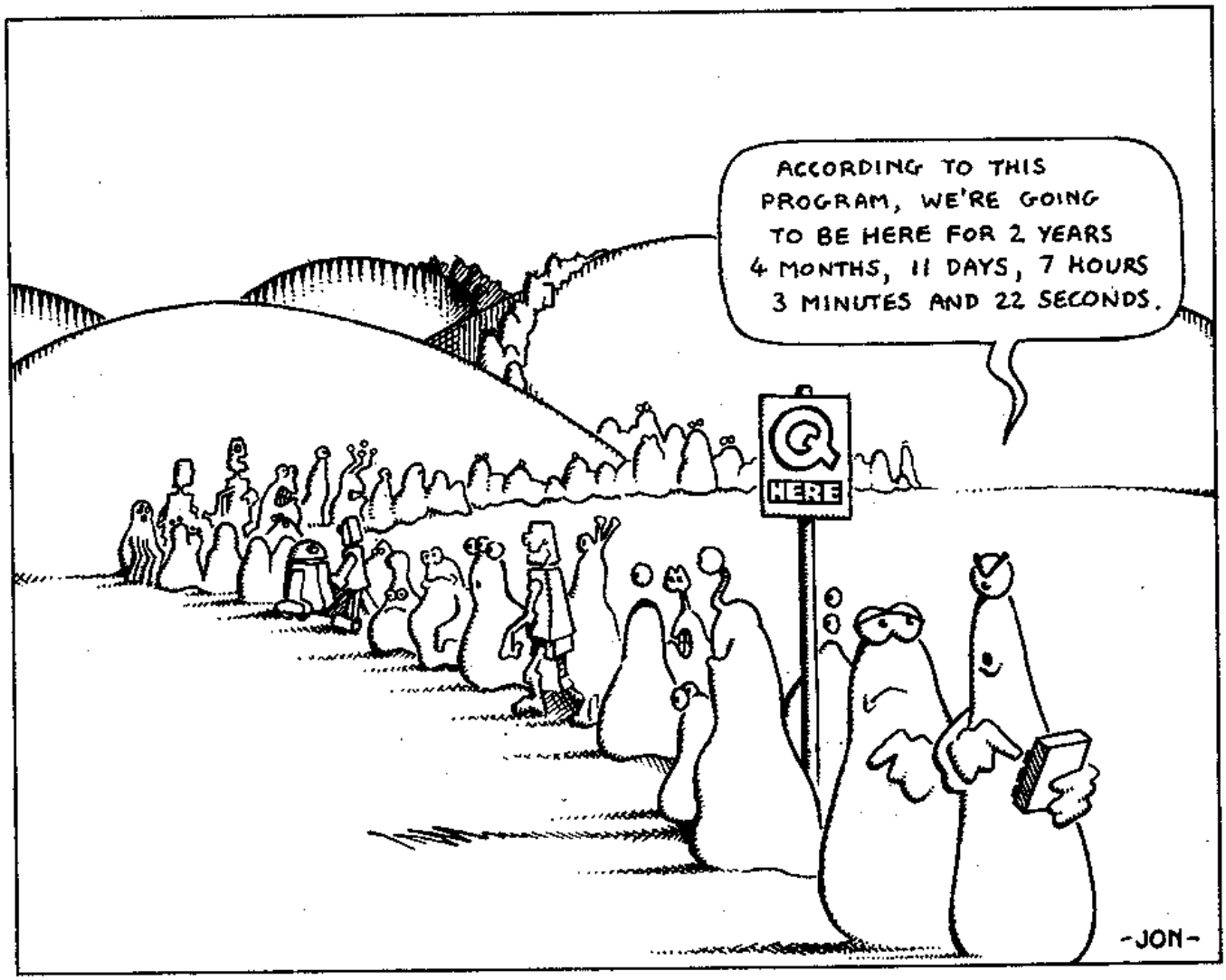
Vol 4 - No 7. March 1991.

FORMAT

FOR SPECTRUM AND SAM USERS



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NEWS ON 4

SHOPPER DROPS SINCLAIR SCENE

Many people purchased their February issue of Computer Shopper and hurried home to read about their favourite machine only to find that the Sinclair Scene was absent. No mention in editorial pages as to why and no promise as to its swift return. The March issue is also minus the column.

We can exclusively reveal that the writer of this much respected section had been forced to back out due to other commitments and it is now up to Shopper's readers to push for new writters to be found.

As just about the only printed source of serious Spectrum and SAM information (other than FORMAT of course) Computer Shopper had developed quite a following. However, as we have seen to often in the past, magazine publishers tend to drop their Spectrum or SAM coverage unless they are constantly reminded what readers want.

MIDLANDS ALL FORMAT SHOW

Following the success of the London All Formats Shows the organizers have decided to hold their first Midland show. It is to be held at the National Motorcycle Museum in Birmingham (not far from the National Exhibition Centre) on Sunday April 21st.

The last one day show in London, on February 2nd, was the biggest so far but many people are unable to get into central London. The Birmingham show will attract people from all over the Midlands and, given the excellent motorway links, even further afield.

SOFTWARE COMPANIES FOLD

Two long running software companies failed recently. Softek, publisher of Artist II and The Writer, closed down leaving several business creditors and programmers unpaid.

The other company to fail was 'industry veteran' Interceptor which has appointed an Administrative Receiver. Debts of over £1million are estimated. Although still trading under the receiver there seems little hope of the company being sold as a going concern but their budget software label - Players - may well survive.

CHIP PRICES SET TO RISE

After two years of steadily falling prices there are predictions of a 10 to 20% rise in the price of memory chips in the next year.

Japanese companies are reported to be cutting back on production in order to raise world prices for the chips that are produced.

European computer manufactures were hit by shortages and high prices in 1987-88 but most now have long term contracts that will help them if supplies again become short. However now might be the ideal time to expand the memory on your computer - before the Japs hike the price even higher.

SAM GETS ITS PD TOGETHER

Ever since the launch of the SAM Coupé users have been dabling with Basic and machine code. The product of this has resulted in a growing range of utilities, demos, games and tunes being created. Many such users have started making the software available as public domain or PD. Where the progams can be copied without restriction but NOT resold.

The Sam Coupé Public Domain Software Association (SCPDSA for short) is being set up as a member of Team SAM to co-ordinate all PD software and make it readlly available through a catalogue to be called 'SAMsational Software'.

The catalogue will be available quarterly, on subscription for £2.00 (£1.50 for INDUG members) along with a high quality PD demo disc. Next months FORMAT will contain full details along with an article on PD software and what it is.

Staff problems are nearly over as this month I welcome two new crew members - Jenny Bundock and Barry Aczel. I'm sure both will soon settle in and FORMAT will, with their help, continue its growth.

Last month I made a slight boob as I edited the MasterDOS review by Carol Brooksbank. On page 24 column 2 in the 3rd line of the paragraph starting NB (where she is talking about using RAM disc with FLASH!). The wording should be ...do so BEFORE loading the main program. If you attempt it after loading then the programs can be corrupted. Sorry for the error, I will order a new pair of specs so it wont happen again.

Any Z80 machine code programmers out there looking for something to challenge their skills? Well there are several programming projects that FORMAT Publications have planned so why not give me a ring. I am also looking for a SAM Basic programmer with past experiance of, and possible access to, the BBC'B' machine as I'm looking to convert several business programs to SAM. With all projects payments are open to discussion.

Some of you may have seen my letter published in New Computer Express (issue 118 - 9/2/91) This had been written, in a frendly fashion, following an item in their Spectrum column written by Robin Alway. I sought to point out a few simple facts that NCE should really have checked out prior to printing the original article. Well I know most of you will not be regular NCE readers so I am taking the liberty of printing the letters here so you can draw your own conclusions.

Letter to Editor NCE - Dated 1/2/91

The following is the full text of the letter. An EDITED version was printed under the caption 'Misled - or misguided?'. Parts between square brackets [] were edited out by NCE.

Dear Sir,

I have just read issue 116 of your magazine and note that, on page 30, Robin Alway mentions the SAM Coupé User Group and gives an address in Berkshire. I would like to point out that INDUG is the largest SAM Coupé User's group. We are founder members of TEAM SAM and have supported the machine since its inception nearly three years ago. As members of TEAM SAM we work very closely with SAM Computers Ltd although we are, of course, totally independent. [We currently have nearly 2500 members world-wide.]

Only SAM Computers Ltd can sanction the use of the name SAM or SAM Coupé and, as far as we are aware, no person or organisation has been given permission to call themselves The SAM Coupé User Group.

As I know you have a lot of SAM readers, and I would hate to see them misled by Robin's column, could you please [print something in a forthcoming issue to] clarify the situation.

[I thank you in anticipation of your help in this matter.]

Yours sincerely, R.P.Brenchley,

Reply printed in issue 118 - 9/2/91

Claiming that Robin has misled anyone by printing the address of a group calling themselves the SAM Coupé User Group is a bit rich, Mr Brenchley. And it would strike me as

being a bit rich if SAM Computers Ltd started getting nasty about the use of the names SAM or Coupé in association with a user group - surely the machine can use all the support it can get?

But being the fair-minded fellow that I am, I took the trouble to print your address in full - but would point out that INDUG is à user group for Spectrum and SAM owners rather than a SAM-specific organization.

Letter to Editor NCE - Dated 14/2/91

Dear Sir,

A BIT RICH IS IT? I write a letter, stating facts, to correct a mistake made by one of your writers, and you call it a bit rich.

SAM Computers Ltd are the only people who can authorize the use of the names SAM or SAM Coupé in relation to the SAM Coupé computer. How would New Computer Express like it if other people started using their name without permission? Your comments were, to use your own words, a bit rich.

I am sure facts speak for us. FORMAT, the group's magazine, has over 4500 readers - world wide - of which about 35% are SAM Coupé owners. Several of our members were actively involved in the design of SAM and in bringing this excellent machine to the market, the level of expertise we can call upon is therefore unrivalled. We also publish software for the SAM Coupé and produce a printer interface for the machine.

INDUG has been going for nearly four years. We are, I agree, both Spectrum and SAM Coupé orientated. But a large majority of SAM users have come to the machine from a Spectrum background and most still own their Spectrums. The SAM Coupé has the major advantage of being able to run around 98% of software written for the 48K Spectrum, so even the Spectrum articles we publish in FORMAT each month are still of interest to those who own a SAM.

We do not seek to stifle new support for the SAM, although it is getting one hell of a lot already. What my original letter set out to do was to point out that nobody can call themselves 'The SAM Coupé Users Group' without SAM Computers giving consent. Anyone reading the article by Robin Alway could, if they were not aware of the situation, have been misled into thinking this reference was to an official users group which is not the case. Robin should be aware of our existence as I have on at least three occasions sent copies of FORMAT to him via NCE, if he would like to contact me with his address I will be only too happy to add him to our mailing list.

I hope the above will make our position clear. I thank you for publishing my original letter but I am afraid I can't thank you for your remarks that were printed.

Yours sincerely, R.P.Brenchley.

- - - - -

I hope the above will make things clear, both for those that saw the letter in NCE and phoned me asking what was going on, and for those who have never heard of NCE.

Until next time.

Bob Brenchley. Editor.

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SHORT • SPOT

By:- John Wase.

For those of you who are relatively new readers, here's a spot of explanation. Around six months ago, I bemoaned the fact that SAM Basic omitted some features that were in Beta Basic 4.0 on the Spectrum. One of these was the PRINT USING construction. Although USING is actually in SAM's ROM and is therefore a SAM keyword, there was only enough room to implement FILL USING. Since then, I've been inundated with versions for the Spectrum as well as SAM. The latest to drop on the mat (only yesterday) is a new approach from C. Jackson of Creigiau, Cardiff. He mentions that the Spectrum's arithmetic makes necessary the 1e-3 in line 10, otherwise things like 100.015 round down, not up. Here's his program...

```
  5 REM FORMAT 2/91 p8 G. JACKSON (Sp
    ectrum)
 10 INPUT N: PRINT N;: LET A=ABS N: L
    ET D=INT (100*(A-INT A)+.5+1e-3)/
    100: IF D=1 THEN LET A=A+1: LET D
    =0
 20 LET D$=(STR$ D)(((STR$ D)(1)="0")
    +1 TO ): LET N$=STR$ INT A+D$
 30 FOR P=1 TO LEN N$: IF N$(P)<>"."
    THEN NEXT P
 40 PRINT TAB 20-P-(N<0);("-" AND N<0
    )+ N$+".00"(1+ LEN D$ TO )
 50 GOTO 10
100 SAVE "printusing"
```

And STOP PRESS - a further letter on the mat this morning - tomorrow would be too late - again from G. Jackson with an afterthought. He says that 0.5+1e-3 (or 0.501) in line 10 is not good enough for n = 99999.955, which should, of course, round up to 99999.96. It should be replaced by 0.51. And a PS, which I quote...

"PS I have to admit that neither of them deals properly with n=99999999.955! - but not too badly."

Next, we have a little program from M.Fellowes of Market Harborough. This program (written for the Spectrum, and therefore fine for SAM), sorts names, and Mr Fellowes diffidently suggests that his program might not be good enough for "shortspot", though it works, and might help a club secretary, or the like who has lots of names to sort.

Of course it is, Mr Fellowes. It could do with a bit more polish, but you'd be amazed how someone sending in a little idea like this can often produce lots more ideas - these help everyone (including you, of course, for amongst them will be lots of ways to improve the program). So let's have some improvements to his initial program. And let's not forget that he started the ball rolling. And anyone else who thinks that they are not good enough - nonsense: we all want to hear from you.

Here's Mr Fellowes' program...

```
  5 POKE 23609,100
  7 BORDER 7: PAPER 6: CLS
 10 DIM n$(30,15)
 30 FOR n=1 TO 30
 35 PRINT AT 8,10; FLASH 1; INK 2; PA
    PER 7;" W A I T "
 40 READ n$(n)
 50 NEXT n
 60 PRINT AT 6,7;"PRESS FOR OPTION.";
    AT 8,2;"(1)   LIST ITEMS TO SCREE
    N.";AT 10,2;"(2)   LIST ITEMS TO
    PRINTER.";AT 12,2;"(3)   SORT ITE
    MS.";AT 14,5;"ITEMS - 3
    0.  CHARS - 15."
 70 INPUT "   ";NUM
 80 IF NUM=1 THEN GOTO 600
 90 IF NUM=2 THEN GOTO 630
100 IF NUM=3 THEN GOTO 700
101 DATA "VERA","BOB","COLIN","BARRY"
    ,"JERRY"
102 DATA "SALLY","KEN","HARRY","NORMA
```

```
    N","LEN"
103 DATA "PETER","RICHARD","DOUGLASS"
    ,"NELLIE","LARRY"
104 DATA "VIOLET","GEORGE","FRANK","K
    EITH","JOHN"
105 DATA "MICK","IRIS","DENNIS","TERR
    Y","SHEILA"
106 DATA "DEBBIE","LIZ","BASIL","STUA
    RT","GLYN"
595 STOP
600 CLS : FOR n=1 TO 30
610 PRINT "No ";n,n$(n)
620 NEXT n
625 PAUSE 70: CLS : GOTO 60
630 FOR n=1 TO 30: LPRINT "No   ";n,n
    $(n): NEXT n: PAUSE 30: GOTO 60
700 RUN 710: REM ***SORTER***
710 INPUT "HOW MANY ITEMS ?";T
720 INPUT "HOW MANY CHAR'S ?";N
730 BORDER 5: PAPER 6: CLS
740 DIM n$(T,N)
750 FOR n=1 TO T
760 POKE 23609,100: POKE 23658,8
770 PRINT AT 10,8; FLASH 1; INK 2; PA
    PER 7;" S O R T I N G "
775 READ n$(n)
780 NEXT n
790 LET C=T
800 LET C=INT (C/2)
810 IF C=0 THEN GOTO 950
820 LET D=T-C
830 LET E=1
840 LET F=E
850 LET G=F+C
860 IF n$(F)<n$(G) THEN GOTO 920
870 LET X$=n$(F)
880 LET n$(F)=n$(G)
890 LET n$(G)=X$
900 LET F=F-C
910 IF F>0 THEN GOTO 850
920 LET E=E+1
930 IF E>D THEN GOTO 800
940 GOTO 840
950 CLS : PRINT AT 10,10; INK 2; PAPE
    R 7;" SORTED ": BEEP 1,1: PAUSE 5
    0: CLS
975 POKE 23692,0
1000 CLS : POKE 23658,8
1010 PRINT AT 8,8;"PRESS FOR OPTION

                (P) FOR COPY.
               (K) FOR LIST.
             (S) FOR SAVE.": INPUT A
    $
1020 IF A$="P" THEN GOTO 1050
1030 IF A$="K" THEN CLS : GOTO 1090
1040 IF A$="S" THEN GOTO 1130
1050 FOR n=1 TO T
1060 LPRINT AT 0,8;n$(n)
1070 NEXT n: GOTO 1000
1080 STOP
1090 FOR n=1 TO T
1100 PRINT TAB 6;n$(n)
1105 POKE 23692,0: PAUSE 10
1110 NEXT n
1120 PAUSE 100: GOTO 1000
1130 SAVE D1"NAMESORT" LINE 5
```

Back to SAM, now. The SAMBUS expansion interface, one of Bruce's latest inventions, has a realtime clock. One of the things, you can do, of course, is to set up the time permanently like this...

```
10 DO
20 PALETTE 2, RND(127)
30 PRINT PEN 2; AT 10,10; TIME$
40 PAUSE 50
50 LOOP
```

I'm sure that our inventive readers can improve on this, though. Come on; what can you do?

Tony Blythe of Kirkbymoorside, Yorkshire, has dropped me a line with a one-liner which he uses to cycle a disc full of high-res screens from disc. How about this....

```
10 POKE 23090,1: FOR N=3 TO 80: LOA
   D N: ON ERROR GOTO 10: PAUSE 250
   : NEXT N
```

Saved as an "AUTO" file straight after DOS, it quietly runs through the each SCREEN$ until it comes to the end. The "ON ERROR" then repeats the slide show, regardless of the number of screenfiles actually on the disc. Pretty good, eh?

Next is a program from Peter Morgalla of Hemel Hempstead, Herts. This short routine prints out a column of decimal numbers from 33 to 128. To the right of each number is printed its equivalent in hexadecimal, then in binary and finally the ASCII character corresponding to the number, making four columns in all, each with an appropriate column heading. Whilst the original Spectrum manuals used to have most of this information in the back, it's not in the SAM manual at all:

even in the Spectrum manual, it's a bind to have to keep on looking this up, so having a copy of the printout to hand is particularly useful when you are programming. The program will print either to screen or printer and incorporates some interesting ways of formatting screen and print layouts. Printer codes are set for Epson compatibles, with a form length of 70 lines (A4) - the variable P in line 290 can be altered as you wish to suit the paper length.

The program printed below is the SAM version, since they (poor souls) lack this information in their manuals. Those with a masochistic tendency or those with later Sinclair machines with those dreadful manuals should find it fairly easy to convert the program to Spectrum Basic. The SAM HEX$ and BIN$ commands would have to be replaced by subroutines to do the necessary conversions, and the printer setup syntax might have to be altered. Screen formatting to allow the headings to remain intact after "Scroll?" could be achieved in a similar fashion to that for the printer option by counting the lines, as in the subroutine at lines 390-410.

```
 10 REM   DEC-HEX-BIN-CHR$
 20 REM **********************
 30 REM *BY PETER R MORGALLA*
 40 REM **********************
 50
 60 MODE 1: CLS : PAPER 1: BORDER 1:
     PEN 7: CSIZE 8,16: CLS
 70 PRINT AT 1,8;"DEC - HEX - BIN"
 80 PRINT AT 3,7;"CHARACTER PRINTER"
 90 CSIZE 6,8
100 INPUT "DECIMAL CODE TO START: ";
    A
110 INPUT "DECIMAL CODE TO FINISH: "
    ;B
120 IF A>255 OR B>255 OR A>B THEN GO
    TO 180
130 PRINT AT 12,2;"PRINT TO "; INVER
    SE 1;"S"; INVERSE 0;"CREEN OR ";
     INVERSE 1;"P"; INVERSE 0;"RINTE
    R"
140 GET S
150 IF S=28 THEN LET CHAN=2,T=4: GOT
    O 180
160 IF S=25 THEN LET CHAN=3,T=10: GO
    SUB 290: GOTO 200
170 GOTO 140
180 GOSUB 260
190 WINDOW 0,31,2,21
200 FOR C=A TO B
210 IF CHAN=3 THEN GOSUB 390
220 PRINT #CHAN; TAB 4-LEN STR$ C; C
    ; TAB 2*T+2;HEX$ C; TAB 4*T-1;BI
    N$ C; TAB 6*T+3;(CHR$ C AND C>32
     AND C<128)
230 NEXT C
240 WINDOW 0,31,0,21
250 STOP
260 CLS
270 PRINT # CHAN;"-DEC-"; TAB 2*T ;"
    -HEX$-"; TAB 4*T ;"-BIN$-"; TAB
    6*T;"-CHR$-": PRINT #CHAN;"-----
    "; TAB 2*T;"------"; TAB 4*T;"--
    ----"; TAB 6*T;"------"
280 RETURN
290 LET P=70: REM P = PAGE LENGTH
300 LET S=10: REM S = SKIP PERF LINE
    S
310 LET L=P-S-2: REM L=LINES PRINTED
     PER PAGE - 2 FOR HEADING
320 PRINT AT 10,3;"CHECK PRINTER IS
    TURNED ON"
330 CLOSE #5: OPEN #5,"b"
340 PRINT #5,CHR$ 27;"C";CHR$ P;: RE
    M SET PAGE LENGTH
350 PRINT #5,CHR$ 27;"N";CHR$ S;: RE
    M SET SKIP PERFORATION
360 PRINT #5,CHR$ 27;"G";: REM SET D
    OUBLE STRIKE
370 CLOSE #5
380 RETURN
390 LET H=C-A
400 IF H/L=INT (H/L) OR H=0 THEN GOS
    UB 260
410 RETURN
9999 DEF PROC SA: SAVE "D1:CHR$PRINT"
     LINE 10
```

Finally, back to the Spectrum. Those of us who have succumbed to progress and bought 128K machines will have noticed some peculiarities with 128K Basic (well, I hope some of us have). Amongst the problems are the fact that colour commands cannot be inserted in lines like we could in the old 48K Spectrum, so we can't make "pretty programs" any more. Brian Gaff (you know; from Micronet), to the rescue...

Firstly, specially for readers with +3 machines (please send me some more +3 stuff, folks), "Switch+3"

```
9999 POKE 23399,4: LET addr=23613: LET
     se=FN p(FN p(addr)): LET se1=233
     54: LET se2=4867: POKE FN p(addr)
     ,(3 AND se=se1)+(58 AND se= se2):
      POKE (FN p(addr)+1),(19 AND se=s
     e1)+(91 AND se= se2): POKE 23611,
     205 : DEF FN p(x)=PEEK x+256*PEEK
      (x+1): STOP
```

Alternatively, if you've got a +2, check the colour. If it's a nasty black colour, it's a +2A; use the +3 program (above). And if its the better, grey, +2 machine, then here's your listing...

```
9999 LET addr=23613: LET se=FN p(FN p(
     addr)): LET se1=23325: LET se2=48
     67: POKE FN p(addr),(3 AND se=se1
     )+(29 AND se= se2): POKE (FN p(ad
     dr)+1),(19 AND se=se1)+(91 AND se
     = se2): POKE 23611,205 : DEF FN p
     (x)=PEEK x+256*PEEK (x+1): STOP
```

Problems? Let's start specifically with the +3. If you load and run a program after using this switch, you are likely to find that the disc motor won't stop. Modify SAVEs and LOADs, by inserting after each command "POKE 23399,4". Neither version can actually be used in a program, as both switch programs use the error return to do the switching. They work by looking at the error return address on the stack and swapping it to 48k or 128K addresses as required. The STOP then creates the error, and the address on the stack is called. Simple. A further pitfall which applies to both versions is that you can't use COPY in 48K mode - well, you can, but if you do, the return will crash because the command erases the printer buffer. In compensation, the RS232 port (and the centronics, if you've a 2A or +3) are both available to LPRINT in 48K mode. This is because, unlike the SPECTRUM command, the CHANS area of memory is left just as it was. Obviously, though, you can't enter 128K syntax in 48K mode.

Many thanks, Brian, for sorting this out, and for mentioning all the pitfalls.

That's all for this month, folks. Do please keep the bits and pieces coming in. I try to put together a balanced and varied column which covers the widest possible choice of machines, and which contains a range of material so that beginners and experienced programmers alike can find it useful. Without your contributions, this would be impossible. Please send them to:- John Wase, Green Leys Cottage, Bishampton, Pershore, Worcs WR10 2LX. See you next month.

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NEV'S HELP PAGE

By:- Nev Young.

Last month I started with a query from M.Jones of Ladybarn. This month I'm going to try and solve some of the problems he sent me in the four letters since then.

His first problem is with the DIM command. He tries the loop: FOR x=1 TO 10: READ P(x): NEXT X and although the DATA is in the program he gets the error 2 P() not found. He finds that he must first DIM the array before he can READ data into it. The manual does not say he should have to. Well yes and no. Page 54 of the manual gives the short program

```
5 READ p,q
6 PRINT p,q
7 RESTORE 5
```

I can't actually find an example of loading arrays in the manual but there is a very important point to be noted here. As you should know any variable must be created before it can be used. The way to create it is usually by the command LET. For example LET count = 0 creates a number variable count and assigns the value 0. You can prove this with the short program

```
10 CLEAR
20 PRINT count
30 LET count=25
```

This will not work, it will tell you that the variable is not found, but if you reverse lines 20 and 30 it will.

Arrays must also be created before they can be used but they are created by the DIM command. The reason for this is the LET command could not create an array because you need more information. Otherwise you would get silly commands like LET P(x)(LENGTH =25)=0 where the length would tell the computer how many items there are in the array.

Instead we use DIM. This creates space in the computers memory and sets up information to allow the program to find any part of the array. The DIM command is written as DIM <variable name> (size1, size2, size3, etc)

The reason it is called DIM is that it stands for DIMension. A one dimension array is DIM x(23) that is create an array of one dimension with 23 numbers in it. DIM x(23,12) would create a two dimension array with 12 rows each holding 23 numbers, DIM x(23,12,5) is a three dimension array of 5 planes of 12 rows of 23 numbers, and so it goes on.

As arrays are held in the memory in a special way to allow for this type of multi dimensioning they must be created first. That is why you get the error.

Next problem. Why does the RENUM command not alter the GOTO/GOSUB commands. Well quite simply it does when it can for example GOTO 125 when renumbered would change but GOTO VAL "125" would not. That is because the "125" is not a number. Only numbers can be changed so even GOTO 100+25 would not be changed. The point to remember is that early Spectrums did not have a RENUM command so programmers used to quite a lot of 'crafty' coding to make the programs smaller or faster.

The one you find most often is GOTO VAL "125". This actually makes the program smaller but slower. Now how can GOTO VAL "125" be smaler than GOTO 125. At first it looks like the first is 5 characters longer, but no it isn't. The keywords GOTO and VAL are stored as single bytes, the " is only one byte. So knowing this the first still seams longer, but only by three bytes.

The secret is in how numbers are held in a program. the number 125 is actually held in the program as 125 CHR$ 14 CHR$ 0 CHR$ 0 CHR$ 125 CHR$ 0 CHR$ 0. Every number in a program has 6 bytes following it. You never see them because they are taken out of any listing. When the program is run the computer does not use the number you see but the special 'floating point' form that follows it. A string, that is something inside " is not a number and does not have the extra six bytes so now you can see the first form of GOTO is actually 3 bytes shorter.

The penalty you have to pay for the space is speed. The number is no longer ready for the computer to use so it has to be calculated by the VAL command to turn the string into a number. This is quite slow as you can see if you try this simple program.

```
10 FOR N = 1 TO 1000 20 GOSUB 100 30
NEXT N 40 STOP 100 RETURN
```

Run it and time it then change line 20 to GOSUB VAL "100" and try it again.

Next problem! I am going to have to guess a bit here. Malcolm has typed in a program he found in an old magazine to display a clock on the screen but when he has poked all the machine code in and then does a RANDOMIZE USR to start it he gets the error 12 Missing DEF PROC, 0:1. How can this be? Machine code doesn't use procedures.

I think the problem is that the machine code is making calls to the Spectrum ROM to do most of the work. On SAM there is no Spectrum ROM and I think when the machine code makes a ROM call it is finding the bit of code for procedures. Try loading the program in Spectrum mode using one of the emulators advertised in this magazine. I see from your letter you already have one so that should do.

Next problem!! Your Sam keeps crashing, refusing to enter more lines of a program, corrupts lines in memory and generally makes a right mess of your programs.

I have been quite lucky that I have not had any of the problems you mention in your letters since I upgraded to ROM 2.0 (I do have ROM 3 but only on disc) The strange effects of corrupted lines, blank screens and general crashing were all present in the early ROMS. I can not tell what version you have but you can find out by typing the line PRINT PEEK 15. This should give a number that is 10 times the rom version. If that is 20 or 30 then maybe it is your DOS. The SAMDOS, while being very good, does have some problems. These are all fixed in the new MASTERDOS, which also has many very nice features included.

Right I think Malcolm has had enough space so lets go to somebody else. Gerald Jess in Norfolk asks a simple question. How can I load Tasword 2 or PGC's DTP pack onto SAM? The simplest method is to get SPECMAKER from SD Software this will let you get 48K spectrum programs working with the minimum of effort and I'm not just saying that because I run S D Software. (The editor will censor this if he disagrees).

Malcolm Perry who writes not only to ask questions but with a lot of solutions as well, has a problem with some machine code. He says "All my reference books about MC say that all that you need to do to get back to basic from machine code is to do a RET at the end of the MC routine. This is fine for simple routines but what if the MC has already made several CALLs within itself. The RET just returns from the last CALL. So what is the 'official' way to call BASIC from machine code and then go back to MC"

The lazy answer is there is no official way. And there is NO way to do a true CALL of BASIC from machine code. This is because it was never envisaged that anybody would want to do what you are doing. You can, as you know, CALL a MC routine and return to basic. You can not CALL basic from MC and return to it. The reasons are many but the main ones are that the machine stack and the calculator stack get lost/cleared when you re-enter BASIC.

So what you have to do is not CALL BASIC but GOTO BASIC. Then when you have finished whatever you are doing in basic you need to GOTO machine code once more. Now you have another problem every time you do a RANDOMIZE USR the machine stack is set to return you to the basic after that call so you will have lost the original call to machine code that you made in the first place.

To do what you want you need to preserve a number of the basic system variables before returning to basic and then restore them after you get back into machine code. This is not easy. If you look at a number of comercial programs that make calls back to basic you will see that after they have done something in basic they get back to machine code by another RANDOMIZE USR. Here they have kept a note of where they want to goto when they get back into MC and the first thing the MC does is check for a code to direct it there.

I know there are some other fancy tricks, fiddling with the ERRSP is just one and there are quite a few more. But none of them can be considered a CALL to basic more like goto basic then goto machine code.

If anybody out there would like to send in some guaranteed working methods of executing a basic line from machine code please send them in to me and I will get the best ones published.

That's all for this month. Remember, I can only answer questions through this column. Make sure you include FULL details. If your problem is with software it is best to send a copy (on disc if possible) and enclose a SAE for its return.

Send your problems to me at:-

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LETTERS FROM LIGA

By: Luca Alimandi.

Dear FORMAT friends,

I've been told that some of you might be interested in my program "FontED", which I wrote to fill up a little gap in the PCG Desk Top Publishing (DTP) Pack programs.

In fact PCG's pack of programs and fonts is one of the most interesting, useful and powerful sets of programs that I have had the good fortune to use. They enable me to produce, easily and quickly, beautiful booklets, little newspapers, nice greeting cards, and also do some serious printing.

So I use it a lot. But... I never liked the character set used for text entering; I find the letters confusing and tiring to read. So I changed them and I think now they are much better! And I have added another little improvement. When you load a SCREEN$ to create a graphic file (with option GRAPH), the bottom two lines get lost. So I have modified that too. Next month I will give you the listings for those two improvements, but for this month there is only space for the FONTEDIT program.

This is a program that I have written to EDIT or CREATE the GIANT FONTS for Headliner! In fact there is an Editor in DTP Pack, but it works only with the fonts used by Typeliner!

First type in the Basic program below and SAVE it by:-

SAVE d1"FontED" LINE 10.

```
 10 CLEAR 32767
 20 LOAD d1"FONTED C"CODE
 30 CLS : PRINT AT 6,10;"FONT  EDITOR
    "
 40 PRINT AT 7,9;"--------------"
 50 PRINT AT 9,9;"1) LOAD A FONT"
 60 PRINT AT 11,9;"2) SAVE A FONT"
 70 PRINT AT 13,9;"3) EDIT A FONT"
 80 IF INKEY$<>"1" AND INKEY$<>"2" AN
    D INKEY$<>"3" THEN  GO TO 80
 90 LET C=1000*(CODE INKEY$-48)
100 GO TO C
1000 CLS : INPUT "NAME OF FONT TO LOAD
    : ";N$
1010 LOAD d1;n$CODE 57000
1020 RANDOMIZE USR 55230
1030 PRINT "FONT LOADED AND EXPANDED":
     PAUSE 100: GO TO 30
2000 CLS : INPUT "NAME OF FONT TO SAVE
    : ";N$
2010 LET len=USR 54920
2020 POKE 57000,24: DIM x$(28)
2030 LET t$="Fnt6 "+CHR$ 10
2040 FOR k=1 TO 6: LET x$(k)=t$(k): NE
    XT k
2050 FOR k=1 TO LEN n$: LET x$(k+6)=n$
    (k): NEXT k
2060 LET t$=STR$ len: FOR k=1 TO LEN t
    $: LET x$(k+22)=t$(k): NEXT k: FO
    R k=1 TO 28: POKE 57000+k,CODE x$
    (k): NEXT k
2070 POKE 57031,13: POKE 57032,255: PO
    KE 57033,201
2080 SAVE d1;n$CODE 57000,len
2090 PRINT "FONT COMPRESSED AND SAVED"
    : PAUSE 100: GO TO 30
3000 CLS : GO SUB 4000: RANDOMIZE USR
    54487
3010 INPUT "CHR$ TO EDIT: ";C$
3020 POKE 54884,CODE c$
3030 PRINT #0;AT 0,0;"Press 1 when fin
    ished"
3040 RANDOMIZE USR 54400
3050 RANDOMIZE USR 54670
3060 BEEP .5,30: INPUT "KEEP NEW CHR$
    ? ";r$
3070 IF r$="y" OR r$="Y" THEN  INPUT "
    CHR$ ? ";c$: POKE 54884,CODE c$:
    RANDOMIZE USR 54885
3080 INPUT "CONTINUE WITH THIS CHR$ ?
    ";r$
3090 IF r$="y" OR r$="Y" THEN  GO TO 3
    030
3100 INPUT "CLEAR THIS CHR$ ? ";r$
3110 IF r$="y" OR r$="Y" THEN  CLS : F
    OR k=23296 TO 23535: POKE k,0: NE
```

```
    XT k: RANDOMIZE USR 54885: GO SUB
     4000: RANDOMIZE USR 54487: GO TO
     3020
3120 INPUT "EDIT ANOTHER CHR$ ? ";r$
3130 IF r$="y" OR r$="Y" THEN  CLS : G
    O TO 3000
3140 GO TO 30
4000 LET i=0: PRINT AT 3,0: FOR k=0 TO
     5: FOR j=0 TO 2: PRINT  BRIGHT N
    OT i;"   "; BRIGHT i;"   "; BRIGH
    T NOT i;"   "; BRIGHT i;"   "; BR
    IGHT NOT i;"   ": NEXT j: LET i=N
    OT i: NEXT k
4010 RETURN
```

Next, type in the following program "CODEGEN" which creates and saves the "FONTED c" CODE file.

```
 10 DATA 58,100,214,214,32,17,240,0,3
    3,0,0,61,40,3,25,24,250,17,0,128,
    25,229,17,0,91,1,240,0,237,176,9,
    168
 20 DATA 225,6,6,14,40,22,8,203,14,48
    ,36,197,213,229,62,40,145,79,120,
    135,135,135,146,71,205,41,213,30,
    1,205,11,208
 30 DATA 8,213,4,205,8,213,12,205,8,2
    13,5,205,8,213,225,209,193,21,32,
    213,35,13,32,207,16,203,201,30,1,
    6,12,85
 40 DATA 0,14,0,197,205,170,34,6,15,6
    2,255,119,35,16,252,193,4,4,4,120
    ,254,147,32,233,14,0,6,0,205,8,10
    ,44
 50 DATA 213,4,120,254,145,32,247,12,
    12,12,121,254,123,32,237,201,197,
    205,170,34,71,4,62,1,15,16,253,71
    ,126,203,13,119
 60 DATA 67,40,3,176,24,10,203,75,40,
    5,47,176,47,24,1,168,119,193,201,
    121,135,129,60,79,120,135,128,60,
    71,201,11,42
 70 DATA 22,0,14,254,6,127,237,120,20
    3,87,32,2,203,250,203,95,32,2,203
    ,242,6,223,237,120,203,71,32,2,20
    3,194,14,41
 80 DATA 203,79,32,2,203,210,6,251,23
    7,120,203,71,32,2,203,202,6,253,2
    37,120,203,71,32,2,203,218,122,24
    6,250,60,15,239
 90 DATA 32,4,122,230,250,87,122,246,
    245,60,32,4,122,230,245,87,122,24
    6,63,60,32,4,122,230,63,87,74,6,0
    ,201,13,100
100 DATA 33,0,0,34,98,214,30,0,205,21
    9,213,1,30,0,16,254,13,32,251,205
    ,219,213,1,30,0,16,254,13,32,251,
    11,61
110 DATA 1,254,247,237,120,203,71,200
    ,205,52,213,122,167,40,217,203,12
    2,196,242,213,203,114,196,251,213
    ,203,66,196,54,214,19,171
120 DATA 203,74,196,65,214,203,82,196
    ,76,214,203,90,196,87,214,24,185,
    237,75,98,214,205,41,213,205,8,21
    3,4,205,8,16,152
130 DATA 213,12,205,8,213,5,205,8,213
    ,201,205,6,214,176,119,30,1,24,22
    4,205,6,214,47,176,47,119,30,2,24
    ,213,13,37
140 DATA 58,99,214,79,62,47,145,203,6
    3,203,63,203,63,33,0,91,1,40,0,60
    ,61,40,3,9,24,250,237,75,98,214,1
    0,178
150 DATA 6,0,9,58,99,214,230,7,71,4,6
    2,128,7,16,253,71,126,201,58,98,2
    14,254,39,208,60,50,98,214,201,58
    ,12,42
160 DATA 99,214,254,47,208,60,50,99,2
    14,201,58,98,214,254,1,216,61,50,
    98,214,201,58,99,214,254,1,216,61
    ,50,99,15,123
170 DATA 214,201,0,0,33,58,100,214,21
    4,32,17,240,0,33,0,0,61,40,3,25,2
    4,250,17,0,128,25,235,33,0,91,8,2
    40
180 DATA 1,240,0,237,176,201,0,0,0,0,
    22,5,30,255,221,33,202,222,29,33,
    0,128,1,96,84,126,187,40,245,35,1
    1,33
190 DATA 13,32,248,16,246,123,221,119
    ,0,221,35,21,32,230,221,33,168,22
    2,6,90,33,0,128,17,206,222,237,83
    ,160,215,14,14
200 DATA 197,229,237,91,160,215,205,2
    40,214,27,27,26,167,32,6,221,126,
    34,18,24,2,19,19,237,83,160,215,2
    25,17,240,14,129
210 DATA 0,25,193,16,221,42,160,215,3
    5,54,128,17,168,222,175,237,82,34
    ,197,222,35,68,77,201,62,1,50,157
    ,215,126,13,107
220 DATA 60,50,158,215,14,6,6,40,126,
    254,0,40,33,254,255,40,63,58,158,
    215,190,40,113,126,19,18,50,158,2
    15,62,11,220
230 DATA 1,50,157,215,35,16,227,13,32
    ,222,19,221,126,34,18,201,120,254
    ,1,32,34,121,254,1,40,240,35,126,
    43,167,11,239
240 DATA 40,23,58,157,215,254,40,48,1
    6,254,1,40,2,27,27,221,126,38,24,
    200,221,126,35,24,3,221,126,36,50
    ,159,10,252
250 DATA 215,58,158,215,190,40,8,58,1
```

```
    59,215,19,18,126,24,177,58,157,21
    5,254,1,32,3,126,18,19,58,157,215
    ,60,50,12,31
260 DATA 157,215,18,126,35,190,43,40,
    161,62,1,50,157,215,24,154,58,157
    ,215,254,1,40,11,254,2,32,224,221
    ,126,37,12,208
270 DATA 18,19,24,217,60,50,157,215,1
    9,126,18,50,158,215,195,24,215,0,
    0,0,0,0,0,0,0,0,0,0,0,0,6,244
280 DATA 0,0,0,0,0,0,0,0,0,0,0,0,0,0,
    0,0,0,0,0,0,33,0,128,34,73,216,62
    ,1,33,168,2,236
290 DATA 222,50,75,216,229,221,225,1,
    39,0,9,71,221,126,34,79,5,40,6,19
    0,35,32,252,16,250,17,0,91,126,35
    ,11,97
300 DATA 221,190,37,32,4,29,26,24,12,
    185,40,50,6,1,183,40,4,254,255,32
    ,4,70,35,24,31,221,190,38,32,13,8
    ,235
310 DATA 123,214,40,48,252,198,40,71,
    62,40,144,71,175,221,190,35,32,2,
    62,255,221,190,36,32,1,175,18,28,
    16,252,12,172
320 DATA 24,192,175,18,28,32,252,237,
    91,73,216,33,0,91,1,240,0,237,176
    ,42,73,216,17,240,0,25,34,73,216,
    58,12,38
330 DATA 75,216,60,254,91,194,198,215
    ,201,0,0,0,0,0,0,0,0,0,0,0,0,0,0,
    0,0,0,0,0,0,0,5,224
1000 CLEAR 54390: LET k=54400
2000 FOR l=1 TO 33
2010 PRINT AT 10,5;"Reading DATA in LI
     NE ";l*10
2020 LET c=0: FOR d=1 TO 30
2030 READ n: LET c=c+n: POKE k,n: LET
     k=k+1
2040 NEXT d
2060 READ n: READ m: LET chk=256*n+m
2070 IF c<>chk THEN  PRINT AT 12,7; FL
     ASH 1;"Error in line ";l*10: STOP
2080 NEXT l
2090 CLS : PRINT "Put in drive 1 the d
     isc in whichyou want to save FONT
     ED, then  press any key"
2100 PAUSE 0
2110 SAVE d1"FONTED c"CODE 54400,972
```

If everything is OK you can try it. Make sure you have saved the files "FONTED" and "FONTED c", then reset the computer, (if you have a 128k put it in 48k mode) and type:-

LOAD d1"FONTED".

The program autoruns and presents a Menu:-

1) LOAD A FONT
2) SAVE A FONT
3) EDIT A FONT

If you type 1 and ENTER, the computer will ask you to enter the file name of the font to load. Then it loads it from disc and expands it to a form more easily worked on. Then it returns to main menu.

If you type 2 and ENTER, the computer will do the opposite - compress the font present in its memory and save it under the name that you give.

Finally if you select option 3 from the main menu, you will be asked for the character to be edited, and a grid of 40 by 48 points (each point formed by 4 pixels) will be drawn on screen.

Type the character you want to edit and you will see it appear in the grid together with a fast-flashing point in the left-bottom corner.

Use the Q, A, O, and P keys for up, down, left and right, to move the flashing cursor around the grid. Press the M key to set the point at the cursor position (ON). The N key resets or erases the point (OFF). In this manner you can edit the character and, when you have finished, press the "1" key. Now the computer asks you if you want to KEEP this CHR$. If you answer Y for yes, you'll be asked for the character at which you want assign the new figure. This is useful in case you want to create a character starting from another similar to it, like creating an "l" from an "i" or an "n" from an "m".

If you simply press ENTER, the computer will ask you if you want CONTINUE to edit this chr$. If you press ENTER again you'll be asked if you want to CLEAR this CHR$, i.e. cancel it from screen and from memory, so be careful! Don't reply Y unless you are certain.

Finally, if you only press ENTER in

response to the last question, you will be asked if you want EDIT ANOTHER chr$. If you just press ENTER you'll return to the main menu.

The program itself is quite short, but when a font is expanded then it occupies 22800 bytes. Well, that is all for this month. Try to create new Giant Fonts and if you find them interesting let me know. I also have another method of creating new fonts by taking the figures directly from SCREEN$... but it works only on 128k Spectrums and is somewhat complicated to explain! If you wish to know more about it, please let me know. I'm happy to share my solutions with you all!

So goodbye for this month. I will write again next month with those other DTP PACK improvements.

All the best,

Luca Alimandi,
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00135 Roma,
ITALY.

S.P.I.

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CLIP ART

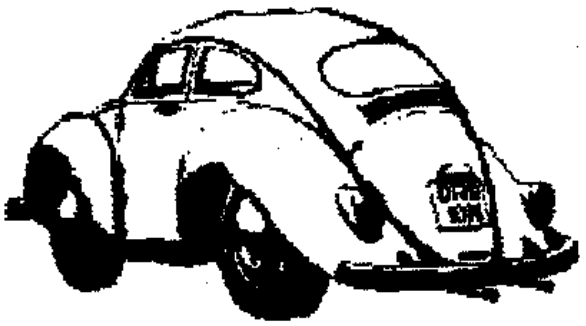
For Spectrum or SAM

By:- Carol Brooksbank.

I do not often envy those who have a PC, but once or twice I have felt a twinge of jealousy when I have seen adverts for clip art collections. Mind you, the feeling has not usually lasted beyond seeing the price of them, and died altogether when I discovered that most of them are specific to particular graphics or DTP packages which cost £150-£300.

But for Spectrum/Sam users, there has never been anything except sprite collections to make life easier for those of us who make a lot of use of DTP and printed graphics, but cannot draw for toffee.

At last, that gap in our software market has been filled by Teachers Pet Software, the software house well known for Spectrum educational software. There are four categories of clip art on offer - people and places; animals; cars; clip art. (The last one covers everything which does not fit into any of the other categories.)



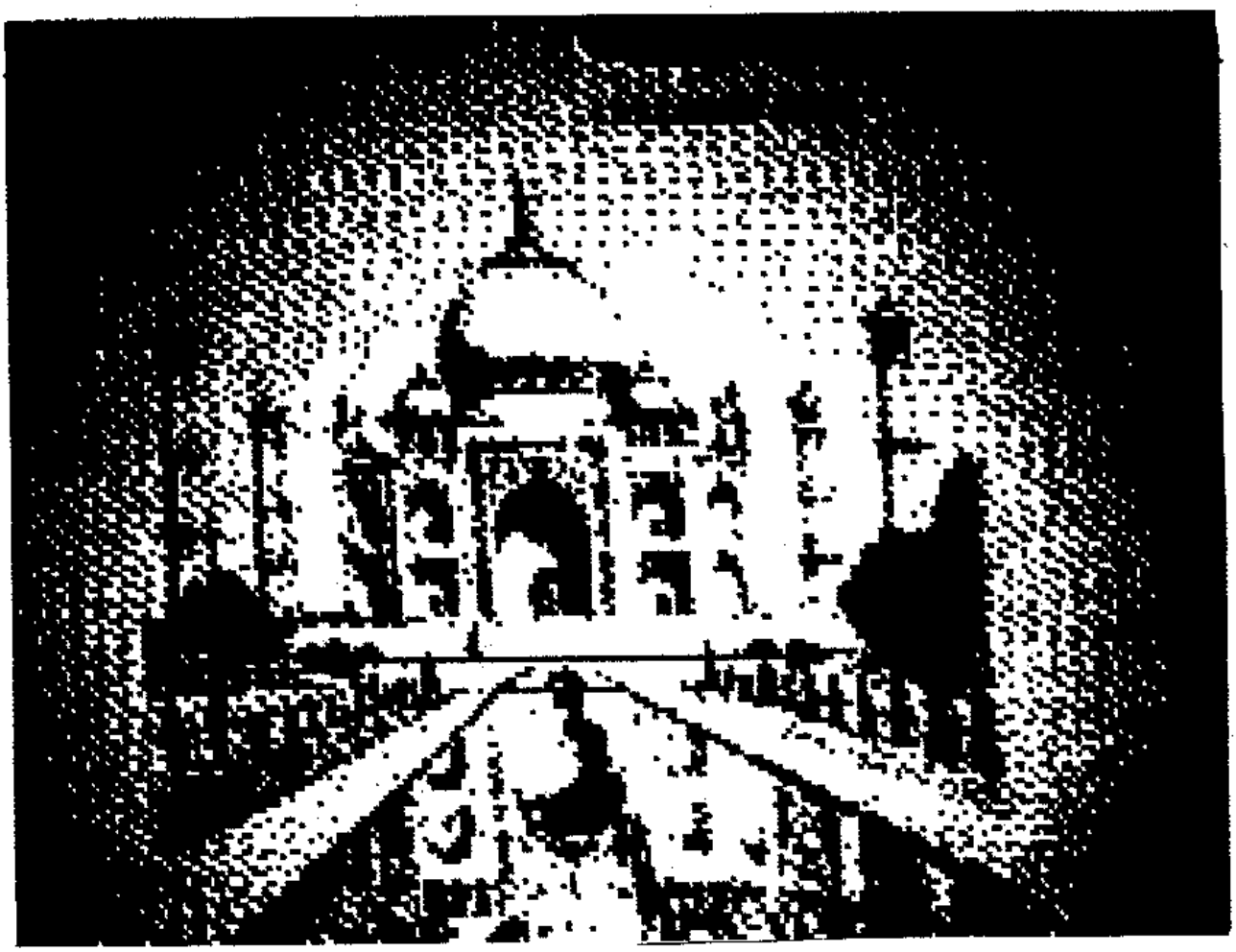
The artwork is in the form of Spectrum screen code files, rather than SCREEN$, which means that they can be used by Sam users too. They can be loaded as screens, used with art packages like Art Studio or Flash, printed as screen dumps or used in DTP work. The artwork is public domain, which means that you can use printouts in any form and for any purpose, though you must not supply copies of the code files to other people.

The people and places file includes pictures of well-known and instantly recognizable people from Henry VIII to Wogan, Mary Queen of Scots to Ron and Nancy Reagan, St George to Napoleon. There are also numerous pictures of anonymous children, men and women; cartoon figures; soldiers; Beefeaters; a cartoon headmaster; typist; telephonist; Greek soldier; a sandwich board man with the board left blank so that you can fill it in with whatever you like; and, similarly, a man putting up a blank poster. The places include The Arc de Triumphe;, Golden Gate Bridge; the Leaning Tower of Pisa; the statue of Liberty and many more.

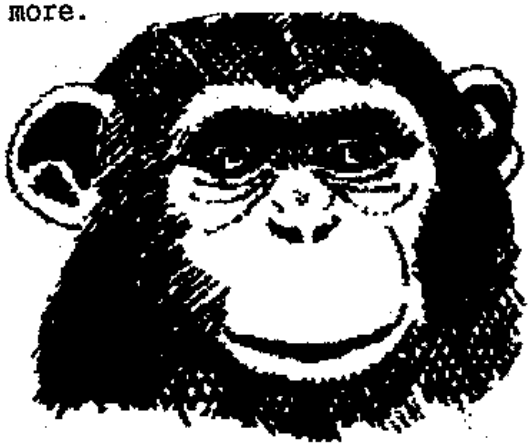
The cars file includes all sorts of makes and models of cars, antique, middle-aged and modern, pictured from all sorts of angles. There are even some steamrollers. Some are repeated in large and small sizes. Some are line drawings, some are digitized photographs.

The animals file has animals and birds, including elephants, hens, dogs, camels, a pheasant and Winnie -the-Pooh. Most are realistic line drawings or digitized photographs, but there are one or two cartoon characters, including a dog and a hen.

The clip-art file contains all sorts of things - guns (revolvers and a



field gun); trumpets and French Horns; a chef carrying a cake; an aircraft; safety pins; maps of the UK and of Australia; hands toasting with champagne glasses; pointing fingers; Santa; a fancy MENU header; and many, many more.



I received a total of 217 screens altogether, of which about 150 are in the files on sale now. The rest were a preview for supplementary collections to be issued soon. Each disc had a "slideshow" program which lets you inspect all the screens on the disc and offers large or small screendumps. It was very hard to choose a few to illustrate this article from so many attractive and interesting items, but I hope these will give you just a taste of what is available.

The pictures have been produced using a video camera and a digitiser, so all sorts of illustrative material is used, including photographs. Most are black-and-white, though some are coloured and could be used with shaded dumps. One or two are a little bit fuzzy and indistinct, but the vast majority are excellent quality, and often, even when the screen display looks a bit muddled, the printed copy is splendid. The Taj Mahal is typical of that - I was dubious about whether that would print at all because on screen it looked quite blurred, but the printed result is beautiful.

So hats off to Teachers Pet Software for spotting a very real need for Spectrum/Sam users and stepping in to meet it. These files are superb value at £4.50 per set, or £16 for all four. And there is a promise of more to come. Who needs a PC when you can produce artwork like this on a Spectrum or Sam?

QUEUES

A SIMULATION

Program By:- Ettrick Thomson, Text By:- John Wase.

Little things please little minds, or so they say. Personally, I like small, elegant programs which illustrate a point. To produce these actually needs very crisp minds and sharp tight programming skills. Ettrick Thomson matches the bill. Here's a SAMprog (Speccy convertible) about queues.

Now, queues are a singularly British phenomenon - we held a Scientific Meeting recently at work (on effluent treatment, if you really want to know), and at lunch-time, we all laughed at the way everyone formed an orderly queue for the food. "Over on the continent", they said, "Everyone would just have dived in. It's just the same for a bus or a tram". However, the principle of the queue seems to be a part of the British tradition. Consequently, Sociologists and Mathematicians study queues.

In many Post Offices these days, they have a queue system: the customers form a single queue, going to a serving station as soon as it's vacant. Ettrick's program simulates a Post Office with five servers. In my local Post Office, they all seem to need the toilet as soon as I go through the door, but our computer 'servers' seem never to require this. All you see is a row of five dots when you RUN the program: the five dots are the servers and the zero is the current arrival rate. It's the dinner hour - the doors are firmly locked! Two o'clock, and the doors are opened - you can change the customer arrival rate merely by pressing a key (1 to 9) and holding it until the display changes to the new figure.

Press key 9. Customers will then start to arrive, entering at the top right hand corner, joining the queue (if any), until they reach the head of the queue at the top LH corner; then they go to the first free server. When they have been served, they vanish, leaving the server free (as shown by the dot) until a new customer is available (which will, of course, be immediately if there is a queue). There are two types of customers, which helps to show them moving in the queue, but there is no difference in behaviour or treatment - Ettrick points out sternly that there is nothing sexist or racist about his program!

The customers arrive at random, the rate displayed being the average; the service time is also random, with a fixed average, which is taken as the unit of time; five servers can therefore just cope with an arrival rate of five. A rate of nine consequently overloads the system and the queue is bound to build up to its maximum length of thirty-two; customers arriving when the queue is full just go away!

When the queue has built up, say, to a length of 16 or so, try changing the arrival rate to five: the theoreticians tell us that with this exact match, the queue will still continue to grow. Any rate under five will give a finite average queue length (but the model shows that the actual length varies over wide limits). You can "close the doors" by pressing zero; eventually all the customers then on the premises will be served.

Etrick says that this program began life on the ZX81 and had to fit into its 1K RAM, so it had to be simple: by today's standards, it cries out for improved graphics. Nevertheless, Ettrick, it demonstrates the points you mentioned quite nicely, and many thanks for the explanation.

Here's the program:-

```
  5 REM QUEUE
  9 REM prologue
 10 DIM q$(32); LET q=0,s$=".....",r
    ate=0
 20 RANDOMIZE
 29 REM main loop
 30 DO
 49 REM change arrival rate (if desi
    red)
 50 LET a$=INKEY$: IF "0"<=a$ AND a$
    <="9" THEN LET rate=VAL a$
 60 PRINT AT 5,0;rate
 69 REM either new customer, or fini
    sh serving customer
 70 IF (5+rate)*RND>=5
 98 REM select new customer
 99 REM new customer joins queue  (i
    f room)
100 LOOP IF q=32
110 LET r=RND(1),c$=("m" AND r)+("f"
     AND NOT r)
120 FOR i=31 TO q STEP -1
130 PRINT AT 1,i;c$;" ": PAUSE 5: NE
    XT i
140 LET q=q+1,q$(q)=c$
150 ELSE
199 REM select service point: termin
    ate service (if serving)
200 LET s$(1+RND(4))="."
210 PRINT AT 3,0;s$: PAUSE 20
220 END IF
299 REM if there is a queue, and a s
    erver is free, assign customer a
    t head ofqueue to server
300 LOOP IF NOT q
310 LET free_server=INSTR(s$,".")
320 LOOP IF NOT free_server
330 LET s$(free_server)=q$(1)
340 PRINT AT 1,0;" "; AT 3,0;s$
399 REM queue is reduced by one, and
     moves up
400 LET q=q-1,q$=q$(2 TO )
410 FOR i=1 TO q
420 PRINT AT 1,i-1;q$(i);" "
430 PAUSE 10: NEXT i: LOOP
```

'So much for computer dating!'

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CALCULATE YOUR REPAYMENTS

By:- David Tinker.

It has always been helpful to know the monthly repayments needed to redeem a morgage but when the interest rate changes as often as it has over the past few years it is even more important to realise the effects the changes will have on your outgoings.

Whilst tables of values are the most comprehensive, such tables need a PC with a large spreadsheet such as Supercalc or Lotus 123 to ensure a full cover. However the following programs can quickly print out the effect of changes in the interest rate or the period of the loan for the amount of your mortgage.

The program when typed and saved autoruns from line 10 and after a brief explanation requests the following inputs:-

1) The current mortgage interest rate (at the time of writing - 15.4%)

2) The current basic income tax rate (at the time of writing - 25%)

3) The sum borrowed or currently owed (the Principal)

The program then outputs a table either to the screen or a printer giving the relevant information as input at the top and then the following three items in tabular form:-

1) The mortgage period (in years)

2) The monthly repayment due to redeem the mortgage at full interest rate

3) The monthly repayment to redeem the mortgage when paid in accordance with the MIRAS scheme (Mortgage Interest Relief At Source).

If printed to screen the scroll message appears after 8 years of the table - to complete the table reply yes. You are then asked if you wish to repeat the procedure with a new set of values. In this way you can build up an extensive set of values.

For those of you that wish to formulate an alternative table the calculations are given in the subroutine starting at line 6000.

As an example the second program should be typed in and saved as Mort_plus and then merged with the original program. When working correctly GOTO 9000 and save as MORTGAGES2. This enlarged program will output a table where the period is fixed but the interest varies between a low and high value in given steps as input in answer to the programs questions.

Program 1.

```
  10 REM  * * * * * * * * * *
  15 REM
  20 REM  MORGAGE REPAYMENTS
  30 REM
  40 REM  DAVID TINKER  1990
  45 REM
  50 REM  * * * * * * * * * *
 100 GOSUB 5000
 110 GOSUB 4000
 990 CLS
1000 INPUT "  What is the current inte
     rest   percentage rate ";x
1010 INPUT "What is the Principal sum
     £";P
1020 INPUT "What is the current basic
     incometax rate  ";t
1030 LET y=x*((100-t)/100)
1040 LET r1=1+(x/100)
1050 LET r2=1+(y/100)
1100 CLS
1110 PRINT "You now have a choice to o
     utput to the screen or a printer"
1120 PRINT : PRINT "TO PRINT TO SCREEN
```

```
        1 & ENTER"
1130 PRINT : PRINT "TO PRINT TO PRINTE
    R    2 & ENTER"
1200 INPUT "    WHICH NUMBER 1 or 2  "
    ;z$
1210 IF z$="1" THEN GOTO 2000
1220 IF z$="2" THEN GOTO 3000
1230 IF z$<"1" THEN GOTO 1200
1240 IF z$>"2" THEN GOTO 1200
2000 REM  * * * * * * * * * *
2005 REM
2010 REM      S C R E E N
2015 REM
2020 REM  * * * * * * * * * *
2030 CLS
2100 PRINT TAB 4;d$
2110 PRINT
2120 PRINT TAB 5;e$;x;"%"
2130 PRINT
2140 PRINT TAB 1;f$;y;"%)"
2150 PRINT
2160 PRINT TAB 2;g$
2170 PRINT
2180 PRINT TAB 13;"£";p
2190 PRINT
2200 PRINT TAB 2;h$
2210 PRINT "-------------------------
    ------"
2220 PRINT TAB 2;i$
2230 PRINT
2240 FOR n=1 TO 30
2250 GOSUB 6000
2260 PRINT TAB 4;n;
2270 PRINT TAB 12;"£";a1;
2280 PRINT TAB 23;"£";a2
2290 NEXT n
2300 GOSUB 8000
2310 CLS
2500 STOP
3000 REM  * * * * * * * * * *
3005 REM
3010 REM     P R I N T E R
3015 REM
3020 REM  * * * * * * * * * *
3100 CLS
3110 FLASH 1: PRINT AT 10,12;"PRINTING
    "
3120 LPRINT TAB 4;d$
3130 LPRINT
3140 LPRINT TAB 5;e$;x;"%"
3150 LPRINT TAB 1;f$;y;"%)":
3160 LPRINT
3170 LPRINT TAB 2;g$
3180 LPRINT TAB 13;"£";p:
3190 LPRINT TAB 2;h$
3200 LPRINT "-------------------------
    -------"
3210 LPRINT i$
3220 LPRINT
3230 FOR n=10 TO 30
3240 GOSUB 6000
3250 LPRINT TAB 1;n;
3260 LPRINT TAB 10;"£";a1;
3270 LPRINT TAB 22;"£";a2
3280 NEXT n
3290 FLASH 0: CLS
3300 GOSUB 8000
3310 CLS
3500 STOP
4000 REM  * * * * * * * * *
4005 REM
4010 REM    INTRODUCTION
4015 REM
4020 REM  * * * * * * * * *
4100 PRINT AT 0,6;"MORTGAGE REPAYMENTS
    "
4110 PRINT  OVER 1;AT 0,6;"__________
    _______": OVER 0
4120 PRINT : PRINT "   THIS PROGRAM OU
    TPUTS A  TABLESHOWING MONTHLY  RE
    PAYMENTS  DUETO REDEEM A MORTGAGE
     FOR A GIVENSUM (PRINCIPAL) BASED
     UPON:-
              a) The True Interest Ra
    te
            b) The MIRAS Scheme Rate"
4130 PRINT
4140 PRINT "  THE PROGRAM REQUESTS THE
     INPUTOF 3 ITEMS AS FOLLOWS:-"
4150 PRINT
4160 PRINT "1) The current Mortgage in
    terest   rate"
4170 PRINT
4180 PRINT "2) The current Basic Incom
    e  tax   rate"
4190 PRINT
4200 PRINT "3) The Principal sum you w
    ish to   base the calculations up
    on"
4210 PAUSE 0
4220 CLS
4230 PRINT "     The program then offe
    rs thechoice of showing the table
     uponthe  screen  or  printing  t
    o  aprinter."
4240 PRINT AT 10,5; FLASH 1;"PRESS ANY
     KEY TO START"
4250 PAUSE 0: FLASH 0
4260 RETURN
5000 REM  * * * * * * * * *
5005 REM
5010 REM    S T R I N G S
5015 REM
5020 REM  * * * * * * * * *
5100 LET d$="MORTGAGE REPAYMENT TABLE"
5110 LET e$="Interest Rate  = "
```

```
5120 LET f$="(Under MIRAS Scheme = "
5130 LET g$="Monthly repayment to rede
     em"
5140 LET h$="principal over given peri
     od"
5150 LET i$="Years       True        MIR
     AS"
5200 RETURN
6000 REM  * * * * * * * * *
6005 REM
6010 REM    CALCULATIONS
6015 REM
6020 REM  * * * * * * * * *
6030 LET A1=(INT ((P/12)*((r1↑(n+1)-r1
     ↑n)/(r1↑n-1))*100))/100
6040 LET A2=(INT ((P/12)*((r2↑(n+1)-r2
     ↑n)/(r2↑n-1))*100))/100
6050 RETURN
8000 INPUT " DO YOU WISH TO REPEAT (Y/
     N) ";y$
8010 IF y$="y" OR y$="Y" THEN CLS : GO
     TO 1000
8020 IF y$="n" OR y$="N" THEN RETURN
9000 SAVE d1"MORTGAGES" LINE 10
```

PROGRAM 2.

```
  30 REM  (Varying Interest)
1000 INPUT "How many years do you wish
       the Mortgage to run ";n
1025 INPUT "what is the lowest interes
     t rateyou wish to calculate ";b
1026 INPUT "what  is  the  highest  in
     terestrate you wish to calculate
     ";c
1027 INPUT "In what steps do  you  wis
     h  theinterest rate wish to vary
     ";d
1028 GOTO 1110
1060 RETURN
2120 PRINT TAB 4;e$;n;" years"
2140 PRINT TAB 4;f$;t;"%)"
2240 FOR x=b TO c STEP d
2245 GOSUB 1030
2260 PRINT TAB 2;x;" %";
2290 NEXT x
3140 LPRINT TAB 4;e$;n;" years"
3150 LPRINT TAB 4;"(Based upon a basic
       rate": LPRINT TAB 4;"of  income
       tax  of  ";t;"%)":
3170 LPRINT TAB 3;g$
3190 LPRINT TAB 3;h$
3230 FOR x=b TO c STEP d
3235 GOSUB 1030
3250 LPRINT TAB 1;x;" %";
3280 NEXT x
4115 PAUSE 150
4116 CLS
4120 PRINT "   THIS PROGRAM OUTPUTS A
      TABLESHOWING MONTHLY  REPAYMENTS
       DUETO REDEEM A MORTGAGE FOR A G
     IVENSUM (PRINCIPAL) AND PERIOD FO
     R:-
       a) The True Interest Rate

     b) The MIRAS Scheme Rate"
4140 PRINT "  THE PROGRAM REQUESTS THE
      INPUTOF 6 ITEMS AS FOLLOWS:-"
4160 PRINT "1)  The Period of the Mort
     gage"
4180 PRINT "2)  The Principal sum"
4200 PRINT "3)  The current income tax
      rate"
4201 PRINT
4202 PRINT "4-6)The lowest and highest
       rate    of interest you wish co
     vered    and the steps it increse
     s in"
4210 PAUSE 0
4220 CLS
4230 PRINT "     The program then offe
     rs thechoice of showing the table
      uponthe  screen  or  printing  t
     o  aprinter."
4240 PRINT AT 10,5; FLASH 1;"PRESS ANY
      KEY TO START"
4250 PAUSE 0: FLASH 0
4260 RETURN
5110 LET e$="Term of Mortgage "
5120 LET f$="(Based upon a basic rate
           of income tax  of  "
5140 LET h$="sum for interest rate sho
     wn"
5150 LET i$= " Rate       True        M
     iras"
9000 SAVE d1"Mortgages2" LINE 10
```

"My God! If the morgage rate goes up again I'm going to really loose my cool!"

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MONEY MANAGER

By:- Carol Brooksbank.

We begin this month with a procedure called three times from menu option 2. It lists all the payments due between given dates, adds up the amount required to pay them, withdraws this amount from the 'assigned' fund if required. Also, if required, it will produce a printed copy of the list.

```
11145 DEF PROC printlist
11150 LOCAL SUM: LOCAL X: LOCAL G$: LO
      CAL J: LOCAL W: LOCAL K: LOCAL K
      $: LOCAL C$
11155 LET SUM=0,X=S
11160 DO UNTIL X=E+1
11165 IF CAL$(X,6)=" " THEN GOTO newda
      y
11170 LET G$=CAL$(X)
11175 PRINT : PRINT G$(1 TO 3);"  ";G$
      (4 TO 5)
11180 LET J=INSTR(6,G$,"\ "),W=6,K=6
11185 DO UNTIL W=J+1
11190 LET C$=G$(W)
11195 IF C$="↑" THEN LET C$="  ",K$=G$
      (K TO (W-1)),SUM=SUM+VAL K$
11200 IF C$="\" THEN LET C$=CHR$ 13,K=
      W+1
11205 PRINT C$;
11210 LET W=W+1
11215 LOOP
11220 PRINT : PRINT : PRINT
11225 LABEL newday: LET X=X+1
11230 LOOP
11235 IF SUM=0 THEN CLS : PRINT "THERE
       ARE NO PAYMENTS DUE       BETWE
      EN THESE DATES":presskey: GOTO m
      oredates
11240 PAUSE 20: CLS : PRINT "The sum r
      equired to pay these is ": PRINT
       "£";SUM
11245 PRINT : PRINT "Do you wish to wi
      thdraw the      money?"
11250 yes_no
11255 IF Y$="Y" THEN LET assign=assign
      -SUM: GOTO queryprint
11260 LABEL moredates: CLS : PRINT "DO
       YOU WISH TO SELECT NEW DATES?":
      yes_no
11265 IF Y$="Y" THEN POP : GOTO 2000
11270 LABEL queryprint: CLS : PRINT "D
      O YOU REQUIRE A PRINTOUT OF THEL
      IST?":yes_no
11275 IF Y$="N" THEN GOTO 11370
11280 LABEL hardcopy
11285 LET X=S
11290 DO UNTIL X=E-1
11295 IF CAL$(X,6)=" " THEN GOTO fetch
      next
11300 LET G$=CAL$(X)
11305 LPRINT : LPRINT G$(1 TO 3);"  ";
      G$(4 TO 5)
11310 LET J=INSTR(6,G$,"\ "),W=6
11315 DO UNTIL W=J+1
11320 LET C$=G$(W)
11325 IF C$="↑" THEN LET C$="  "
11330 IF C$="\" THEN LET C$=CHR$ 13
11335 LPRINT C$;
11340 LET W=W+1
11345 LOOP
11350 LPRINT : LPRINT
11355 LABEL fetchnext : LET X=X+1
11360 LOOP
11365 LPRINT "The sum required to pay
      these is £";SUM
11370 END PROC
```

printlist is called with S holding the calendar page number at which the list is to start, and E holding the last page to be listed. Several variables are needed within the procedure which need not be carried out of it, so there are a number of LOCAL variables. Multiple LET statements are used in several lines - 11195 is a typical example.

In line 11155, SUM is initialised - the variable which will keep the running total of the payments listed - and the start page number is copied to X. Lines 11160 to 11230 are two nested DO UNTIL loops. The outer one runs through the calendar pages between the two dates, and the inner one inspects each page, separates the payment entries, adds the value of each to SUM, and prints each entry to screen. If SUM=0 at the end of these loops, there were no payments listed between

the dates concerned, and at line 11235 the program jumps forward if no payments were found.

If this jump to 11260 is made, and more dates are required, the program jumps out of the procedure at line 11265 and returns to the start of option 2, so POP discards the address to which the procedure would normally have returned.

If there were payments listed, line 11240 prints the amount required to pay them and asks whether the sum is to be withdrawn from 'assign'. If not, the program runs straight into moredates, but if the sum is withdrawn, a jump forward is made to the routine which offers a printout of the list. The nested loops here are the same as those which print to screen.

```
2000 REM THE PAYMENTS OPTION"
2005 CLS : PRINT "PLEASE GIVE THE DAT
     ES BETWEEN  WHICH YOU WISH THE
     DATES TO BE  LISTED."
2010 PRINT : PRINT "For MONTHS, alway
     s give first  three letters as
     JAN FEB etc."
2015 POKE SVAR 618,8
2020 INPUT "Start date - month";A$
2025 INPUT "start date - date";D
2030 findate
2035 LET S=G
2040 POKE SVAR 618,8
2045 INPUT "End date - month";A$
2050 INPUT "End date - date";D
2055 findate
2060 LET E=G
2065 IF E<S THEN GOTO 2080
2070 printlist
2075 GOTO menu
2080 CLS : PRINT "THE LIST WILL BE PR
     INTED IN TWO PARTS -"
2085 PRINT : PRINT CAL$(S,1 TO 3);" "
     ;CAL$(S,4 TO 5);" TO DEC 31"
2090 PRINT "AND JAN 1 TO ";CAL$(E,1 T
     O 3);" ";CAL$(E,4 TO 5)
2095 presskey
2100 LET B=E,E=365
2105 printlist
2110 LET E=B,S=1
2115 printlist
2120 GOTO menu
```

Option 2 has only one function, so there is no menu. It is used when you wish to list the payments due to be paid in the next few days. In practice, you would probably run the program weekly, and call up a list of the payments to be made in the week ahead.

It begins by asking for the starting date, calls findate to get the calendar page number, which is transferred to S in line 2035. The last date page number is found in the same way and held in E. For most of the year it then simply calls printlist to list the payments and withdraw the money from 'assign', and returns to the main menu. But if the list covers the end of the year, the starting date, falling in December, will have a higher page number than the end date which falls in January. In that case, a jump is made to line 2080 and two lists are produced, one from the start date to December 31, and one from January 1 to the end date.

```
3000 REM THE BANKING OPTION
3005 LABEL menu4: CLS : LET togflag=0
     : CSIZE 8,16
3010 PRINT "          BANKING MENU"
3015 CSIZE 8,8: PRINT : PRINT : PRINT
      INVERSE 1; "1) PAY IN MONEY"
3020 PRINT "   DO NOT USE for main wa
     ge/       salary - use MAIN MENU
               OPTION 1 to pay that i
     n."
3025 PRINT INVERSE 1;"2) STATEMENTS"
3030 PRINT "   Printout of current ba
     lances"
3035 PRINT INVERSE 1;"3) TRANSFER BET
     WEEN FUNDS"
3040 PRINT : PRINT INVERSE 1;"4) WITH
     DRAWALS"
3045 PRINT "   Withdraw from free mon
     ey or      savings"
3050 PRINT : PRINT : PRINT : PRINT IN
     VERSE 1;"9) EXIT TO MAIN MENU"
3055 PRINT AT 20,0; INVERSE 1;"Keys D
     /E toggle funds display"
3060 PRINT AT 21,0; PAPER 6; PEN 0;"S
     ELECT OPTION NUMBER OR D/E"
3065 LABEL men4: GET opt
3070 IF opt=0 THEN wrongoption: GOTO
     menu4
3075 IF opt >4 AND opt<9 THEN wrongop
     tion: GOTO menu4
```

```
3080 IF opt>9 AND opt<13 THEN wrongop
     tion: GOTO menu4
3085 IF opt>14 THEN wrongoption: GOTO
      menu4
3090 IF opt=13 OR opt=14 THEN LET men
     no=4:toggle
3095 GOTO 3000+(100*opt)
```

Option 3 menu, menu4, follows the pattern of all our menus. There are no new procedures called by the BANKING MENU options.

The menu's option 9 is: 3900 GOTO menu

```
3100 CLS
3105 disptotals
3110 INPUT "PAY IN HOW MUCH";payin
3115 WINDOW 0,31,9,18: PRINT "PAY INT
     O WHICH FUND?": PRINT : whichfun
     d
3120 IF fund=1 THEN LET savings=savin
     gs+payin: ELSE IF fund=2 THEN LE
     T cash=cash+payin: ELSE IF fund=
     3 THEN LET assign=assign+payin:
     END IF
3130 WINDOW : CLS : disptotals
3135 PRINT AT 21,0;"ANY MORE TO PAY I
     N?"
3140 yes_no
3145 IF Y$="Y" THEN GOTO 3100
3150 GOTO menu4
```

BANKING option 1 takes care of paying in money other than your main wage. Your main income is always paid in via PAY DAY MENU option 2, so that the money is assigned to the funds correctly. This option is for paying in casual earnings, and any other money you may receive - whether you raise it by selling the family silver or by a successful day at the races is none of my business. Your funds total is displayed, and you are asked which fund you want the money to go to.

```
3200 CLS
3205 INPUT "PLEASE ENTER TODAY'S DATE
     ";today$
3210 LPRINT "STATEMENT DATE:  ";today
     $: LPRINT : LPRINT : LPRINT
3215 statement
3220 LPRINT : LPRINT
3225 GOTO menu4
```

BANKING option 2 produces a printed statement of the amounts in the three funds. You are prompted for the date, which may be entered in any form you like - 1 Jan 1990, 1.1.90, 1/1/90, Jan 1st - whichever you choose will be printed on the statement.

```
3300 CLS
3305 transfunds
3310 GOTO menu4
```

BANKING option 3 calls transfunds at 10665, a procedure we have met before, to transfer money between the three funds.

```
3400 CLS
3403 disptotals
3406 WINDOW 0,31,9,18
3409 PRINT "WITHDRAW FROM": PRINT : P
     RINT "1) SAVINGS": PRINT "2) FRE
     E MONEY"
3412 PRINT : PRINT "WITHDRAWALS FROM
     THE ASSIGNED   FUND SHOULD ";
3415 PRINT INVERSE 1;"ONLY";: PRINT "
      BE MADE WHEN   PAYING REGULAR B
     ILLS - USING   MAIN MENU OPTION
      2"
3418 INPUT "WHICH FUND";fund
3421 IF fund=0 OR fund>2 THEN WINDOW
     : CLS : PRINT "YOU MUST ENTER 1
     or 2": PRINT:presskey: GOTO 3400
3424 INPUT "HOW MUCH?";amount
3427 IF amount=0 THEN GOTO 3445
3430 IF fund=2 THEN GOTO wdfree
3433 IF amount>savings THEN WINDOW :
     CLS : PRINT "NOT ENOUGH IN FUND"
     : PRINT :presskey: GOTO 3400
3436 LET savings=savings-amount
3439 WINDOW : CLS : PRINT "DO YOU REQ
     UIRE A PRINTED RECORD?":yes_no
3442 IF Y$="Y" THEN INPUT "PURPOSE OF
      WITHDRAWAL?";purpose$: LPRINT a
     mount;"   ";purpose$
3445 CLS :disptotals: WINDOW 0,31,9,1
     8: PRINT "ANY MORE WITHDRAWALS?"
     :yes_no
3448 IF Y$="Y" THEN WINDOW: GOTO 3400
3451 WINDOW : GOTO menu4
3454 LABEL wdfree
3457 IF amount>cash THEN WINDOW : CLS
      : PRINT "NOT ENOUGH IN FUND": P
     RINT :presskey: GOTO 3400
3460 LET cash=cash-amount
3463 WINDOW : CLS : PRINT "DO YOU REQ
     UIRE A PRINTED RECORD?":yes_no
3466 IF Y$="Y" THEN INPUT "PURPOSE OF
      WITHDRAWAL?";purpose$: LPRINT a
```

```
    mount;"   ";purpose$
3469 CLS :disptotals: WINDOW 0,31,9,1
    8: PRINT "ANY MORE WITHDRAWALS?"
    :yes_no
3472 IF Y$="Y" THEN WINDOW: GOTO 3400
3475 WINDOW : GOTO menu4
```

The last BANKING option is a little longer, but it is quite straightforward. It handles withdrawals, and is very similar to transfunds, except that it will only allow you to withdraw from 'free' money or 'savings', because 'assigned' money should only ever be withdrawn by main menu option 2 to pay calendar bills.

This option will not let you overdraw either of the funds, and you can make a printed record of the withdrawal, and the purpose for which the money was used, if you wish.

Main menu option 4 is very short and sweet. 4000 saveprog: GOTO menu

saveprog is the procedure at 10930 which handles SAVEing the program. This option should be called whenever the program is used, after all your transactions are finished, so that your disc/tape copy is up-to-date.

Incidentally, this procedure could not be called save, because no procedure or label may be given a BASIC keyword for its name. There are one or two other words reserved, which although they are not keywords at present, may be used in the future for BASIC extensions, so they must not be used as names. They include SORT, ALTER, USING$, SHIFT$, INARRAY, NUMBER, CHARS and JOIN. SAM ROM v.2 would accept these as procedure names since they are not yet keywords, but if they were used the software would probably have to be rewritten for future versions of SAM, so they should be avoided.

```
5000 REM THE PRINTING OPTION
5005 LABEL menu5: CLS : LET togflag=0
5010 CSIZE 8,16: PRINT "          PRIN
    TING MENU"
5015 CSIZE 8,8: PRINT : PRINT : PRINT
     INVERSE 1;"1) INITIALISE PRINTE
    R"
5020 PRINT "   Send codes for page le
    ngth,     print style, etc."
5025 PRINT INVERSE 1;"2) PRINT NOTES"
5030 PRINT "   Print notes, comments
    on        printouts."
5035 PRINT : PRINT : PRINT : PRINT :
    PRINT INVERSE 1;"9) EXIT TO MAIN
     MENU"
5040 PRINT AT 20,0; INVERSE 1;"Keys D
    /E toggle funds display"
5045 PRINT AT 21,0; PAPER 6; PEN 0;"S
    ELECT OPTION NUMBER OR D/E"
5050 LABEL men5: GET opt
5055 IF opt=0 THEN wrongoption: GOTO
    menu5
5060 IF opt>2 AND opt<9 THEN wrongopt
    ion: GOTO menu5
5065 IF opt>9 AND opt<13 THEN wrongop
    tion: GOTO menu5
5070 IF opt>14 THEN wrongoption: GOTO
     menu5
5075 IF opt=13 OR opt=14 THEN LET men
    no=5:toggle
5080 GOTO 5000+(100*opt)
```

Here we have the menu for option 5, the PRINTING MENU, which is also menu5. Its exit option is:-

```
5900 GOTO menu
```

```
5100 OPEN #4,"b"
5105 PRINT #4; CHR$ 27;"@";
5110 PRINT #4;CHR$ 27;"C";CHR$ 70;
5115 PRINT #4; CHR$ 27;"N";CHR$ 2;CHR
    $ 13;
5120 CLOSE #4
5125 GOTO menu5
```

PRINTING option 1 sends codes to the printer to set it up as you wish to have it for your printouts. Line 5100 opens a stream for sending binary codes to the printer. The codes I have sent are these:-

Line 5105 - initialise the printer.
Line 5110 - a 70 line page length (true A4 if normal 1/6 line spacing is used.
Line 5115 - skip over perforations leaving a 2-line gap; and CHR$ 13 to empty the printer buffer, because with my particular printer you need to empty the buffer to actually send the codes to the printer.

It is up to you to decide what codes you want to send. You may want some or all of these, or you may wish to have others - a margin, or a particular type style, perhaps. Enter whatever lines you need to send the correct codes, and end the option, as I have, with:-

```
CLOSE #4
GOTO menu
```

```
5200 CLS: INPUT "NOTE TO PRINT";note$
5205 LPRINT note$
5210 CLS : PRINT "ANY MORE NOTES TO P
     RINT?";
5215 yes_no
5220 IF Y$="Y" THEN GOTO 5200
5225 GOTO menu5
```

PRINTING option 2 is used to make any notes you wish on printouts. The program will print out statements of your funds position, lists of payments due, the amount withdrawn from 'free' and 'savings', and the purpose for which you withdrew the money, so you can keep a complete record of all your finances. It is possible that you may wish to put some notes or comments on a printout, and this option allows you to do that. It is very simple. It uses INPUT to prompt for the notes, and LPRINT to print them.

We have covered quite a lot of main menu options this month. Next month we shall start on option 6, the CHANGE CALENDAR MENU, which is the menu with the greatest number of options, and which has some of the most complex routines in the program. See you then.

* ~ * ~ * ~ *

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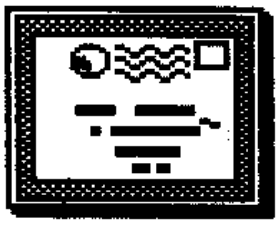
YOUR LETTERS



Dear Editor,

I quite agree with you that people should be expected to make the small effort required to remember their membership number when renewing, or indeed any other piece of assistance that is reasonably asked for, to help the staff operate an efficient service - which I have always found yours to be. It may not seem much in itself, but when compounded several hundred (or thousands of times even) it makes a huge difference.

Keep up the good work, hopefully with the co-operation of the members.

Yours sincerely, Peter R.Wood.

Thank you Peter, I have had many letters like yours although there have been some putting the opposite view. I'm sure this debate will go on for some while. **Ed.**

Dear Editor,

May I say how nice it was to receive your printer interface for my SAM, plug it in, type LPRINT "A" and it did. Not at all what I'm used to!

Secondly, a work of praise to Mr Seymour of Leo Software. He does some useful educational programs for children and was extremely helpful on the phone when I had a problem, even sorting out one problem which was nothing to do with his disc.

Is the new Master DOS different from that supplied with new Sams?

Yours sincerely, Gerald Jess.

Kind comments accepted both by us and, I'm sure, Leo Software. No, MasterDOS is not being shipped with new SAMs. SAMDOS 2 will continue to be sent out for the foreseeable future. I think most serious users will upgrade to MasterDOS but if all someone wants to do is play games then SAMDOS is good enough. **Ed.**

Dear Editor,

I much appreciate Mr. Vanstone's letter quoted in the present copy of Format on the above subject.

Very unfortunately Messrs, Greenweld Electronics now only do a ribbon connection and not the solid "Y", so it looks as if I shall have to carry on as before, unless someone can come up with the name of a current supplier. Incidentally Messrs, Greenweld's telephone number has been changed to Southampton (0703) 236363.

Yours sincerely, B.N.A.Lankester.

Dear Editor,

In recent issues of FORMAT, B.G.Services have advertised a VTX5000 Modem for sale. There must be plenty of readers, who like me, don't know much about modems, will you write an article on modems (what they do, costs, etc.) or ask one of your many excellent contributors to write an article on them.

Can you also please tell me if the O.C.P. Advanced Art Studio is compatible with PCG's DTP package.

Yours sincerely, Henry Connell.

As I've said many times before I try to publish what comes in so if anyone knows a bit about modems then get typing.

In answer to your question (which should have gone to Nev for his help page - I will have a demarcation dispute on my hands if I answer too many questions in the letters page) yes, as far as I know any SCREEN$ file can be used. **Ed.**

Dear Editor,

I have just taken delivery of another SAM Coupé computer, (the first one I bought for my son when they first came out), and I have purchased the 512K version with twin drives. I

was most fortunate in finding out that the price was due to drop, via a kind little bird, and saved around '40 on the deal. That should read forty pounds but I can't seem to work out how to bring the pound sterling sign with SAM to a Star LC10. I could always do it with the Speccy though.

However, to the purpose of my letter. When I received the machine the drives and such were already fitted, so I was able to get straight down to business. Did a few quick tests then decided to test if the drives were functioning okay. DIR 1 - OK, DIR 2 - message 'check disc in drive'. My first reaction was to switch off and remove drive 2 just in case it might not be seated properly. All seemed okay. Switched back on and DIR 1 and DIR 2 ok. Headscratching time. Then I realised that when I first switched on I had had the printer/external disc interface connected, not so the second time.

So I switched off again and reconnected the interface. No DIR 2 again. So I put on the thinking cap and slowly it came back that when I first used the interface I had to alter a drive jumper to get the drive working. That's it, simple I thought, put the jumper back where it was originally. No dice - this time no DIR 1. By this time half my hair was out and the air was turning blue, so I switched off, removed the interface and opened it up again, this time I connected it minus the casing with a view to moving the jumper around, (there are only two moves really anyway), and after a bit of messing and fiddling to no avail I removed the jumper from circuit completely - and decided to see what happened when I did a DIR 1 - yep, you got it, it worked, and so did DIR 2.

So now I'm happy, but I might have been a whole lot more happier if a slight mention of this fact had been included in the setting up instructions. However, maybe my experience will help some other hapless likeminded dimwit sometime and save them all that hassle. SAMCO was very close to a blistering phone call.

Yours sincerely, M.Chapman.

Your solution is a valid one and I'm sure there will be others for whom your advice will come in handy. Still I do think you are a little hard on SAMCO Mr Chapman. I know the instructions aren't perfect, they do explain how to set up for drive 1 or 2. However it was never envisaged that someone would use the external drive interface with two internal drives fitted. The COMMS interface and our own SPI give the printer interfacing most people require **Ed.**

Dear Editor,

I'm not about to argue for more Spectrum coverage in FORMAT, even though I don't own a SAM, overall things are very good. However there is one area where FORMAT seems to be failing and that is the NEWS ON 4 page. It seems to be SAM, SAM, and SAM again. What about the new releases for Spectrum?

Yours sincerely, Colin Little.

I try to get a balance Colin, but at the end of the day there seems to be very little happening on the Spectrum front these days.

News of software releases, clubs, and shows are what most people want to see but they don't appear out of thin air. I want to see more Spectrum items, and more SAM as well, as FORMAT continues to grow. I would like to have two or even three pages of news each month but I need people to tell me about things.

So let's talk incentive here. The first reader to send in a particular news item will in future be credited with three months extra subscription. Your name will appear after the item and you just claim your extra months when your renewal is next due. Come on, let's hear from you. **Ed.**

* - * - * - * - * - *

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Here is a super new collection of some very usefull utilities which we have put together onto one disc for the benefit of all Disciple and Plus D users. We have selected many of these programs from our own toolkit of working discs, some of which we use everyday, to help us with our own disc operations and programing. Here is an opportunity to get some super utilities . . . . and we have planned the contents, so there is something on it for everyone.

There are NINE programs on the disc . . .

- AUTO-BOOT - the best cat-loader ever. This is a program we use every day
- MENU-MATE - now you can have file names with 28 letters & selective loading.
- COPY KING - inteligent sector copier will only copy the sectors used on a disc.
- SNAP RENAME - the easy way to rename snapshots . . you see the screen !
- SUPER-RECOVER - automatic operation.
- LABEL MAKER - will selectively print disc contents on a label, for 5.25 or 3.5 discs.
- SUPER SORT - fast m/code with demo.
- FAST CLONE - whole disc copier.
- SHOPPING LIST - a real BOON for those who do the family shopping.

Here is a resourse disc that will fast become an essential part of your disc collection. Its the one you will reach for time and time again, as it holds the most useful utiilities all on one disc !

SEND FOR THIS UTILITY DISC TODAY OR SEND US A SAE FOR FULL DETAILS.

£10·95

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For DISCIPLE & PLUS D

DISC MANAGER	£12.95
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FILE MASTER	£8.95

Send SAE for details

SAM USERS Write and tell us what type of programs you would like to see BetterBytes write for SAM. Enclose SAE for reply.

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