

# SAMSprite

Design sprites and animation for your games and utilities. Results can be easily used from BASIC, SAM C, Machine Code or GamesMaster.

**Carol Brooksbank, June 1996 FORMAT :-**

"I found this a very easy program to use, and certainly, mask creation was the easiest I have ever come across... The handbook is clear and easy to follow, and the program options are straightforward to use. It is a first class introduction to the world of sprites"

256 frames in each file

Fast, full-screen animation

Rotate and Scroll

Colour cycling

Optional Mouse Support

Fill, Invert, Mirror and Flip

Fade and Bright facilities



Only £9.99 from FRED Publishing,  
40 Roundyhill, Monifieth, Dundee,  
DD5 4RZ Tel: 01382 535963

Vol.10 Nº5.

January 1997.

## FORMAT

THE HOME OF Z80 COMPUTING



The Truth Is Within

£1.75 (UK R.R.P.)

ISSN 0963-8598.

# CONTENTS

Vol.10 N°5.

January 1997.

♦ News On 4 .....	4
♦ The Editor Speaks .....	6
♦ Short Spot .....	7
♦ FREDing Around .....	17
♦ SAM Emulation .....	21
♦ Your Letters .....	23
♦ Small Ads .....	26
♦ Format Readers Service Page .....	27

**Stop Press:** Answer to Xmas Crossword that was printed in last month's issue will be given next month. *Ed.*

## THIS MONTHS ADVERTISERS:-

FORMAT (SAM REPAIR SERVICE)	26
FRED PUBLISHING	Back Cover
MIRA SOFTWARE	20
NORTHERN SPECTRUM & SAM SHOW	6
REVELATION SOFTWARE	12
S.D.SOFTWARE	2
STEVE'S SOFTWARE	16
WEST COAST MAIL ORDER	22

**FORMAT ISSN 0963-8598**

© Copyright 1997 FORMAT PUBLICATIONS. All Rights Reserved.

No part of this publication may be reproduced, in any form, without the written consent of the publisher. The purchaser of this magazine may copy program material published herein for his or her own personal use and provided that any such programs are erased if and when the purchaser disposes of this magazine in any way. While every effort is made to ensure accuracy in FORMAT the publisher will not be held liable for any errors or omissions.

FORMAT is published by FORMAT PUBLICATIONS.

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

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

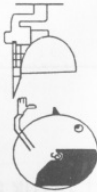
<b>Hard Bits:</b>		<b>For:</b>
IDE Drive Interface:-	£60.00p	Sam
IDE Data Cable:-	£9.95p	Sam
Drive PSU & Case:-	£25.00p	
Uni-Dos:-	£19.95p	Disciple/Plus D
<b>Soft Bits:</b>		
Speamaker:-	£9.95p	Sam
PC Suite:-	£19.95p	Sam
Spefile+:-	£9.95p	Plus D/+3
Fractal Collection:-	£4.95	Plus D
Midi Sound:-	£22.50p	Plus D/+3
<b>Postage:</b>		
Hard Bits £1.00 per order, Soft bits £0.50p per order. 3" discs add £2.00p to price.		

Replacements/Upgrades etc. Price on Application

## S D Software

70, Rainhall Road, Barnoldswick  
Lancashire, BB8 6AB

New Email Address: Nevilley@ndirect



# NEWS ON 4

## NSSS #2

Wetherby is set to host the 2nd Northern Spectrum & Sam show on Saturday the 22nd February.

The first show, back in September, was very successful and the organizers hope to build on the last show's attendance and are also looking to squeeze in another couple of stands if they can.

Wetherby is easy to reach from large parts of the North of England being situated between Leeds and York and well served with main roads.

## MORE CHANNEL 5 PROBLEMS

Latest news on the Channel 5 front is that the new field engineers (those that have been employed to 'adjust' TV receivers in certain areas of the county) have been issued with a new device which will cause more than a little bother for some people.

In an effort to cut costs, the Channel 5 people have come up with a switchable in-line filter, which they will fit to TVs where the owner's video recorder cannot 'easily' be adjusted away from the frequency Channel 5 is using in the area. The problem is that the device has to be switched over in order to watch the video and, at least in most cases, it means you will not be able to record C5 programs off air.

To many who have no technical knowledge, this 'fixer' will be viewed as a marvellous gift from Channel 5. However, - it is hardly a practical fix I think you will agree and seems to me to be a shirking of the responsibility that Channel 5 undertook as part of its franchise - namely to adjust peoples equipment to work with the new station.

## SWEET 16

The computer that really started the Home computer revolution will be 16 this year. The ZX81 may only have had one kilobyte of RAM and black and white display when it was launched in 1981, but its impact on the world is still felt even today.

While many of the later hardware developments which led to the Spectrum and SAM owe a lot to the pioneering work done on the ZX81, it is without doubt the number of budding young programmers it gave rise to for which we have to give our biggest thanks. Without the ZX81 many would not have afforded to buy a computer (your editor included - I bought mine with the money I saved by giving up smoking) and I believe that without the ZX81 there would not have been the talented people available for the Spectrum when that came out a year later.

To commemorate the ZX81's 16th Birthday, we are looking for someone to demo their ZX81 at the April show - get in touch if you can (we have a few extra bits we can help you with).

## SAM VOUCHERS

The New Year sees an added bonus for new SAM owners. All new machines will now be shipped with a set of money off vouchers which can be redeemed when purchasing software from either FRED Publishing or Revelation Software. £50 in vouchers are included in all Elite (£199.95) and Reconditioned SAM (£139.95) packs from the start of 1997. West Coast believe this is a better option than giving away free software as it allows the new owner a choice.

## The Editor Speaks

Happy New Year to everyone from Jenny and I, hope you had a good Christmas.

As usual, this issue has to be produced in a far shorter period of time than a normal monthly **FORMAT**. Strange as it may seem, that Jenny Bundock always wants to have time off over Christmas - I offered to let her go half an hour early on Christmas day but no, she insisted she was not coming back until the 2nd January. So, as you can guess, it's a rush, and coupled with that I've still had a fair bit to do recovering from that virus infection on the PC last month. Hopefully everything will be back to normal next month.

First item this month is the date for the Spring Show here in Gloucester. Saturday the 19th April is the day, put it down in those brand new diaries you got for Christmas and make sure you are there. We hope to have several new things on display so make sure you don't miss the show - you have plenty of notice so the only excuse I will accept for not attending is a doctor's certificate showing major incapacitation.

Just before Christmas I was talking to a member on the technical hotline and he raised a point that I had not thought of before. He is a Spectrum owner, like many of you, and had only been reading **FORMAT** for a couple of years. The point he made was that he had missed all the early information on SAM, and that these days everything that appeared in **FORMAT** seemed to assume that everyone knew what a SAM was, what it could do, and how it was different from the Spectrum. Valid point, well at least I came to think so as I thought about it.

Could there be a way of correcting this shortcoming? Well I don't know, I don't want to simply reprint what has been published before, if I started repeating old articles in **FORMAT** it would be unfair on readers who have been with us from day one (and there are still quite a few of you out there). So, over to you - could someone come up with a new article that (in effect) reviewed the SAM for people who have not seen it before? Imagine you are writing to a friend to persuade him to change to a SAM. We will publish more than one such review if they are good enough because I've no doubt there are many different angles you can take in such a review. Go on, give it a go.

Membership rates are set to rise. I warned you all last year that it would be necessary, but don't worry, they won't affect existing readers yet. From the 1st Feb the UK rate will rise by £3 to £15 per year. Overseas surface mail will go up by £4 to £20 but for the moment overseas airmail will stay at £25. There are a couple of other changes to the overseas set-up but I will cover that in a separate letter to overseas members next month.

These new rates will only apply this year to new members. Existing members will still be able to renew at the current rates until at least the end of 1997 - so as I said, don't worry about it now.

And finally, all being well (and barring 6 foot snow drifts) we will be at the 2nd Northern Spectrum & Sam Show on the 22nd Feb - see the advert in this issue for more details.

Until next month.

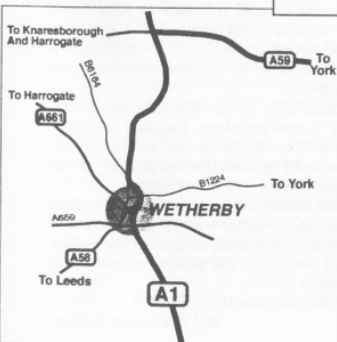
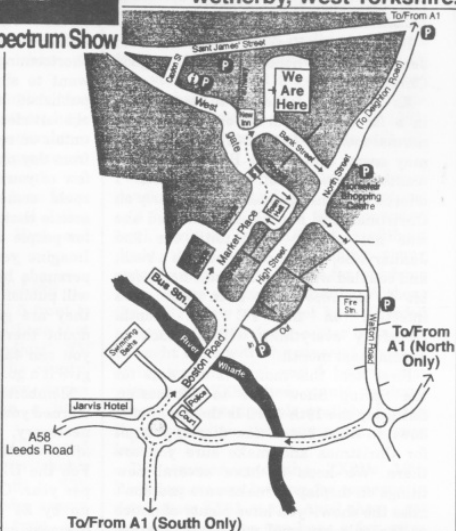
Bob Brenchley, Editor.

### The Second Northern SAM & Spectrum Show

Due to the success of our last show, on the 22<sup>nd</sup> of February the second Northern SAM & Spectrum Computer Show will take place in Wetherby, a town between Leeds and York and just off the A1. All the major SAM and Spectrum companies are expected to be there including **Format, Fred, Crashed, Alchemist Research, Sintech, Persona, SD Software**, and many more. There's also our very popular **Sell, Swap & Buy** stand. Doors open to the public at 10:30am and close at 4:30pm.

#### GETTING TO THE SHOW

For people coming North, simply take the first turning for Wetherby, then follow the map on the right (you'll end up at the left-hand roundabout). If you're travelling South, however, you should take the junction which is signposted for the **A58 to Leeds**. Once at the roundabout which is on the left-hand side of the map above, take the exit to Wetherby (which should also have an NSSS sign). Once over the bridge, take the first left. Follow this road round, go over the pedestrian



#### PARKING

There is limited parking behind the hall itself, but there are many other car parks, most of them free, within a few minutes walk from the hall. Turning right after the bridge will take you to a free 200-space car-park, and the two car parks which are to the left of the hall on the map are also free. All of these car parks are within a minute's walk from the hall.

Entry is charged at £1.50 for adults, under 10's are free. Advance tickets available for £1.00 from the address below. Doors open 10:30am - 4:00pm.

For stand bookings or information on public transport, places to stay, etc. then write, enclosing an SSAE, to: **NSSS, 123 Potternewton Lane, Chapel Allerton, Leeds, LS7 3LW.**

# SHORT SPOT

## YOUR HINTS, TIPS AND PROGRAMMING IDEAS

Edited By:- John Wase.

Happy New Year to you all. And an apology! (As flamin' usual - **Ed.**). I should have included this game in the Christmas issue, but I didn't have room.

It's from Simon Turk (from whom we have heard quite a lot in recent issues) with a Tonbridge postmark and a silly cartoon on the stamp. And inside, there's a definitive answer to Mrs Taylor's troublesome program (mark one) lines that caused so much fuss last month. R got in as an extra somehow. PRINT #1 prints to the bottom of the screen to leave maximum room for the wordsearch itself. Simple. Thanks Simon. After all, you should know; you wrote it!

But we digress. The game (brace yourself, Wase). You see, it's like this. Simon's one of these little devils with imagination. And cheek. You'll see! Here's the story line. Rudolph-the-Red-Nosed-Reindeer, Santa Claus, John Wase and a Glass of Sherry (don't know why they called him that) are all standing on the South bank of the River. The idea of the game is to row them across to the North Bank (which is in Bishampton, and therefore represents everlasting perdition), so that they all end up standing there. Trouble is, Rudolph's fed up with Crimbles, and will therefore maul Santa if left alone with him for more than five milliseconds, and Santa will drink the sherry if they are left together for more than five microseconds since this Christmas has left Santa a raving alcoholic. What Wase does about all this is, fortunately, not disclosed. "Hope you like the game," says

Simon. And so do I! Here it is...

```

10 REM Christmas Conundrum by
   Simon Turk
15 MODE 3
20 DIM O$(4,10): LET O$(1)="J
   OHN WASE": LET O$(2)="RUDO
   LPH": LET O$(3)="SANTA": L
   ET O$(4)="SHERRY": LET MOV
   ES=1
30 DIM I(2,4): FOR I=1 TO 4:
   LET I(1,I)=1: NEXT I: DIM
   b$(2,5): LET b$(1)="SOUTH"
   : LET b$(2)="NORTH": LET p
   =1: DIM b(2)
40 CLS
50 PRINT AT 0,0;"YOU ARE ON T
   HE ";b$(p);" BANK"
60 PRINT AT 2,0;"ON THIS BANK
   THERE IS:-"
65 PRINT
70 LET fl=0
80 FOR I=1 TO 4: IF I(p,I)=0
   THEN GOTO 100
90 LET fl=1: PRINT o$(I(p,I))
100 NEXT I
110 IF fl=0 THEN PRINT "NOTHIN
   G"
120 PRINT AT 9,0;"IN THE BOAT
   IS:-"
125 PRINT
130 LET fl=0
140 FOR I=1 TO 2: IF b(I)=0 TH
   EN GOTO 160
150 LET fl=1: PRINT o$(b(I))
160 NEXT I
170 IF fl=0 THEN PRINT "NOTHIN
   G"
180 PRINT AT 15,0;"PRESS 1 TO
   MOVE SOMETHING INTO THE BO
   AT"
190 PRINT "PRESS 2 TO MOVE SOM
   ETHING OUT OF THE BOAT"
200 PRINT "PRESS 3 TO ROW THE
   BOAT TO THE OPPOSITE BANK"
210 IF INKEY$="1" THEN GOTO 10

```



```

00
220 IF INKEY$="2" THEN GOTO 20
00
230 IF INKEY$="3" THEN GOTO 30
00
240 GOTO 210
1000 REM MOVE IN
1010 LET t=0
1020 INPUT "TYPE IN WHAT YOU WA
NT TO MOVE INTO THE BOAT T
HEN PRESS RETURN";in$
1030 GOSUB 9000
1040 IF t=0 THEN PRINT : PRINT
"There is no ";in$;" in th
is game": PAUSE : GOTO 40
1050 FOR l=1 TO 4: IF l(p,l)=t
THEN GOTO 1080
1060 NEXT l
1070 PRINT : PRINT "The ";in$;"
is not on this bank": PAU
SE : GOTO 40
1080 FOR n=1 TO 2: IF b(n)=0 TH
EN LET b(n)=t: LET l(p,l)=
0: GOTO 40
1090 NEXT n
1095 PRINT : PRINT "You have ov
erloaded the boat.It sinks
.Silly Billy!": PAUSE : RU
N
2000 REM MOVE OUT
2010 LET t=0
2020 INPUT "TYPE IN WHAT YOU WA
NT TO MOVE OUT OF THE BOAT
THEN PRESS RETURN";in$
2030 GOSUB 9000
2040 IF t=0 THEN PRINT : PRINT
"There is no ";in$;" in th
is game": PAUSE : GOTO 40
2050 FOR b=1 TO 2: IF b(b)=t TH
EN GOTO 2080
2060 NEXT b
2070 PRINT : PRINT "The ";in$;"
is not in the boat": PAUS
E : GOTO 40
2080 FOR n=1 TO 4: IF l(p,n)=0
THEN LET l(p,n)=t: LET b(b
)=0: GOTO 4000
2090 NEXT n
3000 REM ROW BOAT
3010 IF b(1)<>1 AND b(2)<>1 THE
N PRINT : PRINT "You can't
row the boat without a ma
n": PAUSE : GOTO 40
3020 LET moves=moves+1
3030 IF moves/2=INT (moves/2) T
HEN LET p=2: GOTO 3050
3040 LET p=1
3050 PRINT : PRINT "You row to
the ";b$(p);" bank": PAUSE
3060 GOTO 4000
4000 REM CHECK MOVE
4010 LET total=0: FOR l=1 TO 4:
LET total=total+L(2,L): N
EXT L
4020 IF total=10 THEN CLS : MOD
E 4: PRINT AT 10,0;"Well D
one.Now everybody can have
a nice christmas": STOP
4030 IF moves/2=INT (moves/2) T
HEN LET p=1: GOTO 4050
4040 LET p=2
4050 LET t=0: FOR l=1 TO 4: LET
t=t+l(p,l): NEXT l
4060 IF t=7 THEN PRINT : PRINT
"While you were away Santa
guzzled the sherry": PAUS
E : CLS : RUN
4070 IF t=9 THEN PRINT : PRINT
"While you were away Santa
guzzled the Sherry, only
to then be mauled by Rudol
ph": PAUSE : CLS : RUN
4075 IF t=5 THEN PRINT : PRINT
"While you were away Rudol
ph mauled santa": PAUSE :
CLS : RUN
4080 IF moves/2=INT (moves/2) T
HEN LET p=2: GOTO 4100
4090 LET p=1
4100 GOTO 40
9000 REM TABLE
9010 IF in$="john wase" THEN LE
T t=1
9020 IF in$="rudolph" THEN LET
t=2
9030 IF in$="santa" THEN LET t=
3
9040 IF in$="sherry" THEN LET t
=4
9050 RETURN

```

another source of supply; moreover he's even more prolific than I'd imagined. Wase is (as usual) covered in confusion.

Next, Roy commends Miles Kinloch's excellent space-saving notes, but mentions that during typing in his Spectrum 'Solitaire' program, he finds problems because it is translating USR as UDG and INK as PEN and putting in extra numbers after PEN, like PEN 16. Bjorn Nyberg, too, writes similarly: his Line 8910 has somehow transmogrified itself from INK 9 to PEN 17. Damn. We still have a problem.

The mechanics of putting this together are complicated, as you might well guess. Bob puts **FORMAT** together as pages in 'Ami-Pro' on a PC-compatible. I keep a copy of Ami-Pro solely for typing SHORT SPOT. When it comes to the programs, I leave a blank bit with some stars and the name of the SAM or Spectrum program, and after I've formatted a disc on SAM,

copy SAM and Spectrum programs alike onto this disc; I then make a further copy. So a copy of the text is filed on a PC-compatible disc, while a different SAM-disc has the programs, all in the SHORT SPOT disc filing box in Bishampton, while two discs, one a SAM disc and the other a PC-compatible Ami-Pro file are winging their way to Gloucester.

There, Bob loads the Ami-Pro file into his PC-compatible, and the program files into SAM. An Andy Wright conversion program converts any of the Spectrum programs into SAM format. PC-suite (from SD Software) then converts the SAM programs to text before changing them all to PC format, and the programs are cut and formatted to fit into the Ami-Pro text. So what is going wrong?

Well, as you can see, I use MasterBasic on SAM to format my discs and collect all the programs together. You'll never guess, but there's a problem; if the first

file is a Spectrum file, it won't be read correctly. So the first one is always saved as a dummy file. So it isn't that bug.

As the programs are now all in SAM format, a special AmiPro macro is used on the Spectrum programs to change them back, as it were, to Spectrum programs. This should change PEN back to INK, remove the extra space at the start of each line (SAM has 5 spaces for the line-number against the Spectrum's 4) and a few other bits and bobs. We now think the macro has got itself sort of not quite right somewhere. Superficially, it looks OK, so it's one of these intermittent, subtle, jobs that is giving us grief. I'll report further when we've investigated some more.

So now you know how it's done. Please bear with us, we think we've debugged it this month!

Next, I still have a bit from Roy with some rather nice snippets. Roy investigated the Spectrum pattern program in November's **FORMAT**; the bottom of page nine, and got interested. For instance, one of the things you can do is change the numbers in line 20, but it's all too easy for the machine code to stop with the error message 'integer out of range'. So Roy, being Roy, wrote a small routine, 'arcinvest' to get the computer to show what's happening. The part circle DRAW goes off the screen for some critical values of whole multiples. For example, 0 to 17 are OK, 18 not, and so-on, as one progresses. The first two values of the DRAW instruction are stated as representing the coordinates x and y of the end of the DRAW, but in fact add or subtract to the PLOT coordinates, depending on the value of angle, the third figure in the instruction. It seems clear that these end values have a rapid rate of change at certain critical values of angle. It depends on the calculated radius of arc. Try a multiple of

1.8, followed by 1.9. A pattern is drawn when the angle is greater than twice pi, as it is in the 'pattern' program, and the author must have adjusted the values in line 20 to avoid the pattern going off the screen. Try it!!!

```
1 REM Investigate part-circle
  DRAW
2 REM On ZX Spectrum+ by B.C.
  R.Burford 171196.
10 LET iv=PI
20 INPUT "Multiple: ";m
30 LET an=iv*m
40 PRINT #0; AT 0,0;"Angle= ";
  an;"r. Mult=";m
50 PLOT 65,80: DRAW 20,20,an
60 PRINT #0; AT 1,0;"Any key:"
  : PAUSE 0
70 CLS : GOTO 20
```

Finally, just to keep you amused (and again our apologies that it couldn't be included in last month's issue), Roy writes that 'strangpats' is an old routine he came across some years ago. It's pretty, and must get the screen memory in quite a knot! Roy thought it would be amusing for Christmas time, and so do I. As it's still that time of year, and the likelihood of being frozen in is clearly with us as I write, you could do with something which makes strange patterns to keep you happy! Here it is: just the job! Remove line 170 for a faster display; type the lines below for instant happiness in the freeze!

```
5 REM James Southgate.  Stra
  nge patterns.  Your Comput
  er.  December 1982.  p109.
10 REM Revised to ZX Spectrum+
  128K by B.C.R.Burford 19/0
  2/91.
30 PRINT "Enter range of colou
  rs(1 to 7): ";
40 INPUT c$: PRINT c$: FOR z=0
  TO 50: NEXT z
50 IF LEN c$>1 OR CODE c$<49 O
  R CODE c$>55 THEN GOTO 1
60 LET c=VAL c$: CLS
70 PRINT #0; AT 1,0;"Colour ra
  nge=0 to ";c; AT 2,0;"Press
```

```
any key' to stop"
80 BORDER 1
90 LET y=INT (RND*70)+100: LET
  x=INT (RND*60): LET z=INT
  (RND*3)-INT (RND*6)+1
100 FOR r=y TO x STEP z
110 PLOT r,r: DRAW 0,175-2*r
120 DRAW 255-2*r,0
130 DRAW 0,-175+2*r
140 DRAW -255+2*r,0
150 INK INT (RND*c+.5)
155 IF RND>.85 THEN OVER 0: GOT
  O 170
160 OVER 1
170 BEEP 0.05,r/7
175 IF INKEY$<>"* THEN INK 0: B
  ORDER 7: OVER 0: STOP
180 NEXT r
200 GOTO 90
```

Many thanks Roy: I'm so grateful for all your contributions, as are other readers. SHORT SPOT would indeed be thin without them.

While I remember, Roy was commending the excellent space and memory-saving notes by Miles Kinloch of Edinburgh, while reminding me that our macro was still playing up! Miles, you will recall, has invested much time and effort into finding obscure but very irritating bugs in Betados. He now writes to tell me that one can always discover one more bug if one looks hard enough, and he's found it. It must be a particularly resistant bug, well immune to the keating's-powder-like effects of Miles' recent enormous 'Betafix' to end all bugs forever program, but he's found one! George Siougas of Greece wrote about it - he's discovered it when using a PLUS D converted copy of 'Art Studio', and Miles mentions that he'd like to thank him for bringing it to his attention. Miles immediately sprang into action, and isolated a faulty Command Code, this time RST 8, DB 59, the instruction for finding a file. The problem will occur only when a disc has been formatted for an extended

directory, and only with programs that call the DOS from machine code. The command code executes the original G+DOS routine, but, since the latter is designed for a standard-size directory, a 'not found' error results if the file is not among the first 80. Fortunately, Betados does incorporate a routine to circumvent this: it's just that Andy Wright forgot to call it! The cure is therefore a simple matter of POKEing in the new address:-

```
10 CLEAR 39999
20 LOAD d1*+sys Beta* CODE 409
  60
30 POKE 44974,30: POKE 44975,5
  3
40 SAVE d1*+sys Beta* CODE 409
  60, 6850
```

It's important to note that this must be done only *after* amending the code with November 1996's 'Betafix' by Miles, featured in that month's SHORT SPOT, the reason being that in the original Betados, the code in question would be at quite a different location, and a pretty mess would result!

Finally, and this is, as our transatlantic cousins would say, real hot from the press, a little biro note on the back of Miles' envelope mentions that George had written with the information that the Code 59 bug affects 'Campion' and 'Astrum', too!

Many thanks, Miles.

Now over to Ettrick Thomson of Woodbridge, Suffolk, active as ever, who mentions two things from the November issue.

The first is that the peculiarity of the Spectrum and SAM routines that lead to the patterns in the program 'patterns' have been dealt with before in respect of a program by Lee Willis called 'Quirk' in SHORT SPOT, September 1993. October 1993 had Ettrick's explanation, repeated shortly here. So Roy, I (and others) have, as usual, been busy quietly re-inventing

the wheel!

The 'curve' drawn by the command DRAW x,y,z is simulated, as is usual, by a series of straight lines, but the number of lines is limited to 252, which is perfectly adequate for the usual sort of curve, subtending an arc of, say, up to 360 degrees, i.e. a circle. But if z is very large, so that the true arc would be a large number of coincident circles, the straight lines that are drawn, which are chords of these true circles, become obvious. Matthew Westcott (see later) also makes rather similar comments.

The program 'kaleido' extends 'k/lido' so that each random point is replicated 5 times. The screen is divided into 6 sectors, each sector containing the same pattern of points, with appropriate reversals, corresponding to reflections in two mirrors, one along the positive x-axis and one extending from the origin at 60 degrees to the x-axis. It is a SAM program, for the graphics scaling (line 30) allows the origin to be put in the centre of the screen makes programming easier.

Here it is...

```
10 REM kaleidoscope: Ettrick
  Thomson
20 PALETTE 8,38
30 LET xos=128,yos=87
40 FOR i=1 TO 30
50 LET r=1+83*RND,a=(1+59*RND
  )*PI/180
60 LET x0=r*COS a,y0=r*SIN a
70 LET k=SQR 3,z1=k*y0,z2=k*x
  0
80 LET x1=(z1-x0)/2,y1=(z2+y0
  )/2
90 LET x2=-(z1+x0)/2,y2=(z2-y
  0)/2
100 PEN 1+RND(14)
110 disp x0,y0:disp x0,-y0
120 disp x1,y1:disp x1,-y1
130 disp x2,y2:disp x2,-y2
140 NEXT i
150 PAUSE : CLS #
160 STOP :
170 DEF PROC disp a,b
```

## SAM GAMES AVAILABLE FROM REVELATION

### SOPHISTRY

Our latest & BEST licenced game. Originally produced for the Spectrum by CRL, and now brilliantly converted for SAM, Sophistry is a game that is big, perplexing, colourful, frustrating, musical, bouncy, and above all DIFFERENT (and it even has the Spectrum version built in so you can take a trip down memory lane).

£9-95 (£8-95 to INDUG members)

### TNT

Written by industry mega-star Matt Round - A game packed with humour, colour, sound and above all ACTION!

Loosely based on Bomb Jack (the game SAM owners have most requested over the years). As well as the normal one player game, TNT has gone one better by giving you TWO player action - competing against each other, in full glorious technicolour - at the same time. It even has a novel feature in a SAM game - a High Score Table, how many others have that?

Avoid the meanies, collect the bonus points, Jump, Hover, Fly - what more do you want???

£9-95 (£8-95 to INDUG members)

### NEW ELITE NEW

The legendary game at last available on SAM disc. Using the code of the Spectrum version, long thought the best after the original BBC version, this game is a must for everyone who loves action and adventure. Full manuals, story book and packaging.

£14-95 (£11-95 to INDUG members)

### GRUBBING FOR GOLD

GRUBBING FOR GOLD - the most advanced, the most playable, the most enjoyable quiz game since the legendary Quiz Ball. They said it could not be done - they said bringing a TV quiz show to SAM would not work. Well let them eat their hearts out because YOU GOT IT....

Hundreds of questions, on a wide variety of subjects at levels to suit most people, it includes a question editor so you can create your own sets of questions. This is the game you can never grow out of.

£9-95 (£8-95 to INDUG members)

### More Games Coming Soon

Send SAE for full list of available games.

## REVELATION FOR THE VERY BEST IN SERIOUS SOFTWARE

~THE SECRETARY - The most advanced word-processor for SAM, powerful, versatile and easy to use. NEW Version 1.5 Available Now - The BEST just got better £14.95 (INDUG £12.95)

~COMET Z80 ASSEMBLER - The SAM assembler many professionals use, yet easy enough for the beginner - so why settle for second best? £29.95 (INDUG members £21.95)

## DRIVER

The Graphical User Interface for SAM

Comes complete with many built-in utilities and ready to run applications. Full manual and a disc-based tutorial. DRIVER gives you the ease of use only found on big office computers before. So easy to use yet so powerful. Fantastic Value £29.95 (INDUG members £24.95)

Now Includes FREE Copy Of DRIVER's Extras Disc 1

DRIVER's Extras Disc still available for existing users at £5.95 (INDUG members £4.95)

SCADs PD Yes, at last, we are pleased to re-release SCADs - the arcade game development system for SAM. Previously sold by Glenco at £24.95 we have now placed the software into the Public Domain so the disc costs you Only £2.50. The full manual (over 200 pages) is also available for £12.95 (overseas please add an extra £1 to postage rates below because of weight)

\* All prices include UK postage and packing (Europe please add £1, other overseas please add £2).

\* Payment by UK cheque (made payable to Revelation Software), PO or cash. Sorry but we can't accept orders by Euro-cheque or Giro.

\* Please Quote INDUG membership number clearly on order if claiming discount.

\* Send orders to:-

**Revelation  
Software**

Revelation Software, 45, Buddle Lane, Exeter, EX4 1JS.

```
180 PLOT a,b: PLOT a,b+1: PLOT
    a+1,b: PLOT a+1,b+1
190 END PROC
```

Ettrick comments that the real kaleidoscope had bits of coloured glass of different shapes and sizes between its mirrors, and as you rotated the tube, they took up different positions, creating different patterns. It would be nice to simulate that: difficult though! Sprites all over the place?

Many thanks Ettrick.

Ettrick took the easy way out, but Matthew Westcott of Chorley has (bless him) managed it on a Spectrum. As Matthew says, it's rather slow, because it has to do loads of SIN and COS calculations. Again, he's used a similar approach - a six sided kaleidoscope where polar coordinates are defined with 'r' the distance from the middle of the screen and 'a' the angle. The functions are defined in line 10, and 20 converts these into normal coordinates. The six points it plots are, like Ettrick's, angles a, 60-a, 60+a, 120-a, 120+a, 240-a, 240+a, and -a degrees.

Matthew comments that altogether it took him about half an hour, of which quite half consisted of finding out that the Speccy does SIN and COS in radians instead of degrees! "Bet," says Matthew, "You never thought kaleidoscopes could be so complicated!"

```
1 REM Hexagonal Kaleidoscope
  by Matthew Westcott
2 REM Based on K/Lido - Short
  Spot, FORMAT Nov 1996
6 LET d=PI/180
7 DEF FN x(r,a)=(r*COS (a*d)
  +127
8 DEF FN y(r,a)=(r*SIN (a*d)
  +87
9 BORDER 0: PAPER 0: CLS
10 LET r=RND*85
120 LET a=RND*60
25 INK RND*7: BRIGHT RND
30 LET x=FN x(r,a): LET y=FN y
  (r,a): GOSUB 100
```

```
40 LET x=FN x(r,-a): LET y=FN
  y(r,-a): GOSUB 100
50 LET x=FN x(r,120-a): LET y=
  FN y(r,120-a): GOSUB 100
60 LET x=FN x(r,120+a): LET y=
  FN y(r,120+a): GOSUB 100
70 LET x=FN x(r,240-a): LET y=
  FN y(r,240-a): GOSUB 100
80 LET x=FN x(r,240+a): LET y=
  FN y(r,240+a): GOSUB 100
90 GOTO 10
100 PLOT x,y: PLOT x+1,y: PLOT
  x,y+1: PLOT x+1,y+1: RETURN
```

While we're at it, Matthew also includes a fractal program called, for some reason, 'martin', based on a screen-saver for Windows by someone called Phil Robinson, who also doesn't know the original source of the fractal code! Matthew has converted the original C source code into Spectrum Basic, but, like the kaleidoscope program, it's extremely slow unless you compile it, and, says Matthew, it's still no match for the original on a '486. (Hiss, Boo)!

Here's 'martin'.

```
1 REM Martin Fractals
2 REM Converted from Windows
  screensaver by Matthew West
  cott
10 LET a=RND*100-50
20 LET b=RND*100-50
30 LET c=RND*100-50
60 LET xold=0
70 LET yold=0
100 LET xplot=xold+127
110 LET yplot=yold+87
130 IF xplot<255 AND xplot>0 AN
  D yplot<175 AND yplot>0 THE
  N PLOT xplot,yplot
140 LET xnew=yold-SGN xold*SQR
  (ABS (b*xold+c))
150 LET ynew=a-xold
160 LET xold=xnew
170 LET yold=ynew
180 IF INKEY$<>" " THEN GOTO 10
  0
```

Matthew's also put on a design program for me which I can't reproduce as it has a code file; I guess that's why he says it's a present for me! So thanks,

Matthew, for the design, the comments and the interesting programs: please keep them coming!

Finally, here's our old friend Mr Round, of Stirchley, Birmingham, who has caused such correspondence with his 'colour weaver' and, more recently, with 'patterns'. Yes, we've some more bits and pieces from him for this month's issue.

Let's kick off with 'spiro'. Choose the size of a big circle, a small circle and a pen. The spirograph pattern produced by putting the pen in the small circle and rolling this round in the big circle will be produced on-screen. I seem to recall something like this a year or two back!

```
1 BORDER 6: PAPER 0: INK 7
2 REM **SPIROGRAPH BY R,WRIGH
T**
3 REM ** SINCLAIR PROGRAMS ANN
UAL SPRING/SUMMER 1984**
5 LET ov=0: CLS : GOTO 150
10 LET a=0: LET b=0: LET f=0:
LET i=.1
20 LET h1=0: LET v1=0
100 LET b=-(a*ra)/r: LET v=INT
(((ra-r)*SIN(a)-d*SIN(b))
+.5): LET h=INT (((ra-r)*CO
S(a)-d*COS(b))+.5)
110 IF f=2 THEN PLOT 128+h1,88+
v1: DRAW h-h1,v-v1
115 IF f<2 THEN LET f=f+1
120 LET h1=h: LET v1=v: LET a=a
+i
125 LET a$=INKEY$: IF a$="" THE
N GOTO 100
130 GOTO 310
150 PAPER 0: INK 7: CLS : PRINT
** SPIROGRAPH** --
-----
160 PRINT " by R.WRIGHT"
" This prog.produces Patte
rns which can be generated
by two gears as follows:-"
170 CIRCLE 60,51,40: CIRCLE 84,
51,16: INK 3: PLOT 60,51: D
RAW 0,40: PLOT 84,51: DRAW
0,16: PRINT AT 12,7;"R": PR
INT AT 14,10;"r": PLOT 94,5
1: DRAW 16,32: PLOT 94,51:
DRAW 18,30
180 INK 7: PRINT AT 11,12;"ink"
```

```
190 PRINT AT 10,16;" The smalle
r"; AT 11,16;"gear rotates"
; AT 12,16;"around the"; AT
13,16;"inside of the "; AT
14,16;"larger gear;"
200 PRINT AT 15,16;"producing a
pen "; AT 16,16;"trace."
210 PRINT AT 17,16;" Input R,r,
and"; AT 18,16;"radius of P
en"; AT 19,16;"in small cir
cle"
220 PRINT AT 21,11;"Hit a key":
PAUSE 0
225 INPUT "Load a Pattern From
Tape?";x$: IF x$="y" THEN I
NPUT "filename?";f$: CLS :
LOAD f$CODE : PAUSE 0: GOTO
150
230 INPUT "Radius R(R=85)?";ra
240 INPUT "Radius r?";r
250 INPUT "Pen radius ?";d
255 INPUT "ink colour ?";in: IN
K in
256 INPUT "Paper colour ?";pap
300 PAUSE 50: IF ov=0 THEN PAPE
R pap: CLS : GOTO 10
305 GOTO 10
310 INPUT "Overprint another pa
ttern ?";q$: IF q$="y" THEN
LET ov=1: GOTO 230
315 IF q$="y" THEN GOTO 10
320 INPUT "Printer copy ?";q$:
IF q$="y" THEN DUMP
330 INPUT "Tape copy ?";q$: IF
q$="y" THEN INPUT "filename
?";q$: SAVE q$ SCREEN$
340 GOTO 150
```

And finally we have 'contours' which will draw three dimensional surfaces on the Spectrum. When run, the program produces a cross on the screen. Use keys 5,6,7,8 and 9 to draw a coutour line in the bottom left-hand square. Nine will draw a horizontal line; the other keys move the contour from left to right at varying angles. When the bottom left square has been crossed, the line will move to the top right-hand square and continue. The computer will ask: '1; South to North - 2; West to East?' Inputting 2 will produce twenty intermediate contours representing a

gradual change from the first to the second contour. Inputting 1 will produce the questions 'Radians?' requiring you to input the curvature on your North-South lines. Straight is zero; maximum curvature around 2.3-2.4. No matter what option you select, you'll always be given the opportunity to use the other later.

Here it is; get typing!

```
1 REM ***3D CONTOURS***
3 REM ** BY TIM CLOSE **
5 REM ** SINCLAIR PROGRAMS ANN
UAL SPRING/SUMMER 1984**
10 PLOT 127,0: DRAW 0,175: PLO
T 0,87: DRAW 255,0
20 DIM L(127): DIM H(127)
30 LET A=43
35 LET D=-1
40 FOR T=1 TO 2
50 FOR G=1 TO 127
60 IF INKEY$="9" THEN PLOT G+D
,A: GOTO 100
70 IF INKEY$="8" THEN LET A=A+
1: PLOT G+D,A: GOTO 100
75 IF INKEY$="5" THEN LET A=A-
1: PLOT G+D,A: GOTO 100
80 IF INKEY$="7" THEN LET A=A+
.5: PLOT G+D,A: GOTO 100
90 IF INKEY$="6" THEN LET A=A+
.5: PLOT G+D,A: GOTO 100
91 IF INKEY$="1" THEN GOTO 100
0
95 GOTO 60
100 IF T=1 THEN LET L(G)=A: GOT
O 115
110 LET H(G)=A
115 NEXT G
130 LET A=131: LET D=127: NEXT
T
140 OVER 1: PLOT 127,0: DRAW 0,
175: PLOT 0,87: DRAW 255,0:
OVER 0
145 INPUT "(1)SOUTH NORTH or
(2)WEST EAST?";O
146 IF O=1 THEN INPUT "RADIAN$?
";D: GOTO 150
147 IF O=2 THEN GOTO 200
148 GOTO 145
150 FOR A=0 TO 126 STEP 4
160 PLOT A,L(A+1)
170 DRAW 128,88+((H(A+1)-88)-L(
A+1)),D
```

```
180 NEXT A
190 INPUT "WESTEAST AS WELL?";O
$
191 IF O$="Y" THEN GOTO 200
192 RUN
200 FOR t=0 TO 126
210 LET B=L(T+1): LET A=T
220 FOR G=1 TO 20
230 LET A=A+6.35: LET B=B+4.4
240 LET B=B+((H(T+1)-88)-L(T+1)
)/20
245 PLOT A,B
250 NEXT G
260 INPUT T
270 INPUT "SOUTHEAST AS WELL?";
O$
280 IF O$="Y" THEN LET O=1: GOT
O 146
290 RUN
1000 LET B=43
1010 LET A=1
1015 LET D=1
1020 LET L(INT D)=B
1021 PLOT D,B
1030 LET B=B+(SIN A)
1040 LET A=A+.04: LET D=D+.5
1045 IF D=127 THEN GOTO 1060
1050 GOTO 1020
1060 GOTO 130
```

Well, Mr Round, I bet these produce as much comment as the other programs you sent! Do send us some more soon! And many thanks for all these interesting little snippets.

And that's all for now. I've very little material in hand; you all know what you've got to do. It's often the simple things that produce the most interest, as Mr Round has demonstrated. So, get typing, please, and keep all your snippets coming to me; without them I can't put a column together. Please send them to:-

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

And a Happy New Year to you all. See you next month.



**Stevens Software**, Specialists in Text, Pictures, Scanning & Printer driver software for Desk Top Publishing work. I have programmed more Utility software than any one person.

As I program all the software myself, I can provide full customer care, helping you with any problems and any advice, all year round including during the Christmas holidays.

**Other Software:-**  
SC\_FILER £7 (Worth £12.50) Database filing program, store addresses, Stamp collections, Music & Video etc, anyway you like, 99% machinecode for fast searching etc.

SC\_MACHINE CODE PACK £15, (Worth £30) consisting of SC\_ASSEMBLER, SC\_MONITOR & TURBOMON, all you need and more for programming in the fascinating world of machinecode.

**SC\_WORD pro The DTP package £29.99 (Worth £64)**  
SC\_WORD pro the most advanced word-processor, built in smooth non jagged Fonts (24 are supplied, most in 11 sizes), the same output you would get from expensive PC's. Multi column ASCII PRINT word processor output, with converter. Comes with a high resolution Screen dumper with 10 sample SCREENS. Draw lines of any thickness at any position on an A4 piece of paper.

Disc and Hard drive installable version.

Professional A4 Manual plus Lester piggyots guide on getting the best out of SC\_WORD pro. Clipart sampler pack, 60 high resolution pictures, plus a paper based catalogue of over 1,000 to choose at extra cost plus the Photo sampler pack as above.

SC\_HD LOADER a modified MasterDOS which will also load in code files, without using any extra memory. You will need a 512K Sam, MasterDos, any printer except a 300 dpi inkjet or Laser printer.

When ordering please state Printer you own.

**THE HARD DRIVE PACK £149 (Worth £164)**  
SC\_HD - The Hard drive pack consists of the Power supply, SC\_LOADER, casing unit (2 years guarantee), S.D Software Hard drive interface, IDE Connecting lead, Hard Drive Operating System, Manual & SC\_HD LOADER.

**Buy now, Pay next Year.**  
Order your software over the Phone to make sure you receive your order before Christmas. Order sent out next day with a Christmas card. Send us your money by 2 months of interest free. An excellent ideal way to budget this year.

**STEVE'S SOFTWARE**  
7 NARROW CLOSE, HISTON  
CAMBRIDGE, CB4 4XX

**MERRY CHRISTMAS**

& FAX 01223 235150 (after 6pm MON-SAT)  
Email SteveSoftware@msn.com

# FREDing AROUND

By:- Michael Collins.

During one of my infrequent, but lengthy, calls with Bob that I'm sure a lot of the readers are familiar with, I happened to ask what the 'FRED' discs were for the SAM that I'd seen advertised from time to time. Apart from being told it was a monthly disc-magazine, all I got out of him was a lengthy list of names and descriptions which meant nothing to me. In the end, he promised to send me the most recent few issues in return for a short review in **FORMAT** in case anyone else had the same enquiry.

Mere days later, three very slick looking discs popped through the letterbox, labelled issues 73, 74 and 75 respectively.

Issue 73 starts off with a slightly unusual editorial - the house-moving antics of the editor! However, things swiftly move to more relevant topics with news of no less than four new games. Each issue also seems to have the obligatory letters section, as well as a nice selection of screens to look at.

Undoubtedly the star of issue 73 though is a game called *Escape*. Apparently written using SCADS, it is a beautiful little game where you have to negotiate caverns shooting aliens and collecting crystals and other objects in order to escape - complete with hidden 'bonus' sections and all, I'm sure I've paid real money for much worse games in the past!

The next program was one of the

programming 'demos' that we used to hear so much about, although they looked nice and were accompanied by nice bouncy music, neither of the parts were stunning - until you realised that the two multi-coloured scrolling messages were actually in the border of the screen - where it is impossible to print anything!

The next item, called 'Triple Peaks', is a version of the card game not dissimilar from versions of patience. Written in C, it has mouse, joystick and cursor support and everything is done by clicking on icons - very simple but somehow managing to get that balance between skill and luck that keeps you coming back for more.

Given that it was FRED who released C, it's no surprise that even more programs are to be found that are compiled C (fortunately, the authors also usually contribute the source, to give us lesser educated a chance to learn!), and the next item is a series of fancy 'demo' type effects combined with a fast version of the popular 'Life' algorithm.

Another thinking person's game comes in the next item, in the form of a simple memory game (also written in C) with varying difficulty levels - definitely not one for the morning after!

I suppose it can only be expected to find a heavy bias towards FRED products on their own magazine, and there is also a section of 'E-Tunes' - musical numbers composed on E-Tracker

- like the screens section, unless you're a collector of such things, there is no practical use in these, but they are quite varied, and extremely well done, so it's easy to pass a good few minutes just listening to each composition. The interesting thing about this section, was the music player, which is in the form of a CD player (ie play, pause, eject buttons etc!) with a colourful backdrop, and all manner of things going on in the screen - I'm not sure how appropriate it all is, but I suppose it's better than just watching a blank screen while the music plays.

The one utility on the disc is a 'palette sorter' - apparently an aid to people converting screens between computers and having difficulties with the palettes. I wouldn't imagine this is going to come in the top ten of many people's useful SAM utilities list, including mine, but those that do partake in such activities might find it invaluable.

The next item was disappointing really - named 'Fantasy Fred League' it required a program which had appeared on a previous issue of Fred - which I obviously didn't have. Fantasy League is apparently a competition in the traditional style with readers buying 'teams' of Fred contributors, and points being awarded for contributions, so the team with the most prolific contributors ends up top of the league (and wins some spectacular prize, no doubt).

Next up, Modules is a collection of music 'modules' - pieces of music that have been composed on other computers (because the SAM currently doesn't have software powerful enough to do the job) but can be played back through SAM with impressive quality. Very impressive...although admittedly, limited use.

Aside from a smattering of graphical

adverts, the last item is 'Fredex' - an index of every item that has appeared on the FRED discs to date! Although not quite up to date, this is an exceptional idea - individual issues can be browsed to see their contents, or searches can be made for a particular game or utility.

And so we reach the end of FRED issue 73. It has to be said that FRED is certainly not a disc version of **FORMAT** - the approach is much more light hearted and games oriented, but given that most of the programs are unprotected, they can prove a remarkable source of ideas for those willing to spend a little time and effort. It has to be said that for the asking price of £2, even if I had only liked one or two of the programs, it's still very good value for money.

And onward and upward to FRED 74. It seems FRED took a one-month only change of format, which really screws up my chances of explaining this well, but some of the regular features made it through - the editorial contains the familiar ramblings of the editor, stories retold from the then-recent Leeds show, news, and for some bizarre reason, film reviews. The letters, screens, Fantasy League and Module sections also carried through to this issue, while additional articles by way of an interview and several more show reports from reader's perspectives - just in case we hadn't already realised what we'd missed out on!

Issue 74 was apparently a break from the norm because they'd amassed several huge programs in terms of discs space, which if they'd used on a normal issue would have precluded several other regular items from appearing, so they put three big items on the issue, and sacrificed a lot of the smaller items. Not

a bad idea.

Unfortunately, the first, and apparently the most impressive, program didn't work on my disc! A few phone calls later and it seems this was a common problem, but that the program was a demo with hundreds of screens and pieces of music, which should account for the 300K it took up on the disc!

The next item, 'Big Gunz', is a nicely put together shoot-em-up game with a variety of options and plenty of blasting action that kept me occupied for a good hour or two - again, a program which could easily have made the budget shelves not so long ago.

Again, a game, but 'Epicentre' is an adventure, which may be more of interest to fellow **FORMAT** readers. Apparently written using the SAM Adventure System, Epicentre is a text-only adventure which seems to be fairly extensive. Sadly, adventures not being my strong point, I was only able to explore the few dozen locations that are available without having to solve any puzzles.

So, an unfortunate issue for **FRED** because of the problems with the main item, but not a total disaster. Bearing in mind that FRED is a monthly, it still provided an ample dosage of SAM news and general chatter, as well as two games which between them, should give the issue long term appeal to most people.

But moving swiftly onto the last disc, FRED 75 - the Christmas issue - although aside from the occasional Christmas Wishes, this didn't seem to have influenced the issue much. Returning to it's usual format, the disc's 'regulars' included the editorial, letters, screens, music modules, ETracker music, adverts, and the still-uninvestigated

'Fantasy Fred League'!

The music modules that have been on all three discs are not exactly small items - each one can often take up over 100K. However, the problem is that these modules are so complex - each having their own samples - that the program required to run them isn't the sort of thing that can be squeezed onto every issue as well - but luck was on my side, issue 75 brought the latest version of the 'Mod Player'. Apparently selling commercially prior to it's inclusion on this issue, this version even has support for reading the modules straight from PC discs.

Games continue to be the order of the day with an impressive four games this issue - none of which will have you taking days off work, but given that, each is great fun for at the very least fifteen minutes, we're talking severe value for money here.

Resuming the light-hearted thread that FRED seems to thrive on, 'The Useless Ones' is a story the like of which I have never seen before! Written as a spoof of Star Trek, it follows the regular Fred staff and contributors through some highly amusing anecdotes. Very childish. But who cares - I loved it!

And that leaves me with just two programs left on FRED 75 to mention. Masker is a utility which can be used from Basic or SAMPaint to create masks for graphics blocks - it lets you simply load in your block, and it will output the masks in the correct format depending on whether you will be accessing them from Basic, C or machine code.

The self-explanatory 'Specy Loader' is a simple, but useful, utility to let you load and run Spectrum .SNA files. Apparently more effective than the old MGT one, it's also considerably better

presented!

FRED issue 75 is undoubtedly the best of the three - games galore for the time wasters, utilities galore for the techies, humour galore for the clowns, and plenty more other items for SAM users in general.

Amongst the people I've spoken to about FRED, there were two main reasons cited among those who didn't subscribe to FRED: That it was a disc magazine, so wasn't as easy to read as, say, **FORMAT** and that it wasn't serious enough. Both points have some truth - but you have to decide whether 800K of programs is a good enough trade-off for not being able to read the editorial in bed, and that whilst FRED does seem to be very light-hearted in general, it does cover the more serious issues as well. The problem possibly

stems from FRED putting too much on each issue - they are not going to find many people who like everything on an issue, but in each issue, the vast majority of readers must find, at the very least, three or four items they do like.

And to be honest, for £2 an issue, it seems a very good buy. It covers another angle completely from **FORMAT**, both in terms of it's medium, and it's style - but from now on, I'll be a dedicated **FORMAT** reader... as well as a dedicated FRED reader.



## Get Serious With **MIRA SOFTWARE!**

**MIRA SOFTWARE** has been writing software for you, the serious Spectrum user, for over 10 years. We offer a range of language compilers and technical software at unbeatable prices. Our software supports a wide range of disk drive systems and is available on a choice of media. Please contact us for more details.

### Languages

Modula-2 Compiler	£20
Pascal Compiler	£15
Fortran Compiler	£15

### Technical Software

The Mira Compilation*	£5
Mira Skyplot	£10
Star Data (Microdrive only)	£3.50

\* A selection of technical programs written using the Modula-2 compiler



**SOFTWARE**  
48 Lodge Close  
Old Marston  
Oxford, OX3 0QP  
Tel/Fax 01865 204706  
Email: [Mirasoft@aol.com](mailto:Mirasoft@aol.com)  
Web Page: <http://members.aol.com/mirasoft>

# SAM EMULATION

By:- Simon Goodwin.

A SAM Emulator capable of running the majority of SAM programs is now circulating freely on the Internet. It requires a Unix workstation to run, and has been tested on various platforms ranging from a humble 486 PC running Linux (free Unix) to the fast and expensive DEC Alpha workstations. It is working on five different Unix systems so far, and should be portable to most others. It was written using the freely distributable GCC (Gnu C) compiler, available on most 16 and 32 bit micros.

You need a fast machine to run SAM programs at full speed - the author's 486SX runs at only about a quarter of the speed of a real SAM (and costs several times more, of course). There are no plans (at the moment) to convert it for DOS or Windows, as modern PCs (and Amigas etc) are quite capable of running Unix and X Windows.

Xcoupe is developed by student Allan Skillman, and currently only available via the Internet. You need SAM ROM images to run it, the documentation explains how to transfer these from your SAM to the emulator.

The alpha version I tested (v0.7) includes:

- Memory support for 512K and up to 4Mb external memory.
- Graphics modes 1 to 4.
- Line interrupts with palette changes.
- VL-1772 Disc controller hardware emulation.
- Two disc drives supported using image

files.

Support for reading real SAM discs (Linux version only at the moment).  
SAM Mouse emulation.

The next version will also support the SAM real-time clock. If you have access to the World Wide Web you can download an alpha-test version, for free, from this address:-

[http://www.hep.ucl.ac.uk/~ajs/xcoupe/xcoupe\\_0.7.tar.gz](http://www.hep.ucl.ac.uk/~ajs/xcoupe/xcoupe_0.7.tar.gz)

This contains all the files you need to compile the program on a Unix system with Gnu (Free Software Foundation) utilities. You need GnuZIP to unpack the files, and GCC to compile them.

It runs all these programs without problems: SAM-DOS, MasterDOS, DRiVER, The Lerm Assembler, Comet, The Batz and Ballz demo, Simon Cookes ZUB demo, SAM C, SAM Paint, Sphera, TurboMon.

SAM Tetris, Lyra 3, KEDISK and FLASH also work, but not perfectly. There is still work to be done on support for mixed mode screens. The only program that crashes it completely, so far, is SAM DICE.

Xcoupe uses the X Windows system - the Unix windowing environment. It needs a system with a 256-colour display. It multi-tasks with other Unix processes and uses virtual memory, if necessary.

For more details, contact the author by EMAIL: [ajs@hep.ucl.ac.uk](mailto:ajs@hep.ucl.ac.uk)

# SAM elite 512

## FEATURES INCLUDE

512K RAM  
32K ROM  
800K Floppy Disc Drive  
6 Channel Stereo Sound (mono through TV)  
Z80B 6Mhz Processor  
Centronics Printer Port  
Joystick Port  
MIDI & Networking  
128 Colours  
4 Screen Modes  
SCART Output (for Monitor or TV)  
Plus *LOTS* More....

**ONLY £199<sup>95</sup>**

Includes 1 year return to base warranty on full computer  
PLUS extended 2 year warranty on main board.

POWER AT A PRICE YOU CAN AFFORD...

The advanced computer that retains a user friendly appeal which makes even the beginner feel right at home. An easy to learn Basic and disc operating system (no messing with slow tapes here) will allow you to do things you never thought possible before. Your SAM comes with a very easy to read manual and everything you need to get started - it even has some pretty impressive demo software for you to run, just to give you a few ideas for starters.

If you already own a Spectrum then this is the machine for you because you don't have to throw away all you have learnt so far - just be prepared to be amazed at the extra power and features.

## Reconditioned SAM Coupé

We are able to supply a small number of professionally reconditioned SAM Coupé computers. These have been fitted with a modern style disc drive, a version 3 ROM, new keyboard unit, and are supplied with new manuals and DOS system disc. They carry a full 90 day full return to base warranty. Because these are reconditioned machines there may be slight blemishes to case or base.

## SAM Coupé Replacement Disc Drives

The original slot-in slim-line drives produced for the SAM Coupé are no longer made. If your existing drive is now showing signs of terminal decline perhaps it is time you gave your SAM a new lease of life by fitting a modern style (PC type) floppy drive.

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.

	Kit Form	Assembled
Internal Disc Interface Type 1 (without 1772)	£19.95	£29.95
Internal Disc Interface Type 2 (including 1772)	£29.95	£39.95

Ordering: Write your order clearly, state your name, full address and phone number and if possible please quote your INDUC number as this will help to speed orders. Payment: Cheques and UK Postal Orders should be made payable to FORMAT PUBLICATIONS. Overseas customers may also pay using FORMAT's foreign exchange scheme. Postage & Packing: Prices include UK p.p. Overseas customers please write for a quote. Prices valid until 1st January 1997. E & O.E.

Send Your Orders To:-

West Coast Mail Order,  
c/o Format Publications,  
34, Bourton Road,  
Cloucester,  
GL4 0LE.

**West Coast Computers**

## INTERFACES

These interfaces work with both the SAM elite and the SAM Coupé unless otherwise stated.

**SAM MOUSE SYSTEM** Interface. High Quality Mouse and the Software to drive it. The interface plugs into the mouse port on the back of SAM so you don't need a spare expansion socket. More and more software now works better if you use a mouse. **Only £39.95**

**SAM PRINTER INTERFACE** The SPI (Coupé only) allows connection to any standard parallel printer. Allows standard LPRINT, LIST & DUMP commands to work on compatible printers. Plugs straight into the expansion port. Requires BBC type 26 way ribbon printer cable (see below). **Only £24.95**

**TWOUP** Allows two interfaces to be connected to SAM's expansion port at same time. **Only £19.95**

**XDI** The eXternal Disc Interface. Allows external 3 1/2" or 5 1/4" drive to be connected to SAM Coupé. Also includes Parallel Printer Interface. **Only £44.95**

**ALSO AVAILABLE:** Printer Cable - £7.95, SCART Cable - £7.95, Replacement Keyboard £14.95, Replacement Power Supply - please ring. Plus spare parts service - tell us what you want and we will give you a price.



# YOUR LETTERS

Dear Editor,

There is a point of Basic programming that I do not believe has been fully discussed in *FORMAT*, and I welcome your views.

When I have data to be used (and updated) I always store it as a data file on disc, such as "Lolly" DATA A(). I notice that lots of programs (such as Carol's Money Manager) store data as variables, which means you have to boot as 'goto' line number, and an injudicious poke at the F4 key (SAM) or a RUN command will lose all the data.

I think that data file storage is much safer, and also allows separate programs to use the data. For example, I have a zeroize program I use once a year, which is entirely separate from the main program, and eliminates any danger of losing all data when using the main program. I always store data on three floppies due to SAM's tetchiness when disc handling.

Another SAM quirk is that a READ command will try to read any load command for a data file, so DATA lines have to be put before any LOAD commands, but this is a minor penalty for what I think is a safer storage method.

Yours sincerely, Rusty Atkins.

True, few people seem to use DATA type files. They have their place, and for array type data they are of course ideal, although for many applications they are now as flexible as OPENtype files on disc. One problem with DATA type files

is that they are rather wasteful on space (both in memory and on disc) as the full array needs to be handled every time. (By the way, I don't understand your comment regarding SAM discs, always found things VERY reliable - we use SAM for our main membership database so we do have daily experience.)

Would someone like to do an article comparing the different methods of storing data - I'm sure lots of readers would be interested.

I had not heard of the problem with READ, will look into it when I have a few spare moments. **Ed.**

Dear Editor,

In the October issue of *FORMAT*, West Coast Computers advertised the sale of reconditioned SAM Coupés at a very reasonable price. Having had my original SAM from way back, which was updated with extra RAM and disc drive when they became available. I felt it was only a matter of time before something packed up. The new purchase was therefore an insurance policy with its new ROM, keyboard and disc drive.

I successfully checked everything was working OK with the new SAM and all my floppies loaded alright except one. This rogue disc refused to load, although it worked perfectly well on the older SAM. I kept getting a track fault coming up.

I suppose this could be explained on a small discrepancy of tracking between the two drives. I wonder if any other readers have had any trouble when



changing over to the new disc drive.

*Yours sincerely, P.J. Williamson.*

Tracking is probably the problem, if the wayward disc is not a commercial game which is copy-protected, then try formatting a disc on your new machine and copying the files to it using your old machine. You may find this does the trick.

As to ageing SAMs, well there are still hundreds of SAMs in daily use that came out in the first few weeks of production at MGT. Keyboards are the most common thing to wear out, but those are easy to replace with a new keyboard unit and they only cost £12.95 (UK incl p&p) so a new one will not break the bank. The only other thing to suffer from constant use is the disc drive, but once you change to the new style then any future replacement is easy and will only cost £20-£25. All in all, SAM has proved to be a wonderfully reliable machine with very low running costs. **Ed.**

**Dear Editor,**

A few comments on Martin Fitzpatrick's 'TALKING C' (*FORMAT* Vol.10 N°3, November issue).

Not all of the functions dealt with are in the 'graphics' library: the function *getpixel* is in the 'misc' library, a new library that was included in the updated SAM C Version 4.21. It ought to have been added to the graphics library and so should one or two others, such as the companion to *getpixel*, *putpixel* (a,b,c) which puts a pixel at the co-ordinates a,b using PEN c, but FRED didn't make a proper job of it.

The function *gety()* does not 'return the y co-ordinate...' but returns 191-y; a mix-up with the upside down PC screen?

The misc library includes *circle*, but this was already included in the graphics library of the original version. This can lead to trouble: if a program includes

both graphics and misc, then circle is unusable. If you try to use it, then compiling comes to a halt with the message 'multiply-defined symbol'. Cure: delete circle from the misc library.

*Yours sincerely, Ettrick Thomson.*

Many thanks Ettrick, nice to see someone who understands C, cos I don't that is for sure. And Jenny says thank you for the newspaper clippings on the Year 2000 problems you sent, she is busy digesting them for a future follow-up. **Ed.**

**Dear Editor,**

I think *FORMAT PC* is just what we old SAM and Spectrum users want, and I am looking forward to your articles on languages and inside Windows.

You ask for the "most used utilities" on the SAM (John Adams letter in a recent *FORMAT*). I think the two outstanding programs are *The Secretary* and *SAMPaint*. *Campion* is all right as a spreadsheet, if only one could freeze the titles, but I am still waiting for a decent database. What has happened to the *PROFILE*, promised in August 95 *FORMAT*?

Best wishes for success of *FORMAT PC*.

*Yours sincerely, Dr Gerhard Behr.*

Thank you Gerhard, glad to see you enjoy the new mag. And sorry *PROFILE* has still not been released. Revelation were let down by the programmer who had undertaken the task and are now busy looking for someone to take on the project. In fact I have been looking at it myself during the few odd moments each month that I get to use the SAM these days. Anyone interested in taking on *PROFILE* could give me a ring and I will fill you in on what stage it's at. **Ed.**

**Dear Editor,**

The best game that I've come across is

*Conquest*, a strategy game by Zedsoft, though *Football League Manager* from FRED is also very good. As for Word-processors, the only one I have is *The Secretary*. While I'm not sure how it compares to other Word-processors it is very easy to use and the manual is easy to follow.

The Quazar sound card is a great improvement on the SAM sound and I hope that software companies support it perhaps by producing games that support the Quazar and the SAM's sound chip if the Quazar is not detected.

I could go on and on so I'll finish with this one thing, what I would really like to see for the SAM is a method of allowing 128 Spectrum games to work on the SAM.

*Yours sincerely, James Loder.*

The real problems with the 128K games is the different memory layout and paging methods, coupled with the different sound chip. By hacking it is possible to convert individual games but it is not easy. **Ed.**

**Dear Editor,**

Thanks for this month's *FORMAT*, arrived today. Thanks also to Ray Bray for his reply on my PLUS D query, I have another one for him. Details please of the type etc., of a suitable 3½" drive for the PLUS D, the makers, and must it be an 800K?

In *The Editor Speaks*, Bob you ask for details of a supplier of Spectrum keyboard membranes. I today have contacted a local firm:- The Trading Post, Victoria Road, Shifnal, Shropshire, TF11 8AF, Telephone number 01952 - 462135 who inform me that they still have a supply of some membranes, so if you would be kind enough to pass this on, hopefully our fellow readers will be able to contact them and get what they require.

I note in *Your Letters*, Graham Howden of London is looking for an Einstein, if you would like to pass my details to him I may be able to help him out with a TC 01 if he is interested.

*Yours sincerely, Deryck R.J. Morris.*

Most drives can be made to work with the Spectrum although some technical knowledge is required when it comes to getting PC 1.44Mb drive to work (you have to make sure they stay in 720K mode). **Ed.**

**Dear Editor,**

I came across a limited supply of ZX Spectrum+ type keyboard membranes yesterday and the company is Trading Post.

One purchased over the counter cost me £15 but as Mr J.E.Thakeray does mail order I am sure he would be pleased to help members, and they also do Spectrum spares.

*Yours sincerely, Roy Burford.*

Thanks Roy, your letter arrived in the same post as Deryck's above, and as your's contained some extra information I've run it as well. My thanks to several others who also wrote in. **Ed.**

**Dear Editor,**

Further to my letter on monitors published in the September *FORMAT*. I have searched through old issues for information and found only Ray Bray's Help Page in August 94. It seems to amount to:

1. Philips CM8833 (which I have) is no longer available.
2. Look for second-hand Amstrad CTM 640.
3. Use a TV but find out if the SCART lead works.

Not a very satisfactory state of affairs; no criticism of Ray Bray, this is not his field.

West Coast Computers advertise a computer with SCART connection to a monitor which no one can identify so we have to make do with the inferior display with a lead to the TV set. In the 'old days' we had the late lamented PBT advertising the Philips, but now there is no one. **FORMAT** is the only magazine dealing with SAM so where do we go? Surely it would not be impossible for West Coast Computers to access TV or monitor suppliers to find out which are compatible?

*Yours sincerely, L.W.Simpson.*

My personal recommendation is always towards a Scart TV. That way you get the best of both worlds, good clear picture and the use of the TV when needed. However, make sure it is full scart, some have only Composite Video connected and their picture quality is not nearly as good.

In the end, if you want a true monitor, what you need is to go to a monitor expert and say "here is the signals from SAM, what should I buy to connect up to it?" As to assessing monitors, there are just too many and they are changing daily - the monitor market is so messy. We have to rely on readers recommendations as the best guide but even then the chance of another reader being able to buy the same monitor weeks later is not that high. You cannot expect West Coast or ourselves to keep a check on such a variable market - there just is not the resources to do it. **Ed.**

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

This is YOUR letters page so it is up to you to fill it with interesting things. Come on, get writing, any subject even remotely related to computers. Just keep things as short as you can so we can fit in as many as possible each month. Please write clearly or type your letters. Send them to the address on page 3 or email them to us at [FormatPub@aol.com](mailto:FormatPub@aol.com)

## SMALL ADS

**FOR SALE** Single and Double disc drive cases with room for power supply - as produced for the MGT drives - £4.50 + p&p (special price for qty). J.R.C. Camera Repairs. Phone/fax 01491 834403.

**FOR SALE** Cannon BJ-10e bubble jet printer complete with sheet feeder. Very good condition with manuals and original box. £60 + postage. Contact Antony on 01933 665891.

**WANTED** Colour monitor, compatible with the Spectrum 128, in working order or easily repaired. Also 3 1/4" 80 track double sided external disc drive for DISCIPLE/PLUS D (cased with psu in working order). Ring E.H.Cooke-Yarborough on 01865-820224 (Abingdon).

### YOUR ADVERTS

Selling, Buying, Pen Friends, etc.  
Any PRIVATE advert, subject to acceptance, will be printed FREE in the next available issue. Any software sold MUST be original. The publishers will not be held, in any way, responsible for the adverts in this column.

Due to shortage of space, if your advert remains unpublished after two months then please send it in again. Trade advertisers contact the publisher for rates.

## FORMAT

### SAM REPAIR SERVICE

We are pleased to be able to offer readers an official, West Coast approved, repair service for SAM Coupé and SAM elite computers and add-ons.

**PRICING** Because every fault is different we can't guarantee a fixed rate. When we receive your machine it will be tested and, if it is going to cost more than £35 for the repair then we will contact you for authority to continue.

Pack your machine well (we will use your packing for its return). Please phone us on 01452-412572 for advice on dispatch (we can even arrange UK Mainland collection and overnight delivery for an extra £12.95). In many cases we can also give an estimate over the phone. All repairs returned by overnight carrier so tell us which days there will be someone in to sign for the parcel. Please quote your INDUG membership number and give a evening contact phone number.

Send your machine to:-

**Format (SAM Repairs),**  
34, Bourton Rd, Gloucester, GL4 0LE.

## SOFTWARE

### SAM Coupé Software On 3 1/2" Disc

**PCG's DTP PACK** The famous package including WordMaster, TypeLiner & HeadLiner. Complete on disc for SAM. Includes 2 extra font packs bringing the total value to £53.40.

Order Code: SCD-04 Price: £24.95

**COLOUR DUMP** Screen dump software to work with Epson compatible colour printers. RRP £12.95

Order Code: SCD-05 Price: £7.95

**MasterDOS** The advanced Disc Operating System for SAM. Includes random access files, sub-directories and lots more.

Order Code: SCD-31 Price: £15.95

**MasterBASIC** Extended Basic for SAM, works with either MasterDOS or SAMDOS.

Order Code: SCD-32 Price: £15.95

Order Both MasterDOS & BASIC Together and SAVE £5.

### SAMSPEC SOFTWARE

SAM + Spectrum versions on one disc (5 1/4 or 3 1/2")

**FONT LIBRARY** 100 screen fonts plus support software, easy to use on either computer. (Special 3" disc available - Spectrum files only). RRP £8.95

Order Code: SSD-01 Price: £5.95

**MONEY MANAGER** Advanced personal budgeting system for both machines. Spectrum version needs 128K+2 (not +2a or +3). RRP £15.95

Order Code: SSD-02 Price: £9.95

### SPECTRUM SOFTWARE

Unless otherwise indicated these are DISCIPLE/PLUS D programs. Please state 3 1/2" or 5 1/4" disc (80 track only) on order.

**ARTIST 2** The best art package ever written for the Spectrum. 48K and 128K versions on the same disc. With page-maker and utility software. Full manual. RRP £19.95

Order Code: SPD-01 Price: £12.95

**UTILITY DISC #1** Six of the best and most useful disc utilities for DISCIPLE or PLUS D. Added bonus program - not to be missed. RRP £9.95

Order Code: SPD-02 Price: £6.95

**PCG's DTP PACK** The famous package including WordMaster, TypeLiner & HeadLiner. Includes 2 extra font packs bringing the total pack value to £53.40.

Order Code: SPD-04 Price: £24.95

+3 Version: SPD-04C Price: £29.95

**MUSIC MAESTRO** Write music either just for fun or to include in your own games. Full manual, lots of demo tunes. The ideal way to write music on the Spectrum. RRP. £9.95

Order Code: SPD-05 Price: £7.95

+3 version: SPD-05C Price: £9.95

# FORMAT

## READERS SERVICES

### FORMAT BACK-ISSUES

Volumes 1, 2 and 3 are now out of print. Volumes 4,5,6,7 and volume 8 are available as complete volumes. Order by giving the Volume N° (i.e. V5).

Price: £14.00 per volume.

All issues, from Volume 8 N° 1 (September 1994) to the latest issue, are available separately. To order just quote the Volume and Issue N°.

Price: £1.75 each, (5 or more £1.50 per copy).

### HARDWARE

**DUC LEAD** For use with DISCIPLE or PLUS D. This 'Dualing Up Cable' allows two disc drives to be attached without the need for opening one drive to alter its ID. Allows you to switch drives to even out wear without opening cases. RRP £16.95

Order Code: DUC-01 Price: £11.95

**PRINTER LEAD** Top quality parallel printer lead (BBC standard). 2 metres long. For use with DISCIPLE, PLUS D or SAM. RRP £10.95

Order Code: PPL-01 Price: £7.95

+3 PRINTER LEAD, For +3 or +2a. RRP £12.95

Order Code: PPL-02 Price: £9.95

### SAM COUPÉ TECHNICAL MANUAL Version 3

The real inside info on SAM. No SAM is complete without one. RRP £16.95

Order Code: STM-01 Price: £12.95

### NEW SAM CLOCK NEW

The SAM\_CLOCK is fully compatible with the TIME and DATE functions of MasterDOS and has an integral battery that keeps the board functioning when your SAM is switched off. The board fits onto the expansion connector at the back of SAM but comes with a built-in through-connector so you don't need a Two-Up to use it in conjunction with another interface. RRP. £29.95

Order Code: SCH-01 Price: £24.95

**ORDERING** All prices include UK p&p, overseas readers please add 10% for extra postage.

Clearly state Order Code, Product description, Quantity required and Price. Remember to add any postage and don't forget your Membership Number or we can't process your order. Payment in STERLING by Cheque (drawn on a UK bank), P.O. Euro Cheque or Cash. Make cheques payable to FORMAT. Payment MUST be in same envelope as order. Send to FORMAT's address on page 3. Normally dispatch is at the same time as your next issue of FORMAT. We will not be held liable for delays or non-delivery due to circumstances beyond our control.