

# SHARPSOFT



**Issue 15**

# SHARPSOFT USER NOTES

Issue No.15

## C O N T E N T S

	<u>Page</u>
<b>EDITORIAL</b>	2
<b>Z80 CP/M fig-FORTH for all the Sharp Family</b>	3
<b>MZ080A Notes, Letters and Listings</b>	
BASIC Extension	4
Clues for lost Adventurers Secret Kingdom Mexican Adventure	5
USR Command	6
Inside my MZ-80A	7
Memo Pad	7
Trap	8
<b>MZ-80K Notes, Letters and Listings</b>	
Queries on ZEN, PASCAL, FORTH and LISP	11
SP-5025 and Speed BASIC add-ons	12
Word Count for WP.2 (SUN Issue 6)	18
Far Reaching Implications!	20
SP-5025 AND and OR functions	21
PCW Leisure Lines Problem	22
<b>MZ-80B Notes, Letters and Listings</b>	
Problem with MZ-80B Graphics Book	24
International Section	25
Accessing P5 Printer Codes	37
Inner Planets - PASCAL	38
Music Favourites - Ralph Birnbaum	40

© SHARPSOFT LIMITED 1984

## SHARPSOFT USER NOTES

### ISSUE NO.15

Looking through our files of correspondence I found that we had accumulated, during the Summer, a large number of letters and programs from readers. Hence our end of year Issue is devoted entirely to your contributions. In this Issue you will find something for everyone - from FORTH to PASCAL.

The number of subscribers to the User Notes has dropped during the last year - which perhaps reflects the age of the MZ-80K or a move by Sharp owners to the MZ-700 or possibly other home computers!

Our policy has always been to support Sharp computer owners and we propose to continue publishing these notes for at least one further year. At the end of next year we will again review the current membership position.

The declining number of members does however force us to revert back to the original format of three Issues per year.

The first Issue in the 1985 series will be published towards the end of February - so please send in your contributions as soon as possible.

A membership registration form for the 1985 User Notes is included with this Issue. It helps us if you could return the completed form with your registration fee in the near future.

Best wishes to all our Members  
for Christmas and the New Year

Mike Brinson  
Editor

Z80 Fig-FORTH for all Sharp Systems

from

EDMUND RAMM - GERMANY

I am pleased to send in my latest version of Z80 fig-FORTH, this time I am happy to enclose an MZ-80A, MZ-80B and MZ-3500 formatted disc as well.

The new version (1.1g) adapts itself to the size of the TPA (formerly this had to be done at assembly time) and supports the CP/M file system (the previous versions accessed the disc directly by means of track and sector co-ordinates). Further details are outlined in the file Z80FORTH.UPD. Credit for the new mass storage routines goes to Albert van der Horst (Netherlands Computer Club).

I've often heard the rumour than a 6 MHz Z80B will outperform an 8088 which runs at 4.77 MHz (IBM PC). And indeed, Z80 fig-FORTH on my 6.14 MHz Z80B system runs circles around poly-FORTH (which is an expensive commercial product) on an IBM PC.

From the last paragraph you may have gleaned quite correctly that I'm not using a Sharp machine anymore. True, I'm rolling my own now (homemade ECB-Bus based CP/M system), but this doesn't mean I'm about to forsake the Sharp world. With my ol' n' faithful MZ-80K I was limited to one disc format, now I can read (and write) lots of them, including the Sharp range.

We can supply copies of the disks containing Z80 fig-FORTH for:

1. MZ-80K CP/M - 2 disks at #10
2. MZ-80 A/B/3500 - 1 disk at #5

These charges include media and postage.

Overseas readers should add a further #3 to cover additional postal charges.

Please specify which computer when ordering your copy.

BASIC Extension by Jasmit Singh

BASIC EXTENSION NOTES

ASC 'SUBSTITUTE FOR' NO. NEXT  
 | | | | |  
 DATA 35, 32, 3, 6, 152, 201, 254

For the last one end with a '201'  
 instead of 254

The numbers for the keywords are:

152=POKE	163=CLOSE	128=REM
146=END	153=DIM	164=MON
151=VERIFY	148=ON	154=DEFFN
165=LIMIT	149=LOAD	142=READ
155=INPUT	160=CONT	129=DATA
133=LIST	156=RESTORE	167=GET
138=FOR	134=RUN	157=CLR
168=INP@	144=NEXT	135=NEW
158=MUSIC	169=OUT@	140=THEN
136=PRINT	159=TEMPO	141=GOTO
170=CURSOR	137=LET	160=USR (
171=SET	142=GOSUB	139=IF
161=WOPEN	172=RESET	143=RETURN
162=ROPEN	145=STOP	

```

10 REM ---- BASIC extension By J.Singh ----
200 REM !=RUN,%=FOR,&=NEXT,^=THEN, [=GOTO,]=GOSUB,←=RETURN,#=INPUT
205 REM \=LIST,@=CURSOR,☐=NEW,☐=LOAD
210 POKE 5255,205:POKE5256,9:POKE5257,51:POKE5258,0
220 FORA=13065TO13156:READB:POKEA,B:NEXT
230 DATA254,63,32,3,6,136,201,254,33,32,3,6,134,201,254,37,32
240 DATA3,6,138,201,254,38,32,3,6,144,201,254,39,32,3,6,140,201,254,91,32,3,6
250 DATA141,201,254,93,32,3,6,142,201,254,95,32,3,6,143,201,254,35,32,3,6
255 DATA155,201,254,92,32,3,6,133,201,254,64,32,3,6
256 DATA170,201,254,21,32,3,6,149,201,254,22,32,3,6,135,201,201
260 PRINT "☐ BASIC extension"
265 PRINT " "
270 PRINT " by Jasmit Singh"
275 PRINT "32492 Bytes "
280 PRINT "-----"
290 PRINT
300 NEW
    
```

Dear Sharpsoft,

As Adventure programs seem to be very popular, I thought I would give some frustrated adventurers a break and give them some clues.

On SECRET KINGDOM, I found almost all of 10 treasures in less than a week. If you find some fireworks, give these to a wizard, he will in turn give you a magic staff. By typing 'USE STAFF' some oil will appear and the Staff will disappear. The oil can be used to light a torch which must be lit before entering the snake pit. Getting past that Guard can seem difficult at first. To get past him, you must take the Cannon ball, climb the tree and then drop the Cannon ball. This will kill the guard. To enter the Iron Maiden, you must be wearing the Chain Mail. To get to the bottom of the lake, you must hold your breath and then dive into the lake.

On MEXICAN ADVENTURE, this is much harder. Not even Sharpsoft knew how to get the PASSPORT. This is done by going to the cell which has a dead body hanging from the rope and on him you will find a piece of paper. Take this and then go to the other cell which has a dying man, take the spectacles that can be found on him, and then type 'USE SPECTACLES'. The paper will burn away leaving code. Then go to the bank in Eldorado and type in 'CODE' followed by the code. The bank clerk will then give you a safety deposit box. Inside the box is a passport without a Photo on it. To get the Photo, you need to make a camera. Can anybody tell me how to make the camera?

Can anybody beat these highscores?

Galactic Attack	= 246000 (3 noughts at the end!)
Bug Blaster MZ700	= 32000
Raid	= 27000
Attack Force	= 91000

Does anybody know how to correct the bug in 'MEXICAN ADVENTURE'. When I try and get out of the Jeep and enter the arid Plain I get an error (unused reference line stated).

Has anybody found any bugs in ZEN assembler. I wrote a program, and when I altered the last line of the source code, assembled it and then ran it, the program kept looping around the beginning of the proram. I would be grateful if somebody could tell me how to correct it, or any bugs in ZEN.

Keep up the good work. and I look forward to the next Issue.

SIMON JONES  
KENT

P.S. Why don't you have a competition on your games for the highest score?

Dear Sirs,

May I please make the following comment:(?).

Reference the suggestion made in FOUR editions of S.U.N. as to the use of "USR(33):USR(36)" to obtain copies of BASIC AND the current programme. According to the Authors of these remarks, I should have a tape copy programme PLUS the BASIC, which to me means that I could 'Load' that tape WITHOUT Loading Basic Interpreter.

It DOES NOT work for me, I have tried all ways I could think of, i.e. reversing them to: USR(36):USR(33), one at a time i.e. usr(33) 'enter' then usr(36) next line,. You 'name-it' I have tried it, but still it don't work. Could you PLEASE HELP!?? (I am fast 'going-up-the-wall').

N.B. I have the Model: MZ-80A (48K) I do not have any attachments, such as printer, disc driver etc.

The Editions of SUN which quoted 'USR(33):USR(36)' are:-

- No. 2 June 1981, page 10.
- No. 3 1981, page 19.
- No. 8 1983, page 21.
- No. 9 1983, page 61.

Also the Author of "Peeking and Pokeing the Sharp MZ-80A" G.P. Ridley also quotes ".....records on tape last program loaded, including the BASIC SA5510." BUT it still don't work for me, can you please help, in your reply please treat me as a complete 'idiot' and tell me 'step-by-step' (as if I was a computer).

One further thing Sirs, is ther any Software for MZ-80A as a 'Simulation' Captain of a ship(??) such as the Flight Simulation. i.e. contriolling a ship into Harbour, on similar lines as seen on T.V. sometimes (!!??).

I will be extremely grateful to you for your replies.

R.G. BAXTER  
KENT

Entering USR(33):USR(36)<CR> will only make a copy tape of the last program loaded. If you have just loaded the BASIC interpreter then entering USR(33):USR(36)<CR> will make a copy tape of the BASIC only.

If BASIC is already loaded and the last program loaded was a BASIC program then entering USR(33):USR(36)<CR> will make a copy of the BASIC program only and not the program and interpreter together.

Obviously the previous information in our User Notes has been unclear because the BASIC interpreter cannot be linked with a BASIC program without make quite a few modifications. We hope this makes more sense.

SHARPSOFT



## MZ-80A - Notes, letters and Listings

```

10015 PRINT LEFT$(TI$,2);":";MID$(TI$,3,2);"/";RIGHT$(TI$,2)
10016 IF Y=23 THEN PRINTCHR$(4):Y=22:GOTO 900
10020 IF X<1THENX=1
10021 CURSOR X,Y:PRINT "■"
10022 GETMM$:CURSOR X,Y:PRINTMM$
10023 IF MM$=CHR$(#15)THEN X=X-1:CURSOR X+1,Y:PRINT " ":GOTO 10010
10024 IF MM$=CHR$(#16)THEN GOTO 100
10025 IF MM$<>" " THEN X=X+1:IF X=40 THEN Y=Y+1:X=1
10030 GOTO 10010

```

-----  
TRAP

```

5 GOTO 1600
100 PRINT"█":BE=99999:BU=208
110 PRINT"█ TIME";TI:TAB(19);"BEST";BE
120 FOR X=53288 TO 53327:POKE X,BU:NEXT
125 FOR X=53327 TO 54247 STEP 40:POKE X,BU:NEXT
130 FOR X=54247 TO 54207 STEP-1:POKE X,BU:NEXT
140 FOR X=54248 TO 53288 STEP-40:POKE X,BU:NEXT

170 X=INT(RND(1)*880+53327)
180 IF (PEEK(X)<>0)+(PEEK(X+1)<>0)+(PEEK(X-1)<>0) THEN 170
190 POKE X,199:R=0
200 M=53828:POKE M,207
210 GOTO 430
220 IF PEEK(X+0)<>0 THEN GOTO565
221 PRINT"█";TAB(8);TI
222 POKE 4514,20:USR(68):USR(71)
225 IF PEEK(X+0)<>0 THEN GOTO 565
230 GET T$
240 IF T$="8" THEN R=-40
250 IF T$="2" THEN R=+40
260 IF T$="4" THEN R=-1
270 IF T$="6" THEN R=+1
271 IF T$="5" THEN R=0
273 IF PEEK(X+0)<>0 THEN GOTO 565
275 IF PEEK(M+R)=208 THEN R=280
276 M=M+R:POKE M,206:POKE M-R,207
277 POKE M,207:POKE M,206
280 X=X+0:POKE X,199:POKE X-0,0
285 TI=TI+1
290 GOTO 220
400 REM
410 REM CHANGE POSITION FOR COMPUTER
420 REM
430 GET T$
431 GET T$
432 IF T$="8" THEN R=-40
433 IF T$="2" THEN R=+40
434 IF T$="6" THEN R=+1
435 IF T$="4" THEN R=-1
436 IF T$="5" THEN R=0
437 RA=INT(RND(1)*8+1)
440 IF RA=1 THEN O=-40
450 IF RA=2 THEN O=+40
460 IF RA=3 THEN O=-1
470 IF RA=4 THEN O=+1
480 IF RA=5 THEN O=-39
490 IF RA=6 THEN O=-41
500 IF RA=7 THEN O=+41
510 IF RA=8 THEN O=+39

```

```

520 TI=TI+1:PRINT"␣":TAB(4):"TIME";TI
550 POKE M,206:POKE X,199
557 IF PEEK(M+R)=208 THEN 560
558 M=M+R:POKE M,206:POKE M-R,207
559 IF PEEK(X+D)<>0 THEN 565
560 GOTO 220
565 IF PEEK(X+40)<>0 THEN 567
566 GOTO 430
567 IF PEEK(X-40)<>0 THEN 569
568 GOTO 430
569 IF PEEK(X-1)<>0 THEN 571
570 GOTO 130
571 IF PEEK(X+1)<>0 THEN 573
572 GOTO 430
573 GOTO 650
637 GOTO 220
650 POKE X,109
651 FOR I=100 TO 0 STEP-1:POKE 4514,I:FOR J=0 TO 200STEP50:POKE 4513,J:USR(68)
660 NEXTJ,I:USR(71)
670 REM
680 REM ** TRAP **
690 REM
695 FOR L=1 TO 1000:NEXT
700 FOR P=2 TO 23
710 CURSOR 1,P:PRINT STRING$( " ",38):NEXT
720 CURSOR 7,3:PRINT"TIME          RATING"
740 CURSOR 7,4:PRINT"-----"
750 CURSOR 7,6:PRINT"< 50          EXCELLENT"
760 CURSOR 7,8:PRINT"> 50          VERY GOOD"
770 CURSOR 7,10:PRINT"> 150         GOOD"
780 CURSOR 7,12:PRINT"> 350        FAIR"
790 CURSOR 7,14:PRINT"> 600        POOR"
800 CURSOR 7,16:PRINT"> 1000       PATHETIC!"
805 CURSOR 5,21:PRINT"● PRESS ANY KEY TO START ●"
810 CURSOR 10,19:PRINT"YOUR TIME WAS":TI
820 IF TI<BE THEN BE=TI
830 GET T$:IF T$="" THEN 830
842 PRINT"␣":TI=0:GOTO 110
1000 REM
1010 REM ** INSTRUCTIONS **
1030 PRINT"␣":0=0
1040 S$="-----TRAP"
1050 P=1
1060 GOSUB 1290
1070 S$="-----"
1080 P=2
1090 GOSUB 1290
1100 S$="Try and trap the UFO in all four"
1110 P=4:0=2:GOSUB 1290
1120 S$="directions in the shortest time"
1130 P=6:GOSUB 1290
1140 S$="possible by using the keys below."
1150 P=8:GOSUB 1290
1160 S$="8 Key - Move up."
1170 P=11:0=8:GOSUB 1290
1180 S$="2 Key - Move down."

```

```

1190 P=13:0=8:GOSUB 1290
1200 S$="4 Key - Move left."
1210 P=15:0=8:GOSUB 1290
1220 S$="6 Key - Move right."
1230 P=17:0=8:GOSUB 1290
1240 S$="5 Key - Stop snake moving."
1250 P=19:0=8:GOSUB 1290
1260 S$="S Key - Start Game."
1270 P=21:0=8:GOSUB 1290
1280 GOTO 1340
1290 FOR K=1 TO LEN(S$)
1300 FOR R=1 TO 30:NEXT R
1310 CURSOR 0,P:PRINT LEFT$(S$,K)
1320 NEXT K
1330 RETURN
1335 GET T$:IF T$="S" THEN 100
1340 GOTO 1335
1350 GET T$
1360 IF T$="S" THEN 100
1370 GOTO 1350
1600 PRINT"▣"
1610 PRINT"▣"
1650 PRINT" _____ "
1660 PRINT" N "
1670 PRINT" | _____ "
1680 PRINT" | ▣ "
1682 PRINT" | ▣ "
1685 PRINT" | ▣ "
1690 PRINT" | ▣ N N N N "
1700 PRINT" | ▣ ▣ ▣ ▣ ▣ ▣ ▣ ▣ "
1710 PRINT" | ▣ | | | | | | | | "
1720 PRINT" | ▣ | | | | | | | | "
1730 PRINT" | ▣ | | | | | | | | "
1740 PRINT" | ▣ | | | | | | | | "
1750 PRINT" | ▣ | | | | | | | | "
1760 PRINT" | ▣ | | | | | | | | "
1770 PRINT" | ▣ | | | | | | | | "
1775 PRINT" | ▣ | | | | | | | | "
1780 PRINT" | ▣ _____ "
1785 PRINT" | ▣ "
1790 PRINT" \ _____ "
1795 POKE 54135,199:FOR K=5 TO OSTEP-1:POKE 4514,K:POKE 4513,K:USR(68):NEXT
1798 USR(71)
1800 S$="PLEASE PRESS ANY KEY "
1810 FOR P=1 TO LEN(S$)
1820 FOR K=5 TO OSTEP-1:POKE 4514,K:POKE 4513,K:USR(68):NEXT:USR(71)
1830 CURSOR 9,22:PRINT LEFT$(S$,P);
1840 NEXT
1845 POKE 54158,199:FOR K=5 TO OSTEP-1:POKE 4514,K:POKE 4513,K:USR(68):NEXT
1846 USR(71)
1850 CURSOR 32,22:USR(409B3)
1860 GOTO 1000

```

Dear Sharpsoft,

I would be grateful if you would answer the following questions:

1. I want to buy an assembler for my MZ-80K. What is the difference between ZEN and the Sharp Cassette based Assembler? (As the latter costs twice the price of the former). Also which is the best assembler for a beginner? Are both assemblers supplied with good documentation? Is it possible to use one of the above without reading books beforehand?
2. I have bought HP4T PASCAL. However I do not understand how one PEEKS and POKES. Peeking and Pokeing with this PASCAL doesn't seem to be similar to that of normal BASIC. I tried poking the video ram area, but this doesn't seem to work too well as normally nothing happens. My letter to Hisoft was answered with the advice - I seek help from a friend who is a machine code expert. Since none of my friends have computers this hasn't been possible.
3. Is the FORTH language offered in the Sharpsoft Catalogue any different from that sent out with a previous Sharpsoft? In particular does it load quicker?
4. If I wanted to program in LISP, would I first have to buy CP/M and then a commercially available version of LISP? This seems very expensive as CP/M for the MZ-80 is #160 alone, and the versions of LISP around #100. Is there a cheap version available - as for the BBC?

S. COLEBY  
GERMANY

Both Zen and the Sharp Systems Assembler are well implemented Z80 cassette based programs. The Sharp system is a relocating assembler. For the beginner ZEN is probably the easier to learn and use. In both cases the documentation supplied does NOT set out to teach you how to program in Z80 assembly language. One of the popular Z80 Text books should help you learn Z80 assembly programming.

Your problems with HP4T PASCAL and PEEK/POKE techniques will probably go away as you become more proficient in Z80 machine code - Any readers who have written PASCAL programs using PEEKS and POKES might like to reply to this query?

The FORTH in the SHARPSOFT catalogue is a simple version written specifically for the MZ-80K - see comments in earlier Issues of the User Notes. It includes a full screen editor and a different program loading system to fig-FORTH.

As far as I am aware there is no cheap cassette based LISP for the MZ-80K. If any reader has written one or knows if a cassette version is available please write to us with the details.

EDITOR

## MZ-80K Notes, letters and listings

Dear S.U.N.

I enclose the listings of some machine code routines to be used with either SP-5025 or Speed BASIC. The first enables two more commands to be available:

RESTORE line no.                   The next piece of data read by the READ command will be the first that appears in the program after the line number.

ON variable RESTORE line nos.     If the variable is equal to one the command will restore from the first line number. If it is equal to two it will restore from the second line number etc.

The next four routines enable scrolling. They scroll a rectangle of the screen either Up, Down, Left or Right. To set up this routine the height, the width and the X,Y co-ordinates off the top left hand corner of this rectangle must be given.

e.g. to set up a routine that scrolls the right half of the screen down, 'run' the program for scrolling down and enter the height as 25, the width as 20 and the X,Y co-ordinates as 20,0.

The entry point to these routines is at the beginning. These routines can be called as often as you want and combinations of calls to different routines can create diagonal scrolling.

If the snow becomes annoying use USR(3494) first before every call.

These routines do not scroll as if on a cylinder i.e. what disappears off one side appears on the other instead spaces are put in the gap.

### LABELS

A crude way of using labels on the GOTO command is POKE 7388,140 and POKE 7389,25. This allows variables to be used as well as line numbers.

```
e.g. 10 END = 3-
      20 GOTO END
      25 PRINT "THIS WILL NOT BE PRINTED"
      30 PRINT "END"
      40 END
```

Note that the first two letters of each label must be different.

To achieve a similar thing on the GOSUB command:

POKE 7415,140 and POKE 7416,25

SPEEDING UP PROGRAMS

When a variable is met, the computer searches through a list of them and if it can't find it then the variable is initialised and added on the end. Therefore, if a well used variable is only encountered quite late on, every time it is used the computer wastes time finding it.

So it is a good idea to initialise a well used variable right at the beginning.

```
e.g. 10 X=0
      20 D=6:L=5:C=98:K=-3:REM GARBAGE
      30 FOR X=1 to 1000
      40 PRINT X
      50 NEXT X
```

took 45 seconds to run (X is first in the list)

```
20 D=6:L=5:C=98:K=-3:REM GARBAGE
30 FOR X=1 to 1000
40 PRINT X
50 NEXT X
```

took 49 seconds to run (x is fifth in the list)

PROGRAM TO ACCEPT MORE THAN ONE KEYPRESS

The routine is initialised between lines 5 to 50

```
Line 130 checks for 'W'
Line 140 checks for 'A'
Line 150 checks for 'O'
Line 160 checks for 'X'
Line 170 checks for ' '
Line 180 checks for ' '
Line 190 checks for ' '
Line 200 checks for ' '
```

If you need a fire key for a program you write using this routine.

IF 255-PEEK(49178)=1 then INST/DEL is depressed

IF 255-PEEK(49179)=128 then the bottom right hand key is depressed

The program is called 'AVOID' for two players.

Player 1 is the ball, UP-W, LEFT-A, RIGHT-D, DOWN-X.

Player 2 is the spaceship, UP-J, LEFT- RIGHT- , DOWN- .

You move around leaving a trail, the loser is the player that runs over his/her own or his/her opponents trail first.

Hope these routines are of use to you.

I. DUFFY  
(Age 14)

P.S. What is the "Using" command mentioned by W.H. Fisher in Issue 4, Page 90?

The PRINT USING command is for formatting and aligning numbers and figures output to the screen. It is a particularly useful command for programs that produce rows and columns of numbers that need to be neatly displayed in a uniform format. The 'USING' command is not implemented in Sharp SP-5025 and there is not a patch available that adds the command.

SHARPSOFT

### RESTORE line no. + ON var. RESTORE line nos...

```

10 REM *** WRITTEN 26-8-84 ***
20 REM *** BY I.DUFFY ***
30 PRINT "WHERE DO YOU WANT THE ROUTINE TO BE"
40 INPUT "KEPT ";R
50 LIMIT R-1
60 FOR X=R TO R+64
70 READ D:POKE X,D:NEXT
80 DATA 205,41,24,202,36,27
90 DATA 205,241,22,34,1,72
100 DATA 235,205,165,23
110 DATA 142,19,194,142,19
120 DATA 205,224,31
130 DATA 33,119,69,54,1
140 DATA 195,178,25
150 DATA 183,202,222,28
160 DATA 61,202,249,28
170 DATA 195,9,192
180 DATA 6,0,254,137,202,35,32
190 DATA 4,254,139,202,35,32
200 DATA 4,254,152,202,35,32
210 DATA 195,142,19
220 POKE 6735,R-INT(R/256)*256
230 POKE 6736,INT(R/256)
240 POKE 8265,195
250 POKE 8266,R+32-INT((R+32)/256)*256
260 POKE 8267,INT((R+32)/256)
270 POKE 8219,195
280 POKE 8220,R+43-INT((R+43)/256)*256
290 POKE 8221,INT((R+43)/256)
300 POKE 8227,120
310 POKE R+41,R+9-INT((R+9)/256)*256
320 POKE R+42,INT((R+9)/256)
330 END

```

**SCROLL RIGHT**

```

10 REM *** WRITTEN 26-8-84 ***
20 REM *** BY I.DUFFY ***
30 PRINT "WHERE DO YOU WANT THE ROUTINE TO BE"
40 INPUT "KEPT ";R
50 LIMIT R-1
60 FOR X=R TO R+35
70 READ D:POKE X,D:NEXT
75 DATA 62,0,33,0,0
80 DATA 1,41,0,9,84,93
90 DATA 43,229,1,0,0,237
100 DATA 184,225,61,32,239
110 DATA 6,0,35,17,40,0
115 DATA 33,0,0
120 DATA 119,25,16,252,201
130 INPUT "HEIGHT ";H
140 INPUT "WIDTH ";W
150 INPUT "X,Y ";X,Y
160 POKE R+1,H
170 L=53248+X+Y*40+W-42
180 POKE R+3,L-INT(L/256)*256
190 POKE R+4,INT(L/256)
200 POKE R+14,W-INT(W/256)*256
210 POKE R+15,INT(W/256)
220 POKE R+23,H
225 L=53248+X+Y*40
230 POKE R+29,L-INT(L/256)*256
240 POKE R+30,INT(L/256)
250 END

```

**SCROLL LEFT**

```

10 REM *** WRITTEN 26-8-84 ***
20 REM *** BY I.DUFFY ***
30 PRINT "WHERE DO YOU WANT THE ROUTINE TO BE"
40 INPUT "KEPT ";R
50 LIMIT R-1
60 FOR X=R TO R+35
70 READ D:POKE X,D:NEXT
75 DATA 62,0,33,0,0
80 DATA 1,39,0,9,84,93
90 DATA 35,229,1,0,0,237
100 DATA 176,225,61,32,239
110 DATA 6,0,35,17,40,0
115 DATA 33,0,0
120 DATA 119,25,16,252,201
130 INPUT "HEIGHT ";H
140 INPUT "WIDTH ";W
150 INPUT "X,Y ";X,Y
160 POKE R+1,H
170 L=53248+X+Y*40-39
180 POKE R+3,L-INT(L/256)*256
190 POKE R+4,INT(L/256)
200 POKE R+14,W-INT(W/256)*256
210 POKE R+15,INT(W/256)
220 POKE R+23,H
225 L=53248+X+Y*40+W-1
230 POKE R+29,L-INT(L/256)*256
240 POKE R+30,INT(L/256)
250 END

```

## SCROLL UP

```

10 REM *** WRITTEN 26-8-84 ***
20 REM *** BY I.DUFFY ***
30 PRINT "WHERE DO YOU WANT THE ROUTINE TO BE"
40 INPUT "KEPT ";R
50 LIMIT R-1
60 FOR X=R TO R+27
70 READ D:POKE X,D:NEXT
80 DATA 62,0,33,0,0
90 DATA 84,93,1,40,0
100 DATA 9,229,1,0,0
110 DATA 237,176,225,61,32,240
120 DATA 6,0,119,35,16,252,201
130 INPUT "HEIGHT ";H
140 INPUT "WIDTH ";W
150 INPUT "X,Y ";X,Y
160 POKE R+1,H-1
170 L=53248+X+Y*40
180 POKE R+3,L-INT(L/256)*256
190 POKE R+4,INT(L/256)
200 POKE R+13,W-INT(W/256)*256
210 POKE R+14,INT(W/256)
220 POKE R+22,W
230 END

```

## SCROLL DOWN

```

10 REM *** WRITTEN 26-8-84 ***
20 REM *** BY I.DUFFY ***
30 PRINT "WHERE DO YOU WANT THE ROUTINE TO BE"
40 INPUT "KEPT ";R
50 LIMIT R-1
60 FOR X=R TO R+27
70 READ D:POKE X,D:NEXT
80 DATA 62,0,33,0,0
90 DATA 84,93,1,216,255
100 DATA 9,229,1,0,0
110 DATA 237,176,225,61,32,240
120 DATA 6,0,119,35,16,252,201
130 INPUT "HEIGHT ";H
140 INPUT "WIDTH ";W
150 INPUT "X,Y ";X,Y
160 POKE R+1,H-1
170 L=53248+X+(Y+H-1)*40
180 POKE R+3,L-INT(L/256)*256
190 POKE R+4,INT(L/256)
200 POKE R+13,W-INT(W/256)*256
210 POKE R+14,INT(W/256)
220 POKE R+22,W
230 END

```

## 'AVOID'

```

10 REM *** WRITTEN 27-8-84 ***
20 REM *** BY I.DUFFY ***
30 LIMIT 49151
40 FOR X=49152 TO 49169
50 READ D:POKE X,D:NEXT
60 DATA 33,1,224,17,28,192
70 DATA 6,10,120,50,0,224,126,18
80 DATA 27,16,247,201
90 MX=53248:NX=54247
100 MD=1:ND=-1
110 PRINT"C"
120USR(49152)
130 IF 255-PEEK(49173)=1 THEN MD=-40
140 IF 255-PEEK(49174)=1 THEN MD=-1
150 IF 255-PEEK(49174)=2 THEN MD=1
160 IF 255-PEEK(49177)=1 THEN MD=40
170 IF 255-PEEK(49172)=128 THEN ND=-40
180 IF 255-PEEK(49175)=64 THEN ND=-1
190 IF 255-PEEK(49175)=128 THEN ND=1
200 IF 255-PEEK(49176)=128 THEN ND=40
210 MX=MX+MD
220 IF (MX<53248)+(MX>54247) THEN MX=MX-MD
230 IF PEEK(MX)<>0 THEN 300
240 POKE MX,71
250 NX=NX+ND
260 IF (NX<53248)+(NX>54247) THEN NX=NX-ND
270 IF PEEK(NX)<>0 THEN 320
280 POKE NX,199
290 GOTO 120
300 PRINT"H THE SPACE SHIP WON"
310 GOTO 330
320 PRINT"H THEN BALL WON"
330 FOR X=1 TO 3000:NEXT
340 PRINT"C____DO YOU WANT ANOTHER GO?"
350 GET A$:IF A$="" THEN 350
360 IF A$="Y" THEN 90
370 IF A$="N" THEN END
380 GOTO 350

```

Dear Sharpsoft,

You may be interested in the enclosed short routine to add to 'Word Processor 2' (SUN Issue 6). It is often necessary to limit one's writing to certain number of words and this routine will provide a quick count of the words in the text.

I have attached BASIC and subject code listings. The program works by using either spaces - 20H - or end of line indicators - ODH - as the markers between words. However, a series of '20H', as with an indent, must be ignored. Blank lines entered by 'CR' are stored by WP2 as 'ODH' and these must be distinguished from the end of line 'ODHs'. To determine whether a '20H' or a 'ODH' is significant or not, the program looks at the character immediately preceding it. If that character is not either another '20H' or a 'ODH' then the word count is incremented.

The other character which I have prevented being counted is 'C3H' which is the graphic I use for underlining. I have not eliminated hyphens, but that could easily be done.

C600H is not a significant address. 4638H stores the address of the start of the text array in BASIC. 463AH stores the address of the string variable immediately after the array. Subtracting one from the other gives you the length of the array in which words are to be counted; this is kept in BC.

I have used 'H' (how many?) to call the count as I do not use the instructions.

I hope it may be of use to 'word counters' - I make no apologies for its' amateurism!

P. HICKEY  
S.E.18.

65 GOSUB3000

350 IFC\$="H"THEN3100

```

3000 FORCT=50688T050795
3010 READWQ:POKECT,WQ:NEXT
3020 DATA 205,93,198,237,115,0,199,42,58,70,237,75,56,70,237,66
3030 DATA 34,240,197,237,75,240,197,42,56,70,17,6,0,25,17,0
3040 DATA 0,126,254,32,40,15,254,13,40,11,254,195,40,35,35,11
3050 DATA 205,71,198,24,236,43,126,35,254,32,40,242,254,13,40,238
3060 DATA 254,195,40,234,19,24,231,120,254,0,192,121,254,0,192,24
3070 DATA 18,35,11,205,71,198,126,254,195,32,212,24,244,62,22,205
3080 DATA 18,0,201,237,83,2,199,237,123,0,199,201
3090 RETURN
3100 REM***WORD COUNT:T1=0
3105 USR(50688)
3110 H=PEEK(50947)
3120 F=INT(H/16):G=H-(16*F)
3130 T1=(F*4096)+(G*256)+PEEK(50946)
3140 PRINT"___WORD COUNT=";T1
3150 GOTO170

```

MZ-80K Notes, letters and listings

```

1          ;WP.2 WORD COUNT
2          ;P HICKEY AUGUST 1984
3          ORG 0C600H
4          LOAD 0C600H
5 C600 CD5DC6      CALL CLR
6 C603 ED7300C7   LD (0C700H),SP
7 C607 2A3A46     START: LD HL,(463AH)
8 C60A ED4B3846   LD BC,(4638H)
9 C60E ED42       SBC HL,BC
10 C610 22F0C5    LD (0C5F0H),HL
11 C613 ED4BF0C5  LD BC,(0C5F0H)
12 C617 2A3B46    LD HL,(463BH)
13 C61A 110600    LD DE,6
14 C61D 19        ADD HL,DE          ;TO JUMP OVER ARRAY
15          ;STORAGE GARBAGE
16 C61E 110000    LD DE,0          ;DE TO HOLD WORD COUNT
17 C621 7E        STRT1: LD A,(HL)
18 C622 FE20      CP 20H
19 C624 280F     JR Z,PREV        ;LOOK AT PREVIOUS CHAR
20 C626 FE0D     CP 0DH
21 C628 280B     JR Z,PREV
22 C62A FEC3     CP 0C3H
23 C62C 2823     JR Z,LINE        ;UNDERLINE
24 C62E 23       NEXT: INC HL
25 C62F 0B       NXT1: DEC BC
26 C630 CD47C6   CALL ZERO
27 C633 18EC     JR STRT1
28 C635 28       PREV: DEC HL        ;WAS LAST CHAR SIGNIF?
29 C636 7E      LD A,(HL)
30 C637 23      INC HL          ;HL BACK TO WHAT IT WAS
31 C638 FE20    CP 20H
32 C63A 28F2    JR Z,NEXT        ;LAST ONE WAS A
33          ;SPACE SO IGNORE THIS ONE
34 C63C FE0D    CP 0DH
35 C63E 28EE    JR Z,NEXT        ;LAST WAS A FULL
36          ;STOP SO IGNORE THIS ONE
37 C640 FEC3    CP 0C3H
38 C642 28EA    JR Z,NEXT
39          ;STILL HERE MEANS THAT LAST
40          ;CHAR WAS SIG THUS THIS 20
41          ;OR 0D MARKS THE END OF
42          ;A WORD
43 C644 13      INC DE
44 C645 18E7    JR NEXT
45 C647 78     ZERO: LD A,B
46 C648 FE0D    CP 0
47 C64A C0     RET NZ
48 C64B 79     LD A,C
49 C64C FE0D    CP 0
50 C64E C0     RET NZ
51 C64F 1812    JR TER
52 C651 23     LINE: INC HL
53 C652 0B     DEC BC
54 C653 CD47C6 CALL ZERO

```

## MZ-80K Notes, letters and listings

55 C656 7E		LD	A, (HL)
56 C657 FEC3		CP	0C3H
57 C659 20D4		JR	NZ, NXT1
58 C65B 18F4		JR	LINE
59 C65D 3E16	CLR:	LD	A, 16H
60 C65F CD1200		CALL	0012H
61 C662 C9		RET	
62 C663 ED5302C7	TER:	LD	(0C702H), DE
63 C667 ED7B00C7		LD	SP, (0C700H)
64 C66B C9		RET	
65		END	

Dear Editor,

Sensibly, all my language tapes were copied as soon as I knew how to make back up copies.

I try never to use the 'masters' other than for occasional check.

Thank goodness, for my back up BASIC and BASIC with Toolkit have, through some unknown reason, developed faults that distort perfect programs.

Result, make new back up copies, all O.K.

I am aware that interruption of the power supply can 'crash' your machine, filling the screen with ASCII signals. If this is also the reason for my tapes going faulty then the implications are far reaching.

Nuclear missile control is PROTECTED by a binary fail safe coding. Should this 'crash' for any reason, power failure or otherwise, then surely there is nothing to stop an execution of the commands. Such as "set target - (release missile) GO?GO?GO".

As earlier stated, "the implications are far reaching".

One thing I learnt many years ago was that electricity is never infallible, e.g. mechanically lock, electrically unlock; never the other way.

Whilst this letter could be 'hot' to publish under your machine code section, I would like to know of views of others with greater knowledge of machine code than myself.

Further frustration with my MZ-80K. How do I get over something like this?

```

FOR X = 1 TO 6
FOR Y = 1 TO 6
INPUT X,Y
IF X<1 OR X>6 OR X=INT(X) <> ABS(X) THEN "ERROR"
IF Y>0 AND Y<7 AND INT(Y)=ABS(Y) THEN "CONTINUE"
"ERROR"
"CONTINUE"

```

Naturally error and continue at end of if statements  
refer to line numbers with Print " " "

Am I way out? Just not competent enough? Or is this just something the MZ-80K cannot handle?

FROST  
LINCS.

The MZ-80K SP-5025 interpreter will not understand the AND and OR functions. These are very useful functions when programming and can be implemented on the MZ-80K by substituting the AND for an '\*' sign and the OR function for a '+' sign. Using this method, your program should look like this:

```
FOR X = 1 TO 6
FOR Y = 1 TO 6
INPUT X,Y
IF (X<1) + (X>6) + (INT(X) <> ABS(X)) THEN "ERROR"
IF (Y>0) * (Y<7) * (INT(Y) <> ABS(Y)) THEN "CONTINUE"
"ERROR"
"CONITNUE"
```

Please notice the brackets, these are essential. More information on this can be found in Issue No. 3 on Page 50.

SHARPSOFT

Dear Sirs,

I am the owner of a MZ-80K computer and I have some questions to propose at your attention.

I know your publication and I found the first Issues very interesting. SHARPSOFT User notes is the best for me, indeed.

Therefore I ask you for untie two terrible problems, if the solution is in your possibilities.

Firstly, I have attempted to employ the logical functions AND, OR, and NOT in my computer. From the memory map I have listed the reserved keyword table and I found the keywords AND, OR and NOT. Besides, consequently to forward command like:

```
PRINT 23 AND 255
```

the computer reply with a SYNTAX ERROR message. Nevertheless, the statement:

```
10 PRINT 23 AND 256
```

is regularly tokenized with 185 in place of AND function.

Is possible to implement the regular logical functions with a little machine-language routine? How, and where, in the RAM area?

MZ-80K Notes, letters and listings

The second question is about the possibility of reply with any expression (numerical or string) to the INPUT statement. Is possible to find some standard routines of GENERALIZED INPUT of this type?

Last question is about the possibility to find the following publications and where:

BASIC SP-5025 Commented Listing

BASIC SP-6015 Commented Listing

Thanks for your attention and excuse me for my bad use of your wonderful language.

DOTT. I. ASCHIERI  
ITALY

It is probably possible to make use of the AND, OR and NOT commands using a small Machine Code patch, but to our knowledge nobody has come up with a solution. If anyone else knows of a way then please let us know. There is however a way around the problem without using a Machine Code patch and that is to use the '+' (plus) and '-' (minus) functions. This method has been explained on the previous page and in SUN No. 3 Page 50.

To enter expressions or equations into variables rather than just numbers and letters is not possible on the MZ-80K. To have such a facility would be very useful but it would be very complicated to implement.

The commented listing of SP-5025 is no longer available because Sharp held the copyright and stopped it being produced. the SP-6015 was never released because of this experience.

SHARPSOFT

-----  
Dear Sir,

I have a Sharp MZ-80K and used it to solve the May PCW edition's Leisure Lines Problem. Using the program listed below I had the computer examine every integer between 100000 and 999999 to see if the product of the 1st half of the number and the 2nd half all squared equalled the original number. In order to reassure myself that the computer was indeed performing I had it printing the original number, the squared product and the error between the 2 numbers whenever the error was less than 50. An interesting result followed, even though the error should have been an integer it was not calculated as such for the majority of occasions. The first 14 'answers' are also listed below. Can anybody explain why I got the results I did.

A.J. FLEWITT  
(Sqn Ldr)

```
10 FOR X=100000 TO 999999
20 W# = STR# (X)
30 D# = RIGHT$(W#,3)
40 E# = LEFT$(W#,3)
50 D = VAL (D#)
60 E = VAL (E#)
70 IF ABS(X-((D+E)^2)<50 THEN PRINT X,(D+E)^2,ABS(X-((D+E)^2))
80 IF X<>((D+E)^2) THEN 100
90 PRINT "ONE ANSWER IS",X
100 NEXT X
```

ANSWERS

108221	108241	19.999939
110222	110224	1.9999695
112223	112225	1.9998474
114224	114244	20.000214
123228	123201	26.999878
133232	133225	7.0007935
148237	148225	11.99939
155239	155234	3.0004883
159240	159201	39.000366
163241	163216	25.00061
167242	167281	38.999451
172243	172225	18.000916
177244	177241	3.000061
189246	189225	21
etc	etc	etc

Unfortunately we cannot explain what the exact cause of the error is, but it has been known before that there is a small amount of inaccuracy in the SP-5025 floating point arithmetic. We first discovered it when we noticed that some calculations made by our Home Budget program were out by a penny! In most cases you can accommodate for the inefficiency by slightly altering your program. In your case changing line 70 to read as follows will cure:

```
70 IF ABS(X-((D+E)^2))<50 THEN PRINT X,(D+E)^2,INT(ABS(X-((D+E)^2)))
```

SHARPSOFT

Dear Sirs,

I refer to the problem I am having with Mr. M.E. Brinson's program on Page 80/81 of his book "A Practical Guide to the MZ-80B Computer Graphics" (Graphics Generator 2.D).

At any time, using either the 'L', 'K', or 'J' keys to move the cursor left across the screen, when it passes the 0 position I lose the program because "Error 3 in line 1000", comes on to the screen.

Although not an expert programmer, I have played with BASIC a lot and it seems to me that line 4063 should take care of this and not show an error. The movement of cursor right does not cause error.

Can Mr. Brinson please identify the problem and advise me? I am trying to use these graphics for serious business sketches. An early reply would be appreciated.

R.E. FISH  
HANTS

The error 3 occurs because you are obviously trying to move the flashing cursor off the edge of the screen. When the cursor does this one of the variables XC or YC becomes less than zero and hence produces an error when the pixel is reset in line 1000 (The pixel range is only between 0-319 for the horizontal axis and 0-199 for the vertical axis). This can be overcome by changing line 1000 and making it line 1008 and adding the two following lines:

```
1000 IF XC < 0 THEN XC = 320 + XC
1004 IF YC < 0 THEN YC = 200 + YC
```

This will produce a 'wraparound' effect, where if the cursor does move off one edge it will appear on the opposite side of the screen.

When finished the modified section should look like this:

```
999 REM FLASHING SUBROUTINE
1000 IF XC < 0 THEN XC = 320 + XC
1004 IF YC < 0 THEN YC = 200 + YC
1008 RESET XC, YC
1010 FOR I=1 TO DELAY: NEXT I: REM DELAY ROUTINE
1040 SET XC, YC
1050 FOR I=1 TO DELAY: NEXT I: REM DELAY ROUTINE
1060 RETURN
```

The addition of the line 1000 and 1004 will slightly slow down the flashing so you may wish to make the delay loop variable smaller in line 68. Hope this answers your question.

SHARPSOFT

MZ-80B Notes, letters and listings

Dear Sirs,

Earlier this year I bought a copy of your book "A Practical Guide to the MZ-80B Computer Graphics", which I found very interesting, until I tried the Graphics Generator Program on pages 80-82. The drawing routine worked OK but the scale and angle commands produced no results. Is there something wrong (or missing) in the program, or is it that I am not using it correctly? I raised the matter with you previously (March '84) but had no reply from you. Perhaps you can enlighten me?

G. ENTWISLE  
OXON

To our knowledge there are no problems with the program in pages 80-82 of the graphics book, except for the one pointed out by Mr. Fish in this Issue. If you could possibly send us a listing of the program as you have typed it in then we will be more than pleased to try and pin-point the bug.

SHARPSOFT

-----  
Dear SUN,

Please find enclosed some listings that I think might be of interest to you, there are many more so please let me know if you are interested.

Sheep Dog Trial appeared in Personal Computer World some time ago and I have converted it to Sharp BASIC. It is fun to play and not as easy as it sounds; full instructions are in the program.

In response to a letter in Issue 10 of SUN there is a BASICODE available for the MZ-80B and anyone interested can write to me at: 5 Heidepark, Wageningen Hoog, NL-6705 AB Holland.

Here are some interesting pokes for the B (SB-6510):

POKE\$6008,\$FF:POKE\$6009,\$FF:LIMITMAX gives you 255 more bytes  
in BASIC.

POKE\$525B,\$00:POKE\$525C,\$00:POKE\$525D,\$00:POKE\$525E,\$00:POKE\$525F,\$00  
allows printer codes <20H  
and is particularly useful  
for non Sharp printers.

Presently I am looking for a (screen) text editor under CP/M; do you have one or can you recommend a good one, ED.COM doesn't please me much. Also let me know if you have any new (public) CP/M software available for the B.

J.A. ARENS  
HOLLAND

## MZ-80B Notes, letters and listings

There are various editors that can be used as a substitute for the CP/M Editor ED.COM. The ultimate solution is to buy a Wordprocessor capable of outputting files for compilers, assemblers and other such system software. Wordstar can perform all these duties easily, but is rather expensive for non-business users @ #295. We can recommend a utility called PEDIT which is produced by Phoenix Software Associates. PEDIT is a programmable character-oriented text editor that has sophisticated text manipulation capabilities. It includes facilities for macro definition, conditional execution, and programmed keyboard interaction, as well as all the standard facilities for text insertion, deletion, searching and block moves. It is able to handle files of any size and costs #138.00 (add #5.00 for overseas postage)

## SHARPSOFT

```

000A 00      NOP
1  REM ---- SHEEPDOG TRIALS
2  REM ---- PERSONAL COMPUTER WORLD, 12.83, P. 284
3  GOSUB50
4  REM --- MAINLINE LOOP ---
5  FORZ=1TO10:GOSUB7:GOSUB24:NEXTZ:GOSUB28:GOTO5
6  REM -- DOG (PLAYER) MOVEMENT --
7  EX=0:EY=0
8  GETK:IF (K=0)+(K=5)THEN18
9  IFK=1THENEY=1:EX=-1:GOTO17
10 IFK=2THENEY=1:EX=0:GOTO17
11 IFK=3THENEY=1:EX=1:GOTO17
12 IFK=4THENEY=0:EX=-1:GOTO17
13 IFK=6THENEY=0:EX=1:GOTO17
14 IFK=7THENEY=-1:EX=-1:GOTO17
15 IFK=8THENEY=-1:EX=0:GOTO17
16 IFK=9THENEY=-1:EX=1:GOTO17
17 IFSQ=1THENUSR(#OEBE)
18 IF (ASC (CHARACTER$(XD+EX, YD+EY)) <> 0) * (ASC (CHARACTER$(XD+EX, YD+EY)) <> 32) THEN22
19 CURSORXD, YD:PRINT " ";
20 XD=XD+EX:YD=YD+EY:CURSORXD, YD:PRINTD$;
21 IF (XD=20) * (YD=10) THEN42
22 RETURN
23 REM --- CALCULATE CURRENT SCORE AND DISPLAY ---
24 SC=SC-2:IFSC<0THENSQ=0:GOTO45
25 CURSOR33, 24:PRINTSC;" ";
26 RETURN
27 REM -- MOVE ALL SHEEP --
28 XF=INT (RND (1) * 3) - 1:YF=INT (RND (1) * 3) - 1
29 FORN=1TONS
30 XABS=ABS (X (N) - XD):YABS=ABS (Y (N) - YD)
31 IF (XABS<2) * (YABS<2) THENDX=XF:DY=YF:GOTO34
32 IF (XABS>16) + (YABS>8) THENDX=XF:DY=YF:GOTO34
33 DX=SGN (X (N) - XD):DY=SGN (Y (N) - YD)
34 IF (ASC (CHARACTER$(X (N) + DX, Y (N) + DY)) <> 0) * (ASC (CHARACTER$(X (N) + DX, Y (N) + DY)) <> 32) THEN39
35 IF (X (N) + DX=2) + (X (N) + DX=39) + (Y (N) + DY=2) + (Y (N) + DY=22) THEN39
36 CURSORX (N), Y (N):PRINT " ";
37 X (N)=X (N) + DX:Y (N)=Y (N) + DY:XF=DX:YF=DY:CURSORX (N), Y (N):PRINTS$;
38 GOSUB7
39 NEXT
40 RETURN

```



MZ-80B Notes, letters and listings

```

99 PRINT" Your job is to manoeuvre the sheep"
100 PRINT" into the pen in the centre of the"
101 PRINT" screen, using the numeric keys:":PRINT
102 PRINT"          7 8 9"
103 PRINT"          \|/"
104 PRINT"          4- -6"
105 PRINT"          /!\\"
106 PRINT"          1 2 3":PRINT
107 PRINT" When you have got all the sheep into"
108 PRINT" the pen, position the dog in the gate.":PRINT:PRINT
109 PRINT"          Hit any key to start"
110 GETA$: IFA$="" THEN 110
111 GOTO 57
112 REM ---- Converted from IBM Basic A to Sharp Basic by
113 REM ---- J.A. Arens
114 REM ---- 5 Heidepark
115 REM ---- Wageningen Hoog
116 REM ---- NL-6705 AB Holland
117 REM ---- Correspondence and tips welcomed.

```

```

10 REM ----- SHELL SORT (STRINGS; Compressed version)
20 REM ----- Using string comparison regardless of length,
30 REM ----- standard Sharp Basic tests string lengths first.
40 REM ----- Sorts array SA$, define number of elements as EL first.
50 REM ----- Use as subroutine. Can be used to sort numbers as well.
60 REM ----- J.Arens, 5 Heidepark, Wageningen, NL-6705 AB Holland.
70 REM -----
60000 POKE$2509,$AF: REM Normal $B$, in SB-5510 POKE$235B
60010 M=INT(EL/2):FORX=-1TO0STEP0:FORY=1TOEL-M:FORZ=YTO0STEP-M:L=Z+M
60020 K=0: IFA$(Z) > SA$(L) THEN U$=SA$(Z):SA$(Z)=SA$(L):SA$(L)=U$:K=Z
60030 Z=k:NEXT:NEXT:M=INT(M/2):X=-1*(M=0):NEXT:POKE$2509,$B$:RETURN

```

```

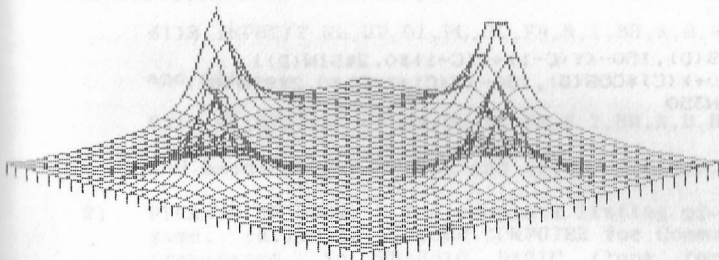
10 REM ---- 3-D PLOTTER
20 REM ---- PC '83
30 CONSOLEC80,80,24,N
40 GRAPH00,11,C,01:GOSUB480:GOTO60
50 REM DEF FNA(X)=required function
60 PRINTCHR$(6):"Do you desire squares or line plotting (S/L) ?"
70 GETA$: IFA$="" THEN 70
80 IF (A$ <> "S") * (A$ <> "L") THEN 70
90 PRINTCHR$(6)
100 IFA$="S" THEN 290
110 FORX=0TO8STEP.25
120 FORY=0TO8STEP.25
130 YY=163-(Y-X+2+FNA(X))*6: IFYY<0 THEN YY=0
140 IFX=0 THEN SET20*(Y+X),YY
150 IFX>0 THEN LINEPOSH,POSV,20*(Y+X),YY
160 NEXTX
170 YY=163-(Y-X+2)*6: IFYY<0 THEN YY=0
180 LINEPOSH,POSV,20*(Y+8),YY
190 NEXTY
200 FORX=0TO8STEP.25
210 YY=163-(-6*X+12): IFYY<0 THEN YY=0
220 SET20*X,YY
230 FORY=0TO8STEP.25
240 YY=163-(Y-X+2+FNA(X))*6: IFYY<0 THEN YY=0
250 LINEPOSH,POSV,20*(Y+X),YY
260 NEXTY
270 NEXTX

```

```

280 FORT=0T03000:NEXTT:G0T040
290 F0RY=0T08STEP.5
300 FORX=0T08STEP.5
310 YY=163-(Y-X+2+FNA(X))*6:IFY<0THENYY=0
320 IFX=INT(X)THENSET20*(Y+X),YY:G0T0340
330 LINEPOSH,POSV,20*(Y+X),YY
340 NEXTX
350 YY=163-(Y-X+2)*6:IFY<0THENYY=0
360 LINEPOSH,POSV,20*(Y+8),YY
370 NEXTY
380 FORX=0T08STEP.5
390 YY=163-(-6*X+12):IFY<0THENYY=0
400 SET20*X,YY
410 F0RY=0T08STEP.5
420 YY=163-(Y-X+2+FNA(X))*6:IFY<0THENYY=0
430 IFY=INT(Y)THENLINEPOSH,POSV,20*(Y+X),YY:G0T0450
440 SET20*(X+Y),YY
450 NEXTY
460 NEXTX
470 FORT=0T03000:NEXTT:G0T040
480 PRINTCHR#(6);" 3-D PLOTTER":PRINT:PRINT
490 PRINT" 1. F(X) = 1/(COS(X/2)*COS(Y/2)+1.1)":PRINT
500 PRINT" 2. F(X) = 1/(COS(X)*SIN(Y)+1.1)":PRINT
510 PRINT" 3. F(X) = 1.5/(COS(X)*SIN(Y/2)+1.1)":PRINT
520 PRINT" 4. F(X) = 1.5/(COS(X)*SIN(Y/3)+1.1)":PRINT
530 PRINT" 5. F(X) = 1/(COS(X)*COS(Y)+1.1)":PRINT
540 PRINT" 6. F(X) = (SIN(X/3)*2)^3+(SIN(Y/3)*2)^3:PRINT
550 PRINT" 7. F(X) = your own function / end plotting":PRINT:PRINT
560 PRINT" Your choice 1,2,3,4,5,6 or 7?"
570 GETA:IF(A<1)+(A>7)THENS70
580 ONAG0T0590,600,610,620,630,640,650
590 DEF FNA(X) = 1/(COS(X/2)*COS(Y/2)+1.1):RETURN
600 DEF FNA(X) = 1/(COS(X)*SIN(Y)+1.1):RETURN
610 DEF FNA(X) = 1.5/(COS(X)*SIN(Y/2)+1.1):RETURN
620 DEF FNA(X) = 1.5/(COS(X)*SIN(Y/3)+1.1):RETURN
630 DEF FNA(X) = 1/(COS(X)*COS(Y)+1.1):RETURN
640 DEF FNA(X) = (SIN(X/3)*2)^3+(SIN(Y/3)*2)^3:RETURN
650 PRINT:PRINT"Enter line 50, then 'G0T0 50':PRINT
660 PRINT"50 DEF FNA(X)="

```



2.  $F(X) = 1 / (\cos(X) * \sin(Y) + 1.1)$

```

10 REM -- POKE SCREEN USING MZ-80K ADR. CODES
20 YY=INT((KK-53248)/40)
30 XX=INT((KK-(53248+40*YY)))
40 IFYY>23THENYY=23
50 CURSORXX,YY:PRINTCHR#(CH);
60 RETURN
70 REM -- PEEK SCREEN USING MZ-80K ADR. CODES
80 YY=INT((KK-53248)/40)
90 XX=INT((KK-(53248+40*YY)))
100 CH#=CHARACTER#(XX,YY)
110 CH=ASC(CH#)
120 RETURN
130 REM For POKE nnnnn,cc use KK=nnnnn, CH=cc, GOSUB 10
140 REM For PEEK nnnnn use KK=nnnnn, GOSUB 20, CH returned as ASCII code
150 REM NOTE, 80B and 80K character codes do not correspond, so experiment!

```

## MZ-80B Notes, letters and listings

```

10 REM ---- GOBLET DEMO PLOT
20 REM ---- PC '84
30 PRINTCHR$(6):GRAPH00,I1,C,01
40 DIMX(9),Y(9)
50 FORQ=1TO9:READX(Q),Y(Q):NEXTQ
60 FORB=2TO100
70 FORC=1TO9
80 F=1
90 FORD=0TO7.854STEP6.283/B
100 IFF=1THENSETX(C)*COS(D)+160,150-Y(C)+X(C)*.2*SIN(D)
110 IFF>1THENLINEPOSH,POSV,X(C)*COS(D)+160,150-Y(C)+X(C)*.2*SIN(D)
120 F=2
130 IFC=1THENNEXTD,C
140 SETX(C-1)*COS(D)+160,150-Y(C-1)+X(C-1)*.2*SIN(D)
150 LINEPOSH,POSV,X(C-1)*COS(D)+160,150-Y(C-1)+X(C-1)*.2*SIN(D)
160 GETA#:IFA#=""THEN180
170 GOTO220
180 NEXTD
190 NEXTC
200 NEXTB
210 DATA50,0,50,10,5,10,5,40,40,40,75,100,65,100,30,45,0,45
220 FORB=2TO100
230 GRAPH00,I1,C,01
240 FORC=1TO9
250 F=1
260 FORD=0TO7.854STEP6.283/B
270 IFF=1THENSET160+X(C)*COS(D),150-(Y(C)+X(C)*.2*SIN(D))
280 IFF>1THENLINEPOSH,POSV,160+X(C)*COS(D),150-(Y(C)+X(C)*.2*SIN(D))
290 F=2
300 IFC=1THENNEXTD,C
310 SET160+X(C-1)*COS(D),150-(Y(C-1)+X(C-1)*.2*SIN(D))
320 LINEPOSH,POSV,160+X(C)*COS(D),150-(Y(C)+X(C)*.2*SIN(D))
330 GETA#:IFA#=""THEN350
340 GOTO380
350 NEXTD
360 NEXTC
370 NEXTB
380 FORB=3.1TO.1STEP-.2
390 GRAPH00,I1,C,01
400 FORG=0TO6.2STEPB
410 FORC=1TO9
420 F=1
430 FORD=0TO7.854STEP6.283
440 IFF=1THENSET160+X(C)*COS(D+G),150-(Y(C)+X(C)*.2*SIN(D+G))
450 IFF>1THENLINEPOSH,POSV,160+X(C)*COS(D+G),150-(Y(C)+X(C)*.2*SIN(D+G))
460 F=2
470 IFC=1THENNEXTD,C
480 SET160+X(C-1)*COS(D+G),150-(Y(C-1)+X(C-1)*.2*SIN(D+G))
490 LINEPOSH,POSV,160+X(C-1)*COS(D+G),150-(Y(C-1)+X(C-1)*.2*SIN(D+G))
500 GETA#:IFA#=""THEN520
510 GOTO560
520 NEXTD
530 NEXTC
540 NEXTG
550 NEXTB

```

## MZ-80B Notes, letters and listings

```

560 FORB=2TD100
570 GRAPH00,I1,C,01
580 FORG=0TD6
590 FORC=1TD9
600 F=1
610 FORD=0TD7.854STEP6.283/B
620 IFF=1THENSET160+X(C)*COS(D+G),150-(Y(C)+X(C))*0.2*SIN(D+G)
630 IFF>1THENLINEPOSH,POSV,160+X(C)*COS(D+G),150-(Y(C)+X(C))*0.2*SIN(D+G)
640 F=2
650 IFC=1THENNEXTD,C
660 SET160+X(C-1)*COS(D+G),150-(Y(C-1)+X(C-1))*0.2*SIN(D+G)
670 LINEPOSH,POSV,160+X(C)*COS(D+G),150-(Y(C)+X(C))*0.2*SIN(D+G)
680 GETA$:IFA$=""THEN700
690 GOTO740
700 NEXTD
710 NEXTC
720 NEXTG
730 NEXTB
740 RUN

```

-----  
Dear Friends,

I have just read bad news about 80B. Where are goes all B's friends? Please write something about our computer: it's still alive! This is my little contribution.

- 1) BUG REPORT. (Who have done it?) In Sharpsoft 'Secret Kingdom' correct lines 6118 and 6218, before save on tape the current game. If you reload a previously interrupted game you can't solve all puzzles...So:

```

6118 INPUT/T NL,UP,D1,PL,SC,FB,N,I,BH,A,B,HM__
and also...

```

```

6218 PRINT/T NL,UP,D1,PL,SC,FB,N,I,BH,A,B,HM__
and headless man sleeps and dreams forever.

```

- 2) PYRAMYD OF DOOM. The complete listing of a small adventure game, published in YOUR COMPUTER for Commodore 64, and here translated in SB-6510 BASIC (look for some tips in listing!). Need Graphic RAM I (or delete lines 40000-50000).
- 3) CP/M KEY-STAR. Use it to redefine blue programmable keys (F1-F10 and much more) directly in BIOS. Do you know MBASIC 5.2? OK, now try it!

## MBASIC 5.2 - BIOS USER KEY

```

1 DEF FNC$(H,V)=CHR$(27)+"="+CHR$(V+&H20)+CHR$(H+&H20):
  CL$=CHR$(26):HO$=CHR$(21):
  UP$=CHR$(11):DO$=CHR$(10):RI$=CHR$(12)
5 'CL$=clear screen - HO$=home - FNC$(X,Y)=CURSOR X,Y
10 AD=62132!:PRINT CHR$(7): 'BIOS key adress
20 FOR KEY=0 TO 9
30 READ WORD$:LW=LEN (WORD$)

```

## MZ-80B Notes, letters and listings

```

40 PRINT "KEY F";KEY+1;"="";:IF RIGHT$(WORD$,1)="#" THEN
PRINT LEFT$(WORD$,LW-1);CHR$(&H7F) ELSE PRINT WORD$
50 IF LW>7 THEN PRINT "***WARNING*** ";WORD$;" IS TOO LONG!":
STOP
60 POKE AD,LW
70 FOR J=1 TO LW:BYTE=ASC(MID$(WORD$,J,1)):
IF BYTE=42 THEN BYTE=13
80 POKE AD+J,BYTE
90 NEXT J
100 AD=AD+B
110 NEXT KEY
120 PRINT DO$;"PRESS A KEY TO START. ===>";
130 IF INKEY$="" THEN 130
140 PRINT CHR$(27);";";: RESET ALL KEYS
141 ' replace data statements
150 DATA "RUN ", "LIST ", "EDIT ", "INPUT ", "AUTO ", "CHR$( ",
"FILES*", "RESET ", "?FNC$( ", "LOAD "
160 PRINT DO$;"*** Ok ***";DO$;CHR$(7):WIDTH 79:END

```

Note: call this program after loading MBASIC (e.g. A>MBASIC KEY). It pokes in BIOS unerasable locations the command strings for blue keys. Command strings can be up to seven characters, write then in DATA statement in line 150. If you want an automatic carriage return (as in example for FILES) use '\*' at word's end. Line 1 also set a pseudo-CURSOR command: PRINT FNC\$(10,12);"X", will print 'X' at 10th position of 12th column.

Program works only with 64K CP/M.

### PYRAMYD USER NOTES

The 'arrows' symbols in listing could be replaced with normal PRINT CHR\$(x). The reverse strings are: 'What?' (line 290) and 'silver shield' (line 20210). You must escape from ugly pyramid. The interpreter knows six direction! North, East, South and West (and also 'Sud' for South, 'Ovest' for West... It's Italian, dear Mugsy). ON ERROR facility trap unwanted exits and restore normal keyboard mode (capital letter). It can be deleted for use with tape basic interpreter. There is no SAVE facility, game have few locations, but it's quite addictive. I suppose.

MARIO PETENGHI  
MILANO - ITALY

Just a note to all the 'Friends of the MZ-80B'. I'm his greatest fan and have used him for over three years to produce each and every Issue of the Sharpsoft User Notes! Yes I'm the one to blame for all those typos! My 'Busy Bee' runs Wordstar on a 12 megabyte Winchester with a TEC Daisywheel printer, and I wouldn't swap him for the world!

SHARON - SHARPSOFT

\*\*\* PYRAMIYD OF DOOM - SHARP MZ-80B (SB-6510) \*\*\*

```

1 REM PYRAMID OF DOOM - BASIC SB-6510          (C) Mario Pettenghi
2 REM ORIGINAL VERSION (C64 BASIC)            (C) YOUR COMPUTER
3 ON ERROR GOTO 30110
4
5 CONSOLE C40:PRINT"@":RESTORE:GOSUB 40000
6
7 DIM OB$(7,14),R$(7),X$(7),OB(5),F$(5)
8
9 FOR I=1 TO 7:READ R$(I):NEXT
10 FOR I=1 TO 7:READ OB$(I,1):NEXT
11 FOR I=1 TO 7:READ OB$(I,2):NEXT
12
13 L9$=STRING$( "=",30):GRAPH 00
14
15 IF PEEK($0D69)=65 THEN CHANGE
16 FOR I=1 TO 7:READ X$(I):NEXT
17
18 A=0:Y$="I see something !":Y2$="I'm not carrying it !":B=0:CO=0:PR=0
19
20 R=1:MUSIC "+C0":K=0:T=0:R3=0:FT=3
21
22 PRINT"@":IF R=6 THEN PRINT"I'm by an exit.":GOTO 100
23
24 PRINT"I'm in a ";R$(R);".#":PRINTL9$
25
26 CURSOR 0,CSRV+2:PRINT"Things I see:"
27
28 PRINT"@":OB$(R,1);"      ":OB$(R,2)
29
30 FOR I=3 TO 12:IF OB$(R,I)<>" THEN PRINT OB$(R,I)
31
32 NEXT
33
34 PRINT"@#Exit:":X$(R)
35
36 A$="":B$="":C$=""
37
38 PRINT"@":L9$:PRINT"@":M$;CHR$(1):PRINTL9$:PRINT:PRINT"@What Shall I Do Now?":INPUT"@":A$
39
40 L=LEN(A$):FOR I=1 TO L
41
42 B$=LEFT$(A$,I):B2$=RIGHT$(B$,1):IF B2$=" " THEN L2=L-I:I=L+1:NEXT:GOTO 200
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150
151
152
153
154
155
156
157
158
159
160
161
162
163
164
165
166
167
168
169
170
171
172
173
174
175
176
177
178
179
180
181
182
183
184
185
186
187
188
189
190
191
192
193
194
195
196
197
198
199
200
201
202
203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
230
231
232
233
234
235
236
237
238
239
240
241
242
243
244
245
246
247
248
249
250
251
252
253
254
255
256
257
258
259
260
261
262
263
264
265
266
267
268
269
270
271
272
273
274
275
276
277
278
279
280
281
282
283
284
285
286
287
288
289
290
291
292
293
294
295
296
297
298
299
300
301
302
303
304
305
306
307
308
309
310
311
312
313
314
315
316
317
318
319
320
321
322
323
324
325
326
327
328
329
330
331
332
333
334
335
336
337
338
339
340
341
342
343
344
345
346
347
348
349
350
351
352
353
354
355
356
357
358
359
360
361
362
363
364
365
366
367
368
369
370
371
372
373
374
375
376
377
378
379
380
381
382
383
384
385
386
387
388
389
390
391
392
393
394
395
396
397
398
399
400
401
402
403
404
405
406
407
408
409
410
411
412
413
414
415
416
417
418
419
420
421
422
423
424
425
426
427
428
429
430
431
432
433
434
435
436
437
438
439
440
441
442
443
444
445
446
447
448
449
450
451
452
453
454
455
456
457
458
459
460
461
462
463
464
465
466
467
468
469
470
471
472
473
474
475
476
477
478
479
480
481
482
483
484
485
486
487
488
489
490
491
492
493
494
495
496
497
498
499
500

```

## MZ-80B Notes, letters and listings

```

470 IF(C$="che")*(F$="open")THEN F$="bag of gold":GOSUB 20000:R3=5
475 IF(C$="che")*(R3=5)THEN OB$(2,1)="treasure chest empty":M$=Y$:GOTO 80
480 M$="I see nothing special.":GOTO 80
500 IF C$="par" THEN F=1
510 IF(C$="bag")+(C$="gol") THEN F=2
520 IF(C$="met")+(C$="bar") THEN F=3
530 IF C$="kni" THEN F=4
540 IF C$="key" THEN F=5
550 IF C$="tor" THEN F=6
555 IF C$="lit" THEN F=9
560 IF C$="mat" THEN F=7
570 IF(C$="sil")*(C$="shi") THEN F=8
575 GOSUB 20100:IF RE=0 THEN M$="Not carrying it!":GOTO 80
580 FOR I=1 TO 5:IF OB(I)=F THEN OB(I)=0:M$="Ok."
581 NEXT
582 IF F=1 THEN F$="parchment"
583 IF F=2 THEN F$="bag of gold"
584 IF F=3 THEN F$="metal bar"
585 IF F=4 THEN F$="knife"
586 IF F=5 THEN F$="key"
587 IF(F=6)*(TF=0)THEN F$="torch"
588 IF F=7 THEN F$="matches"
589 IF F=8 THEN F$="silver shield"
590 IF F=9 THEN F$="lit torch"
592 GOSUB 20000:IF R<6 THEN 80
593 F$="bag":GOSUB 20300:IF RE=0 THEN 80
594 F$="sil":GOSUB 20300:IF RE=0 THEN 80
596 M$="The minotaur grabs the gold and the shield and runs "
597 M$=M$+"off laughing.":OB$(6,1)="" :X$(6)=X$(6)+" north"
598 F$="bag":GOSUB 20500:F$="shi":GOSUB 20500:GOTO 80
600 IF(C$<>"tre")*(C$<>"che")THEN 630
605 IF((C$<>"tre")+(C$<>"che"))*(R=2)THEN F=5:GOSUB 20100
610 IF(RE=0)+(R<>2)THEN M$="Ok."
621 FOR I=1 TO 14:IF OB$(R,I)="treasure chest locked" THEN OB$(R,I)="treasure chest"
622 NEXT:GOTO 80
630 IF C$<>"doo" THEN M$="I dont follow you.":GOTO 80
640 IF(C$="doo")*(R=1)THEN F=5:GOSUB 20100:IF RE=0 THEN M$="...Not yet.":GOTO 80
650 M$="Ok.":OB$(1,1)="door":GOTO 80
700 IF(C$="doo")*(OB$(1,1)="locked door")*(R=1)THEN M$="Not yet.":GOTO 80
710 IF(C$="doo")*(OB$(1,1)="door")*(R=1)THEN M$="Ok.":OB$(1,1)="open door"
720 IF(C$="doo")*(OB$(1,1)="open door")*(R=1)THEN X$(1)=X$(1)+" west":R9=1
725 IF(C$="doo")*(R9=1)*(R=1)THEN F$="fierce warrior":B=1:GOSUB 20000:GOTO 80
730 IF((C$<>"tre")*(C$<>"che"))+(R<>2)THEN 770
735 TR=0
740 IF OB$(2,1)="treasure chest locked" THEN M$="Not yet.":GOTO 80
750 IF OB$(2,1)="treasure chest" THEN OB$(2,1)+" open":M$="Ok.":GOTO80
760 M$="It's already open!":GOTO 80
770 IF(C$<>"cof")+(R<>4)THEN M$="I don't follow you!":GOTO 80
772 F=3:GOSUB 20100
774 IF RE=0 THEN M$="Not yet.":GOTO 80
776 IF RIGHT$(OB$(4,1),4)="open" THEN M$="It's already open!":GOTO 80
778 IF(C0=0)+(C0=5)THEN OB$(4,1)=OB$(4,1)+" open":M$="Ok.":IF C0=0 THEN C0=3:GOTO 80
800 RE=0
805 IF(C$="war")*(R=1)*(B=1)THEN F=4:GOSUB 20100:IF RE=0 THEN M$="Not yet.":GOTO 80
810 IF RE=1 THEN M$="Ok.":F$="dead warrior":B=5:1=1
815 I=I+1
820 IF(RE=1)*(OB$(R,I)="fierce warrior")THEN OB$(R,I)="dead warrior":GOTO 80
830 IF I<14 THEN 815
835 I=0

```

## MZ-80B Notes, letters and listings

```

840 IF C$="min" THEN 21000
850 M$="I don't follow you!":GOTO 80
900 FOR I=1 TO 5:F$(I)="" :NEXT
905 FOR I=1 TO 5
910 IF OG(I)=1 THEN F$(I)="parchment"
920 IF OG(I)=2 THEN F$(I)="bag of gold"
930 IF OG(I)=3 THEN F$(I)="metal bar"
940 IF OG(I)=4 THEN F$(I)="knife"
950 IF OG(I)=5 THEN F$(I)="key"
960 IF OG(I)=6 THEN F$(I)="torch"
970 IF OG(I)=7 THEN F$(I)="matches"
980 IF OG(I)=8 THEN F$(I)="silver shield"
985 IF OG(I)=9 THEN F$(I)="lit torch"
990 NEXT
1000 PRINT "I have:";BL$=SPACE$(3)
1010 PRINTF$(1);BL$;F$(2);BL$;F$(3)
1020 PRINTF$(4);BL$;F$(5)
1030 M$="Ok.":GOTO 155
1100 IF C$="box" THEN C$="woo"
1101 IF C$="woo" THEN M$="I can't, it's nailed to the floor.":GOTO 80
1102 IF C$="gol" THEN C$="bag"
1103 IF C$="war" THEN C$="fie"
1104 IF C$="bar" THEN C$="met"
1105 IF C$="che" THEN C$="tre"
1106 IF C$="shi" THEN C$="sil"
1107 IF C$="doo" THEN C$=LEFT$(DB$(1,1),3)
1108 F$=C$:GOSUB 20300
1110 IF RE=0 THEN M$="I don't see it here!":GOTO 80
1140 F=0
1150 IF C$="par" THEN F=1:PR=1
1160 IF (C$="bag")+(C$="gol") THEN F=2
1170 IF (C$="met")+(C$="bar") THEN F=3
1180 IF C$="kni" THEN F=4
1190 IF C$="key" THEN F=5
1200 IF C$="tor" THEN F=6
1210 IF C$="mat" THEN F=7
1220 IF (C$="shi")+(C$="sil") THEN F=8
1223 IF C$="lit" THEN F=9
1225 IF F=0 THEN M$="I can't do that!":GOTO 80
1230 GOSUB 20400:IF RE=0 THEN M$="I'm carrying too much!":GOTO 80
1240 F$=C$:GOSUB 20500:IF RE=0 THEN M$="I don't follow you!":GOTO 80
1250 M$="Ok.":GOTO 80
1300 Y4$="I can't go that way!":M$=""
1301 ON R GOTO 1310,1370,1410,1430,1450,1480,1500
1310 IF (C$="eas")+(C$="est") THEN M$="Ok.":R=2:GOTO 80
1320 IF C$="nor" THEN M$="Ok.":R=7:GOTO 80
1330 IF (RIGHT$(X$(1),4)="-west")$(C$="wes")$(B(>5)) THEN M$="warrior won't let me!"
1340 IF M$="warrior won't let me!" THEN 80
1350 IF (RIGHT$(X$(1),4)="-west")$(C$="ove")+(C$="wes"))$(B=5) THEN M$="Ok.":R=5:B=5:GOTO 80
1355 IF C$="doo" THEN M$="Sorry.":GOTO 80
1360 M$=Y4$:GOTO 80
1370 IF (C$="eas")+(C$="est") THEN R=3:M$="Ok.":GOTO 80
1380 IF (C$="wes")+(C$="ove") THEN R=1:M$="Ok.":GOTO 80
1390 IF (C$="sou")+(C$="sud") THEN R=4:M$="Ok.":GOTO 80
1400 M$=Y4$:GOTO 80
1410 IF (C$="wes")+(C$="ove") THEN R=2:M$="Ok.":GOTO 80
1420 M$=Y4$:GOTO 80
1430 IF C$="nor" THEN R=2:M$="Ok.":GOTO 80
1440 M$=Y4$:GOTO 80

```

## MZ-80B Notes, letters and listings

```

1450 IF (C$="eas")+(C$="est") THEN R=1:M$="Ok.":GOTO 80
1460 IF C$="nor" THEN R=6:M$="Ok.":GOTO 80
1470 M$=Y4$:GOTO 80
1480 IF (C$="sou")+(C$="sud") THEN R=5:M$="Ok.":GOTO 80
1483 IF (C$="exi")+(OB$(6,1)="minotaur") THEN 21000
1485 IF C$="exi" THEN M$="Sorry.":GOTO 80
1486 IF (C$="nor")+(OB$(6,1)="") THEN 22000
1490 M$=Y4$:GOTO 80
1500 IF (C$="sou")+(C$="sud") THEN R=1:M$="Ok.":GOTO 80
1510 IF (C$="wes")+(C$="ove")+(C$="nor")+(C$="est")+(C$="eas") THEN R=7:M$="Ok.":GOTO 80
1515 M$="What are you saying?":GOTO 80
1520 IF C$(">tor") THEN M$="What..":GOTO 80
1530 F=6:GOSUB 20100:IF RE=0 THEN M$="Not carrying it!":GOTO 80
1540 M$="Ok. Torch lit.":CO=5:FT=3
1550 FOR I=1 TO 5:IF OB(I)=6 THEN OG(I)=9
1555 NEXT:GOTO 80
1560 F=1:GOSUB 20100:IF RE=0 THEN M$="Examine things, experiment...":GOTO 80
1570 IF PR=0 THEN M$="Read the parchaent?":GOTO 80
1580 IF PR=1 THEN M$="The magic word might get you somewhere.":GOTO 80
1590 M$="...examine things, experiment!":GOTO 80
1600 IF C$("<sil") THEN M$="Ok...Nothing happens":GOTO 80
1605 IF PR(<) THEN M$="Ok. SILVER SHIELD...Nothing happens.":GOTO 80
1610 IF PR=1 THEN M$="A shield materialises!":F$="silver shield":GOSUB 20000
1620 IF PR(>6 THEN PR=5:GOTO 80
1630 F$="bag":GOSUB 20300:IF RE=0 THEN 80
1640 PRINT":M$:PRINT"The minotaur grabs the gold and the ":M$="Ok."
1650 PRINT"shield and runs off laughing.":OB$(6,1)="":X$(6)=X$(6)+" north"
1660 F$="bag":GOSUB 20500:F$="sil":GOSUB 20500:GOTO 155
20000 FOR I=1 TO 14
20005 IF OB$(R,I)=F$ THEN I=15:NEXT:RETURN
20010 IF OB$(R,I)="" THEN OB$(R,I)=F$:I=15
20020 NEXT:RETURN
20100 FOR I=1 TO 5:IF OG(I)=F THEN RE=1:I=6:NEXT:RETURN
20110 NEXT:RE=0:RETURN
20200 PRINTCHR$(1);"Parchment says:"
20210 PRINT"Magic word is 'MAGIC WORD'."
20220 PRINT"#ADVICE: stay clear of the minotaur.":GOTO 155
20300 FOR I=1 TO 14
20310 IF LEFT$(OB$(R,I),3)=F$ THEN RE=1:I=15:NEXT:RETURN
20320 NEXT:RE=0:RETURN
20400 FOR I=1 TO 5:IF OG(I)=0 THEN OG(I)=F:I=6:NEXT:RE=1:RETURN
20410 NEXT:RE=0:RETURN
20500 FOR I=1 TO 14:IF LEFT$(OB$(R,I),3)=F$ THEN OB$(R,I)="" :I=15:NEXT:RE=1:RETURN
20510 NEXT:RE=0:RETURN
21000 PRINT"The minotaur don't like that idea."
21010 PRINT"It turned nasty on me. I'm dead."
21020 INPUT"#Another go ? (y/n) ":F$
21030 IF LEFT$(F$,1)="y" THEN RUN
21040 IF LEFT$(F$,1)<>"n" THEN 21020
21050 PRINT"#Thanks for playing.":MUSIC"ALROCIRO"
21060 IF PEEK($OD69)=97 THEN CHANGE:END
22000 PRINT"You have done it!"
22010 PRINT"#You have helped me escape!"
22020 PRINT"#THANK YOU !!!":GOTO 21020
30000 DATAcorridor,hold,chapel,tomb,narrow tunnel,exit,azez
30010 DATAlocked door,treasure chest locked,alter,large stone coffin,"",minotaur,""
30020 DATAwooden box,"",,"",torch,"",""
30030 DATAnorth east,east west south,west,north,north east,south
30040 DATAnorth west east south

```

```

30110 PRINT"ERROR N. ";ERN;" AT LINE ";ERL
30120 USR($OEBE)
30140 IF PEEK($OD&9)=97 THEN CHANGE
40000 GRAPH 11,C,D1:LINE 10,10,310,10,310,190,10,190,10,10
40010 LINE 20,20,300,20,300,180,20,180,20,20
40020 X=RND(1)*260+40:Y=RND(1)*130+40
40030 FOR X1=X TO 20 STEP -10:LINE X1,Y,20,20:LINE X1,Y,20,180:NEXT
40040 FOR X1=X TO 300 STEP 10:LINE X1,Y,300,20:LINE X1,Y,300,180:NEXT
40050 FOR Y1=Y TO 20 STEP -10:LINE X,Y1,20,20:LINE X,Y1,300,20:NEXT
40060 FOR Y1=Y TO 180 STEP 10:LINE X,Y1,20,180:LINE X,Y1,300,180:NEXT
40070 FOR Y=85 TO 115:BLINE 100,Y,225,Y:NEXT
40080 CURSOR 13,12:PRINT"PYRAMYD OF DOOM"
40090 FOR J=1 TO 5:CONSOLE R:MUSIC"+FO-CR":CONSOLE:MUSIC"R1":NEXT:MUSIC"R5R0"
50000 RETURN

```

---

Dear Sharpsoft,

I should be grateful if one of the readers of SUN could solve a problem.

I just need a program that will enable me to access the printer codes on my Sharp MZ-80 P5 printer using the MZ-80B.

According to the printer manual the printer is capable of performing many functions but these are inaccessible under Sharp BASIC.

Have any other readers solved this problem.

J. PARISH  
CO. DURHAM

You can send the control characters to the P5 printer by using the ?/PCHR\$(XX) command. Most of the control codes are between 0 and 32 but the MZ-80B traps these from being sent to the printer to stop normal listings going haywire half way through printing. The CHR\$(XX) does not have the codes 0-32 trapped and hence should produce the extra functions. Try the following program:

```

10 PRINT/PCHR$(18);:REM
20 PRINT/P"SHARPSOFT IN EXPANDED"

```

These codes and their uses are explained on Pages 25, 26 and 27 of the P5 manual.

SHARPSOFT

---

Dear Sharpsoft,

As promised on the telephone a while ago, here is my 'Inner Planets' program for the MZ-80B. It is an original idea of my own worked out without reference to any other similar ones that may exist.

It represents a beginner's attempts to use Sharp PASCAL. I find the result quite pleasing but expect the experts will have plenty of criticism of my use of PASCAL.

MZ-80B Notes, letters and listings

I find PASCAL works efficiently but is 'fussy' to write in. the recommended style of indentation produces a printout that leaves me giddy just to look at it. Hence my severe curtailing of this approach.

One suggestions, 'Inner Planets' is best viewed in a dimly lighted room with the brightness control turned up a bit onthe MZ-80B.

Hope S.U.N. readers like it.

M. FRY  
EASTBOURNE

For MZ-80B.

July 1984

```

0.(INNER PLANETS by M. Fry.)
1.var K:integer;
2. MR:=array[694,1]of integer;E:=array[364,3]of integer;
3. V:=array[223,1]of integer;M:=array[87,1]of integer;
4. AL,TH,R,KP,KL,PI:real;
5. A,B:char;
6.function X:integer;
7.begin X:=trunc(R*cos(TH)+160.0)ends;
8.function Y:integer;
9.begin Y:=trunc(R*sin(TH)+100.0)ends;
10.function LUX:integer;
11.begin LUX:=trunc(65.0*cos(TH)+160.0-3.0*cos(AL));end;
12.function LUY:integer;
13.begin LUY:=trunc(65.0*sin(TH)+100.0-3.0*sin(AL));end;
14.procedure MERCURY;
15.begin writeln("MERCURY.Orbital radius 36 Million miles.Period 88 days.");
16. writeln();
17. TH:=0.0;KP:=PI/44.0;R:=25.0;
18. for K:=0 to 87 do
19. begin MCK,OJ:=X;MCK,1J:=Y;TH:=TH+KP end
20.end;
21.procedure VENUS;
22.begin writeln("VENUS.Orbital radius 67 million miles. Period 224 days.");
23. writeln();
24. TH:=0.0;KP:=PI/112.0;R:=47.0;
25. for K:=0 to 223 do
26. begin VCK,OJ:=X;VCK,1J:=Y;TH:=TH+KP end
27.end;
28.procedure MARS;
29.begin writeln("MARS.Orbital radius 140 million miles.");
30. writeln("Period 695 days.(This will take a little time to compute.)");
31. writeln();
32. KP:=2.0*PI/695.0;TH:=0.0;R:=98.0;
33. for K:=0 to 694 do
34. begin MREK,OJ:=X;MREK,1J:=Y;TH:=TH+KP end
35.end;
36.procedure EARTH;
37.begin writeln("EARTH-MOON.Earth's orbital radius 93 million miles.");
38. writeln("Period 365 days.Lunar month 28 days.");
39. writeln("(Another lengthy computation!)");writeln();
40. writeln("Earth-Moon distance exaggerated.");
41. writeln("Other distances approximately to scale.");
42. writeln();
43. KL:=PI/14.0;KP:=2.0*PI/365.0;AL:=0.0;TH:=0.0;R:=65.0;
44. for K:=0 to 364 do

```

## MZ-80B Notes, letters and listings

```

45. begin E[K,0]:=X;E[K,1]:=Y;
46.   E[K,2]:=LUX;E[K,3]:=LUY;TH:=TH+KP;AL:=AL+KL
47. end
48.end;
49.procedure DISPLAY;
50.var EK,MK,VK,YR:integer;
51.begin graph(I,1,C,0,1);EK:=0;MK:=0;VK:=0;YR:=0;
52.  range(C,80);write(chr(6));
53.  cursor(78,12);write("←");
54.  cursor(75,16);write("Earth");
55.  cursor(76,18);write("Year");
56.  cursor(75,20);write(YR:4);
57.  cursor(75,22);write("+Day");
58.  repeat
59.    for K:=0 to 694 do
60.      begin cursor(75,24);write(EK:4);
61.        position(156,97);pattern(-7,"(D(Ⓜ(D(");
62.        gset(MREK,0],MREK,1]);
63.        gset(EIEK,0],EIEK,1]);
64.        gset(EIEK,2],EIEK,3]);
65.        gset(MEMK,0],MEMK,1]);
66.        gset(VEVK,0],VEVK,1]);
67.        A:=key;if(ord(A)=32)or(ord(A)=82)then
68.          begin if ord(A)=82 then begin B:='R';K:=694 end;
69.            repeat A:=key;
70.              until ord(A)=67;
71.            end;
72.            position(156,97);pattern(-7,"(8+(4B(");
73.            grset(MREK,0],MREK,1]);
74.            grset(EIEK,0],EIEK,1]);
75.            grset(EIEK,2],EIEK,3]);
76.            grset(MEMK,0],MEMK,1]);
77.            grset(VEVK,0],VEVK,1]);
78.            MK:=MK+1;if MK=88 then MK:=0;
79.            VK:=VK+1;if VK=224 then VK:=0;
80.            EK:=EK+1;if EK=365 then
81.              begin EK:=0;YR:=YR+1;
82.                cursor(75,20);write(YR:4);
83.              end;
84.            end
85.          until ord(B)=82;
86.end;
87.{MAIN PROGRAM}
88.begin PI:=3.1416;
89.  range(C,40);write(chr(6));
90.  writeln(" The SUN and INNER PLANETS");writeln();
91.  writeln("Computing orbits now for:-");
92.  MERCURY;VENUS;MARS;EARTH;
93.  writeln("■□□□□□□□□□ Any KEY will start display.");
94.  writeln("To halt display KEY SPACEBAR.");
95.  writeln("To continue KEY C.");
96.  write("To restart from Day 0, KEY R then C.");
97.  A:=key;while ord(A)=0 do A:=key;
98.  repeat DISPLAY;cursor(0,23);B:=' ';
99.    writeln(" KEY E TO END PROGRAM. ANY KEY TO RESTART FROM DAY 0.");
100.   A:=key;while ord(A)=0 do A:=key;
101. until ord(A)=69;
102. graph(I,1,C);
103.end.
104.

```

MZ-80B Notes, letters and listings

```

1 REM
2 REM
3 REM
4 CONSOLEC40:PRINT"Number ?";
5 GETA#:IFA#=""THEN5
7 A=VAL(A#):PRINTA
10 DNA60SLIB520,530,540,560
20 TEMP07
100 READA
110 FORI=1TOA:PRINTI;A#,:READA#:MUSICA#:NEXT
200 GOTO2
520 RESTORE2000
525 RETURN
530 RESTORE3000
535 RETURN
540 RESTORE4000
545 RETURN
560 RESTORE6000
565 RETURN
2000 REM God Save the Queen
2010 DATA 49
2020 DATA G5,R0,G5,A5,#F6,G3,A5,B5,R0,B5,+C5,B6,A3,G5,A5,G5,#F5,G8
2030 DATA+D5,R0,+D5,R0,+D5,R0,+D6,+C3,B5,+C5,R0,+C5,R0,+C5,R0,+C6,B3,A4,B5
2040 DATA+C3,B3,A3,G3,B6,+C3,+D5,+E3,+C3,B5,A5,G8
3000 REM It's a long way to Tipperary
3010 DATA 78
3020 DATAD3,#D3,F3,R3,F6,R0,F3,G3,A3,#A5,+D5,R5,+D3,+C3,#A5
3030 DATAG7,#A5,F7,R3,#A3,D3,F4,R0,F6,R0,F3,G3,A3,#A5,+D5,#A3,B3
3040 DATA+C5,G5,A5,#A5,+C4,+D2,+C3,A3,G3,F3,D3,#D3,F3,R3,F5,F3,R0,F3,G3,A3
3050 DATA#A5,+D8,#G5,+E5,G5,#A5,+C5,+D7,+D3,R3,#B3,+C3,+D3,R3,+D3,+D6
3060 DATA#A3,+C3,#A3,G7,F5,#A5,+D5,#A7,+C5,#A8
4000 REM Entertainer
4010 DATA 104
4020 DATA+D3,+E3,+C3,+A5,+B3,+G5,+D3,+E3,+C3,A5,B3,G5
4030 DATAD3,E3,C3,-A5,-B3,-A3,-#G3,-G5,R5,G0,B0,+D0,+G5,D3,#D3
4040 DATAE3,+C5,E3,+C5,E3,+C7,+C3,+D3,+#D3,+E3,+C3,+D3,+E5,+B3,+D5,+C8
4050 DATAD3,#D3,E3,+C5,E3,+C5,E3,+C8,+A3,+G3,+#F3,+A3,+C3,+E5,+D3,+C3,+A3
4060 DATA+D8,D3,#D3,E3,+C5,E3,+C5,E3,+C8,+C3,+D3,+D3,+E3
4070 DATA+C3,+D3,+E5,+B3,+D5,+C8,R0
4080 DATA+C3,+D3,+E3,+C3,+D3,+E5,+C3,+D3,+C3,+E3,+C3,+D3,+E5,+C3,+D3,+C3
4090 DATA+E3,+C3,+D3,+E5,+B3,+D5,+C4
6000 REM Minuet in G (Beethoven)
6005 DATA 161
6010 DATAB4,+C2,+D4,+#C2,+D4,+#C2,+D4,+#C2,+D7,+E4,B2,+C7,+D4,A3,B5,R5,G4,A2
6020 DATAB4,#A2,B4,#A2,B4,#A2,B7,A3,G3,R0,G3,#F3,R0,#F3,A3,G3,E3,D3,R5
6030 DATA+D3,+G3,R0,+G5,+#F5,+G5,+A7,+G2,+#F2,+E2,+D2,+C5,B5,+E4,+C2,B5,A5
6040 DATAG4,A2,B4,#A2,B4,#A2,B4,#A2
6050 DATAR7,+C4,#G2,A7,B4,#F2,G5,+D3
6060 DATA+#C3,+D3,B3,+D3,G3,B3,D3,B3,A3,+C3,#F3,A3,D3,#F3,G3,#F3,G3,A3,B3
6070 DATA+#C3,+D3,+#C3,+D3,+E3,+D3,+C3,B3+#A3,B3,+C3,B3,A3,G3,B3,A3,G3,#F3,A3
6080 DATAE3,#F3,G3,E3,#C3,-A3,D5
6090 DATA+D3,+#C3,+D3,+E3,+C3,A3,B3,#A3,B3,+C3,A3,#F3,+D3,+#C3,+D3
6100 DATA+E3,+C3,A3,B3,#A3,B3,+C3,A3,#F3,+D3,+#C3,+D3,B3,+D3,G3,B3,+D3,+G3,B3,+D3,+G3
6120 DATA+E3,+G3,+C3,+E3,A3,+C3,#F3,A3,D3,E3,F3,#F3,A5,G3

```

**SHARP**SOFT

Sharpsoft Ltd., 86-90 Paul Street, London EC2A 4NE

Printed by Oldham Press (T.U.), Chatham, Kent.