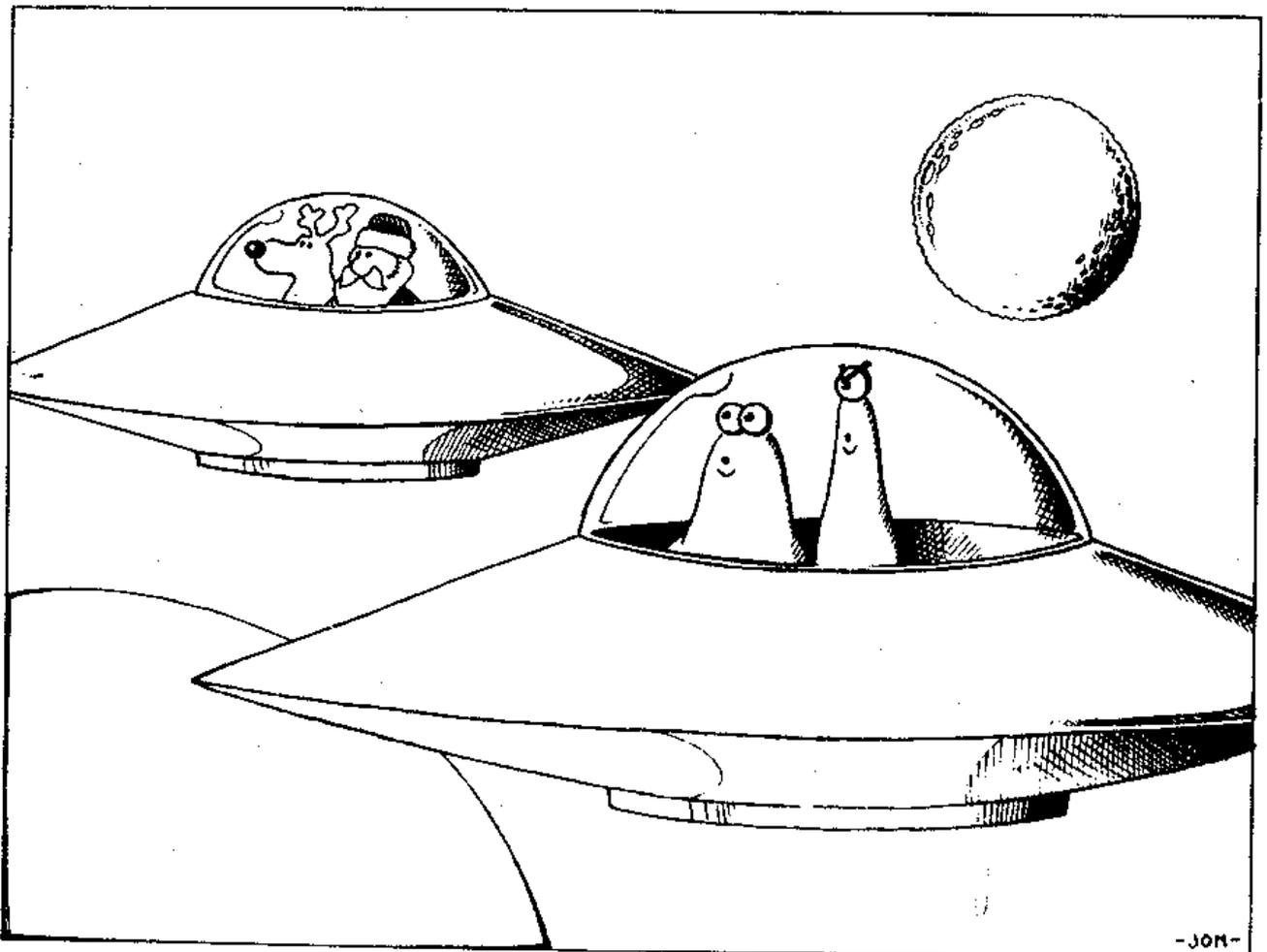


Vol 4 - No 4.

December 1990.

# FORMAT

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# NEWS ON 4

## SAM DATABASE

A new South Wales software company - GM Software - have announced a database program for the SAM Coupé.

GM-BASE is described as a 'User Friendly' fully integrated database system and has facilities to Create, Copy, Renames and Erase databases and to Append, Insert, Sort, Delete and Search records.

A print option allows both Free-Form and Tabular printouts from the full file or selected records.

The program will be launched at the All Formats Show in London on the 15th of December. More details can be obtained by sending a stamped addressed envelope to GM Software, 48 Main Road, Crynant, Neath, West Glamorgan, SA10 8NP.

## UNI-DOS UNITES DISC USERS

PLUS D and DISCiPLE owners have always had a lot in common but soon they will be really united. UNI-DOS will be available in two versions, one for DISCiPLE and one for PLUS D, and will consist of a new ROM, system and utility disc and an A5 manual. What makes for unity is that the system file is the same for both versions so - if you have both interfaces fitted with UNI-DOS - you can boot-up on either using the same disc.

SD Software will release UNI-DOS to the public at the December All Formats Show. UNI-DOS has undergone extensive field trials over the past few months with selected FORMAT readers being given the chance to play with the powerful new DOS.

A full review will appear in the January issue if deadlines allow.

## AMSTRAD PULL PLUG ON SOFTWARE

Way back in 1984 Amstrad formed its own software division - Amsoft - to

produce software for the then infant CPC 464. Amstrad went on to produce i software, or badge other companies product, for their CPC, PCW and IBM clone ranges of computers.

Now, hot on the heels of their announcement that the Spectrum +3 is no longer in production, Amstrad is closing its software operation.

Is this another sign that the Amstrad bubble has got a slow leak?

## PLUS D AND COPYRIGHT

Datel Electronic, who took over the PLUS D from MGT just over a year ago, are at the centre of a growing storm amongst potential users. If you now order a PLUS D direct from Datel they send you a card to sign and return. This card forms an undertaking from the buyer that he/she will not use the PLUS D to infringe rights under the 1988 Copyright act. If you don't sign the card and return it Datel say they will tear-up your order.

Now it is well understood that the PLUS D had a Snapshot button and this allows you to make a back-up copy of a program to disc. But that isn't software piracy. As long as you keep the original tape, and as long as you do not pass disc copies of the program to anyone else (whether you charge for the copies or not), you have the right to back-up your software. Because the PLUS D can't be used to make tape copies of commercial software there is little Datel needs to do under the Act other than to point out in their adverts and instructions that the device must only be used for legitimate back-up purposes.

Well Daltel are to be applauded for trying to cut the unacceptably high incidence of copyright theft, something that in the long run does untold damage to the future of the home computer industry, they are making a stand with the wrong product.

Delaying customers order is a little heavy handed. If Datel continue to take this attitude it can only cost them sales.

### SOVIET SPECTRUM - WILL IT COME WEST

Several magazines have published reports on the wide spread availability of Spectrum clones in the Eastern Block countries, especially the USSR. But the question many people have been asking (even more so since Amstrad dropped the +3) is will they be available in the UK.

Well at last we have managed to contact someone at the Soviet Embassy in London that seems to know what they are talking about. An the answer is - maybe.

For years the Soviets have had no concept of copyright, in a communist country there was no need as no one owned anything except the state. Well now Moscow is rushing to catch up with the West and new laws are being passed. These may not affect the Spectrum clones for the moment but it will make it almost impossible to get government support for exporting the machines.

If a UK company was prepared to invest in the development of a new Spectrum clone that didn't breach the copyrights held by Sinclair and Amstrad than it might be a different story, only time will tell.

### SAM SEMINAR

For those of you that want to know more about the latest developments in the SAM Coupé field SAMCO are organizing a seminar in London on the 15th December. An all-in ticket costing £10 will give you entry to the All Formats Show and a seat at the seminar. Many of the people responsible for bringing the Coupé to life will be there to give talks and answer your questions.

Demonstrations of the new 'Card Cage' expansion system (£40) and the one megabyte RAM upgrade (£80) will be given.

As space may be limited you are well advised to ring SAMCO on 0792-700300 to book your place.



I would like to take this opportunity to be one of the first to wish you a VERY MERRY CHRISTMAS (or in the case of some of our more distant overseas readers perhaps I'm the last). I like Christmas, its a time for relaxation and having fun and I've tried to make this issue of FORMAT a really fun issue. So relax, let the festive season wash over you and enjoy this special Christmas FORMAT.

You will note that I am keeping the editorial extra short this month so there is room for even more news items. I have to spend a good deal of my time chasing up stories from NEWS ON 4 and I think its about time you did something to help. I need news items on Shows, Clubs, Software releases, Hardware developments ect, ect. Why is nobody sending me NEWS? Come on out there, do your bit, it only takes a short phone call or a little letter. Tell me what's happening so I can tell the world.

Could I also remind readers about the increase in subscription rates from the 1st January 1991. The new rates are £12 in the UK, £16 for all overseas surface mail and £25 for airmail. Remember you have until December 31st to send off your renewals at the old rates. Any postmarked on or before that date will be accepted, any postmarked after the 31st will have membership adjusted pro-rata with the new rates. If you want to pay your subscription early for next year and save money you better send your cheque off quick.

Finally, before I leave you to your Christmas cheer, there will be no HOTLINE available from Saturday 22nd to Thursday 27th December. I hope you enjoy your Christmas holiday as much as I intend to enjoy mine.

Back next year,

**Bob Brenchley. Editor.**

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# SHORT SPOT

By:- John Wase.

Although I appreciate that it's your ShortSpot, I've got a problem. I feel I'm getting far too many long items and not enough short ones. And this is frustrating. I do try and make a fairly balanced column (calamities permitting), and one long article on, say a SAM disc autoloader is not going to turn on people with cassette versions, or those with Spectrums. (Yes, I've just such an item: it'll make a separate article). My feeling is that I would like a lot more real "shorties", but I would also appreciate your views: do write in to the letters page and tell us. You might think your particular program snippet is common knowledge, but there are many reading this who are new to your two-liner. So please, lets have lots of lovely little bits and pieces, then we can make up a really interesting and well assorted column.

The sort of thing I have in mind is this month's opener from Roger Brookes of Middlesbrough. He writes with information about the Art Studio Conversion (Vol 1, Issue 8). He has the 128k version as well as the 48K version, and one of the things missing in the latter is that you cannot load in extra texture fills. As the fills are just UDGs the same as the text, he thought it must be possible to move the text loading pointer around to point at the texture fills area.

Texture fill:-

```
POKE 37725,231: POKE 37726,96:
POKE 41491,124: POKE 41492,96
```

Text:-

```
POKE 37725,124: POKE 37726,0:
POKE 41491,124: POKE 41492,0
```

As long as you have some way of doing the POKES with the code in

memory, like a multiface or the PickPokeIt, it is not a problem to switch from the text to texture fill, load and save options and back again. All loading and saving is done from the font menu. Roger's letter came to me with the most incredible illustrations all over it. There was a huge postman carrying a sack on the envelope, along with some other pictures, and all sorts of oddments on the letter. Congratulations, Roger; I thought it was super.

Now here's a good one. Jack Law of Upper Norwood, London, writes that he looked hard at Mr Doughty's Bingo program; alas, he's not a Bingo man; though he does enjoy doing the pools! Then it suddenly struck him that this program could be modified for pools punters with very little difficulty. Just alter lines 430 and 440 as follows:-

```
430 DIM B$(58): DIM R(58): RANDOMIZE:
FOR B=1 TO 58
440 LET Y=INT (58*RND)+1
```

And that's it. Many thanks, Jack. (Incidentally, there are a number of other small alterations to make things work more smoothly or to improve the shapes of letters, but these are really cosmetic).

Dr. Behr of Brierfield, Lancs, writes about Mr Baumann's tips on Tasword 2; they have inspired Dr. Behr to add his quota of new (old) tips, too.

1) To modify the extended mode help page. use the same method as for the normal mode. but replace 22784 with 24320. (He also mentions that I have made a transcription error - my column should, of course, have read (N+22784) again to bring the help page back).

2) For multiple print-outs, add the following lines to Tasword 2:-

```

251 LET i=14: PRINT AT i.0;"No. of co
    pies (1)": GOSUB 6000: IF a$=""TH
    EN LET a$="1"
252 LET k=VAL a$
279 FOR i=1 TO k
281 NEXT i

```

3) To change the border colour, enter Basic and POKE 64516,x where x is the number of the colour, 0 to 7.

4) To change ink and paper colours, enter Basic and POKE 58512,54 POKE 58513,x POKE 58521,54 POKE 58522,x where x=8\*paper+ink

5) He also has several word-count patches, and can send one if anyone wants. So it's up to you.

6) Finally, Clive White (in Your Letters) had a problem over the number of characters printed per line: he wanted 80 columns. First alter the carriage return and line feed codes to zero. Then define a graphics character to be these codes. Set the margins to 40, type in the text, and afterwards add the appropriate graphics symbol to the end of every alternate line.

A.S.Hughes of Holywell, Clwyd, has entered the "PRINT USING" discussion with this little contribution. He writes that a very concise number formatting procedure, consisting of only one Basic line, is as follows:-

```

PRINT "seven spaces"(1 TO 6-INT (LN x/
LN 10)*(x>1)+(x<.1));x

```

Where I have written seven spaces, press the space bar seven times, of course. The number to be printed is the variable x. In this example, the number 6 will allow a maximum of seven digits to be displayed before the decimal point. Note that the number of spaces in the string immediately after the PRINT command must always be at least one more than this number (seven spaces in the example).

The procedure works by slicing the string in such a way as to insert a number of spaces in front of x to ensure that the decimal point is placed at a specific location (just after the complete string) on the screen. If x is 1 or more, the expression  $\text{INT}(\text{LN } x / \text{LN } 10) * (x > 1)$

evaluates the characteristic of the logarithm to the base 10 of x. This characteristic is one less than the number of digits appearing before the decimal point. If x is less than one, then only a decimal fraction need be printed. These are handled by the Spectrum in one of two ways. If x is greater than or equal to 0.1, then a leading zero is printed and this is the reason for the addition of the logical expression (x<.1) in the PRINT statement. Unfortunately, thing fail when x is equal to zero. The reason for this is that zero is an invalid argument for the function LN (the natural logarithm). In order to deal with this eventuality you must test for zero before using the routine.

The number of digits allowed after the decimal point can also be controlled in the usual way by a Basic line preceeding the PRINT statement, e.g.

```

LET x=(INT ((x+.005)*100))/100

```

This rounds up and limits x to two places of decimals. The bits and pieces can all be put together in little demonstration program like this:-

```

10 INPUT x
20 LET x=(INT ((x+.005)*100))/100
30 PRINT TAB 10;
40 IF x=0 THEN PRINT TAB 16;"0": GOT
0 10
50 GOSUB 100
60 GOTO 10
100 PRINT "seven spaces"(1 TO 6- INT
(LN x/LN 10)*(x>1)+(X<.1));x
110 RETURN

```

Sorry it's a bit on the short side this month. Back to normal next month. Tell you what. After you've digested all that turkey, pop upstairs away from everyone, drag out that old SAM or Spectrum and have a big relax. Then just drop me a line with that neat little programming wrinkle. Send to John Wase, Green Leys Cottage, Bishampton, Pershore, Worcs, WR10 2LX.

Thanks to you all, and have a really smashing Christmas.



# CHRISTMAS CAROLS

By:- Clyde Bish.

With the Festive Season fast approaching perhaps we should turn our attentions from Landscaping for a while and enjoy making use of a few routines based on Christmassy themes. O.K. I admit it. You'll actually end with a game. But, serious programmers, turn not over in disgust. There are a lot of useful techniques within the programs to be learnt so get typing.

The program is called "Carol Quiz" and makes use of READ, DATA and BEEP in a rather unique way.

Now that Christmas is almost with us everywhere you go people are humming, whistling, or even singing Christmas carols. But how quickly do you recognise the tune? Here's your chance to find out. After an elaborate animated and entertaining title sequence (during which time numerous variables etc. are set so don't think you can miss it out!) the machine will play a carol using its much maligned but quite efficient BEEP. (Plus users can improve on the musical quality greatly here.) All you have to do is recognise the tune and press the appropriate key. Easy? Not a bit of it. Here's the catch. I omitted to tell you that the tune won't start playing at the beginning! Low scores are best as the longer you take the more penalty points you collect. But don't make a mistake - it will cost you an extra 15 points!

Now I'll let you get on with the pre-Christmas task of typing the program in. But first a reminder that Colour Control Characters and UDGs are listed in FORMAT's standard way i.e. {G A} means enter Graphics Mode (cap-shift 9) and press the letter A. {ES 7} tells you to press Extended Mode then Shift 7. For further details see the Easy-Read Listings article in FORMAT Vol 1 No 10. It may seem a

large program to start with but once you get into the swing of typing you will find it won't take too long.

```
1 CLEAR 65090: GOTO 9
2 FOR n=1 TO LEN m$+1: PRINT AT j,0
  ; INVERSE i;(z$+m$)(n TO n+31): B
  EEP .05,n: NEXT n: RETURN
3 LET z=(z=0): PRINT AT 6,7;INK 2+(
  2 AND z=0);"{G Q}{G S}";AT 7,7;"{
  G T}{G U}";AT 6,23;"{G Q}{G S}";A
  T 7,23;"{G T}{G U}";AT 14,7;"{G Q
  }{G S}";AT 15,7;"{G T}{G U}";AT 1
  4,23;"{G Q}{G S}";AT 15,23;"{G T
  }{G U}": RETURN
5 LET xx=(256-8*xs*LEN p$)/2+p: LET
  i=23306: POKE i,xx: POKE i+1,yy:
  POKE i+2,xs: POKE i+3,ys: POKE i
  +4,8: LET i=i+4: LET w=LEN p$: FO
  R t=1 TO w: POKE i+t,CODE p$(t):
  NEXT t: POKE i+w+1,255: LET w=USR
  65091: RETURN
9 RESTORE 950: LET z$="
  ": LET o=0: L
  ET m=1: LET d=2: INK 7: BORDER d:
  PAPER m: CLS : FOR f=65091 TO 65
  533 STEP 5: PRINT AT RND*20,RND*3
  0;"*": BEEP .01,RND*10+36: READ a
  ,b,c,e,g: POKE f,a: POKE f+1,b: P
  OKE f+2,c: POKE f+3,e: POKE f+4,g
  : NEXT f: LET a$="{GS 8} {GS 8}
  ": LET b$="{GS 8} {GS 8} {GS 8}"
  : LET x$="{ES 4}{G I}{ES 2}{G J}{
  ES 4}{G H}{ES 7}{ES 0}": LET y$="
  {ES 4}{G H}{ES 2}{G J}{ES 4}{G I}
  {ES 0}": PRINT AT m,6;"{G N}{GS 8
  }{GS 8}{GS 8}{G L}";AT d,5;"{G N}
  {GS 8}";AT 3,5;a$;AT 4,5;a$;AT
  5,5;"{GS 8}{G N}{GS 8}{GS 8}";AT
  6,5;a$;AT 7,5;a$;AT 8,5;"{G M} {
  G L} {G N}";AT 9,6;"{G M}{GS 8}{G
  S 8}{GS 8}{G L}": LET p$="arol":
  LET yy=24: LET xs=4: LET ys=8: L
  ET p=32: GOSUB 5
50 PRINT AT 12,7;"{G N}{GS 8}{GS 8}{
  G O}";AT 13,6;"{G N} {GS 8} {G O
  }";AT 14,6;b$;AT 15,6;b$;AT 16,6;
  "{GS 8}{G N}{GS 8}{GS 8} {GS 8}";
  AT 17,6;b$;AT 18,6;b$;AT 19,6;"{G
  M} {G L} {G L}";AT 20,7;"{G M}{f
```

```

GS 8){GS 8){GS 8){GS 8){GS 8){G L
}": LET p$="uiz": LET yy=112: LET
p=40: GOSUB 5
90 PAUSE 50: LET c=m/2: LET q=c/2: L
ET dm=c+m: LET dc=c+q: LET E=d+d:
LET F=5: LET FS=6: LET G=fs+m: L
ET A=9: LET BF=a+m: LET B=a+d: LE
T TC=12: LET TD=tc+d: LET TE=td+d
100 FOR n=m TO 4: FOR i=o TO 21: PRIN
T AT i,0; OVER 1; INVERSE 1;z$: N
EXT i: NEXT n: FOR i=o TO 21: PRI
NT AT i,0; OVER 1; PAPER 5;z$: NE
XT i
110 PAUSE 50: PRINT AT 10,d; PAPER 5;
INK 6;"{GS 3}{GS 3){GS 3){GS 3){G
S 3){GS 3){GS 3){GS 3){GS 3){G
S 3){GS 3){GS 3){GS 3){GS 3){G
S 3){GS 3){GS 3){GS 3){GS 3){G
S 3){GS 3)": RESTORE 130: FOR n=m
TO 6: PRINT AT 11,d; PAPER 5;INK
m;"{G F} ";INK d;"{G G} ";INK
m;"{G F} ";INK d;"{G G} ";INK m;
;"{G F} ";INK d;"{G G} ";INK m;
;"{G F} ";INK d;"{G G} ";INK m;"
{G F} ";INK d;"{G G)": READ t,u:
BEEP t,u: PRINT AT 11,d; PAPER 5
;INK m;" {G G}";INK d;"{G F}
";INK m;"{G G}";INK d;"{G F}
";INK m;"{G G}";INK d;"{G F}
";INK m;"{G G}";INK d;"{G F} "
;INK m;"{G G}";INK d;"{G F} ": RE
AD t,u: BEEP t,u: NEXT n
130 PRINT AT 11,d; PAPER 5;INK m;"{G
F} ";INK d;"{G G} ";INK m;"{G F
} ";INK d;"{G G} ";INK m;"{G F}
";INK d;"{G G} ";INK m;"{G F}
";INK d;"{G G)": READ t,u: BEEP t
,u: DATA q,E,q,o,q,D,q,-5,q,E,q,o
,q,D,q,-5,q,E,q,o,q,D,q,-5,dc,o
170 PAUSE 25: INK 7: BORDER 6: PAPER
3: CLS : PAUSE 20: LET j=m: LET i
=j: LET f$="{G D}{G E}{G D}{G E}{
G D}{G E}{G D}{G E}{G A}{G B}{G C
}": LET m$f=f$+" HOW GOOD ARE YO
U AT CAROLS? ": GOSUB d: PAUSE
50: LET i=o: LET j=5: LET m$f=f$+"
WHEN YOU RECOGNISE THE TUNE " :
GOSUB d: LET j=7: LET m$f=f$+"PRE
SS THE NUMBER OF YOUR CHOICE": GO
SUB d: PAUSE 30: LET j=10: LET m$
=f$f$+" THE FASTER YOU ARE
": GOSUB d: LET j=11: LET m$f=f
$f$+" THE BETTER YOUR SCORE
": GOSUB d: PAUSE 30: LET j=13:
LET m$f=f$+" BUT DON'T MAKE A MI
STAKE! ": GOSUB d: PAUSE 150: P
RINT AT 18,6;"Press ENTER to star
t": PAUSE o
175 PAPER 7: CLS : INK o: RESTORE 17
5: FOR n=m TO 8: READ t$: PRINT A
T o,VAL t$;x$: NEXT n: RESTORE 17
5: FOR n=m TO 8: READ t$: PRINT A
T 21,VAL t$;y$: NEXT n: DATA "0",
"4","8","12","17","21","25","29"
180 PRINT AT o,o': FOR n=1000 TO 5500
STEP 500: RESTORE n: READ a$: PR
INT n/500-d;". ";a$: NEXT n: PRIN
T " Which Carol? (Press number
)"
200 LET s=o: LET p=s: LET yy=112: LET
ys=3: LET xs=d: FOR i=m TO 150:
NEXT i
210 FOR v=m TO 10: LET w=INT (RND*10)
+1
215 RESTORE w*500+500: READ a$: LET r
=INT (RND*10+5): FOR n=m TO r: RE
AD t,u: NEXT n: FOR n=r TO r+30:
READ t,u: BEEP t,u: IF INKEYS<>"
THEN GOTO 310
220 NEXT n: LET p$="Too slow": GOSUB
5: BEEP 1,-24: GOTO 330
310 IF INKEYS<>STR$ (w-m) THEN FLASH
m: LET p$="WRONG": GOSUB 5: BEEP
1,-12: LET s=s+15: FLASH o: GOTO
330
320 FLASH m: LET p$="CORRECT!": GOSUB
5: FOR i=m TO 5: BEEP .1,36: NEX
T i: FLASH o
330 LET s=s+n-r: PRINT AT 19,11;"SCOR
E =";s: FOR n=m TO 200: NEXT n: F
OR n=12 TO 20: PRINT AT n,o;z$: N
EXT n: NEXT v
349 LET a$="{E 6){ES 2){G R){G P){ES
3){G K){ES 2){G R){G P){ES 3){G K
){ES 2){G R){G P){ES 3){G K){ES 2
){G R){G P){ES 3){G K){ES 2){G R
){G P)": LET b$="{E 6){G J){ES 4){
G I)": LET c$="{E 6){ES 4){G H){E
S 2){ES 2){G J){E 7){ES 0}"
350 BORDER 3: PAPER 6: CLS : INK m: L
ET p$="SCORE": LET yy=64: GOSUB 5
: LET p$=STR$ s: LET yy=88: GOSUB
5
360 LET s=7: PRINT AT 6,s;"{E 6){ES 1
){G Q){G S}";a$;"{G Q){G S}";AT s
,s;"{G T){G U}";AT s,23;"{G T){G
U}";AT s+s,s;"{G Q){G S}";AT s+s,
23;"{G Q){G S}";AT 15,s;"{G T){G
U}";a$;"{G T){G U){E 7){ES 0)": F
OR n=9 TO 12 STEP d: PRINT AT n,s
;b$;AT n+m,s;c$;AT n,23;c$;AT n+m
,23;b$: NEXT n
900 PAUSE 25: LET z=m: RESTORE 900: L
ET x=.35: LET y=.1: FOR j=m TO 30

```

```

: READ t,u: BEEP t,u: GOSUB 3: NE
XT j: PAUSE 50: PRINT {SS 3}0;"Pr
ess ENTER to play again": PAUSE o
: GOTO 175: DATA x,D,x,G,y,G,y,A,
y,G,y,FS,x,E,x,0,x,E,x,A,y,A,y,B,
y,A,y,G,x,FS,x,D,x,FS,x,B,y,B,y.T
C,y,B,y,A,x,G,x,E,y,D,y,D,x,E,x,A
,x,FS,.5,G
920 STOP
951 DATA 33,15,91,126,35,34,0,91,111,
60,200,38,0,41,41,41,237,75,54,92
,9,62,8,50,4,91,58,11,91,50,9,91,
58,10,91,50,8,91,62,9,50,5,91,126
,35,34,2,91,7,50
952 DATA 6,91,58,5,91,61,32,50,58,4,9
1,61,32,24,58,14,91,71,58,12,91,7
9,58,10,91,129,5,32,252,50,10,91,
42,0,91,195,70,254,50,4,91,58,13,
91,71,58,9,91,128,50
953 DATA 9,91,42,2,91,195,99,254,50,5
,91,58,12,91,71,58,9,91,50,7,91,5
8,13,91,79,197,205,231,254,193,58
,7,91,60,50,7,91,13,32,241,58,8,9
1,60,50,8,91,5,32,221
954 DATA 58,6,91,195,115,254,128,64,3
2,16,8,4,2,1,58,142,92,238,255,71
,58,141,92,160,71,58,8,91,230,248
,111,58,7,91,254,192,208,31,31,31
,230,31,103,203,28,203,29,203,28,
203
955 DATA 29,203,28,203,29,62,88,180,1
03,58,142,92,166,176,119,58,7,91,
71,230,7,246,64,103,120,31,31,31,
230,24,180,103,120,23,23,230,224,
111,58,8,91,71,31,31,31,230,31,18
1,111,235
956 DATA 33,223,254,120,230,7,79,6,0,
9,70,26,33,6,91,203,70,40,3,176,1
8,201,47,176,47,18,201,0,0,0,0,0,
0,4,7,7,14,10,4,60,142,254,255,12
8,0,0,120,248,248,252
957 DATA 252,0,0,1,0,0,0,0,0,96,192,2
24,125,126,62,33,65,15,31,63,255,
126,60,24,8,240,248,252,255,126,6
0,24,16,11,15,62,63,252,124,240,2
08,208,240,124,252,63,62,15,11,0
958 DATA 0,16,0,32,4,0,0,255,24,60,66
,66,82,66,60,255,254,252,248,240,
224,192,128,255,127,63,31,15,7,3,
1,1,3,7,15,31,63,127,255,128,192,
224,240,248,252,254,255,1,1,2
959 DATA 2,4,8,48,192,1,1,3,3,255,127
,63,31,128,128,64,64,32,16,12,3,1
28,128,192,192,255,254,252,248,31
,63,127,255,3,3,1,1,248,252,254,2
55,192,192,128,128
1000 DATA "Hark! The Herald Angels Sin
g",c,D,c,G,dc,G,q,FS,c,G,c,B,c,B,
c,A,c,TD,c,TD,dc,TD,q,TC,c,B,c,A,
m,B,c,D,c,G,dc,G,q,FS,c,G,c,B,c,B
,c,A,c,TD,c,A,dc,A,q,FS,c,FS,c,E,
m,D,c,D,c,G,dc,G,q,FS,c,G,c,B,c,B
,c,A,c,TD,c,TD,dc,TD,q,TC,c,B,c,A
,m,B,c,D,c,G,dc,G,q,FS,c,G,c,B,c,
B,c,A,c,TD,c,A,dc,A,q,FS,c,FS,c,E
,m,D
1500 DATA "It Came Upon a Midnight Cle
ar",q,F,q,G,c,A,c,G,c,F,q,G,q,A,c
,BF,c,A,c,G,c,TC,c,TC,c,A,q,BF,q,
TC,c,TD,dm,TC,q,A,q,BF,c,TC,c,TC,
c,A,c,F,c,BF,c,A,c,G,q,F,q,G,q,A,
q,BF,c,TC,c,A,c,G,dm,F,q,F,q,G,c,
A,c,G,c,F,q,G,q,A,c,BF,c,A,c,G,c,
TC,c,TC,c,A,q,BF,q,TC,c,TD,dm,TC,
q,A,q,BF,c,TC,c,TC,c,A,c,F,c,BF,c
,A,c,G,q,F,q,G,q,A,q,BF,c,TC,c,A,
c,G,dm,F
2000 DATA "O Come, All Ye Faithful",c,G
,m,G,c,D,c,G,m,A,m,D,c,B,c,A,c,B,
c,TC,m,B,c,A,c,G,m,G,c,FS,c,E,c,F
S,c,G,c,A,c,B,m,FS,dc,E,q,D,d,D,c
,G,m,G,c,D,c,G,m,A,m,D,c,B,c,A,c,
B,c,TC,m,B,c,A,c,G,m,G,c,FS,c,E,c
,FS,c,G,c,A,c,B,m,FS,dc,E,q,D,d,D
2500 DATA "Once in Royal David's City"
,c,D,c,FS,dc,G,q,G,q,G,q,FS,q,G,q
,A,c,A,c,G,c,G,c,B,dc,TD,q,B,q,B,
q,A,q,G,q,FS,m,G,c,TE,c,TE,dc,TD,
q,G,c,TC,c,TC,m,B,c,TE,c,TE,dc,TD
,q,B,q,B,q,A,q,G,q,FS,m,G,c,D,c,F
S,dc,G,q,G,q,G,q,FS,q,G,q,A,c,A,c
,G,c,G,c,B,dc,TD,q,B,q,B,q,A,q,G,
q,FS,m,G,c,TE,c,TE,dc,TD,q,G,c,TC
,c,TC,m,B,c,TE,c,TE,dc,TD,q,B,q,B
,q,A,q,G,q,FS,m,G
3000 DATA "See Amid the Winter's Snow"
,dc,G,q,A,c,G,c,FS,dc,E,q,D,m,D,c
,G,c,A,c,TC,c,B,dc,B,q,A,m,A,dc,T
D,q,TD,c,TC,c,B,c,A,c,G,m,FS,dc,T
D,q,TD,c,TC,c,B,c,A,c,G,m,FS,dc,G
,q,A,c,G,c,FS,dc,E,q,D,m,D,dc,TD,
q,B,c,G,c,TC,c,B,c,A,m,G,dc,G,q,A
,c,G,c,FS,dc,E,q,D,m,D,c,G,c,A,c,
TC,c,B,dc,B,q,A,m,A,dc,TD,q,TD,c,
TC,c,B,c,A,c,G,m,FS,dc,TD,q,TD,c,
TC,c,B,c,A,c,G,m,FS,dc,G,q,A,c,G,
c,FS,dc,E,q,D,m,D,dc,TD,q,B,c,G,c
,TC,c,B,c,A,m,G
3500 DATA "The First Nowell",q,E,q,D,d
c,o,q,D,q,E,q,F,m,G,q,A,q,B,c,TC,
c,B,c,A,m,G,q,A,q,B,c,TC,c,B,c,A,
c,G,c,A,c,B,c,TC,c,G,c,F,m,E,q,E,
q,D,dc,o,q,D,q,E,q,F,m,G,q,TC,q,B
,m,A,c,A,dm,G,c,TC,c,B,c,A,c,G,c,
A,c,B,c,TC,c,G,c,F,m,E,q,E,q,D,dc
,o,q,D,q,E,q,F,m,G,q,A,q,B,c,TC,c

```

,B,c,A,m,G,q,A,q,B,c,TC,c,B,c,A,c  
 ,G,c,A,c,B,c,TC,c,G,c,F,m,E,q,E,q  
 ,D,dc,o,q,D,q,E,q,F,m,G,q,TC,q,B,  
 m,A,c,A,dm,G,c,TC,c,B,c,A,c,G,c,A  
 ,c,B,c,TC,c,G,c,F,m,E

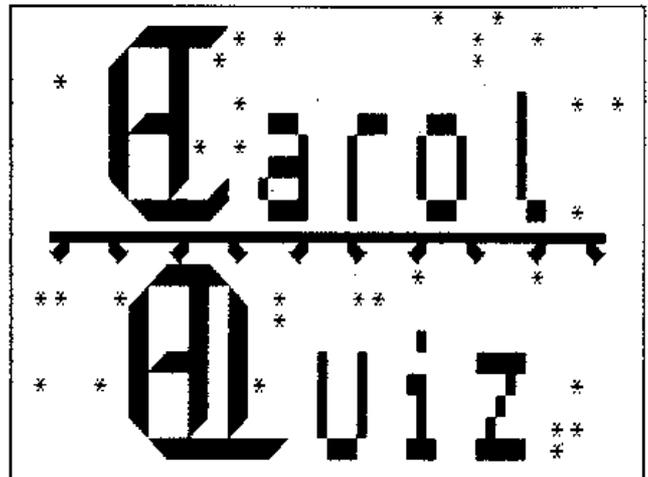
4000 DATA "Silent Night",dc,G,q,A,c,G,  
 dm,E,dc,G,q,A,c,G,dm,E,m,TD,c,TD,  
 dm,B,m,TC,c,TC,dm,G,m,A,c,A,dc,TC  
 ,q,B,c,A,dc,G,q,A,c,G,dm,E,m,A,c,  
 A,dc,TC,q,B,c,A,dc,G,q,A,c,G,dm,E  
 ,m,TD,c,TD,dc,17,q,TD,c,B,dm,TC,d  
 m,TE,dc,TC,q,G,c,E,dc,G,q,F,c,D,d  
 m,o,dc,G,q,A,c,G,dm,E,dc,G,q,A,c,  
 G,dm,E,m,TD,c,TD,dm,B,m,TC,c,TC,d  
 m,G,m,A,c,A,dc,TC,q,B,c,A,dc,G,q,  
 A,c,G,dm,E,m,A,c,A,dc,TC,q,B,c,A,  
 dc,G,q,A,c,G,dm,E,m,TD,c,TD,dc,17  
 ,q,TD,c,B,dm,TC,dm,TE,dc,TC,q,G,c  
 ,E,dc,G,q,F,c,D,dm,o

4500 DATA "Away in a Manger",c,0,c,F,c  
 ,F,q,G,q,A,c,F,c,F,q,A,q,BF,c,TC,  
 c,TC,c,TD,m,BF,q,G,q,A,c,BF,c,BF,  
 c,TC,c,A,c,A,q,F,q,A,c,G,c,D,c,F,  
 m,E,c,o,c,F,c,F,q,G,q,A,c,F,c,F,q  
 ,A,q,BF,c,TC,c,TC,c,TD,m,BF,q,G,q  
 ,A,c,BF,c,BF,c,TC,c,A,c,A,q,F,q,A  
 ,c,G,c,D,c,E,m,F,c,o,c,F,c,F,q,G,  
 q,A,c,F,c,F,q,A,q,BF,c,TC,c,TC,c,  
 TD,m,BF,q,G,q,A,c,BF,c,BF,c,TC,c,  
 A,c,A,q,F,q,A,c,G,c,D,c,F,m,E,c,o  
 ,c,F,c,F,q,G,q,A,c,F,c,F,q,A,q,BF  
 ,c,TC,c,TC,c,TD,m,BF,q,G,q,A,c,BF  
 ,c,BF,c,TC,c,A,c,A,q,F,q,A,c,G,c,  
 D,c,E,m,F

5000 DATA "Good King Wenceslas",c,G,c,  
 G,c,G,c,A,c,G,c,G,m,D,c,E,c,D,c,E  
 ,c,FS,m,G,m,G,c,G,c,G,c,A,c,G  
 ,c,G,m,D,c,E,c,D,c,E,c,FS,m,G,m,G  
 ,c,TD,c,TC,c,B,c,A,c,B,c,A,m,G,c,  
 E,c,D,c,E,c,FS,m,G,m,G,c,D,c,D,c,  
 E,c,FS,c,G,c,G,m,A,c,TD,c,TC,c,B,  
 c,A,m,G,m,TC,2,G,c,G,c,G,c,G,c,A,  
 c,G,c,G,m,D,c,E,c,D,c,E,c,FS,m,G,  
 m,G,c,G,c,G,c,G,c,A,c,G,c,G,m,D,c  
 ,E,c,D,c,E,c,FS,m,G,m,G,c,TD,c,TC  
 ,c,B,c,A,c,B,c,A,m,G,c,E,c,D,c,E,  
 c,FS,m,G,m,G,c,D,c,D,c,E,c,FS,c,G  
 ,c,G,m,A,c,TD,c,TC,c,B,c,A,m,G,m,  
 TC,d,G

5500 DATA "While Shepherds Watched",c,  
 F,dc,A,q,A,c,G,c,F,c,BF,c,BF,c,A,  
 c,G,c,A,c,TC,c,TC,c,B,dm,TC,c,A,d  
 c,TD,q,TC,c,BF,c,A,c,G,c,F,c,E,c,  
 A,c,G,c,F,c,F,c,E,dm,F,c,F,dc,A,q  
 ,A,c,G,c,F,c,BF,c,BF,c,A,c,G,c,A,  
 c,TC,c,TC,c,B,dm,TC,c,A,dc,TD,q,T  
 C,c,BF,c,A,c,G,c,F,c,E,c,A,c,G,c,  
 F,c,F,c,E,dm,F

It now only remains for me to wish you a Merry Christmas and say, "See you in the New Year" with more tricks and techniques. And it only remains for you the RUN the program and see if you can get a better score than Uncle Jack!



## SMALL ADS

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# BETA DOS

## For The PLUS D

Reviewed By:- John Wase.

I suppose one of the reasons why I still use my Discovery disc unit so much is because although my PLUS D interface (now, of course, marketed by Datel) still works, even the latest issue has, for me, a number of quirks and irritants. For instance, I habitually format my discs to over 250 catalogue entries for storing the many opentype text files, each of a single overhead projector sheet, which I use in my lectures: you are limited to 80 with G+DOS. I frequently reorganise my discs, revising, regrouping and deleting text files, and again, on G+DOS this is not easy. Dr. Andy Wright has issued a new DOS, called, appropriately, Beta DOS, which aims to correct many of the original PLUS D deficiencies and is in general faster, neater, easier and more reliable. In addition, he has provided new features which will be appreciated by all who do more than merely play the odd game or two.

Beta Dos comes on 3.5" disc with an 18 page A5 booklet, unbound and without covers, keeping the cost down to £9.95. You need a PLUS D with ROM version 1a - if you are one of the very few with version 1, phone INDUG for advice. Load your normal G+DOS, either 2 or 2a, and format a spare disc. Load BDM from the Beta DOS disc: the auto-running program prompts you to reload your DOS into the Spectrum's RAM, upgrades version 2 to 2a if necessary, patches it and prompts you for the formatted disc, saving Beta DOS back out onto this master. Format a couple more discs while you're at it and save Beta DOS onto them (SAVE dl "+SYSBeta" TO dl "+SYSBeta"; you can't save Beta DOS directly from the PLUS D RAM), noting the new code length. Now you're away..... What will this little beauty do?

Grab another disc (good thing

they're cheap at the moment) for formatting. Hang on, though - should we have a bigger catalogue? Whilst the normal G+DOS number of directory tracks is four, Beta DOS allows from four up to thirty-nine (using FORMAT dl 39). You'll see that this gives room for 780 files (now shown as 780 free slots on the Beta DOS catalogue) and 605K free. Each track takes 20 catalogue entries, slightly reducing free disc capacity. Care, mind, your old G+DOS doesn't know how to handle this nor can it allow the 10% or so increase in data transfer rate you get with Beta DOS formatted discs: only Beta DOS discs formatted with four directory tracks can be read by the old system and at the old speed. Right: now we're away....

So, grab a handful of valuable discs - here's one full of Tasword files - damn nuisance in G+DOS, wasn't it - wouldn't always copy opentype files properly. Do a SAVE dl "\*" to d2 "\*". Wow! Copies them all properly, no messing, and the speed... Beta DOS copies them all, opentype, microdrive, snapshot, anyoldshot. And it uses the space beyond the Basic rather than overwriting anything so it doesn't reset the Spectrum at the end. Everything is preserved. (Incidentally, FORMAT, too, now works similarly, instead of brazenly overwriting whatever you've got in RAM from 49152). SAVE OVER will now automatically overwrite existing files - especially useful for multipart programs or screens which you don't want corrupted with "Overwrite y/n".

CAT is extended and, cor, ainnitt quick! The speed increase here is very noticeable. CAT 1 works the same as before (with the additional info on file slots mentioned above). CAT (shades of the +3!) gives a short catalogue for the current drive, like

CAT 1! or CAT 2! in three columns (poke system variable to change it for 80 column printer output), alphabetically sorted. John Croghan (who also ran some tests, bless him) thought this feature wonderful, I hate it because I file Tasword files (like letters) chronologically on a subject disc (I'm pretty profligate with discs), so gasbrdlet2 comes way up the catalogue in last year's letters: gasbrdlet5 is at the bottom in this years complaints. John files willy nilly, and is glad of a sort program to come up with the name - I can never remember the name and so look for when it was written... Horses for courses. Fortunately you can poke another system variable to prevent this alphabetical sort, and clear instructions are included showing how to save your customised version to disc.

Conveniently, you can also send a sorted catalogue to a disc file: Andy Wright's example, as follows,

```
OPEN #6;d1"Cat1": CAT #6;1!: CLOSE #*6
```

is clear and has obvious implications in his new random access commands which I am dealing with below. Incidentally, however, he still has not been able to overcome the CLOSE # bug in the Spectrum ROM which can only be done in the add-on hardware, which is why it's O.K. in Interface 1 and the Discovery: there is no correcting hardware in the PLUS D.

LOAD @ and SAVE @ have been improved: the head delay bug that allowed a sector to be written before the disc had reached full speed is now corrected and multiple sectors are allowed - this means that 48K can now be saved in about three seconds. There is a special backup utility which copies all the files - Dr. Wright mentions that it uses the improved LOAD @ and SAVE @ commands and encourages you to look at it. If you are using a 128K machine, then it automatically uses the RAMdisc to minimise disc swapping - you have to alter line 40 to tell it you've got

two disc drives. The transfer speed is phenomenal: I used twin drives and it finished the 80K or so before I realised it, taking me unawares with timings of the order of a couple of seconds. Whilst we're on the utilities, a separate "squash" file is also provided (which compresses 48 and 128K snapshots) with information on how to incorporate it into the DOS. Space limitations in the PLUS D dictate that it overwrites many of the new DOS commands and it also must be there to unload a "squashed" snapshot, so its use is slightly limited.

So that's the old commands. Improved, faster CAT, with alphabetical and improved printer options, faster and improved FORMAT with higher rates of data transfer and, optionally expanded catalogue up to 780 files: improved reliable copy/transfer of all file types, better sector SAVE/LOAD with new backup and squash utilities. Quite a list, and this alone would be good value for less than ten quid, but it's the new commands which really give this DOS some edge.

Let's look at these now. This section of the instruction book gives the clearest account I've yet seen of streams and channels in relation to opentype files. It goes through the standard PLUS D syntax, opening and closing a file out to a disc, reading it back in and showing the structure of a file - IN and OUT are explained, both when explicitly stated and as defaults, and INKEY\$, INPUT and INPUT LINE are also explained: good stuff if you don't know exactly how these files worked. It then goes on to MOVE. MOVE was tardy on the Discovery, but worked - its action on the PLUS D was more restricted. In Beta DOS, it's fully implemented. As explained, the MOVE command reads a file, a character at a time, and writes it to another file or stream, so it's slower than the Beta DOS "SAVE TO". However, MOVE also enables you to add to a file (like the BEEB's OPENUP, or the Discovery's OPEN #5 EXP commands). This facility has been lacking for far too long - congratulations, Andy.

Even better is the new extension RND which allows you to open a random access file. Beware; RND acts as both IN and OUT in certain circumstances, although if you use it instead of OUT, it will automatically correct the G+DOS bug mentioned earlier in the sector write command which also occasionally occurs when writing opentype (serial) files. The snags and advantages of using RND in this way are fully documented. More, once you have opened a file using RND, you can easily jump to any record in a fixed length record file using the POINT command which follows the position of the file pointer, rather like the Discovery, again. You can open the file, read any record you choose, write to any record (amending it) and close it again. Big database users, Howzatt!

As well as moving the file pointer with POINT, you can read it's position with FN P (all the functions are given in a special little program on the master disc), so you can easily make a lookup table of the start of variable length records in a file. FN L gives file length - makes it easy to add records at the end of the file, and FN E is an end of file function. Even

this can be simplified, and Andy has added a wonderful extension to POINT - OVER. POINT #5,0 makes sure the file pointer is at the start of the file; OVER 1999 will then pass over 1999 carriage returns to point at the 2000th record - and these can be of as variable a length as you like. Wonderful!

Overall, this DOS is a pretty good deal. In the short time I've played with it, I could find no obvious bugs, though I gather that a large number of opentype Tasword+2 files gave someone a problem; hence version 1.1. It's still based on G+DOS with its deficiencies on the one hand, but it is upward (or is it downward?) compatibility on the other. The only programs that really suffer are those that play around in DOS (like some of Better Bytes') - overall, though, a much improved disc organiser should now be possible.

At less than ten quid, this represents super value, for it's the first really notable Spectrum disc improvement for some time. Available from:- Beta Soft, 24 Wyche Avenue, King's Heath, Birmingham, B14 6LQ.



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# YOUR LETTERS



Dear Editor,

I read in CRASH magazine that you are offering help to any SAM Coupé owners, I don't actually own a SAM, but there are a few questions I would like answering:-

Is PLUS D interface compatible with the SAM? Are PLUS D discs compatible with SAM? I know 128k games aren't compatible with the SAM, but will a 128k emulator be released? How do I connect my Citizen 120D printer to the SAM? If I buy the SAM will it have the most up-to-date ROM chip, DOS and spectrum emulator? Can the SNAPSHOT function on the SAM copy 48k software and SAM software, or is it just 48k software that it can copy? If the SNAPSHOT function can only copy 48k software to disc, is there any software available to copy SAM software to disc? Finally, there does not seem to be much software for the SAM at the moment. I know ENIGMA Variations are converting older titles, but will software houses like for instance OCEAN and DOMARK release SAM versions of Spectrum games, or will they just make the games SAM compatible?

I would be very grateful if you could answer these queries as th SAM seems to me to be an excellent machine, and I am thinking of purchasing one this Christmas.

Yours sincerely, Adam G.Ferrier.

Quite a lot there Adam so I will answer the questions in order and quickly. No. In some ways but not others. No. Buy the S.P.I. (see advert). Yes. Just 48k. No. And finally there is lots of software appearing now and most if it is new SAM titles not copies of old games, you will have to ask Ocean what they are doing but you will be pleased to hear Domark are working on SAM releases. Ed.

Dear Editor,

This is just a line of thanks for publishing "Bughunter" in the October issue of FORMAT. However there appears to be an error in the listing. The second address in line 110 should be 26255 NOT 26225 otherwise odd things happen on pressing (space). If a customised version Tasword+2 is saved then "Bughunter" must be run again as bughaunted Tasword+2 code is three bytes longer than the original and the last three bytes of the bughaunted code is not saved. This prevents the print file function from working.

Again many, many thanks for wonderful FORMAT.

Yours sincerely, Mike Bennett.

I've not been able to test out your fix to find out if it was our mistake or just a difference in your version of Tasword+2. There does appear to be several versions around and this caused the problem in the first place. Ed.

-----

Dear Editor,

I have been trying to get hold of a version 3 ROM and DOS for my SAM. Letters that I have written to SAMCO have not been answered, can you help?

Which printers around £120 £150 would you recommend to work with the S.P.I. INTERFACE as advertised on FORMAT.

I have written a KUNG FU MANAGER PROGRAM (TEXT ONLY) for SAM in BASIC would you like to see it?

The mag is great, but are there any members out there dabbling with the sound chip on SAM? Lets have some software.

Yours sincerely, Brian Halhead.

You don't say what address you use for SAM computers but, if you had sent off your guarantee card, they should

have written to you by now. Give them a ring on 0792-700300 and I'm sure they will help.

On the subject of printers there is an article coming from John Wase next month that should point you in the right direction.

And finally to the SAM sound chip - if anyone out there is doing something PLEASE contact me. I have had lots of requests for articles or programs to for SAM's excellent sound chip. Ed.

Dear Editor,

Here are some IDEAS for things I would like to see included in FORMAT.

1. PLUS D Snapshot data compression program. (a sort of Multiface emulator!)
2. PLUS D Recover utility.
3. A check disc utility/command.
4. Autoload program - can the Autoload program be made to load every time 'RUN' is entered, even if the disc operating system is present?
5. Autoload/Autoreset program - an EXECUTE file that, on pressing of the PLUS D's button will reset the spectrum's memory and reload the AUTOLOAD program off disc.
6. Time/Date program - an EXECUTE file that keeps track of the time and date (after entry) and brings it up on pressing the PLUS D's button or similar?
7. Menu program - to give a list of the contents of a disc and to allow the user to select a number according to his choice and then load that choice.
8. How can I alter a multiface BASIC loader saved on disc, so that on loading I can get another border colour apart from blue?
9. Using a multiface - how can I alter the save/load routines of a 'snapshot' programs - so they can read from disc? eg. multiloader games, utilities etc. - could an EXECUTE file in the PLUS D monitor, the activation of load/save routines and push data to disc?
10. Baud rates on the Spectrum - how to use them in connection with the PLUS D.
11. Graphics handling routines - ways of using the PLUS D for graphics eg. in animation etc.
12. Customizing of common utilities for use with the PLUS D eg. TASWORD, MINI OFFICE etc.
13. Reviews of utilities - with recommendations and ratings etc.
14. An article on the

most efficient form of 'fixer' - expansion socket multi-way adaptors - with recommendations! 15. Notes on which hardware clashes with the PLUS D and that which is compatible.

Yours sincerely, Tim Howard.

When I first received Tim's letter I just put it to one side making a mental note to pass it around a few of our writers sometime in the future. Then I looked at it again.

Now some items are a bit vague but there are still some good ideas in the list. However what did surprise me was how many items on the list have already been covered in past issues. Which just goes to show that a set of back issues of FORMAT would be a worthwhile investment to all readers who want to get the most from their machines. Ed.

Dear Editor,

I have noticed difficulty in obtaining solid 'Y' connectors for the PLUS D link up. As a matter of interest I too could not get one and have had to resort to using a two way ribbon edge connector. I connect the centre plug to the computer, one take off goes to the PLUS D, the other to an AMX mouse interface with the printer take off leading from the mouse interface to an Amstrad DMP 2000.

I have used this method both with a +3 and a standard +2 Spectrum for some time without any serious problems.

Yours sincerely, Basil Lankester.

Ribbon cables often give problems with devices like the PLUS D, the capacitance of the cable often causes signal distortion and failure. You are lucky, it is down to the particular Spectrum / interface / cable combination and others may find ribbon cables don't work for them. Bear in mind that the shorter the cable the more chance you have of success. Ed.

Letters may be shortened or edited to fit on these pages. Keep your letters as short as you can so we can fit in as many as possible.



# THOUGHT SPOT.

By:- Jeremy Cook.

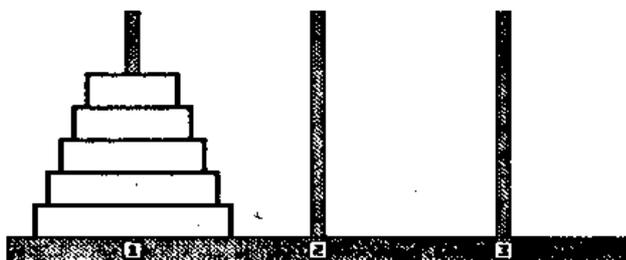
Welcome to this month's Thought Spot. As ever there is a selection of puzzles of various kinds with which you can exercise your brain muscles.

The regulars amongst you will not be surprised to learn that first we have the prize puzzle, where you can win a YEARS FREE SUBSCRIPTION to FORMAT! So, dunce caps off and down to business.

But before that I would like to apologise for a major mistake last month in the Scrabble puzzle. Sorry. Those of you who used a Scrabble board may have discovered that there were too many E's and H's, but not enough F's and M's. So replace the first H in the column containing "HETHOD" with M, and the second E in the column containing "SHELE" with F. I'm telling you now so that you can have another go before seeing the answer.

## PRIZE PUZZLE NO.5 - THE TOWER OF HANOI

This is often found as a children's toy with three pegs and several different sized discs which can slot over the pegs. The start position is as shown in the diagram, with all the discs arranged in increasing order of size on one peg. This is the tower.



All you have to do is move the tower to the peg on the right. To do this move one disc at a time, from the top of a pile, and place it over another peg, ensuring it never rests on a disc smaller than itself.

If you hadn't already guessed, what you have to do is write a short program to work out the moves. I shall expect a very simple display of the moves, though they need not be stored. Once you have completed that simple task you might like to experiment with different numbers of discs and pegs. Can your program be modified to cope? (this is not essential). After that send your program to the usual FORMAT address by Friday 1st Feb 1991 (Note that discs and cassettes will only be returned if an SAE is enclosed.)

Now on to those puzzles for which the only reward is the satisfaction of having completed them.

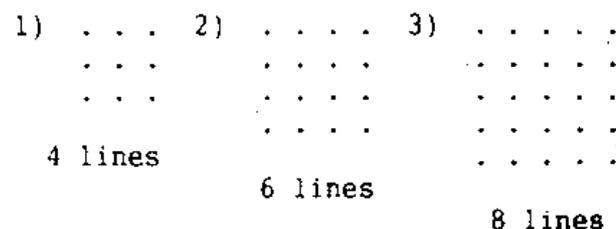
## REBUS

A rebus (also known as a Dingbat) uses pictures, numbers and letters to make words and sentences. For example "DDEE" represents "disease". Can you decipher these?



## DOT-TO-DOT

Without lifting your pencil from the page and without going over the same dot twice join the 9, 16 and 25 dots with 4, 6 and 8 straight lines respectively (or less if you can).



**HOMOPHONES**

Whatophones? I hear you ask. Homophones are words having the same sound but different meanings. For example, sail and sale; weather and whether. Below are some clues leading to pairs of homophones with numbers indicating the lengths of the words in the order clued. Once all the clues have been solved, take the initial letter from one word in each pair, and these letters should form half of yet another pair of homophones. The question is; what is that pair of homophones?

1. Suppress measuring device (6,6)
2. White bucket (4,4)
3. Small island walkway (4,5)
4. Consumed rowing crew (3,5)
5. Expensive animal (4,4)
6. Complete slum (5,4)
7. Deserve vase (4,3)
8. Lion sounds sore (4,3)

Sadly, another Thought Spot draws to a close. As the sun sets behind the clouded minds, I bid you all farewell. But if you would like to tell me how good you think my puzzles are, drop me a line via FORMAT.

- \* - \* - \* - \* -

**SOLUTIONS TO NOVEMBERS PUZZLES**

**Kickself:-**

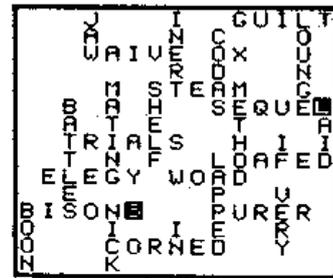
1. There is only one winner and the other 21084 players are knocked out in 21084 matches
2. 2 inches

**Lengthy Division:-**

```

          291
    =====
45 ) 13095
    90
    ==
    409
    409
    ---
      45
      45
      ==
  
```

**Scrabble Trouble:-**



\* : \* : \* : \* : \*

**PRIZE PUZZLE NO. 2**  
**WINNERS**

For this I received eight solutions from six people, all of which displayed all the arrangements for the 360 tiaras.

To tackle this problem I think one should investigate smaller numbers of holes and jewels first, and work up. For example:-

three holes and three jewels.

123	213	312
132	231	321

three holes four jewels

123	213	312	412
124	214	314	413
132	231	321	421
134	234	324	423
142	241	341	431
143	243	342	432

and so on...

It is easy to see that there is a pattern to these, but what is the pattern? - it is not so easy to see. But it is possible to fill in some gaps. For example:-

three holes and three jewels (> marks numbers from above list)

111	131	221	311
112	>132	222	.
113	133	223	.
121	211	>231	.
122	212	232	etc
>123	>213	233	

Now it is clearer: nested loops excluding the arrangements with more

than one of any jewel. Note that this is only one way of doing it - there are others. Also note that this is only one way of looking at the problem (books are often useful sources of how to do a problem). Having worked out a method, we move on to the easy task (it often is in comparison) of writing the program.

Most entries used nested FOR NEXT loops in their programs. There was however some variation in the way the invalid arrangements were excluded.

Eloi Gil, Lars Jermius, D.A.Lorner (whose SAM graphics were very effective), and Alan Cox all used OR to make sure there were no two jewels the same. Here is Lars Jermius's program (with minor output mods).

```

10 LET a$="ADERST"
20 LET count=0
30 FOR a=1 TO 6
40 FOR b=1 TO 6
50 FOR c=1 TO 6
60 FOR d=1 TO 6
70 IF a=b OR a=c OR a=d OR b=c OR b
=d OR c=d THEN GO TO 100
80 LET count=count+1
90 PRINT a$(a);a$(b);a$(c);a$(d)
100 NEXT d
110 NEXT c
120 NEXT b
130 NEXT a
140 PRINT "HE NEEDS TO DO ";count;"
TIARAS."

```

H.Griffiths and Alan Cox (with a second program) used different sized loops. To exclude unwanted arrangements they used string splicing to remove jewels from the set. So to start with there is a choice of six jewels. One is used and is removed from the set so it can't be used again. Now there's five to choose from. One of these is used and removed from the set, leaving four. And so on. H.Griffiths' program is slightly neater:

```

20 REM Permutations=6*5*4*3=360
30 REM "A"=amethyst,"D"=diamond,etc.
100 LET w$="ADERST"
110 FOR a=1 TO 6: FOR b=1 TO 5
120 FOR c=1 TO 4: FOR d=1 TO 3
130 PRINT w$(a);

```

```

140 LET x$=(w$( TO a-1) AND a>1)+w$(a
+1 TO )
150 PRINT x$(b);
160 LET y$=(x$( TO b-1) AND b>1)+x$(b
+1 TO )
170 PRINT y$(c);
180 LET z$=(y$( TO c-1) AND c>1)+y$(c
+1 TO )
190 PRINT z$(d);" ";
200 NEXT d: NEXT c: NEXT b: NEXT a

```

Jack Bettidge solved the more general problem of permutations (ie. arrangements) of any number of items from a given set. Unfortunately it is too long to print this time (although not very long), but I will try to print it in a future issue.

For you lucky people with SAM/Beta BASIC, Eloi Gil included a second program, which uses a procedure and recursion. Recursion is where a procedure repeatedly calls itself until it finds a condition that allows it to repeatedly exit from the layers of procedure calls until it reaches the first call and the program ends. Recursion can be quite difficult to understand, so don't worry if you can't.

Eloi's program is very powerful because it can do exactly the same as Jack Bettridge's, but is shorter and quicker. The jewels are in a\$, and the number of holes is the parameter of the procedure "tiara". This is slightly changed from the Beta BASIC version but is fundamentally the same:

```

10 LET a$="ADERST",b$="",
20 LET n=0,b=0
30 tiara 4
40 PRINT 'n;" tiaras"
100 DEF PROC tiara h
110 LOCAL x
120 FOR x=1 TO LEN a$
130 IF INSTR(b$,a$(x)) THEN GO TO.5
140 LET b$=b$+a$(x)
150 IF h>1 THEN tiara h-1
160 ELSE LET n=n+1,b=(b=0)
170 PRINT BRIGHT b;b$
180 LET b$=B$( TO LEN b$-1)
190 NEXT x
200 END PROC

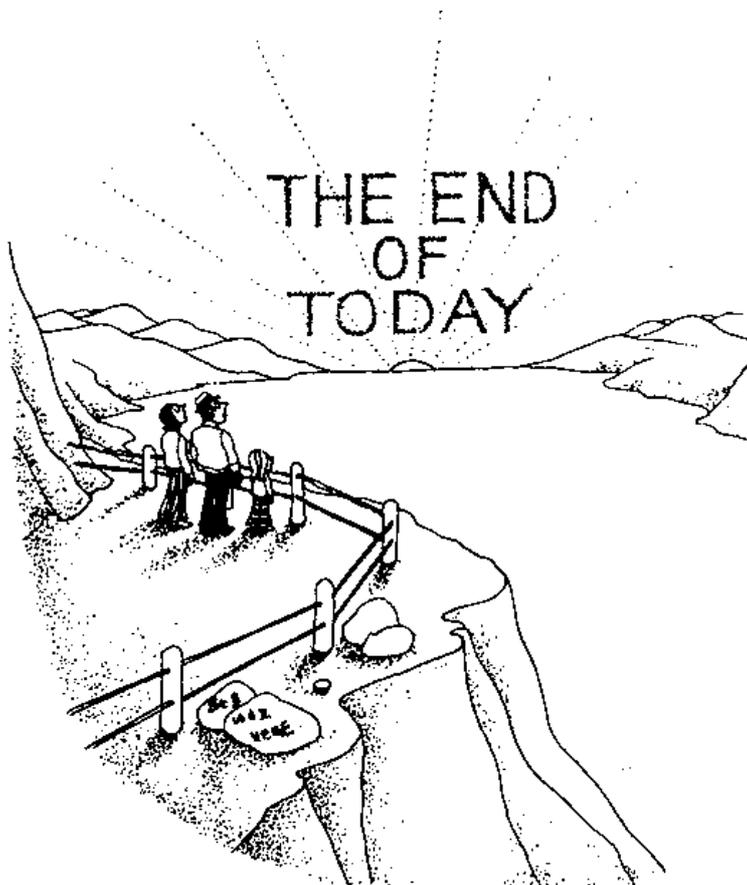
```

The alternating brightness produces

a striped display which is apparently patriotic for a catalan like Eloi. I have to say that I liked this program quite a lot, and have decided to award Eloi with the years subscription to FORMAT (remember to claim it next time your renewal is due Eloi). His program stood out from the rest, and I know that there are others with SAMs and Beta BASIC who gave the simple solutions above.

I hope that helped some of you with this and other problems. Keep solutions and letters coming in. See you next month, perhaps.

P.S. It will always help me if you can send your solutions on tape or disc because typing in several programs is very time consuming and prone to errors. Note that I will only return discs and tapes if a stamped addressed envelope is included.



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# XMASLIST



By:- G.H.Stevens.

XMASLIST had its origins in a touch of domestic strife last Christmas when my wife objected to addressing all the Christmas card envelopes as well as signing all the cards. It struck me that the Spectrum could well help take the strain. It has taken me some time and the program is still in a somewhat rudimentary state but it does work.

The original aim was to establish a set of records of all our friends who receive Christmas cards and a means of printing out a sticky label for each of them. I soon decided to add additional functions so that as well as entering and amending records I could look up telephone numbers and compile partial lists for use other than for Christmas cards. I also added a quick way to make a copy of the address file.

Each DISCiPLE or PLUS D disc sector will take 6 records of 85 bytes as well as the 2 bytes to link to the next sector. The program reserves the last 5 tracks on a disc for the address file by appropriate use of track 3, sector 10. This is accomplished in the subroutine at line 9600. The address file is, in fact, set up as a normal code file but it is retrieved sector by sector.

Each record is structured with the first byte coding for inclusion in the Xmas list or not. The next byte codes for the title of the addressee. (The list of titles I need is at line 9820 but may need adapting by other users.) The last byte codes for the country of the addressee. In between there seems to be plenty of space for name, address and telephone number; I have only once had to go through the abbreviation loop at line 1189. The symbols "\*" and "#" are used to mark the space used for the telephone number. This helps in reconstructing

the label for display on the screen or for printing.

With each country code I have associated the English name, the French name and the telephone code of the country as dialled from France (where I live). Obviously changes would be needed in lines 9890, 9940 and 9840 to suit other users' circumstances.

When it comes to printing, a little experimenting will be required to set the repeat distance and margin to suit the stationery in use. The subroutine at line 7790 allows for this. The program has three printing modes. In the first it prints all the records with first byte set at 1. The other two modes allow for printing a sub-set of the records using a list formed either by looking through the complete address list in sequence or by picking out individuals at random. There is also provision to restart from the list (either the complete file or the sub-set) should anything go wrong in the middle of printing.

Although it works, the program is still in a somewhat crude state. I have not, for example, mastered the colour attributes when printing out various menus but, as the French say, "Tant pis!" I have in mind an attempt to optimise the sequence of subroutines and I shall certainly modify the search subroutine so that, for example, I can look up two or more "Stevens" in sequence when my first search fishes out an uncle rather than a cousin or an aunt. I am also looking into compressing the program so that I can load the whole of the address file into my 48K Spectrum+ and thus speed up the searches. For example, I might load the machine code over a slightly extended initial REM command and use the Printer buffer for temporary

storage of the parameters needed during a search. That way I might achieve a tolerably high limit on the number of records I can handle.

```

1 REM **LABEL AND LOOKUP PROGRAM**
2 REM **BY G.H.STEVENS. 27/10/90**
3 BORDER 3: PAPER 1: INK 7
5 CLEAR 50000
8 DIM V(50): DIM QS(14,8): DIM TS(1
0,13): DIM LS(14,16): DIM MS(6,11
): DIM PS(4,15): DIM HS(85): DIM
FS(14,15)
10 PRINT FLASH 1;"SETTING-UP TABLES
";AT 4,1;"ENSURE CAPS LOCK IS ON"
15 GOSUB 9800
20 PRINT AT 4,10; INK 0; INVERSE 1;"
Main Menu "
40 FOR f=1 TO 6
50 PRINT AT 4+f,10; PAPER 6; INK 0;M
$(f)
60 NEXT f
80 LET f=11: LET g=7: LET m=1.
85 GOSUB 9200
90 GOSUB m*1000
93 IF index=1 THEN CLS : PRINT "IS D
ISC LOADED AND WRITE ENABLED?";AT
2,1;"ANY KEY CONTINUES": PAUSE 0
: GOSUB 9600
95 INK 7: BORDER 3: PAPER 1: CLS
100 GOTO 20
999 REM ***ENTER SEQUENCE*****
1000 LET index=1
1005 BORDER 5: CLS
1010 LOAD @1,3,10,64000
1020 LET lstrec=1+256*PEEK 64446+PEEK
64447
1030 LET NXTRK=75+INT ((lstrec-1)/60)
1040 LET NXSEC=1+INT ((lstrec-1-60*(NX
TRK-75))/6)
1050 LET NXBYT=64000+85*(lstrec-1-60*(
NXTRK-75)-6*(NXSEC-1))
1060 PAPER 1: INK 6: CLS : IF amend=1
THEN GOTO 1070
1065 LET recno=lstrec
1070 PRINT AT 4,10; INVERSE 1;" TITL
ES "
1090 FOR f=1 TO 10: PRINT PAPER 6; IN
K 0;AT 4+f,10;TS(f): NEXT f
1130 LET f=13: LET g=11: LET m=1: GOSU
B 9200
1135 LET tit=m
1137 PAPER 5: INPUT "Name (including i
nitials) ";n$: PAPER 4
1140 CLS : INPUT "Address (putting com
mas at line ends) ";a$
1150 FOR f=1 TO LEN a$
1160 IF a$(f)="," THEN LET a$(f)=CHR$
10
1170 NEXT f
1172 PAPER 0: CLS : PRINT AT 4,10; INK
6; INVERSE 1;" COUNTRY " :
FOR f=1 TO 14: PRINT INVERSE 0;
AT 4+f,10;LS(f): NEXT f: LET f=16
: LET g=15: LET m=1: GOSUB 9200
1174 LET Z=m
1176 PAPER 3: INK 1: CLS
1180 INPUT "Telephone no. (max 11 char
s)";C$
1185 LET check=LEN n$+LEN a$+LEN C$
1187 IF check<81 THEN GOTO 1190
1189 PRINT #1; FLASH 1;"Too many chara
cters; try to abbreviate!": PAUSE
200: INK 6: CLS : GOTO 1137
1190 PAPER 2: INK 4: INPUT "ON XMAS LI
ST? (Y/N)";i$
1200 IF i$<>"n" AND i$<>"N" AND i$<>"y
" AND i$<>"Y" THEN GOTO 1190
1205 LET x$="n"
1210 IF i$="y" OR i$="Y" THEN LET x$="
y"
1260 GOSUB 9400
1270 INPUT "Is this correct? (y/n)";i$
1280 IF i$<>"n" AND i$<>"N" AND i$<>"y
" AND i$<>"Y" THEN GOTO 1270
1290 IF i$<>"y" AND i$<>"Y" THEN GOTO
1060
1300 IF NXBYT<>64425 THEN GOTO 1308
1305 LET FLAG=1: REM set flag if this
is last record on sector
1308 IF amend=1 THEN GOSUB 8007: GOTO
1318
1310 GOSUB 8000
1318 IF amend=1 THEN RETURN
1320 INPUT "Any more entries? (y/n) ";
i$
1330 IF i$<>"n" AND i$<>"y" AND i$<>"N
" AND i$<>"Y" THEN GOTO 1320
1340 IF i$="y" OR i$="Y" THEN GOTO 103
0
1360 RETURN
1999 REM ***AMEND SEQUENCE*****
2000 BORDER 6: PAPER 4: INK 2: CLS : I
F codein=0 THEN GOSUB 5010
2010 GOSUB 5200: GOSUB 5700: PAPER 6:
INK 0: CLS : GOSUB 5500: GOSUB 94
70: LET amend=1: GOSUB 1270: LET
amend=0: RETURN
2999 REM ***LOOK-UP SEQUENCE****
3000 BORDER 4: PAPER 4: INK 2: CLS : I
F codein=0 THEN GOSUB 5010
3010 GOSUB 5200
3020 GOSUB 5700: PAPER 6: INK 0: CLS :
GOSUB 5500: GOSUB 9470: GOSUB 54
10
3030 IF IS="Y" OR I$="y" THEN GOTO 302

```

```

0
3050 RETURN
3999 REM ***PRINT SEQUENCE*****
4000 BORDER 1: PAPER 5: INK 0: CLS
4010 PRINT AT 4,10; INVERSE 1;" PRINT
    OPTIONS "
4020 RESTORE 9980
4030 FOR f=1 TO 4
4040 READ P$(f): PRINT PAPER 6; INVER
    SE 0;AT 4+f,10;P$(f)
4050 NEXT f
4060 LET m=1: LET f=15: LET g=5
4070 GOSUB 9200
4072 PAPER 5: IF m=4 THEN GOTO 4250
4075 INPUT INVERSE 1;"NUMBER OF FIRST
    RECORD? ";NUM
4077 LOAD @1,3,10,64000: LET lstrec=25
    6*PEEK 64446+PEEK 64447
4078 CLS : PRINT "Highest record numbe
    r is ";lstrec;AT 2,1;"Any key to
    continue": PAUSE 0
4080 IF m<>1 THEN GOTO 4160
4085 PAPER 2: INK 7: CLS
4090 GOSUB 7750
4095 GOSUB 7840
4100 GOSUB 7870: GOSUB 5700
4110 IF PEEK NXBYT=1 THEN GOSUB 5540:
    GOSUB 8300
4120 LET NUM=NUM+1
4130 IF NUM=lstrec+1 THEN RETURN
4140 IF NXBYT=64425 THEN GOTO 4095
4150 GOTO 4100
4160 PAPER 7: INK 1: CLS : LET l=1: IF
    m<>2 THEN GOTO 4200
4170 IF codein=0 THEN GOSUB 5010
4180 GOSUB 5200: GOSUB 5700: CLS : GOS
    UB 5500: GOSUB 9470: LET last=0:
    GOSUB 7500: IF last=0 THEN GOTO 4
    180
4190 GOSUB 7750: LET NUM=1: GOSUB 7950
    : RETURN
4200 INK 0: IF m<>3 THEN GOTO 4250
4210 GOSUB 7840
4220 GOSUB 7870: GOSUB 5700: CLS : GOS
    UB 5500: LET recno=NUM: GOSUB 947
    0: LET last=0: GOSUB 7500: IF las
    t<>0 THEN GOSUB 4190: RETURN
4222 IF NUM<>lstrec THEN GOTO 4230
4223 LET last=l-1
4225 PRINT #1; FLASH 1;"NO MORE RECORD
    S! ANY KEY PRINTS": PAUSE 0
4227 GOSUB 4190: RETURN
4230 LET NUM=NUM+1: IF NXBYT=64425 THE
    N GOTO 4210
4240 GOTO 4220
4250 INK 2: INPUT "RESTART PRINTING AT
    SEQUENCE NUMBER ?";NUM
4260 INPUT "TOTAL NUMBER OF LABELS ?";
    last
4270 GOSUB 7790: GOSUB 7950: RETURN
4299 REM ***COPY FILE S/R*****
4300 BORDER 0: PAPER 6: INK 0: CLS : C
    LEAR 38000
4310 PRINT AT 1,1;"IS MASTER DISC INS
    ERTED?";AT 3,1;" ANY KEY CONTINUE
    S": PAUSE 0
4320 LOAD @1,3,10,64000
4330 LET lstrec=(PEEK 64447+256*PEEK 6
    4446)
4340 LET TK=75: LET SEC=1
4350 FOR f=0 TO 4
4360 FOR g=0 TO 9
4370 LOAD @1,(TK+f),(SEC+g),38400+512*
    g+5120*f
4380 IF (60*f+6*g)>=lstrec THEN GOTO 4
    430
4390 NEXT g
4400 NEXT f
4430 PAPER 0: INK 6: CLS
4440 PRINT AT 1,1;"REMOVE MASTER,";AT
    2,1;" INSERT BACK-UP DISC";AT 3,1
    ;"ANY KEY CONTINUES": PAUSE 0
4460 FOR f=0 TO 4
4470 FOR g=0 TO 9
4480 SAVE @1,(TK+f),(SEC+g),38400+512*
    g+5120*f
4485 IF (60*f+6*g)>=lstrec THEN GOTO 4
    510
4490 NEXT g
4500 NEXT f
4510 SAVE @1,3,10,64000
4520 LET codein=0: CLEAR 50000
4530 GOTO 8
4999 REM ***COPY FILE SQUENCE***
5000 GOSUB 4300: RETURN
5009 REM ***LOAD SEARCH M/C S/R*
5010 RESTORE 5060
5020 FOR f=1 TO 80
5030 READ n
5040 POKE 65000+f,n
5050 NEXT f
5060 DATA 33,0,250,58,0,252,95
5070 DATA 221,33,3,252,1,254,251
5080 DATA 213,229,229,209,197,225,167
5090 DATA 237,82,68,77,225,209
5100 DATA 221,126,0,237,177,32,42,229
5110 DATA 62,1,187,40,14,221,35
5120 DATA 29,221,126,0,190,35,40,241
5130 DATA 225,35,24,205,225,17,1,250
5140 DATA 167,237,82,17,85,0,62,0,60,2
    37,82,242,43,254
5150 DATA 6,0,79,201,1,0,0,201
5180 LET codein=1
5190 RETURN
5199 REM ***SEARCH S/R*****
5200 LET NXTRK=75

```

```

5210 LET NXSEC=1
5220 INPUT "WHAT KEY? ";K$
5225 LOAD @1,NXTRK,NXSEC,64000
5230 POKE 64512,LEN K$
5240 FOR f=1 TO LEN K$
5250 POKE 64514+f,CODE K$(f)
5260 NEXT f
5265 CLS
5270 PRINT FLASH 1;AT 10,10;"SEARCHIN
G"
5280 LET A=USR 65001
5290 IF A=0 THEN GOTO 5320
5300 LET NXBYT=64000+(A-1)*85
5305 LET recno=A+6*(NXSEC-1)+60*(NXTRK
-75)
5310 RETURN
5320 LET NXSEC=NXSEC+1
5330 IF NXSEC<11 THEN GOTO 5225
5340 IF PEEK 64510=0 THEN GOTO 5400
5350 LET NXTRK=NXTRK+1
5360 LET NXSEC=1
5370 GOTO 5225
5400 CL$ : PRINT FLASH 1;AT 5,5;"NO M
ATCHING RECORD!"
5410 PRINT #0; FLASH 0;"PRESS ANY KEY
TO CONTINUE"
5420 PAUSE 0
5425 PAPER 5: CLS
5430 PRINT AT 10,5;"DO YOU WANT TO TRY
ANOTHER KEY? (Y/N)"
5440 IF INKEY$<>"N" AND INKEY$<>"n" AN
D INKEY$<>"y" AND INKEY$<>"Y" THE
N GOTO 5430
5445 LET I$=INKEY$
5450 IF INKEY$="Y" OR INKEY$="y" THEN
GOTO 5200
5460 RETURN
5499 REM ***CREATE DISPLAY S/R**
5500 FOR f=w+1 TO 82
5510 IF h$(f)="#" THEN GOTO 5530
5520 NEXT f
5530 LET C$=h$((w+1) TO (f-1))
5540 LET tit=PEEK (NXBYT+1)
5545 IF tit=10 THEN LET u$=CHR$ 10: GO
TO 5590
5550 LET u$=T$(tit)
5555 FOR f=12 TO 1 STEP -1
5560 IF u$(f)<>CHR$ 32 THEN GOTO 5580
5570 NEXT f
5580 LET u$=u$(2 TO f)+" "
5590 FOR f=1 TO 82
5600 IF h$(f)=CHR$ 10 THEN GOTO 5620
5610 NEXT f
5620 LET n$=h$( TO (f-1))
5625 LET n$=u$+n$
5630 LET a$=h$((f+1) TO (w-1))
5640 LET x$="n"
5645 IF PEEK NXBYT=1 THEN LET x$="y"
5650 LET Z=PEEK (NXBYT+84)
5655 PRINT AT 6,7;
5660 RETURN
5699 REM ***CREATE h$ S/R ***
5700 FOR f=1 TO 82
5710 LET h$(f)=CHR$ (PEEK (NXBYT+1+f))
5720 NEXT f
5730 FOR f=82 TO 3 STEP -1
5740 IF h$(f)="*" THEN GOTO 5760
5750 NEXT f
5760 LET w=f
5770 RETURN
5999 REM ***EXIT SEQUENCE*****
6000 BORDER 2: PAPER 2: INK 7: CLS
6015 IF index=1 THEN GOSUB 9600
6020 STOP
7499 REM ***MAKE LIST S/R*****
7500 INPUT "PRINT THIS LABEL? (Y/N) ";
i$
7510 IF i$<>"Y" AND i$<>"y" AND i$<>"n
" AND i$<>"N" THEN GOTO 7500
7520 IF i$="n" OR i$="N" THEN GOTO 755
0
7530 LET V(1)=recno: LET l=1+1
7550 INPUT "ANY MORE LABELS? (Y/N) ";i
$
7560 IF i$<>"Y" AND i$<>"N" AND i$<>"y
" AND i$<>"n" THEN GOTO 7550
7565 IF i$="Y" OR i$="y" THEN GOTO 759
0
7570 LET last=l-1
7580 PRINT AT 4,5;"TOTAL NO. OF LABELS
IS ";last
7590 RETURN
7749 REM ***SET UP PRINTER S/R**
7750 CLS
7780 LPRINT CHR$ 27;"R";CHR$ 0
7790 INPUT INVERSE 1;"HOW MANY LINES
BETWEEN LABELS? ";skip
7800 INPUT INVERSE 1;"WHAT MARGIN? ";
g
7806 LPRINT CHR$ 27;CHR$ 108;CHR$ g
7810 CLS : PRINT AT 2,5; INVERSE 1;"SE
T FIRST LABEL AT CORRECT POINT IN
PRINTER";AT 5,5;"PRESS ANY KEY T
O CONTINUE"
7820 PAUSE 0: CLS
7830 RETURN
7839 REM ***SELECT SECTOR S/R***
7840 LET NXTRK=75+INT ((NUM-1)/60)
7850 LET NXSEC=1+INT ((NUM-1-60*(NXTRK
-75))/6)
7860 LOAD @1,NXTRK,NXSEC,64000: RETURN
7869 REM ***SELECT RECORD S/R***
7870 LET NXBYT=64000+85*(NUM-1-60*(NXT
RK-75)-6*(NXSEC-1))
7873 RETURN
7949 REM ***EXTRACT LIST S/R****

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```

7950 PRINT #1;"LAST NUMBER IN LIST IS
";last
7955 LET REC=V(NUM)
7960 LET NXTRK=75+INT ((REC-1)/60)
7970 LET NXSEC=1+INT ((REC-1-60*(NXTRK
-75))/6)
7980 LOAD @1,NXTRK,NXSEC,64000
7985 LET NXBYT=64000+85*(REC-1-60*(NXT
RK-75)-6*(NXSEC-1))
7987 GOSUB 5700: GOSUB 5540: GOSUB 830
0
7989 IF NUM=last THEN RETURN
7990 LET NUM=NUM+1
7991 LET RECI=V(NUM)
7993 IF INT ((RECI-1)/6)=INT ((REC-1)/
6) THEN LET REC=RECI: GOTO 7985
7995 GOTO 7955
7999 REM ***SAVE RECORD S/R*****
8000 LOAD @1,NXTRK,NXSEC,64000
8005 FOR f=NXBYT TO (NXBYT+84): POKE N
XBYT,0: NEXT f
8010 IF x$="y" THEN POKE NXBYT,1
8020 POKE NXBYT+1,tit: REM Title code
8030 FOR f=1 TO LEN r$: REM r$ include
s "*" to separate tel. no.
8040 POKE NXBYT+1+f,CODE r$(f)
8050 NEXT f
8060 FOR f=1 TO LEN C$
8070 POKE NXBYT+1+LEN r$+f,CODE CS(f)
8080 NEXT f
8090 IF (2+LEN r$+LEN C$)>=83 THEN GOT
O 8120
8100 LET point=NXBYT+2+LEN r$+LEN C$
8110 POKE point,CODE "#": REM # marks
end of telno.
8115 FOR f=point+1 TO NXBYT+83: POKE f
,0: NEXT f
8120 POKE NXBYT+84,Z
8130 IF FLAG<>1 THEN GOTO 8170
8140 LET NS=(NXSEC=10)+(NXSEC<>10)*(NX
SEC+1)
8150 LET NT=NXTRK+(NXSEC=10)
8160 POKE 64510,NT: POKE 64511,NS
8170 SAVE @1,NXTRK,NXSEC,64000
8180 LET lstrec=lstrec+1
8190 LET FLAG=0
8200 RETURN
8299 REM ***PRINTOUT S/R*****
8300 PRINT AT 5,1;"If printer malfunct
ions then 'BREAK' followed by '
GOTO 4000' when ready"
8301 LPRINT n$;CHR$ 10;a$;CHR$ 10;CHR$
10;FS(Z)
8302 LET lines=3
8304 FOR f=1 TO 82
8305 IF h$(f)=CHR$ 10 THEN LET lines=1
ines+1
8306 NEXT f
8310 FOR f=1 TO skip-lines
8320 LPRINT CHR$ 10
8330 NEXT f
8340 PRINT AT 1,1;"SEQUENCE NO. OF PRI
NTED LABEL IS ";NUM
8360 RETURN
9199 REM ***MENU SUBROUTINE*****
9200 PLOT 80,143
9210 DRAW 8*f,0: DRAW 0,-8*g: DRAW -8*
f,0: DRAW 0,8*g
9215 LET p=4+m
9220 PRINT PAPER 5; INK 0; BRIGHT 1;
OVER 1;AT p,10;s$( TO f)
9225 PAUSE 0
9230 LET i$=INKEY$: IF i$=CHR$ 13 THEN
RETURN
9235 PRINT INK 0; PAPER 6; OVER 1;AT
p,10;s$( TO f)
9240 IF i$<>CHR$ 11 AND i$<>CHR$ 10 TH
EN GOTO 9230
9250 LET m=m+(i$=CHR$ 10)-(i$=CHR$ 11)
9260 IF m=0 THEN LET m=g-1
9270 IF m=g THEN LET m=1
9280 GOTO 9215
9399 REM ***DISPLAY S/R*****
9400 PAPER 6: INK 0: CLS
9410 IF tit=10 THEN LET r$="": GOTO 94
60
9415 LET u$=T$(tit)
9420 FOR f=12 TO 1 STEP -1
9430 IF u$(f)<>CHR$ 32 THEN GOTO 9450
9440 NEXT f
9450 LET r$=u$(2 TO f)+" "
9460 PRINT AT 6,7;r$;
9470 LET r$=n$+CHR$ 10+a$+"*"
9480 FOR f=1 TO (LEN r$-1)
9490 IF r$(f)=CHR$ 10 THEN PRINT : PRI
NT TAB 7;; GOTO 9510
9500 PRINT r$(f);
9510 NEXT f
9515 PRINT AT 13,10;L$(Z)
9520 PRINT AT 15,10;"Telephone number
";AT 16,6;QS(Z)+"-"+C$
9525 PRINT AT 4,10;"Record Number ";re
cno
9530 IF x$="y" THEN PRINT AT 1,10;"On
Xmas List"
9540 RETURN
9599 REM ***SAVE INDEX S/R*****
9600 LOAD @1,3,10,64000
9610 POKE 64256,4: REM PSEUDO-CODE FIL
E
9632 LET a$="ADDRESS_D"
9634 FOR f=1 TO 9
9636 POKE (64256+f),CODE a$(f)
9638 NEXT f
9640 POKE 64266,32
9650 POKE 64268,50: REM NO. OF SECTORS

```

```

9660 POKE 64269,75: REM START TRACK
9670 POKE 64270,1: REM START SECTOR
9680 POKE 64359,192: REM THE NEXT 4 LI
      NES GIVE THE SECTOR MAP
9690 FOR f=1 TO 6
9700 POKE (64359+f),255
9710 NEXT f
9720 LET f=INT (lstrec/256): REM STORE
      LAST RECORD NO., HIGH BYTE FIRST
9725 POKE 64446,f
9730 LET g=lstrec-256*INT (lstrec/256)
9735 POKE 64447,g
9740 POKE 64467,4
9750 POKE 64469,100: REM FILE LENGTH
9760 POKE 64471,150: REM START ADDRESS
9770 SAVE @1,3,10,64000
9775 LET index=0
9780 RETURN
9799 REM ***STE UP TABLE S/R****
9800 RESTORE 9820
9810 FOR f=1 TO 10: READ TS(f): NEXT f
9820 DATA " Mr.", " Mrs.", " Miss", " Ms.
      ", " Mr. & Mrs.", " Dr.", " Dr. & Mr
      s.", " Professor", " Prof. & Mrs.", "
      Organisation"
9830 RESTORE 9840
9835 FOR f=1 TO 14: READ QS(f): NEXT f
9840 DATA "(19.44)", "(19.44)", "(19.1)"
      , "(19.1)", " ", "(19.44)", "(19.44)"
      , "(19.49)", "(19.852)", "(19.42)", "
      (19.31)", "(19.61)", "(19.43)", " "
9850 RESTORE 9890
9860 FOR f=1 TO 14
9870 READ LS(f)
9880 NEXT f
9890 DATA " ENGLAND", " SCOTLAND", " U.S
      .A.", " CANADA", " FRANCE", " GREAT
      BRITAIN", " CHANNEL ISLANDS", " F.R
      .GERMANY", " HONG KONG", " CZECHOSL
      OVAKIA ", " NETHERLANDS", " AUSTRAL
      IA", " AUSTRIA", " "
9900 RESTORE 9940
9910 FOR f=1 TO 14
9920 READ FS(f)
9930 NEXT f
9940 DATA " ANGLETERRE", " ECOSSE", " ETATS
      UNIS", " CANADA", " ", " GRANDE BRETA
      GNE", " ILES DE MANCHE", " R.F.ALLEMA
      GNE", " HONG KONG", " TCHECOSLOVAQUIE
      ", " PAYS BAS", " AUSTRALIE", " AUTRICH
      E", " "
9950 RESTORE 9970
9960 FOR f=1 TO 6: READ MS(f): NEXT f
9970 DATA " ENTER", " AMEND", " LOOK-UP"
      , " PRINT", " COPY FILE", " EXIT"
9980 DATA " XMAS LIST", " SELECT RANDOM
      ", " SELECT SEQ'L", " RESTART PRINT
      "
9990 CLS
9993 LET FLAG=0: LET codein=0: LET ind
      ex=0: LET amend=0: LET x$="n"
9994 LET lstrec=1: LET NXBYT=0: LET NX
      TRK=0: LET NXSEC=0
9997 LET s$="
      "
9999 RETURN

```

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# ◀ CROSSWORD ▶

This is the time of year when you can sit back, put your feet up, and relax in front of a nice fire. As such it often requires just that little too much effort to get out of you chair and switch on your computer.

clues but we can confirm there are no mistakes in the crossword itself. We will publish the answers in the January issue of **FORMAT**.

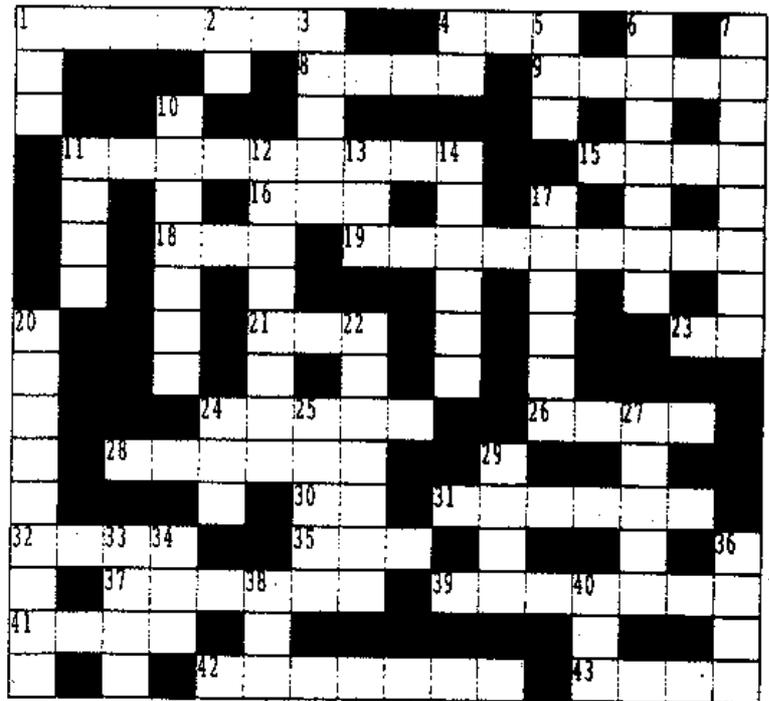
Have fun.

Well **FORMAT** to the rescue with something to keep you in the computer mood but still in your arm chair. A seasonal crossword. Each answer is either Christmas or Computer related - though some only just.

My thanks to Ray Hoy for producing the crossword.

Ray has said that if readers like the crossword he may be prepared to do one for **FORMAT** on a regular basic. So if you like the idea why not write in and tell us.

The clues are given at the bottom of the page. Sorry for the odd spelling mistake in the



## ACROSS

1. SEASONAL GATHERINGS
4. GLIDE ACROSS SNOW
8. EDIBLE TUBEROUS ROOT
9. FOUND IN CRACKERS
11. SEE 11 DOWN
15. EXCURSION
16. VEGETABLE
18. SEND FOR QUICK REPLY (AB
19. LASTING WAVES
21. LABEL
23. TO SHOW ALTERNATIVES
24. SOLDIER'S JACKET
26. CHRISTMAS
28. WAIT FOR THIS MONTHLY
30. UN-NAMED OBJECT
31. HOUSES HAVE THESE
32. GAIN ACCESS
35. ANIMAL DOCTOR
37. MAIN MEAL OF THE DAY
39. A TIME TO HAVE A PARTY
41. A SINGLE QUANTITY
42. PLEASING TO THE EYE
43. PUT THING AWAY FOR LATER

## DOWN

1. MINCE FOR EXAMPLE
2. HARDWARE ABBREVIATION
3. TEXAS IS ONE OF THESE
4. -- WHAT
5. MISCHIEVOUS CHILD
6. FAIRY TALES
7. MEMORY MACHINE
10. GIFT
11. SEASONAL SWEET TREAT
12. COLOURS OF THE RAINBOW
13. --- READING
14. SHIELD/WE SEE A LOT OF
17. CLOSE RELATIONS
20. COMPLETE LIST OF ITEMS
22. SOME DECORATIONS DO THIS.
24. DOING ONE'S BEST
25. LACK OF WOULDLY WISDOM
27. NOT SECURE
29. FERMENTED GRAP JUICE
33. ALTER LINE IN PROGRAM
34. A PARASITIC INSECT
36. BIG HOUSE PLANT AT XMAS
38. NEITHER
40. NOT TO REFUSE/ TO AGREE

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*Carol Brooksbank.*  
FORMAT Aug. 1990

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# MONEY

# MANAGER

By:- Carol Brooksbank.

From now on, we will take it for granted that you will load "MANAGER" each month, add the listings in this month's article, enter CLEAR as a direct command, and save the new version of "MANAGER". Later on you will be able to RUN and try out parts of it, but for the moment it will not be useable. Eventually, when this very long main program is complete, we will put it together with the loading program we wrote in the first month, to make the full working program. This month we begin with some more procedures.

```
10150 DEF PROC findate
10155   LOCAL D$
        LOCAL X
10160   LET D$=STR$ D
10165   IF LEN D$=1 THEN LET D$="0"+D$
10170   LET A$=A$+D$,G$="Z"
10175   FOR X=1 TO 365
10180     IF CAL$(X,1 TO 5)=A$ THEN LET G=X,G$=CAL$(X)
        GO TO 10200
10185   NEXT X
10190   IF G$<>"Z" THEN GO TO 10200
10195   CLS
        PRINT "You have entered the date incorrectly"
        POKE SVAR 618,8
        INPUT "Month - first three letters";A$
        INPUT "date";D
        CLS
        GO TO 10160
10200 END PROC
```

This procedure finds the calendar 'page number' by searching for the date, and returns with G holding the page number and G\$ holding a copy of the page. If it cannot match the date it is searching for with any in the calendar, you are prompted to re-enter it in the correct form.

Here we meet LOCAL for the first time. A procedure can have its own

local variables which are not preserved when you leave it. If you use a LOCAL variable which you have also used in the main program, the variable will be reset to its main program value when leaving the procedure, so you can re-use variable names without damaging the program's running, so long as they are LOCAL. In this procedure, only D\$ and X are not required outside it. It is entered with A\$ holding the first three letters of a month and D holding a date, and G and G\$ hold the information to be carried out of it.

```
10205 DEF PROC putincal
10210   LOCAL A$
        LOCAL X
        LOCAL X$
10215   LET A$=STR$ A+"↑"+P$+"\ "
10220   IF G$(6)<>" " THEN GO TO 10230
10225   LET G$(6 TO (5+LEN A$))=A$
        GO TO storeit
10230   LET X=INSTR(6,G$," \ ")
10235   IF (X+LEN A$)>K THEN CLS
        PRINT " "; PAPER 6; PEN 0
        ;"NO ROOM FOR THIS ENTRY"
        PRINT "PLEASE SHORTEN THE PAYEE'S NAME OR CHANGE THE DATE TO THE DAY BEFORE OR AFTER"
        PRINT "PLEASE GIVE THIS ENTRY AGAIN WITH REVISED DETAILS"
        presskey
        LET year=year-A
        CLS
        GO TO 10250
10240   LET G$((X+1) TO (X+LEN A$))=A$
10245   LABEL storeit
        LET CAL$(G)=G$
10250 END PROC
```

This procedure puts payment details into the calendar page. It is entered with G\$ holding the page to be used, and G holding the page number, A holding the payment amount and P\$ the name of the payee. A typical calendar page looks like this:-

The first five letters are the date, March 1. Next comes the amount to be paid for the first bill, £120, separated from its payee by "↑". Each payment is terminated by "\". The payment is converted to this form by line 10215. So, on March 1, you pay £120 mortgage and £45 for gas.

If there is a space at character 6, the page is empty and the payment can be entered there. If there are already entries on the page, INSTR is used in line 10230 to search for the reverse oblique stroke followed by a space, which will be the end of the last entry. The characters in the brackets tell INSTR what to look for. Starting at the character, it searches the first string for the second string. You can use A\$, B\$ etc., or write the second string out in full as we have here. X will hold the number of the character in the first string where the second one starts. If the second string did not appear in the first, X would return with 0, but in our calendar page, X will tell us where on the page the last entry finishes.

If there is no room on the page for the payment, the program offers you the choice of either rewriting it and shortening the payee's name, or entering it on the day before or after. Ideally, you should keep your pages long enough to avoid this happening by dimensioning a big enough array in the first place. When all is well, the procedure enters the payment into G\$ - starting at (X+1), the first free place - and then replaces G\$ in its correct place in the calendar.

You will see in line 10235, the line which tells you there is no room to enter this payment, that the current payment's value is deducted from 'year'. This is the variable which keeps a running total of the value of the payments entered in the calendar, and it must always be updated. Here, the payment which had been added on before the procedure was called is deducted again when it cannot be put in the calendar.

In line 10245 we meet LABEL. This gives the line a name, and GO TO or GO SUB calls can be made to the name instead of to the line number. This has two advantages. When you are writing a program, you often want to write a GO TO to a line which isn't written yet, and you don't know what its line number will be. Using a label gets round the problem. You simply give the appropriate line the label when you get there. But much more importantly, jumps to labels are executed faster than jumps to line numbers, so they speed up the program.

```

10255 DEF PROC entermonth
10260   LOCAL D
        LOCAL B
        LOCAL J
        LOCAL Z
10265   CLS
        PRINT "There will be a short
        pause   while each entry is made in
        the calendar"
10270   PRINT "When you have entered
        all your monthly payments, please rep
        ly - "0" to the next prompt for date"
10275   INPUT "Date?(0 IF FINISHED)";D
        IF D<>INT (D) THEN CLS
        PRINT "YOU HAVE NOT ENTERED
        A PROPER   DATE"
        presskey
        GO TO 10265
10280   IF D=0 THEN GO TO 10370
10285   LET B=D
10290   INPUT "Amount - in figures wit
        h no £ or p signs?";A
10295   INPUT "Payee? USE A SINGLE WOR
        D WITH NO SPACES";P$
10300   LET J=1
10305   WINDOW 6,28,15,16
        PRINT PAPER 6; PEN 0;"ENTERING
        THE DATA"
10310   RESTORE 105
10315   DO UNTIL J=13
10320     READ A$,Z
10325     IF D>Z THEN LET D=Z
10330     findate
10335     LET year=year+A,J=J+1
10340     putincal
10345     LET D=B
10350   LOOP
10355   CLS 1
10360   WINDOW
10365   GO TO 10275
10370 END PROC

```

'entermonth' puts payments made on the same date every month into the calendar. It prompts you for the date. If you entered "31", this is converted in months with less than 31 days to the last day of the month by line 10325. (February is always assumed to have 28 days). As this means changing the value of D, it is copied into B in line 10285 and restored in 10345. 'entermonth' calls 'findate' and 'putincal' to make each entry. 'year' is updated as each entry is made.

While the entries are being made, there is something of a pause, so a flashing "ENTERING THE DATA" is displayed in a window in the middle of the screen while this is going on. The window is cleared by CLS 1, and the full screen restored by WINDOW before returning from the procedure.

```

10375 DEF PROC payinstr
10380   CLS
        PRINT "Please enter for each p
ayment:"
10385   PRINT
        PRINT " 1) Month payment is du
e. (Give first three letters in ca
pitals as JAN FEB etc. Give END
after last payment entered)"
10390   PRINT
        PRINT " 2) Day of month paymen
t is due"
10395   PRINT
        PRINT " 3) Amount in figures w
ith no £ or p signs"
10400   PRINT
        PRINT " 4) Payee. (Shorten thi
s as much as possible)"
10405   presskey
10410 END PROC

```

This procedure is a short instruction screen called by the main section which enters occasional payments, it simply sets out the form in which the entries should be made.

```

195 LET year=0
   CLS
   PRINT "Your regular monthly paym
ents will be entered first (mortgage
, monthly standing orders etc.)"
200 PRINT

```

```

PRINT "If you pay anything (like
rates)over, say, 10 months, enter
them, but when the calendar is compl
ete use the CHANGE CALENDARoption to d
elete the unwanted months via DELETE
OCCASIONAL PAYMENTS."

```

```

205 PRINT
   PRINT "You will be prompted for
the date (day of the month), amount
per month, and payee"

```

```

   presskey
210 CLS
   entermonth
215 CLS

```

```

   PRINT "Your occasional payments
will beentered now - car tax and
insurance, TV licence, annual subsc
riptions, gas and electricity
, etc."

```

```

220 PRINT
   PRINT "Enter each occasional pay
ment separately, i.e. enter a
quarterly payment 4 times, givin
g each month and date separately"
   presskey
   payinstr

```

```

225 POKE SVAR 618,8
   INPUT "Month - first 3 letters
n capitals, END if finished?";A$
230 IF A$="END" THEN GO TO salary
235 INPUT "Date?";D
240 findate
245 INPUT "Amount in figures - no £
or p signs?";A
   LET year=year+A
250 INPUT "Payee? (ONE WORD, NO SPAC
ES)";P$
255 putincal
260 GO TO 225

```

We return now to the main program, to the section which actually puts the payments into the calendar. It begins by initialising the variable 'year'. Then comes an instruction screen, leading up to entering monthly payments. This part of the program handles payments made on the same day every month, or on the same day most months. Things like water rates or community charge, which, if paid monthly, are usually paid over ten months instead of twelve, are entered now, but the instruction screen explains that the unwanted months should be deleted later by using the DELETE OCCASIONAL PAYMENTS option. 'entermonth' is called to make the

calendar entries.

Then comes the routine which enters occasional payments. It is used for entering annual bills like car tax and insurance, subscriptions etc., and quarterly ones, although quarterly payments are treated as four separate entries. 'payinstr' is called, the user is prompted for the date, and 'findate' is called to fetch the correct calendar page.

Finally, the amount is called for, 'year' updated, the payee's name requested, and 'putincal' called to make the calendar entry.

```
265 LABEL salary
    CLS
    PRINT "Please now indicate whether your main salary\wage is paid monthly or weekly."
270 PRINT
    PRINT "This is to enable the deductions for your bills to be made in line with your income."
275 PRINT
    PRINT "There will be provision for you to enter other income at any time."
280 POKE SVAR 618,8
    INPUT "Are you paid weekly or monthly (W\M)?";I$
285 IF I$="W" THEN GO TO weekly
    ELSE IF I$="M" THEN GO TO monthly
    ELSE CLS
        PRINT AT 10,5; PAPER 6; PEN 0;
        "YOU MUST ENTER W or M"
        GO TO 280
    END IF
290 LABEL weekly
295 DEF FN B(N)=INT (((N*100)/52)+1)/100
300 LET week=FN B(year)
305 GO TO caldone
310 LABEL monthly
315 DEF FN Q(N)=INT (((N*100)/12)+1)/100
320 LET month=FN Q(year)
```

The calendar entries are now complete, but there are one or two things left to do before it can be SAVED. At line 265, we come to the section which establishes whether your main pay day is weekly or monthly. In

line 285, we use IF with ELSE statements for various lines of action depending on what I\$ holds. END IF marks the end of the IF options.

The 'year' variable has been keeping a running total of the amounts listed on the calendar, and now it will be divided by 52 or 12, to discover how much per week or month must be deducted from your take-home pay and placed in the assigned fund for bills.

The functions defined in lines 295 and 315 make this calculation. If you simply divide the 'year' total by 12 or 52, you could get a figure which has yards of figures after the decimal point and does not translate to £ and P. By first multiplying by 100, taking an integer of the division, adding 1 to round the answer up, and then dividing by 100 again, we get a figure with no more than two places after the decimal point. The round-up may mean that occasionally 1p too much per week/month is set aside, but if we did not round up, the program would sometimes set aside 1p too little, and eventually the accumulated shortfall would mean that the fund could not meet the bills.

The calendar is now complete, but we need to be able to read its pages. The next two procedures print it to printer or screen.

```
10415 DEF PROC printcal
10420 LOCAL M
    LOCAL J
    LOCAL X
    LOCAL G$
    LOCAL C$
10425 LET M=1
10430 DO UNTIL M=366
10435 IF CAL$(M,6)=" " THEN GO TO
10510
10440 LET G$=CAL$(M)
10445 OPEN # 4,"b"
    PRINT #4;CHR$(27);CHR$(69);
    CLOSE # 4
10450 LPRINT G$(1 TO 3);" ";G$(4 TO 5)
10455 OPEN #4,"b"
    PRINT #4;CHR$(27);CHR$(70);
    CLOSE # 4
```

```

10460 LET J=INSTR(6,G$," \ ")
10465 LET X=6
10470 DO UNTIL X=J+1
10475 LET C$=G$(X)
10480 IF C$="↑" THEN LET C$="
"
10485 IF C$="\ " THEN LET C$= CHR
$ 13
10490 LPRINT C$;
10495 LET X=X+1
10500 LOOP
10505 LPRINT
10510 LET M=M+1
10515 LOOP
10520 END PROC

```

The procedure goes through the calendar, and prints out the information held in any pages which have something in them after the date. It uses nested DO loops, the outer one running through the calendar pages, and the inner one running through the entries on a page. Whenever "↑" is encountered, a space is printed, and when "\ " occurs, a line feed is sent.

Lines 10445 and 10455 show how to send control codes to the printer. Opening a stream to "b" opens a channel for sending binary codes to the printer. The codes sent here print the date in emphasised (bold) type, and then revert to normal type for printing the payment details.

```

10525 DEF PROC screencal
10530 LOCAL M
LOCAL J
LOCAL X
LOCAL G$
LOCAL C$
10535 CLS
LET M=1
10540 DO UNTIL M=366
10545 IF CAL$(M,6)=" " THEN GO TO
10610
10550 LET G$=CAL$(M)
10555 PRINT G$(1 TO 3);" ";G$(4 TO
5)
10560 LET J=INSTR(6,G$," \ ")
10565 LET X=6
10570 DO UNTIL X=J+1
10575 LET C$=G$(X)
10580 IF C$="↑" THEN LET C$="
"
10585 IF C$="\ " THEN LET C$=CHRS

```

```

13
10590 PRINT C$;
10595 LET X=X+1
10600 LOOP
10605 PRINT
10610 LET M=M+1
10615 LOOP
10620 END PROC

```

This is almost identical to 'printcal', except that it prints to the screen.

```

325 LABEL caldone
CLS
PRINT "The calendar is now compl
ete."
330 PRINT
PRINT "If you need to make any c
hanges,wait until it has been saved an
dyou will be asked if you wish to ru
n the program. Do so, and use the CHA
NGE CALENDAR option."
335 PRINT
PRINT "Do you require a printout
of thepayments and dates?"
340 yes_no
345 IF Y$="N" THEN GO TO 355
350 printcal
355 CLS
PRINT "Do you wish to see the pa
yments and dates on screen?"
360 yes_no
365 IF Y$="N" THEN GO TO 380
370 screencal
375 presskey

```

Finally, for this month, we come to the routine which offers the chance to view or print the calendar. This preview gives you a chance to check that all is correct, but I have not written a separate change calendar option for this part of the program, because there will be a main menu option for calendar amendments. When you are setting the program up, it is simpler to wait until the first copy has been SAVED, then go to the main menu and make any changes from there.

See you again next month, when we shall be adding the routines which manage transfer of money between the program's funds, and SAVEing the program. We shall also start to look at the main menu and its routines.

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# NEV'S

# HELP PAGE

By: Nev Young.

I suppose I have to begin with an apology for not being here last month. I could tell you all a great tale of woe. My wife left me, I got made redundant, I had to move 200 miles South to get work, The post office didn't redirect any mail. But you don't want to read this so on with the good stuff.

A. Brammer of Melton Morbray would like to know how to protect disks from being copied and how to disable the snapshot button. He has some software that does this so he knows that it can be done.

I know of several ways of copy protecting programs, but I won't tell you any of them as they are all secrets. That may seem a bit mean of me but you see if you know how to protect programs then you also know how to get past the protection, and I am afraid that there are some people out there who would use the information for nefarious purposes.

Roy Burford has rediscovered a little trick on the Spectrum that many newcomers may not know so I will pass it on. As you should know if you want to send data to a disk file you have to specify the channel number in the print statement. eg. PRINT #4;"hello" will send "hello" to channel 4. But did you also know that you can send data to channels 0 to 3. PRINT #0; and PRINT #1 will print on the lower screen where INPUT commands normally work. PRINT #2 will go to the screen as normal and PRINT #3 will go to the printer. Also LPRINT #2 will go to the screen instead of the printer.

If you write a program where every PRINT is followed by #st then you can send everything to the screen or the printer just by using LET st=2 or LET st=3.

An even easier way is to use the Spectrums own OPEN# command. Get any program that sends data to the screen. Put the command OPEN #2,"p" at the start of the program and CLOSE#2 at the end. Everything will now go to the printer instead of the screen.

Jim Skellern is puzzled by the disk cleaning program I gave back in issue 3/3 he can't get it to work. First are you sure that you have got this as the first line as you have a PLUS D 10 LET COM = 227 Next the reason that T is not used in the out command is because it is just a counter. The program first sends 80 step in commands to the disk then 80 step out commands. Each step moves the drive heads one track. Dead simple really.

Dean Dyson would like to know the difference between a serial and a parallel printer interface and which is better for his SAM. Get a parallel printer for SAM and make sure it is EPSON FX80 compatible. That way you just plug it in and it works. Either one will need an interface - The SAM printer interface or the SPI from FORMAT both work very well. Now what is the difference. Well lets assume you know about bits and bytes. The difference is that a parallel interface sends a complete byte every time it sends to the printer. Usually at about 500,000 a second. A serial sends a bit at a time plus two or three others to get things synchronised so the computer has to break the byte down to send it, and the printer has to put it back together again. These normally send only about 800 bytes a second. The speed doesn't normally make much difference as the printers only print at about 80 bytes a second. But setting up a serial printer is much more difficult as there is much more to get wrong, such as speed, parity, stop bits etc.

Derek Burn is having problems with that KA program published some months ago. Read the next couple of issues and see what typing errors the editor made when he published it. That's why it doesn't work.

Ivan from Budapest is having a couple of problems (or he was when he wrote the letter back in September. Took nearly two months to get here). Your first problem with IBU. The fix given in 3/4 does work. Looking at your printouts I think you have forgotten to load the machine code.

Next, now you can not change the snapshot routine on the PLUS D to get over the attribute problem like on the Disciple. It is in ROM.

Last, the reason you get a ! down the left edge of your printouts using the small is beautiful program is that you have missed the ; of the end of line 200 in the program. I am sure this is just a typing error on your part but a number of other people have written to ask why do some PRINT statement end with ; and others not.

There are 3 things that can be put into a print, or lprint, command these are ; , and ' they all do something special.

The ; instructs the computer to leave the print position unchanged so the next thing you print will follow on with no spaces eg PRINT "hel";"lo"

The , will move the print position on to the next half line. eg. PRINT 1,2,3,4,5,6

Finally the ' will move the print position on to the next line eg. PRINT 1'2'3'4'5'6

If you do not put anything at the end of the PRINT command then the computer will assume that you want the next print to start on a new line. So to stop that happening a ; is sometimes put at the end of the print command to stop it.

This is especially important for a

printer as you may be not be sending data to print but control codes to make the printer do something. If you look at line 200 of the program you will see that you are actually telling the printer to go into 8 bit graphics and expect to receive a line of graphics codes. If you miss off the ; then the first code is a CHR\$ 13 which is not what was intended.

A number of people have written to ask if it is possible to produce a 128K emulator for SAM. The simple answer is no. A company called AM\*\*\*AD make a good emulator for the 128K spectrum. It is called the +2. But SAM can not do it. The 128K machine has very special hardware to handle the memory switching which is done in a completely different way to the SAM.

And finally this month P.J.Williamson has found something strange with the INPUT command on SAM. When using the INPUT command he gets a strange error if he types in a word that is inside inverted commas.

The simple test program is:-

```
10 INPUT A$: PRINT A$
```

If you try and enter this is a "test" sentence it will not be accepted. The reason is that the first " tells the computer that it has reached the end of the INPUT, so it tries to make sense of the word 'test' as a command. To get around this problem either change the command to INPUT LINE A\$ or change the sentence to 'this is a "test" sentence' The double " is a special way of telling the computer that you really want a " and that it is not the end of the INPUT.

In closing, please remember my new address. Send help letters to:-

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- **COPY AS MANY FILES AS YOU WANT** - After copying one batch of programs Disc Mate will then load and copy the next batch until all the selected programs are copied. There is **NO LIMIT** to the number of progs you can copy. You select how many and the order in which they are copied. The unique 2-way scrolling **PICK & STORE LIST** makes file selection so easy!

- **COPY TO ANY DISC** - programs on destination discs are secure, **NO** over-writing.
- **MULTIPLE COPIES** - copy the selected programs onto as many discs as you wish.
- **POWERFUL TOOLKIT** - gives you control over your discs, and offers benefits far in excess of this **LOW** price.
- **INTELLIGENT AUTO-RECOVERY** - of all erased programs - detects file types, reads sectors used & recovers if at all possible.
- **BLOCK-OUT FAULTY SECTORS** - make discs more reliable & data far more secure. Gathers all bad sectors and makes them invisible. An **IDEAL** check after formatting - only takes 40 secs to safeguard a disc!
- **TEST FILE FEATURE** - traces and maps all tracks/sectors used in any program - visually check for bad distribution.
- **ULTRA FAST SELECTIVE ERASE** - will erase all selected files in 2 secs max!
- **VIEW SNAP REGISTERS** - 128K only.
- **INTELLIGENT ERROR TRAPPING** - will report on any errors found, and gives you very helpful alternative options . . . such as **RENAME, RE-TRY, NEXT, CANCEL, OVERWRITE, QUIT, LOAD**, etc.

I strongly recommend **DISC-MATE** and invite all Disciple and Plus D users to try it for 14 days without any obligation. If not delighted, simply return within 14 days for **MONEY BACK** \* REFUND

SAYS DAVE HOOD OF **BETTERBYTES**

- **COMES WITH USER MANUAL** - a very clear, & easy to follow guide, giving many hints and tips. We sent copies of **DISC-MATE** to several **BETTERBYTES** Customers for their pre-release evaluations . . . Here is what some of them said:

"Its almost as good as a second drive." C.M. GLASGOW. "With one drive, the fully automatic operation & just an occasional disc swap is a delight." R.B. NOTTS.

Get **Disc-Mate** on 14 days trial. Specify if for Disciple or Plus D.

- \* **NOT SPECIAL FILES** or **SNAP-SHOTS** IN 48K MODE.
- \*\* **LESS BETTERBYTES POST & PACK EXPENSES.**

**£10.95****NEW**

## UTILITY DISC

Here is a super new collection of some very useful 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** - intelligent 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.
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- **SHOPPING LIST** - a real **BOON** for those

who do the family shopping. Here is a resource 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 utilities all on one disc!

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

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