ,Loop
      DJNZ Loop
      EI
      RET
```

When the program is run from addresses between 32768 and 65535, it takes 30.2 seconds (correct according to the clock frequency of 3.5 MHz and the number of clock cycles for each instruction). Between addresses 16384 and 32767, 37.2 seconds are needed, an

execution time increase of 23 percent. Moral, put the code that needs to be fastest above address 32767.

Enough of this serious stuff: I have here a program for SAM from Tony Jeenes; a version of the old tray puzzle where one slides letters around to put them in alphabetical order. Type in the program and move the letters with the cursor keys - I'm sure you can get a lower score than my 417!

```
2 REM ***** SAMTILES *****
4 REM *** BY TONY JEENES ***
6 REM ** USE CURSOR KEYS **
8 REM ** TO PLACE TILES IN *
9 REM * ALPHABETICAL ORDER *
10 PRINT AT 0,18;"MOVES "
11 CSIZE 8,16
12 mix
13 PRINT AT 1,12; a$( TO 5)
14 PRINT AT 2,12; a$(6 TO 10)
15 PRINT AT 3,12; a$(11 TO 15)
16 PRINT AT 4,12; a$(16 TO 20)
17 PRINT AT 5,12; a$(21 TO )
25 CSIZE 8,8
27 LET x=128,y=96,go=0
30 GET a$: LET s=CODE a$
32 REM IF s>11 THEN GOTO 30
34 count: GOTO s*5
40 REM ***** left *****
41 SCROLL 1,8,x,y,16,16
42 IF x<128 THEN LET x=x+8: ELSE GO
   TO 30
43 GOTO 30
45 REM ***** right *****
46 IF x>96 THEN LET x=x-8: ELSE GOT
   O 30
47 SCROLL 3,8,x,y,16,16
48 GOTO 30
50 REM ***** down *****
51 IF y<160 THEN LET y=y+16: ELSE G
   OTO 30
52 SCROLL 4,16,x,y,8,32
53 GOTO 30
55 REM ***** up *****
56 SCROLL 2,16,x,y,8,32
57 IF y>96 THEN LET y=y-16: ELSE GO
```

```

      TO 30
58 GOTO 30
60 REM ***** count *****
61 DEF PROC count
62 LET go=go + 1
63 PRINT AT 0,24;go
66 END PROC
68 REM ***** mix *****
70 DEF PROC mix
72 LET a$="ABCDEFGHIJKLMNPOQRSTUVWXYZ
"
74 FOR n=1 TO 24
76 LET mix=1+INT (RND*24)
78 LET b$=a$(n)
80 LET a$(n)=a$(mix)
82 LET a$(mix)=b$
84 NEXT n
86 END PROC

```

Our evergreen L.G.Baumann of Pinetown, South Africa has come up with some useful ideas again. As you know, it's quite easy to alter the control codes in Tasword 2 to suit your particular printer. You can alter the Help page of your customised program, too, to match. Here's how it's done.

Load Tasword 2; go into Basic from the menu and type in:-

```
FOR N=32000 TO 33535: POKE N,PEEK (N+22784): NEXT N and enter it.
```

When it's finished (about 20 seconds), go back into Tasword with GOTO 1 and the help page will now be in the text file. Revise it. Now put it back again by going once again into Basic, and this time typing:-

```
FOR N=32000 TO 33535: POKE (N+27784), PEEK N: NEXT N
```

Now this should have put the altered help page back. We'll check. Go back into Tasword 2 with GOTO 1. The altered text will still be on the screen. Call up the help page in the usual way (EDIT - Caps shift + 1 on rubberkeys) and the help screen should reappear unchanged. Fine; the modified one's in the right place. Save the new version of Tasword 2 using the "t" option in the menu.

Another useful hint from the same

author involves the transfer of Tasword 2 text into a Program. Now, why should one want to do that? Easy. If you write a utility program, it's likely to have some screens of instructions. Usually these PRINT lines are inserted at the tail-end of the listing and the Program auto runs from these lines. So, you've got to set up all these PRINT lines first. And there's a lot of messing about and trial and error in getting the words to fit on each line without spilling over or making a mess - quotation marks make things almost impossible to do first time. L.G.Baumann to the rescue.

First LOAD your Tasword 2 and set the right hand margin to 32. Write in the text. Do not use double quotation marks - use a single apostrophe. Go into Basic, and, without clearing the computer, LOAD the transfer program. Edit from line 4 to create as many print lines as are needed at the rate of one full print line per four Tasword 2 lines (or part of four).

Enter "GOTO 100" to start the transfer process, and wait. Test the result with "RUN". Edit out any unwanted print lines and also the program lines. The last print line containing words might have some residual spaces at the tail end and these can be removed. Save the rest as, say, "prints". Reset the computer, load your program and merge "prints". Easy. Here's the program:-

```

1 PRINT "*****
*****
*****
*****
***"
49 STOP : REM *Do not remove this li
ne**128 stars per print line*
50 CLS : PRINT : PRINT "How many lin
es of Tasword do you wish to tran
sfer? ";: INPUT AT 20,0;AT 0,22;
"No? ";q
55 PRINT AT 3,27;q: PRINT '"Check t
hat you have at least ";INT ((q-1
)/4)+1;" provisional print lines
": PRINT '"Then start again with
GOTO 100": STOP
100 CLS : PRINT #0;"PLEASE WAIT ";INT

```

```

(q*2.4);" seconds": LET tw=32000
: LET ram=PEEK 23635+256*PEEK 236
36+6: LET st=ram-5
110 FOR f=1 TO 128: IF tw>31999+64*q
THEN CLS : LIST : REM Sets limit
to conversion
120 POKE ram,PEEK tw: LET tw=tw+1: LE
T ram=ram+1: IF INT (f/32)=f/32 T
HEN LET tw=tw+32
139 IF PEEK (ram+6)=226 AND NOT tw=32
000+q*64 THEN PRINT "Short of Pro
visional PRINT lines- only ";(tw-
32000)/256;" provided - should be
";INT ((q-1)/4)+1: STOP
140 NEXT f: LET ram=ram+8: GOTO 110
4999 STOP
5000 RANDOMIZE USR 64330: STOP : REM F
or Tasword Text: REM This program
not checked -DAJW

```

Just a few comments. Each print line must have 128 asterisks or characters, and this must not be varied. Do not remove line 49: to prevent a crash if you have made a mistake, lines are continuously monitored for the keyword "STOP". The variable "ram" is set up in the particular way it is (line 110) because the first address in RAM differs for computers with and without interface 1, and this program was originally written with microdrives in mind. You can go back to the Tasword text at any time to modify it with "GOTO 5000", and back to the transfer program through the main menu. The Tasword right hand margin can be either justified or unjustified - it doesn't matter.

Daniel Neidle writes about John Conway's "life" algorithm, which appeared in the June issue of "Computer Shopper" and describes how a simple system of "living" cells can be constructed on a grid and allowed to grow or die according to a simple set of rules. Daniel's first Spectrum version was in Basic, but was far too slow. Here's a machine code version.

```

10 REM ***** LIFE *****
20 REM
30 REM Algorithm- John Conway
40 REM Code-D Neidle,May 1990
50 REM
60 REM Cursor keys to move
70 REM ", " to kill/create cell

```

```

80 REM Space to start 'Life'
90 REM "P" to pause
100 REM Any key restarts
110 REM Space returns to Basic
120 REM "E" allows editing
130 REM
140 CLEAR 49999
150 LET t=0
160 FOR a=50000 TO 50322: READ n:LET
t=t+(a-50000)*n: POKE a,n: NEXT a
170 IF t<>5378637 THEN PRINT "ERROR-
check your data": STOP
180 SAVE d1"Life-c"CODE 50000,323
190 DATA 205,107,13,195,111,195,221,1
26,255,221,134,1,221,134,32,221
200 DATA 134,224,221,134,33,221,134,3
1,221,134,223,221,134,225,201,33
210 DATA 96,234,17,97,234,1,224,2,54,
0,237,176,205,17,196,243
220 DATA 205,242,195,251,33,8,92,54,0
,118,126,254,32,200,254,80
230 DATA 40,247,254,69,202,124,195,24
3,33,128,234,17,32,237,1,32
240 DATA 0,237,176,33,0,237,17,96,234
,1,32,0,237,176,221,33
250 DATA 128,234,33,64,237,1,160,2,54
,0,221,126,0,254,0,32
260 DATA 11,205,86,195,254,3,32,19,54
,1,24,15,205,86,195,254
270 DATA 2,40,6,254,3,40,2,24,2,54,1,
35,221,35,11,120
280 DATA 177,194,184,195,33,64,237,17
,128,234,1,160,2,237,176,195
290 DATA 128,195,205,107,13,62,2,205,
1,22,33,128,234,1,160,2
300 DATA 126,254,0,62,143,32,2,62,32,
215,35,11,120,177,32,240
310 DATA 201,221,33,128,234,62,2,205,
1,22,22,0,30,0,62,22
320 DATA 215,122,215,123,215,62,42,21
5,62,8,215,33,8,92,54,0
330 DATA 118,126,254,0,40,250,254,32,
200,221,34,96,234,254,8,32
340 DATA 3,29,221,43,254,9,32,3,28,22
1,35,254,10,32,6,20
350 DATA 1,32,0,221,9,254,11,32,12,21
,1,32,0,221,229,225
360 DATA 237,66,229,221,225,254,44,40
,16,42,96,234,126,254,1,62
370 DATA 32,32,2,62,143,215,195,30,19
6,221,126,0,221,54,0,0
380 DATA 254,1,202,137,196,221,54,0,1
,251,6,10,118,16,253,195
390 DATA 30,196,0

```

Have a formatted disc ready and type in the program. Line 180 automatically saves it to DISCIPLE/PLUS D disc as

soon as the program runs: change this line for alternative disc systems or for cassette. To run the routine, do:-

```
10 POKE 23617,8: REM CAPSLOCK ON
20 CLEAR 49999
30 LOAD "yourname" CODE 50000
40 RANDOMIZE USR 50000
```

It is important that the computer is in capslock mode when the program runs. When you run the program, the screen clears and you are presented with an asterix-shaped cursor which is moved by the arrow keys. Pressing the comma sets or resets a cell (shown as a blob) at the current cursor position. When you are happy with your initial display of "living cells", press the space-bar to start the main part of the program. This contains an algorithm which works as follows:-

If a cell has less than two neighbours, it dies of loneliness.

If a cell has more than three neighbours, then it dies of overcrowding.

If a blank space has three neighbours, then it "comes to life".

If you want to pause the program (use "P"), you can then either return to

Basic with "space" or edit the current cell arrangement with "E". Different initial patterns behave quite differently: some die out, some reach a steady state and some get more and more complex until the screen is filled with cells. The initial patterns mentioned in the "Computer Shopper" article are:-

```
***
* A "glider" which moves across
* the screen.
***
* * A Beehive which expands and
*** completely changes state.
```

Have fun!

And that's all for now. Please keep all your programs, particularly short snippets, coming in, otherwise I can't do a "Short Spot" - there'd be nothing without your contributions. Please send them to:-

John Wase,
Green Leys Cottage,
Bishampton,
Pershore,
Worcs,
WR10 2LX.

If you are sending programs or routines then PLEASE send a disc or tape as it is faster for me and less prone to errors. Thank you.

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PLEASE NOTE NEW ADDRESS:- 70, Rainhall Road, Barnoldswick, Lancs, BB8 6AB.

SPECMAKER REVIEWED

By:- Carol Brooksbank.

SPECMAKER is a new Spectrum emulation program for the SAM Coupé, and a very ingenious one it is too. It uses a memory store - the Ramdisc - for Spectrum files. Files can be loaded to the Ramdisc in Sam mode, and when you switch to Spectrum mode they are available for use. It is also possible to load Spectrum programs from cassette or PLUS D discs, and save them to Ramdisc and Sam floppy disc. By the way, as in most cases where you see PLUS D mentioned then you can assume DISCiPLE as well.

Like all emulation programs, it requires you first to make a tape copy of your 48K Spectrum's ROM - this one has an option for using the 48K ROM from a 128K Spectrum or +2 if you do not have the ordinary 48K Spectrum or Spectrum+.

There is a conversion program which loads the Spectrum ROM from tape and then produces and saves to disc five separate versions of it.

- 1 is the standard ROM, but with printing routines for Sam's parallel printer port and a Spectrum reset using the NMI button.
- 2 loads from cassette and saves to Ramdisc
- 3 loads from Ramdisc and saves to cassette.
- 4 loads and saves using the Ramdisc - this is the most used ROM version.
- 5 loads and saves snapshots and does not use the Ramdisc. These choices make the program extremely versatile.

Once the Specrom files are prepared, you load the emulator program and

choose from a menu of 5 options:-

- Save Ramdisc
- Load Ramdisc
- Load from PLUS D disc
- Load Spectrum snapshot using Ramdisc
- Load snapshot without Ramdisc.

The last option is useful for games where you need not or cannot break into Spectrum BASIC. It lets you load a PLUS D snapshotted game and go straight into playing it, though you can make a Sam snapshot if you wish, using the NMI button.

Virtually any Spectrum 48K program can be loaded by one or other of the options, including utilities like WORDMASTER and VU-FILE. I had only one failure - SUPERCHESS 3.5 - both the snapshot and the original tape would load, but neither would respond to the keyboard. Everything else I tried ran perfectly, with only the most minor modifications. For example, if the program uses the equivalent of POKE @6,1 to send binary codes to the printer the commands must be changed to MOVE 1. One or two other PLUS D commands must be changed or deleted, but other than that the programs seem to run exactly as they do on the Spectrum. For instance, all WORDMASTER's options, including loading and saving Spectrum SCREEN\$, worked exactly as they do with the Spectrum. Printing of text and illustrations was perfectly normal.

Ramdisc files can be saved to disc all together, or singly. With a program which has a BASIC file and several code files, you would save them all together. Extension files such as type fonts are best saved singly so that you can choose which ones to load as you need them. You cannot save groups of files and merge them. Multiple files are saved as a

complete Ramdisc and re-loading them will overwrite any Ramdisc you already had in memory, but you can load as many more single files as the Ramdisc can hold - up to 32 files in 120K on a 256K Sam, 360K on the 512K version.

If you are using something like a word processor, once in Spectrum mode the program's SAVE option will save to the Ramdisc. You must return to Sam mode to save it to floppy disc. You do have to be careful about that. If you are in the habit of saving to disc regularly as a precaution against losing your text in a power failure or crash, it is easy to forget that the program SAVE has only saved to memory. A Spectrum reset would leave your text intact on the Ramdisc, but a power failure would still lose it. And I made the opposite mistake once - went straight to Sam mode without saving the text to the Ramdisc - what I saved to the floppy disc was the earlier version already on the Ramdisc and the new version was lost. You must save to Ramdisc and then to floppy to be safe.

One thing I found a bit irritating was that if you exit to Sam mode, either to save the latest version or to load some more files, you cannot return straight to Spectrum and carry on. This is particularly infuriating if, say, you only want another DTP PACK font from disc. You have to go all through the performance of saving your text file to Ramdisc, exit to Sam and save to floppy. Then you must choose "Load Ramdisc", load the Spectrum version you want and then all the files you need to use, including the one you just saved, before returning to Spectrum mode, when you must then load the program from the Ramdisc, load any files you need from the Ramdisc, and only then can you get on with more work.

A simple option to return to Spectrum from Sam mode without loading the whole Ramdisc again is sorely needed. It would also mean that you could have a disc of Ramdisc files separate from the program files. At present it is essential to have the program files on every disc because

program and working files are loaded one after the other.

In Spectrum mode, you can erase files from the Ramdisc, but they are only marked as erased. They can no longer be accessed, but they still occupy Ramdisc space. There is a utility program which must be run to reorganize the memory and this actually deletes them and frees up the space in the Ramdisc. I found it was wise to keep this utility in memory all the time - if you fill up the Ramdisc with erased earlier versions of a file you may not have room to load the utility and then you cannot actually delete the unwanted files.

The Ramdisc does not overwrite earlier versions with the same name, so unless you erase them as you go along, you can end up with a whole lot of files with the same name. This sounds horrendous, but in practice it soon became second nature to erase the last version before saving the new.

I did not much like the need to use the correct case in Ramdisc file names. "FRED" and "fred" would not be recognized as the same thing, and a Ramdisc error is generated if you get it wrong. PLUS D and Sam users are not used to worrying about such things.

But these are fairly minor points in such a useful program as this. I mention them because enhancements are planned and the publishers are looking for feedback from users.

I found this a very easy to use and efficient Spectrum emulator. There are only a few programs which are not compatible with it, and where a program needs to be modified, the changes are very minor indeed. The handbook tells you all you need to know. SPECMAKER brings us a significant step closer to the real Spectrum-compatible SAM.

SPECMAKER is available direct from:- SD Software at their new address 70, Rainhall Road, Barnoldswick, Lancs, BB8 6AB. Priced at £12.95 (£9.95 for INDUG members).



Welcome back to the Corner. Due to overwhelming demand, this month sees the introduction of adventure reviews. The inaugural adventure game, The Axe of Kolt, was not chosen merely by chance. It is an excellent example of what can be produced on the dear ol' Speccie using one of the many adventure utilities. However, just before we dive into the review let's have a quick chat with the author - Larry Horsfield.

You could say that Larry is a typical independent adventure author. He produces his adventures from home, during his spare time, not to make millions from the sales of his games but from the sheer pleasure of creation. The first adventure Larry ever played was Sphinx adventure, which came free with the Electron. "...a good adventure, but it didn't have a save routine! I spent months on it!"

But why become an adventure author?

"I bought a copy of The Quill, which became available for the Electron. I read an awful lot of science fiction and fantasy and I thought some of the stories would make a good adventure. Magnetic Moon is based on a story called Sargasso of Space by a woman named Andre Norton. Another of her stories, Galactic Derelict, formed the basis of Starship Quest. I did Magnetic Moon purely for fun, I'd no intention of selling it. Then Harry Bastion formed his Electron "Elk Adventure Club". He wanted to give a free game away with a subscription. So I said that I'd redo Magnetic Moon and he could have that. Then I had ideas of a follow-up so I wrote Starship

Quest. Both adventures were then converted and re-written, using the PAW, to the Spectrum."

As an adventure veteran, I asked Larry if he could give any general rules and advice to anyone who maybe considering writing an adventure. Donning his grandpa glasses, reclining in his winged-chair, brandy in one hand, purring cat on his lap, favorite slippers and the fire twinkling in his good eye Larry spoke these words of wisdom.

"Start simple. Begin with the basics then, later, try something a bit more difficult and build on that. What froze a lot of people from using PAW is the tutorial manual. It tries to cover too much. Also, stay away from graphics. Especially on a 48K Spectrum, they're just a waste of memory. When you've written the game get other people to playtest it, at least two others. Because different people will try to solve the same adventure in different ways."

Larry also recommends that you carry a notebook around with you in case inspiration strikes! Books and films are a good source for puzzles. One area in Axe of Kolt is inspired by Indiana Jones and the Temple of Doom, for example.

OK, so here is the first adventure review. Write and let me know what you think of it, am I telling you enough or too much? Your letters will help shape future Adventure Corners.

AXE OF KOLT

You are Alaric Blackmoon, a

down-and-out mercenary and swordsman. The game begins as you arrive in the peaceful kingdom of Hecate. It appears that trouble follows you because the dreaded Xixons, a nasty bunch of creatures dressed up in lizard suits, have returned to attack Hecate after a 200 year leave of absence.

During the original invasion, it seems that Kolt, a local boy come good, did some serious damage with an axe, as he vanquished the invading Xixons. But not any old axe you may pick up down your local DIY shop. This was a good bit of kit - forged from elf-metal by a sorcerer. Years after the original Xixons had been vanquished, Kolt passed away. The axe buried with the great man in his tomb.

Now that the Xixons have returned, it appears that the Axe must be found and delivered to King Kelson (a relative of Kolt) as only the Kolt line of heirs can trigger the special powers the axe contains. After which he will move hither and thither, maiming and killing the Xixon hoards. Thus will Hecate be saved.

I am sure that it will come as no surprise that you, Alaric Blackmoon, must do the dirty work of finding said axe and returning it to Kelson.

Immediately after you boot up this adventure you can see that the adventure contains high standards of design within the basic presentation framework. The screen information is presented within two windows. The upper window displays the location description. It never scrolls off the top of the screen, as a few other adventures do, so you never have to enter a "redescribe" command just to get the location description back. The lower window is the active area featuring text input, messages and so on. Screen colours are used intelligently and are easy on the eye while the choice of font is good, Kolt's text is very readable. There is a "vocab" command which brings up a screen full of useful words and an "info" command which lists some of Kolt's useful facilities. It is nice

to see these "on-line" help facilities only as far away as a press of a button, and not stuffed away in the depths of some documentation or cassette inlay.

Direct commands are very friendly. "Examine" can be abbreviated to "X", while "Get" can be input as "G". There is also an "Again" or "A" command which repeats an input (and very handy it is too). Another nifty feature cuts in if you die. The program asks you if you wish to be re-incarnated. If you say "yes" the game will restart at the time of your last Ramsave. You can Examine All "carried", "worn" or "here" and there is an Examine Me command which, unlike many adventures which utilise this option as a gimmick, proves very useful in Kolt, especially during the later stages.

The text descriptions are fairly functional, telling you what you need to know without bombarding you with flowery prose. Most of the atmospheric touches come from examining objects and people. There are no noticeable spelling mistakes - well, anyone who includes "thaumaturgical" in their location descriptions must be confident in their spelling! The directional descriptions are very thorough, explaining where each object is in relation to each other - this is a boon for map makers. However, descriptions do not always list all of the available exits, so you will need to check those not listed, if in doubt. Also, don't rely on the old "paths go east, south..." standby. Always check the rest of the description for available exits.

Don't forget to re-visit locations in Kolt, part one especially, as actions will trigger events in other locations. Objects and characters may suddenly appear, therefore. In addition, because you have to revisit locations the adventure appears to be larger than it really is, as well as giving a non-linear feel to the game.

A good bit of advice for part one is to ask characters about absolutely anything, and ask them more than once

if you get a reaction. Also, examine and search everything - and I mean everything. Be aware that the two commands are treated differently in Kolt. Also, make a note of names - you may need them later on.

The imagination and thought that has gone into producing the puzzles makes the game enjoyably frustrating - if you know what I mean. In fact, Kolt is most enjoyable method of contracting an ulcer I now of. You will need lateral thinking by the bucketful. Even objects you may think have served their purpose may have to be used for a completely different purpose later on.

Axe of Kolt is a little gem - the best

adventure game I've played this year.

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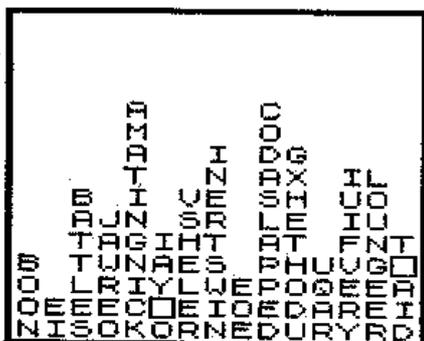
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the 'Z' tile he hadn't placed. Fortunately the tiles were stopped from sliding at the bottom of the board, as shown in the diagram. Given that the tiles have not strayed into different columns, the first word was 'TRIALS' and the blanks were 'L' and 'S', your task is to put the tiles back where they were so the judge can count the final score.

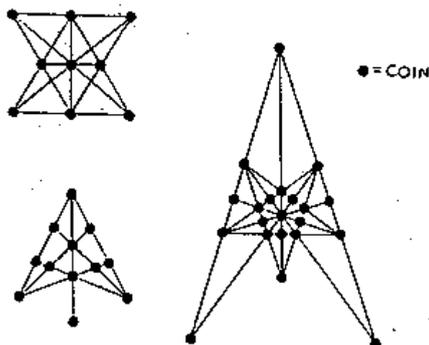


That is all for this month, apart from the winning program of the first prize puzzle which is discussed below. Don't forget you still have the rest of November to do prize puzzle no.3 (October's issue). Any letters of praise and adulation are welcome.

- * - * - * - * -

Solutions to October puzzles

Money Troubles:-



Lengthy Division:-

```

      877
13 | 11401
    104
    ---
     100
      91
      ---
       91
       91
       ---
        00
  
```

Word Ladders:-

Here are my solutions - there will undoubtedly be others and it may even be possible to do them with fewer links.

1. LOAD lord lore love lave SAVE
2. FOR far fat MAT
3. COLD cord card ward WARM
4. BLACK blank blink clink chink chine whine WHITE
5. BREAD break bleak bleat blest blast boast TOAST
6. PESTLE nestle nettle settle settee setter petter potter cotter cottar costar costal postal portal mortal MORTAR (costar is debatable since it is hyphenated: co-star)

- Rebus:-
1. quiet as a mouse
 2. vanishing point
 3. tall story

*** Glitch Report *** It has been brought to my attention (thanks Eloi Gil) that the Crossnumber in the August 1990 Thought Spot has two solutions: 1 across can be 95 or 99. Sorry. Also, last month's answers for Mixed Doubles should have "chukka" and not "pukka". I changed my mind but not the text. Sorry.

- * - * - * - * -

PRIZE PUZZLE NO 1: RESULTS

In all I received seven solutions to this first PRIZE PUZZLE (which pleased me) and all those that commented liked the idea of THOUGHT SPOT (which pleased me even more). I am happy to say that most of the programs gave the right answer of 42 coins in 3 ways. Unfortunately, John Redfern's program didn't fulfill all the requirements.

Some people have been wondering how to go about solving these puzzles. All I can say is that there is no unique solution or right way of doing them. Ideally find more than one way to do each problem and use the one which seems to fit the situation best. Hopefully this article will help you understand what its all about.

My basic criteria are that the program should be: neat, understandable and friendly; reasonably short; efficient; graphically basic. On the subject of graphics, I will try to choose the winner on method and style and not necessarily on graphics. Also I shall try to take in account the different abilities of the Spectrum and SAM Coupé.

Looking at the programs the main problem was finding all the possible routes. Most programs started by putting the maze into an array. One thing that hadn't occurred to me was READING directly into the array (line 30):

```
10 DIM m(6,6)
20 FOR row=1 TO 6: FOR col=1 TO 6
30 READ m(row,col)
40 NEXT col: NEXT row
50 DATA 1,4,2,3,5,6,3,6,5,1,2,4,2,1,
  4,6,3,5
60 DATA 5,3,1,4,6,2,4,5,6,2,1,3,6,2,
  3,5,4,1
```

There were two basic methods of route finding. The first involves taking binary numbers from 0000011111 through 111100000 to represent the routes with 0=east and 1=south (or vice versa), only using those numbers with five of each digit otherwise the route falls outside the maze. This was the most popular method in various guises.

The easiest was probably to count from 31 to 992 and convert this to binary with BIN\$, like D.Lane and Nev Young (who was of course excluded from winning as he is a regular contributor to FORMAT). A mixture of their methods is:-

```
70 LET max=0: FOR no=31 TO 992
80 IF no<256 THEN LET b$="00"+BIN$ no: ELSE LET b$=(BIN$ no)(7 TO)
200 NEXT no
```

In H.Griffiths' program he made an array of binary numbers from 0 to 31 and of the number of 0's in each and then matched numbers to have only five 0's. This saved having to check all 962 numbers for the right amount of

0's. I thought he had a neat "0" counter (which could be applied to others things):-

```
90 LET found=1,tot=0
100 LET found=INSTR(found,b$,"0")
110 IF found THEN LET found=found+1,tot=tot+1: GOTO 40
120 IF tot<>5 THEN GOTO 200
```

You will probably notice that most of this is high power SAM (or Beta with modification) BASIC. But about three times faster is this from Eloi Gil (I hope I pronounced that correctly), whose English is infinitely better than my Spanish! It is for the Spectrum:-

```
70 LET b$="0000011110": LET tot=4: LET max=0
80 LET bit=10
90 IF b$(bit)="0" THEN LET b$(bit)="1": LET tot=tot+1: GOTO 120
100 LET b$(bit)="0": LET tot=tot-1
110 LET bit=bit-1: GOTO 90
120 IF tot<>5 THEN GOTO 80
200 IF b$<>"1111100000" THEN GOTO 80
```

It uses several GOTO's, but could probably be made neater. The methods for finding the number of coins for each route, maximum number of coins and ways of getting them were very similar. Here is a typical way:-

```
130 LET coins=1: LET row=1: LET col=1
140 FOR c=1 TO 10: LET d=VAL b$(c)
150 LET row=row+d: LET col=col+1-d
160 LET coins=coins+m(row,col)
170 NEXT c
180 IF coins>max THEN LET max=coins: LET ways=0
190 IF coins=max THEN LET ways=ways+1
210 PRINT "Pay gatekeeper ";max;" coins in any one of ";ways;" ways."
```

A simple mistake to make, which was made by both me and Alan Cox, is to put "ways=1" on line 180, but this gives one too many ways because line 190 does it for you.

Etrick Thomson's method was to set up an array max(), which records the maximum number of coins that can be collected when each cell is reached. This is the sum of the coins in a

given cell plus the greater of the two max() values to the west and north. Another array ways() records the number of ways of collecting max(), for each cell, and is the value of ways() for the cells west and north with the greater max(), unless the max()'s are equal, in which case the ways()'s are summed. Here is Ettrick's program for a Coupé (add to lines 10 to 60 above). To help see what is going on, you can extend it to PRINT max() and ways():-

```

10 DIM maze(6,6),max(6,6),ways(6,6)
30 READ maze(row,col)
70 LET max(1,1)=maze(1,1)
   LET ways(1,1)=1
80 FOR c=2 TO 6
   LET max(1,c)=max(1,c-1)+maze(1,
   c),ways(1,c)=1
   NEXT c
90 FOR r=2 TO 6
   LET max(r,1)=max(r-1,1)+maze(r,
   1),ways(r,1)=1
100  FOR c=2 TO 6
   LET a=max(r,c-1),b=max(r-1,c)
110  IF a>b THEN
   LET max(r,c)=a+maze(r,c),wa
   ys(r,c)=ways(r,c-1)
   ELSE
   IF a<b THEN
   LET max(r,c)=b+maze(r,c),
   ways(r,c)=ways(r-1,c)
   ELSE
   LET max(r,c)=a+maze(r,c),
   ways(r,c)=ways(r-1,c)+way
   s(r,c-1)
120  NEXT c
   NEXT r
130 PRINT "max number of coins is ";m
   ax(6,6)
140 PRINT "which can be got in ";ways
   (6,6);" way";"s" AND ways(6,6)>1

```

Since I felt that the programs of the people mentioned above were all better than the others in some respect I decided to put the names in a hat and draw one at random. The above programs are not the winner's solution, but representative of some good bits from all the entries. The name selected was.....

H. Griffiths

and I am happy to declare him the

winner. Congratulations. Next time your renewal is due just return your renewal notice to Bob claiming your Years Free Subscription.

I hope the above has helped readers to understand how puzzles can be solved. I may well (if there is time now I am at university) do a similar breakdown for other prize puzzles. If you have any comments you would like to make I would love to hear from you via FORMAT, however as is normal in such competitions the decision is final, but if you don't like it, tell me and I can perhaps implement what you say in the future.

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RE-INKING

RIBBON RESUSCITATION - ASSISTANCE FOR THE IMPECUNIOUS OR DOT-MATRIX DISASTER?

By:- John Wase.

Do you re-ink your dot matrix printer ribbons? I do, and (I think) save myself quite a lot of money in the process. However, before you dash out to buy a bottle of Quink, let me mention that there are quite a lot of snags that you really ought to hear about.

Firstly, there is the ink. This should, of course, run freely (but not too freely), and should give a good dark impression. More subtle are the requirements which intimately concern the mechanism of the print head. As you probably know, the print head rapidly fires and refires a series of pins (most usually nine, eighteen or twenty four, depending on the quality, and cost, of the printer), forcing them onto the ribbon, and therefore making inky dots on the paper behind. Anyone who has watched this will be struck by the speed at which it all happens (you can't see the pins being fired; it's all far too quick) and the more curious may well have burned their fingers on the top of the print head, which can get very hot indeed. When you think about this a bit more, you can see that the lubricating, clogging and evaporative properties of the ink will be very important in respect of the ultimate life of the print head mechanism. And a dead print head usually means a new printer - they are rarely economical to repair. So the use of inappropriate inks (like the bottle of Quink) is bad news.

Let us look at things now in a little more detail. Don White, Professor of Chemical Engineering at the University of Arizona has done a bit of research into this subject, finding that the life of a print head can actually be significantly extended if ribbons are regularly coated with a lubricant-based ink of the proper type. As Don says, the elements

involved in the printing process are the print head needles, the nylon fabric ribbon, the ink and the paper. The mechanics of the process, too, are important in respect of ribbon life: they depend, in turn, on the strike pressure of the print-head needles, the contact time of the ribbon and the paper, the ribbon properties (ink absorption and affinity), the ink properties (viscosity, darkness) and the paper properties (porosity and ink absorption). To make things even more complicated, the print head consists of electromagnetically fired metal needles individually cased in plastic cylinders: the strike pressure of the needles can vary from 5 to 200 pounds per square inch, and contact times with the paper (which are also a function of the printing speed and strike pressure) range from 10 to 200 microseconds.

Nylon fabric is the most widely used material for ribbons - the ribbon needs good ink absorption characteristics and resistance to wear. To improve the ink absorption onto the nylon ribbon, the woven fabric is subject to texturisation (the fibres are thermally treated, transforming the filaments into highly twisted structures to improve porosity), and then a high polarity polymer coating is added to the fabric surface to further improve affinity for the ink. High speed printers and twenty-four pin models use high-density ribbons with less porosity but much improved wear resistance - so don't try swapping ribbons between nine and twenty-four pin machines - you'll probably damage print-heads.

The ink, of course, is the key component. It must contain a permanent dye with a minimum of insoluble particles (non-abrasive and less than

three microns maximum diameter), and it must neither react chemically with nor degrade in any other way the print head mechanism. That means that it must be compatible with stainless steel, phosphor bronze, beryllium, copper, nylon, acetal, polyethylene and polypropylene. It must also contain an ink-compatible additive which is stable and which will not form gummy precipitates on the print-head, but which will form a thin protective coating on the metal surface, lubricating the works well over the whole operating temperature range. The only practical additive which meets these requirements is a silicone of one sort or another, and ink without such an additive is pretty useless. A number of printer manufacturers advise against re-inking ribbons. This advice is valid if traditional clay-based printing inks are used, for these will dry on the needle cylinder walls and clog the print head. However, this will not occur if the proper ink is used: indeed, Don has positive proof that head life can be extended with regular use of a proper ink which contains the appropriate lubricant.

Finally, to give you the complete low-down, let me mention that the key elements which affect ribbon and print-head life are the needle impact pressure (which can to some extent be varied by the printer user) and frequency of impact (which can not): the friction coefficient between needles and ribbon, and the print-head impact temperature, which are both profoundly affected by the presence and properties of the ink. This is because the friction coefficient between the matrix needles and the ribbon is very important. A large proportion of the strike energy is transformed into heat and the material properties of the nylon ribbon are themselves very sensitive to an increase in working temperature. With repeated use, the needle temperature can rise near the melting point of nylon (480°F) causing the ribbon to soften under the needles. The situation is made worse because nylon is a poor conductor of heat. However,

as long as there is plenty of lubricating ink, adhesion between hot needles and nylon surfaces is prevented, so reducing wear: the presence of the ink in between the filaments dissipates the impact energy. Of course, once the filaments begin to dry out, the impact temperature rises sharply, causing rapid degradation of the fabric, a hole in the ribbon and possibly a ruined print head.

I tried out two very different re-inkers. The first is Caspell's "Ribbon Refresh". This comes as an aerosol canister at less than £10.00 including postage. The other device is the "Maxiprint Ribbon Re-inker" from AC Enterprises. This varies in price (there was a special offer when I got mine) but is likely to be at least £40.00. It consists of a box full of bits and pieces.

"Ribbon Refresh" first. To use this, you prise off the lid of the ribbon. This is usually a moulding with a number of plastic pegs in it which fit into holes in the raised edge around the base. Great care is needed, as the pegs on the lid are easily broken off. The use of a ribbon where pegs are missing on the plastic box can result in the ribbon jamming and doing in the print head. Great care is also needed because, as you prise the lid off, a spring-loaded gadget which is difficult to replace often shoots out: beware. Once the lid is off, the ribbon is revealed as "concertinaed" fabric within the container. Put the open container, still with the ribbon inside, on a large sheet of newspaper, preferably out of doors. Put the tube (like the one supplied with WD40) into the aerosol press-spray and spray. Too little and the resulting print has light and dark patches. Too much and it's a runny mess. Don't forget to turn the knob after inking to bring the bits from outside and at the ends into the middle, and to spray those, too. It's best to have several ribbons and do them well in advance, so that the ink soaks well in and the lightest hydrocarbon evaporates: I speak from bitter experience. Unless you take

care, it can be a messy job. Having said that, I've used "Ribbon Refresh" successfully since it was introduced, and have saved myself a fortune on replacing ribbons. True, the ink is not so black, nor does it last so long, but one can't have everything, can one.

The "Maxiprint Ribbon Re-inker" is a horse of a different colour. The base of the box is slotted, and you have to assemble and screw a number of bits into this in order to clamp your particular shape of ribbon tightly. You then mark the start of the ribbon with a little dab of "Tippex", open the ink cartridge and turn a handle which is slotted onto the ribbon drive. My Epson FX80 types of ribbons are the least conveniently accommodated, and I found it difficult to get the clamps tight enough. The loop around the cartridge was not as tight as I would have liked. In opening the cartridge, I got the stuff all over my hands. The ink did not run as freely as I would have liked and I couldn't control it as well as I had hoped, so that the first ribbon seemed over-inked, whilst others had the ink applied rather patchily. The winder kept coming off the ribbon: whilst it was stopped, the ink kept going, with a great big patch. It also took a very long time to wind the ribbon right through to the white "Tippex" mark again. Much of this was beginners' clumsiness, but I would not, for instance, recommend this to the Junior School teacher whilst the class was waiting!

So what were the results like. Marvellous, actually. They exceeded my wildest expectations. The ribbon was super-black. I have used one for ages in an Epson RX80 (you remember, the very old one) with Tasprint at double height to print leaflets and handbills. And still it carries on and on, as fresh as when I first reinked it. I get the impression that it lasts quite a bit longer than a new one.

So what's the verdict? At first I thought this was going to be a one-horse race: "Ribbon Refresh" is so

much cheaper and I found it so easy. However, the results, though satisfactory, are not nearly so impressive as those for the "Maxiprint" device. For the amateur, therefore, with a low rate of ribbon usage, I would recommend the Caspell can, for here one would need to buy only five or so new ribbons before the break-even point was reached. However, if you are a fairly large user of ribbons (more than twenty), like a small business office, or a teacher in a computer-aware school, and particularly if you need an especially good impression or if you use an awful lot of graphics, then the "Maxiprint Ribbon Re-inker" could suit you better.

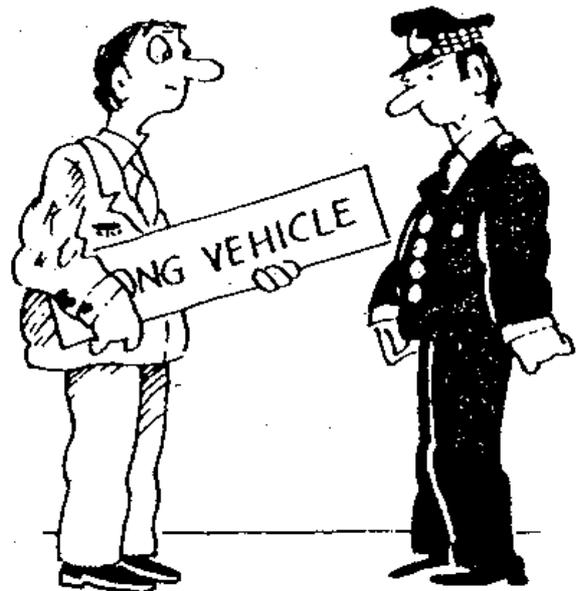
Finally, Caspell are fighting back. They are due to introduce a new aerosol which contains a much denser ink. I'll let you know what I think about this when I see it.

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+ + + + +



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MONEY

MANAGER

By:- Carol Brooksbank.

This month, we start the main program. The OPEN TO command which assigns the pages we need for BASIC is not repeated in the main program because, in normal use, it will be loaded by the loader program we wrote last month, and that will open the pages to BASIC. This does mean, however, that in a few months' time, when we have written about half of the program, we shall start running out of BASIC space unless we do something about it. I suggest that you make a habit of entering:-

```
OPEN TO 10: CLEAR 163840:
LIST FORMAT 2: CSIZE 8,8
```

as a direct command before starting to load what we have done so far, or type in some more. This will set everything up as we want it. There is no need to LOAD last month's BASIC, because we are starting a new program today.

LISTING 1

```
10 REM Money Manager by Carol Brook
sbank
15 REM copyright FORMAT 1990
20 REM PROGRAM FOR THE SAM Coupé
25 SCROLL CLEAR
30 PALETTE
  PALETTE 6,42,110
  POKE SVAR 618,8
  POKE SVAR 615,1
  BORDER 1
  PAPER 1
  PEN 7
  CLS
35 REM SETTING UP THE CALENDAR
40 CSIZE 8,16
  CLS
  PRINT " "; PAPER 6; PEN 0; "S
  ETTING UP THE CALENDAR"
  CSIZE 8,8
  PRINT
  PRINT
  PRINT " Please wait"
45 LET K=100
```

```
DIM CAL$(365,K)
50 LET M=1
55 DO UNTIL M=366
60 LET X=1
65 READ A$,A
70 DO UNTIL X=A+1
75 LET D$=STR$ X
  IF LEN D$=1 THEN LET D$="0"+
  STR$ X
80 LET M$=A$+D$
85 LET CAL$(M,1 TO 5)=M$
90 LET X=X+1,M=M+1
95 LOOP
100 LOOP
105 DATA "JAN",31,"FEB",28,"MAR",31,
  "APR",30,"MAY",31,"JUN",30,"JUL",
  31,"AUG",31,"SEP",30,"OCT",31,"
  NOV",30,"DEC",31
```

Listing 1 above is the first part of the main program, which sets up in memory the calendar which keeps track of all the year's recurring bills. Normally we shall use a line step value of 5, but there are one or two places in the program, especially around menu options, where we have to get a lot of commands into a few available line numbers, and we shall use smaller steps there.

In line 25, SCROLL CLEAR disables the 'Scroll?' message and the wait for a keypress. This line is optional, so if you like listings and so on to pause, leave it out. Our own routine will pause the program when there is a lot of information on the screen to absorb. SCROLL CLEAR only affects the display of the calendar entries - running through them without stopping.

Line 30 sets up another pair of colours - this time red and yellow - to flash in colour 6. SVAR 618 is the system variable which controls caps lock. POKEing it with 8 sets caps lock on. POKE SVAR 618,0 would return to lower case. Since caps lock can be turned off if you accidentally hit the

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key, we shall use this POKE again whenever it matters whether an INPUT is in upper case. POKE SVAR 615,1 turns the function keys into a keypad, so that you can enter sums of money more easily. But don't use the keypad figures to select menu options, because we shall be using the GET command at all menus. GET picks up key numbers, not the value they hold. It will only respond as you expect if you use the number keys at the top of the keyboard.

It takes a time to establish the calendar in memory, and if the user were left with a blank screen while this was going on, he might think the program had crashed. So line 40 puts an explanation of the delay and 'Please wait' on screen. You will see the effect of the different CSIZE lettering in this screen. The large lettering is on our flashing PAPER 6 background.

Line 45 sets up a calendar in memory, 1 page per day. Variable K governs the size of the page. Keep this as low as is practicable, but you must be able to accommodate all the entries on the day on which you pay the most bills (often the 1st of the month). If you use K=100, your data array calendar will occupy 36K of memory. That won't matter if you are saving to disc, but a tape user will find the program takes an eternity to SAVE, VERIFY and LOAD if the calendar is that big.

Lines 50 to 105 set the date in the form JAN01 to DEC31 as the first 5 characters of each page. We are using DO UNTIL loops, which are very similar to FOR-NEXT loops in operation, but you can have a variant, DO WHILE. DO UNTIL continues until the given condition exists, DO WHILE until the condition ceases to exist. This loop would work in exactly the same way if you used DO WHILE M<>366. LOOP marks the point where you jump back for the next repeat. DO on its own, without WHILE or UNTIL, will go on looping until you press the ESC key.

If you look at line 85, you will see

that SAM's syntax is often simpler than the SPECTRUM's. The same line in SPECTRUM BASIC would read:-

```
LET C$(M)(1 TO 5)=M$
```

You need extra brackets, and you could not use 'CAL\$' to remind yourself what the array is.

The program's procedures all live together, starting at line 10000. It will make for a certain amount of jumping around in the line numbers as you type it in, but the program as a whole will be tidier that way. You will know where to find them if you want to take another look at a procedure later. But we could have scattered them about by putting them in the program wherever they were first called. They do no upset the program running because anything starting DEF PROC is ignored. They must be called by name to be executed.

LISTING 2

```
10000 DEF PROC transquery
10005   WINDOW
        CLS
10010   PRINT
        PRINT "If any of these bills a
        re due shortly, please conside
        r whether the assigned fund wi
        ll have built up enough to pay
        them."
10015   PRINT
        PRINT "If not, you should cons
        ider transferring money from o
        ne of the other funds."
10020   PRINT
        PRINT "This problem should onl
        y occur in the first year afte
        r the program has been set up.
        "
10025   presskey
10030   CLS
10035   disptotals
10040   PRINT AT 17,0; PAPER 6; PEN 0;
        "DO YOU WISH TO TRANSFER FUNDS
        ?"
10045   yes_no
10050 END PROC
```

This first procedure, strictly speaking, doesn't belong at the top of the list, as it isn't needed till

later in the program and it calls three other procedures which have not been written yet. But I put it here because it is used only by the first part of the program which sets up the calendar, and not, like all the others, by the main program. Tape users may wish to speed up saving and loading by deleting some of the lines which establish the calendar once it is set up, and they can then also delete this procedure.

It is very simple - an instruction screen which also enquires whether you wish to transfer money between the program funds. In all the instruction screens, the rather odd spacing gives a tidy screen layout.

The procedure begins with WINDOW, a command which returns to using the whole screen after the previous operation has been writing to a smaller area.

LISTING 3

```
10055 DEF PROC presskey
10060   PRINT
        PRINT
        PRINT "PRESS A KEY TO CONTINUE"
"
10065   PAUSE 0
10070 END PROC
```

This procedure pauses to allow you to read the screen. It is used at the end of every 'page' of a set of instructions.

LISTING 4

```
10075 DEF PROC disptotals
10080   WINDOW 7,28,0,6
        PAPER 7
        PEN 0
10085   CLS 1
10090   PRINT
        PRINT " Savings £";savings
10095   PRINT " Free £";cash
10100   PRINT " Assigned £";assign
10105   PRINT " Total £";assign+savin
        gs+cash
10110   WINDOW
10115   PAPER 1
        PEN 7
10120 END PROC
```

The program divides your money into three funds - Savings, which you can draw on for emergencies and occasional expenses. Free money, which you can use for day-to-day living and weekly bills. Assigned money, which you should only use for your monthly, quarterly and annual bills.

This procedure displays the totals available in the funds. It first defines a window, between columns 7 and 28, and lines 0 and 6. The funds totals are displayed in this window, with black lettering on a white background. CLS 1 clears the window, leaving the rest of the screen untouched, so this display is superimposed over whatever is there. In the main program it will be possible to toggle this display on and off at any menu, and it is often called up at other points when you need to see the state of your affairs. It ends by reverting to the full screen and normal screen colours.

LISTING 5

```
10125 DEF PROC yes_no
10130   INPUT
        PRINT #1; "Enter Y for yes or
        N for no"
10135   POKE SVAR 618,8
        GET Y$
10140   IF Y$<>"Y" AND Y$<>"N" THEN GO
        TO 10135
10145 END PROC
```

yes_no is the procedure used every time you need to reply YES or NO to something. In line 10135, SVAR 618 is poked again to make sure the Y or N is upper case.

GET is used whenever the reply is one letter or figure. It is quick to use because no RETURN is needed. GET Y would return a number, Y\$ returns a letter. It is particularly useful for selecting menu options.

The procedure will not return with anything other than Y or N.

LISTING 6

```
110 REM ENTERING DATA INTO THE CALEN
```

```

DAR
115 CLS
PRINT "The calendar will now be
set up with your personal financ
ial data."
120 PRINT
PRINT "Your money will be kept i
n three funds"
125 PRINT
PRINT " Assigned money - money
set aside to pay forthcoming bil
ls"
130 PRINT
PRINT " Savings - money for
emergencies or occasional expens
es"
135 PRINT
PRINT " Free money - money avai
lable for day-to-day expenses"
140 presskey
145 CLS
PRINT "If you wish the program t
o handle your transactions corre
ctly, you should now enter into
these funds any money you have
in hand or in bank accounts at pr
esent."
150 PRINT
PRINT "Please enter amounts as f
igures only (without £ or p sign
s, e.g. 25.35)."
155 PRINT
PRINT "If you do not wish to put
money into one of the funds, ent
er 0"
160 INPUT "Money saved for bills";as
sign
165 INPUT "Savings?";savings
170 INPUT "Money free for day-to-day
use?";cash
175 disptotals
180 PRINT AT 18,0; PAPER 6; PEN 0;;"
ARE THESE AMOUNTS CORRECT?"
185 yes_no
190 IF Y$="N" THEN CLS
GO TO 150

```

We return now to the main program. This is a long instruction screen which explains the three funds, and sets them up with the money you have in hand. The three procedures we have just entered are called from this program section.

Instruction screens are very important in this program because, of course, there is no handbook so it

must be very user-friendly. Fig.1 shows you the first part of this screen, waiting after presskey for you to read the screen. You can see that CSIZE 8,8 does not very often cause the letters to run into one another. In fact, it happens only once on this screen, where the 'f' of 'forthcoming' touches the tail of the 'y' on the line above.

We leave it there for now. If you have RUN any part of the program to try it out, enter CLEAR as a direct command before you SAVE it, or you may find yourself SAVEing the calendar DATA too. It would not matter much to disc users, but tape users would find that what seems to be a small amount of BASIC takes a very long time to SAVE. SAVE what we have done so far as:-

SAVE "MANAGER"

Next month we shall be writing procedures to find particular calendar pages and write data into them, and more of the main program which begins to personalize the calendar.

Fig.1.

```

The calendar will now be set up
with your personal financial
data.
Your money will be kept in three
funds
Assigned money - money set
aside to pay forthcoming bills
Savings - money for
emergencies or occasional
expenses
Free money - money available
for day-to-day expenses
PRESS A KEY TO CONTINUE

```



"But you can't! Where will I find another girl with only three letters in her name?"

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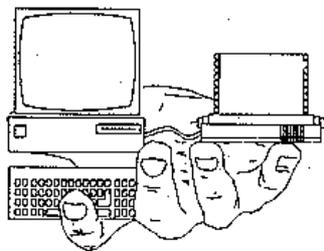
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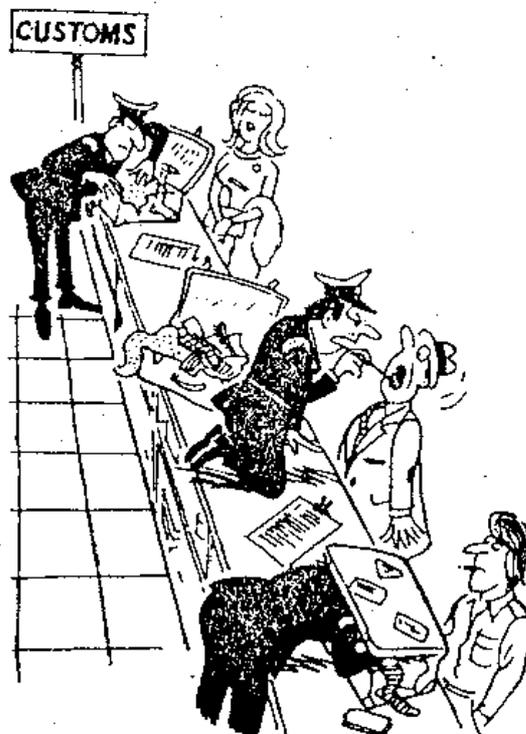
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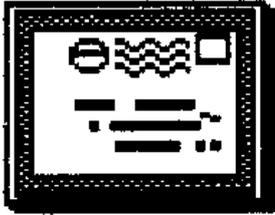
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'Say "Ah"'



YOUR LETTERS



Dear Editor,

I don't know whether your readers are aware of the problem about to befall 70% of all home computer users. The Home Office has granted a new T.V. channel to a yet to be named company to broadcast on UHF channel 36, which by coincidence is used by all computer users without a monitor. Could you tell me whether or not I have got any cause for concern.

Can I say as a Sam Coupe user how helpful your monthly magazine has been of help to me by keeping me up to date during the MGT 'Troubles'

Yours sincerely, Stuart Sullivan.

The new Channel 5 TV company will use, in some areas, UHF channel 36 for transmissions. This may cause some interference with existing home computers and video systems. How bad this will be is still unclear but most equipment should be easy to adjust to use slightly different frequencies to avoid problems. I returned a video machine recently to avoid interference from a nearby computer.

Parliament may also make it part of the new companies franchise agreement that any adjustments are done by the company's engineers. Ed.

Dear Editor,

You may remember I phoned you recently with a question about the Morse Code Trainer (from the July issue). I complained that every time I ran the program I got the same list of letters and could not get a random list. I enclose a listing of the program with some modifications of my own, and the most important modification of yours. Lines 3 and 35 give 48 groups of five letters, and line 70 gives, as you suggested, a new random sequence each time. Useful chap, FRED!

```
1 CLEAR 49799
2 LOAD D1"TX CODE" CODE
3 DIM A$(2880): DIM B$(288)
5 INPUT "SPEED ?";W
7 PRINT AT 11,11; FLASH 1; INK 4;"P
LEASE WAIT"
10 POKE 49870,INT ((315/32/W-INT (31
5/32/W))*256)
15 POKE 49871,INT (315/32/W)
20 POKE 49881,INT (840/W)
25 POKE 49891,INT (560/W)
30 POKE 49909,INT (1100/W)
35 FOR A=1 TO 288
40 LET N=65+(RND*25)
45 LET B$(A)=CHR$ N
48 IF INT (A/6)=A/6 THEN LET B$(A)=C
HR$ 32
50 NEXT A
60 LET A$=(B$+CHR$ 255)
65 CLS : PRINT AT 11,5; FLASH 1; INK
2;"PRESS A KEY TO TRANSMIT": PAUSE 0:
CLS
70 LET FRED=USR 49800
```

I find that:- 7 w.p.m. is c.6.
14 w.p.m. is c.12.
25 w.p.m. is c.20.
28 w.p.m. is c.24.

This may be just my Speccy, but it would be useful to be able to "correct" the program. Thank you very much for your patience and assistance - thats what "Format" is all about.

Yours sincerely, Jack Law.

Thanks Jack. As I told you on the phone the RANDOMISE USR in line 70 of the original program always resets the seed for the random number generator to the same value so the list is always the same for the second and subsequent runs of the program. Using LET FRED=USR prevents this. I'm glad I was able to help. Ed.

Dear Editor,

I know most of this is going to get edited, but I'm going to write it

anyway! Firstly many congratulations on a great user mag, it has really helped me out on some of the problems I have had with the Sam Coupé on several occasions. Gratefully I am now the proud owner of the latest ROM and DOS, so many problems are now no more.

But to the point, this little missive was written using the Tasword word processor, and very good it is too, but there are two very niggling questions:-

1) Why are we working with only 64 characters per line when the Coupé in MODE 3 has 85? Surely there must be some way to use this facility? One main reason for this niggle is that I own a Citizen 120D printer and that having only 64 characters per line severely limits the capabilities of the printer. For instance in Elite pitch any printing looks great and is much more economical with 85 per line.

2) Why are there only 320 lines available for use on the Coupé? It seems to me to be an absolute waste of the memory space left over, (especially if you've got a 512K machine). Surely (again) there could have been some way in which the memory could have been used efficiently?

These two questions really only lead me on to two other points. The first being the attitude of some of the other computer mags regarding the Coupé as a 'Super Spectrum'! (No names, no pack drill - New Computer Express - oops sorry). I can only say that when they look at a program like Tasword and only see the Speccy program, in their own small way are bound to say, this a dressed up Spectrum! Which we all know it is not. I am not actually knocking Tasman, for the program is excellent and as it stands it is of great use....but.

Point 2. 'Im gonna tell you a story' - (who said that?). Once upon a time, a long time ago, there was a computer. Only a little one, and it went by the name of the ZX80. (Can anyone remember?). It was very popular among the intelligentsia. It did not do much, except evolve, (Darwin rools OK). Firstly into the ZX81, then onto

the Spectrum, at the same time there appeared other computers, (Electrons, C64s etc). Now with all this popularity happening there appeared something else, much to the consternation (then) of newsagents. 'Oh where do we put them?' they'd say. In these mags there were programs, hints, tips, how to modify, how to get your Speccy, ZX81, BBC etc to do things that they were not supposed to be able to do. Some worked, some didn't, some were bad, but, the majority of these hints and tips came from the people who were just messing about at home. They were learning machine code, assembler etc and the mags abounded with all their efforts. Where have they all gone?

Now I was too old to come to grips with anything much more than BASIC, (although you would not think so, reading this, I'm still a kid at heart), chapter 9 was about as far as I got, and that does not help much! So what I need, nay want, to know is are they still doing it? Programming that is, and messing about with obscure bits of code etc. And what I really want to know is, is anyone out there who can provide the answer to my first two questions? Or do I have to wait and pay for an upgrade from Tasman, if one ever appears.

Ok, so this was a bit long just for two questions, but the point has been made, I hope.

Keep up the good work. By the way, at least FORMAT keeps printing progs and hints etc. long may it last.

Yours sincerely, Clive White.

The SAM version of Tasword 2 is really just a stop-gap. It is a simple translation of the Spectrum 48k program produced very quickly so SAM users had some form of wordprocessor for their machine.

New wordprocessors are planned by several people, these will exploit the machine far more but (of course) they take time to write as SAM is such a big machine.

As to the 64 character lines this is quite normal. Most wordprocessors default to 64 characters because printers are in general 80 column.

With an 8 character margin to both left and right of the text this gives 64 characters for your text. OK many printers have other type faces or print sizes, so more advanced wordprocessors allow longer lines - often up to 128 characters. Let's hope better wordprocessors start appearing soon. Ed.

Dear Editor,

Disaster struck in June this year when my Disciple ceased to perform. Local dealers recommended buying a new drive, a new SAM an Amiga, or just shrugged. Owing to me being off work for 10 Months, finance was not available for these remedies, BUT, to the rescue came FORMAT. I rang P.B.T. Electronics whose advert and review were in FORMAT 3-12. They were most helpful and repaired both interface AND drive for.... 20.00 including post etc. It's nice to find a firm you can praise these days, so please give them the cudros they deserve, also Format for the news of the company in advance of their advert.

Yours sincerely, Barry Twyman.

Dear Editor,

I have had a 'Disciple Interface' working with my Spetrum for the past couple of years and it WAS great. Until, it stopped working at Easter '90 - I sent it off to MGT in Swansea for repair and was told by phone that it was the 'chip' that controls the disc drive that was at fault. I waited and waited, until the middle of May before phoning again to enquire about the fate of my disciple. To cut a long story short.- it eventually arrived and I plugged it onto my Speccy and NOTHING happened! I phoned MGT and got an answer phone message that the buisness was in the hands of a 'Receiver'

What can I do to get my disciple mended?? Please can you help?

Yours sincerely, David Turner.

Well David, I hope the previous letter gives you the answer to your question. Give PBT a ring and they should be able to help. However I

expect you may need to have your complete set-up looked at as it is possible something else is causing your DISCiPLE to fail. Ed.

Dear Editor,

What has happened to the SAM basic guide which Ken Elston started in February? It is really needed, as the MGT user guide and the Flash guide are very poor, compared with the original Spectrum book.

It took me 2 months to find out that one can LOAD pictures drawn with DRAW and PLOT in basic into Flash as SCREEN. To say that the use of AND, OR and NOT is obvious, is lazy, especially if it is later used to explain OVER (OVER 2 gives ORing and OVER 3 gives ANDing). When, how and what for do you use MEM? It seems such a useful and elaborate function.

I hope your book will be on SAM basic . You have never told us, what it will be about! But at least let us have a series on "Hints and Tips". I am sure it would be a very popular regular.

Yours sincerely, Dr Gerhard Behr.

Ken is, alas, largely out of action these days. A move of house, change of job and shortage of time are some of the lame excuses he uses for not writing for us at the moment.

Meanwhile, Carol Brooksbank's new series should help explain SAM Basic for you. And don't forget SHORT SPOT, this is the place for readers to send their hints & tips (both Sam and Spctrum) and John Wase is always pleased to receive items. And don't be put off, by thinking that everyone already knows your tip, send it in and let John be the judge of whether to publish or not. Ed.

* - * - * - * - * - *

Letters may be shortened or edited to fit on these pages.

This is YOUR letters page so it is up to you, our readers, to fill it. Send your letters to the usual address and mark the envelope LETTERS in the top left-hand corner. Keep your letters as short as you can so we can fit in as many as possible.

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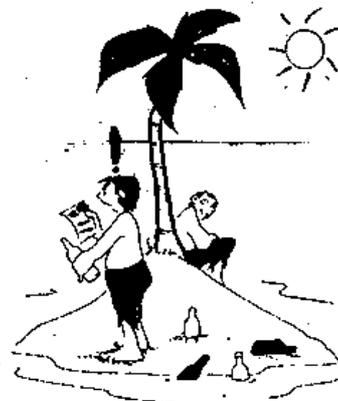
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