

Vol 3 - No 10.

June 1990.

# FORMAT

FOR SPECTRUM AND SAM USERS



The Best For  
News And Reviews

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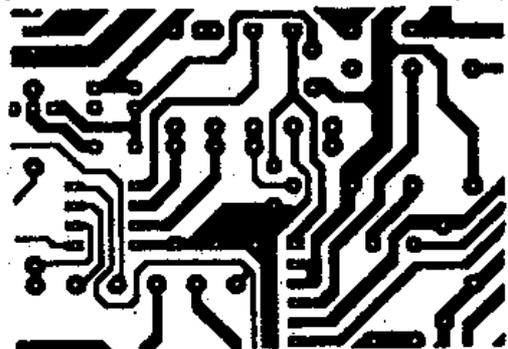
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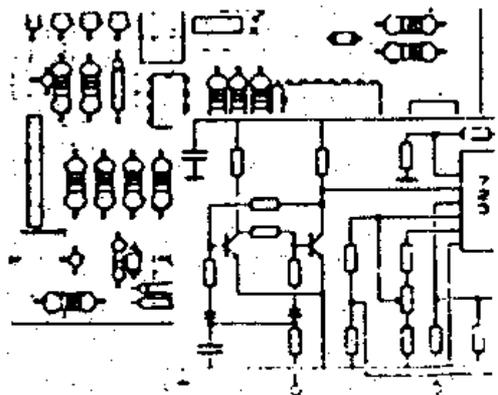
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# NEWS ON 4

## PLUS D RELAUNCH

DATEL Electronics have relaunched the PLUS D with full page colour advertising. The PLUS D is available on its own for £59.95 or with a 3½" drive at £129.95 both prices including UK postage.

Their commitment to the PLUS D means it's continued success as the Spectrum's number one disc system.

DATEL can be contacted on 0782-744707.

## SAM PRICE INCREASE

Miles Gordon Technology have raised the price of the SAM Coupé by £10 with immediate effect. The rise applies only to the computer, giving a new price of £179.95, and not to disc drives or other peripherals. The move coincides with a total commitment to dealer sales rather than mail order.

A spokesman for MGT said that the new price would allow for better distributor and dealer margins which in turn will lead to better support for the end user.

## DUST COVERS

If your SAM computer gets as dusty as those in the FORMAT office you will be pleased to hear that Dilwyn Jones Computing has just the thing you need. DJL have just announced the availability of a new dust cover for the Coupé and covers that fit a range of 80 column printers. Priced at £6.50 for SAM plus £2 postage and packing per order. For more details contact DJL on Bangor (0248) 354023.

## FIRST COMPUTER "FUN LINE"

Mel Croucher (that multi-media, multi-talented, all round computer expert) now stars in the very first Computer Fun Line. Described as a mix

of light hearted chat covering anything remotely relating to computers and industry people, the line is available 24 hours a day, 7 days a week on 0898 299399 with a new message every Monday.

Its well worth a ring, Mel (even if you catch him on an off day) is better than many of those high paid TV comedians. But please remember that these calls are charged at 38p per minute at peak time and 25p per minute off peak.

## BSB COMPUTER CHANNEL

British Satellite Broadcasting may not have been first in the race to convert UK users to satellite TV, but they do seem to be coming up with some advanced programming.

June 28th will see the launch of their 'Computer Channel' which will broadcast current affairs and interactive training programmes related to computing. Alas there will be no home computer coverage at first. In the early days the Computer Channel will have about three hours of programmes a week but later expansion is planned. The programmes will be beamed down using the Movie Channel frequencies during the morning period when films are not being transmitted. A special decoder and subscription must be paid for and it is obvious that it is business users who are being targeted.

Programmes aimed at the home computer user have not been ruled out, although no firm plans have been made as yet.

-----  
**URGENT** we need your news. Clubs, Shows, New Releases, anything you think other people should know about. If you have any news items you want to pass on then send them in. Please mark the envelope NEWS in the top corner.



Several apologies due this month. Firstly, this issue is a little smaller than intended due to illness, I spent the first week of the month in bed with bronchitis which has put things way behind. Secondly, much to my regret, I missed the 2nd All Formats Show at the end of April. This was partly due to a total equipment breakdown (the BBC I use for type setting is not as robust as the Spectrum) and partly to an urgent hospital visit by a member of the family. Still I will make sure I get to the next show on June 9th and 10th.

On the subject of the All Formats Show I understand that it turned out very well (despite my absence). There were plenty of bargains and lots of money changing hands. It appears that the shows are beginning to attract a real following. I don't really like the two-day shows myself, I think one day is ample for this type of show. However, lots of people turned out on the Sunday so exhibitors were quite pleased with the results. I've already mentioned the 3rd show but Bruce Everice has already committed himself to a 4th show in August and at least one more before Christmas. It looks like the All Formats Show is set to become a very regular (and welcomed) part of the computer year.

The SAM Coupé continues to make excellent headway. New machines now being shipped are being fitted with version 2.0 ROMs. This is not the final version as there are still a few minor bugs left to sort out. Existing users should be sent the finished version in a few weeks once the final testing is done.

In preparation for the new ROM MGT

have now released a new edition of the SAM Coupé Technical Manual. It now has an index and is better laid-out but I would still not recommend it to anyone who is not really technical. FORMAT will cover most aspects of SAM's inner secrets so keep reading.

SAM software continues to be a little thin on the ground with many developers waiting for the new ROM/DOS to be released so they can test their software. Our own free software tape is caught up in the same trap, it has been tested with version 2.0 but (just in case) I must wait for the final ROM before committing to duplicating hundreds of cassettes. Software companies, however, are busy working on SAM products and there should be lots of games and serious software on the market early in the summer.

Just two issues ago (April 1990 issue) I again appealed to people to ring me if they have any problems as I do not have time to reply to letters other than through the pages of FORMAT. Now I don't like to moan, if nothing else it wastes valuable space, but some people seem to ignore what I say (Mr R.Quin take note). So remember, with the exception of overseas readers, NO letters get personal replies - TELEPHONE instead, it's what the Hotline is there for.

Finally this month I thought it might interest you to know that FORMAT subscriptions have now surpassed the 2500 mark. This represents (according to a survey I did last year) some 4000 readers WORLD WIDE.

Until next month,

Bob Brenchley. Editor.

# SHORT SPOT

By:- John Wase.

I'll start with some Samstuff. Apologies to those who haven't got one; just skip the first little bit and I'll make sure you have some goodies later.

Firstly, I now have an advance copy of ROM 2 and SAMDOS 2. They seem to have corrected most of the more obvious ROM and DOS errors, improved Spectrum emulation and Basic conversion, done some minor improvements to "Flash", improved the speed of some Basic commands, implemented BAND and BOR, and also DUMP in a DOS extension. DOS now formats and copies files without errors, but still does not support Opentype files, a major omission in my view. I'll keep you posted. "Fine", you say, "but I've not had my new DOS yet, and the old DOS still does funny things. It's defective in overwriting files of the same name, for instance." Carol Brooksbank of Coventry to the rescue!

The overwrite bug shows up occasionally in normal use, and all the time with "Flash!" - Instead of the filename when it asks OVERWRITE..? you get a load of gibberish: if you reply "Y", the directory is corrupted. Not always obvious, until you find files lost, the overwrite in a different directory position, and eventually "Directory full" or "No room on disc for file" when you know there are only a few files and 400K to spare. Doing a DIR gives the space remaining on the disc as something silly like -310 or R 2457. Carol's "dir.repair" uncorrupts the directory.

```
10 CLEAR 59999
20 FOR T=0 TO 3
30 FOR S=1 TO 10
40 READ AT 1,T,S,60000
50 CLS : PRINT PEEK 60000,PEEK 60256
60 INPUT "CHANGE THESE? (Y/N)";YS
```

```
70 IF YS="y" OR YS="Y" THEN POKE 600
00,0: POKE 60256,0: WRITE AT 1,T,
S,60000
80 NEXT S
90 NEXT T
```

Yes, the program's a lot shorter than the explanation. Load the program, insert the suspect disc and RUN. Two numbers will be displayed with the input message "CHANGE THESE?". If the numbers are sensible SAM file type indicator bytes - 0, 5, or something between 16 and 20, enter "N" to get another pair: if the numbers are in the 200's, the directory sector is corrupted, enter "Y" and the program will poke zero into the two file indicator bytes, freeing the sectors and the blocked entries. The corruption always affects the whole sector (which is why you sometimes lose another file) and ties up hundreds of sectors because a very large number is entered in the file length bytes. Unfortunately you cannot readily recover the corrupted bits, but at any rate you've got the rest. Many thanks, Carol.

Next, all the way from Gibraltar, A.F.Olivera writes about the Hisoft Basic compiler for the Spectrum. One of the very few Spectrum Basic instructions that defeats it is VAL. However, Bert finds that on occasion, he needs VAL, so he goes through the listing, substituting it with FN V\$(X\$), and defining the following instructions:-

```
DEF FN V$(X$)="00000"(TO 5-LEN X$)+X$
DEF FN V(X$)=(CODE (FN V$(X$))(5)-48)+
(CODE (FN V$(X$))(4)-48)*10+ (CODE (F
N V$(X$))(3)-48)*100+ (CODE (FN V$(X$)
)(2)-48)*1000+ (CODE (FN V$(X$))(1)-48
)*10000
```

Bert points out that this caters for

strings up to 5 characters long; it's pretty obvious how to extend the defined functions to cope with longer strings. Although this is a rather roundabout method of going about things, Bert finds that the compiled code still executes about three times as fast as the Sinclair VAL! Many thanks, Bert.

For those who find this sort of thing heavy going, here's a couple of short tips for the DISCiPLE/PLUS D from John Blomley - I already featured his tape header reader in February's Format. Like me, he's lazy, and he often faced with the problem of dealing with discs with an array of programs and files to sort out. O.K? Here's a little exercise which saves you the problem of typing out each command over and over again...

First you need an autoloading program that lists each of the programs on disc with a number to press for loading. Then you need a few programs like this....

```

5 REM >>>>>CAT.PRINT<<<<<<
10 CLS : PRINT "INSERT DISC AND PRES
  S A KEY TO SHOW CATALOGUE"
11 PAUSE 0: CAT 1
12 PRINT "PRINT ? Y or .N?"
14 IF INKEY$="" THEN GO TO 14
15 LET A$=INKEY$: IF A$="N" OR A$="n
  " THEN GO TO 10
20 PAUSE 0: CAT #3;*
30 REM Little subroutine to ask if
  there is anything more to be done
  (THEN GO TO 10) else reload
  autoload or STOP

```

Equally, you can erase files with

```

5 REM >>>>>ERASER<<<<<<
10 CAT 1: PRINT INPUT NAME OF FILE T
  O BE ERASED OR PRESS ENTER TO ABO
  RT": INPUT B$: ERASE D1;B$:
30 REM Little subroutine as above

```

and you can retitle and transfer files. I've tried to keep this fairly general, so that you can use the principle with most things; a nice exercise in elementary programming which gives you a useful utility. Whilst such utilities abound for

microdrives and Discoveries, as well as MGT's interfaces, there's nothing on the market yet for SAM - proud owners into elementary programming will find that they have a useful utility as well. Now extend it to dealing with groups of SAMfiles.....

Did you know that you can avoid a lot of hassle with the old problem "IF A\$="Y" OR A\$="y" THEN..." by doing a POKE 23617,8 first. This puts auto caps lock on, so that only capitals are input from the keyboard. POKEing with 0 returns to the L cursor. On SAM, POKEing SVAR 618 with 8 or 0 will have the same effect.

Malcolm Goodman of Leeds is a correspondent whose information turns up in nearly every "Short Spot". Here's an extra-fast Spectrum machine code routine for clearing the display file:-

LABEL	INSTRUCTION	T-STATES	COMMENTS
10	DI	4	Interrupts off
20	LD A,255	7	The Test Value
30	LD (STR+1),SP	20	Save Stack Pointer
40	LD DE,767	10	The Counter
50	LD BC,0	10	The Clearing Value
60	LD SP,22528	10	End of Display File +1
70	LOOP PUSH BC	11	Put Two Zeros on Stack
80	PUSH BC	11	Again
90	PUSH BC	11	Again
100	PUSH BC	11	And Again
110	DEC DE	6	Reduce Counter
120	CP D	4	Is D=255, i.e. is DE=65535?
130	JPNZ LOOP	10	If not, then Repeat
140	STR LD SP,0	10	Restore Stack Pointer
150	EI	4	Interrupts on
160	RET	10	Exit

The length of the routine is short at a mere 30 bytes. The execution time in T-states is as follows:-

With 4xPUSH BC approx 49200 (DE=767)  
 With 6xPUSH BC approx 44100 (DE=511)  
 With 8xPUSH BC approx 41500 (DE=383)  
 With 12xPUSH BC approx 39000 (DE=255)

The value of DE in Line 40 equals:-  
 (3072/Number of "PUSH BC's")-1 and  
 must always be an integral factor of

3072. Malcolm suggests that it would not be too difficult to modify the listing to work with SAM.

When compared with the more usual routine:-

```
XOR A      ; A=0
LD HL,16384 ; Screen First Byte
LD DE,16385 ; Screen Second Byte
LD BC,6143  ; Counter
LD HL,A    ; Poke First Byte with 0
LDIR      ; Block Move
RET       ; Exit
```

which is even shorter and which runs in about 129000 T-states, you can see that Malcolm's routine can be between 2 and 3 times faster. It also shows that the shortest routine isn't always the fastest!

Last but not least. I had a whole welter of stuff in between Christmas and Easter. Now almost all that's coming in is SAM-related. Is that

really what you want? So far, I've tried to provide a mixture; something for everyone, disc, cassette, microdrive, novice, advanced, Spectrum, Sam, Basic or Assembler. But its up to readers to send thing in, without your contributions Short Spot will get very short.

Sent any programs, hints, tips, useful info, ect direct to me at:-

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

Please submit programs on disc or tape as this avoids error when reproducing in Format.

And Bless You All - its lovely to hear from you.

- - - - -



## Dilwyn Jones Computing

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# LIFEGUARD

## Reviewed

By:- Ian Cull.

It is very difficult for many people to learn how to hack programs in order to find infinite lives or whatever. A reasonable knowledge of machine code is needed, as well as enough skill to break into the loader and stop the program auto-running so that it can be examined.

A tool like Romantic Robots Genie or MGTs Pick-Poke-It will help, allowing the program to be examined even as it is being played. However, Romantic Robots Lifeguard program aims to take all the hassle out of finding pokes - simply press a button, and try each poke that the program suggests.

LIFEGUARD is an Infinite Lives Finder program that will run on ANY Spectrum fitted with one of RomRobs MULTIFACE devices. These devices are all hardware add-ons which give a games player the ability to halt almost any game, AT ANY TIME, and store the current position to tape or almost any add-on storage device. MULTIFACE ONE will save to tape, microdrive cartridge, Opus, Beta, Disciple/Plus D or Kempston disc interface or Wafadrive (certain interfaces require a special version of MULTIFACE). MULTIFACE 128 supports the extra memory of the original 128K Spectrum (and the grey +2) and offers hyperspeed tape saving as well (but loses the Wafadrive option). MULTIFACE THREE works with the 'unusual' hardware of the Spectrum+3 (and the +2A) and can save to tape or the 3inch disc - you can also LOAD disc games from the 'Magic Button' allowing 48K games to be stored on disc.

Except for the +3, all SAVED games can be reloaded without using the MULTIFACE, which means that its internal RAM can be used to store special programs - LIFEGUARD is such a program. LOADING LIFEGUARD from tape

takes less than one minute, and the program automatically identifies which MULTIFACE is fitted and installs itself. The program is then completely invisible to the Spectrum until the Magic Button is pressed.

You can now LOAD a game and begin playing. At some point, note how many lives you have left, and press the Magic Button. The game stops and the LIFEGUARD menu appears. The first step is to tell LIFEGUARD how many lives you have - press L(ives) then 1(up) or 2(down) to set the counter; 3(set) finishes that part of the procedure.

Next you press S(earch) and LIFEGUARD hunts through the stopped program for possible infinite life pokes. Below the menu is shown how many pokes were found and how many have been tried, and the last poke address. You now press N(ext) to return to the program with the next (first) poke installed, and deliberately die. If you lose a life then press the Magic Button again and try N(ext) until you get a poke which stops your lives going down. Then press the Magic Button one final time and note the address shown (SPACE returns you to the game); next time you can use the MULTIFACE built-in Tools function to poke this address with zero.

Finding infinite life pokes is not always this easy; lives can be counted in Z80 code in many different ways, and LIFEGUARD cannot automatically try every possible way. However, an additional menu option, F(lip), allows different methods to be tried. LIFEGUARD offers two common instructions types (if the first gives no luck, try the second AFTER resetting the lives counter to however many lives you now have left). There is also an option for C(ustom)

setting, but you need to know what you're doing to use this successfully.

However, LIFEGUARD can often find pokes and is very simple to use. I tried a few games to test how successful it can be.

First I tried it on EXOLON on a 128K Spectrum. I began playing and immediately got shot by the cannon - so I blew this up then pressed the Magic Button. I set the lives counter to 8 and pressed S (using the initial 'DEC A' flip mode) - LIFEGUARD found three possible pokes so I pressed N to try the first. Instant Success! Lots more death, but no more loss of life - I pressed the Button again to reveal the poke address as 40221,0.

Next I loaded PACMANIA on my Spectrum+3. This time I set lives to 4 and pressed S - no pokes found! So I Flipped to the 'DEC HL' mode and tried S again; three pokes were found. Again, the first one worked - 35141,0.

I then tried an older game, NEBULUS, and found a poke of 32921,0. I then loaded up TREASURE ISLAND DIZZY but drew a blank since there is no lives counter (your first death is your last).

LIFEGUARD can be used to find other pokes too. On EXOLON again I found pokes for infinite Ammo (33646,0) and grenades (37456,0) by setting the lives counter to the number of bullets/grenades remaining.

I did not have good luck every time, however. ZYNAPS was one game for which I could find no useful poke - one left the display at 6 lives but still ended the game after three. Other pokes did nothing or caused strange behaviour (including a crash).

In summary, LIFEGUARD is a clever program which does very well attempting a nearly impossible task - automatic hacking of games! Anyone owning a MULTIFACE will find LIFEGUARD a useful investment, allowing pokes to be found before they appear in any magazine - but not every game is

breakable. MULTIFACE itself is a very useful Spectrum add-on in its own right (especially for anyone using faster storage than tape) and is almost essential for Spectrum+3 owners. The Tools function allows magazine pokes to be easily put into any game without having to use massive listings.

LIFEGUARD costs £6.95 from Romantic Robot, 54 Deanscroft Ave, London NW9 8EN but you need a MULTIFACE too (£35...£45).

\* \* \* \* \*



"Alright, leave that for now. It isn't much of a story anyway."

## ★ ★ ★ ★ ★ ★ **THE** Compressor ★

\*\*\*\*\*  
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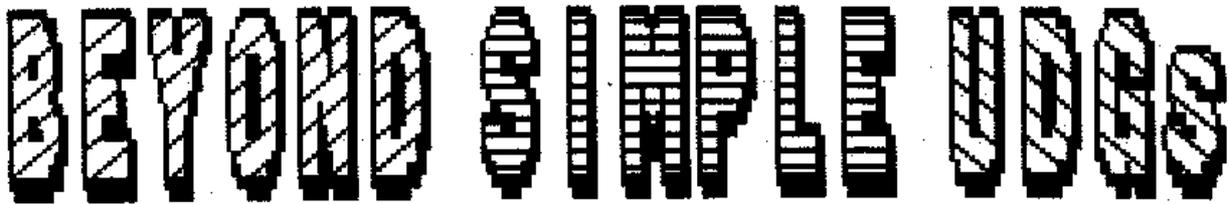
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Note: Tapesnap will not work with compressed snaps

Shimon Young, 21 Colchester Road,  
Southend-on-Sea, Essex SS2 6HW.



Part 7.

By:- Clyde Bish.

After last month's mega-brain-stretching exercise in programming we'll turn to something a little easier - at least to begin with!

It's about time you had something to find (and eat!) so add the lines from Program 8 to the listing we produced last month. You'll see that in line 85 we use another array F\$( ) to hold finds information. In this array the first element is dimensioned to the number of rooms, and the second to the length of the largest word we might want to use as an object name (in this case TREASURE!). Into this we record specific objects in specific locations, having first set all to "nothing". So the treasure is in room 12, food in room 7, and the key in room 9. Now that there is food to eat and objects to find we will have to allow the player to pick them up and carry or eat them to gain strength. Variable h\$ holds what you are carrying (set initially to "nothing" in line 99). You start with 50 strength points (variables). You'll also notice that changes have been made in the player control routine. Line 9010 now also gives you your current strength score and in addition tells you what object is visible and what, if anything, you are holding.

Line 9020 allows you to pick up an object if you press "P" (and there is something to pick up and you are not already holding anything.) If you pick up food you automatically eat it and your strength score increases by 20.

Line 9025 works in reverse allowing you to drop what you are carrying if you press "D" (and of course you are holding something and there is space to drop it.) The other new line, 9498 reduces your strength by 1 each time you make an action, and will announce your sad demise if your score reaches

zero. RUN 80 as before and try moving round picking up and dropping objects and eating.

By now you should see that we're getting somewhere (or at least doing a lot whilst we're getting nowhere!) But adventures aren't just wandering around opening and closing doors, picking up objects and eating. You're supposed to ACHIEVE something. How about some treasure to find? Easy, you might say. I've already been to room 12 and found it. True, so let's make life a little more difficult. Remember the key? Keys are made for opening things, doors for example, so let's lock the door to room 12, only allowing it to be opened by the one who carries the Mystic Key of Khron. Add:-

```
9011 IF H$(3)<>"k" AND L=3 AND O=2 THE  
N GOTO 9016
```

This will jump you past the open\_door routine if you're facing the door in question but don't possess the key. Try it and see the difference.

We also have need of a goal. A place to return to after you've retrieved the treasure in order to complete the adventure. Add:-

```
101 IF H$(1)="T" THEN PRINT AT 10,10;"  
YOU HAVE WON!": STOP
```

RUN 80 as usual to see what happens when you return to room 1 having found the key, unlocked the door and taken the treasure.

So far so good, but really it's about time you had some opposition. Perhaps a small (but very unpleasant) Zombie to hinder your progress? Those of you familiar with adventure game books will be aware of that the usual way to determine the outcome of conflicts is

# THE PLACE TO BE...

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# BE THERE!

to throw dice and let chance decide your fate by reducing you or your opponent's strength scores depending on the roll of the dice until one or other reaches zero. That's O.K. with a book, but computers can be interactive, so let's interact! The computer will play for the monster against you. But first we need a monster plus an interactive combat routine. Add Program 9 to your growing listing.

Now take a look firstly at line 86. You can add more monsters if you like. The array is set up in the same way as for the finds, so room 12 contains a monster - which is rather a pity as it also contains the key you need to open the treasure room! You'll notice that the first two elements of the name are in fact a number. This is the monster's strength and will be read and used in the combat routine. The name length has been set to a maximum of 8 letters (plus two for the strength value) but you could change this by reDIMensioning the array. Line 9006 within the player control subroutine checks if a monster is present when you enter a room and, if so, informs you of the occupant before sending you to the combat subroutine starting at line 9500.

Now let's take a look at this rather unique program section in detail line by line:-

Line 9500: announces that a fight is imminent and sets the monster strength variable to the value of the first two elements in the name array.

Line 9510: pauses a random length of time then, if  $RND > .5$  takes you to the player attack routine, otherwise:

Line 9520: A random monster attack statement is printed using the machine's logic capabilities yet again and the value generated into R. This is put into the input area and is followed by a random length pause (which could, if you wished be determined by the relative strengths of player and monster). If within the pause time you press 1 then you block

the attack and the routine passes to line 9550. Otherwise:

Line 9530: you are hit and your strength is decreased by 5 points. If this results in a strength score of zero or less then you're dead! Otherwise:

Line 9540: the routine jumps to line 9560

Line 9550: You parry the blow.

Line 9560: After a pause the statement is cleared using INPUT; and the routine jumps back to repeat the sequence.

Lines 9600 to 9650: allow you to attack the monster if it drops its guard provided you press 0 within the time allowed. If you are enough the monster's strength is reduced with the final inevitable result. In this case the monster array is cleared and you are returned to the player control subroutine. If the monster still has sufficient strength to continue the routine loops back as above.

RUN 80 and move to room 12 to try it out and I think you'll agree that it is more exciting than just sitting back and letting the machine throw dice for you!

All adventures contain tricks and puzzles - probably more to show the ingenuity of the writer than to test the abilities of the player. Let me end by showing you how to build a few simple ideas into our adventure game.

If you've noticed and are wondering why room 11 is shown on the map here's the answer. Firstly we add a ledge and a hole to room 9. Now wouldn't that be a temptation to explore to a would-be adventurer? Add Program 10 to your listing. This makes the necessary changes to room 9 and also adds in "room" 11. I'll leave you to work out (or find out) what happens if you go through the hole causing the program to jump to line 1100!

Maybe you've also been wondering why

the apparently useless phial was included? Add the following to the existing line 9025:-

```
IF F$(1,3)="p" THEN FOR F=1 TO 10: PAPER 6: CLS: PAPER 0: CLS: NEXT F: PRINT "It exploded!": PAUSE 100: PRINT "You're dead!": STOP
```

Now RUN 80, move to room 2, pick up the phial, then drop it. Now do you know?

Perhaps you think that getting home with the treasure is a bit too easy? We can soon alter that. Add:-

```
1225 IF H$(1)="T" THEN LET M$(2)="20a Balrog"
```

Now try getting the treasure home! Well, there's the basic idea. In these articles I've provided you with a relatively simple system with which to create a graphic adventure. Now it's up to you to alter and elaborate on the idea.

Next time we'll use the same basic graphics to produce a maze game (complete with nasty goblin) that won't have the disadvantage of being designed by you, the player. It's computer generated so no one (except the Spirit of the Machine) knows the layout!

Until then get back to the keyboard and improve on your adventure. Over to you, Mr Spock!

#### PROGRAM 8.

```
85 LET H$="nothing": LET S=50: DIM F$(12,10): FOR N=1 TO 12: LET F$(N)=H$: NEXT N: LET F$(2)="a phial": LET F$(12)="TREASURE!": LET F$(7)="food": LET F$(9)="a key"
610 LET L=6: GOSUB W
6010 LET L=6: GOSUB W
9010 PRINT AT 19,10;"Strength = ";S;AT 20,8;"You see ";F$(1);AT 21,8;"You carry ";H$: PRINT #0;AT 1,6;"What will you do?": PAUSE 0: LET R$=CHR$ PEEK 23556: IF R$="N" OR R$="E" OR R$="S" OR R$="W" THEN LET O$=R$
```

```
9020 IF R$="P" AND F$(L,1)<>"n" AND H$(1)="n" THEN LET H$=F$(L): LET F$(L)="nothing": IF H$(1)="f" THEN PRINT AT 1,12;"You eat": LET H$="nothing": LET S=S+20: PAUSE 100
9025 IF R$="D" AND F$(L,1)="n" AND H$(1)<>"n" THEN LET F$(L)=H$: LET H$="nothing"
9498 LET S=S-1: IF S<=1 THEN CLS: PRINT "You are dead!": STOP
```

#### PROGRAM 9.

```
86 DIM M$(12,10): LET M$(9)="20a Zombie"
9006 IF M$(L,1)<>" " THEN PRINT #0;AT 0,0;"You are confronted by a ";M$(L,3 TO ): PAUSE 100: INPUT ;: GOSUB 9500
9500 LET M=VAL M$(L, TO 2): PRINT #0;AT 0,10;"You fight": PAUSE 25
9510 PAUSE RND*50+25: IF RND>.5 THEN GOTO 9600
9520 LET R=INT (RND*4+1): PRINT #0;AT 0,4;("A cut to your thigh!" AND R=1)+("It lunges at you chest!" AND R=2)+("A blow to your body!" AND R=3)+("It strikes at your head!" AND R=4): PAUSE RND*20+20: IF INKEY$="1" THEN GOTO 9550
9530 PRINT #0;AT 1,10;"You are hit": LET S=S-5: IF S<1 THEN GOTO 9996
9540 GOTO 9560
9550 PRINT #0;AT 1,10;"You parry the blow"
9560 PAUSE 50: INPUT ;: GOTO 9510
9600 LET R=INT (RND*4+1): PRINT #0;AT 0,4;("The creature hesitates!" AND R=1)+("It drops it's guard!" AND R=2)+("The creature stumbles!" AND R=3)+("It looks away!" AND R=4): PAUSE RND*20+20: IF INKEY$="0" THEN GOTO 9650
9610 PRINT #0;AT 1,10;"You miss!": GOTO 9560
9650 PRINT #0;AT 1,10;"A hit!": LET M=M-5: IF M<1 THEN PAUSE 50: INPUT ;: PRINT #0;AT 0,5;"The creature lies slain!": LET M$(L)=" ": PAUSE 50: INPUT ;: RETURN
9660 GOTO 9560
```

#### PROGRAM 10.

```
901 IF O$="E" THEN GOSUB 43: GOSUB 44
905 LET D=1: GOSUB (18 AND O$="N")+1
```

```

9 AND O$="S")+ (48 AND O$="W")
906 IF O$="W" THEN GOSUB 46: GOSUB 47
930 IF R$="M" THEN GOTO 910+(-110 AND
O$="E")+ (190 AND O$="W")
1100 CLS : FOR N=0 TO 18: PRINT A
T N,12;"Aaargh!": BEEP .02,18-N:
NEXT N: PAUSE 20: PRINT : LET R$=
"SPLAAAAAAAAAAAAAAAAAAAAAAAAAAT!
": FOR N=1 TO LEN R$: PRINT R$(N)
: BEEP .01,-20: NEXT N: STOP

```

```

9025 IF R$="D" AND F$(L,1)="n" AND H$(
1)<>"n" THEN LET F$(L)=H$: LET H$
="nothing": IF F$(L,3)="p" THEN F
OR N=1 TO 10: PAPER 6: CLS : PAPE
R 0: CLS : NEXT N: PRINT "It expl
oded": PAUSE 100: PRINT "You are
dead!": STOP

```

+ : + : + : + : +



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```
10label:ldhl,16384 or 10 La BE 1 :L dh 1, 163 8 4
```

When you press Enter, the line is reprinted like this :-

```
10 label: LD HL,16384
```

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# OPENTYPE

## FILE COPIER

By:- John Wase.

In compensation for the loss of your Italian copying program (see last months Short Spot), here's a little program which copies OPENTYPE files. These are the sorts of files made by Tasword+2, for instance, and there are errors in some of the DOS's, both in the DISCiPLE and the PLUS D, which give interesting results, like copying only the first sector of your file on odd occasions. This program, which stops all the hassle, is based on an idea by Andrew Pennell in his book "Master your Microdrive" (The "#14 to Z\$ Stream") modified and shortened so that you can copy from disc to disc, or, if you've got a DISCiPLE, from Microdrive to disc, thus enabling you to recover those precious Tasword 3 files.

Firstly, have a couple of blank formatted discs handy. Now type in this Basic loader program, note that you must be in 48K mode.

```

1 REM ** Basic Loader **
2 REM ** Stream 14_Z$ **
3 REM ** Juan Guillen **
10 RESTORE
20 LET s=0: READ a: LET sa=a
30 IF a=99999 THEN GOTO 1000
40 READ b
50 IF b<0 THEN GOTO 90
60 POKE a,b
70 LET a=a+1: LET s=s+b: IF b=0 THEN
  LET s=s+256
80 GOTO 40
90 IF s+b<>0 THEN PRINT "CHECKSUM ER
  ROR AT ADDRESS ";sa: STOP
95 GOTO 20
100 DATA 23296,42,83,92,43,229,1,11,0
  ,205,85,-1047
101 DATA 23306,22,209,33,26,91,1,11,0
  ,237,176,-1062
102 DATA 23316,33,50,92,54,21,201,39,
  91,37,91,-709
103 DATA 23326,90,40,0,40,0,11,0,207,
  18,183,-1357
104 DATA 23336,8,42,75,92,126,254,128

```

```

,32,2,207,-966
105 DATA 23346,1,254,90,40,6,205,184,
  25,235,24,-1064
106 DATA 23356,239,35,94,35,229,86,19
  ,213,25,205,-1180
107 DATA 23366,82,22,229,193,209,225,
  114,43,115,8,-1240
108 DATA 23376,3,2,201,-206,99999
1000 SAVE d1"stream14z$": SAVE d1"14_z
  $ mc"CODE 23296,83
1010 PRINT "ALL DONE"

```

Now make sure there is a blank formatted disc in drive 1. Run the program. Juan has carefully implemented checksums, so that if there is an error, the program stops, indicating the faulty line. If this is the case, check it out. When everything is right, the program will save itself as "stream14z\$" to disc 1, and the code will be saved as "14\_z\$ mc".

Write protect the disc, just in case. Find a disc with an Opentype file on it. If you have reset the machine, then reload the code you just saved (no need to alter RAMTOP; the code goes in the printer buffer). The code's in? OK, then shove your disc with the Opentype file on it (write protected) into drive 1 and enter the following commands:-

```

RANDOMIZE USR 23296: LET Z$="": MOVE D
1"Filename" TO #14

```

You now have the Opentype file in Z\$. Really! Do "PRINT Z\$", and you will see. You can modify Z\$ as much as you like.

When you've done, put a new formatted disc into the drive and type the following:-

```

OPEN #4;D1"Filename" OUT: PRINT #4;Z$;
: CLOSE #4

```

The file should be copied onto the new disc. Check it and see.

So far, so good. All this is a bit clumsy for everyday use, but if it works, you've already done the hard bit. All you've got to do is to type in a program which will use the code and make things easy. Here it is:-

```

1 REM ***transit***
2 REM ***J. Wase***
10 LOAD d1"14_z$ mc"CODE
20 RANDOMIZE USR 23296
30 INPUT "Source disc drive number?";source
40 INPUT "Target disc drive number?";targ
50 PRINT INK 1; BRIGHT 1; INVERSE 1; "INSERT SOURCE DISC: PRESS KEY": PAUSE 0
60 CLS : CAT source
70 INPUT "Filename? ";f$
80 CLS : PRINT INK 1; BRIGHT 1; INVERSE 1; "ALL O.K? PRESS ANY KEY": PAUSE 0
100 LET z$="": MOVE Dsource;f$ TO #14
110 CLS : PRINT INK 1; BRIGHT 1; INVERSE 1; "PRESS ANY KEY": PRINT : PR

```

```

INT : PRINT "Break here to examine/print z$": PAUSE 0
200 PRINT INK 1; BRIGHT 1; INVERSE 1; "INSERT TARGET DISC: PRESS KEY": PAUSE 0
210 CLS : PRINT "SAVING FILE TO TARGET DISC": OPEN #4;Dtarg;f$ OUT : PRINT #4;z$:: CLOSE #*
500 CLS : CAT targ
510 PRINT INK 1; BRIGHT 1; INVERSE 1; "PRESS ANY KEY": PAUSE 0
520 INPUT "MORE? (Y/N)";m$
530 IF m$="y" OR m$="Y" THEN CLS : GO TO 50
540 PRINT INK 1; BRIGHT 1; INVERSE 1; "BYE-BYE": STOP

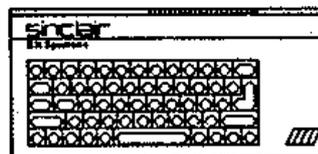
```

Save this on a spare disc. Put the first disc, the write protected one you saved Juan's program and code on, in the drive. Run "transit". It should load Juan's code. Check it all works with spare discs. If it's all O.K., save "transit" line 1 on your master disc and re-write-protect.

Now you can reorganise all those messy Tasword files, can't you....

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# 007-DISASSEMBLER

## REVIEWED FOR THE SAM COUPE

By:- Carol Brooksbank.

This program is something of an answer to a prayer for me. Since SAM came into my life, I have lost track of the time I have spent disassembling bits of its ROM by inspecting the individual bytes and working out for myself what the opcodes are.

This new disassembler comes from a well-respected stable. G.A.BOBKER, in his Spectrum utility program days, was known to us all as ZX-GUARANTEED. Now that he is concentrating on SAM, he feels that company name is inappropriate and has taken to using his own name till he renames his company.

FIG 1.

33913	47	LD B,A
33914	3AA53F	LD A,(16293)
33917	2F	CPL
33918	FDA624	AND (IY+36)
33921	B0	OR B
33922	77	LD (HL),A
33923	C1	POP BC
33924	E1	POP HL
33925	C9	RET
33926	CD8F04	CALL 1167
33929	C5	PUSH BC
33930	CD9404	CALL 1172
33933	E1	POP HL
33934	C9	RET
33935	CD9404	CALL 1172
33938	59	LD E,C
33939	50	LD D,B
33940	DD23	INC IX
33942	DD7E00	LD A,(IX+0)
33945	0600	LD B,0
007 DISASSEMBLER		
Start	Next	Exit Copy Hex

The program comes on disc, and included with the disassembler are a relocating program so that you can avoid the utility code overwriting the code you are trying to inspect, and a bonus - a program called REVEAL.

The disassembler is very easy to use. You must first load any code you wish to inspect to an address below 65535. The disassembler itself normally resides at 16384, so there is plenty of room available. If you want to examine FLASH2 code, for instance, you could first LOAD "FLASH2" CODE 25000. (There is not a lot of mileage in disassembling FLASH2, by the way - most of it holds the the loading screen.)

When you run the assembler, and press S (for start), you give the address from which you want to disassemble. If you select hex display you must enter a four figure hex number, with decimal display it must be a five-figure decimal number. The first screenful is displayed instantly. You can toggle between hex and decimal, though only the addresses change, including addresses called in the disassembly - the object code bytes are always in hex.

Pressing N will bring up the next screenful of disassembly. E exits to BASIC. C (COPY) is inactive at present because there is no DUMP code in SAM'S Version 1 ROM, but printouts are possible. Exit to BASIC, and key F2 will give a printout. As an alternative, the author provides an ingenious piece of BASIC which you can type in, which gives a screen dump on either the left or right of the page, using the SCREEN\$(x,y) function. I found that I could accommodate three screen fpages' down the left of the printed page, turn the page back, and print three more on the right. It is much more economical with paper, but more importantly, there is more program displayed on one page so it is easier to see continuity of the program.

The printout routines return you to

the disassembler automatically. If you have gone to BASIC for any other reason - perhaps to enter a POKE - key F4 takes you back into the disassembler at the point where you left off.

FIG 2.

ADDRS	BYTES	ASCII
233285	110 032 083 065 077	n SAM
233290	068 079 083 032 049	DOS 1
233295	046 177 078 111 110	..Non
233300	115 101 110 115 101	sense
233305	032 105 110 032 083	in S
233310	078 079 083 032 049	NOS 1
233315	046 177 083 116 097	..Sta
233320	116 101 109 101 110	temen
233325	116 032 101 110 100	t end
233330	032 101 114 114 111	erro
233335	242 069 115 099 097	.Esca
233340	112 101 032 114 101	pe re
233345	113 117 101 115 116	quest
233350	101 228 084 082 075	e. TRK
233355	045 032 032 048 044	- 0,
233360	083 067 084 045 056	SCT-8
233365	048 044 069 114 114	0, Err
233370	111 242 070 111 114	o. For

FIG 3.

ADDRS	BYTES	ASCII
233259	AF 32 CF 7A 5F E1	.2.z_.
233265	7E ED 7B 04 41 C9	~.{.A.
233271	4E 6F 6E 73 65 6E	Nonsen
233277	73 65 20 69 6E 20	se in
233283	53 41 4D 44 4F 53	SAMDOS
233289	20 31 2E B1 4E 6F	1..No
233295	6E 73 65 6E 73 65	nsense
233301	20 69 6E 20 53 4E	in SN
233307	4F 53 20 31 2E B1	OS 1..
233313	53 74 61 74 65 6D	Statem
233319	65 6E 74 20 65 6E	ent en
233325	64 20 65 72 72 6F	d erro
233331	F2 45 73 63 61 70	.Escap
233337	65 20 72 65 71 75	e requ
233343	65 73 74 65 E4 54	este.T
233349	52 4B 2D 20 20 30	RK- 0
233355	2C 53 43 54 2D 38	,SCT-8
233361	30 2C 45 72 72 6F	0,Erro

One very unusual but useful touch is that, on screen, all CALL and RET instructions are highlighted in colour. It is a great help to see at a glance where subroutines end and

subroutine calls come. (Fig.1)

I have only little niggles about the program. It is something of a nuisance to exit to BASIC to print each screen page to the printer. Since SAM has no screen dump routine, I wish COPY had been used to trigger off the author's own printing routine - preferably the one which offers the LEFT-RIGHT option. And it would be handy to have POKE and SAVE facilities from within the disassembler. That apart, this is a workmanlike and easy to use program - so user-friendly that its 'handbook' is one-and-a-half sheets of A4, and you won't even be referring to that five minutes after you start using it.

FIG 4.

ADDRS	BYTES	ASCII
233129	Od Oe Of Og Oh Oi	
233155	Oj Ok Ol Om On Oo Op	
233181	Q R S T U V W X Y Z	
233207	[ \ ] ^ _ ` {   } ~	
233233	2 0 2 C C C C O U N C O M	
233259	Z M Z 2 z { A Nonsense	
233285	in SAMDOS 1. Nonsense in	
233311	SNOS 1. Statement end erro	
233337	Escape requeste TRK- 0,S	
233363	CT-80,Error Format TRK- 0	
233389	los Check disc in driv No	
233415	"BOOT" fil Invalid file na	
233441	m Invalid statio Invalid d	
233467	evic Variable not foun Ver	
233493	ify faile Wrong file type M	
233519	erge erro Code erro Pupil	
233545	se Invalid cod Reading a w	
233571	rite fil Writing a read fi	

007 REVEAL is a program for displaying the addresses and bytes of a program on disc. On loading, you are asked for the file name, its usual store address, and then whether you want a decimal, hex or ASCII display and the address from which you wish to start - and this can be any address in SAM's memory above the start of the code file. Six figure numbers are accepted. If you opt for hex, only the bytes peeked are in hex - the addresses remain in decimal. On both hex and decimal, the ASCII equivalents, if printable characters, are displayed at the right of the

screen. (Figs 2 and 3). If you opt for ASCII display, the ASCII printable characters are displayed with all other bytes printed as inverse blanks.(Fig. 4). This is particularly useful if you need to search for messages, codewords and so on. The three illustrations are from the SAM DOS message area.

But there is a bug in this program. If you look carefully at Figs. 2-4, you will see that the bytes listed do not correspond. In fact, the ASCII display is correct. The decimal display addresses need 2 added - the top line bytes actually start at 233287, and the hex display addresses are scrolled down by one line. The top line there are the bytes starting at 233265. So, if you use this program to

discover where to enter POKES, you must be very careful about the addresses you use.

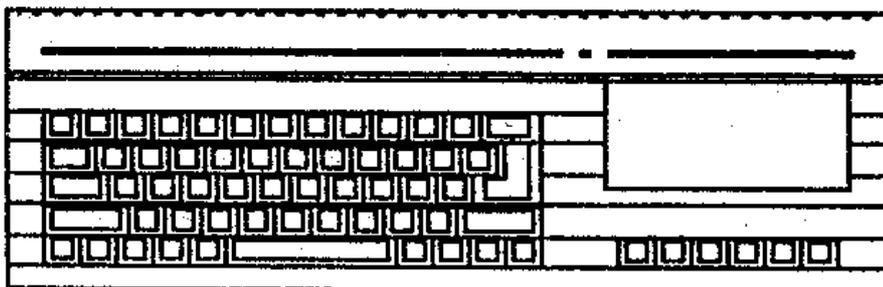
But the whole package is very good value for money. The disassembler alone is well worth the modest price, and it is good news that there are disc doctor and disc manager programs coming soon. Utilities of this sort are welcome additions to SAM's repertoire.

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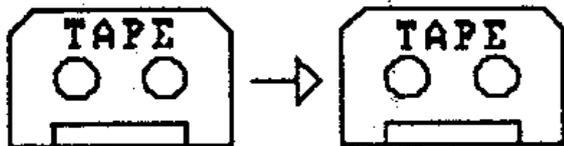


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# \* REVIEW \* REVIEW \* REVIEW \*

# LERM ASSEMBLER

By:- Carol Brooksbank.

listings, the TAB key has been programmed to move across the screen so that labels and opcodes can be kept in line.

Automatic line numbering is available, with user-definable start number and step, and all or part of the source code listing can be renumbered.

Notes may be added after the opcodes, or given a line to themselves, but they must not flow from one screen line to another. One touch I like very much. In common with all assemblers I have met which allow notes, they must be preceded by ";", so that the listing as you enter it looks like this:-

```
00990 ;Open stream for sending
01000 ;binary codes to printer
01010 ;
01020 STREAM LD A,251
01030      CALL 274
01040      LD HL,PRCODS ;codes
01050 ;list address
```

When you produce a printed copy of this, it usually looks rather messy. But the LERM assembler sends spaces to the printer instead of ";", so the printout looks like this:-

```
00990 Open stream for sending
01000 binary codes to printer
01010      STREAM LD A,251
01030      CALL 274
01040      LD HL,PRCODS codes
01050 list address
```

It is much neater and easier to read.

The program accepts all the regular pseudo-ops in their short form DB (not DEFB), DW, DM. It also accepts DS, although the handbook does not tell you so. If the code is to reside at an address occupied by the assembler code, you can ORG to one address and

Life will be a little easier from now on for SAM machine code programmers. There has been no assembler for SAM, so we have had to write our source code on the Spectrum. If, like me, you have only one disc drive between the two machines, this has meant a lot of SAVEing, switching off the power, unplugging the drive from one machine and connecting it to the other, switching on, LOADING - and then repeating the whole performance when it crashes!

But now LERM have come to the rescue with their SAM ASSEMBLER. This has been brought to the market quickly to fill a pressing need, so it is only an assembler. A toolkit enhancement will follow, with facilities like disassembler, one step option and reverse assembler.

It is a very simple program, and therefore very straightforward to use. It comes on tape, but making disc or tape backups could not be easier. After LOADING, you exit to BASIC when key F0 makes a disc copy, F1 a tape backup. F9 returns you to the menu which contains the following options:-

- (A) Enter Assembler
- (S) Save a Source file
- (O) Save Object Code
- (E) Erase a File
- (D) Fetch Directory
- (M) Select device T or D
- (R) Exit to basic
- (L) Load a Source File

Once in the assembler, source code can be entered in decimal, hex, binary or any mixture of the three. The assembler does not insist that labels and source code must be entered in their own fields - if you put LD A,(HL) where the labels normally go it will assemble correctly - but, in the interests of neat and understandable

DISP to another, which means that the object code will run from its correct address, but while it is being assembled it will be stored at the DISP address.

I have only two criticisms of the program, and one is that source code and object code together may only occupy addresses 32768 - 65020. It seems a pity to me that DISP addresses could not take advantage of SAM's abundant memory, so that larger source code files could occupy the whole lower memory with object code stored at the higher addresses. But it may be, of course that LERM are reserving the higher pages for the enhancements to come.

My other criticism is admittedly one of the bees in my own bonnet. I do not like assemblers to restrict me to only six-letter labels. I find it difficult in a long program to produce dozens of labels which mean anything at all with so few letters, and it means that you cannot even use many of the documented names, which everyone will recognise, for SAM's jump calls and system variables. In the example above, for instance, I would normally have used

```
CALL JSETSTRM
```

instead of

```
CALL 274
```

but JSETSTRM - the label in the technical manual - has 8 letters.

I know that part of the reason behind this is that if you want to keep the line number, label and opcodes on one screen line, you must restrict label length. But in SAM we have MODE 3, with 85 characters per line. Labels could be much longer, there would be more room for notes on the same line, and the printout would occupy the whole width of the paper, if the program took advantage of SAM's flexible screen modes. In fact, mode 3 is used for the menu.

I was surprised at first that, during assembly, the object code is

not printed either to screen or printer. But you do not really need to see the bytes themselves, and it means assembly is very quick with this program.

If you really must know what the bytes are, a toolkit option lets you inspect them. If there are any problems with assembly, error message codes are printed out, together with the offending line so that you can correct things. The handbook explains the error messages. The symbol table can be printed to screen or printer, giving the addresses of all labels used. Interestingly, the table is in reverse, so that the last label you used is at the top. Since the last one I use is usually

```
LENGTH EQU END-START
```

it means that the code block length is at the top of the list and easily found. A nice practical touch.

A small toolkit is included, giving options for converting between hex, decimal and binary, printing the high and low bytes of two byte numbers, printing any label and its value after assembly, displaying the last line number used in the source code listing, and for listing addresses and their byte values.

The program also allows you to have more than one source code listing in memory at once. You can start a new listing by entering NEW and an address. Your original file will start at 32768. Once you have initialised a listing with NEW nnnnn, you can switch between files with the OLD command. OLD 32768 calls up your original file, OLD nnnnn the new one. Only the size of your files and the memory available restricts the number of files you can have. SAVE, ASSEM, RENUM etc. operate on whichever is your currently selected file.

This is a very good and useful program for the SAM user. It has all the facilities for writing source code

>>> turn to page 26 >>>



# YOUR LETTERS



Dear Editor,

From my experience I am wondering what will be the position of the SAM in a couple of years time. Will MGT have dropped the line? Will it not be possible to get it repaired if needed?

The reason I say this is that after selling me a LC10 Printer, when I needed a spare part MGT tell me they no longer deal with the LC10. The Twoface was dropped after about 12 months. A couple of years after buying a DISCiPLE MGT appear not to want to know about repairing it nor can I find anyone else who will. It was not so long ago in FORMAT that you said MGT would still repair the DISCiPLE, who is right? Now they have sold off the PLUS D, where will this leave existing users.

Things have certainly changed, and for the worse in my opinion, at MGT over the last months.

Yours sincerely, M.Perry.

Editors Note:- I Faxed a copy of Mr Perry's letter to MGT and received the following reply. Its a little long, but I couldn't think of a way to shorten it. Please remember that if you are having problems with Spectrum, DISCiPLE, PLUS D or SAM Coupé then the best source of help and advice is FORMAT. Meanwhile, here is MGT's reply:-

Dear Bob

MGT offers a full 1 year guarantee on all its products. This has always been the company's policy and will continue to be, whether these are manufactured by MGT or not.

It follows that we will undertake responsibility for repair of any product within this 12 month period. It is not necessarily the case that we can supply spare parts and ship them to the customer. In the case of products which we do not manufacture, it is often necessary to send the

entire unit back to the original manufacturer for repair as spare parts are not available individually.

As many of your readers will know, MGT has never manufactured the DISCiPLE. We designed the product in 1986, but entered into an agreement with Rockfort Products of London, who were to manufacture and sell them. When, in 1987, there was a major disagreement between MGT and Rockfort, we were unfortunately unable to retain any rights to the product. However, we felt we had an obligation to customers who had bought the product. We also sold small numbers of the product, buying them in a normal commercial transaction from Rockfort.

We have always repaired DISCiPLEs within the warranty period, and wherever possible have repaired product outside the period. Rockfort have now ceased production of the DISCiPLE and it is no longer possible for us to acquire any custom chips if they are required. As such it depends on the fault as to whether we can repair DISCiPLEs or not.

Within the last month, we have transferred the rights in the PLUS D to Datel Electronics Ltd. We did this because we now need to concentrate fully on the SAM Coupé, and we felt that a company like Datel, could provide customers with an excellent service. They would, we thought, be likely to prolong the life of the product. We will continue to honour the warranty on all PLUS Ds we have sold. We will also repair PLUS Ds which are out of warranty - as will Datel, we understand. Datel can be contacted at:-

Datel Electronics Ltd,  
Fenton Industrial Estate,  
Govan Road, Fenton, Stoke-on-Trent,

I should, I think, point out that MGT has necessarily changed with the introduction of the SAM Coupé. Six

months ago we were selling products to relatively small numbers of people, and were well able to cope with the demand for customer assistance. One of the articles of faith at MGT has always been that we should be able to help customers in all circumstances, no matter what their question is.

The Coupé has introduced us to a much larger market with a considerably different profile. MGT has had to grow exponentially to deal with the requirements of becoming a mass market manufacturer. Mr Perry is right - our customer service is not what it was. This is largely because it is difficult to identify the well-rounded individuals who can perform well in customer support. We need people who know and love the product, can communicate well - whether on the telephone or in writing and can deal with enquiries at an appropriate level, whether high level or low level and whether the customer is 8 or 80.

Our commitment to high quality customer service is undiminished, but I would ask our customer base to be aware that we're not getting everything right at the moment, and won't until we've identified the right people and had the time to train them in the MGT way. An important internal debate at MGT at the moment is whether, since we appear to be under-equipped with the right sort of customer service people at the moment, we should work with an outside agency to get better results.

I hope this is helpful. To Mr Perry and to others who may have found our service recently less than satisfactory, I apologise. But I'd like to assure you that our commitment to the customer is unchanged, and I trust that you'll begin to see improvements soon. And thank you FORMAT for helping to keep our customers so well-informed.

Alan Miles

Dear Editor,

Beware the 1000pf cure for the capital M & N symptom that seems to afflict the Spectrum +2 in 48k mode. I fitted one of the capacitors across the diode stated and true to the

instructions it cured the fault.

However, since affecting the cure I have noticed there seem to be side effects with some of my programs. One of these is Lin-o-type which should allow you to switch between printer Enable/Disable. Once the printer is enabled I can no longer disable it like I did before. Another program is the WP48+/128 word processor typed in from the now defunct ZX Computing. With the capacitor in I could no longer print the letter R or the inverted comma key.

So if you have carried out this modification to the +2, and have wondered about unusual effects, it could be that the capacitor is the cause.

By the way, on my version of the +2 I found that by entering 128 mode and then typing SPECTRUM to enter 48k mode, the M & N problem isn't there (but don't ask me why).

Yours sincerely, Reg Brooks.

Continued from page 24.

now - testing and debugging aids will be available soon. Owners of LERM's Z80 TOOLKIT for the Spectrum can already get a conversion program to use most of its features with the SAM assembler.

The program is simple enough to be usable by a beginner, but still has enough options to satisfy the more experienced programmer. Its handbook is written in clear and sensible language, with the key summary and error codes on the last page where they are easily found. LERM are to be congratulated on producing a practical and bug-free program so quickly.

SAM ASSEMBLER £8.99

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Whitley Bay,  
Tyne & Wear,  
NE25 9UW. Tel:- 091 2533615

Next month I will be reviewing the new SC Assembler from Steve Nutting which I have just received.

# ELECTODRAW

## CIRCUIT DESIGNER REVIEWED

By:- Alf Casarrubios.

In February's edition of *FORMAT*, Bob asked about small companies producing serious *SPECTRUM* software. One company that I have come across is *BESoft*, which produces a software package called *ELECTRODRAW*.

It is primarily an electronic circuit drawing aid, which allows you to store, edit and print electronic circuit diagrams. It can also be used for architectural, electrical and other engineering diagrams and schematics; I use mine to draw railway signalling diagrams for work!. More on the different uses later.

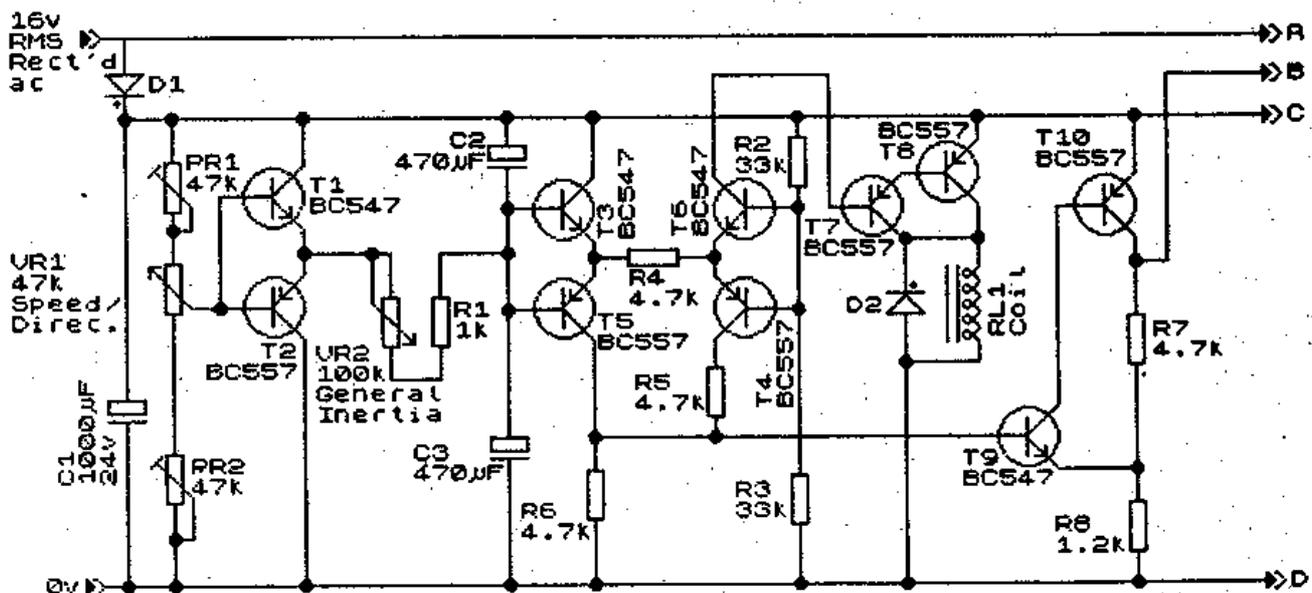
The program will run on any 48/128K *SPECTRUM* and will work with Microdrives, *DISCiPLE*, *PLUS D* and probably other disc interfaces as the loading and saving is done via a BASIC program, which can be altered to suit your particular storage system.

The software is supplied on tape or microdrive (nice touch this, as not many companies supply software on

microdrives these days). Disc users can transfer to disc from the loading menu, as all commands use microdrive syntax. A few *POKE @* commands have to be entered as a line before the machine code is loaded. These are to select line feed off and to set the number of characters per line to zero. Once the software has been customised, the "run" file has to be renamed to "Auto\*\*\*\*\*" for autoloading.

When the program is run you are presented with a colour options menu to select the *INK* and *PAPER* colours. Once chosen it cannot be changed again from within the program. Next comes the printer option. A choice of *ZX*, *Alphacom*, *Centronics* or *Interface 1 RS232* is offered; this should cater for most needs. When selected, up comes the main menu through which you are able to select all options which include the following:-

1. *TAPE/DRIVE* options - This allows you to save/load/merge files from tape or drive and also *CAT* a drive.



Circuit reproduced by kind permission of Roger Amos from his book  
 "Practical Electronics for Railway Modellers 2"

2. RETURN to present diagram - Displays the diagram that you have loaded or drawn on the screen. If there is no diagram in the memory, it will present you with a screen ready for drawing one.

3. DEFINE a symbol - With this option you go into the "symbol editor" to redefine the symbols to suit your use of ELECTRODRAW. The 50 symbols provided are for drawing electronic and logic circuit diagrams. The memory allows at least 100 more user defined symbols, this number can go up to approximately 1000 depending on the size of the symbols, so that the program can be adapted for other drawing disciplines such as electrical engineering diagrams and process plant schematics etc. You are only limited by your imagination. Once redefined they can be saved thereby allowing very flexible use of the program.

4. DUMP to printer - Allows you to produce a printed copy of your completed masterpiece. One word of warning, do remember to save your diagram before printing as part of it is lost during printing. In fact one quarter of the diagram is printed at a time, allowing you to print diagrams that may stretch over several pages, by printing 3/4 of the diagram (select this option 3 times), keeping the last part in memory, draw more or merge a file and carry on printing ad infinitum until you run out of paper or your ribbon dries up!!

5. DRAW a new diagram - This erases any diagram that is in memory and gives you an empty screen to start a new drawing.

6. GRID ON/OFF - This places a chequer-board of alternate bright and normal squares to help the positioning of the symbols.

0. QUIT - Pressing Caps-Shift and Y when prompted will exit the program via a RANDOMIZE USR 0.

When drawing a circuit, the keys follow a fairly logical sequence and are user friendly, like B to draw a BOX and E to ERASE. One useful feature is M for MAGNIFY. This command displays an enlarged image 4 times normal size immediately around the cursor in the bottom right hand corner of the screen. This feature is very useful when aligning symbols and lines during drawing. W will WIPE a line when the cursor is placed on it. R will ROTATE a symbol through 90 degrees and V will flip it VERTICALLY. N will bring you to NORMAL and Y will bring you to the main menu.

Labels (text) can be put on the diagram by putting the cursor in the position required and pressing L for LABEL. Normal text and Greek characters along with numbers can then be written on the diagram.

CONCLUSION Overall the program has been quite well written and thought out as far as use and flexibility is concerned; it's strongest point being it's great adaptability. After using it for a week or so one got used to the controls and options fairly quickly. The user manual is well written and easy to comprehend.

A couple of minor criticisms are that there is no prompt to save the file before printing and that the print is in single density, it would have been nice to print in double density especially if the original was going to be photocopied for distribution.

These two points do not detract from the fact that it is a very good piece of software which I recommended to anybody thinking of buying a utility such as this one. I wish it well.

The program will run on the SAM Coupé, using the Spectrum Emulator in the January 1990 issue of FORMAT.

BESoft, 20 Ashville Road, Leytonstone, London E11 4DT. Tel:- 081-558-3469 (evenings only).

PRICES:- On cassette £17.50, microdrive £19.00 incl. p & p.

# NEV'S HELP PAGE

By:- Nev Young.

It would appear that Bob Bates of Nottingham doesn't fully understand the POKE @ command. Now I seem to remember reading about this in an early issue of FORMAT.

The POKE @ command was created solely for setting the DISCiPLE and PLUS D system variables. However, it was soon found that the command could be used as a double poke in the Spectrum main memory but with reservations. Firstly POKE @ will only poke a single byte into memory if the value to be poked is less than 256. Secondly you have to offset the address to be poked by the address of the first system variable in the DISCiPLE or PLUS D. ie 664 for a DISCiPLE and 8192 for a PLUS D. A few examples:-

On a DISCiPLE

```
POKE @49336,42 : 50000=42
                  50001 unchanged
POKE @49336,364 : 50000=108
                  50001=1
```

On a PLUS D

```
POKE @41808,42 : 50000=42
                  50001 unchanged
POKE @41808,364 : 50000=108
                  50001=1
```

This can be useful. If you have a program that you want to run on both DISCiPLE and PLUS D it is possible to find out which with the following code:-

```
10 POKE 65535,0
20 POKE @64871,1
30 IF PEEK 65535 = 1 THEN DISCiPLE
40 IF PEEK 65535 = 0 THEN PLUS D
```

L.A.Taylor of Surrey is having problems with the WRITER word processing converter program from FORMAT (FST-07). The first problem you have is either a faulty or a dirty

disc drive. Try giving the heads a good cleaning. (See help page in issue 3/3). The second is you may have a non standard version of the WRITER (The company who marketed that program had a habit of changing things without changing the version numbers). If this is the case I suggest you phone the editor of FORMAT as he may be able to work something out for you.

P.Clough of Durham is also having problems with the conversion of the WRITER your problem is a simple one. Simple to fix tricky to understand. The conversion works with G+DOS 1a/2a but not with G+DOS 3. This is because MGT incorrectly sent out a few PLUS Ds with version 3 dos. This was produced by upgrading version 2 but it wasn't the same upgrade that was published in FORMAT that upgraded version 2 to 2a. The correct version of dos is available from FORMAT reader services, see elsewhere in this issue.

A different word processor causing problems is TASWORD+2, this time for a reader from Hannover (your letter was damaged in the post & I can't make out your name). The problem is every time he tries to save a file to disc the message 'FATAL DISC ERROR' is produced. Well I'm using the same word processor to write this column, and I can only get that error by either removing the disc or having a write protected disc in the drive. Apart from that it works perfectly.

And yet another word processing problem. This time from R.Jones of Llangefni. He wants to know of any word processor he can use on his 16K Spectrum. Well I've not been able to find any but somebody else reading this might know of one. Remember Mr Jones has a 16K Spectrum. I think it would be as easy to get a 48k Spectrum. Certainly where I live there

are a few for sale each week in the local newspapers, sometimes for a little as £20.

Istvan Ordog of Budapest writes a sad tale of Opentype files not working at all well. (At least the PLUS D has Opentype files). You are quite correct in your description of the problem. There always has been a problem with Opentype files and nobody has ever come up with a real fix. The problem happens if the disc stops spinning between writing sectors. When the next sector is to be written the PLUS D may start writing before the disc is spinning at the correct speed. The result is lost data or badly written sectors. My own solution to this is to put extra lines into my program to keep the disc spinning. On a DISCiPLE this is "OUT 27,0" or "OUT 227,0" on the PLUS D. This will keep the disc spinning and the heads at track 0. This has stopped the problem happening on my discs and maybe it will help you.

Mark Longborn of Bristol wants to know if there is a 128K version of OCP Artstudio available for the PLUS D. The editor tells me there will be soon. I believe that Villy Feltman is working on it over in Denmark. Now I don't know of a mouse that you can use with this package but I'm sure somebody reading this will. I'll let you know.

Well thats all for this month. Keep those letters coming. I will answer as many queries as possible but only through the magazine so please do not send me return postage etc. Also it is in your interest to send me as much info as possible such as program listings etc. as contrary to popular belief I do not have a vast library of programs, I only do this in my spare time!

Write ONLY to Nev Young at:-

FORMAT Help Line,  
3, Mitchell Place,  
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# FORMAT

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\* \* \* \* \*

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## SPECIFICALLY WRITTEN FOR PLUS D & DISCIPLE

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### FASTWORD PLUS

Here is a great programme that rejuvenates an old favourite. How often when using TASWORD TWO, have you been stuck for the right word? FASTWORD PLUS offers a complete reference book of words, waiting, ready for use at the press of a key!

This is the Plus D and Disciple Disc version of the successful program FASTWORD, a THESAURUS for the Spectrum. Features include ● Full alphabetical index of over 6,000 words ● A display of almost 600 screens ● Equivalent to a 120,000 word printed Thesaurus ● Sense identification for each word ● Select a word from the index using the first 2 letters and displayed on the screen is an average of 20 synonyms and associated words ● 2 way scrolling index ● Fast response ● Overlays Tasword 2 ● Words can be looked up in the Thesaurus as you are working on a text file in Tasword 2!

Also supplied is a NEW TASWORD 2 BASIC PROGRAM, specially written for Disc drive operation, offering new features such as selective catalogue, Wordcount etc. A CONVERTER program tailors your Tasword 2 code to give any combination of screen colours plus a new highly readable Tasword 2 character set.

Complete with instructions these 4 programs represent amazing value. Supplied on Disc. **ONLY £9.95**

### FILE MASTER

At last! A comprehensive DataBase system that is VERY EASY to use. You will never forget the correct keys to press when using FILE MASTER, we guarantee it!

This versatile and powerful program can be used to store virtually any type of data. File Master enables you to create and maintain sophisticated data files, the type normally associated with more expensive computers. For example a file called 'DIARY' could be created. After typing the relevant data, the program can inform you which of your friends have a birthday in the next month, if the TV licence is due and the date of your next dental appointment. Records of money paid into the bank and cheques drawn could also be kept in the diary, and for an up-to-date total you simply press a key! The variety and scope of the files you can create is almost limitless and each file you create can have an infinite number of records (using segmented files).

Send for your FILE MASTER disc today. **ONLY £8.95**

### THE ORGANISER

Features include ● Organisation of programs on any disc in any order you wish ● Makes finding programs in the directory much easier ● Selected programs load faster ● Checks for faulty sectors ● Automatic or manual Sector Repair ● Recovers erased files ... PLUS many more features to make file handling and disc 'house-keeping' so much EASIER.

This is what the experts said:-

"The ORGANISER has a very friendly user interface.... it's rare to find a package so easy to use.... brings out the best features in GDOS.... MGT should bundle it with SAM.... value for money...." SID MARTIN in COMPUTER SHOPPER.

"Beautifully constructed and presented.... at £5 a bargain.... worth £10 or more just for the Disc Doctor aspects alone.... clearly to be recommended...."

Dr. JOHN WASE in POPULAR COMPUTING WEEKLY.

The ORGANISER is an essential program for ALL Plus D and Disciple users. Supplied on Cassette. **ONLY**

**£5**

### DISC MANAGER

THE DISC MANAGER is the most powerful program ever written for the DISCIPLE/PLUS D.

Designed to take advantage of Disc Drive ownership, the Manager keeps track of all the programs on all your discs, ● Storage of up to 27,000 records on one Disc, or 79,920 total. Random File Access. ● Name & Number Discs with fast Autonumber and user pre-defined titles features. No typing in of Data. Press a key and Discs are automatically added to appropriate catalogue. ● Fastest ever MCode Search. 2 modes - Search and Load or Search and List all occurrences, then select program to load. ● Plus many other unique features. ● Comes with 16 page manual and demonstration catalogues. ● Operates with 48K or 128K Spectrums. Send for the DISC MANAGER today... and you'll soon wonder how you ever Managed without it!

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SOFTWARE THAT IS SPECIFICALLY WRITTEN FOR PLUS D & DISCIPLE

PLEASE STATE YOUR DRIVE TYPE, SIZE, ETC, INDUG MEMBERSHIP No. AND IF REQUIRED FOR DISCIPLE OR PLUS D