

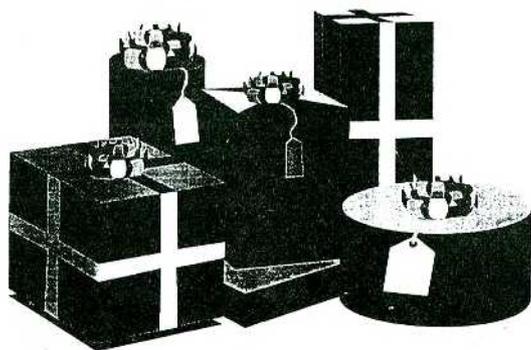
FORMAT

TAKING THE SPECTRUM & SAM TO THEIR LIMIT

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Birthday.



Another Year Older,
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ISSN 0963-8598.

Vol. 12 N°1.

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As used by Format Publications to transfer articles and programs for this mag.

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STOP PRESS: The full range of SD's software and hardware will return in the next few months, if there is anything not listed above that you really need then phone Bob on 01452 412572 and he will do his best to help.

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FORMAT ISSN 0963-8598

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FORMAT is published by **FORMAT PUBLICATIONS.**

34, Bourton Road, Gloucester, GL4 0LE, England.

Telephone: 01452-412572 Email: Formatpub@aol.com

NEWS ON 4

THE C64 RIDES AGAIN

According to Belgian company Web Computers International, one of the biggest selling home computers of all time—the Commodore 64—is coming back.

It has employed the original team to develop a home computer based on AMD's Elan 400 486 chip. To be branded the Commodore 64, the device, which can plug into a TV, will offer a 56K modem with Netscape's Email and Navigator browser, Lotus AmiPro word processor, Lotus 1-2-3 spreadsheet and Lotus Organizer. It will also include a Commodore 64 emulator for the games market.

Corne Klerks, product manager at Web Computers, said the new Commodore 64 would be priced at £299 and be targeted at the youth market via retail outlets and ISPs. Klerks compared the appeal of the Commodore 64 to that of the VW Beetle, and said the new version would be small enough for school children to carry around.

Jamie Snowden, analyst at research firm Input, scoffed at the resurrection of the Commodore 64, calling it a ridiculous idea. "There are 1,000s of Commodore 64 games fans out there and most already have emulators on their PCs," he said. "If you just want a basic PC connected to the Internet then you can pick up a second hand 486 with a modem and a browser for about £90".

Snowden said that in the games market, the new Commodore 64 could not compete with the Nintendo 64 and the Sony Playstation, which is now available at £99. "No one with any sense is going to buy it. This kind of thing has never

worked in the past," he claimed.

On the other hand, a computer that will attach to the TV and give web access, word-processing and run games, is something that may have a real market. Only time will tell.

Now all we have to do is get them interested in doing the same with the Spectrum or SAM - now that would be a machine worth buying.

CONSUMABLES TO BE INVESTIGATED

While printers have fallen in price year after year, the price of printer ribbons, ink jet and toner cartridges seem to have remained disproportionately high.

Well now the EU consumer protection people are launching an investigation which could mean cheaper consumables in the future.

One aspect due for close scrutiny is the difficulties put in the way of third party suppliers who want to manufacture compatible ink-jet cartridges for leading printers like the Epson Color Stylus range.

Don't expect fast action though, the investigators is not expected to report until late next year.

YOUR NEWS HERE...

Come on readers, we need your news. Anything related to computers which you think will interest other SAM and Spectrum owners. Just jot it down on a piece of paper, add your name and membership number, and send it off to us at the usual address. Please mark the envelope 'News' so that we can give it the priority it deserves.

Remember, you get three months extra subscription for every news item we print, so don't rely on others to send in an item you have seen - send it off yourself and earn our thanks as well.

This months credits:- Alan Cox.

The Editor Speaks

Welcome to the start of a new *FORMAT* year and the first issue of volume 12.

1998 has not been a good year for us. Production problems had already put us behind at the end of '97 and the break-in in January this year squelched any chance of recovery during the first half of this year. We are, very slowly I admit, getting back to normal. Both Jenny and I would like to extend our warmest thanks to all of you who have chipped in and helped during our problem times - without your support and encouragement we may not have made it. We would also like to thank everyone for their patience, especially when we have been so far behind with orders. Most orders are now up to date, the only remaining backlog is with the SAM CLOCK and as that is 100% down to me to do, it is still going to be a while before I catch up.

Thank you readers, for helping us to keep the Spectrum and SAM alive for another year. In particular thank you for your votes of confidence in us which you give each time you renew your membership. We will do our best to ensure you continue to get the support you deserve from us.

I'm sad to say that the 1998 membership drive is still not taking off as well as we would all like. I'm not sure where we have gone wrong in promoting the drive to you, our existing members - but I would certainly value any comments you may like to make. I do know it is all too easy to just sit back and

expect everyone else to do something - that is a problem we all suffer from (yes, I'm human too you know). But in this instance it just doesn't work like that. Remember that **INDUG** is a User Group, run for the benefit of its users (it has been a long time since I made a living out of the user group I can tell you) and as members of **INDUG** it is up to you to do your bit to help us to grow. As I said last month, I don't expect you to all rush out and introduce dozens of Spectrum and SAM people, I know that even though there are still thousands of users out there, they tend to be rather quiet about their hobby. But there are MILLIONS of PC users and those are our real target with this drive. You don't have to push *FORMAT* PC, something most of you will not even have seen, what you do need to push is the support we give. Where else can a PC user get unlimited telephone helpline support for just £20 a year? The nearest we have found is nearly three times that figure.

Please, you know it is in your own interest to see **INDUG** grow, so do a little arm twisting among your friends and work-mates - you will be doing them a favour as well as us, and yourself too. Remember, if you need any more subscription forms, all you need to do is phone us and we will send you some straight away. If we all pull together we can make 1999 a fantastic year for all of us.

Until next month.

Bob Brenchley, Editor.

SAM elite 512

FEATURES INCLUDE

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In most cases we find the faults with old drives are mechanical (due to worn heads, stepper motor failure, etc.) In these cases you need an Internal Interface Type 1 to which you transfer the 1772 disc controller chip from your old drive - thus making the upgrade as cheap as possible.

If you want to fit a second drive (or first drive, if you don't have one or the 1772 on your old drive is faulty) then order a Type 2.

Both types are available in either kit form or ready assembled. For the kit you will need screwdriver, soldering iron, solder and a reasonable level of soldering skills. All you need for the assembled version is a screwdriver. Full fitting instructions are given and the only other thing you need is a standard PC type disc drive from your local supplier (cost about £20 to £25).

If you have any doubts about which type of interface you need, or any questions about the drive fitting in general, then please give the FORMAT hotline a ring on 01452-412572 and they will be pleased to help you.

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Internal Disc Interface Type 1 <i>(without 1772)</i>	£19.95	£29.95
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SHORT • SPOT

YOUR HINTS, TIPS AND PROGRAMMING IDEAS

Edited By:- John Wase.

Y'know; it's hectic, trying to start a new business from scratch. In the workshop soon after seven; fall into bed at midnight... Sale again, last weekend; had more stock; more variety, made a much smaller loss than last time! Arrived home er knock shhhh tired. Rang up Bob, asked him when he wanted the next lot of copy. Yesterday. *Yesterday?* Yes, yesterday. How much have you done; can I pick it up tomorrow?

Which is why I'm typing on a dodgy portable (Bob's got the other, trying to put some digital camera software to work on it for me), furiously, in a strange place, without all my past files, and hoping that this makes sense. This sort of thing has happened all too frequently this last year: I am very grateful to a loyal readership for putting up with my wild ramblings, typed in Timbuctoo, Honalulu, (and even North Wales), without the aid of my files. Starting a business is fun, but it's darn hard work.

My first letter this month is from John Saunders of Chalfont St Giles, Bucks, who has a couple of points. In the first place, the demise of my trailer load of birch logs half way up the Llanberis pass seems to have entertained him, for he says "Birch logs BIG enough to go through a kiln?" Yes, John; too small, and there's nothing left to use after it's been sliced and kilned, so it's an expensive waste.

Now to business. John recently bought a Canon BJ 250 printer for SAM, and

while Tony Kinch is sending along a disc which will correct most of its idiosyncracies, and shed light on what it expects as control codes for most of its functions, there are still one or two things that it does unexpectedly. For example, before delivering copy, it prints '11' at the top of a sheet, then spits it out otherwise blank, following with the expected print-out. It also sees fit to print the 'normal print' symbol, though complying with the instruction.

For the first problem, my instincts tell me to examine the way in which the printer is being set up for a specific page length, right at the start of things. It's the old line feed/carriage return thing; do you get the software to send it or set a dip switch on the printer, and somewhere you've got a duplicate. But as for the second; heavens knows.

Can anyone help John? C'mon; I really need this input from you. Moreover, Roy Burford of Norton, Stourbridge, has written with a program converted for the Spectrum, which also needs your input. His letter lurked with a number of others in a pile I've just discovered during my turning out and tidying up; apologies for its tardy appearance. In this letter, Roy, whose programs and conversions feature so freely on these pages, reminds me of his fascination with timing and clocks, and his frustrations in not finding a Spectrum one (or a C64 one, either, for that matter) which keeps good time. Until now, that is. This one at any rate

keeps time on Roy's Spectrum in 483K Basic. Oddly enough, the C64 version gains badly! It's called *clock0* and here's the listing.

```
1 REM Input magazine. pp896.
  Watching the interrupts.
2 REM Revised on ZX Spectrum+
  128K by B.C.R.Burford 1203
  98.
3 REM POKE 23674,hour. 23673,
  minute. 23672,second before
  , but preferably after RUN.
4 REM RUNS in 48K ONLY in thi
  s form. Why does it crash i
  n 128K and is it readily co
  nvertible to 128K?
10 CLEAR 32319: LET total=0
20 FOR n=32320 TO 32554: READ
  a: POKE n,a: LET total=tota
  l+a: NEXT n
30 IF total<>24216 THEN PRINT "
  Error in data": STOP
40 RANDOMIZE USR 32320
50 DATA 33,0,0,34,120,92,34,12
  1,92,62,40,237,71,237,94,20
  1,0,64,0,0
60 DATA 62,62,237,71,237,86,20
  1,0,229,213,197,245,58,91,1
  26,60,50,91,126,254
70 DATA 50,32,50,175,50,91,126
  ,58,120,92,60,50,120,92,254
  ,60,32,35,175,50
80 DATA 120,92,58,121,92,60,50
  ,121,92,254,60,32,20,175,50
  ,121,92,58,122,92
90 DATA 60,50,122,92,254,13,32
  ,5,62,1,50,122,92,58,122,92
  ,38,0,111,17
100 DATA 23,64,205,234,126,58,1
  21,92,38,0,111,17,26,64,205
  ,234,126,58,120,92
110 DATA 38,0,111,17,29,64,205,
  234,126,17,208,61,33,29,64,
  205,34,127,17,208
120 DATA 61,33,26,64,205,34,127
  ,62,120,33,24,88,119,17,25,
  88,1,7,0,237
130 DATA 176,205,191,2,241,193,
  209,225,251,201,237,83,80,1
  26,1,246,255,205,251,126
140 DATA 1,255,255,205,251,126,
```

```
201,175,9,60,56,252,237,66,
  61,198,48,229,205,21
150 DATA 127,33,80,126,52,42,80
  ,126,205,34,127,225,201,237
  ,75,54,92,38,0,111
160 DATA 41,41,41,9,235,201,6,8
  ,26,119,36,19,16,250,201
```

Now, before you get all enthusiastic, a couple of points. Roy writes "I find that accessing a drive causes the computer to crash and unusual drive activity (I did CAT 2) whilst it is running in 48K". Can anyone sort out why this is so? And the 128K version doesn't work - Roy writes that perhaps Miles Kinloch can advise us as to the 128K conversion.

Now, for those of you who are relatively new to programming, here's a gem. Streams and channels are handled rather nicer for SAM than for the Spectrum, but here we are with a good example of how to use them on the good of Speccy/PLUS D combination; neat, short and to the point. The idea is to allow sending data to screen or printer by choice, and the routine can therefore be extracted and used in larger programs. The demonstration program merely sends the square roots of 1 to 10, but of course can be adapted to almost anything. The format is for a SERIAL 8056 Compact Printer, and will need changing for other printers.

```
1 REM Morse & Hancock. ZX Spe
  ctrum Micro-Guide. Guild Pu
  blishing. 1984. p13. OPEN #
  n"device type"(p or s) & C
  LOSE it n
2 REM On ZX Spectrum+ 128K by
  B.C.R.Burford 200898.
20 INPUT "(S)creen or (P)rinte
  r ;o$
25 IF o$<>"s" AND o$<>"S" AND
  o$<>"p" AND o$<>"P" THEN GO
  TO 20
27 LET f=0
```

```

30 IF o$="p" OR o$="P" THEN FO
  RMAT "P";1200: OPEN #2,o$:
  LET f=1
40 :
50 FOR x=1 TO 10
60 PRINT x,SQR x
70 NEXT x
80 IF f=1 THEN CLOSE #2
90 STOP

```

While we're on about program conversions (well, I am!!!), I would like you to have another look at one of Roy's conversions, and the difficulties that can arise from the Spectrum's use of colour. As we all know, the Spectrum has high resolution black and white (an 8x8 pixel square) but only low resolution colour, so that square can be coloured or not. This program, as converted, needed Line 155 adding and two further lines removing and the number of hyperbolas and ellipses also cut to clean up the display. CURVES0 is more or less the original, while CURVES1 has been modified to introduce random colour change, and because of the opened up display, there is less colour clash.

I give the listings in full, because they're short, anyway. Type in CURVES0 first and look at the screen intelligently, from a distance. A fine show of Speccyproblems, isn't it. Now save it and modify it to CURVES2, or, if you prefer, just type it in. Compare the output and compare the listings.

```

1 REM Input magazine. pp889.
  Looking into curves.
2 REM Revised on ZX Spectrum+
  128K by B.C.R.Burford 1003
  98.
10 BORDER 0: PAPER 0: PEN 7: C
  LS
15 PRINT #0; AT 0,4; PEN 7;"Hy
  perbolae & Ellipses"
20 LET hyperbolae=80
30 LET ellipses=270

```

```

40 GOSUB hyperbolae
50 GOSUB ellipses
60 PRINT #0; AT 1,4; PEN 6;"An
  y key to exit:"
65 PAUSE 0
70 BORDER 7: PAPER 7: PEN 0: S
  TOP
80 LET ox=127: LET oy=87
90 FOR a=1 TO 2 STEP .1
100 LET a=22: LET b=a*(SQR (e
  2-1))
102 LET h=1
104 LET f=ox+(a/COS -1.396)
106 LET g=oy+(b*TAN 1.396)
108 IF g<0 THEN LET h=0
120 IF g>0 THEN PLOT PEN 6;f,g
130 FOR t=-80 TO 80 STEP 20
135 LET r=t*PI/180
140 LET x=a/COS r: LET y=b*TAN
  r
142 LET c=oy+y: LET d=ox+x
150 IF h=0 THEN LET d=f+g*(f-d)
  /(c-g): PLOT PEN 6;d,h: LET
  c=0
155 LET h=1
160 IF c>175 THEN LET d=d-((d-P
  EEK 23677)*(c-175)/(c-PEEK
  23678)): LET c=175
170 DRAW PEN 6;d-PEEK 23677,c-P
  EEK 23678: NEXT t
172 LET f=ox+(a/COS 1.75)
174 LET g=oy+b*TAN 1.75
178 IF g<0 THEN LET h=0
180 IF g>0 THEN PLOT PEN 6;f,g
190 FOR t=100 TO 260 STEP 20
195 LET r=t*PI/180
200 LET x=a/COS r: LET y=b*TAN
  r
202 LET c=oy+y: LET d=ox+x
204 IF h=0 THEN LET d=f+g*(f-d)
  /(c-g): PLOT PEN 6;d,h: LET
  c=0
206 LET h=1
210 IF c>175 THEN LET d=0-((d-P
  EEK 23677)*(c-175)/(c-PEEK
  23678)): LET c=175
220 DRAW PEN 6;d-PEEK 23677,c-P
  EEK 23678
230 NEXT t: NEXT e
250 RETURN
270 FOR e=.5 TO .98 STEP .08
280 LET a=100: LET b=a*(SQR (1-

```

```

e↑2))
290 PLOT PEN 5;ox+a,oy
300 FOR t=0 TO 360 STEP 10
305 LET r=t*PI/180
310 LET x=a*COS r
320 LET y=b*SIN r
330 DRAW PEN 5;x-(PEEK 23677)+o
  x,y-(PEEK 23678)+oy
340 NEXT t: NEXT e
360 RETURN

```

And here is the second version. Only a few changes, but quite a difference!

```

1 REM Input magazine. pp889.
  Looking into curves.
2 REM Revised on ZX Spectrum+
  128K by B.C.R.Burford 1003
  98.
10 BORDER 0: PAPER 0: PEN 7: C
  LS
15 PRINT #0; AT 0,4; PEN 7;"Hy
  perbolae & Ellipses"
20 LET hyperbolae=80
30 LET ellipses=270
40 GOSUB hyperbolae
50 GOSUB ellipses
60 PRINT #0; AT 1,4; PEN 6;"An
  y key to exit:"
65 PAUSE 0
70 BORDER 7: PAPER 7: PEN 0: S
  TOP
80 LET ox=127: LET oy=87
90 FOR a=1 TO 2 STEP .1
100 LET a=22: LET b=a*(SQR (e↑
  2-1))
102 LET h=1
104 LET f=ox+(a/COS -1.396)
106 LET g=oy+(b*TAN -1.396)
108 IF g<0 THEN LET h=0
120 IF g>0 THEN PLOT PEN RND*6+
  1;f,g
130 FOR t=-80 TO 80 STEP 20
135 LET r=t*PI/180
140 LET x=a/COS r: LET y=b*TAN
  r
142 LET c=oy+y: LET d=ox+x
150 IF h=0 THEN LET d=f+g*(f-d)
  /(c-g): PLOT PEN RND*6+1;d,
  h: LET c=0
155 LET h=1
160 IF c>175 THEN LET d=d-((d-P

```

```

EEK 23677)*(c-175)/(c-PEEK
23678)): LET c=175
170 DRAW PEN RND*6+1;d-PEEK 236
  77,c-PEEK 23678: NEXT t
172 LET f=ox+(a/COS 1.75)
174 LET g=oy+b*TAN 1.75
178 IF g<0 THEN LET h=0
180 IF g>0 THEN PLOT PEN RND*6+
  1;f,g
190 FOR t=100 TO 260 STEP 20
195 LET r=t*PI/180
200 LET x=a/COS r: LET y=b*TAN
  r
202 LET c=oy+y: LET d=ox+x
204 IF h=0 THEN LET d=f+g*(f-d)
  /(c-g): PLOT PEN RND*6+1;d,
  h: LET c=0
206 LET h=1
210 IF c>175 THEN LET d=0-((d-P
  EEK 23677)*(c-175)/(c-PEEK
  23678)): LET c=175
220 DRAW PEN RND*6+1;d-PEEK 236
  77,c-PEEK 23678
230 NEXT t: NEXT e
250 RETURN
270 FOR e=.5 TO .98 STEP .08
280 LET a=100: LET b=a*(SQR (1-
  e↑2) )
290 PLOT PEN RND*6+1;ox+a,oy
300 FOR t=0 TO 360 STEP 10
305 LET r=t*PI/180
310 LET x=a*COS r
320 LET y=b*SIN r
330 DRAW PEN RND*6+1;x-(PEEK 23
  677)+ox,y-(PEEK 23678)+oy
340 NEXT t: NEXT e
360 RETURN

```

Many thanks, Roy.

Funny Roy mentioned Miles Kinloch, for I found also a small routine of his. He writes that readers will recall we originally published his DRIVETEST routine in Short Spot in April 1996; well, it's now been rewritten and updated to include the DISCiPLE as well. Normally, we don't publish endless updates, but as this is both important and short, I felt it worthy of inclusion.

```

10 REM DISCiPLE/PLUS D CURRENT

```

```

DRIVE TEST
20 REM 24 BYTES, RELOCATABLE
30 REM CODE POKER AND DEMO
40 REM By Miles Kinloch
50 CLEAR 59999: FOR a=60000 TO
  60023
60 READ d: POKE a,d: NEXT a
70 DATA 207,71,1,1,0,124,181,4
  0,5,58,218,29,24,3,58,218,6
  1,31,56,1,12,195,80,0
80 PRINT "Press any key to tes
  t. (Ensure there is a disc
  in each drive.)": PAUSE 0
90 REM Test
100 CAT 1"": CLS : PRINT "Cur
  rent drive is ";USR 60000:
  PAUSE 0
110 CAT 2"": CLS : PRINT "Cur
  rent drive is ";USR 60000:
  PAUSE 0
120 REM Save code
130 CLS : INPUT "Save code on D
  rive 1 (yin)? "; LINE a$: I
  F a$="Y" OR a$="y" THEN SAV
  E dl"Drive.c"CODE 60000,24
140 STOP
9999 SAVE d*"DRIVETEST" LINE 10

```

Miles has also given the assemble! source code for this routine which will be of interest to those of you who like to find out how things *really* work. Here it is:-

```

; DISCIPLE/PLUS D CURRENT DRIVE
; TEST
; FOR DISCIPLE WITH GDOS 3d, OR
; PLUS D WITH ROM 1a (G+DOS/BETA
  DOS)
; PLEASE Note: not for UNIDOS.

```

```

  ORG (Any)
  RST 8
; Page in shadow system.
  DB 71
; Use Command Code 71
  LD BC,1
; BC set initially to 1.
  LD A,H
  OR L
; Test HL after command code 71.
; If 0=PLUS D, 1=DISCIPLE.
  JR Z,PLUS

```

```

; Jump forward if it is a PLUS D.
DISCP LD A,(7642)
; Get DISCIPLE drive number.
  JR TEST
; Jump to common test routine.
PLUS LD A,(15834)
; Get PLUS D drive number.
TEST RRA
; Bit 0 set=drive 1,
; Bit 0 reset=drive 2
  JR C,END
; Indicate result in BC...
  INC C
; ..to return value in USR
; argument.
END JP 80
  Page out and return to Basic.

```

Many thanks, Miles.

I'm now going to leave the Spectrum for a minute or two, and turn to SAM. My first offering here is from one of our renowned long-standing contributors, Ettrick Thomson of Grundisburgh, Suffolk. His contribution arose from Gerald Symes' contribution to the April '98 issue. He writes as follows.

"Now, the SAM program 'Bridge Deal' produces four hands and displays them in the usual form, hands placed in North South East West positions, each suit in each hand in order of value. Once the prologue (Lines 300-540) has been run, it takes just under three seconds to produce and display a deal. The hands are chosen at random and all deals are equally likely, but a novel method is used which requires neither shuffling nor sorting. I first hit on this method 14 years ago; it has appeared in one of the defunct magazines and in SAM supplement. Recently, a probability expert confirmed the soundness of the method".

"We begin with a full pack represented by the 104-character string p\$ (Lines 110, 330), each card needing two characters: the first gives the value: 'A',

'K', . . . , '2' (with 'T' for ten) and the second the suit, one of the four UDGs that give the suit symbol when printed. The cards are arranged in order of value: ace of spades, king of spades, . . . , two of clubs, and are processed in that order, each card being either rejected or accepted for inclusion in the first hand. Line 170 makes the choice; n is the number of cards still needed to complete the current hand (FOR-n-LOOP Lines 160-230) and m the number of cards still available for inclusion, starting at 52 for the first hand (Line 150, h=1). If $RND(m-1) > n$ the card is rejected and we continue to loop; Line 180 decrements m and advances c, where c gives the position of the first character in p\$ of the card under consideration. If $RND(m-1) \leq n$ the card is accepted; since $RND(m-1)$ takes at random the values 0 or 1 or 2 . . . or m-1, the probability of acceptance is n/m ; Lines 200-230 (1) prints the card, preceded by the suit symbol when a change of suit occurs (2) produces a new version of p\$ with the chosen card removed and (3) decrements m; then (Line 230) we proceed to add another card to the current hand, or advance to the next hand".

"For the second and subsequent hands, we begin (Line 150) with $m=39$ or 26 or 13 and with the residual pack p\$ containing only those cards that have not been allocated to hands, The fourth hand will consist of the residual pack, but taking advantage of this would mean extra program, so this hand is chosen just like the others; at this stage $m=n$ for all thirteen cards, so the probability of acceptance is $n/m=1$, so each card is accepted".

"One reason for choosing a SAM version is that MODE 3, with 64

characters to the screen line, allows the conventional display of a bridge deal, with North's hand at the top, South's at the bottom, and East's and West's at the sides. There are four WINDOWS (SAM, not Microsoft!), one for each hand, which simplifies getting the printing in the right place".

"It may be worth giving a slightly simpler way of organizing shuffling, sticking to Gerald's method. This program shuffles the characters of a string n\$".

```

10 FOR i=LEN p$ TO 1 STEP -1
20 LET c=1+INT(RND*i)
30 LET P$(c TO) = p$(c+1 TO)
   +p$(c)
40 NEXT i

```

Many thanks, Ettrick, for all the useful explanations. Here's the 'Bridgedeal' listing:-

```

10 REM Bridge Deal:Ettrick Th
   omeon
20 prologue
30 DO :deal
40 PRINT #0;"Another deal? (y
   /n)"
50 GET r$
60 LOOP WHILE r$="y" OR r$="Y
   "
70 MODE 4: BLOCKS 1: PALETTE
   80 CLS # : STOP :
100 DEF PROC deal
110 CLS : LET p$=z$
120 FOR h=1 TO 4
130 WINDOW 1(h),r(h),t(h),b(h)
140 PRINT AT 0,10;n$(h);
150 LET c=1,m=13*(5-h),q$=""
160 FOR n=13 TO 1 STEP -1
170 DO UNTIL RND(m-1)<n
180 LET c=c+2,m=m-1
190 LOOP
200 IF p$(c+1)<>q$ THEN : LET
   q$=p$(c+1): PRINT PEN 2 AN
   D (q$=CHR$ 130 OR q$=CHR$
   131)'q$;" ";

```

```

210 IF p$(c)="T" THEN PRINT "1
0 ",: ELSE PRINT p$(c);" "
;
220 LET p$(c TO )=p$(c+2 TO ),
m=m-1
230 NEXT n: NEXT h
240 END PROC :
300 DEF PROC prologue
310 DIM z$(104),l(4),r(4),t(4)
,b(4),n$(4,5)
320 FOR i=1 TO 104 STEP 2
330 LET z$(i)="AKQJT98765432"(
1+(i DIV 2) MOD 13),z$(i+1
)=CHR$(129+i DIV 26)
340 NEXT i
350 FOR h=1 TO 4
360 READ l(h),r(h),t(h),b(h),n
$(h)
370 NEXT h
380 DATA 18,45,0,5,"North"
390 DATA 18,45,12,17,"South"
400 DATA 36,63,6,11,"East"
410 DATA 0,27,6,11,"West"
420 BLOCKS 0
430 FOR s=0 TO 3: FOR r=0 TO 7
440 READ b: POKE UDG CHR$(129
+s)+r,b
450 NEXT r: NEXT s
460 DATA 8,28,62,127,107,8,28,
0
470 DATA 54,127,127,127,62,28,
8,0
480 DATA 8,28,62,127,62,28,8,0
490 DATA 28,28,107,127,107,8,2
8,0
500 MODE 3: PALETTE : CSIZE 8,
9
510 PALETTE 3,76
520 PAPER 3: BORDER 3: PEN 0:
CLS
530 RANDOMIZE
540 END PROC :

```

Now over to Roy Gardener of St. Columb, Cornwall, who wrote earlier in the year when I made a plea for bits and pieces, and I've kept this SAMstuff tucked away until I needed a lot, of short pieces, like now. What I have from him

is, as he puts it, "... a few assorted bits and pieces, some taken from my toolkit, others found lurking around; none perhaps amounting to much..." Real Short Spots, in fact, many demonstrating programming features. Here are two...

Let's start with 'bubbles'. Not really bubbles at all, - it uses the circle command to produce overlapping coloured rings. It is slow at first, as it is RECORDing to BLITZ later. So this is one routine which the novice programmer might like to look at. In addition, do you remember the fuss about KEYIN earlier in the year? Well, this program uses KEYIN to rewrite itself as it runs. Check it out!

```

1 REM Bubbles by R.Gardner
Jan 90
2 CLS : PRINT " " "Prog runs
slow while Recording to
string. Will then BLITZ (h
oldBREAK to stop). Put REM
on lines5 & 75 to run wit
hout Recording." " "Line 75
--d- is set to approx. 3
min- alter to suit."
3 PRINT '"Bubbles uses KEY
IN to re-write itself as
it runs.': PAUSE 300: CLS
5 RECORD TO a$
10 KEYIN "50": DELETE 80 TO 1
00
20 LET z=2, c=1,d=1: DIM a(10
),b(10)
30 LET c=1: FOR f=1 TO 10: LE
T a(f)=RND(160)+60,b(f)=RN
D(100)+60: NEXT f
40 LET c=c+1: FOR f=1 TO 5: C
IRCLE PEN 9+f;a(f),b(f),c*
2
60 NEXT f: LET d=d+1
70 IF d=420 THEN LET c=1: KEY
IN "100goto10": KEYIN "50"
: KEYIN "80if c<50then got
040": KEYIN "90if d<le3the
n goto30"

```

```

75 IF d>750 THEN RECORD STOP
: PAUSE 50: CLS : GOTO 2e2
: REM approx. 1min per d=2
50;i.e.750=app.3min.Lines
70&90 set cutoff at 4min
80 IF c<50 THEN GOTO 40
90 IF d<1e3 THEN GOTO 30
100 GOTO 10
110 IF d=215 THEN LET z=0, c=1
:KEYIN "50": OVER 0
120 IF c=80 THEN OVER z: KEYIN
"50 circle pen9+f;a(f+5),
b(f+5),(c-80)*2"
130 IF c<110 THEN GOTO 40
140 KEYIN "50": OVER 0: GOTO 3
0
200 BLITZ a$: GOTO 200
222 CLEAR : SAVE OVER "Bubbles
" LINE 2

```

Now for fun with a picture. So, you'll need a SCREEN\$ to test it out, won't you. Got one? Good. What this little snippet does is to display the screen in different ways - from centre, bottom up and two centres.

```

80 CLEAR : SAVE OVER "ScrDisp
" LINE 90: STOP
90 REM Screen displays
by Roy Gardner
92 CLS : PRINT "'LOAD a scr
een" " ' "Select-" " "'1 DI
R
"'2 Enter filename"
93 GET a: IF a=1 THEN CAT 1:
LET a=2
94 IF a=2 THEN INPUT "Filenam
e?";a$: LOAD a$ CODE 11468
8: GOTO 96
95 GOTO 93
96 LET a=507904: CLS : REM
for 256K let a=245760
99 REM DISPLAY screens
100 REM by colours
102 FOR f=0 TO 15: PALETTE f,0
NEXT f: PAUSE 50
104 POKE a,MEM$(114688 TO 1146
88+24576)
106 FOR f=0 TO 15: PALETTE f,P

```

```

EEK (139264+f)
108 PAUSE 3: NEXT f
109 PAUSE 80: CLS
112 REM from centre
114 LET g=0: FOR f=1 TO 97
116 POKE a+12288-g,MEM$(126976
-g TO 127103-g)
117 POKE a+12416+g,MEM$(127104
+g TO 127231+g)
118 LET g=g+128: NEXT f
119 PAUSE 80: CLS
121 REM bottom up
122 LET g=0: FOR f=1 TO 192: P
OKE a+24448,MEM$(114688+g
TO 114815+g)
124 SCROLL 2,1,0,f-19,256,f
126 LET g=g+128: NEXT f
128 PAUSE 80: CLS
131 REM two centres
132 LET g=0: FOR f=1 TO 49
134 POKE a+6144-g,MEM$(120832-g
TO 120960-g)
135 POKE a+6271+g,MEM$(120959+
g TO 121086+g)
136 POKE a+18430-g,MEM$(133118
-g TO 133245-g)
137 POKE a+18557+g,MEM$(133245
+g TO 133372+g)
138 LET g=g+128: NEXT f: PAUSE
: BOOT

```

And that's all we've room for from Roy this month. We'll feature him some more in the months to come; until then, many thanks for your efforts Roy.

I know Christmas is coming, and you're all terribly busy, but do please send me some bits and pieces to keep Short Spot going; without them I can't put a column together. Please send them to:-

**John Wase,
Green Leys Cottage,
Bishampton,
Pershore,
Worcs,
WRI O 2LX.**

Thank you. See you all next month.

Paper Is Paper - Right?

By:- Kathrine Powers.

Well, paper is paper, isn't it? That begging letter you are sending out to parents asking them to support your school's Christmas bazaar will look just fine on a 90gsm vellum, won't it? After all, you're never again going to let an unscrupulous salesman at your local instant print shop talk you out of £24 for a ream of 160gsm cockled paper that jammed and tore in your printer.

Maybe you're a paper pro. You know how to access the weight, texture, and finish of a sheet of paper at a glance, right?

Probably not. The truth is that to most people a sheet of paper, is a sheet of paper, is a sheet of paper....

Most of us know what we don't like — but only after we have torn the ream open and can no longer return the paper. With offices and homes turning into mini-print shops, it is a good idea to know the facts about paper from how it's made to how to Dick the best kind.

MAKING PAPER

Once the trees are chopped down and shipped to a mill, they are stripped of their bark and chopped into progressively smaller pieces. The tiny pieces are mixed with chemicals and pressure cooked into a mushy mass called *pulp*. The pulp is cleaned and bleached until it has the consistency of slush. The slush is put in fast-moving, wire mesh screens where it eventually sets into a continuous sheet of paper. As the slush moves down the line, excess water is squeezed out by giant

rollers, and the not-so-slushy sheet becomes a web. The web runs through more rollers that not only remove water but also ensure uniform thickness.

The web is then forced through heated rollers that remove the remainder of the water, and the continuous sheet is wound onto giant spools called *parent rolls*. Then, the rolls are cut at the mills or shipped to paper companies where they are cut and packaged. At this point, regardless of the size, texture, weight, or colour, the paper is called stock.

(NOTE: For an excellent tutorial of the paper-making process and additional pages with interesting paper facts, visit the Mead Corp. World Wide Web site at <http://www.mead.com>.)

PAPER TERMS

The many variations of paper making result in different weights, degrees of brightness, finishes, textures, colours, and sizes. Rollers, set to varying widths, determine how thick or thin a sheet will be. The thickness (or *caliper*) of the paper determines its weight; the higher the weight, the better the quality of paper. When a weight (in the UK and Europe this is measured in Grammes, in the USA it is measured in pounds) is assigned to paper, that refers to the weight of one square meter of paper (in the USA it refers to 1,000 sheets of that particular stock). 80gsm (grammes per square meter) is the most common weight for copy paper, and 100gsm is the most common for general office

stationary printing. Deluxe business letterhead could go as high as 120gsm.

Brightness refers to how much light reflects off a sheet; the higher the rating, the better the papers quality. The brighter the sheet, the sharper the contrast to the print or illustration, and the easier the document is to read. Titanium dioxide and magnesium oxide are two of the more prevalent chemicals added to pulp to increase the brightness. Average brightness for a white sheet of paper is 82, while a blue-white sheet, with excellent contrast and brilliance, will have a brightness rating of 92 or 94. Just as you'll see the weight on the label of the ream or carton of paper, many companies now include a brightness rating on their packages.

Finish refers to the surface of the paper. Printers and paper manufacturers refer to cheaper, bumpier surfaces as toothy. Lacking a smooth, hard surface, these papers are usually porous and will absorb rather than set the ink of an inkjet printer, causing the image to spread or bleed. When you print a document, the surface appears fuzzy, smeared, and difficult to read. Vellum, the roughest paper, is an example of a toothy paper. To obtain a harder finish, manufacturers roll paper over drums and spray it with a clay coating. This finish is what paper makers refer to as coated paper. *Calendering* is another way to attain a smooth, shiny finish. Uncoated paper is run over additional drums where it is polished by steel rollers. Calendered paper is rated from roughest to smoothest: vellum, antique, wove, and smooth.

Textured papers are those with raised or uneven surfaces. Examples include laid, linen, ribbed, embossed, and cockled paper. Textured paper gives a document

a richer, more polished appearance, but the rollers on home and office copy machines and printers get caught on the uneven surface causing the paper to tear or jam. Today, many textured papers are compressed or coated so they can be used in copiers and printers.

Grain is the term for the lay of the paper. As the slush travels along the wire meshes, the tiny particles align themselves with the direction of the flow. Once the paper sets and dries, the aligned particles form the grain of the paper. Paper is generally cut with the grain and is referred to as grain long. A *ream* (500 sheets) or carton (normally 5 reams or 2500 sheets) of A4 paper is usually grain long.

SIZES

At first the plethora of paper sizes may appear confusing to the uninitiated — but they are not.

Most paper that you will use will be A4 (297mm by 210mm). The next most common size is AS which is 210mm by 148mm (which, if you look at it closely, is half the size of A4) and then you have A3 which is 420mm by 297mm.

Let us look at that another way. Take a piece of A3 paper, fold it in half by placing the short edges together, slit them apart and you have two pieces of A4. Do the same again, short edges together, and you have sheets of A5. If you did the same again you would end up with A6 then A7 and so on. AS is normally the smallest paper you will be able to buy but any size could be cut for you by a printer with a good guillotine.

Up from A3 you have of course A2, A1 and A0— a massive sheet 1642mm by 594mm — not the sort of paper you would be interested in, just think of the size of the printer needed to handle that.

USING PAPER

Most printer and copy machine manufacturers specify paper standards: weights and types of paper for optimum machine performance. Additionally, paper manufacturers print guide-lines for use on their labels. I would advise that if you are uncertain whether a specific weight or texture will run in your printer, read the label on the paper and see what the manufacturer recommends.

Using a different grade or weight probably may not break the printer or copier, but the quality of the job may suffer. For instance, if 120gsm paper is your printers utmost limit and you try to print on 200gsm card stock, your machine may not run the paper through, it may damage the stock, or the ink or toner may smudge or flake. Rollers in copiers and printers are set to certain widths, and they grab and pull the stock, guiding it through the machine. If the paper is too light, less than say 60gsm for instance, the rollers may fail to grab the sheet or pull several sheets through at once. Eventually it will jam because the rollers can't keep moving the lightweight paper along.

Inkjet printers usually need a harder, non-absorbent, coated surface that will dry quickly. Since inkjets spray the ink onto the paper, a porous page allows the ink to spread out making the text look blurred. Again, look for manufacturers that guarantee their paper for use with inkjet printers.

In the past, papers with textured surfaces would hang up on the rollers and either tear or jam. The prevalence of home printers has created a greater demand for premium paper, and manufacturers have responded by coating and polishing paper surfaces.

Laser printers are slightly more

tolerant of different surfaces than inkjet printers since the toner doesn't bleed into the page. For best results, though, you'll still want to use a smooth, hard surface so the toner doesn't chip and flake as it can on uneven surfaces.

While copy machines tolerate a wide range of weights, they are intolerant of most textured paper. Laid, linen, or patterned paper may go through the copier, but the toner will probably spot and flake. Copy machines are also finicky about the grain. Rollers pull paper through the copier, and over time the rollers develop a fit for sheets with a specific lay. When you mix up the grains, the rollers don't grab the paper the same way and will often jam.

PAPER STORAGE

Other problems you can run into are heat and humidity. Humidity lets paper stretch, which causes it to wrinkle, tear, fold, and jam when pulled into your printer. Have you ever seen an uneven crease through the paper after printing or copying? That's the result of stretched paper. Moisture will also adversely affect the receptivity of paper to toner and ink. Text and images may smudge and flake, or the toner or ink may not transfer to the damp paper at all. Most paper experts caution that sudden temperature changes also cause physical paper deformation including curling, stretching, shrinking, and dimpling. I suggest that if you are moving paper stock from a bitterly cold garage or a blistering hot conservatory, let it adjust to the new environment for a couple of days before unwrapping it for use.

Packaging and storage are the most important factors in preserving paper. Manufacturers recommend storing paper in a cool and dry area with the wrapping

secured and in boxes with the lids on. After opening a ream of paper, if you do not intend to use all the paper at once, it is best to reseal the pack to keep dust and moisture out and prevent the edges of the paper from curling.

Although dust isn't as much of a threat to paper as heat and humidity, it will gunk up your printer, requiring more frequent cleaning. For professional printers working with liquid ink, dust will alter the colour and can prevent the image from adhering to the paper.

BUYING PAPER

Until a few years ago, consumers purchasing paper in small quantities could buy it only at a premium price through local print shops. With both leisure and office computing taking off, there has been a big demand for more affordable and more readily available paper of all weights, colours, and textures. To stay competitive many shops now stock a wide range of paper types, often in small packs ideally suited to the home user (who wants 500 sheets of lime green paper when just 50 will do).

In addition, the likes of Office World now have stores within easy reach of the majority of people in the UK, stocking an incredible range of papers. Better still, you can shop from home, give Neat Ideas a ring on 0800 500192 and get them to send you their paper catalogue. Home delivery is free on all orders over £30 but remember, these are really trade people, their prices need to have VAT added.

Remember, before you buy, it's a good idea to double-check the instruction manual for your printer and find out the recommended weight and finish for your model. After making your purchase, be careful how you store the paper so as not to damage it

Writing for **FORMAT**

The Spectrum is now 16 years old, the SAM nearly 9 and **FORMAT** is celebrating its 11th birthday. In that time an incredible amount has been written and published about our two favourite machines. You may think there is nothing more to be said or done - but you would be WRONG.

This special anniversary issue contains a reprint of the first ever introductory issue of **FORMAT** so you can see how the standards have risen over the years - and we want to continue putting out a magazine each month for at least another ten years - a magazine that is interesting, informative and bloody good value for money.

But we can only do that with your help. We need your contributions. Letters, items for Short Spot, questions for the Help Page, articles - both large and small, reviews, news.....

There are so many ways in which each of you can help us to keep **FORMAT** going well into the new millennium - but we do need your help and we need it NOW!

You don't have to be a brilliant writer to contribute, you just need something to say - and every one of you out there has something to say. It is our job to edit your contribution into shape for **FORMAT** - and that is a job we love to do. So come on, get writing, even the smallest items is better than nothing.

Please, do your bit to help, you can't expect others to contribute if you don't. Honest, it doesn't hurt, and you will have the pleasure of seeing your work in print - extra copies of **FORMAT** to pass on to relatives are available at discount prices <grin>.

Ring us if you need help or ideas.

A Spectrum In Your Palm.

By:- Guy Inchbald.

A personal organizer is not the sort of place you might expect to find a Spectrum emulator. But the Psion Series 5 is no ordinary organizer, rather it is a fully-fledged 'palmtop' computer. Because it is very different from most computers (and quite interesting in its own right), I will outline its main features before I get onto the Spectrum emulator.

Psion's Series 5 is one of that rare breed nowadays, a successful British computer made by a successful British company. Psion have been making pocket organizers for years, but the Series 5 is a remarkably powerful computer. For those who understand these things, it has a 32-bit RISC processor running at 18 MHz, 6 Mb ROM and 8 Mb RAM expandable to around 128 Mb (and rising) using a digital camera style Compact Flash card. The processor is the ARM 7500FE: the Series 5 is in fact a direct descendant of my Acorn A5000, which was until a few years ago Acorn's flagship workstation, and the Series 5 is both bigger and faster. Yet Tardis-like it folds up and slips comfortably into my coat pocket.

The keyboard is a miracle of design, sliding out as the screen unfolds to provide a beautifully-balanced arrangement big enough to type articles like this one on (though you need slim fingers to touch-type) yet small enough to enter, say, Ctrl P with one hand spanning the keyboard.

The screen is both wonderful and

awful. At 640 x 240 pixels it has the full width and about two-thirds the depth of VGA resolution, in 16 shades of grey. It is touch-sensitive - you can use a finger or the slender stylus which pops out from the side of the case. A full windowing user interface is provided, and using the touch screen is to mice what the jet engine is to propellers. Instead of pointing-and-clicking you just tap. To double-click, double-tap. To select an area, run your finger over it.

Truly wonderful! But... the touch membrane is tinted so the display is depressingly grey in all but the strongest overhead lighting. A backlight works well in dim conditions, but in between (i.e. most of the time) it is no more than useable, and even sixteen levels of grey seem over-optimistic. Awful! But useable - just.

Connection to the outside world can be made in various ways, but the important ones here are to a Windows PC and to a modem. With the Series 5 you get a CD containing PsiWin, a PC application which allows file transfer between your PC and Series 5 amongst other things. Free on Psion's website is MessageSuite, an integrated email/fax/web browser package, which you download and install via your PC.

Now I'm ready to turn to the Speccy side of things, But before I leave the Series 5 I have to mention OPL. This is Psion's programming language and bears more than a passing resemblance to SAM

Basic. The graphics are a bit different but DO loops, procedures, PRINT and LPRINT and so on are all there. The other main difference is that line numbers are missing: GOTO is there but you have to LABEL the line to go to. And there are new commands, for example to manipulate complex databases.

I should have mentioned that the Series 5 comes with a fully integrated suite of desktop and personal organizer applications including a relational database with its own flavour of SQL (to be honest, I use it mostly for shopping lists). And, there is Sketch, a Flash! type drawing program - you have to see a kid with a touchscreen before you will believe the enthusiasm!

Palmtop BV are a Dutch company specializing in software for Psions. They wrote a Spectrum emulator in C++ (the object-oriented version of C, whatever that means) just for fun, to see if it could be done. They recently upgraded it to Version 2.0, which is available free on the Internet at <http://www.palmtop.nl> for those of you who have internet access. So I downloaded it direct to my Series 5 using MessageSuite, and it installed without a hitch, adding its start-up icon to my list of Extras. It insisted on putting a second start-up icon in my c: drive root directory and won't work if I remove the link, which is annoying.

On start-up it displays Palmtop's copyright notice and a toolbar down one side. Tapping 'Open' in the toolbar replaces the Palmtop notice with a box containing the familiar Sinclair copyright notice on the last line. And you're away, pausing only to dig out your old Speccy to find the long-forgotten keypresses for AT, TO, TNT and so on.

The screen is only a couple of inches (5 cm) deep, with quite fine resolution, so

the Spectrum screen display is quite small. An option is provided to display it double-width, which is much more legible, or even custom size, which slows everything down. Below the display is a line of text showing the current speed of emulation, 48k or 256k mode, and screen refresh rate.

The emulation speed varies according to how much the Psion is struggling, which depends on a whole variety of things. So 4- or 16- level greyscale, display size, sound on/off, and some more arcane things are user-settable to optimize performance. To help speed things up, the emulator does not check whether the Spectrum code writes to the Spectrum ROM. This does not matter on a real Speccy, as the ROM is permanent, but in an emulator it can be overwritten. I have known programs which do this - they would probably crash the emulator.

The various facilities are accessed via the toolbar and a pop-up menu bar. Inverse and bright screen modes are also provided, to help cope with the problems of converting the Spectrum's 16 colours to the Psion's dodgy greyscale. They only partially succeed. Kempston is the only joystick provided, with options to map it to various parts of the Psion's input devices, such as the arrow keys. The emulator supports .SNA, .TAP, .Z80, .SCR and .POK file types. Where from, you might ask. Well, from the Z80em on your PC probably, transferred via Psi Win (or from Warm Silence's emulator on your Acorn, transferred via ArcLink or PsiRisc).

But if like me you have no PC at home, and no spare disc space on your Acorn (Your desktop machine is Millennium bug-proof isn't it? Why did you think I have a Psion and an Acorn but no PC?) you can find a wealth of Spectrum

software on the Web. Some sites are now at least trying to find out about copyright (Brian Gaff of BG Services seems to have persuaded them) but most of the material is clearly pirated and quite illegal. For this review I downloaded a copy of Jet Set Willy, of which I own an original tape. I had to unzip it using the s5zip shareware from RMRsoft.

Once installed it ran quite happily, and legibly enough in reverse video mode. I could speed it up to around 170% before the screen became too jerky to play. But the sound was chopped up into hits and sounded like a dalek with a sore throat whatever speed I chose, though it only slowed the game down by about 10%. This emulator is definitely not recommended for anything which relies on sound quality! But when you consider that the software is emulating hardware with a clock rate almost a quarter as fast as itself, the skill of the programmers is pretty impressive.

There is some useful information, such as a FAQ (Frequently Asked Questions) page on Palmtop's web site, but it is rather limited. The Series 5's on-line help is not supported. This is a shame, and holding copies of the web pages is no substitute.

In summary, Palmtop's emulator is basically sound with well thought out but limited frills. It is inevitably restricted by the fact that the Series 5 has a low clock speed, by modern standards, to conserve battery power, and includes a touchscreen, batteries, stylus and solid state disc in a package smaller than the original Spectrum. But there really should be support for the better documentation. Though it can never replace Z80em on a desktop PC it remains an impressive feat, and great fun!

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YOUR LETTERS

Dear Editor,

I have every sympathy with, and the same problem as, Dean Shepherd, having bought my SAM at the show in the Royal Horticultural Hall in Westminster where the SAM was first given a wide publicity. (When was that?) The result is dozens of discs, exactly as Dean, and a fine old shambles it is too.

My problem was lack of foresight, buying a good supply of discs, and just blundering ahead, filling or half-filling with any old program or project, but at least keeping correspondence files separately. I have been helped to a small extent by the modification and additions to the word-processor TAS2 made by Mike Haine, by which a micro copy of the directory of a disc is very simply printed out to the size of a disc label. I suppose that is much like your Disc Labeller program, Dean?

But this does not solve the problem which started so many years ago! If there still are beginners in the field I would urge them to think ahead. Work out a system to classify your savings to disc so that kindred subjects are kept together and stick to it. Believe me, the extra effort will be so much worth while; and remember Dean's advice - to use disc space more efficiently.

Some time ago I numbered my discs with the idea that perhaps I could keep a printed record to identify a program to a certain disc, but the problem remained, the snag being the program-titling's restriction to program or letter months previously, but care in this direction helps if one can retain a discipline of

classificationization (! thank you, Thatcher). So, returning to the cataloguing question - what does a cataloguer program do? We did have something of this sort with the discmag OUTLET, a directory of most of the numbers issued, which gave a decent result, but which seemed to me to present the same difficulty of 'what the heck am I going to look for?'

Well, that's the problem. I do not think the answer is as simple as a cataloguer program, but other views would be very interesting. I am toying with the idea of re-saving related programs to other discs, but must admit to lack of courage to start such a task. Another point, - surely the problem is even more crucial with a Hard disc; how do H.D. users deal with it? and what about PC users?

Yours sincerely, John Sanders.

As you can guess, I've got masses of discs around the office - most of which I do not really know the contents of. Imagine also the added headache of them being Spectrum, SAM, PC and the odd disc from other machines.

A program to help us keep track is what is needed, and I'm sure there is someone out there who can be encouraged to have a go. How about it folks, what ideas do you have for this sort of program? Write and tell us your thoughts (dreams) and maybe somebody will be encouraged to have a go. **Ed.**

Dear Editor,

Well, what happened to all the SAM companies at the Gloucester show? I can well understand that attendance may not

be possible all the time but the attendance was appalling. What is particularly galling is the amount of times the ordinary user has been condemned for not turning up only for the companies to do the same. If the Gloucester show is not on, the only alternative is the Northern Show, not much good for someone like me who lives 15 miles south of Oxford.

Also, SAM Clocks, what's happening? To your credit you haven't banked my cheque, but understandably I'd like to know when/if I'm going to get one.

Yours sincerely, James Loder.

The two who were missing this time were Quazar, who couldn't make it due to work commitments, and SAM Supplement who had booked a stand but let us down without any explanation (not for the first time I would add) and will not be on the invite list for next April.

It was however, good to see Colin McDonald back with all the Fred stuff *[still no news on a permanent solution to the Fred situation I'm afraid]*.

By the way, sorry I was missing for a large part of the show. A broken key in the car door lock, with just an hour to go to the show opening, had me running around Gloucester most of the day getting locksmiths to sort things out. Next time I'll stay put so I can talk to more people. **Ed.**

Dear Editor,

Thanks for the tip about the SimCoupe Emulator for the Apple Macintosh. Yes, it works in so far as it does not crash my Mac, and to exit it I only need to press 'Esc'. For me, this is an excellent start. But so far, this is as far as I have had time to get with it. Oh!, it didn't take very long to download, I should add. But what with a new machine to get to know the idiosyncrasies of, and to attempt to solve problems with Emulators at this stage is, I think you will agree, perhaps he a little bit ambitious right now.

That said, it seems that working out where all the keys are mapped to is the main obstacle. I seem to remember having the exact same problem to solve with SpecMaker and other Spectrum Emulators on my SAM.

Also, the documentation which comes with it is a little sparse and getting it to read SAM or Spectrum discs is a bit beyond me right now. It looks like some sort of prior conversion process to the format of some unknown computer (this is not a dig at IBM compatible PCs - I really don't recognise the format!) or maybe an intermediate stage is required first before the discs can be read.

I am probably wrong however. When and if I suss all this out, I will get back to you.

Yours sincerely, Dean Shepherd.

I am looking for someone to handle an 'Emulator' section because I know there are a lot of people interested in the subject. We did have something several years ago but at the time it died through lack of feed-back from readers. However, with the more widespread use of PCs these days, and the much greater interest in emulation of the Spectrum and SAM, I think now is the time to devote a regular section to the subject.

There is a review of a new emulator for the Psion Palmtop computers in this issue, but if anyone feels they can contribute more on the subject of Emulation, please get in touch. **Ed.**

Dear Editor,

Over the past few months, I seem to be receiving my **FORMAT's** well over a month late, for instance, on Saturday 27th June, I got my May 1998 edition of **FORMAT!** Is there anybody else out there as confused as I am about the publication dates of popular Magazines? OK, so **FORMAT** is going through a rough patch right now so it is a little behind in its issues. I am not going to criticise here as I have been with

FORMAT almost since the beginning and after all these years this is the only time **FORMAT** has come unstuck. And for good reason. So, I have not even thought about ringing Jenny.

What throws me though, is why do all the so called 'Glossy' magazines always come out the month before they say they do? This has always been the case. If I go into my loft right now and pick up the June 1987 copy of, say, 'Your Sinclair' I know with reasonable certainty, that I probably bought it in the second week of May that year. Weird!

Anyway, going back to May's edition of **FORMAT**. John Wase had asked me to resend the 'pull down menus' program as two lines of code apparently were missing. I am not certain what went wrong here but I was under the impression that the program was fully working when I sent it. I tested every program after copying them across. This would not be a problem ordinarily, but... I have run dry of DS/DD discs! I have to admit that I have been unable to get to the Gloucester Shows for the last two of them so I have not been able to get a fresh supply. What does John do with the ones we send him, anyway? Eat them!!? (Only kidding. He sends them to you, doesn't he, Bob. Enough said).

I think I have a better idea though. Perhaps I will dig out the original article, photocopy it or retype it. With a lot of the stuff I sent, the problem is that, although some of the programs are designed to convert Spectrum code files to Basic Data Statements, I have had hells trouble getting them to work (in actual fact I haven't).

I was rather hoping you, or a reader, might have better luck with them. There is no point me hanging on to them if someone can get them to work. I'm sure there must be some Spectrum enthusiasts just itching to get their intellectual teeth into a problem like this. Why not put up a sort of prize? I have

tried to find the original articles and, where I have found them, they were not very enlightening after all this time, I'm afraid. At least not for me, so I will try to find them again and copy them for you. Also, I have a follow up article which is missing.

I regret that my Spectrum and SAM have been moth balled for the time being. This is due entirely to lack of space at home, and not to any lack of interest on my part. I am also worried about my Spectrum's keyboard membrane wearing out. I have had it twelve years now so its second keyboard membrane just has to be about to give out. Hence my interest in PowerPC emulators as a sort of reincarnation, if you take my meaning

Yours sincerely, Dean Shepherd.

We are still running behind but doing all we can to catch up. And yes, I've never understood why the high-street mags are a month ahead on their cover dates.

Converting a code file to data statements is not the easiest of tasks on the Spectrum (it is far easier on the SAM as you have the KEYIN command). But I will look at getting an article together on the subject for a future issue. I'm sure John (and I) look forward to any new contributions you can make. **Ed**

Dear Editor,

Could you let me have a list of the POKE@ commands for the DISCiPLE/PLUS D please.

Yours sincerely, Alan Cox.

Jenny has sent a photocopy of the original article, from way back in volume 1 issue 2, to you. I hope it will have answered all your Questions. **Ed.**

Letters may be shortened or edited to fit on these pages although we try to edit as little as possible.

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THE MILLENNIUM FILES

By:- Jenny Bundock.

Here I go again, bringing you all the latest news on the Millennium Bug - don't forget this is just a brief recap, if you would like the full version of the *Millennium Files*, they are published monthly in FORMAT PC.

Have you seen the commercials on the telly? What with only a year and a bit to go before the bomb goes off, it looks as if it's still proving quite a task to get the message across to smaller businesses. But even more difficult is alerting the general public.

Although there is awareness on a world wide scale, the problem really is that there are so many different layers to the year 2000 problem, each layer has to be explained fully to really get a true picture of what we are up against.

Gwyneth Flower who is the director of Action 2000 is planning on sending every household in the country a civilian's guide to the year 2000 bug. She's suggested sending a mailshot to every UK resident to make sure that people are aware of the facts, and not worried by scaremongering stories. It follows fears over the affect the hug may have on essential household appliances with in-built digital clocks, from video recorders to microwave ovens.

Here is a list of critical building operations that contain embedded chips that could be affected by the millennium bug: HVAC (Home ventilation and air conditioning) controls, boilers, chillers, flow-meters, filters, thermo-stats, leak

detectors, underground storage tank monitors, lights, generators,. elevators, alarms, smoke detectors, sprinklers, telephone's fax machines, ATMs (Automatic Telling Machines), postal meters, building access systems, parking access systems, and security systems.

Prime Minister Tony Blair took the problem very seriously back in March, and in his speech at the 'Millennium Bug Conference' in London organized by Midland bank here is what his plans were.

- Training programme worth up to £30m to train 20,000 'bug busters'.
- £10m donation to the World Bank to kick start international programme to help developing countries.
- Increase in funding for Action 2000 from £1m to £17m, with more to come if needed.
- Urgent efforts from central government to co-ordinate private/public sector co-operation.
- Proposal to set up a world summit of year 2000 experts.
- Business links to train staff to provide top quality advice for small businesses.
- All local authorities urged by government to set up their own year 2000 task-force.

Robin Guenier, head of Taskforce 2000 has said that all these plans have come too late, and with only a few months to go he says we are now looking at an 'emergency situation'.

Action 2000 have a programme of

seminars taking place across the country to continue to preach the gospel. Their recent survey on small to medium sized businesses, found that, of those firms yet to tackle the bug, 83% don't intend to do so at all. In most cases, this is because they simply don't believe it will affect them.

The Government is also concerned that the public might be panicked into hoarding petrol, stockpiling food or withdrawing savings from their bank accounts (through ignorance of the problem) as the millennium approaches. If just one bank customer in three withdrew an additional £300, it could cause a crisis because the Bank of England would very rapidly have to find another £6 billion - and they might not be able to!

A US year 2000 expert, Tony Keyes, is offering a \$10,000 reward to sceptics who can prove the year 2000 will be a non-event. He says "I want to dispel the myth that the date change will not be a problem for society. We have wasted far too much time debating whether or not Y2K is just market hype. I want to put my money where my mouth is".

This example proves that it's definitely not a non event. A little while ago, a source at a north London hospital disclosed that an operation had to be postponed, because the computer system told doctors that the swabs, needed during the surgery, were out of stock. In fact there were plenty available.

The confusion occurred because the swabs had a use-by date early in the next millennium. Instead of reading the date as 2001, the computer could recognize only the last two digits and believed the date to be 1901.

A survey of 10,000 electronic locks and safes found that many may not be able to

cope with the year 2000. As a result, thousands of doors and safes could unlock at the stroke of midnight as their safety over-rides cut in.

The safety features are supposed to stop people being trapped, for example, in a burning building, but could leave anywhere with an electronically controlled lock, open to opportunist burglars. The consultants who carried out the survey have urged people to use traditional locks and police forces are considering drafting in extra people to deal with any problems. A frightening example could be that some prison doors may unlock on the 1st January 2000 because of their computer control systems getting confused over the date. Rather than keep going, it will simply shut down, thereby opening all the doors and releasing all the prisoners.

Not all date change-related failures are related to technology. A large North American organization took the matter very seriously and put in place a plan to build an inventory which identified and tested year 2000-sensitive devices.

These devices were tested and those that passed were assigned a serial number and labelled with a sticker to indicate their compliance. Unfortunately, the labels were not tested to see if they were sticky-compliant so they fell off and the whole process had to be repeated!

Finally, gravestones are the latest products to be hit unexpectedly by the Year 2000 problem. Apparently it is common practice to inscribe the first two digits of the year of death in advance, particularly when a husband and wife elect to share a gravestone, but one spouse is still alive. The trouble is, all those tombstones have been inscribed with the figures '19'.....

I'll be back soon.

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