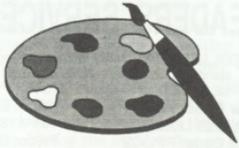


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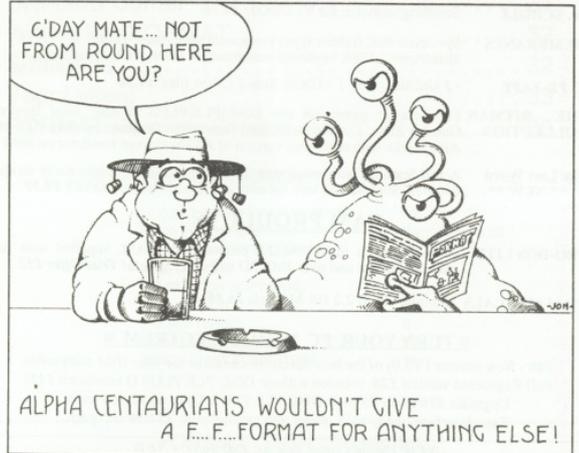
For a full list of SAM Software available from FRED Publishing send an SAE to the address below.

Vol.8 N°6.

February 1995.

# FORMAT

THE HOME OF Z80 COMPUTING



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## PAW GOES SAM

PAW, the Professional Adventure Writing system produced by Gilsoft, will now work on SAM thanks to an un-official supplement disc available from SAM PD in Lancashire.

The conversion disc requires you to have your own legal copy of PAW (version A17C). It converts the program, both 48K and 128K to SAM disc with full SAMDOS compatibility, because of the paging required to patch the 128K version the system only works on a 512K SAM. The key-scan routines are changed to read SAM's keyboard and the function keys patched to give SAM specific feature like disc catalogue, etc. All tape routines are patched to access the disc system. A new feature also allows SAM Basic or machine code routines to be called from within the game. The 48K version can also access Etracker music.

Existing PAW games can be run and edited and there are routines on the disc to convert games databases from PLUS D disc or from tape.

The conversion is the work of Dutch programmer Martijn Groen. Write to SAM PD, 18 Mill Lane, Glenburn Rd, Old Skelmersdale, Lancs, WN8 8RH for more details (enclose an SAE please).

## 240 OR NOT 240

Many of you will not be aware that the 1st January 1995 marked the start of a major change that will bring Britain into step with the other countries of Europe. No, it has nothing to do with fisheries, nor veal calves. It is something far closer to home for all of us. Our beloved 240 volts A/C mains is on its way out.

OK, we aren't the only ones, many

other countries in Europe will be changing their voltage (220v) as well to arrive at a Europe-wide norm of 230 volts by the year 2003. In fact, if some of the countries pull their finger out, we could be harmonised by 1998/99.

So why the change? Well it is difficult for the new Europe wide market to deal with different voltages without adding to the cost of electrical products. Dropping ours by 10 volts will make very little difference to most existing equipment (none at all to Spectrum or SAM) while the rise from 220 to 230 volts will cause a few problems on the continent. However, it seems that the plan has been going through for several years so items like light bulbs have been made 230 volts compatible in Europe for at least the last 18 months.

Of all areas only one will not be changing, Northern Ireland. They have been on 230 volts for some time. For the rest of us in the UK there will be a gradual change, region by region, with completion due sometime this year.

## MAPLIN MERGER

News just in. Electronic component distributors Maplin are to merge with a stock-market listed company to allow it to raise more money for expansion. The company, which started in 1972 and has a turnover of around £30 million through its 33 shops and mail-order, is merging with Cannon Street Investments plc. Maplin's management will be unchanged.

**Credits:** D.Whitmore

**URGENT** we need your news. Anything you think other people should know about. Each item printed earns the contributor 3 months extra subscription (please claim when next renewing).

A very happy 1995 to you all from Jenny, myself and all those who help produce **FORMAT**. What! I've already said that last month? Oh yes, so I did, But as this is the first Editorial I have actually written this year I will say it again just in case you missed it last month.

Well, its back to work here at Format HQ after the long Christmas break and it looks like being a busy year. Our next Gloucester Show is now in the planning stage, we are trying for Saturday the 29th April but we are awaiting confirmation on that. By the way, any diary that shows that weekend as being a bank holiday in England is wrong, the May bank holiday has been moved to the 8th May - to celebrate VE Day.

Talking of dates, you may have heard a lot recently about the trouble many people are predicting for the 1st Jan 2000. This is to do with the way many business machines deal with the year, both on their internal clock/calendars and in their software. If you have a PC try setting the clock to 23:59 and the date to 31/12/99 and then wait a little. Now try using the date, many machines will produce some funny results. OK, there is still a few years to go. Now for the good news, when running MasterDOS and using the clock on the SAM CardCage the change-over is handled without a single glitch. Try it and see. Another bonus to using a sensible, user-friendly system.

The 2001 article in last month's issue has produced a nice response. The article was passed to me by someone who found it in a file that had been dropped, just outside a rather battered police call box,

in a junk yard in London. Only time will tell how much of its contents were true but I have sent the original off for hand writing analysis to see if I can track down the author. More news when I have it.

Over the last few months I have had several people contact me about items they sent to Blue Alpha Electronics for repair, mostly after the move to Glanannan, that have not been returned. Obviously I am having difficulty communicating with Mark Hall at the moment as I can't speak to him on the phone, but I will try to sort out anyones problems if they let me know all the details - you know, what; when; where and how much. If you have already written then we have you on the list, if you just telephoned Jenny or myself then could you please drop us a line now so I have something we can copy and send to Mark for his comments, although I have to say he has not replied to my last couple of letters (and so I don't know for certain how he is at the moment). Still, I will try to get answers for people if I can.

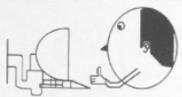
**FORMAT** may be a little late this month, cos I just spent a whole day trying (and failing) to keep the fence at the front of my house from disintegrating and flying around the neighbourhood. More expense! I prefer the hedge on the other side, but at least I don't get nagged to cut the fence twice a year. Is it my imagination, or is it just a sign of old age, but are we getting more high winds these days than we use to?

Anyway, from a very windswept Gloucester.

Until next month.

Bob Brenchley, Editor.

# S D S SOFTWARE



## Quality Serious Software For Spectrum & SAM

### PC-SUITE

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

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*\*Requires MasterDos and MasterBasic to use OPUS single density discs.*

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Please add £2.00 to price for each 3" disc required.

Please add £0.50 postage for each order (£1.20 outside UK).

\* Using SpecMaker Spectrum emulator

**S. D. Software, 70, Rainhall Road,  
Barnoldswick, Lancashire, England, BB8 6AB.**

# SHORT SPOT

YOUR HINTS, TIPS AND PROGRAMMING IDEAS

Edited By:- John Wase.

This was originally going to be January's Short Spot. Indeed, I started off by wishing you all a Happy New Short-Spot: no, don't worry; we're not going to change it. Trouble is, I sent Bob so much for December that he had enough for January as well! So please excuse me if some of the opening comments are unseasonable, and, indeed, remember that even after I heard this from Bob and delayed, I'm still ending up writing February's issue before the Christmas tree is down. As usual, I've one or two interesting snippets for you all. First on the list is a little note from Frank Harrop of Hollingbury, Brighton, who writes about the Maxiprint re-inker. He kindly enclosed an advert for them out of Computer Shopper; Beach Imaging, 205 Glensack Road, Eltham, London SE9 1RD; 081 850 8344, sell them.

I know it must seem ages away when you read this, but did you have a win on the National Lottery in time for Christmas? You did? Pardon? What? Oh dear; never mind: here's a SAM program from Frank Evans of Waltham Abbey, a 'simple' program to choose numbers for the national lottery. It has been biased to select a number from each colour group plus one number from the whole range. To keep it (sic) as random as possible, a variable delay has been added using Pause. the numbers are then sorted into order." Well, this is a whole nest of hornets, isn't it. After all, on the one hand, a thing is either random or chosen, so we can't have things as random as

possible. And on the other hand, all random number generators depend on something or other, and are never completely arbitrary in their choice of number: after all, something random is exactly what it says: completely arbitrary. I know what Frank is driving at, though; he wants a good spread of numbers across the board. Anyway, here's his solution:-

```

10 REM Lottery F.Evans 1994
20 REM SAM Basic
30 MODE 4: CSIZE 8,16: DIM A(
6)
40 LET a(1)=RND(8)+1
50 PRINT AT 2,0;a(1)
60 wait
70 LET a(2)=RND(9)+10
80 PRINT AT 2,2;a(2)
90 wait
100 LET a(3)=RND(9)+20
110 PRINT AT 2,6;a(3)
120 wait
130 LET a(4)=RND(9)+30
140 PRINT AT 2,10;a(4)
150 wait
160 LET a(5)=RND(9)+40
170 PRINT AT 2,14;a(5)
180 wait
190 LET ch=0
200 LET a(6)=RND(48)+1
210 FOR b=1 TO 5
220 IF a(b)=a(6) THEN LET ch=1
230 BEEP .1,7
240 NEXT b
250 IF ch=1 THEN GOTO 180
260 PRINT AT 2,18;a(6)
270 PRINT AT 4,4;"SORTING"
280 FOR b=1 TO 5
290 IF a(b)>a(b+1) THEN LET ch
=b+1,tem=a(b),a(b)=a(b+1),a
(b+1)=tem
300 BEEP .1,7
310 NEXT b
320 IF ch=1 THEN GOTO 280
330 CLS
    
```

```

340 PRINT " Your Numbers Are
: -": PRINT
350 FOR b=1 TO 6
360 PRINT " ",a(b);
370 NEXT b
380 DEF PROC wait
390 BEEP .1,9
400 PRINT AT 4,0;"Press Space
Bar"
410 PAUSE
420 PRINT AT 4,0;"
"
430 END PROC

```

And my grateful thanks for the idea of dissolving your astringent letter in alcohol and drinking it for a Christmas treat!

Lotteries are much in evidence at the moment, for here's another stab at the same thing: bit more ambitious, though, as it also does the pools! It is again for SAM and was sent by Mr Warwick of Plymouth to help pick 'Lucky' numbers. Originally written for the Spectrum to help win the pools some years ago, it has now been rehased for MasterBasic. MasterBasic, however, is not really needed; but the line for printing should be altered to suit either SAMDOS (which needs DUMPLD to be loaded for DUMP only, or MasterBasic, where one can use any sort of dump) and Line 10 can be ignored if you lack Speccyfont, and is currently REMmed out. Here it is:-

```

10 REM LOAD "speccyfont" CODE
15 REM LOAD "dumpld" CODE
20 MODE 1: PEN 17: PAPER 1: B
ORDER 0: LET t=2
25 PRINT #0;"Pools or Lottrey
?": PAUSE : LET r$=INKEY$
30 IF r$="P" OR r$="p" THEN L
ET b$=" Team ": LET p=55
: REM P = no of teams in t
he pool
35 IF r$="L" OR r$="l" THEN L
ET b$="Lottery ": LET p=49
: LET z=6: GOTO 45
40 INPUT "Number of"; (b$);"s
? ";z
45 DIM a(z)
50 RANDOMIZE : PRINT AT 11,11
: PAPER 6;" W A I T "
55 FOR y = 1 TO z

```

```

60 LET a(y)=INT (RND*p)+1
65 FOR d = 1 TO z
70 IF d<>y AND a(d)=a(y) THEN
LET y=y-1: GOTO 60
75 NEXT d
80 NEXT y
85 LET n = z
90 FOR i = 1 TO n
95 LET a(i)=a(i)
100 NEXT i
105 FOR s = 1 TO n-1
110 LET m = 0
115 FOR i = 1 TO n-s
120 IF a(i) <=a(i+1) THEN GOTO
145
125 LET x = a(i)
130 LET a(i)=a(i+1)
135 LET a(i+1)=x
140 LET m = 1
145 NEXT i
150 IF m = 0 THEN GOTO 160
155 NEXT s
160 CLS : PRINT #t;" "; TAB 12
;"Pinbias"
165 PRINT #t;" "; TAB 15-((14+
LEN b$+LEN STR$ z)/2); PAP
ER 1;z;" RANDOM "; PAPER 6
; b$; PAPER 1;" numbers"
170 LET c=7: PRINT #t; AT 10,0
;
175 FOR i = 1 TO z
180 IF c>23 THEN PRINT #t; '':
LET c=7
185 PRINT #t; TAB c;a(i);
190 LET c=c+3
195 NEXT i
200 PRINT AT 20,0;"C O P Y? ":
PAUSE 0
205 IF INKEY$="y" OR INKEY$="Y
" THEN DUMP
210 IF INKEY$="n" OR INKEY$="N
" THEN PRINT AT 21,0;"Anot
her? ": PAUSE 0
215 IF INKEY$="y" OR INKEY$="Y
" THEN GOTO 20
220 IF INKEY$="n" OR INKEY$="N
" THEN STOP
225 GOTO 200: STOP
230 SAVE "pinbias" LINE 10

```

Now these are two contrasting methods of solving the problem, both a little different, and both quite long. I bet you can't achieve the same result in less than 11 short lines of Basic! Come on: Messrs. Warwick and Evans have shown us the light. Then we can all win the £17 million!

Oh, by the way Mr Warwick, I saw your comment about tapes, and yes, you're quite right; I often leave tapes to the end, as they are such hassle to load, in spite of my having the super expensive recommended cassette player. Sorry about that; it's just human nature. Many thanks for sending it on disc!

And while we're talking about recording media which give us difficulties, here's another one which we found a bit of a problem. Unfortunately, as is often the case these days, "Windows" rules, OK, and when Bob's BEEB died, (RIP and thanks for the return of my loan machine, Bob), he changed to AmiPro for Windows. I now type Short Spot's text on an IBM PC-compatible (come on; I can't look at programs on a SAM if I'm also typing on it), but using Tasword, as Bob's AmiPro will convert neither Word for Windows2 or 6. Bob therefore gets the text files on an IBMPC disc and all the program files on a SAMdisc, after I've converted DISCIPLI or Spectrum files appropriately. Paul Mayo of HMS Invincible has just sent me a +3 disc: although Bob can't read it, I can. But, again, it's human nature to put it on one side until last as it's hassle; sorry, Paul. Fortunately, the Christmas Break has given me enough time to have a quick look, and the cassette recorder did its stuff (well; it did after I disconnected the ear socket). So at last, I managed to get it onto my doughty +2 and here we are: I have it. Paul refers to the October issue's paragraph on finding the day of the week for any given date; he's written a little routine to do this, too. His first attempt in 1989 was for any date in the 20th century, and used a method similar to that described in the last paragraph in the October issue. As Paul puts it, "It was for any date in the 20th Century and was 95% accurate. However, there was a

bug in it which I was unable to find during several attempts before I came across a different method of finding the day. A friend's daughter's schoolbook approached things mathematically by addition of various products of sums applied to the year required, numbers substituted for the month, the day number and the result applied to a table of days of the week to find the answer. This method was easily convertible into a computer program and has been expanded to include the 19th and 21st Centuries as well as the present one. For instance, I now know that my 100th birthday in 2058 will be on a Monday!"

Great stuff, Paul! As I mentioned, it was written on a Spectrum +3, but as it includes none of the +3's special quirks, it should work on anything, and the error-trapping in lines 2000 to 2180 prevents calculations based on stupid letters or numbers. Here is the Paul's new daydate. Get typing.

```

1 REM *****
5 REM * PAUL MAYO 1994 *
9 REM *****
10 BORDER 0: PAPER 0: INK 6: C
LS
20 PRINT AT 0,0;"THIS PROGRAM
SHOWS WHAT DAY OF THE WEEK
IT WAS FOR ANY DATE BET
WEEN"
30 INK 3: PRINT AT 3,0;"JAN 1s
t 1800 AND DEC 31st 2099":
INK 4
40 PRINT AT 5,0;"Enter DATE as
2 figures";: INK 3
50 PRINT " i.e. 01"
60 INK 4: PRINT AT 7,0;"Enter
MONTH as first 3 letters";:
INK 3
70 PRINT "i.e. JAN": INK 6
100 GOSUB 1000: POKE 23658,8
110 LET subt=0: LET lyr=0: LET
tot=0: LET ucent=0: LET dce
nt=0: LET max=0: LET wrong=
0: LET odd=0: LET nlyr=0
120 GOSUB 2000: IF wrong=1 OR n
lyr=1 THEN GOTO 150
130 GOSUB 3000
140 GOSUB 4000

```

## SAM GAMES AVAILABLE FROM REVELATION

### SOPHISTRY

Our new 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).

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```

150 RANDOMIZE USR 3652: GOTO 11
0
1000 REM **** set-up ****
1010 DIM m$(12,3): DIM m(12): DI
M w$(10,9): DIM r$(1,4)
1020 FOR f=1 TO 12: READ m$(f):
READ m(f): NEXT f
1030 FOR f=1 TO 10: READ w$(f):
NEXT f
1200 DATA "JAN",1,"FEB",4,"MAR",
4,"APR",0,"MAY",2,"JUN",5,"
JUL",0,"AUG",3,"SEP",6,"OCT
",1,"NOV",4,"DEC",6
1210 DATA "FRIDAY","SATURDAY","S
UNDAY","MONDAY","TUESDAY","
WEDNESDAY","THURSDAY","FRID
AY","SATURDAY","SUNDAY"
1220 RETURN
2000 REM **** in data ****
2010 LET lin=10: LET lm=2: INK 5
: PRINT AT lin,0;"Enter Dat
e": INK 6: GOSUB 6000
2020 GOSUB 5000: IF nlin=1 THEN
GOTO 2010
2025 LET day=VAL y$: IF day>31
OR day<1 THEN PRINT AT 10,1
1;" ": GOTO 2010
2030 LET lin=12: LET lm=3: INK 5
: PRINT AT lin,0;"Enter Mon
th": INK 6: GOSUB 6000
2040 FOR f=1 TO 12: LET x$m$(f)
: IF y$=x$ THEN LET mon = m
(f): GOTO 2050
2045 NEXT f: IF F=13 THEN PRINT
AT 12,12;" ": GOTO 2030
2050 IF f=1 OR f=2 THEN LET subt
=1: IF f=2 THEN LET odd=1:
IF odd=1 AND day>29 THEN LET
T wrong=1
2055 IF wrong=1 THEN RETURN
2060 LET lin=14: LET lm=4: INK 5
: PRINT AT lin,0;"Enter Yea
r": INK 6: GOSUB 6000
2065 GOSUB 5000: IF nlin=1 THEN
GOTO 2060
2070 LET r$(1)=y$: LET yrv=VAL r
$(1)
2080 IF yrv>2000 THEN LET ucent
=1
2090 IF yrv>2099 THEN LET max=1
2100 IF yrv<1900 THEN LET dcent=
1
2110 IF yrv<1800 THEN LET max=1
2115 IF max=1 THEN LET COL=12: L
ET max=0: PRINT AT lin,col;
" ": GOTO 2060
2120 LET yr=VAL r$(1,3 TO 4)
2130 LET n=INT (yr/4)
2140 IF yr-(n*4)=0 THEN LET lyr=

```

```

1
2150 IF lyr=0 AND odd=1 AND day=
29 THEN LET nlyr=1
2160 IF nlyr=1 THEN RETURN
2170 IF yrv=1900 THEN LET lyr=0
2180 RETURN
3000 REM **** calc ****
3010 LET aa=INT (yr/12)
3020 LET ab=yr-(aa*12)
3030 LET ac=INT (ab/4)
3040 LET tot=aa+ab+ac+day+mon
3050 IF subt=1 AND lyr=1 THEN LE
T tot=tot-1
3060 LET ad=INT (tot/7)
3070 LET ae=(tot-(ad*7))+2
3080 IF ucent=1 THEN LET ae=ae-1
3090 IF dcent=1 THEN LET ae=ae+2
3100 RETURN
4000 REM **** print day ****
4010 PRINT AT 17,0;"THE DAY IS
": INK 3;w$(ae); INK 6
4020 PRINT AT 21,0;"PRESS SPACE
FOR ANOTHER DATE"
4030 PAUSE 0
4040 IF INKEY$=CHR$ 32 THEN RETU
RN
4050 IF INKEY$<>CHR$ 32 THEN GOT
O 4030
5000 REM **** ltr check ****
5010 LET nlin=0
5100 FOR f=1 TO lm
5020 IF CODE a$(1,f)>57 OR CODE
a$(1,f)<48 THEN PRINT AT li
n,12;" ": LET nlin=1: GO
TO 5040
5030 NEXT f
5040 RETURN
6000 REM **** flash ****
6010 DIM a$(1,lm): LET col=12
6020 LET a$(1)="" : LET y$=""
6040 FOR f=1 TO lm
6050 PRINT AT lin,col; FLASH 1;"
": FLASH 0
6060 PAUSE 0
6070 IF INKEY$=CHR$ 32 OR INKEY$
=CHR$ 13 THEN GOTO 6060
6080 LET a$(1,f)=INKEY$
6090 IF INKEY$=CHR$ 12 THEN PRIN
T CHR$ 8: PRINT AT lin,col;
" ": LET col=col-1: LET a$
(1,f-1)="" : LET f=f-2: GOT
O 6120
6100 PRINT AT lin,col;a$(1,f)
6110 LET col=col+1
6120 LET y$=a$(1,1 TO f)
6130 NEXT f
6150 RETURN
Many thanks, Paul.

```

Further to my comments last month, Bill Lawrie of Middle Barton, Oxfordshire, mentions that Blue Alpha sent him a spare SAM Coupé power supply when his SAMbus was short of power. Thank you, Bill.

We'll stick with SAM for a minute, for here's a really crisp Short Spot from Ettrick Thomson of Aldeburgh, Suffolk. You remember those Lissajous figures? Ettrick writes that one way of constructing a Lissajous figure is to start off with a transparent cylinder and draw a sine wave on the cylindrical surface round and round with as many cycles as necessary until it meets itself. In the program that follows, all 7 lines of it, n times round the cylinder has m cycles of the sine wave. Now project the cylinder onto a surface parallel with the axis of the cylinder. The projection will lie within a rectangle, whose upper and lower sides are the projections of the upper and lower edges of the cylinder: the projection is a Lissajous figure. The SAM program draws the result of projecting onto a surface at an angle to the cylinder's axis: the projections of its edges are two ellipses, within which the projected sine wave lies, making the original cylinder more obvious, especially for values such as m=13,n=9 or m=19,n=3. You can easily modify the program to produce a conventional Lissajous figure. In line 30, delete "0.5\*" and in Line 60, delete "SIN t+0.5\*".

```
5 REM Lissajous plus
7 REM Ettrick Thomson
10 LET xrg=3,xos=1.5,yrg=6,yo
s=2.5
20 INPUT #2;"m:";m,"n:";n
30 PLOT 1,0.5*COS 50
40 FOR a=2 TO 360*PI STEP 2
50 LET t=a*PI/180
60 DRAW TO COS t,SIN t+0.5*CO
S (m*t/n+50)
70 NEXT a
```

C'mon, type it in: it'll take you a lot less time than it took me to type the

description! Bless you, Ettrick.

Next, we have a cry for help from Debu Dutta of Bombay (our readership goes far and wide). He writes to tell us of his two 128K's, two 48K's pair of DISCiPLES, with monitor, printer and loads of peripherals, collected with much effort since import of hardware and software into India used to be very heavily restricted. Debu explained how he had to have two versions of Tasword128. The first is, of course, the standard Tasword128 program modified with our evergreen TasCon for the PLUS D. This yields opentype files, but has a bug in it preventing DataMerge. The second is again modified, but this time by Jap Kuiper from Holland (Hi Jap, nice to hear of your work again: howya keepin?). This version indeed retains its DataMerge function, but the files it produces are MDFILE type, and therefore no-one else can read them conveniently.

When Debu read our TASFIX program, he was delighted. It meant he could now stop running two parallel versions, and instead could use the one which communicated with everyone else, and still use DataMerge. Joy at last!

However it was not to be. TasFix did indeed modify the code, and function D now initially worked, but on loading the merge program, pressing either A (for all) or S (for select), merely made the main menu reappear. Worse, a further press of D now puts the whole shooting match into Basic. Debu wants to know if this is because he is using DISCiPLE rather than the PLUS D, and how to get around the problem. Can anyone help?

I have a similar problem from Ted Cooke-Yarborough, who lives near Abingdon, and keyed in DOSPEEK over Christmas. Now Ted has a DISCiPLE, not a PLUS D, and so he used the offset 664 in Line 190 as instructed. "The

resultant string of numbers," writes Ted, "Bears no relation to the POKE@ values I have in my system. Moreover, these numbers, when converted to hex and then disassembled, seem to make a perfectly viable piece of Z80 code. I conclude that the program is looking at a piece of DOS, and not the POKE@ values, so I think that the offset of 664 must be wrong. I have no idea what the right offset is; can you enlighten me, and anyone else who has keyed in this program?"

I enclose a copy of my Basic listing (which has been modified slightly for printing out) and a list of the numbers the program produces, with the equivalent machine code written in. I have also tried an offset of 6640, but with no better luck."

Well, well, poor Ted. I don't know that a reproduction of his program and an obvious piece of DOS will help, much, but can anyone help Ted, please? Sounds like a case for Miles Kinloch again!

This seems to be a month for interesting conundrums. Steve Brook of Reading asks if he is right in thinking that the ULA in the Spectrum contains some sort of ROM program to control the screen, and what else? The Paging? "A while back," writes Steve, "My grey 128+2 gave in, and I resorted to my Chinese/Spanish +2A/+2B. Modified, of course, with a fixer kit. Then I picked up another grey +2 at a car boot sale for £1.00, thinking I may be able to pinch bits e.g. the ULA which I had isolated as the problem. As it turned out, the only problem with the new +2 was the power connector: it works fine now as this letter is written on it!

However, having fiddled about with the other one I thought it was working again as I could get the startup screen. Great I thought, and it seemed to work fine, until I typed in the 128k to 48k test

program in last month's Short Spot. When I ran it I got the error message "NOT '40:1 ?" I have since found that it does not work with the Typeliner prog in the DTP pack or Tetris. Yet it works ok with all the other progs I have tried??? Both grey 128ks are issue 3 same date but the ULA's are 8627 and 8623. Do you know of a difference or have I corrupted part of the code in the ULA. Has anyone else had a problem with last months program? Strangely the rogue +2 shows up some hidden writing on the Tetris title screen which none of my other Spectrums show up! GREMLINS?

Lastly, back in July 92 you said that the +2A could not use the composite video? Mine does and I get BRIGHT as well on a Ferguson TX RGB, same lead for all my 128k's."

Well, well. Essentially the black +2 came about primarily because the +3 was beset with drive problems (they came from the old MSX standard which never took off, so Alan Sugar was able to buy them real cheap. And a lot of them were pretty nasty, too, and were not very reliable). They were also expensive in comparison to the +2. When Suger had used up the first lots of +2 boards, he found it easier to use the +3 boards in a modified +2; the infamous +2A. The +3, and therefore the +2a did not have the connection to use the BRIGHT line. You seem to have got hold of a rogue one, a modified model, a development model, or just a funny-ha-ha model. How interesting. As for the corrupted ULA; well, it's possible, but it might be for real. I know little about Spectrum ULA's. Does anyone else?

I now have a note from Matt Round (Malevolent) of Menai Bridge, Anglesey. Nice to hear from you, Matt, and give my regards to Tony Thickett at the Liverpool Arms. Matt has a Spectrum program; a neat modification of Pluralizer which

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appeared recently. It might not, as you say, Matt, be the most exciting piece of software around, but it certainly is neatly done. Instead of using loads of IFs, Matt has created a system which reads find-and-replace data, which changes the word's ending if it finds a match. Matt writes that "This means by simply changing the data, you can improve the program's 'intelligence'. The data format is described in the REMs, and I've included data which is fairly good at getting words right (a fully-comprehensive list would probably be too long to publish). [It would probably be so long that the Spectrum would go into sulk-mode, too! JW]. Other than that, there are no fancy features. By the way, the original used the MasterBasic function SHIFT\$, so you might get some confused enquiries about that." Many thanks, Matt, and here's your Plural2:-

```

10 REM Pluralizer2
20 REM (C)1994 Malevolent
30 MODE 4: CSIZE 8,9: CLS #
40 POKE 23658,8: INPUT "Noun
(RETURN=quit): "; LINE n$
50 IF n$="" THEN STOP
60 PRINT n$; " - "; LET n$="
"+n$,p$=n$: RESTORE 150
70 READ a$,b$: IF a$="" THEN
PRINT n$(2 TO ); "S": GOTO
40
80 LET i=INSTR(n$+"@",a$+"@")
: IF i=0 OR i=2 THEN GOTO
70
90 PRINT (n$( TO i-1)+b$)(2 T
O ): GOTO 40
100 REM Search$,Replace$ data
110 REM Prefix with . to
replace whole word
120 REM Earlier in list =
higher priority
130 REM As it is it's FAR
from perfect, but
140 REM illustrates the
technique
150 DATA ".SHEEP",a$,".FISH",a
$, "FISH",a$: REM a$=same
160 DATA ".LOAF", ".LOAVES", ".P
HENOMENON", ".PHENOMENA", ".

```

```

CRITERION", ".CRITERIA"
170 DATA ".OX", ".OXEN", ".GOOSE
", ".GEESE", ".FOOT", ".FEET"
, ".TOOTH", ".TEETH"
180 DATA ".HOUSE", ".HOUSES", "H
OUSE", "HOUSES", "OUSE", "ICE
", ".MAN", ".MEN", "MAN", "MEN
", ".EAU", "EAUX", "IS", "ES"
190 DATA "IUM", "IA", "FF", "FFS"
, "RF", "RVES", "LF", "LVES", "
IFE", "VES", "OO", "OOS", "O",
"OES", "S", "SES", "X", "XES"
200 DATA "Z", "ZES", "SH", "SHES"
, "CH", "CHES", "AY", "AYS", "E
Y", "EYS", "OY", "OYS", "UY", "
UYS", "Y", "IES"
210 DATA " ", " ": REM End marker

```

A slightly different approach has been adopted by Allen Vernon, living near Looe, Cornwall, who has merely expanded Robert's program to include some of the more esoteric English idiosyncrasies. Many thanks, Allen: get typing to compare the two approaches.

```

5 REM ***Expanded from "Plur
alizer" by Robert Brady -
FORMAT Dec.94***
10 MODE 3: CSIZE 8,8
20 INPUT "A WORD, Please ";a$
30 plural a$
40 PRINT "The plural of '";
a$; " is '";b$;" "
50 GOTO 20
10000 DEF PROC plural a$
10005 IF a$="sheep" OR a$="deer"
OR a$="virus" THEN LET b$
=a$
10006 IF a$="people" THEN people
10007 IF a$="hoof" THEN LET b$="
hooves"
10008 IF a$="amoeba" THEN amoeba
10009 IF a$="tooth" THEN LET b$="
teeth"
10010 LET a$=TRUNC$a$
10020 IF LEN a$ < 2 THEN GOTO 20
10030 LET v$="aeiouAEIOU"
10040 IF a$ <> "sheep" AND a$ <> "ho
of" AND a$ <> "tooth" AND a$
<> "deer" AND a$ <> "virus" A
ND a$ <> "people" THEN LET b
$=a$+"s"
10050 REM *** PRINT len a$; " ";p
aper2;a$
10060 IF a$ <> "virus" THEN IF a$(
LEN a$)="s" THEN LET b$=a$
+"es"

```

```

10070 IF a$(LEN a$)="" THEN LET
b$=a$+"es"
10080 IF a$(LEN a$)="" THEN LET
b$=a$+"es"
10090 IF a$(LEN a$-1 TO LEN a$)=
"sh" THEN LET b$=a$+"es"
10100 IF a$(LEN a$-1 TO LEN a$)=
"ch" THEN LET b$=a$+"es"
10105 IF a$ <> "mass" AND a$ <> "gla
ss" AND a$ <> "pass" AND a$ <>
">grass" AND a$ <> "wireless"
THEN IF a$(LEN a$-1 TO L
EN a$)="" THEN LET b$=a$
+"ies"
10110 LET a=INSTR(a$,"oo"): IF a
<> 0 AND a$="goose" OR a$="
foot" THEN LET b$=a$( TO a
-1)+"ee"+a$(a+2 TO )
10120 IF a$(LEN a$)="" THEN
10130 IF NOT INSTR(v$,a$(LEN a$-
1)) THEN LET b$=a$( TO L
EN a$-1)+"ies": ELSE LET b$=
a$+"s"
10140 END IF
10150 IF a$(LEN a$-1 TO ) <> "ff"
AND a$(LEN a$)="" OR a$(
LEN a$-1 TO )="" THEN
10160 IF a$ <> "hoof" THEN IF a$(L
EN a$-2 TO LEN a$-1) <> "oo"
AND a$ <> "oaf" AND a$(LEN
a$-1) <> "e" THEN LET b$=a$(
TO LEN a$-1(-1 AND a$(LEN
a$-1)="" THEN LET b$=a$+"s"
10170 END IF
10180 IF LEN a$ > 4 THEN IF a$(LE
N a$-3 TO LEN a$)="" OR a$="
ND a$ <> "house" THEN LET b$
=a$( TO LEN a$-4)+"ice"
10182 IF a$(LEN a$-2 TO LEN a$)=
"ius" THEN LET b$=a$( TO L
EN a$-2)+"i"
10183 IF a$(LEN a$-1 TO LEN a$)=
"nx" THEN LET b$=a$( TO LE
N a$-1)+"ges"
10185 IF a$="medium" THEN medium
: ELSE IF a$(LEN a$-2 TO L
EN a$)="" THEN LET b$=a
$(TO LEN a$-2)+"a": END IF
10186 IF a$ <> "virus" AND a$ <> "fo
etus" THEN IF a$(LEN a$-1
TO LEN a$)="" AND a$ <> "b
us" THEN LET b$=a$( TO L
EN a$-2)+"i": END IF
10187 IF LEN a$ > 4 THEN IF a$(LE
N a$-3 TO LEN a$)="" THEN T
HEN LET b$=a$( TO LEN a$-2
)+"a"
10188 IF LEN a$ > 4 THEN IF a$(LE

```

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```
N a$-2 TO LEN a$)="ato" OR
a$(LEN a$-1 TO LEN a$)="g
o" AND a$( TO 4)="mang" TH
EN LET b$=a$( TO LEN a$-1)
+"oes"
10189 IF a$="formula" THEN formu
la
10190 LET a=INSTR(a$,"man"): IF
a=LEN a$-2 THEN LET b$=a$(
TO a-1)+"men"+a$(a+3 TO )
10200 REM *** PRINT at 4,0;paper
2;b$***
10210 END PROC
10300 DEF PROC medium
10310 PRINT "The plural of 'me
dium' is 'media': PRINT '
"excepting when 'medium' r
efers to a spiritualist.":
PRINT "Then the plural
of 'medium' is 'mediums'."
10315 GOTO 20
10320 END PROC
10330 DEF PROC formula
10335 PRINT "The plural of 'fo
rmula' is 'formulas': PRI
NT "or 'formulae' in the se
nses of maths and chemistr
y."
10340 GOTO 20
10345 END PROC
10350 DEF PROC people
10355 PRINT "The plural of 'peo
ple' is usually 'people' bu
t can be 'peoples': PRINT
"as e.g. 'The peoples of
the commonwealth'."
10360 GOTO 20
10365 END PROC
10370 DEF PROC amoeba
10375 PRINT "The plural of 'amo
eba' can be 'amoebas' or '
amoebae': PRINT "dependi
ng on whether you like Lat
in or not!"
10380 GOTO 20
10385 END PROC
```

Finally, a growse, a confession, and half a bouquet. I always send the text to Bob on a black disc and the Spectrum/SAM programs on a SAM format white disc. As I'd run out of the latter, I bought another hundred from Woodpecker Discs in December. I've been typing away for you (around 450 lines and over 2,500 words) like a good'un on my little notebook. So now I needed to save it all.

Picked up a white disc. Clearly one of mine, since it had the standard Woodpecker label (it says W-P-K at the bottom). DIR A: nothing there - disc not formatted. I don't know what made me stop: something did. I selected another instead. And I checked the disc later. SAM, bless it, told me that there were three files on it. CLOCK WHAT?, AMCLOCK 3K BASIC, and a SCREEN\$. The PLUS D told me it was CLOCK WHAT? AMCLOCK WHAT? and so on. So there was a corrupted first file and two others. SAM loaded a splendid clock for SAM which I could publish only with extreme difficulty because it's based on a SCREEN\$. So, tough; you can't see it. When you send me a disc, please write on the label your name, what it is, and for what machine. Otherwise calamities like this are inevitable.

And that's what the confession is all about. I have a splendid account, all in order, of 'numcrunch' and its application to Noel's Crinkley Bottom House Party, from Matthew Gallagher of Coxheath, Maidstone, but can't find the associated disc: it's gone walkabouts. Please could you possibly send me another?

And the bouquet? To Lee Willis for his splendid disc-based Christmas card. But what a pity it was based on a SCREEN\$: I know I can publish about five acres of code, but would rather not. Now, how can you get round this one for next year? I shall need it by the end of October, for safety!

And that's all we have room for this month. Please keep all your jottings and snippets coming to:-

**John Wase,  
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# VIDEO TITLING

With Your Computer

By:- John Redfern.

Having recently acquired a Home Video Camera I decided to investigate the best ways of using my SAM Coupe and Spectrum for producing Titles and Title sequences and getting them onto Videotape. Some Home Video cameras have built in title generators but these tend to be fairly basic and don't allow for different Fonts and/or Graphics, so the possibility of producing sophisticated looking title screens is a definite attraction. Now we all know that the AMIGA is ideally suited for the purpose and some superb software is available, but we don't all have access to this; so lets look at using our SAM or SPECTRUM.

Virtually no Home Video cameras have any facility for inputting a video signal. This is because of an EC Regulation that would class them as a Video Recorder if they had the facility and attract an extra whack of Import Duty. Therefore any computer generated signals will have to be recorded directly to your VCR.

You can take the RF signal directly via the aerial lead but this usually results in poor quality recordings due to the fact that your SAM/SPECTRUM operates on Channel 36 the same as most VCRs and although retuning your VCR is an option it is a bit of a nuisance as you have to retune it back afterwards. The best option therefore is to take a Composite Video signal from the computer directly to the Video-in socket on your VCR. This will also give a much superior picture.

On the SAM the composite signal is present on the SCART socket on the back of the Computer and is accessible with a simply constructed lead. On the Spectrum things are not quite so simple but with a bit of very simple soldering can be made so.

So lets make a lead for the SAM. You cannot use a ready made SCART lead as the pin-outs on the SAM are non-standard. However the parts are readily available and the job is fairly simple. Firstly you must determine the type of input that your VCR has, whether it is SCART or phono sockets. The parts that you require are as follows:-

If your VCR has a SCART input;

2 Peritel (SCART) line plugs - Maplin part number FJ41U @ £1.29 each.

If your VCR has a Phono input;

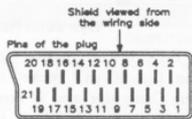
1 Peritel (SCART) line plug (as above)

1 Phono plug - Maplin part number HQ54J @ 26p each

You will also require about 2m of 75ohm Coaxial cable 75 ohm miniature coax -- Maplins part number XR88V @ 36p Metre

This is how you do it. Open up the SCART plug. Strip back about 1-2 inches of the outer insulation of your cable carefully as not to cut through the braided shielding. Tease out the braided wire and twist into a firm wire then trim off about 1/4 inch of the insulation from the inner core. Thread the plug collar

onto the cable then carefully solder the centre core wire to pin 19 and the twisted braid to pin 17 of the plug. The pins are numbered on the plug body but for clarity see Fig.1 below.



**Fig.1 The Scart Connector**

Next reassemble the plug and mark it 'SAM'. Repeat the procedure on the other end of the wire but in this case connect the centre wire to pin 20 and the braid to pin 17. Mark this plug VCR.

If you have Phono type plugs on your VCR, Fit the SCART plug on the SAM end of the cable as above. On the other end of the cable fit the Phono plug by soldering the centre wire of the cable to the centre pin of the Phono plug and the twisted braid to the outer shield. Don't forget to thread the plug cover on the cable first - we've all done it and its most annoying!!

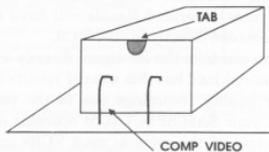
Now join up your SAM and VCR with your cable. Set your VCR to AUX input mode, switch on your SAM and you should be seeing your computer output via your VCR and TV and be able to record the computer output.

Next we come to the Spectrum and to get a Composite Video output you must fit a new socket. This is not as difficult as it sounds but does involve taking the top off. Do this carefully and disconnect the keyboard leads.

You will need the following parts :-

- 1 Chassis Phono socket -- Maplins part number YW06G @ 34p
- a few inches of thin single core insulated wire

Find a suitable place in the casing near the modulator (the big silver box top left) where the socket can be fixed without touching any part of the circuit board and drill a 6.5mm hole. Solder two lengths of the insulated wire to the socket connections. Thread the wire through the hole that you have made and fix the socket with the backing nut supplied. Before you go any further check that nothing will touch anything that it shouldn't when you eventually reassemble things. Next solder the wire that is connected to the centre pin of the plug to the REAR wire that enters the left hand side of the modulator. Then examine the lid of the modulator and on the left just above where you have just soldered the first wire you will see a little tag - bend this out to about 90 degrees and solder the other wire to this. (Fig 2). Check again that nothing is going to short anything out then reassemble the computer, carefully plugging in the keyboard leads. This job is considerably easier in a Spectrum that is in an accessory keyboard than in a rubber keyboard where space is very limited, and should also be fairly easy in a +2 or +3 although I haven't tried this.



**Fig.2 The Modulator.**

The lead that you will need again depends on your VCR. If you have a VCR with phono inputs a standard phono to phono lead will be sufficient. If you have one of the Multi connector video lead kits

this will enable you to make up a Phono-SCART lead. Alternatively you can make up a lead with a phono plug and a SCART plug (VCR end) as above.

Now connect up your Spectrum to your VCR set to AUX input and switch on your Spectrum. Hopefully you should be seeing your Spectrum output on your TV via your VCR and be able to record the computer signal.

Title screens can be designed on your favourite art package or just from Basic - Saved SCREEN\$ can be overlaid with Text - you can use the vast amount of clip art that is available - the possibilities are only limited by your imagination. The rest - as they say - is up to you!

Readers will understand that I have carried out the above modifications successfully on both of my 48K Spectrums in accessory keyboards but cannot be responsible for any problems encountered by anyone attempting them.

The following SAM program is one that I use for screen handling when recording Titles whilst editing my Video tapes. It is very simple and can be altered to suit your own preferences. When making up screens to use as titles you will need to experiment with the colours that you use as some colours don't record very well. This is not a fault of the computer but is due to the limitations of the bandwidth that home Video Recorders can handle.

Video titling programs PROTTLER 4 and LOGO MASTER for the Spectrum are available from Hall Video Products, 147 Gladstone Street, Winsford, Cheshire CW7 4AU at £40 for the two!!

```

10 CLS #
20 LET name$="screen"
30 LET scr=5,delay=5
40 LABEL start
50 CSIZE 8,16: PRINT TAB 8;"V
   IDEO I T": CSIZE 8,9

```

```

60 PRINT AT 2,0
70 PRINT "1 - No. of Screens
   to OPEN ";scr;" "
80 PRINT "2 - Delay between s
   creens ";delay;" "
90 PRINT "3 - Load sequence"
100 PRINT "4 - Display Sequenc
   e"
110 PRINT "5 - Alter Filename
   "
120 PRINT "6 - Exit Program"
130 PRINT "Filename of Screen
   $ ";";name$;" "
140 PRINT "Press a Key to sel
   ect Option"
150 GET a
160 IF a<1 OR a>6 THEN GOTO 15
   0
170 GOTO ON a;180,250,loadscrn
   ,displayscrn,310,exit
180 CLS : PRINT "You may have
   up to 10 screens inyour se
   quence."
190 PRINT "Screen 11 is an ove
   rlay screen to put betwee
   n screens to avoid sudden
   changes and should be s
   aved with the same paper a
   nd palette as the main s
   creens and any unchanging
   graphics you require"
200 PRINT "The Filename shoul
   d be 'overlay'"
210 PRINT "Screen 12 is a bla
   nk screen to put at the e
   nd of your sequence to cle
   ar the graphics."
220 PRINT "The Filename is be
   'blankscrn'"
230 PRINT "Default Value ";scr
   r;" Screens"
240 INPUT "No. of Screens (max
   10) ";scr: CLS : GOTO sta
   rt
250 CLS : PRINT "The Delay fa
   ctor is the length of tim
   e that a screen will be
   displayed before being rep
   laced by the next one"
260 PRINT " A Delay of '0' wi
   ll wait for a Keypress bef
   ore changing Screens"
270 PRINT "Default Value ";de
   lay;" secs"
280 INPUT "Enter delay between
   screens ";delay: CLS : G
   OTO start
290 CLS : PRINT " The filenam
   e for the sequence of Sc

```



information can be permanently stored. Information saved to EPROM is permanent until erased using a special EPROM eraser, unlike the RAM cards which lose data when power is lost (whilst batteries are installed information will be retained on RAM indefinitely).

ROM cards are also available which provide additional applications such as spell checkers, and also transfer utilities enabling data to be ported from the Z88 to other computers. Transfer utilities are available for IBM PC's, Apple Macs, and the BBC range. Even though one is not available for SAM I have been able to write my own using SAM Basic which means I can transfer and store files on SAM disc.

Transfer between computers uses the Import-Export application, and there is

also a Terminal application which I believe is designed for use with modems.

Additional peripherals include a parallel printer lead, which plugs into the RS232 port. The lead allows the computer to be plugged into parallel printers and converts serial data into the parallel format.

If your on the move and want the freedom of a portable computer then the Z88 is ideal value for money. I am currently studying for a degree course part time in the evenings, and use the Z88 at work during lunch breaks to write assignments. I am then able to port them over to SAM when I get home and save them to disc. Richardson's are selling the portable at £99 which is considerably less than the £250 I paid four years ago.

It is a wonderful little machine and I believe well worth the money.

# Z80 SUBS

By:- Adrian Stevens.

First of all welcome to this new regular (I hope) machine code column, covering everything from sub-routines to full machine code routines. Although I have a large amount of m/c routines which will be used in this column, it would be nice if readers could send in any routines however small or large they may be, I will also be interested in anything else machine code related. Some of the routines covered in this column will be more SAM specific but there will be many m/c routines which will also run on the Spectrum or any Z80 based machine for that matter. Right now I've got the introduction out of the way we are going to start this month off with a sub-routine to multiply two 8 bit numbers together, and return with a 16 bit result. The numbers to multiply are passed in H (multiplier) and L (multicand) registers, while the result is returned in HL. The routine does not effect any other registers.

```

;## 8-bit multiply subroutine ##
;On entry H=multiplier, L=multicand
;On exit HL=result
MULTIPLY: PUSH DE
          PUSH BC
          LD E,L
          LD L,0 ;result=0
          LD D,L
          LD B,8 ;shift count
MULT_LP1: ADD HL,HL ;shift left
          JR NC,MULT_LP2
;no add if CY=0 (multiplier bit)
          ADD HL,DE
          ;add multicand
MULT_LP2: DJNZ MULT_LP1
          ;repeat for all multiplier bits
          POP BC
  
```

```

POP DE
RET
;multiplication example
;
EXAMPLE: LD H,93 ;multiplier
          LD L,37 ;multicand
          CALL MULTIPLY
          ;result in HL=3441
  
```

Next is a routine to divide two 8 bit numbers. The number to divide is passed in the L register while the divisor is passed in H. The routine returns with the result in HL, where L is the quotient (whole part) and H is the remainder, other registers are not effected.

```

;## 8-bit division subroutine ##
;On entry H=divisor, L=dividend
;On exit H=remainder, L=quotient
DIVIDE_B: PUSH AF
          PUSH DE
          LD D,H ;D=divisor
          LD E,0
          LD E,1
;E=quotient end pointer
BDIV_LP1: ADD HL,HL ;shift left
          LD A,H
          SUB D
;try to divide by D (divisor)
          JR C,BDIV_LP2
;leave rem if CY=1
BDIV_LP2: RL E ;store quotient
          JR NC,BDIV_LP1
;repeat until all quotient bits
;obtained
          LD A,E
          CPL
;correct for quotient
          LD L,A ;bits inversion
          POP DE
          POP AF
          RET
;byte (8-bit) division example
  
```

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```

;
EXAMPLE: LD L,203 ;dividend
         LD H,23 ;divisor
         CALL DIVIDE_B
;quotient L=8, remainder H=19

Now, lastly for arithmetic operations
(this month any way) is a routine to
divide two 16-bit (word) numbers. The
number to divide is passed in HL
register pair, while the divisor is in BC.
The routine returns with the result of
the division in HL & BC, where HL is
the remainder and BC is the quotient.

;# 16-bit division sub-routine #
;On entry HL = dividend, BC =
  divisor
;On exit HL = remainder, BC =
  quotient
;
DIVIDE_W: PUSH AF
         PUSH DE
         EX DE,HL
         LD HL,1
         LD (WDIV_ST),HL
;set up quotient
         DEC HL
         EX DE,HL
WDIV_LP1: ADD HL,HL
         EX DE,HL ;
         ADC HL,HL
;these three instructions in
;effect provide a 32 bit left
;shift of registers HL,DE
         SBC HL,BC
;try to divide HL by BC
         JR NC,WDIV_LP2
         ADD HL,BC
;restore HL if no divide
WDIV_LP2: EX DE,HL
         PUSH HL
         LD HL,(WDIV_ST)
;shift quotient bit into HL
         ADC HL,HL
;obtained from the attempted
;division
         LD (WDIV_ST),HL
         POP HL
         JR NC,WDIV_LP1
;repeat until all bits of
;quotient obtained
         LD A,(WDIV_ST)
         CPL
         LD C,A
;low byte of quotient
         LD A,(WDIV_ST+1)
         CPL

```

```

         LD B,A
;high byte of quotient
         EX DE,HL
         POP DE
         POP AF
         RET
WDIV_ST: DEFW 0
;word (16-bit) division example
;
EXAMPLE: LD HL,23389 ;dividend
         LD BC,35 ;divisor
         CALL DIVIDE_W
         ;quotient BC=668,
         remainder HL=9

Finally for this month, and as a change
from numbers, a small print string
routine.

;## Print string subroutine ##
;Note this routine alters HL and
;the A registers
;
PRSTRNG: POP HL ;HL=ret address
         LD A,(HL) ;fetch char
         INC HL
         PUSH HL
;stack new return address
         CP 255
;check for terminator
         RET Z ;ret if end
         RST 16 ;print char
         JR PRSTRNG

```

To use this routine the string to print follows the "CALL PRSTRNG" instruction and the code 255 dec terminates the string, the following example demonstrates its use:-

```

START:   LD A,2 ;upper scrn I/O
         CALL 274
;call to set channel (SAM)
;SPECTRUM use CALL 5633
         CALL PRSTRNG
         DEFB 22,10,5,17,1
;at 10,5,paper 1
         DEFM "HELLO THIS IS A
         TEST"
         DEFB 255 ;terminator
;instruction execution resumes
         here

```

Well that's it for this month, and I look forward to any machine code contributions from readers of this column. Bye for now.

# The HELP PAGE

Edited By:- Ray Bray.

Sorry there was no Help Page last month but we received only two minor queries which have been carried over to this issue.

We start this month with help from our readers on Harald Lack's request in the December issue for advice on how to connect an external tape recorder socket to a Spectrum +2. Three readers, Marcus Prichard of Slough, Frank Harrop of Brighton, and Andy Davies of Sheffield, have kindly written in, all providing similar information which I have paraphrased below.

Remove the six securing screws on the underside of the case and separate the two halves by carefully unplugging the two ribbon cables for the keyboard from the PCB and the 5-way plug on the opposite side near the cassette unit. Drill a hole through the back of the case to take a 3.5mm jack socket, (near the PCB attached to the cassette unit), solder a short length of two-core wire to the socket and fit it to the case.

The wire from the central part of the socket (where the tip of the jack plug will touch) is then soldered to the point on the PCB where the white wire from the 5 way plug goes to, which is pin 7 of the IC in the datacoder circuit, ensuring that white wire doesn't drop out and avoiding excessive heat. Then solder the other wire to the main earth point of the cassette PCB where the black wire from the 5 way plug is connected.

Finally reconnect the plug and the keyboard ribbon cables and reassemble the case. I am assured that there is no

need to use any switching unit, simply plug in the external recorder and use either the internal or external deck as required.

The next question concerns programming on SAM. John Hunter of Ogmore-by-Sea, (ah that place takes me back to my youth!), asks if we can give him a simple program in Basic which will sort given numbers in the range 1 to 9999 into ascending order and print the result with an LPRINT routine. He has a 512K SAM with MasterDOS and MasterBASIC.

Fortunately MasterBASIC provides a useful SORT routine which makes the Basic program much simpler, and the resulting sort much faster, than it would be if the sorting had to be done completely in Basic. However, the sort will only operate on string arrays therefore the numeric values have to be converted to strings before being sorted. Furthermore, the numbers have to be in a special string format to enable them to be sorted correctly in numeric order. Fortunately Dr. Andy Wright has provided a simple means of doing this with the SVAL\$ and NVAL commands.

Pages 20/21 of the MasterBASIC handbook explains the use of SVAL\$ and NVAL which I recommend you to read. However, if you are only interested in integer numbers (ie whole numbers), within the range you mention then you only need to declare a string array with 2 character length strings. If you wish to sort non-integer numbers then you will probably need to use a 4 character string

array, depending on the accuracy you require. On the question of accuracy, the conversion of decimal numbers to string format and back to numerical format can produce small errors so, this may also influence the choice of string length and how you write your sort subroutine.

The use of string coded numbers provides a compact method of storing numeric data so I would recommend that you adopt this method at the outset, rather than storing the data in numeric arrays and only converting it to string arrays for sorting purposes. The following short demonstration program shows how the SVAL\$, NVAL, and SORT will work with integer numbers within the range you require:-

```
10 DIM N$(10,2)
20 RESTORE 100: FOR A=1 TO 10
: READ D
30 LET N$(A)= SVAL$(D,2): NEXT
  T A
40 SORT ABS INVERSE N$(TO 10)
50 FOR A=1 TO 10: LPRINT NVAL
  N$(A): NEXT A
60 STOP
70 :
100 DATA 9999,66,250,84,66,175
,14.300,1,9999
```

If, as your letter infers, you wish to select up to 80 numbers from some larger source and sort those into order, then it will be necessary to transfer those to a sorting array, such as S\$(80,2), before performing the sort on those numbers only. The final point to note is that if ABS INVERSE is omitted then the sort will be made in descending order.

Rusty Atkins of Reading is experiencing one of those ubiquitous problems with printers producing stray characters, however, his problem is more complicated than most. He has an ANSI printer hooked to his SAM and when it prints a document from *The Secretary* word processor it initially prints @10, does a form feed, prints a B and then

does another form feed before acting properly! This is obviously another of those problems to do with printer control codes, but without a list of the ANSI control codes it is going to be difficult to advise you. The initial printing of the @ character seems to indicate that the printer reset code which is used at the start of each document is different, so check if the ANSI code is the same as the standard 27,64 used by *The Secretary*. The 10 code is the standard line feed but it would require sequential codes 49,48 to be sent to print the numeral 10 and this sequence does not appear anywhere in the standard settings. Similarly the letter B would require a code 66 to be misinterpreted to produce the character B and this code is not used anywhere. A form feed is produced by the code 12 which should be standard for all printers and this only appears in one other setting, that for setting the line spacing to 12/72 inch. However if that was being misinterpreted I would have expected that an A would be printed before each form feed.

In summary Rusty, all I can suggest is that you check that the correct control codes for RESET PRINTER are being used, if not, insert the correct codes and you might find that all the other problems will then be cured. However, if you have the original version of *The Secretary* you might have to also make the program amendment suggested by Bob (Vol 6 No.7 page 37), which is to alter lines 6991 and 6998 of the main program, removing the PRINT #4 statement on each line and replace them with PT(22) which will call the procedure at line 7200. If this does not solve things, send me a list of the ANSI control codes which are different from those used in the control code menu of *The Secretary* and that might give me a better idea of what is happening. In the meantime

perhaps one of our readers has come across this problem and could send in the solution?

Allan Clarkson of Leeds is having terrible troubles with the keyboard of his SAM. The cursor keys and the CNTRL key are not working but if he holds down a combination of TAB, CAPS and SHIFT then CNTRL works, however the cursor keys will then only produce Z, X, C and V. The keyboard membrane has been checked and is alright. Allan says that he has been able to fix most problems with his various computers but this has him stumped. The one common factor with these five keys is that they are all on the same address line which connects to pin 17 of the lower membrane ribbon cable connector. You could try disconnecting and reconnecting the ribbon cable to see if this cures the fault and also check whether there is a break in that wire within the cable, or a fault in the printed circuit connection or the track leading from the connector. There might also be a fault with the diode or resistor connected to line. The final fault might lie in the ASIC itself, but if you have the use of a mouse and this is still working properly, then as the mouse and these keys use the same connection to the ASIC then I doubt if the ASIC is faulty. The answer to Your supplementary question concerning the Epson printer ribbon cartridge only inserting and winding one way is that it contains a continuous ribbon which keeps circulating until it is worn out so you don't have to bother to rewind it or reverse it. I don't know whether you can re-ink this type of ribbon but I can't think of a reason why not.

Now to the questions carried forward from last month. The first by coincidence was also from Harald Lack, who is using a Seikosha SP180 with a 48K Spectrum to run a DTP program. He wishes to

know if it is possible to use other printers such as ink/bubble jets (ie a Hewlett Packard), or laser printers that only have NEC or HP emulation.

Although the HP Laser Jet uses ESC commands, these are different from the Epson standard and the range of functions are not the same. I have no knowledge of the NEC printers. In general terms I think it true to say that any program written for the 48K Spectrum will only work happily with an Epson compatible printer and will not run with printers that do not have this mode. If you wish to use a bubble jet printer then the Cannon BJ10 has an Epson emulation mode and should be suitable for your purposes, providing the programs that you are using have a facility to modify the printer control codes. (Editor's interruption: If people want a laser printer then try the Ricoh LP1200, available from Silica on 0181-309-1111 and priced at £499 including VAT, it has emulations for Epson FX850, IBM Proprinter XL24E, HP LaserJet III, and its own Layout command structure. It works well with SAM and Spectrum. Just thought it may interest someone. Bob.)

The final query comes from Stuart Burton of Poole, Dorset, who asks if the SAM 1 Megabyte extension can be used to provide extra pages of RAM as well as being used for a RAMDISC. He particularly asks if the extra memory can be used for Basic programming. In general terms the answer to your question is yes. The easiest way to use the extra memory for Basic programming is to design the program in modules and store the least used sub-routines in the RAMDISC as separate files, merging them with the main program only when required. This requires careful planning as the sub-routines will be overwritten as each

one is called. (See the May 94 HELP PAGE for a fuller explanation of the use of the Spectrum 128K RAMDISC for this purpose, the principle is the same). The only way to page in the additional memory is by using machine code, and the pages can be used to hold extensions to machine code programs, in the same way as the higher pages of the standard machine. No doubt there are some clever people who can write Basic programs in such a way that they can be paged in and out and used "without the seams showing", but to my simple mind the problems involved are insurmountable. I understand that an article by Carol Brooksbank is likely to appear in **FORMAT** in the not too distant future, giving a full explanation of the use of the 1Meg extension for programming.

That is all for this month. Please keep sending in your problems/answers to the following addresses:-

**Anything SAM or General Purpose:-**

Ray Bray (Format Help Page),  
Spring Cottage, Bourne Close,  
Porton, Salisbury, Wilts, SP4 0LL.

**Anything +3, CP/M:-**

Mike Atkins (Format Help Page),  
70, Rudgwick Drive,  
Bury, Lancashire, BL8 1YE.

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# C

## FOR SAM

FOR MORE DETAILS  
SEE NEXT MONTHS  
**FORMAT.**



# Uni-Dos Corner

By:- Henk van Leeuwen. Edited by:- Adrian Russell.

Back again! What? You want more CREATE files? OK, just this once then, but we do think it is about time you started sending in a few UNI-DOS bits of your own. Come on readers, let us all see what you have been doing with your system.

Oh well, down to work. With this months CREATE file it is possible to DELETE Basic lines. The syntax is CLEAR @ n,m

```
;CLEAR @ N,M
ORG 60000
START  DEFB 1 ;only one syntax
       DEFB 253 ;'CLEAR'
       DEFW CLR_LEN
L_CLEAR CP "@" ;code 64
        RST NZ ;reject if wrong
        RST 40 ;point to first
parameter
        RST 16 ;ask for the st
art Basic line
        DEFW 7298 CP " , " ;seper
ated by a comma
        RET NZ ;reject if wrong
        RST 40 ;point to the ne
xt parameter
        RST 16 ;ask for the la
st Basic line
        DEFW 7298
        RST 24
        DEFB 13 ;SYN.END
        RST 16 ;get last Basic
line from calculator stack
        DEFW 7833
        INC BC ;add one and
        PUSH BC ;save to stack
        RST 16 ;get start Basi
c line from calculator stack
        DEFW 7833
        POP HL
        PUSH BC
        RST 16
        DEFW 6510 ;find RAM add
ress of Basic line
```

```
EX (SP),HL
RST 16
DEFW 6510 ;find RAM add
ress of Basic line
JR NZ, L2
EX DE,HL
L2     POP HL ;HL will have th
e value from the first address n
ot cleared
```

```
AND A
SBC HL,DE ;and DE must
have the start address of the fi
rst Basic line to be deleted
RET C
ADD HL,DE
RST 16 ;call the clear
routine in ROM
DEFW 6629
RST 24
DEFB 14 ;SYN.END
CLR_LEN EQU $-L_CLEAR
```

And, once again, the DATA lines when you don't have your own assembler program.

```
110 DATA 1,253,47,0,254,64,192,
239
111 DATA 215,130,28,254,44,192,
239,215
112 DATA 130,28,223,13,215,153,
30,3
113 DATA 197,215,153,30,225,197
,215,110
114 DATA 25,227,215,110,25,32,1
,235
115 DATA 225,167,237,82,216,25,
215,229
116 DATA 25,223,14
```

Just add the lines to the usual DATA POKER program, run it and then save the code file from memory as:-

```
SAVE d* "CLEARcode"USR 60000,51
```

Back again soon I hope, and remember, we want to see your routines.



**FORMAT** is a magazine that is written by its readers. No professional writers - no staff hacks - just people dedicated to their hobby. This is, we believe, one of the most important parts of what makes **FORMAT** a success.

However, we are always in urgent need of more articles because each month we try to put together an interesting and varied magazine and to do this we need as many articles as possible to choose from, achieving the balance is not easy.

So we need you, the reader, to help us fill these pages. How? Well here are just a few of the ways you can help.

**SHORT SPOT** is, without doubt, the most popular section in each months issue. John Wase does a stalwart job each month sifting through his files to put together readers bits and pieces. But he is always desperate for more - especially small items (under 20 lines of Basic) and for hints and tips. You may have an item that you found somewhere else, that is OK, provided you credit the original author and the mag it appeared in. This, and the Letters Page, are the easiest way that you can contribute to **FORMAT**.

But we obviously need bigger articles - from 1 page to a book full, on any subject related to Z80 computing. And you don't need to be brilliant at writing - it is the ideas that count. We are here to help knock your article into shape for **FORMAT's** pages.

So come on, get writing. Every single one of you has something you have learned that should be passed on. Don't be afraid to share your valuable knowledge. If you need help or advice we are always here to give it, just ask.

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# YOUR LETTERS

Dear Editor,

Thank you for **FORMAT** Vol.8 N°3 and the renewal notice. I have reluctantly decided to end my subscription to **FORMAT** for the following reasons:

1. The external value of the Malawi Kwacha has dropped drastically since the beginning of the year, and means that I am only able to remit one fifth of the Sterling that I could in January 1994.

2. There seems to be an increasing number of articles in **FORMAT** that I have to skip because of not having the right system: as a +2, PLUS D owner, I can make no use of articles about SAM, UNIDOS, +3 Spectrums, for example.

3. One system, which I do have, has been given practically no coverage in **FORMAT** - i.e. BetaBasic, which, given its close approximation to SAM Basic, is surprising.

I wish you and remaining INDUG members, and thank you for your supply of **FORMAT's** over the past seven years or so.

*Yours sincerely, Chris Ingram.*

Sorry to lose you Chris, you joined INDUG when we first started and it is always sad when we lose one of the founding members. Good luck with your work in Malawi.

As to BetaBasic, it has always surprised me that there has not been more articles written on the subject. But as I've often said, we can only print what gets written. **Ed.**

Dear Editor,

Having just subscribed for a twelve

months supply of **FORMAT**, I have received the January 1995 issue - and I think its brilliant! The layout is very attractive even though minimum colour is used and your magazine rather reminds me of Doctor Who's Tardis; small on the outside, but massive in detail on the inside. Don't change a single thing!

I have also just received the SAM Technical Manual priced at £12.95. For SAM programmers who have not yet bought this I should say "Oi! Programmer! You should go and buy the SAM Technical Manual - its everything you ever wanted to know!" But no, really, I give it a 10/10 rating.

To finish this letter, I end it by wishing that I could have bought a SAM and subscribed to **FORMAT** earlier. Best wishes for the future.

*Yours sincerely, Chris O'Sullivan.*

Thanks for your comments Chris, I don't know about the mag being a Tardis but Jenny always refers to the office as the Tardis because we manage to cram so much in (in truth I hoard everything because you never know when something is going to come in useful). Anyway, glad you also find the tech manual worth having. **Ed.**

Dear Editor,

Concerning the recent query from Mr Canfield about 'BT10 Dumping'. Unfortunately, I have not been able to discover why he gets a blank page. Normally if a printer does not understand a control code, things get out of sequence and "random" characters are

printed. This is what happens if the printer is in LQ mode ie the program was written to make use of the BJ130e/X24 emulation. The program should also print the current screen whichever it is e.g. screen 2. The only thing I can suggest is that it is possible that Mr Canfield had screen 1 selected, which was blank, but was displaying screen 2 with a picture on it. This may cause a blank page to be printed. Otherwise without the printer manual I am unable to help. The codes I used were:-

```
ESC [ \ n1 n2 t1 t2 g1 g2 (180th
inch line feed.)
or 27,91,92,4,0,0,0,180,0
ESC D n1 n2 Set Horizontal Tabs
(27,68,11,0)
ESC [ g Send High-Res graphics
(27,91,103,1,48,16,....)
ESC J n Graphics Line spacing
(27,74,24)
```

Apologies for the hand written scribble, Best regards to all at **FORMAT** for a prosperous New Year.

*Yours sincerely, Anthony Henn.*

Many thanks for looking at the query, hope your answer will help a few others.  
**Ed.**

**Dear Editor,**

I have a SAM Coupé and have just received my fourth copy of your excellent magazine and there were a few points/questions I'd like to make.

First, I was reading the "New Tricks For The Secretary" article and there was a ROM version 3.1 mentioned. My SAM has version 3.0 and I wondered what the differences are between the two versions, and how I might go about getting the later version, if needed.

Second, I have been learning and practicing writing machine code programs for about a year and have one or two fairly impressive demo's and utilities, in my (biased!) opinion. I was

wondering how I might get them seen by other SAM users, etc. (This letter was typed up using my word-processor, currently only a BASIC prototype with minor M/C routines.)

Third, I might be able to help David Joyce with his TTL monitor. I once heard, some years ago, that by splitting the bright TTL output three-way and connecting one to each of the red, green, blue connections, together with the normal connections, would restore all colours. A few years and a Physics A-level later, this sounds ridiculous, but I thought he might try it anyhow as it shouldn't do any harm.

Finally, I'd just like to say how much I enjoyed the little slagging match with Mark Sturdy in the December issue, although I once thought the 'diskette' (as in cigar and cigarette, meaning small cigar (?)), and so should be discette in English (!??).

PS Sorry about the length - It didn't look half this long on the screen!

You could miss out my third point if you think it couldn't possibly work (which I now do).

*Yours sincerely David Laundon.*

As far as I know there is no difference between ROMs 3.0 and 3.1 (I do know why the number was changed but I'm not allowed to say in print). The latest, ROM 3.5, only differs in the copyright message (now West Coast) and the fact that it tells you the ROM version number on the start-up screen.

Machine code demo's are best sent to FRED, they are always on the look-out for interesting things to put on their disc-mags.

Miss something out after you so carefully wrote it? What do you take me for - a hard-hearted editor? Anyway, what you have to say may prompt something from other readers and, at the end of the day, it would do no harm trying your idea. **Ed.**

**Dear Editor,**

I am writing this letter in response to Matthew Gallagher's letter in the January **FORMAT**, re The Midi Sequencer. I wonder if Matthew has Tim's latest address, which is: 3, Upper Newbold Close, Newbold, Chesterfield, Derbyshire, S41 8XD.

I can tell Matthew that version III of the sequencer is a professional program which would give the Atari midi software a run for its money.

Finally, if Matthew or any other readers require any help with midi programming on the SAM, please pass on my address, as I have written a number of utilities for my own use.

*Yours sincerely, Nick Carthey.*

**Dear Editor,**

I enclose renewal form and cheque £12.

While doing so I would like to make some comments on **FORMAT** - a good little magazine but not as good as some of your readers seem to think. My chief criticism is your failure to give full help with basic programming.

When the ZX81 and Spectrum appeared they were inundated with books and articles in 'Sinclair User' etc. telling us just how to program. Now we have SAM with its incomplete manual and very little help from the only source we have - **FORMAT**. It was not until I asked Nev (of happy memory!) that I received the information which should have been in the manual or at least on a follow-up. Examples: the way to activate the function keys so as to use them as a numeric pad; to bring into use the whole of the memory; how to alter the number of lines on the screen; e.g. in the listing of *The Secretary* there are the following lines:-

```
LET YR=VAL ("19"+STR$(IN45295 BAND
D 15))+STR$(IN 41199 BAND 15)
LET Y=YR-(mh s)MOD400,m-mh-2+(12
AD mh 3)
```

```
LET wd=1+INT(1,25*y)-DIV100+INT(
2-59*m-2.07)+d(y+2)MOD7:POKE 207
41,STRING$(7,CHR$(ac))
```

What do they mean?

Secondly, I wonder whether **FORMAT** is in the pockets of the suppliers? After buying my SAM and finding serious faults I returned it to MGT and was treated disgracefully; only due to the intervention of an unnamed friend did I manage to get a replacement after months of delay and non co-operation. Yet, when I wrote to **FORMAT** complaining, the letter was not published. I suppose they did not want to upset Miles and Gordon. Then later I wrote about some facets which I thought could be improved on *The Secretary* - again, not published. Recently I wrote recommending a source of non-fading thermal paper for the Alphacom printer, not published. Why not? To keep in with the printer firms?

*Yours sincerely, L.W.Simpson.*

While I know the SAM User's Guide is not perfect we have certainly tried to fill in the gaps over the years. Basic programming is a main-stay for **FORMAT** and since our launch we have published more program material (as a percentage of our space) than any other magazine before us, other than the short lived *Sinclair Programs*. As to what actual lines in a commercial program do, that is not often possible to work out without a knowledge of the whole program, but in this case I think those lines may refer to date calculation.

There is only finite space for letters, and so some get in and other don't. I can't recall the case you quote with MGT (after all it must be a least four years ago). But the general rule we follow with any letter of complaint about a company is to send a copy of the letter to them and then have a word with them about the matter. If we get too many letters about one company then we would print a few

to allow other readers to comment. However, it is not our place to become involved in a dispute, especially not in these pages. MGT had a very good reputation for customer relations, but, as I said, without more details of what your original letter complained about I cannot comment at this time.

I can't find a letter from you about *The Secretary*, was it before or after the new version of *The Secretary* came out last year? As to the one about the thermal paper, that was rejected at the time because there are now so few Alphacom printers left in use I did not think it would have had much interest to readers. **Ed.**

**Dear Editor,**

I wish to know, if any SAM owner is using his computer, with any software and modems, for Amateur Radio applications.

I must say, I agree with David Spark, on his article, on the SAM (Vol .8 N° 5) that there should be much more hardware and software produced, for the SAM, as was for the Spectrum and the BBC computer, as all these items, would help keep SAM going on into the future.

I wish you and your staff, and all **FORMAT** readers, a very good 1995, with lots of luck.

*Yours sincerely, B.Jewell.*

Anyone help Mr Jewell? We will pass on any letter we don't have space to print so get writing please. **Ed.**

**Dear Editor,**

I keep wondering what the trouble was in producing Fig.3 for my Calendar article in December's **FORMAT**, and how you cheated. Presumably it was this trouble that led to the errors in the two 'small months' both of which missed out the Sunday line, but with different kinds of error.

There was another amusing error - but not computer trouble: the good spellers

among our readers would have expected the article to be about 'machine in which paper or cloth is glazed or smoothed by passing between rollers'; I hope they were not too disappointed.

It will no doubt be after Christmas when this letter reaches you, so I hope you had an enjoyable time; I wish you - and **FORMAT** - a Happy New Year.

*Yours sincerely, W.E.Thomson.*

Hi Etrick, Happy New Year to you too. The trouble with fig.3 was the printer control codes, *they no work on mine*. The fix was just to type the thing in on this expensive monster we use to type set **FORMAT** and that is where I hang my head in shame and admit I type some bits a little wrong. Sorry.

As to Calendar/Calender, well even Jenny had to look that one up. In a straw poll conducted last week nearly everyone I asked got it wrong and not one person knew about the cloth press. **Ed.**

**Dear Editor,**

Thank you for an unusually thought provoking last issue! I think that we have to face the fact that the 8-bit heyday is now over - other machines now dominate the market, and we must accept that. However, that doesn't mean that SAM users need to start getting depressed - SAM could still have a long and fruitful future ahead of it.

I was interested to read about the original MGT chips. Surely this is an example of the dedication and resources used to develop the SAM. And perhaps the sums of money involved show that it wasn't a problem with the Coupé, but more the unfortunate timing of recession that led to MGT's downfall.

However, that is in the past, and SAM is still in the present and going strong. In my opinion, SAM has nearly all the major software applications available - Drive, SAMPaint, Campion.... and of course Lemmings! Perhaps the next important new release should be a real

DTP package - preferably Driver compatible. After what's been done already, surely anything is possible!

On the hardware side, perhaps the last major item lacking is an input device such as scanner or digitiser. What happened to the one developed by SamCo? Surely it would be worth someone's while to make it available, if only in kit form? The same goes for the expansion board I read about several years ago in Short Spot (April 1993) that allowed the SAM to emulate a PC, even running Windows.

This, of course, raises another point from last issue - what on earth is the MiDget? The secret's out - I think we should be told more! Surely this must be a good thing, since it would encourage people to keep, and use their 8-bit machines, at the same time as allowing them the extra 'power' that so many users seem to crave.

I feel that the SAM is still a very marketable machine - surely there must still be a big market waiting for it? The strategy must be not to compete with the established 'Power' machines, but to find SAM's own niche. For example, families wanting to buy a first computer, but daunted by the business-world PC prices, and the console world's restricted usefulness.

The "2001" dream from last issue is surely not as funny as it sounds: if people were aware of SAM and its abilities (and low prices!) then surely sales would take off!

PS My SAM disappeared in Blue Alpha's direction a few months ago for a new drive. Any idea when I'll see it again?

*Yours sincerely, Ben Booth.*

Hardware development for the SAM is a long drawn out thing, mostly because it is being developed by people in the spare time. The Midget may, or may not, see the light of day. But if it does end up

being produced then you will read all about it in **FORMAT**.

The digitiser was not very good and, at the end of the day, did not generate much interest and so it died with SamCo. However, there are a couple under development so who knows what the future holds.

As to Blue Alpha, the last time I spoke to Mark (in November) he said there were no repairs outstanding. If anyone has sent repairs or orders to Blue Alpha could the please drop me a line giving details and I will investigate further. **Ed.**

**Dear Editor,**

I'm sure that we've had this discussion several times before, but since people keep complaining about demo writers, and especially after M.Gallagher's letter in the January issue I feel inclined to write to you and express the demo coders opinion.

In answer to the question posed "What is their point?" I quite agree that these flashy machine code demos don't serve any useful purpose, but who says that demo coders just write demos.

If you are a regular reader of Short Spot section then I presume you will recognise my name. I hope that I have provided some useful little routines on several occasions. However, if anyone out there also reads FRED magazine then they also will recognise my name from there, as I have had several pieces of Music (and more recently demos published).

Now I can't claim this for every demo coder in existence, but, for me personally, the reason that I am writing demos is to learn machine code. Although I read Carol's recent series - good though it was it didn't really cover the language in detail. As there are really no decent books on the subject (as far as I am aware) we are left to learn the language our own way (i.e. by writing demos).

My intention is to start writing SERIOUS software, but I can't do this until I feel I know the intricacies of the language. Just think, what would have happened if ESI had not started their programming ... no E-Tracker.

Many other programmers have graduated from demos to writing real, useful programs. Next time just think twice before jumping down peoples throats, perhaps you'll dissuade them from learning, and stop them from perhaps being the SAM software genius of 1995.

*Yours sincerely, Lee Willis.*

Yes Lee, I've seen several of your items on FRED and of course in Short Spot (I do read what I edit, honest. And I do understand what you are saying. However, let me explain.

I started my own software company way back in 1981 - writing software for the ZX81 myself. I expanded to cover the Spectrum in 1982 and was honoured to have one of my Spectrum titles accepted as part of the second batch of games selected by W.H.Smith. They took 9,000 copies of the game in just 10 weeks.

Anyway, I soon attracted other programmers who wanted me to publish their work, and so we developed a system for *Producing* games. This became even more important by the mid 80s when we were selling games to other companies.

The system worked like this. Design a game (story boards and all) and analyse what was needed to make that game work. If any new skills were needed by the programmer, or any new programming ideas needed testing, we did not waste time on the big game - just in case the idea would not work - instead we wrote a smaller game to test the idea. If the idea worked then the big game could go ahead, if it didn't work then far less time had been wasted.

For really new ideas, the small game

had to be kept secret so that maximum money could be made out of the final big game when it was finished. However, the test game was still not a dead loss, just hold it for a few months and flog it to Mastertronic for a few hundred quid and run with the money.

What I'm trying to get at is: why write demos when you could write something that makes money for you. The SAM is crying out for good playable games, even small ones for mags like FRED.

OK, the point that you are learning is also a good one. I always thought it was best to start off with small projects and build up, but always trying to make money for the programmer as we went.

I would never want to put someone off programming, but with a little guidance someone who wants to be programmer of the year sometime could make a little money along the way. If you want to chat about it give me a ring one evening, I'm always keen to give programmers a helping hand in any way I can. *Ed.*

**Dear Editor,**

I read David Finch's (Basically Speaking) article in Decembers issue of *FORMAT* and he suggested someone write an article on using the SOUND command on SAM. I myself use the SOUND command in BASIC a lot and I have researched on it from the technical manual. I am confident that I could write a half decent article on the subject if you would like me to.

*Yours Sincerely, Peter Alleston.*

Ooo! Yes Please. *Ed.*

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

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# FORMAT

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