Vol.6 - Nº 4.   December 1992.

FORMAT

FOR SPECTRUM AND SAM USERS
(Incorporating Sinclair & Sam Computing)

MERRY CHRISTMAS EARTH CREATURE.

AH, CLEARLY A PRIMITIVE RACE.

SCRUNCH

OH, I DON'T KNOW.
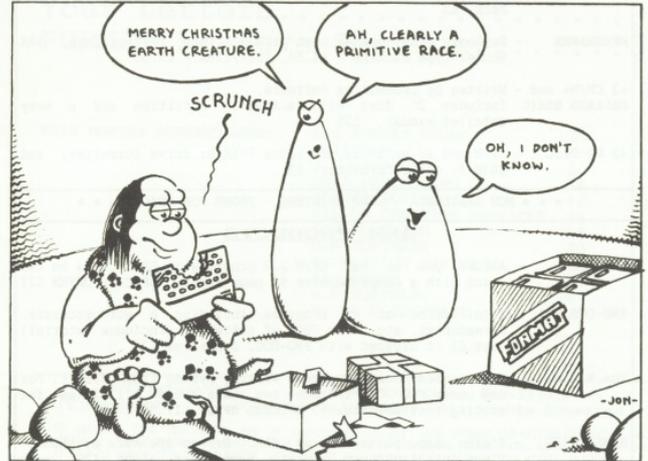
A Christmas Special

For The Intelligent Reader

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WEST COAST SIGN BLUE ALPHA

West Coast Computers have signed up Blue Alpha Electronics to carry out assembly work on SAM and its peripherals. The contract gives Blue Alpha sole assembly of the SAM Coupe until the Spring (when West Coast plan to add another production line - possible outside the UK) and production of the add-ons for at least the next twelve months.

Adrian Parker, Managing Director of the South Wales Company, told FORMAT "West Coast have recognised our expertese in the SAM field and although the contract will represent a large slice of our business in early 1993 it does not prevent us from developing and selling our own range of products."

Blue Alpha have now moved to new and more spacious premises a few miles from Swansea. They are also offering a repair service for SAMs, Spectrums, Plus Ds and DISCiPLEs, and lots of other computer things as well. For more details see their advert in this issue.

REVELATION OFFER

Revelation Software who took over the SAMCO software titles has made many ex SAMCO customers very happy.

SAMCO had taken orders for The Secretary word-processor and, because of various delays, only shipped a pre-release version without a manual.

Well now Revelation have obtained a list of those customers and have written to them offering a free copy of the manual provided that they buy at least one product from Revelation's current catalogue. Alternatively, because the manual for the latest version does not exactly match the earlier versions, Revelation have offered the customers a very special purchase price for the complete package of disc and manual.

Frank Broughton of Revelation said "We felt that SAMCO's customers deserved a chance to see The Secretary at its best and that it will create an even bigger base of satisfied users. I'm sure many people will have been very surprised when our mail-shot dropped through their letter box."

Nice touch guys - its good to see a little thoughtfulness in the industry.

24 PIN PRICES DROP

Seikosha had become the first company to drop its Recommended Retail Price on a 24 pin printer below the magic £200 mark.

Their SL-90 model has fallen by 15% to 199 to spearhead the companies promotion of 24 pin printers into the business, home and education market.

The SL-90 features a 20k buffer, print speeds up to 240cps, two fonts and seven print modes.

Other printer manufacturers are rumored to be looking at their prices not that non-impact (laser and ink-jet) printers have taken so much of the higher end of the market.

SAM OWNERS AVOID SUFFERING

Professional computer magazine and catalogues are full of adverts at the moment for wrist rests that help keyboard users avoid the very painful complaint known as Carpal Tunnel Syndrome. This complaint, also known as RSI (repeditive strain injury), is caused by holding the wrist joint in a fixed position for long periods. By relaxing the wrist support muscles the chance of this problem occuring are greatly reduced.

Nice to know those nice guys at MGT designed the SAM Coupe with just such a wrist rest built in - three years ago.

EVEN LESS GAMES ON TV

Last months news item titled EVEN MORE GAMES ON TV seems to have put a curse on the BBC2 show 100%. Even before the printers ink was dry rumors were floating that the show was in trouble and it now looks certain that the show, complete with its promised computer games section, has been axed.

BBC2 has struggled for several years to provide alternative (youth) viewing to go alongside international and local news coverage on BBC1. However only old (but still good) puppet series (like Thunderbirds and Stingray) and the much mucked about Star Trek TNG seem to draw in the viewers.

The program planners now have plans for a youth show to be screened later in the evening (so it can tackle harder-hitting subjects) and it is most unlikely that this would include anything to do with games.

SUGAR BUY-BACK FIGHT

Alan Sugar's plan to purchase the shares of Amstrad he sold in the 80's and take Amstrad off the Stock Market have come up against a hitch.

A group of shareholders who feel that the 30p per share offer is not enough have pledged to fight the move in the run-up to the companies next AGM.

It is also uncertain if Sugar can gain enough votes from the large institutional shareholders to get his plan through as he is unable to vote his own share block on this matter.

While Amstrad looks round for a new product line to make money on there push into many markets is now centred around their "User Friendly" ranges - from computers to videos.

If Alan Sugar is successful it could start a run of such "repurchase" moves with several high-street names looking closely at taking their shares off the Stock Market which they, like Amstrad, feel does not understand the modern retail industry.

This story looks set to run and run.

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URGENT we need your news. Anything you think other people should know about. Items printed earn contributor 3 month extra subscription (please claim when renewing).

The Editor Speaks

Yo Ho Ho, and a Very Merry Christmas too one and all. You know, it was only as I began to think about how to start this page that I got the first twinge of the Christmas Spirit, I must be getting old, well the kids are anyway (number one gets wed next May) so if it wasn't for all the adverts for toys on the telly I could just miss Christmas.

This month we have the welcome return of The Help Page. Kevin Gould, an enthusiastic Spectrum user, has agreed to edit a NEW - LOOK Help Page. New look because, rather than one person (the all knowing and much missed Nev) answering everything in sight, Kevin needs your help to help others. Ray Bray has already agreed to help Kevin with some of the SAM questions but they are both looking for people with specialist (and not so specialist) area of knowledge. You don't have to be an expert - even as a beginner you still know more than someone who hasn't even started. So please, help make our Help Page the best there is, contact Kevin and see what help you can give.

And finally. The office will be closed from Wednesday 23rd December to Monday 4th January, for some reason Jenny wants to be home with her kids (funny woman). I will be in some of the time so if you have any need of the hot-line it is worth trying. A little reminder now that due to your's truly doing his duty on jury service there will be no daytime technical hot-line for the two weeks starting the 8th December. The normal evening service, from 7.30 to 9.30pm, should still be available if you need any technical help.

Now there is a lot in this months issue, but there always is isn't there. So - on with the show and see you next year.

Bob Brenchley. Editor.

SHORT SPOT

Edited By:- John Wase.

I have the usual miscellanous assortment of items on my desk this month. There are programs waiting to be reviewed; gadgets, too, and lots of post. And a lot of tools, several pieces of laminate-coated chipboard, some screws and fixing blocks, a lot of dust and even more chaos. Once again, like Jack's beanstalk, in spite of rigorous pruning and chucking, my collection of bits and pieces has outgrown its rightful place and overflowed on the floor, into the next door room..... All mixed up with lots of other work, all looking balefully at me. Ah, well; it's all got to stop - it's "Short Spot" time again.

So The Season's Greetings to you all, and here's the first item.

I'm still using bits and pieces from a splendidly voluminous tape sent by Alan Cox of St. Clears, Dyfed. One of his offerings is especially seasonable, though as one who has to drive long distances (we commute some 60 miles; 30 each way, a day), I hope that the output is not mirrored in real life. This particular program, then, is aimed at two sorts of readers; firstly the very young (and the young at heart) who delight in patterns. It's called "Snowflake": just type it in and run it. Secondly, those of you who are learning to program in Basic will find in it sufficient depth to puzzle at. Go for it! Type it in; run it to check that it's OK. All right: how does it work?

```
1 REM Snowflake
2 REM by John Exell
3 REM Popular Computing Weekly
4 REM 30 March-5 April 1989
5 REM The original program at lines
  10 to 570 sets out the changes
  that are made to the angle a exp
  licitly, and is therefore easy t
  o understand - but it is a bit t
  edious to type in
6 REM I have therefore, with apolog
  ies to John Exell, put a compres
  sed version of the program from
  line 1000 onwards in case you ju
  st want to see the effect with l
  ess typing-in effort
10 LET s=2
30 FOR c=-1 TO 1 STEP 2
40 FOR d=-1 TO 1 STEP 2
50 FOR e=-1 TO 1 STEP 2
60 PLOT 65,5
70 LET a=PI/2
80 GOSUB 160
90 GOSUB 530
100 PAUSE 200: REM - insert print pro
    gram here
110 CLS
120 NEXT e
130 NEXT d
140 NEXT c
150 STOP
160 FOR n=1 TO 3
170 GOSUB 210
180 LET a=a-2*PI/3
190 NEXT n
200 RETURN
210 GOSUB 290
220 LET a=a-PI/3
230 GOSUB 290
240 LET a=a+2*PI/3
250 GOSUB 290
260 LET a=a-PI/3
270 GOSUB 290
280 RETURN
290 GOSUB 370
300 LET a=a+PI*c/3
310 GOSUB 370
320 LET a=a-2*PI*c/3
330 GOSUB 370
340 LET a=a+PI*c/3
350 GOSUB 370
360 RETURN
370 GOSUB 450
380 LET a=a+PI*d/3
390 GOSUB 450
400 LET a=a-2*PI*d/3
410 GOSUB 450
420 LET a=a+PI*d/3
430 GOSUB 450
```

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```
 440 RETURN
 450 DRAW s*COS a,s*SIN a
 460 LET a=a+PI*e/3
 470 DRAW s*COS a,s*SIN a
 480 LET a=a-2*PI*e/3
 490 DRAW s*COS a,s*SIN a
 500 LET a=a+PI*e/3
 510 DRAW s*COS a,s*SIN a
 520 RETURN
 530 PAUSE 100
 540 PLOT 173,5: REM this may be diffe
     rent for different computers -tr
     ial and error needed
 550 LET a=5*PI/6
 560 GOSUB 160
 570 RETURN
1010 LET s=2
1030 FOR c=-1 TO 1 STEP 2
1040 FOR d=-1 TO 1 STEP 2
1050 FOR e=-1 TO 1 STEP 2
1060 PLOT 65,5
1070 LET a=PI/2: LET b=PI/3
1080 GOSUB 1160
1090 GOSUB 1530
1100 PAUSE 200: REM insert print progr
     am here
1110 CLS
1120 NEXT e
1130 NEXT d
1140 NEXT c
1150 STOP
1160 FOR k=1 TO 3
1170 GOSUB 1210
1180 LET a=a-2*b
1190 NEXT k
1200 RETURN
1205 REM ***********************
1210 GOSUB 1290
1220 FOR l=-1 TO 5 STEP 3
1230 LET a=a+l*b
1240 GOSUB 1290
1250 NEXT l
1260 RETURN
1265 REM ***********************
1290 GOSUB 1370
1300 FOR m=-1 TO 5 STEP 3
1310 LET a=a-c*m*b
1320 GOSUB 1370
1330 NEXT m
1340 RETURN
1350 REM ***********************
1370 GOSUB 1450
1380 FOR n=-1 TO 5 STEP 3
1390 LET a=a-d*n*b
1400 GOSUB 1450
1410 NEXT n
1420 RETURN
1430 REM ***********************
1450 DRAW s*COS a,s*SIN a
1460 FOR p=-1 TO 5 STEP 3
1470 LET a=a-p*e*b
1480 DRAW s*COS a,s*SIN a
1490 NEXT p
1500 RETURN
1510 REM ***********************
1530 PAUSE 100
1540 PLOT 173,5
1550 LET a=5*PI/6
1560 GOSUB 1160
1570 RETURN
```

I boobed last month. My bit from Ettrick Thomson solving the card problem had nothing to do with Steve's day/date solution. My apologies, Ettrick. However, clearly following on from this, again from Alan, is a little note which should have been included previously, but which also got transposed with something else (my apologies, Alan). Alan mentions that the problems with the court cards in a bridge hand are easily dealt with in Basic - there is no need to go into machine code or resort to reading ports, or anything complicated or elaborate. Staying with Basic, you merely call the cards of each suit 1 to 13 (or 2 to 14 if you prefer). You only need the J, Q, K and A notations when you communicate with humans, and this is easily done by including various statements in a PRINT command like ("K" AND n=13), etc. You can also easily include a suit value if you want to: in particular, you can enhance the value of the current trump suit by, for example, cardval=cardval+100*(suit=trumps).

Many thanks, as usual, Alan.

Ettrick Thomson in fact also sent in the following information, which does concern the day/date problem. He mentions that in his program "Weekday", there is by Spectrum standards (though not SAM standards), a syntax error in LINE 40. Here, there is no semicolon between the prompt ", year(eg 1992):" and the variable, yr. So it seems that with SAM, this semicolon, although acceptable, is not essential, as it is with the Spectrum. This is another small point for a SAM manual, which is still on my list of

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"things to do"! Many thanks, Ettrick.

A further boob, too, while I'm at it, which you should be able to use for your advantage, as they say. Ettrick's original program for SAM; "Weekday", contains a procedure which shouldn't be there. You had it as a bonus. It was inadvertently included when Ettrick saved the program, and since the program worked for me, I didn't see it, either. So what is this mysterious SAM procedure, and what does it do? Well, it's a utility to help with LLISTing programs, particularly to an Epson-compatible printer. Parameters: it LLISTS from lines L1 to L2 with left hand margin m, and w characters per line. If your program has hash signs, omit n from the call, but if it has pound signs, put n=3. There are quite a few other Epson printer control codes. They set elite pitch, slash zeros, choose international character set n, and left-hand margin m, and, finally, restore normal printer settings when it's all done.

In case you didn't get it before, here it is...

```
20000 DEF PROC Lstprg L1,L2,m,w,n
20010 DEFAULT m=0,w=40,n=0
20020 LOCAL e$: POKE SVAR 14,w-1
20030 LET e$=CHR$ 27: OPEN #5,"b"
20040 PRINT #5,e$;"M";e$;"¯";"l";e$;"R
      ";CHR$ n;e$;"l";CHR$ m
20050 LLIST L1-1 TO L2
20060 PRINT #5,e$;"¯";"0";e$;"@": CLOS
      E #5
20070 POKE SVAR 14,79
20080 END PROC
```

Finally from Ettrick, that program from A.Watson, printed in October's "Short Spot". You remember, "Defkey", which "LPRINTs to the screen"! Here's how it works.

LPRINT (and LList and COPY, for that matter) first fill up the printer buffer, a line at a time; each byte (they are not dealt with consecutively) is loaded into an address whose high byte is found from System "Variable"" 23681 and low byte from PR CC at 23680; 23681 normally

contains 91, and 91*256=23296, the first byte of the display file. So what happens is that each LPRINT statement puts data not into the printer buffer, but into the display file, so you see it on the screen, in a position determined by (23681). But the curious layout of the display file (Manual Chapter 24; The Memory) means that each line of print does not occupy 8 consecutive pixel rows, as is usually arranged, but the 8 pixel rows appear separately, 8 pixel rows apart. So the program "prints" each string 8 times, one pixel row beneath the previous printing, and hence each string appears on the screen with all its characters stretched out 8 times in the vertical direction.

Many thanks, Ettrick.

A note of distress from Kevin Gould of Heighington, Lincolnshire, next. You remember, he'd a problem when he tried to use the Pokes to use the Spectrum +2A's printer port with a PLUS D. Still no go. I suspect my answer's correct, then, and the problem lies with G+DOS grabbing the output. I suspect also that it's now hardware time - some lines will have to be cut somewhere. Brian Gaff (you could well contact him) might have the solution, but meanwhile, can anyone help us? Please drop me a line if you know how to deal with this problem.

Next, we have a big fat package, by registered mail, from Istvan Ordog of Budapest, Hungary. Great to hear from you again, Istvan. Istvan sent me a disc tool kit for the PLUS D, asking me my opinion. It comes up with an expanding oblong on the screen in nice colours, with options like Catalogue, disc monitor, track test, track toolkit, directory editor, hidden file, recall, IBM convert, help and exit. The cursor key scrolls a nice inverse bar up and down, allowing you to select. The overall standard of programming is very high. Istvan asks if it could be sold in "FORMAT" readers' services. Normally, we would expect you to advertise in the usual way, but in view of the problems, of corresponding, we'll see what can be

done.

Next, here's a little calendar from Istvan's ZX User Club. It prompts you for the month and year, and then prints up a complete calendar of that month. I know we've had calendars before - this is very nice and quick, though, and quite seasonable - everyone has a new calendar for Christmas, don't they. Istvan mentions that on some of their Spectrums (those with a clock board added), an autorun file reads the month from the built-in clock on booting.

```
1 REM KALENDER FROM ZXUSERCLUB-83.N
  OV
2 DATA "January",1,31,"February",2,
  28,"March",3,31,"April",4,30,"Ma
  y",5,31,"June",6,30,"July",7,31,
  "August",8,31,"September",9,30,"
  October",10,31,"November",11,30,
  "December",12,31
3 RESTORE 3: FOR i=0 TO 7: READ z:
  POKE USR "P"+i,z: NEXT i: DATA 2
  0,20,0,60,2,62,66,62: RESTORE
4 LET s=0
5 DIM a(31)
8 CLS : INPUT "Month? ";m: IF m<1 O
  R m>12 THEN GOTO 8
10 INPUT "Year? ";j: IF j<100 THEN L
   ET j=j+1900: CLS
11 LET ch=2: REM "PRINTER/3,SCREEN/2
   ? ";ch: IF ch<2 OR ch>3 THEN GOT
   O 11
12 READ m$,a,b
13 IF a=2 AND ((j/4)-INT (j/4))=0 TH
   EN LET b=b+1
14 IF m<>a THEN GOTO 12
16 LET f=m+1: LET c=j: IF m<3 THEN L
   ET f=m+13: LET c=c-1
18 LET h=(INT (365.25*c)+INT (30.6*f
   )+5)/7: LET h=(h-INT h)*14+1
20 IF (h-INT h)*10>=5 THEN LET h=h+1
22 LET h=INT h
23 IF h=1 THEN LET n=1
24 IF h=3 THEN LET n=4
25 IF h=5 THEN LET n=7
26 IF h=7 THEN LET n=10
27 IF h=9 THEN LET n=13
28 IF h=11 THEN LET n=16
29 IF h=13 THEN LET n=19
46 PRINT #ch;AT 3,0: PRINT #ch;m$;"
   ";j: PRINT #ch;"_____
   "
47 PRINT #ch;" Mo-Tu-We-Th-Fr-Sa-Su"
48 PRINT #ch;"_____
   "
```

```
50 LET x=8
55 LET d=1
60 FOR k=n TO n+(2*b) STEP 3
70 IF d<10 AND k>17 THEN PRINT #ch;
   INVERSE 1;AT x,k+1;d;: INVERSE 0
   : GOTO 100
80 IF d<10 THEN PRINT #ch;AT x,k+1;d
   ;: GOTO 100
85 IF k>17 THEN PRINT #ch; INVERSE 1
   ;AT x,k;d;: INVERSE 0: GOTO 100
90 PRINT #ch;AT x,k;d;
100 IF k=18 OR k=19 THEN LET x=x+2: L
    ET k=-2
105 IF d=b THEN INPUT "NEW INPUT? ";X
    $: IF X$="Y" OR X$="y" THEN CLS
    : GOTO 1
110 IF d=b THEN GOTO 200
120 LET d=d+1
130 NEXT k: IF d=b THEN STOP
200 STOP
9999 SAVE d*"CALENDAR" LINE 1
```

Now back to SAM. Here's some more of those nice, simple programs to type in, sent in by Chris Dodd, of Thornbury, Bristol (he sent in a great long pile of these - just what's needed to brighten up those foul, dank, cold January days). Come on; even if you're only a beginner, you can surely sit in front of the keyboard long enough to get these in correctly. And to puzzle out how they work (they're not difficult). And to use some of the principles in your own programs. And if you're an expert, well just type 'em in anyway - they're nice and refreshing! And you might even be able to improve on them - and send "Short Spot" the result!

Let's look at "twirl", first. This draws a little "tuft" of crossing, multicoloured lines. Then another one, a little distance away. Then it rotates the two, meshing them like the cogs of a wheel (shades of the "Spirograph" again!). Here it is...

```
10 LET s=1: FOR a=0 TO PI*2 STEP (P
   I*2)/120
20 PLOT PEN s;128+35*COS a,77+70*SI
   N -a: DRAW TO PEN s;128+70*SIN a
   ,77+35*COS -a
30 LET s=s+1: IF s=16 THEN LET s=1
40 NEXT a
50 FOR a=1 TO 15: FOR s=4 TO 0 STEP
   -1: LET c=a+s: IF c>15 THEN LET
```

```
        c=c-15
60 PALETTE c,s: NEXT s: NEXT a: GOT
O 50
```

Just a little point of puzzlement though. Why does the rotating twirl go all faint on me? How can one prevent it? Come on, all you clever, advanced programmers: drop me a line.

Now "Tube". I've seen lots of tube programs for SAM: so have you. This one, however, makes an unusually solid tube that gets bigger and bigger as it advances in an undulating fashion towards you, on-screen.

```
10 MODE 4: PALETTE : PAPER 0: BORDE
R 0: CLS #
20 LET p=1: FOR x=1 TO 207 STEP 3:
LET p=(p+1) MOD 15+1
30 FOR g=1 TO 4: CIRCLE PEN p;x,(9*
SIN (x/7)+88),x/5+g
40 NEXT g: NEXT x
```

Unfortunately, this program does not give you the opportunity to alter the choice of colours: they're fixed, though there's lots.

There is, however, a nice little addition to "tube". Just add the following lines...

```
10 MODE 4: PALETTE : PAPER 0: BORDE
R 0: CLS #
50 FOR a=1 TO 15: FOR s=4 TO 0 STEP
-1: LET c=a+s: IF c>15 THEN LET
c=c-15
60 PALETTE c,s: NEXT s: NEXT a: GOT
O 50
```

...and the tube writhes in horrific intestinal motion. (Yuk!).

Again, the same problems ensue. The colours of the writhing tube are very faint. After all, I guess the same principle's invoked. Maybe if there was some calculation on the variables "c" and "s", so that bright colours were shown on-screen, the effect would be better. Needs someone with more knowledge of the palette than me, though... How about it?

"Now, you scruffy so-and-so's. Marks all over the polished stuff, aren't

there. Off with your fingers! Go away and play with your computer, and stop mucking about". So, never heard comments like that? Never mind; here's a program to make nice clean finger prints on-screen. Don't worry if SAM pauses a while; he seems to need some time to think in this one!

```
5 MODE 1
10 BORDER 0: PAPER 0: PEN 7: CLS
30 LET a=76.11
40 LET alf=a*PI/180: LET c=COS (alf
)
50 LET s=SIN (alf)
60 LET namx=200
70 LET m=52
80 FOR j=1 TO m
90 LET x=0: LET y=j/m
100 FOR n=1 TO namx
110 LET w=x
120 LET x=x*c-(y-x*x)*s: LET y=w*s+(
y-w*w)*c
130 IF ABS (x)>4 OR ABS (y)>1 THEN S
AVE "finger1"SCREEN$
135 IF x>1 OR y>1 THEN GOTO 150
140 PLOT x*128+128,y*85+85
150 NEXT n
160 NEXT j
```

Eventually, there is a nice asymmetrical finger print on the screen. Line 130 saves it for you as a SCREEN$, but if you don't want this to happen, insert:-

```
    STOP : REM
```

between THEN and SAVE in Line 130.

O.K. How does it work?

Of course, if you're idle, like me, and haven't the time or can't be bothered, just type in this little program. It gives a symmetrical pattern not dissimilar to a finger print. The whole comes as a rather pleasing little picture of the print in a nice shade of mauve - but the print itself is not nearly as convincing as the one in the long program. A pity. The predecessor in my room at University was a mathematician, and a great one for programming. On the wall was a little card with the slogan "Think! Maybe we can dodge this work!" Sorry, folks: in

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this case, it just doesn't pay.

```
10 BORDER 7: PAPER 7: PEN 3: CLS
20 FOR b=0 TO 80 STEP 2
30 FOR a=0 TO 2*PI STEP .1
40 PLOT 127+(b*COS a),88+(b*SIN a)
50 NEXT a
60 NEXT b
```

Many thanks, Chris.

And, sticking with SAM, here's a little note from Dave Marriott of Long Eaton, Nottingham. Dave mentions Alan Cox's problem of losing his character set when diverting CHARS on SAM. He writes that it seems that the font you wish to use must lie within Page 0 of RAM (16384 to 32767). Although CHARS, like any two-byte number, can carry a value of up to 65535, SAM probably ignores the two most significant bits and uses the rest as an offset within Page 0. Dave also mentions that he finds that the best place to put alternative fonts is in the system Heap at 16384, with any machine code to manipulate them in there as well. In addition, Dave mentions that there is another restriction on alternative fonts. Frustratingly, it is only effective for characters 32 to 127 (space to copyright symbol) of your new font; for the UDG's from 128 upwards, SAM still uses the normal character set.

Sorry folks; I thought I had a nice Christmas Puzzle to end with, but I can't find it. So I guess that all I can do is dig out an old "April Fool" job to keep you amused over Chrimbles. It is one of the usual crisp bits of code written specially for the Spectrum by our regular contributor L.G.Baumann, of Cowies Hill, South Africa, which he sent me a little while ago, and which I was keeping until early in the new year, for next April's issue, to be exact. Unfortunately, Bob's jury job has made me write this early, so I've had to dig around. Here it is, anyway. Hope it gives you a laugh, too.

```
10 LET f$="APRIL FOOL"
20 FOR f=1 TO 10
30 READ a: LET f$(f)=CHR$ (CODE f$(f
```

```
)+a-20)
40 NEXT f
50 LET f$=f$+" ": REM TWO SPACES
60 FOR f=1 TO 58: PRINT f$;: REM NOT
E SEMI-COLON
70 BEEP .05,f/1.6: NEXT f
80 DATA 32,9,20,29,33,20,38,18,6,27
```

Many thanks, Mr Baumann, and sorry it was so long in the printing - I was saving it.

Once again, it's imploring time. Please send me your snippets - nice little bits like Chris Dodd's are just as acceptable as very esoteric pieces - don't forget; if you are a beginner, there are lots of other beginners out there, too. And please do send a listing and a disc; both with your name on. As I get older and more chaotic, I lose things so much easier! Please send your bits and pieces to:-

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

And a Merry Christmas to you all!

The HELP PAGE

Welcome to the first Help Page under new management. My name is Kevin Gould and, ably assisted by Ray Bray, I will try to answer your Spectrum and SAM problems. Where we can't find a solution, and we don't profess to be total experts on everything, we will use these pages to pass on your plea for help to other readers. Ray will be handling most of the SAM problems while I handle those Spectrum related. But we also need to build a panel of experts on specialist subjects. So if you know a bit about something (anything) then drop us a line so we can add you to our list of people to call on when a problem falls outside our sphere on knowledge.

Now, onto the real business and YOUR help letters.

First off, Mr Hatchett (lets have first names and keep it informal please). He has problems with a PLUS D and a Cumana CSA 354 drive. He has tried everything.

The system tape loads and works until YES to the FORMAT question when he has an error message check drive 1 at line 4110. This is the actual Format command.

Kevin answers: I may be able to answer after researching and delving back to Vol 1 Nº 10 and step rate, may have no connection apart from a Mr Wooff having a Cumana CS400 (if yours works, write in). To be as helpful as possible, as I have nothing to work on, try 9 or 12 in step rate question. The other (and most likely) problem could be that the drive you are using is set up internally as drive 2 - I understand from Bob that many PC drives are shipped set as drive 2 - try changing the jumper/switch inside the drive and see if that does the job. Otherwise send me as much info as

you can as to disc requirements and how you are setting up your system file. I presume you are using G+DOS 2a for ROM 1a.

And now a big thank you to R.H.Doughty, he is answering Mr Burtons question which Nev Young printed in the April edition. If he only wants to do a black on white screen dump this can be inverted by a short program using machine code.

```
10 REM inverscrn 17.5.92 R.H.Doughty
15 REM adjust lines 20 & 40 to suit
   interface and computer
20 LOAD "" SCREEN$
25 PRINT #0;"any key to continue": P
   AUSE 0
30 INPUT "Invert or save screen I/S
   ";C$: IF C$ <> "I" AND C$ <> "S"
   THEN GOTO 30
35 IF C$ = "I" THEN GOSUB 60: GOTO 3
   0
40 SAVE "inverscrn" SCREEN$
50 GOTO 30
60 RESTORE 65: FOR N=0 TO 16: READ A
   : POKE (64000+N),A: NEXT N
65 DATA 33,0,64,1,0,24,62,255,150,11
   9,35,11,120,177,32,246,201
68 REM three three, zero, six four,
   one, zero, two four, six two, two
   five five, one five zero, one on
   e nine, three five, one one, one
   two zero, one seven seven, three
   two, two four six, two zero one
70 RANDOMIZE USR 64000
75 RETURN
```

The program itself may be held on screen by LIST & ENTER for an initial test using GOTO 30.

(line 68 in the above is for clarification as numbers can be typed in wrong - do you like it?)

Malcom Jones has a program, which he is trying to convert to his SAM running MasterDOS, in which a variable

called NC is DIMensioned e.g DIM NC(76). Part of the way through the program is the line ERASE NC: DIM NC(76). In another similar program, the DIM after the ERASE is for a different number (different size array).

In SAM BASIC how can he ERASE the original array and set up a new array using the same name but different size. The program is too involved to use two different array names. They both use the same info but he presumes for different reasons.

Ray answers: With both Spectrum and SAM BASIC it is quite simple to erase the contents of an array. All you need to do is to declare another array using the same variable name with the DIM command, and using the same or revised dimensions.

What you can't do is to amend the dimensions of an array without erasing all the existing data. MasterBASIC gives the facility to do this in respect of strings and string arrays; just one of the many useful functions provided by this excellent piece of software by Dr.Andrew Wright.

Another one from Malcom. He has recently been given a VDU with no manual. The make is INCOTERM CORPORATION A66-03. On the rear of the monitor are 3 "D" sockets and one boyonete type, they are marked J1-J4. J1 is 7 pin while J2 & J3 are 15 pin. He would like to connect either his SAM or 48k Spectrum to it.

Kevin: I have a +2a which has the RGB socket, however a custom made board which a friend made had to be be fitted inside the VDU, this has no sound.

A quick flick to April 91 (perhaps W.Marsden from St.Helens could write in) has a Spectrum + and a Sanyo BM-12ESN VDU. Nev answers the number of lines required is 625. You would need an RGB input on the VDU as well as the Speccy (128k models have a proper RGB output signal and socket).

Ray adds: He does not know this make either but continues regarding monitors to Spectrum and SAM, I would like FORMAT readers to write in and let me know what success they have had in connecting various monitors and TV sets (using the aerial socket or the SCART), so that I can compile a list of suitable equipments which can be then be published in FORMAT. The kind of information I am after, apart from equipment type and cost, is the clarity, stability and control of the display, the reproduction of colours, and whether or not you have encountered any problems. This sort of information is long overdue and I am sure it will be of use to many readers who are contemplating changing their current display equipment.

Come on, those of you who are using a VDU write in, you have done it so tell us.

Tony Watson writes "As no doubt many readers will have informed you, dawn will only come in "Lords of Midnight" 30 seconds or so after you have pressed the "NIGHT" key (U). During this time, the forces of Doomdark make their response to your moves.

However, the above applies to the tape loaded Spectrum version. The game does not seem to travel well via the Messenger to the SAM disc and when night falls on the disc stored version, it stays fallen.

Another game which also fails to translate to the SAM disc via Messenger is "Airwolf" which loses all vertical control.

I too would like some help with solutions to these transfer problems whether they are games, utilities or whatever.

Ray answers: I'm sorry I can't help you on this one as I do not have access to a Messenger. Most of the transfer problems are caused by the program trying to use a Spectrum port which is allocated for other purposes within SAM. On the face of it this does not seem to be the trouble in

this case, as the program works when tape loaded. As you say, there are many problems which arise when trying to run Spectrum software on SAM. It would be useful if readers could let us know what problems they have encountered and inform us of any solutions they have found, so that we can pass them on; in particular does anyone have a solution to Tony's problem?

Kevin adds: Does any one know if it is possible to transfer WEC Le-Mans (Spectrum) to PLUS D disc.. The BASIC is protected.. any ideas..

You can't get a question much shorter than this from Mark Longhorn, thanks Mark.

What is the pin configuration on the PLUS D disc drive.

Ray answers, looking at the back of the PLUS D and reading right to left the top line are numbered 1 to 33 and the bottom line are numbered 2 to 34. Here is what they do. The other pins are not connected.

PIN	USE	
1 to 33	All 0 Volts	
8	Index	In
10	Disc 1 Select	Out
12	Disc 2 Select	Out
16	Motor On	Out
18	Direction of Step	Out
20	Step Pulse	Out
22	Write Data	Out
24	Write Gate	Out
26	Track Zero	In
28	Write Protect	In
30	Read Data	In
32	Side Select	Out

Kevin adds: perhaps you could write and say whether its for reference or something else - I am most interested.

Quite a long letter from R.Barton, BFPO '314, HMS Jersey. He owns a Spectrum +2 with PLUS D and a BBC. He has been given a pair of NEC 8 inch drives which have NEC FD 1165A on the rear. Both have power sockets similar to the BBC compatible drives and a signal lead not unlike the BBC drives

but has a lot more wires to it. Is it possible to convert this for use on the PLUS D if I can get power from another source, if I knew what power it uses. The capacity is not as much as 3.5" drives but his interest is trying to connect them.

Kevin answers: NEC's phone number is 0698 732221, they are based in Motherwell, Lanarkshire (as at 4.11.92). Perhaps as Ray added they will supply technical details. Any one else know anything about 8" drives?

Ray adds: Unless you can obtain the technical data on these drives it is impossible to tell whether they might be connectable to the PLUS D. Some later models of 8" drives were compatible with the Shugart standard used by the PLUS D but the majority were not. If the drives use hard-sectored discs then it is not feasible to use them. Assuming that they use soft-sectored discs, you still face the problem that the discs are probably single-density and single-sided. The PLUS D can be set to deal with single-sided discs using the POKE @1 and POKE @2 commands (numbers less than 128 equal single sided. But, unlike the DISCiPLE, the PLUS D will only work with double-density drives.

OK, now few questions of my own:-

1) Is it possible to connect the Saga 1 Emperor keyboard directly to a +2a. The reason being that I want to keep the +2a out of my kids reach as we now have the PLUS D and Genuis Mouse interface together on a U-slot connected to a Fixer to the +2a. All I want to see is the mouse, keyboard, disc drive and VDU.

2) Anyone know how I can get the PLUS D to print when the Genius Mouse is specified in the Art Studio installation program. I am using ARTCON to make it disc based. I can keep the Mouse interface attached and select keyboard during installation and the PLUS D prints happily. I presume a data clash somewhere. any ideas.

3) Anyone know if it is possible to write a BASIC program using Tasword 2 on a +2a in 48k mode then SAVE it to disc either as a CODE file for converting or as a BASIC program to use as a BASIC program. I know that you can convert BASIC to a Tasword 2 file, is the reverse possible.

Please reply to Kevin if you have any ideas...

Do you find the Help Page too technical or difficult to understand? Does it actually answer your problem? are you reading this and thinking.. "I have a problem but cannot explain it and they will think I am stupid". Well, even if it takes pages or a disc to explain, WRITE. Half my working day is spent explaining things in every form you can imagine. All Ray and I ask is that you enclose as much information as possible, even if it is stupid.

Addresses:

Questions on all matters except SAM spacific to:-

Kevin Gould
FORMAT Help Page
2 Barleyfield Close
Heighington
Lincolnshire (NOT LINCOLN)
LN4 1TX

Questions on SAM to:-

Ray Bray
FORMAT Help Page
4 Tidworth Road
Porton
Salisbury
Wiltshire
SP4 0NG

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A CHRISTMAS ~~DISC CARD~~
For Spectrum Or Sam

By:- Carol Brooksbank.

Have you ever thought of sending your computing friends a Christmas disc, instead of a Christmas card? I have done this a couple of times, once even back in my 48K Spectrum days.

What you put on the disc must be your own choice, of course, because a personalized Christmas "card" must be just that - personal. So all I can do is tell you the form my discs took, in the hope that it will trigger off ideas in you.

My discs had a "soundtrack" of Christmas carols, and a number of suitably Christmassy screens which were displayed one after the other.

I think you need a loading screen first, which says something about this being a Christmas greeting, telling the recipient to turn up the monitor volume so that he can hear the music, if you have any, and perhaps to press a key, when all the screen code blocks and music are loaded, to start the display.

I use about three or four other screens - usually featuring a Nativity scene or the Wise Men on one, Santa on another, something like a snowman, robins or a Christmas tree on another, and one which carries the greeting - my message and name. Last year's card had a final screen which said "The end", when the music finished.

Since I cannot produce original artwork to save my life, I use two main sources - clip art and the charts in embroidery books. Clip art is now freely available for both SAM and the Spectrum, and almost all collections have useful Christmas material. I have the collections from TEACHERS PET, SAM SUPPLEMENT, DAVE LEDBURY, SAMPRINT (Noesis' card and poster printing program) and PCG.
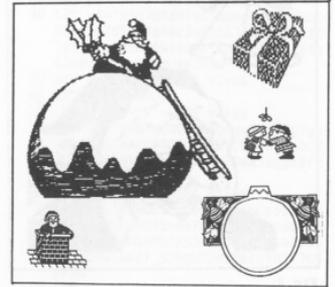
Fig.1.

Thanks to all these different collections, I can choose from 17 Santas, 12 Christmas trees, 2 Bethlehems, 3 Christmas puddings, and assorted holly, gifts, crackers, decorations, stars, angels, carol singers, snowmen and reindeer. Most of them are Spectrum screens in black-and-white. You can use them on SAM, of course. Load them into FLASH in MODE 1. If you wish, you can then select MODE 4 before adding colour. When adding colour on the Spectrum, or SAM mode 1, you must be careful about attribute clashes. Very precise placing of your motifs is needed to allow you to make the best use of colour, given that only two colours per 8x8 pixel cell are available. SAM specific material supplied in mode 4 screens is often already coloured. Figs. 1 and 2 show just a tiny sample of Christmas motifs from these clip art collections.

If you are going to combine motifs to make your screens, you will need an art package. ART STUDIO, THE ARTIST II, and SAM's FLASH all let you insert bits and pieces from other screens

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Fig.2.

into the one you are working on, and all allow you to scroll material around, or cut-and-paste it, to exact positions. I maintain a couple of Christmas "scrapbooks" with the 128K ART STUDIO, containing my favourite motifs, so that they are readily available. Some of my SAM screens start life as Spectrum screens in ART STUDIO and THE ARTIST II, because manipulating motifs and rescaling them is easier than with FLASH. I transfer them to FLASH and MODE 4 for the final colouring.

If you plan to use several screens as well as music, especially on the Spectrum, you may run out of memory. THE ARTIST II has a most useful screen compressor which allows you to save a number of screens in a very economical code file, and call them from BASIC as you need them. A similar compressor for SAM MODE 4 screens is available on STEVE'S SOFTWARE's SC_PD3.

My source for more elaborate screens is embroidery books, especially cross-stitch and tapestry books, which have charts on squared paper. Knitting

patterns can also be useful, but you need the sort of knitting charts which have rectangular grids rather than squared, because knitting charts on squared grids have strange proportions. If possible, I use 4 pixels per grid square (or rectangle), so that I can get plenty of detail and smooth curves. If this would make the picture too big for the screen, I use one pixel per square. Fig. 3 shows a SAM mode 4 screen from a cross-stitch pattern. The lettering is my own addition.

Fig.3.

I use FORMAT's FONT LIBRARY or the DTP PACK Headliner! fonts for my lettering. Fig. 4 shows a greeting screen using Headliner! fonts. The greeting is written in a font sent to me by Luca Alimandi, a FORMAT contributor with a formidable talent for font design. Some of us are trying to persuade Luca to market his Headliner! fonts. Our names are written in a Headliner! font I made myself (using Luca's font editor), copied from one of the large fonts in the Spectrum ICON GRAPHIX 128 program.
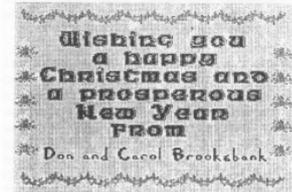
Fig.4.

Now to turn to music. Frankly, if you mean to do this sort of thing with a 48K Spectrum, you need a music package like MELBOURNE's THE MUSIC BOX. BEEP on its own is too feeble to produce anything worth listening to. SAM users will find music writing much easier if they have REVELATION's THE SOUND MACHINE. If you have a music package, follow the instructions and program in three or four of your favourite carols. I am going to concentrate now on music programming in BASIC on SAM and the 128K Spectrum.

Frankly, if I have to produce music using BASIC, I would far rather use a 128K Spectrum than a SAM. The Spectrum PLAY command is very easy to use, and will produce excellent music with 3-note chords, even allowing notes of different lengths in the same chord. Variable length rests are easy to program.

Listing 1 is "O come all ye faithful" for the 128K Spectrum, played through twice with a descant on the second verse. String s$ is the soprano line, c$ the alto line, and m$ the tenor line. These three strings are played together for the first verse. On the repeat, the soprano line remains the same, the second notes of the chord are the soprano line repeated an octave lower. The third line is a descant, d$. The short strings a$ and b$ set the tempo and octaves, and are prefixed to the tune strings along with "V" and either v1(15) or v2(12), which sets the appropriate volume levels so that the melody line and descant are slightly louder than the harmony lines.

If you type this listing, be careful about the use of capital and lower case letters in the strings. Also, capital "O" has a special significance to the PLAY command - it sets the octave - so be careful not to confuse it with O(zero). There are no spaces in the long strings - one line runs straight into the next. The strings must be exactly as they appear in the listing if the music is to sound right. You can add more strings for other carols in the same way.

Listing 1. Spectrum 128K.

```
 10 LET a$="T120O5":LET v1=15:LET v2=
    12
 20 LET s$="N5g7g5dg7ad5babC7b5ag7g5#
    fe#fgab7#f6e3d8d5&7D5Cb7Cb5abga7#
    f5dgg#fga7g5dbbabC7b5abCbag7#f5gC
    7b6a3g9g"
 30 LET p$=a$+"V"+STR$ v1+s$
 40 LET c$="N5d7d5dd7ed5ddde7d5dO4bbO
    5#cd#c7d5dd7d6#c3d8d5&7d3e#f5gg#f
    7g5ddee7d5d&&&&&&&5ddddd7d5dg#fg
    d3d#c7d5de7_6dO4N3b9b"
 50 LET q$=a$+"V"+STR$ v2+c$
 60 LET b$="T120O4"
 70 LET r$=b$+"V"+STR$ v2+s$
 80 LET m$="N5b7b5bb7Ca5gagg7g5#fg7g5
    aaag#fd7a6g3#f8#f5&7b5CD7CD5DgbC7
    a5#f&&&&&&&&&&&&&&&DDDaa7agg6#f3
    g9g"
 90 LET t$=b$+"V"+STR$ v2+m$
100 LET d$="N5D6D3CbCDb6C3babCa5bDGE7
    DD5b#CDED3#Cb5ada7D5#C8D5&6G3#FE#
    FGE6#F3E#DE#FD5Eb3bab#C7D5D&&&&&&
    d7_5D5&&&d7_5D5gDE3#FG#FE7D5D7G5
    #F9G"
110 LET w$=a$+"V"+STR$ v1+d$
120 PLAY p$,q$,t$: PAUSE 5: PLAY p$,w
    $,r$
```

The only way I know to program a chord in SAM BASIC whose notes are not all the same length, is to produce several adjoining chords with the long notes identical in each, and any shorter notes special to the individual chords. It makes SAM music sound not quite so subtle as Spectrum music. Other than that, the tune and descant are the same.

If you have Masterbasic, you can record your music to a string, which can be played independently of anything else your computer may be doing, because it is interrupt-driven. Listing 2 is the Masterbasic listing for "O come all ye faithful". When you have typed in and RUN this program, you will hear the music play, and you can delete the program, type in another, or display a series of screens while the music plays on. In fact, you have to type "SOUND CLEAR" (or NEW or reset SAM) to stop it. Once you have RUN this program, and listened to the music to check that it sounds right - you haven't mistyped

anything - you can delete lines 10-50 and 70-2000, leaving you with only lines 10, 60 and the string tune$. Save by:- SAVE "Ocome" LINE 10 and it will play the tune every time you load it. (Use GOTO 10 to run it again).

Listing 2. For SAM with MasterBasic.

```
  10 SOUND CLEAR 4096
  20 RECORD SOUND OFF TO tune$
  30 CLS : PRINT "PLEASE WAIT - PREPA
     RING SOUND    STRING"
  40 GOSUB 90
  50 RECORD SOUND STOP
  60 BLITZ SOUND tune$
  70 CLS : PRINT "MACHINE NOW FREE FO
     R USE": STOP
  90 LET tempo=12
 100 LET v=15,vol1=v,vol2=v*16
 110 REM Equate Notes to chromatic sc
     ale.
 120 LET B=&05,C=&21,Cs=&3c,D=&55,Ds=
     &6d,E=&84
 130 LET F=&99,Fs=&ad,G=&c0,Gs=&d2,A=
     &e3,As=&f3
 150 FOR r=0 TO 31: SOUND r,0: NEXT r
     : REM Clear sound chip.
 160 SOUND 20,1+2+4+8+16+32: REM Enab
     le all 6 channels.
 170 SOUND 28,1: REM Enable sound chi
     p.
 190 SOUND 0,vol1;1,vol2;2,vol1
 200 RESTORE 400: REM Point to Data t
     able.
 210 FOR r=1 TO 12+14+7+6+7+7+13+19+1
     6+21+32: REM Loop for number of
     chords.
 220 REM Get Length,note1,octave1,not
     e2 etc...
 230 READ L,n1,o1,n2,o2,n3,o3
 240 REM Output Notes to sound chip.
 250 SOUND 8,n1;9,n2;10,n3
 260 REM Output Octaves to sound chip
     .
 270 SOUND 16,o1+o2*16;17,o3
 280 PAUSE L*tempo
 290 NEXT r
 300 FOR r=0 TO 31: SOUND r,0: NEXT r
     : REM Clear sound chip.
 310 RETURN
 330 REM Length,Note1,Octave1,Note2,O
     ctave2,Note3,Octave3... repeated
 400 DATA 2,G,3,B,3,D,3,4,G,3,D,3,B,3
     ,2,D,3,D,3,B,3,2,G,3,D,3,B,3,4,A
     ,3,E,3,C,3,D,3,A,2
 410 DATA 2,B,4,D,3,G,2,2,A,3,D,3,A,2
     ,2,B,4,D,3,G,2,2,C,4,E,3,G,2,4,B
```

```
     ,4,D,3,G,2,2,A,3,D,3,FS,2
 420 DATA 2,G,3,G,2,B,3,2,G,3,B,3,G,2
     ,2,G,3,CS,3,G,2,2,FS,3,D,3,A,2,2
     ,E,3,C,3,A,2,2,FS,3,D,3,A,2,2,G,
     3,D,3,G,2,2,A,3,D,3,FS,2,2,B,4,D
     ,3,B,2,4,FS,3,D,3,A,2,3,E,3,CS,3
     ,G,2,1,D,3,D,2,FS,2,6,D,3,FS,2,D
     ,2,2,0,0,0,0,0,0
 430 DATA 4,D,4,D,3,B,3,1,C,4,E,2,C,3
     ,1,C,4,FS,3,C,3,2,B,4,G,3,D,3,2,
     C,4,G,3,C,3,2,C,4,FS,3,C,3,4,B,4
     ,G,3,B,3
 440 DATA 2,A,3,D,3,B,3,2,B,4,D,3,G,2
     ,2,G,3,E,3,B,3,2,A,3,E,3,C,3,4,F
     S,3,D,3,A,2,2,D,3,FS,2,D,2
 450 DATA 2,G,3,0,0,0,0,2,0,0,G,3,0,0
     ,2,FS,3,0,0,0,0,0,2,G,3,0,0,0,0,2,
     A,3,0,0,0,0,4,G,3,0,0,0,0,2,D,3,
     0,0,0,0
 460 DATA 2,B,4,D,3,0,0,2,0,0,B,4,D,3
     ,2,A,3,D,3,0,0,2,0,0,D,3,2,C
     ,4,D,3,0,0,4,B,4,0,0,D,3,2,A,3,D
     ,3,0,0
 470 DATA 2,B,4,G,3,B,3,2,C,4,FS,3,B,
     3,2,B,4,G,3,B,3,2,A,3,D,3,A,2,1,
     G,3,D,3,A,2,1,G,3,CS,3,A,2,4,FS,
     3,D,3,A,2,2,G,3,D,3,G,2,2,C,4,E,
     3,G,2,4,B,4,D,3,G,3,3,A,3,D,3,FS
     ,2,1,G,3,B,3,G,2,8,G,3,G,2,B,3
 480 REM
 490 DATA 6,0,0,0,0,0,0,3,D,4,G,3,G,2
     ,1,C,4,G,3,G,2,1,B,4,D,3,D,2,1,C
     ,4,D,3,D,2,1,D,4,G,3,G,2,1,B,4,G
     ,3,G,2,3,C,4,A,3,A,21,B,4,A,3,A,
     2,1,A,3,D,3,D,2,1,B,4,D,3,D,2,1,
     C,4,D,3,D,2,1,A,3,D,3,D,2,2,B,4,
     B,4,B,3,2,D,4,A,3,A,2,2,G,4,B,4,
     B,3,2,E,4,C,4,C,3,4,D,4,B,4,B,3,
     4,A,3,D,4,A,2
 500 DATA 2,B,4,G,3,G,2,2,CS,4,G,3,G,
     2,2,D,4,FS,3,FS,2,2,E,4,E,3,E,2,
     2,D,4,FS,3,FS,2,1,CS,4,G,3,G,2,1
     ,B,4,G,3,G,2,2,A,3,A,3,A,2,2,D,3
     ,B,4,B,3,2,A,4,FS,3,FS,2,2,E,4,F
     S,3,FS,2,2,D,4,E,3,E,2,1,CS,4,E,
     3,E,2,1,CS,4,D,3,D,2,6,D,4,D,3,D
     ,2,2,0,0,0,0,0,0
 510 DATA 3,G,4,D,4,D,3,1,FS,4,D,4,D,
     3,1,E,4,C,4,C,3,1,FS,4,C,4,C,3,1
     ,G,4,B,4,B,3,1,E,4,B,4,B,3,3,FS,
     4,C,4,C,3,1,E,4,C,4,C,3,1,DS,4,B
     ,4,B,3,1,E,4,B,4,B,3,1,FS,4,B,4,
     B,3,1,D,4,B,4,B,3,2,E,4,A,3,A,2,
     2,B,3,B,4,B,4,1,B,4,G,3,G,2,1,A,
     3,G,3,G,2,1,B,4,A,3,A,2,1,CS,4,A
     ,3,A,2,4,FS,3,D,4,FS,2,2,D,4,D,3
     ,D,2,2,0,0,G,3,G,2
 520 DATA 2,0,0,G,2,G,3,2,0,0,FS,3,FS
```

```
,2,2,0,0,G,3,G,2,2,0,0,A,3,A,2,2
,0,0,G,3,G,2,2,D,3,G,3,G,2,2,D,4
,D,3,D,2,2,D,4,B,4,B,3,2,D,4,B,3
,B,4,2,0,0,A,3,A,2,2,0,0,B,4,B,3
,2,0,0,C,4,C,3,2,0,0,B,4,B,3,2,D
,3,B,4,B,3,2,D,4,A,3,A,2
530 DATA 2,D,4,B,4,B,3,2,D,4,C,4,C,3
,2,G,3,B,4,B,3,2,D,4,A,3,A,2,2,E
,4,G,3,G,2,1,FS,4,FS,3,FS,2,1,G,
4,FS,3,FS,2,1,FS,4,FS,3,FS,2,1,E
,4,FS,3,FS,2,2,D,4,G,3,G,2,2,D,4
,C,4,C,3,2,D,4,B,4,B,3,2,G,4,B,4
,B,3,2,G,4,A,3,A,2,1,FS,4,A,3,A,
2,1,FS,4,G,3,G,2,8,G,4,G,2,G,3
```

If you want to expand this listing to include more carols of your own choosing, make sure that line 210 always contains exactly the right total of numbers for the chords in your DATA statements. (The first 12 in my listing covers the first two 6-chord blocks in the DATA statements). Add the chords to the DATA statements. You can use 3 notes per chord, and the result will be in stereo. In Masterbasic listings, you can use 0 (zero) to specify a rest, in some or all of the notes in the chord. The first figure in the DATA statement defines the length of the note (or rest).

For the benefit of those who do not have MasterBasic, I have included a listing for use with Samdos. (Listing 3). It will not produce interrupt-driven music, so you must retain all the BASIC in your Christmas card listing. Also, the program will not recognise zero values, so I have removed the 'rests' and lengthened chords or introduced other notes to compensate. Again, you can add more chord DATA statements to introduce more carols, but this time you must add loops like those in lines 10-130 to play them. Line 140 contains the commands which stop the last note from playing on forever.

Listing 3. In Normal SAM Basic.

```
10 LET C=33,CS=60,D=85,DS=109,E=132
,F=153,FS=173,G=192,GS=210,A=227
,AS=243,B=5
20 FOR X=1 TO 6: PLAY : NEXT X
30 FOR X=1 TO 6: PLAY : NEXT X
40 FOR X=1 TO 13: PLAY : NEXT X
50 FOR X=1 TO 7: PLAY : NEXT X
60 FOR X=1 TO 6: PLAY : NEXT X
70 FOR X=1 TO 7: PLAY : NEXT X
80 FOR X=1 TO 7: PLAY : NEXT X
90 FOR X=1 TO 13: PLAY : NEXT X
100 FOR X=1 TO 18: PLAY : NEXT X
110 FOR X=1 TO 15: PLAY : NEXT X
120 FOR X=1 TO 21: PLAY : NEXT X
130 FOR X=1 TO 32: PLAY : NEXT X
140 FOR R=0 TO 31: SOUND R,0: NEXT R
150 DEF PROC PLAY: SOUND 20,63
160 SOUND 28,1
170 LET METRONOME=.95
180 READ L,N1,O1,N2,O2,N3,O3
190 SOUND 8,N1;9,N1;10,N2;11,N2;12,N
3;13,N3
200 SOUND 16,O1-1+(O1*16);17,O2-1+(O
2*16);18,O3-1+(O3*16)
210 FOR V=15 TO 2 STEP -(METRONOME/L
)
220 LET VOL1=INT V: LET VOL2=240-(IN
T V)*16
230 SOUND 0,VOL1;1,VOL2;2,VOL2;3,VOL
1;4,VOL1;5,VOL2
240 NEXT V
250 END PROC
260 REM
270 REM Length,Note1,Octave1,Note2,O
ctave2,Note3,Octave3... repeated
280 DATA 2,G,3,B,3,D,3,4,G,3,D
,3,B,3,2,D,3,D,3,B,3,2,G,3,D,3,B
,3,4,A,3,E,3,C,3,4,D,3,D,3,A,2
350 DATA 2,B,4,D,3,G,2,2,A,3,D,3,A,2
,2,B,4,D,3,G,2,2,C,4,E,3,G,2,4,B
,4,D,3,G,2,2,A,3,D,3,FS,2
420 DATA 2,G,3,G,2,B,3,2,G,3,B,3,G,2
,2,G,3,CS,3,G,2,2,FS,3,D,3,A,2,2
,E,3,C,3,A,2,2,FS,3,D,3,A,2,2,G,
3,D,3,G,2,2,A,3,D,3,FS,2,2,B,4,D
,3,B,2,4,FS,3,D,3,A,2,3,E,3,CS,3
,G,2,1,D,3,D,2,2,FS,2,8,D,3,FS,2,D
,2
560 DATA 4,D,4,D,3,B,3,1,C,4,E,2,C,3
,1,C,4,FS,3,C,3,2,B,4,G,3,D,3,2,
C,4,G,3,C,3,2,C,4,FS,3,C,3,4,B,4
,G,3,B,3
640 DATA 2,A,3,D,3,B,3,2,B,4,D,3,G,2
,2,G,3,E,3,B,3,2,A,3,D,3,4,F
S,3,D,3,A,2,2,D,3,FS,2,D,2
710 DATA 2,G,3,G,2,G,2,2,G,2,G,3,G,2
,2,FS,3,FS,3,FS,3,2,G,3,G,3,G,3,
2,A,3,A,3,A,3,4,G,3,G,3,G,3,2,D,
3,D,2,D,3
790 DATA 2,B,4,D,3,B,4,2,D,3,B,4,D,3
,2,A,3,D,3,A,3,2,B,4,B,4,D,3,2,C
,4,D,3,C,4,4,B,4,D,3,2,A,3,D
,3,A,3
```

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```
870 DATA 2,B,4,G,3,B,3,2,C,4,FS,3,B,
3,2,B,4,G,3,B,3,2,A,3,D,3,A,2,1,
G,3,D,3,A,2,1,G,3,CS,3,A,2,4,FS,
3,D,3,A,2,2,G,3,D,3,G,2,2,C,4,E,
3,G,2,4,B,4,D,3,G,3
970 DATA 3,A,3,D,3,FS,2,1,G,3,B,3,G,
2,8,G,3,G,2,B,3
1000 REM
1020 DATA 3,D,4,G,3,G,2,1,C,4,G,3,G,2
,1,B,4,D,3,D,2,1,C,4,D,3,D,2,1,D
,4,G,3,G,2,1,B,4,G,3,G,2,3,C,4,A
,3,A,2,1,B,4,A,3,A,2,1,A,3,D,3,D
,2,1,B,4,D,3,D,2,1,C,4,D,3,D,2,1
,A,3,D,3,D,2,2,B,4,B,4,B,3,2,D,4
,A,3,A,2,2,G,4,B,4,B,3,2,E,4,C,4
,C,3,4,D,4,B,4,B,3,A,3,A,2
1210 DATA 2,B,4,G,3,G,2,2,CS,4,G,3,G,
2,2,D,4,FS,3,FS,2,2,E,4,E,3,G,2,
2,D,4,FS,3,FS,2,1,CS,4,G,3,G,2,1
,B,4,G,3,G,2,1,B,4,B,4,A,3,FS,3,
,B,4,B,3,2,A,3,FS,3,FS,2,2,D,4,F
S,3,FS,2,2,D,4,E,3,E,2,1,CS,4,E,
3,E,2,1,CS,4,D,3,D,2,8,D,4,D,3,D
,2
1370 DATA 3,G,4,D,4,D,3,1,FS,4,D,4,D,
3,1,E,4,C,4,C,3,1,FS,4,C,4,C,3,1
,G,4,B,4,B,3,1,E,4,B,4,B,3,3,FS,
4,C,4,C,3,1,E,4,C,4,C,3,1,DS,4,B
,4,B,3,1,E,4,B,4,B,3,1,FS,4,B,4,
B,3,1,D,4,B,4,B,3
1490 DATA 2,E,4,A,3,A,2,2,B,3,B,4,B,4
,1,B,4,G,3,G,2,1,A,3,G,3,G,2,1,B
,4,A,3,A,2,1,CS,4,A,3,A,2,4,FS,3
,D,4,FS,2,2,D,4,D,3,D,2,2,G,2,G,
3,G,2
1590 DATA 2,G,2,G,2,G,3,2,FS,2,FS,3,F
S,2,2,G,2,G,3,G,2,2,A,2,A,3,A,2,
2,G,2,G,3,G,2,2,D,3,G,3,G,2,2,D,
4,D,3,D,2,2,D,4,B,4,B,3,2,D,4,B,
3,B,4,2,A,3,A,3,A,2,2,B,3,B,4,B,
3,2,C,3,C,4,C,3,2,B,3,B,4,B,3,2,
D,3,B,4,B,3,2,D,4,A,3,A,2,2,D,4,
B,4,B,3
1750 DATA 2,D,4,C,4,C,3,2,G,3,B,4,B,3
,2,D,4,A,3,A,2,2,E,4,G,3,G,2,1,F
S,4,FS,3,FS,2,1,G,4,FS,3,FS,2,1,
FS,4,FS,3,FS,2,1,E,4,FS,3,FS,2,2
,D,4,G,3,G,2,2,D,4,C,4,C,3,2,D,4
,B,4,B,3,2,G,4,B,4,B,3,2,G,4,A,3
,A,2,1,FS,4,A,3,A,2,1,FS,4,G,3,G
,2,8,G,4,G,2,G,3
```

How to put it all together? Your disc will need a DOS file on it. (SAM users must only use a MasterBasic DOS if you are sending discs to friends who already own MasterBasic, or you will be breaking the copyright laws.

If in doubt, use SAMDOS.)

Then, you need an auto-running program which will load first a loading screen, and then your screen file, (if you have used a compressor), your music (if you have used a music package or a Masterbasic string), and/or the main program which plays your music and displays your screens.

If you are using MasterBasic, you can set the music running with BLITZ tune$, and then display the screens one after the other, using PAUSE to time the changes. If you use a "THE END" screen, time it to coincide with the end of the last carol.

With the Spectrum or Samdos, you will have to call the music in blocks, either of one carol or one verse, and change screens between music blocks. If you are not using compressed screens, you may need to load each screen from disc as it is needed, especially with the Spectrum or a 256K SAM.

You may need a lot of run-throughs, with changes to PAUSE values or the points at which you change screens, before you are satisfied. When your master disc pleases you, make your copies.

A nice final touch is to make a Christmassy label for the discs. (Fig. 6) Ordinary tractor-feed address labels are fine, though you may have to cut a bit off the width. If you have a colour printer, or some coloured ribbons for your monochrome printer, printing the label in say, red and green, can be very effective.

```
Reset SAM
Put this disc in
drive 1 and press
Key F9
```

Fig.5.

So there you are, your Christmas greeting problems solved. Have fun making your discs, and a very happy Christmas to you all.

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SUPER-GOLF

By:- Bob Brenchley.

As a special Christmas treat for all you readers who like programs to type in I thought I would present one of my own (very 'umble) offerings.

Way back in 1981 I wrote a simple game of Golf for the ZX81, it sold a few copies but I did not get rich. Then in 1982, with the launch of the Spectrum, I added colour and UDG graphics. The Spectrum version sold over 9,000 copies through W.H.Smith's alone - not bad even in those heady days.

It is a program for all ages, both sexes, and can even be played by teams (I once had two very drunk teams, each of about 12 people, take an average of 20 shots to hole each ball). The program has also sold well to educational establishments because it helps to teach children the concept of scale - the distance on screen between the tee and the hole has to be looked at in relation to the length of the hole in yards.

Since 1982 the program has been modified a few times, but overall this is still vintage programming. The program relies on the fact that each feature on the course can be detected by its colour - using combinations of INK, PAPER and BRIGHT to make the difference.

So how about a little project for you programming wizards out there in FORMAT land.

First type in the program, it should require only a line:-

    10 MODE 1: CSIZE 8,8

to work on a SAM. If you are really too lazy to type it in then send us £2.95 and we will send you a copy on disc (3½ or 5¼ 80 track only).

Now, wonderful game that it is, there is room for many improvements especially in a SAM version. So get programming and send in your enhancements (if they are more than a few lines long then send them on disc please). Once or twice over the next few months we will run a special feature and print the best of your ideas, each printed contribution will earn the sender extra FORMAT subscription (how long depends on what you send - the Editor's decision final of course). So, how about a little man swinging a club? More detail on screen? Club selection? The list is long.

In addition Revelation Software have agreed to publish the best Golf game you can come up with for SAM (just think of all those royalties). You don't need to start with this one, you could do your own thing either in Basic or Machine code, but it must be good. Graphics, colour and sound would all need to be first class.

```
1000 IF PEEK USR "A"<>1 THEN GOTO 9500
1010 GOTO 5000
2000 BORDER 4: PAPER 4: CLS : PAPER 7:
     FOR I=1 TO 176: PRINT  PAPER 4;C
     HR$ 144;CHR$ 144;CHR$ 144;CHR$ 14
     4;: NEXT I
2010 FOR I=1 TO 3+RND*3: LET K=INT (RN
     D*2): LET T$=CHR$ 16+CHR$ 4+CHR$
     17+CHR$ 0+((CHR$ 145+CHR$ 145+CHR
     $ 145+CHR$ 145+CHR$ 145+CHR$ 145+
     CHR$ 145+CHR$ 145+CHR$ 145+CHR$ 1
     45) AND K)+((CHR$ 149+CHR$ 149+CH
     R$ 149+CHR$ 149+CHR$ 149+CHR$ 149
     +CHR$ 149+CHR$ 149+CHR$ 149+CHR$
     149) AND NOT K): LET K=4+RND*17:
     FOR L=0 TO 21: LET K=K-2+RND*4: P
     RINT AT L,K*(K<=31)-12*(K>12 AND
     L=21);T$( TO 4+RND*8): NEXT L: NE
     XT I
2020 FOR I=1 TO 29 STEP 2: LET J=5+RND
     *5: FOR L=J TO 11+RND*4: PRINT AT
     L,I; PAPER 4; INK 4;" ": NEXT L
```

```
          : NEXT I
2030 LET I=INT (RND*2): LET T$=CHR$ 17
     +CHR$ 5+CHR$ 16+CHR$ 4+((CHR$ 150
     +CHR$ 151+CHR$ 152+CHR$ 153+CHR$
     154+CHR$ 155) AND I)+CHR$ 159+CHR
     $ 160+CHR$ 161+CHR$ 162+CHR$ 163+
     CHR$ 164
2040 LET I=5+10*RND: LET J=11+8*RND: P
     RINT AT I,J;T$( TO 7);AT I+1,J;T$
     (8 TO 10)
2070 LET T$=CHR$ 156+CHR$ 157+CHR$ 158
     : FOR I=1 TO 3+RND*3: PRINT AT 5+
     RND*10,20+RND*6; PAPER 4; INK 6;T
     $(1+RND*2): NEXT I
2080 LET J=INT (4+RND*14): FOR I=J-2 T
     O J+2: PRINT AT I,25+RND*2; PAPER
     4; INK 1; BRIGHT 1;"      ": NEXT
     I
2090 PRINT AT J,27+RND*3; PAPER 4; INK
     1; BRIGHT 1;CHR$ 147; INK 4;" "
2100 LET BX=5+RND*8: LET BY=0
2110 LET J=RND: LET PAR=3+(J>.5)+(J>=.
     8): LET YRD=(170+INT (RND*100))*(
     PAR=3)+(275+INT (RND*175))*(PAR=4
     )+(450+INT (RND*125))*(PAR=5): LE
     T STEP=28/YRD
     2120 PRINT AT 1,1; INK 2;"Hole "
     ; INK 0;H;TAB 10;AT 2,1; INK 2;"P
     ar    "; INK 0;PAR;TAB 10;AT 3,1;
     INK 2;"Yards "; INK 0;YRD
2130 RETURN
5000 BORDER 6: PAPER 6: LET Q=NOT PI:
     BRIGHT Q: OVER Q: FLASH Q: INK Q:
     CLS : POKE 23658,8: RANDOMIZE
5010 LET B$=CHR$ 22+CHR$ 21+CHR$ 0: LE
     T B$=B$+CHR$ 17+CHR$ 4+"
                  "+B$: REM
     32 spaces
5020 PRINT ''''''''''   Do you ne
     ed instructions?"
5030 GOSUB 8010: IF Z$="Y" THEN GOSUB
     9000
5040 CLS : PRINT ''''''''"What length o
     f course would you";TAB 10;"like
     to play?"''TAB 7;'''"S""   Short 9
     hole."'''TAB 7;'''"L""   Long 18 hol
     e."
5050 LET CL=9*(INKEY$="S")+18*(INKEY$=
     "L"): IF NOT CL THEN GOTO 5050
5060 CLS : PRINT ''''''"WELCOME TO THE
     ZX INTERNATIONAL"''TAB 5;CL;" HOL
     E GOLF COURSE."'''TAB 7;"How many
     players?";''TAB 10;'''"1" OR ""2
     """
5070 LET PL=1*(INKEY$="1")+2*(INKEY$="
     2"): IF NOT PL THEN GOTO 5070
5080 DIM P(2,6): DIM N$(2,6): GOSUB 78
     00: LET V=PI/6
```

```
5090 LET PD=Q: FOR H=1 TO CL: GOSUB 20
     00
5100 LET HO=Q: FOR I=1 TO PL: LET P(I,
     1)=BX: LET P(I,2)=BY: LET P(I,3)=
     1: LET P(I,6)=Q: NEXT I
5110 FOR S=1 TO 99: FOR P=1 TO PL
5120 IF PD THEN FOR P=PL TO 1 STEP -1
5130 IF P(P,3)=97 THEN GOTO 5410
5140 GOSUB 7000: LET ST=ST*STEP*2: LET
     PS=" "
5150 IF P(P,3)=32 THEN LET ST=ST/(2+RN
     D*2): LET P$=CHR$ 17+CHR$ 4+CHR$
     144
5160 IF P(P,3)=4 THEN LET P$=CHR$ 17+C
     HR$ 0+CHR$ 16+CHR$ 4+CHR$ 145: IF
     RND>.6 THEN PRINT #Q;"YOUR BALL
     REBOUNDS FROM A TREE.": LET D=RND
     *12: LET ST=ST/4: GOSUB 7900
5170 IF P(P,3)=38 THEN LET P$=CHR$ 17+
     CHR$ 4+CHR$ 16+CHR$ 6+CHR$ 157: I
     F RND>.6 THEN PRINT #Q; PAPER 7;
     INK 2;"MISS HIT!"; INK 0;" You re
     main in bunker.": LET ST=Q: GOSUB
     7900
5180 IF P(P,3)=36 THEN LET P$=CHR$ 17+
     CHR$ 4+CHR$ 16+CHR$ 4+" "
     5190 IF P(P,3)=100 THEN LET P$=CH
     R$ 19+CHR$ 1+CHR$ 17+CHR$ 4+CHR$
     16+CHR$ 4+" "
5200 IF P(P,3)=1 THEN LET P$=CHR$ 16+C
     HR$ 1+"T"
5210 PRINT AT P(P,1),P(P,2);P$
5220 LET P(P,1)=P(P,1)-ST*COS (D*V): L
     ET P(P,2)=P(P,2)+ST*SIN (D*V)
5230 IF P(P,1)>=Q AND P(P,1)<=20 AND P
     (P,2)>=Q AND P(P,2)<=31 THEN GOTO
     5290
5240 PRINT #Q; FLASH 1;"OUT OF BOUNDS.
     .. PENALTY STROKE": GOSUB 7900: L
     ET P(P,6)=P(P,6)+1
5250 IF P(P,1)<Q THEN LET P(P,1)=Q
5260 IF P(P,1)>20 THEN LET P(P,1)=20
5270 IF P(P,2)<Q THEN LET P(P,2)=Q
5280 IF P(P,2)>31 THEN LET P(P,2)=31
5290 LET P(P,3)=ATTR (P(P,1),P(P,2))
5300 IF P(P,3)=39 THEN LET P(P,3)=P(1+
     (P=1),3)
5310 IF P(P,3)=44 THEN GOTO 7700
5320 IF P(P,3)=97 THEN GOTO 5390
5330 IF P(P,3)=36 THEN LET P$="ON THE
     FAIRWAY"
5340 IF P(P,3)=32 THEN LET P$="IN THE
     ROUGH"
5350 IF P(P,3)=4 THEN LET P$="IN THE T
     REES..."
5360 IF P(P,3)=38 THEN LET P$="IN A BU
     NKER."
5370 IF P(P,3)=100 THEN LET P$="ON THE
```

```
     GREEN."
5380 PRINT #Q; PAPER 7; INK 1;P$: PRIN
     T AT P(P,1),P(P,2); FLASH 1; PAPE
     R 4; INK 7;CHR$ 148: GOSUB 7900:
     PRINT AT P(P,1),P(P,2); PAPER 4;
     INK 7;CHR$ 148: GOTO 5410
5390 LET P(P,5)=S+P(P,6)-PAR: LET P(P,
     4)=P(P,4)+P(P,5): LET HO=HO+1
5400 PRINT B$;"Player ";N$(P);" Holed
     out in ";S+P(P,6),: IF S+P(P,6)=1
     THEN FOR I=1 TO 30: BEEP .08,10+
     RND*20: NEXT I: PRINT #Q;AT Q,Q;
     PAPER 2; INK 7; BRIGHT 1; FLASH 1
     ;"A HOLE IN ONE"' FLASH 0;"YOU BU
     Y THE DRINKS AT THE 19th.."
5401 PAUSE 250
5410 PAUSE 50: NEXT P
5420 IF HO=PL THEN GOTO 5440
5430 NEXT S
5440 BORDER 4: PAPER 5: CLS : PRINT P
     APER 2; INK 7;"SCORE   "; INVERSE
     1;"    SUPER GOLF   "; INVERSE 0;
     "    CARD"
5450 PRINT "TAB VAL "9+1*(CL=9)";CL;"
     HOLE COURSE"
5460 PRINT '"Hole - ";H;"  Par - ";PAR
     ;"  Yards - ";YRD
5470 PRINT '"PLAYER";TAB 10;"HOLE";TAB
     20;"COURSE": PLOT 0,118: DRAW 25
     5,0
5480 FOR I=1 TO PL: PRINT 'N$(I);TAB 7
     5490 IF NOT P(I,5) THEN PRINT " On";:
          GOTO 5530
5500 PRINT ABS P(I,5);
5510 IF P(I,5)<Q THEN PRINT " Under";
5520 IF P(I,5)>Q THEN PRINT " Over";
5530 PRINT " Par";TAB 19;
5540 IF NOT P(I,4) THEN PRINT " On";:
     GOTO 5580
5550 PRINT ABS P(I,4);
5560 IF P(I,4)<Q THEN PRINT " Under";
5570 IF P(I,4)>Q THEN PRINT " Over";
5580 PRINT " Par": NEXT I
5590 IF H=CL THEN GOTO 5640
5600 PRINT #Q;" PRESS ENTER TO START N
     EXT HOLE "
5610 IF INKEY$<>CHR$ 13 THEN GOTO 5610
5620 LET PD=(PL>1 AND (P(1,5)>P(2,5)))
5630 NEXT H
5640 PRINT AT 16,2; PAPER 6; INK 0;"Wo
     uld you like another game?";AT 18
     ,11;'''"Y" OR "N"'''
5650 GOSUB 8010: IF Z$="Y" THEN RUN
5660 PRINT AT 20,7; PAPER 6; INK 0;"Th
     anks for playing": STOP
5670 GOTO 5650
7000 PRINT B$;"Player - ";N$(P);" Stro
```

```
     ke No - ";S+P(P,6),: INPUT ;
7010 PRINT AT P(P,1),P(P,2); FLASH 1;
     PAPER 4; INK 7;CHR$ 148
7020 PRINT #0;AT 0,0; PAPER 6;"Directi
     on? 0-12": GOSUB 8030: LET D=VAL
     R$: IF D<0 OR D>12 THEN INPUT ;;
     PRINT #0; FLASH 1;"INVALID"; FLAS
     H 0;" Direction MUST be 0-12": PA
     USE 150: INPUT ;; GOTO 7020
7030 LET D=INT (D*100+.5)/100
7040 PRINT #0;AT 0,0; PAPER 5;"Directi
     on= ";D;" "; PAPER 6;"Strength? 0
     -100": GOSUB 8030: LET ST=VAL R$:
     INPUT ;; IF NOT ST THEN GOTO 702
     0
7050 IF ST<0 OR ST>100 THEN PRINT #0;
     FLASH 1;"INVALID"; FLASH 0;" Stre
     ngth MUST be 0-100": PAUSE 150: I
     NPUT ;; GOTO 7040
7060 LET ST=INT (ST*100+.5)/100: PRINT
     #0;AT 0,0; PAPER 5;"Direction= "
     ;D;" Strength= ";ST: PAUSE 100: I
     NPUT ;; RETURN
7700 PRINT #0; PAPER 7; INK 2;"LANDED
     IN WATER."; INK 0;" Penalty Strok
     e"
7705 FOR I=INT (P(P,2)) TO 0 STEP -1
7710 IF ATTR (P(P,1),I)=44 THEN NEXT I
7715 LET P(P,2)=I: LET P(P,6)=P(P,6)+1
     : GOSUB 7900: GOTO 5290
7800 CLS : FOR I=1 TO PL: PRINT AT 6+I
     *2,0;"Name of player ";I;" ";: G
     OSUB 8040: LET N$(I)=R$: PRINT N$
     (I): NEXT I
7805 PAUSE 100: RETURN
7900 PAUSE 250: INPUT ;: RETURN
8000 REM INKEY$INKEY$INKEY$
8001 IF INKEY$<>"" THEN GOTO 8001
8002 LET Z$=INKEY$: IF Z$="" THEN GOTO
     8002
8003 RETURN
8010 REM INKEY$ (Y) or (N)
8011 PRINT #0;AT 0,0;"Please Press Y o
     r N"
8012 GOSUB 8000: IF Z$="Y" OR Z$="N" T
     HEN GOSUB 8050: RETURN
8013 GOTO 8010
8020 REM INKEY$ NUMERIC
8021 GOSUB 8000: IF Z$<"0" OR Z$>"9" T
     HEN GOTO 8021
8022 RETURN
8030 REM INPUT NUMERIC STRING.
8031 LET R$=""
8032 PRINT #0;AT 1,0;R$; FLASH 1;"?";
     FLASH 0;" ": GOSUB 8000: IF Z$=CH
     R$ 13 AND LEN R$ THEN GOSUB 8050:
     RETURN
8033 IF Z$=CHR$ 12 AND LEN R$ THEN LET
```

```
     R$=R$( TO LEN R$-1): GOTO 8032
8034 IF Z$="." THEN GOTO 8037
8035 IF LEN R$>8 OR Z$<"0" OR Z$>"9" T
     HEN GOTO 8032
8036 LET R$=R$+Z$: GOTO 8032
8037 FOR Z=1 TO LEN R$: IF R$(Z)<>"."
     THEN NEXT Z: GOTO 8036
8038 LET Z$="": GOTO 8032
8040 REM  INPUT ALPHA STRING
8041 LET R$=""
8042 PRINT #0;AT 1,0;""""";R$; FLASH 1;
     "C"; FLASH 0;""" "
8043 GOSUB 8000: IF Z$=CHR$ 13 AND LEN
     R$ THEN GOSUB 8050: RETURN
8044 IF Z$=CHR$ 12 AND LEN R$ THEN LET
     R$=R$( TO LEN R$-1): GOTO 8042
8045 IF LEN R$>10 OR ((Z$<"A" OR Z$>"Z
     ") AND Z$<>" ") THEN GOTO 8043
8046 LET R$=R$+Z$: GOTO 8042
8050 INPUT "": RETURN
8998 RANDOMIZE USR (77+PEEK 23730+256*
     PEEK 23731)
8999 STOP
9000 BORDER 7: PAPER 7: CLS : LET T$=C
     HR$ 20+CHR$ 1+CHR$ 16+CHR$ 2+"
     ZX SPECTRUM   SUPER GOLF    ": P
     RINT T$'' INK 3;"   A GAME FOR 1
     OR 2 PLAYERS"
9010 PRINT '" You may play a 9 hole co
     urse ORa full 18 hole course. Eac
     h holeis generated at RANDOM so n
     o twogames are the same."
9021 PRINT '" When its your turn to pl
     ay yourball will be set flashing.
       Whenready to move you  must  en
     ter avalue 0 to 12 As on a Clock
     Face"
9022 PRINT "to select the DIRECTION of
      shot."''" Now enter a number 1 t
     o 100 forthe STRENGTH of strock,
     an entryof 0 will allow you to re
     turn tothe direction input.    D
     ecimalnumbers ie. 3.25 are allowe
     d."
9030 PRINT B$; INK 1;"Hit ENTER for mo
     re instructions."
9040 IF INKEY$<>CHR$ 13 THEN GOTO 9040
9050 CLS : PRINT T$''"The GREEN = "; B
     RIGHT 1; PAPER 4;"   "; PAPER 7;
     BRIGHT 0;"  FAIRWAY = "; PAPER 4;
     "   "; PAPER 7;"    ROUGH = "; P
     APER 4;CHR$ 144;CHR$ 144;CHR$ 144
     ; PAPER 7;"  BUNKERS = "; PAPER 4
     ; INK 6;CHR$ 158;" ";CHR$ 157; PA
     PER 7; INK 0,"WATER HAZZARD = ";
     PAPER 5;"   "; PAPER 7;"  TREES =
      "; PAPER 0; INK 4;CHR$ 145;CHR$
     149;CHR$ 145; PAPER 7; INK 0;" T
     he HOLE = "; PAPER 4; BRIGHT 1;CH
     R$ 147; PAPER 7; BRIGHT 0;"  The
     BALL = "; PAPER 4; INK 7;CHR$ 14
     8
9060 PRINT ''"When playing from the ROU
     GH yourball will not move as far
     as it will on the FAIRWAY. If you
      landin a bunker you may not get
     out first shot.   When in the TRE
     ES the ball MAY bounce off in any
      direction.  Land in the WATER o
     rgo OUT OF BOUNDS and you incur
     ONE penalty stroke."
9070 PRINT ' PAPER 6;"   I hope you en
     joy your game  "'''"Press ENTER to
      start round OR   ""P"" to see in
     structions again."
9080 IF INKEY$="P" THEN GOTO 9000
9090 IF INKEY$<>CHR$ 13 THEN GOTO 9080
9100 RETURN
9200 DATA 1,128,4,0,0,64,2,0
9210 DATA 255,247,227,213,247,227,213,
     247
9220 DATA 0,96,144,9,102,144,9,6
9230 DATA 12,60,12,4,4,30,37,30
9240 DATA 0,28,62,62,62,28,0,0
9250 DATA 255,195,153,189,157,201,231,
     231
9260 DATA 249,224,224,192,128,0,128,19
     2
9270 DATA 225,192,0,0,0,0,0,0
9280 DATA 255,159,15,7,7,3,1,1
9290 DATA 192,128,128,128,224,224,248,
     255
9300 DATA 0,0,0,0,0,6,31,255
9310 DATA 0,1,3,3,7,15,31,255
9320 DATA 0,63,127,127,255,254,254,124
9330 DATA 56,124,126,63,127,126,252,24
     0
9340 DATA 0,62,126,126,126,126,252,240
9350 DATA 255,255,230,198,128,192,192,
     128
9360 DATA 255,241,240,96,0,0,4,0
9370 DATA 247,195,129,3,3,7,7,3
9380 DATA 128,128,192,240,248,252,254,
     255
9390 DATA 0,0,0,1,1,0,60,255
9400 DATA 1,1,1,1,39,63,191,255
9500 RESTORE 9200
9510 FOR I=0 TO 167
9520 READ A
9530 POKE USR "A"+I,A
9540 NEXT I
9550 RUN
```

Full rules for this competition available by sending an SAE, to Format's normal address, marked RULES.

CHRISTMAS FUN
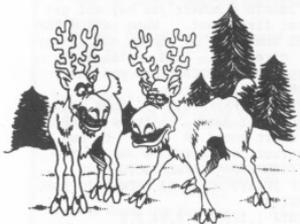
"You just wait 'til you've landed on as many roofs as I have . . ."
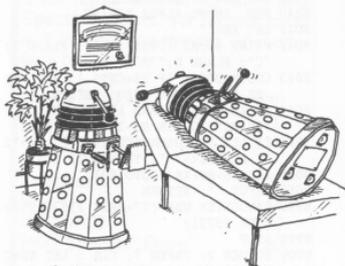
I . . . keep . . . wanting . . . to . . . love . . . everyone . . . I . . . am . . . sick . . .

Note found on the Editor's desk...

Things are looking up. I'm only two weeks behind schedual....

"And Finally, No.11"

"Thou shalt *not* forget thy INDUG membership number...."

DAILY BLURB
TODAY'S GOOD NEWS IS ON PAGE NINE

"But you said — 'evening dress'!"

BLOW JOB £1 an hour

KENTUCKY FRIED MISSIONARY

"Found at last, the Lost Pharaoh's tomb . . . heaven knows how he came to be buried in the middle of Scunthorpe . . ."

"Very nice, Mable, but I think 'Hark the Herald Angels Sing' can survive quite nicely without the Sister Sledge treatment . . ."

POLICE BOX

AA SERVICE

Depressed? Of course we're depressed Mr Disraeli - We will never live to see the Christmas issue of FORMAT...

ROY MITCHELL . . . . . .

The little Polar bear goes up to his mother and says "Am I a brown bear?" to which his mummy says "No son, you're a Polar bear." The baby bear sits and thinks for a while and then says "Mummy, am I a Koala Bear?" Once again his mummy assures him that he is definitely a Polar bear. The baby bear ambles off into the snow but soon returns and approaches his mother. "Mummy, am I a teddy bear?" Now the mummy bear is getting a little pi**ed off and says "Look son. Why all the questions? You are a POLAR BEAR..." "Well mummy, why am I so bloody cold then...?"

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YOUR LETTERS

Dear Editor,

Having recently subscribed to your FORMAT magazine I would like to congratulate you on your varied and unusual magazine.

I am trying to learn machine code on my +3 Spectrum and here varied books on the subjects, such as Z80 Programming by Rodney Zaks and several Melbourne House books such as "The Complete Spectrum Rom Disassembly". I am mainly interested in controlling DC Servo motors for radio control through the Spectrum. Obviously, for real time movement machine code is the only way forward.

My A to D converter is an INTERSPEC from DCP Microdevelopments Ltd., 2, Station Close, Lingwood, Norwich.

And so to my first question, I did use an excellent book some years ago but I do not know the ISBN No. The book was A5 size (half A4), with a very distinctive silver foil cover, and a title something like "Interfacing Projects for the ZX Spectrum ". Also could you suggest any other books on the subject or is there an address of a publisher who specializes in this area of literature. I have been rather disappointed by the lack of response from addresses which are suggested in books or. magazines, one or two have even been returned by the Royal Mail.

Second question, I would be very grateful for any Spectrum specialists in the Northamptionshire Area, preferably with knowledge of machine code or ideally motor control.

Hopefully, you will be able to help because I am committed to using my +3 Spectrum due to the cost of the project so far. However, I feel sure the information is available its just a matter of finding it. Many Thanks,

Yours sincerely, Christopher Box.

I'm not too surprised at your poor luck with writing to companies - it is sad to say that most Spectrum companies are long gone. If any readers can help Chris I will pass letters on as usual. In the meantime try the library, ALL books are available on loan if you order them through the system. Ed.

Dear Editor,

I have just received my September issue of FORMAT and I am enjoying the "my own story" pages, I must say that "The Young Years" is excellent. Can't you twist Nev's arm to get him back to writing the Help Pages, you can't let him go, he is part of an excellent team.

Will you please answer me a few queries on the SAM for me.

1. Does the SAM come with a monitor?
2. Is an emulator necessary?
2a. Emulators, ads say they work on 1000's of 48K Spectrum progress, what about 128K programs?
3. Did I read recently of a built in digitiser?
4. Do you know of any titling programs for SAM or Spectrum for camcorders.

Yours sincerely, Harry Connell.

Quick answers:- 1 - no. 2 - I presume you mean Spectrum Emulators in which case yes and no, you could just load a copy of the Spectrum ROM as detailed in Vol 3 № 5, but commercial emulators have many extras built in. To emulate a 128K spectrum you would need hardware - easier to use a 128K Spectrum. 3 - Don't understand question. Define a digitiser. 4 - There is one for the Spectrum that is advertised in some of the video mags but using basic and some mixed screen fonts (on either machine) is just as good.

And when Nev gets time he has promised to write article for FORMAT,

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he just can't commit to writing a regular monthly column. Ed.

Dear Editor,

As per our telephone conversation today please can you re-copy "Dragon Tiles" onto enclosed disc which I managed to corrupt whilst blowing up SAM's ASIC.

I would thank you for producing the game, but it may result in me having to buy an extra SAM. The reason is my wife (who hates computers!) is totally addicted to it, and won't let me have SAM back!

May I also thank you for the production of FORMAT which just gets better and better. Thanks again,

Yours sincerely, Gary Cooper.

Tell her she has good taste. Ed.

Dear Editor,

Firstly, thank you for picking up the pieces of Sinclair & SAM Computing. I thought I had seen the last of my subscription so it came as a very pleasant surprise to hear from your organization.

In return, perhaps I can help Peter Ballie (letters, October): on an issue 3 rubber Spectrum (and probably issue 4, though I don't know for sure) the VIDEO connection on the edge connector really does produce a composite video signal, which works quite well with the direct video input of my television, so I assume it would drive a monitor. Adrian Dickens' book is very good, but it only covers issues 1 and 2.

Yours sincerely, Andrew Toller.

We have still not picked up all the pieces yet. Mr Garner was very quick to sign a contract when all about him was collapsing, but now it comes to handing over the goods he is so slow he is almost going into reverse.

So far he has only given us about 200 live names and addresses and a lot of those still need to be sorted out because his 'outstanding issues' figure does not agree with the subscribers.

In addition he still, four months

later, has not supplied us with master artwork etc for the issues he did, so we can make them available to a wider audience.

Still we will plod on. One day everything will be sorted out. Ed.

Dear Editor,

I was appealed to subscribe to the magazine Sinclair & Sam Computing by information (read somewhere else and confirmed by phone by Mr Garner) that it covered the field of both Spectrums (& SAMs) and QLs (see PS), whose continued "life" I would like to support, against the clearly established interests of some dark economical forces.

In the 3 issues received, nothing about QLs was published, excessive attention to Amstrad's computers, these could hardly compare in sold numbers to Spectrums (genuine ones!) and QLs. Those, if any, could be considered dinosaurians and extinct, with theirs deficient tape recorders and badly chosen 3" discs.

Amongst the positive features of S&SC was, in my opinion, their NO commitment only to games, which I find exceedingly tiresome in other magazines I no more subscribe to, and their Technical Helpline/Enquiries Service which I never used, but nevertheless intended to use to get a upgrading (from the author himself) for the OPUS Disc drive to 720K.

PS. I have converted my QLs into VERY powerful, fast, flexible and reliable machines, and note that I do not own (yet) the GOLD CARD, and I'm not talking about the Super QL clone to be released later this year according to "strong rumors". Furthermore the QL's QDOS (with its versions MINERVA and SMS-2), is the most powerful of commercially available OSs, and can now be "transplanted" to AMIGA and ATARI machines, opening to concerned computers (plus existing THORs, ONE PER DESKs or TONTOs), a now-a-days pretty vast collection of high quality cheaper software.

Yours sincerely, Ferraz Renato.

We also have a no games commitment -

at least to games reviews - there are glossy mags to cover that side.

I'm sorry to say that you also wont find much on the QL front in FORMAT - not because we don't like the machine (it is still the most programable of the 68000 machine ever built) but because we have more than enough to do to cover the Spectrum & Sam ranges. Ed.

Dear Editor,

I am currently working on a simpler user guide for PCG's Desk Top Publisher, Wordmaster, Headliner and Typeliner. I am hoping to produce it as a booklet for distribution to anyone interested. I could possibly do this through your magazine as a feature, let me know if you are interested and I'll see what I can do.

I enclose a copy of a programme I produced for a recent show. This was done very quickly, 3 days, and does not represent the full quality possible; however it does show the beginner what can be done very quickly with the suite of programs. I must stress that the entire program was done as complete pages and printed out, no paste-ups were used.

Yours sincerely, Adam Murdoch.

Although PCG's (or what ever their name is this week) DTP is far from being true Desk Top Publishing it has attracted quite a following despite some of the worst manuals going. Therefore any help to users will, I'm sure, be much appreciated.

As for your sample programme - not bad at all - sorry I can't show the readers. Ed.

Dear Editor,

Concerning the takeover of Sinclair & SAM Computing, I was a member of the group when it was known as the +3 Users' Group. I found it very good and helpful particularly as it specialized solely for the +3. There was a good PD library and I often sent off for various utilities, the service was extremely efficient and there was no sign of the problems which started towards the end of 1990, which I suspect is when the S&S Computing was

first planned.

My membership should have elapsed in February but I was informed that it would be extended in view of a review which I submitted being published. However, I gave up all hope of that many months ago.

I hope that you will now be able to publish more +3 specific articles and can revive the PD library including the Infobase Index of all the utilities included in the library. During its last few months S&S Computing published Parts 1 & 2 of a DTP guide which I found quite useful as it included several tips to improve Wordmaster.

I'm sure that there must be other +3 users who use programs such as Wordmaster, Tasword +3, Masterfile +3 etc and would like to utilize these to their full extent and now you may be able to make this possible provided, of course, that sufficient interest is shown by all of us.

If you think that I may be able to help in any way then please let me know. For the record my set-up is the +3 with Universal 3½" drive, Multiface 3 and the Star LC24-200 printer. My software includes Wordmaster (including Headliner and Typeliner), Tasword, Tasprint, Tas-sign, Tascalc, Masterfile +3 and The Artist II. I have customized Tasword by replacing the 2nd character set with one which allows me to utilize the graphic symbols of the IBM #2 character set.

Yours sincerely, M.D.Atkins.

Yes we will cover the +3, if people write things we try to print them. So fi there is a contribution you would like to make I will be most grateful.

As to the PD library I would rather leave that up to others - we have more than enough on our plate at the moment. PD libraries need to be run by dedicated people who are prepared to work long hours for little or no return - funny... Jenny reckons we do that in the FORMAT office anyway... Ed.

Dear Editor,

Being a subscriber to S&SC I am very pleased with the service you have

shown so far on the introduction to FORMAT.

At present I am unemployed but would like to support Spectrum and SAM. I enclose my cheque for £15 (£12 for my subscription to FORMAT and £3 towards the SAM rescue package).

Yours sincerely, John Moore.

I've been there John. I know how much £3 means. All we can say is THANKS. Ed.

Dear Editor,

Re - Leslie Pollard's letter in the November issue. There will be many of us who transferred our loyalties from Daniel Garner after commercial considerations persuaded Garner Designs to break faith with the +3.

However there may be little future in chasing up the remaining issues of the DTP booklets. Judged by the usefulness of issues one and two we would probably benefit more by sending our own experiences with DTP to your letters page.

My own experience was one of frustration whenever I had to search for text files which I had saved. Invariably I had forgotten the name that I had filed them under.

I remedied this by altering line 30 of the Wordmaster loader (program "WM") to read:-

    30 SAVE a$+".WM" CODE s,1: RANDOMIZE USR z

NOTE:- I don't know why PCG use the variable "l" it can be most confusing so make sure it agrees with the variable in line 10.

Having started to alter program "WM" I decided to customize it to suit the +3 (with a "B" Drive and a 120D printer. My version is listed below.

Lines 50/55 alter the "K" instruction so that I have the opportunity to CAT either drive "A" or drive "B".

Line 105 enables the Printer interface to log on to the Citizen and Swift Printers.

Lines 110 and 120 provide some diversion whilst the program is loading and:- GOTO 9999 will load this

program as "AM"

The idea in using "AM" is so that you can try LOAD "AM" which will use this program to load Wordmaster without interfering with the original Wordmaster program. If you like what you get you can merge the program again and change Am back to WM.

There are ten spaces between the quotes in line 10.

```
10 LET s=NOT PI: LET l=s: LET a$="
            ": LET z=24505: RANDOMIZE
   USR 24500
20 LOAD a$CODE s,1: RANDOMIZE USR z
30 SAVE a$+".WM"CODE s,1: RANDOMIZE
   USR z
40 ERASE a$ : RANDOMIZE USR z
50 PAPER 6: CLS : PRINT ''''''''' DO
   YOU WANT DRIVE B y,n?": PAUSE 0:
   IF INKEY$="y" OR INKEY$"Y" THEN P
   APER 5: CLS : CAT "B: "EXP : GOTO
   55
52 PAPER 6: CLS : CAT EXP
55 RANDOMIZE USR z
90 STOP : RUN
100 CLEAR VAL "24498"
105 POKE 23354,62: POKE 23355,16: POK
    E 23399,20
110 PRINT AT 10,10; FLASH 1;"WORDMAST
    ER"
120 PRINT AT 12,12; FLASH 1;"LOADING"
130 FORMAT LPRINT "U": LOAD "WM1"CODE
    : LOAD "WM2"CODE : RUN
9999 SAVE " a:AM" LINE 100
```

FOR FUN ....TRY :POKE 23560,76: before the RUN in line 130. There are other ASCII codes which affect the file handling menu, try 23560,75 / 23560,71 / 23560,67 etc.

Yours sincerely, Gordon E.Fowles.

Somepeople seem to have liked the PCG booklets Garner Designs were doing, never having seen one I can't comment. Still thanks for the tips Gordon. Ed.

* - * - * - * - * - *

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

This is YOUR letters page so it is up to you, our readers, to fill it. Keep letters as short as you can so we can fit in as many as possible.

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