The
MEMOTECH
Owners
Club
Magazine

MEMOTECHNIQUES
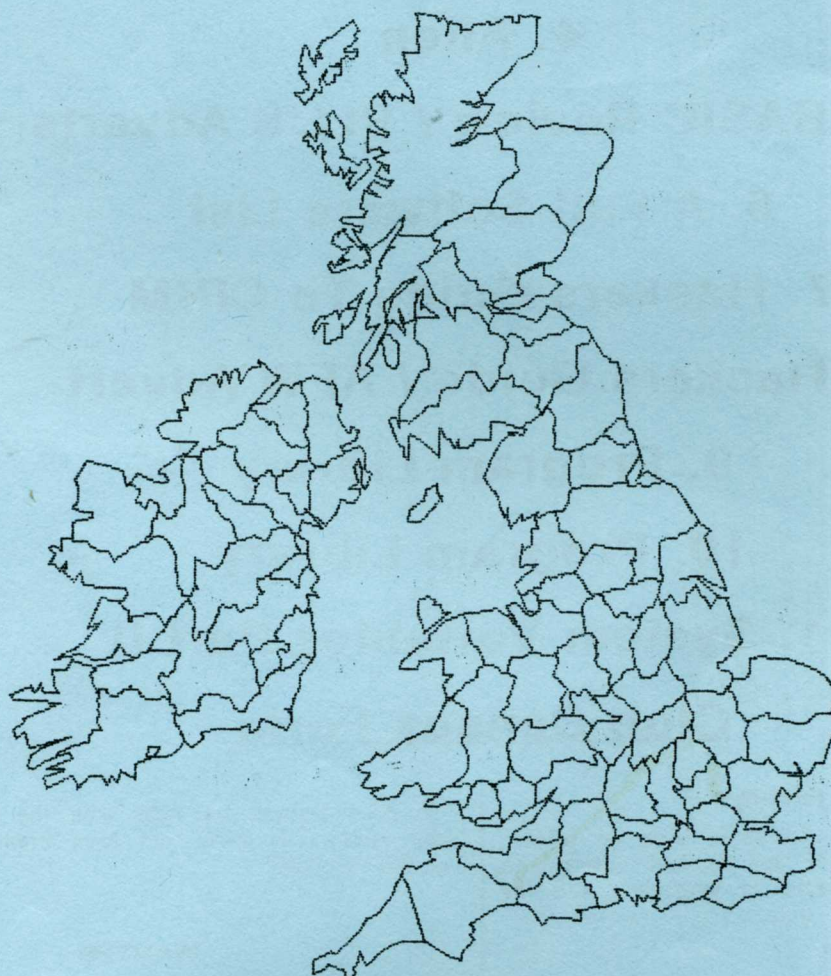
13 Copse Road

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CIRCA ...350

M.O.C.

VOLUME 4 ISSUE NUMBER 9

CONTENTS

--- A Club Facility ---

A program listing facility for those with no printer. Just send in your program on tape (or 5.25" disc) with a pre-paid envelope addressed to yourselves and the club will do the listing for you.

--- Names and Telephone Numbers. ---

i. Paul Wood for 3.5" disc copying, general info and Comms specific info. Tel 0905 24260

ii. Alan Dobson for help with the following adventures: Alice, The ZOO and Man From Granny Tel 061-980-6288

WANTED

Assembler graphics dump to dump screen to half an A4 page (8 by 5·6inchs). Good quality output required.

This routine is required by Nigel Cooper, for inclusion in a MEGA graphics program!!

E D I T O R I A L (September 1988)

Phil & Hazel Eyres
13 Copse Road
Townhill Park
Southampton

Software

On Page 6 is a list of most of the known software titles.

We have marked the titles we can supply, along with new prices.

Next in line. If you are the owner/writer of the software, then please contact us, we cannot promise high sales, but we do promise to pay #1 for every sale. (If anyone can get hold of Andrew Keys - I owe him #15 but I just cannot get hold of him to pay him!!).

The list of software authors we would like to contact is:-

A.Southgate

Chris Whittington

Andy Key

PLUS anyone else who has written commercial MTX software.

A piece of free software to anyone providing information leading to finding the above three people.

Notice also, a list of software available on 500K CP/M and non CP/M systems available from us.

Many people have been asking about hardware prices. As page 6 is full of software, I have taken to providing hardware prices for new and secondhand kit in the small spare corners that occur here and there.

Disc Software 500K CP/M All Available at #3.00 per program, plus #1.00 for the cost of the disc.(As many programs as you like on one disc!).

Mission Alphatron Knuckles Quasar Turbo Toado Obloids 3DTach Fighter Astropac Star Command Nemo

500K Non-CP/M (Readable on CP/M systems!) Chess Reversi Chamberoids Minefield Pacman Pot Hole Pete Phaid Star Command

I should now be in most evenings, except for the odd game of squash. The Club Hotline is between 7 and 8 pm any evening. During the day and after 8.30pm a club answer phone takes over. I hope this is ok for everyone. The number to phone now is (0703) 585106, ask for Phil.

If anyone would like back issues they are available for the small remittance of 80p each. At present there are 36 back issues, 10 for volume 1, 10 for volume 2, 10 for volume 3 and 8 for volume 4.

It should be noted that all articles are the copyright of the sender and M.O.C., anyone wishing to have articles published elsewhere should inform us first.

Phil Eyres

INTERFACING PROJECTS

Why not get into the exciting world of micro electronics. Infact what better way to start than with an MOC D.I.Y. kit. Everything you need is supplied, except a soldering iron, wire cutters and of course a few hours of your time!!. So why not order now.

Interface price list A full set of components and instructions for the LED kit#6.95

A full set of components and instructions for the Speech Synthesiser kit#19.00

Connecting cable for the internal port (needed for projects)#4.50

All prices are fully inclusive.

Please allow 14 days for delivery and make cheques payable to MOC.

ALIEN

```
10 REM ******** ALIEN SEARCH********
20 REM ******** DAVE WEMYSS********
30 REM ******** APRIL 1986********
35 SAVE "ALIEN"
40 VS 5: PAPER 10: INK 1: CLS : CSR 10,10:
PRINT "INSTRUCTIONS (Y/N)?"
50 LET A$ = INKEY$: IF A$ < > "Y" AND
A$ < > "N" AND A$ < > "" THEN GOTO 40
60 LET A$ = INKEY$: IF A$ = "" THEN GOTO 60
70 IF A$ = "N" THEN GOTO 100
80 PLOD "PR1"
90 PAPER 10: INK 1: LET A$ = INKEY$
92 IF ASC(A$) < > 13 THEN GOTO 90
94 PLOD "PR2"
96 LET A$ = INKEY$: IF ASC(A$)13 THEN
GOTO 96
100 CLS : CSR 2,10: INPUT "SET FORCE FIELD
STRENGTH (10-100)";FS: PAUSE 2000: CLS :
RAND -1000
105 IF FS > 100 THEN LET FS = 100
110 PAUSE 2000: LET N = INT(RND*(FS/5) + 4)
120 GOSUB 1000: REM INITIALISATION
130 GOSUB 1500: REM SET UP BACKGROUND
140 GOSUB 1550: REM SET UP PANEL
150 GOSUB 1650: REM START GAME
180 GOSUB 2300: REM SUCCESSFUL SHOT
200 VS 4: PAPER 4: INK 15: CLS
210 CSR 5,5: INPUT "ANOTHER GAME
(Y/N)?";A$
220 IF A$ < > "Y" AND A$ < > "N" THEN GOTO
210
230 IF A$ = "" THEN GOTO 210
240 IF A$ = "Y" THEN CLS : GOTO 40
250 NEW
1000 VS 4: COLOUR 2,1: COLOUR 4,10: CLS
1010 GENPAT 0,36,16,16,16,16,16,56,124,254:
GENPAT 0,35,0,40,16,16,40,0,0,0
1020 LET X = 0: LET Y = 0: LET Z = 0: LET A = 0:
LET B = 0: LET C = 0
1030 RETURN
1500 VS 4: CLS
1502 COLOUR 1,10: FOR D = 0 TO 23: CSR 1,D:
PRINT CHR$(127): NEXT D
1510 FOR W = 1 TO 50: CSR
INT(RND*29) + 3,INT(RND*20)
1520 COLOUR 0,1: COLOUR 1,INT(RND*14) + 1
1530 PRINT "£"
1540 NEXT W: RETURN
1550 VS 4: COLOUR 0,1: COLOUR 1,10: CSR
2,22: PRINT "BOLTS-"
1570 COLOUR 1,10: FOR W = 7 TO N + 6: CSR
W,22: PRINT "$": PAUSE 50: NEXT W
1580 COLOUR 0,1: COLOUR 1,2: CSR 2,20:
```

NODDY Pages

PR1

```
* D INSTR1.
* R
```

INSTR1

You have trapped an alien starfighter in a force field. It's defences have made it invisible both to the eye and to radar. You have a fixed amount of phaser bolts to seek it out and destroy it.

Your battle computer will ask you for firing co-ordinates, after each shot you will receive information on where your shot has landed.

While you are trying to destroy the alien, two things can happen; firstly the computer controlling the force field can malfunction allowing the alien to change its postion, secondly the alien can fire a cosmic ray which can cause a phaser bolt to malfunction.

When your phasers are used up, the force-field breaks down and the alien escapes.

Press ‹ret› to continue

PR2

```
* D INSTR2
* R
```

INSTR2

```
SETTING PHASERS
NORTH     Cursor Up
SOUTH     Cursor Down
EAST      Cursor Right
WEST      Cursor Left
DISTANCE UP
DISTANCE DOWN
FIRE
Home
Press to continue
```

```
PRINT "N/S-";X
1590 COLOUR 1,5: CSR 10,20: PRINT "E/W-";Y
1600 COLOUR 1,14: CSR 20,20: PRINT
"RANGE-";Z
1610 PAUSE 3000: RETURN
1650 LET D = 1
1660 LET A = INT(RND*FS): LET
B = INT(RND*FS): LET C = INT(RND*FS)
1670 COLOUR 1,15: CSR 2,0
1680 PRINT "SHOT NUMBER - ";D: PAUSE
3000: CSR 2,0: PRINT "          "
1690 CSR 2,0: PRINT "SET NORTH/SOUTH
COORDINATE": PAUSE 1500: CSR 2,0: PRINT "
(60 Spaces)"
1700 CSR 2,0: PRINT "WHEN SET PRESS
< S >"
1710 LET A$ = INKEY$: IF A$ = "" THEN  GOTO
1710
1720 LET F = ASC(INKEY$): IF F < > 10 AND
F < 11 AND F < > 83 THEN  GOTO 1690
1730 IF F = 11 THEN  LET X = X + 1: IF X > FS
THEN  LET X = FS
1740 IF F = 10 THEN  LET X = X-1: IF X < 0 THEN
LET X = 0
1750 IF F = 83 THEN  GOTO 1800
1760 CSR 5,20: PRINT " ": CSR 5,20: COLOUR
1,2: PRINT X
1770 GOTO 1710
1800 CSR 2,0: COLOUR 1,15: PRINT "
"
1810 CSR 2,0: PRINT "SET EAST/WEST
COORDINATE": PAUSE 1500: CSR 2,0: PRINT "
": CSR 2,0
1820 PRINT "WHEN SET PRESS  < S >"
1830 LET A$ = INKEY$: IF A$ = "" THEN  GOTO
1830
1840 LET F = ASC(INKEY$): IF F < > 25 AND
F < > 8 AND F < > 83 THEN  GOTO 1810
1850 IF F = 25 THEN  LET Y = Y + 1: IF Y > FS
THEN  LET Y = FS
1860 IF F = 8 THEN  LET Y = Y-1: IF Y < 0 THEN
LET Y = 0
1870 IF F = 83 THEN  GOTO 1900
1880 CSR 14,20: PRINT " ": COLOUR 1,15:
CSR 14,20: PRINT Y
1890 GOTO 1830
1900 CSR 2,0: PRINT "          ": CSR 2,0:
COLOUR 1,15

1910 PRINT "SET RANGE": PAUSE 1500: CSR
2,0: PRINT "        ": CSR 2,0
1920 PRINT "WHEN SET PRESS  < S >"
1930 LET A$ = INKEY$: IF INKEY$ = "" THEN
GOTO 1930
1940 LET F = ASC(INKEY$): IF F < > 68 AND
F < > 85 AND F < > 83 THEN  GOTO 1930
1950 IF F = 85 THEN  LET Z = Z + 1: IF Z > FS
THEN  LET Z = FS
1960 IF F = 68 THEN  LET Z = Z-1: IF Z < 0 THEN
LET Z = 0
1970 IF F = 83 THEN  GOTO 2000
1980 CSR 26,20: PRINT " ": COLOUR 1,14:
CSR 26,20: PRINT Z
1990 GOTO 1930
2000 CSR 2,0: PRINT "          ": COLOUR
1,15: CSR 2,0
2010 PRINT "WHEN READY PRESS  < FIRE >"
2020 LET A$ = INKEY$: LET F = ASC(A$)
2030 IF A$ = "" THEN  GOTO 2020
2040 IF F < > 26 THEN  GOTO 2020
2050 CSR 2,0: PRINT "          ": COLOUR
1,15: CSR 2,0: PRINT "BOLT FIRED - WAITING
REPORT"
2060 PAUSE 2000: CSR 2,0: PRINT "
"
2100 IF X = A AND Y = B AND Z = C THEN
GOTO 180
2110 GOSUB 3000: REM CHECK FOR
INTERFERENCE
2120 GOSUB 3500: REM REPORT EFFECT OF
SHOT
2130 LET D = D + 1: LET N = N-1: GOSUB 4000:
REM CHECK AMMUNITION
2200 IF N > 0 THEN  GOTO 1670
2210 VS 4: CSR 6,5: COLOUR 0,11: COLOUR
1,6
2220 LET M$ = "URGENT!  URGENT!": GOSUB
5000
2230 CSR 5,7: LET M$ = "BATTLE COMPUTER
REPORT": GOSUB 5000
2240 CSR 5,9: LET M$ = "ALL PHASER BOLTS
USED": GOSUB 5000
2250 PAUSE 1000: CSR 2,11: PRINT "ALIEN
POSITION WAS:": PAUSE 2000
2260 CSR 2,13: PRINT "N/S-";A: PAUSE 1000:
CSR 2,15: PRINT "E/W-";B: PAUSE 1000: CSR
2,17: PRINT "DISTANCE-";C
```

```
2270 PAUSE 2000: CSR 2,19: PRINT "IT IS NOW
ESCAPING......"
2280 PAUSE 5000: GOTO 200
2300 IF N > 0 AND A < > X OR B < > Y OR
C < > Z THEN  GOTO 1670
2310 IF A = X AND B = Y AND C = Z THEN  CLS
2320 COLOUR 1,10
2330 IF D = 1 THEN  GOTO 2360
2340 CSR 6,6: PRINT "BOOM · ";: SOUND
3,6,15: PAUSE 2000: SOUND 3,0,0: PRINT "YOU
TOOK ";D;" SHOTS"
2350 PAUSE 5000: CLS : RETURN
2360 CSR 5,5: PRINT "BOOM · ";: SOUND
3,6,15: PAUSE 2000: SOUND 3,0,0: PRINT "YOU
TOOK 1 SHOT ONLY"
2370 PAUSE 5000: CLS : RETURN
3000 RAND ·500
3010 LET G = INT(RND*30)
3020 IF G > = 7 THEN  RETURN
3030 IF G > = 0 AND G < = 3 THEN  GOTO 3100
3040 GOTO 3200
3050 RETURN
3100 REM BATTLE COMPUTER MALFUNCTION
3110 CSR 2,0: COLOUR 1,15
3120 LET M$ = "URGENT!   URGENT!": GOSUB
5000: CSR 2,0: PRINT "            ": CSR 2,0
3130 LET M$ = "BATTLE COMPUTER
MALFUNCTION": GOSUB 5000: CSR 2,0: PRINT
"                ": CSR 2,0
3140 LET M$ = "ALIEN NOW REPOSITIONING":
GOSUB 5000: PAUSE 5000: CSR 2,0: PRINT "
"
3150 LET D = D + 1: LET N = N ·1: GOSUB 4000:
GOTO 1680
3200 REM ALIEN STRIKE
3210 CSR 2,0: COLOUR 1,15
3220 LET M$ = "URGENT!   URGENT!": GOSUB
5000: CSR 2,0: PRINT "            ": CSR 2,0
3230 LET M$ = "BOLT HIT BY COSMIC RAY":
GOSUB 5000: CSR 2,0: PRINT "            ":
CSR 2,0
3240 LET M$ = "FIRE NEXT BOLT": GOSUB
5000: CSR 2,0: PRINT "            "
3250 LET D = D + 1: LET N = N ·1: GOSUB 4000
3260 IF N > 0 THEN  GOTO 1670 ELSE  GOSUB
2200
3500 CSR 2,0: COLOUR 1,11
3510 LET M$ = "BOLTS ARE HITTING:": GOSUB

5000: CSR 2,0: PRINT "            ": CSR 2,0
3520 IF X > A THEN  LET M$ = "TOO FAR
NORTH"
3530 IF X < A THEN  LET M$ = "TOO FAR
SOUTH"
3540 IF X = A THEN  LET M$ = "NORTH-SOUTH
OK"
3550 GOSUB 5000: PAUSE 1000: CSR 2,0:
PRINT "            ": CSR 2,0
3560 IF Y > B THEN  LET M$ = "TOO FAR EAST"
3570 IF Y < B THEN  LET M$ = "TOO FAR WEST"
3580 IF Y = B THEN  LET M$ = " EAST-WEST
OK"
3590 GOSUB 5000: PAUSE 1000: CSR 2,0:
PRINT "            ": CSR 2,0
3600 IF Z > C THEN  LET M$ = "TOO FAR"
3610 IF Z < C THEN  LET M$ = "TOO SHORT"
3620 IF Z = C THEN  LET M$ = "RANGE OK"
3630 GOSUB 5000: PAUSE 1000: CSR 2,0:
PRINT "            "
3640 RETURN
4000 IF N < = O THEN  GOTO 4030
4010 FOR W = 7 TO N + 7: CSR W,22: PRINT " ":
NEXT W
4020 FOR W = 7 TO N + 6: COLOUR 1,10: CSR
W,22: PRINT "$": PAUSE 50: NEXT W: GOTO
4050
4030 FOR W = 7 TO 10: COLOUR 1,10: CSR
W,22: PRINT " ": NEXT W: GOTO 2200
4050 RETURN
5000 REM TELETYPE EMULATOR
5010 FOR L = 1 TO LEN (M$)
5020 PRINT MID$(M$,L,1);
5030 SOUND 3,4,15: PAUSE 100
5040 SOUND 3,4,0
5050 NEXT L: PAUSE 1000
5060 RETURN
```

PRODUCT REVIEW: ZBASIC

Dr. B.L. Houghton,

ZBasic is a fast, interactive Basic compiler marketed by Zedcor of Tucson, Arizona. It has been around for several years now - it was reviewed in BYTE at the end of 1986 - and CP/M-80 & MS-DOS versions are now available from Hisoft at £69.95 and from a number of other firms at very similar prices.

This may not sound exactly a bargain-basement offer, but Basic compilers are very expensive, and this is the cheapest currently available. It comes with a 600-page manual and an inbuilt HELP facility good enough to stop you dipping too often into the manual.

The big advantage of a system like this for the occasional Basic user is that it allows applications which are more simply implemented in Basic than in any other high-level language to be reduced to *.COM files to be handled by CP/M in the usual way.

One trouble with Basic is that its complexity belies its name. With 127 reserved words (compare this with 20 or 30 in C or Pascal) ZBasic is almost as complex as IBM's Basica, to which it has a strong family resemblance.

It is, however, a surprisingly easy program to get into, with cleverly designed alternatives to optimise it for precision (up to 54 double-precision digits) or speed, and to save the configured compiler. Configuration is simple, with only a simple user patch in machine-code needed to get the MTX 'CSR' routine running.

The facilities offered are a sort of amalgam of everything which micro users always claim to be missing from their resident Basics - STRING$, SPACE$, INSTR, and such I/O commands as PRINT@, PRINT%, PRINT

This is the cheapest currently available

USING, INPUT@, INPUT% are all represented. PILES have been discreetly tidied up with a disk-error routine which can be enabled, disabled or put under user control and a set of pointer functions which attempt to provide a Basic equivalent of C's 'ftell()' and 'fseek()' functions (I haven't used these seriously, but, having a nasty suspicious mind, imagine that simultaneous read-and-write or read-and-append operations will still be the sort of hairy struggle with numbers and bad luck which has driven many of us to learn C). Data types are INTEGER, UNSIGNED INTEGER, FLOAT, DOUBLE FLOAT, CHARACTER & STRING. Procedures as in BBC Basic are not as such supported, but there are multiline functions which take parameters and can return a void result. The only major irregularity in syntax is in defining complex strings and comparing elements of them.

Programs may be written either with the intrinsic line-editor or with a word-processor or text-editor. They may be saved either in tokenised form or as ASCII files with or without line numbers (which are used by the editor for reference but thrown away by the compiler). They may either be compiled and saved or executed directly in a very convincing simulation of interpreted Basic.

Even compiled Basics are relatively slow, but this is one of the fastest around, and produces fairly small .COM files. In addition to the now standard CHAIN facilities it surprised me by supporting overlays. People who believe Basic to be a suitable tool for the writing of very long programs should have no difficulty in doing so.

I enclose on this disk the limited Public Domain version of Zbasic which I have configured for Memotech systems. Please note that the control string for the CSR command must not contain a preceding null: I have defined the offending byte as 14H (blue foreground) as being the least offensive on my mono monitor. The CSR x & y parameters must be reversed: patch 1F9CH with 7DH and 1F9DH with 00H. In the public domain version these addresses start at 1F45H and you have to use DDT as the Patch option has been disabled.

SOFTWARE
PRICE LIST September 1988

MOC Phil Eyres 13 CORSE ROAD, TOWNHILL PARK, SOUTHAMPTON.
Tel 0703 585106

Title	Price	Stock
ADVENTURE QUEST	5.00	Y
3D TACHYON FIGHTER	5.00	Y
AGROVATOR	5.00	N
ALICE	5.00	Y
ASTROMILLON	5.00	Y
ASTROPAC	5.00	N
ATTACK OF KER TOMS	5.00	Y
BACKGAMMON	5.00	Y
BLOBBO	5.00	Y
BOUNCING BILL	5.00	N
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FIG-FORTH MOC	7.00	Y
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TUTORIAL FOR ABOVE	7.00	Y
FIG FORTH SDX	10.00	Y
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FIRST LETTERS 1	5.00	Y
FLUMMOX	5.00	N
GHOSTLY CASTLE	3.80	Y
GOLDMINE	5.00	Y
GRAPHICS	5.00	N
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HIGHWAY ENCOUNTER	5.00	Y
HUNCHY	5.00	Y
ICEBURG	5.00	N
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KARATE KING	5.00	Y
KILOPEDE	5.00	Y
KNUCKLES	5.00	Y
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MISSILE COM & ARCADE	5.00	Y
MATHS 1	5.00	Y
MAXIMA	5.00	Y
MEMOCHEQUE	5.00	Y
MEMOSKETCH	5.00	Y

Title	Price	Stock
MEMOSKETCH SDX	5.00	N
MISSION ALPHATRON	5.00	Y
MISSION OMEGA	5.00	N
MUSIC PAD	5.00	Y
NEMO	5.00	N
OBLITERATION ZONE	5.00	N
OBLOIDS	5.00	Y
PAINTBOX	5.00	Y
PAYROLL	5.00	Y
PHAID	5.00	Y
PHYSICS	5.00	Y
PONTOON & BLACKJACK	5.00	Y
POT HOLE PETE	5.00	Y
PUC-MAN	5.00	Y
PURCHASE LEDGER	5.00	Y
QOGO 2	5.00	Y
QUANTUM	5.00	Y
QUAZZIA	5.00	Y
QUEST 1	5.00	Y
REVEAL	5.00	Y
REVERSI	5.00	Y
ROLLA BEARING	5.00	N
RUTHLESS B.	5.00	Y
SALES LEDGER	5.00	Y
SALTY SAM	5.00	N
SEPULCRI SCELERATI	5.00	Y
SMG	5.00	Y
SMGII	5.00	Y
SNAPPO	5.00	Y
T.SNOOKER	5.00	Y
SON OF PETE	5.00	Y
STAR COMMAND	5.00	Y
SUPA CODER	5.00	N
SUPER BIKE	5.00	Y
SUPER MINEFIELD	5.00	Y
SURFACE SCANNER	5.00	Y
TAPEWORM	5.00	Y
TARGET ZONE	5.00	Y
THE WALL	5.00	Y
TOADO	5.00	Y
THE ZOO	5.00	Y
TURBO	5.00	Y
USER BASIC	5.00	Y
USER BASIC SDX	5.00	Y
UTILITIES SDX	5.00	Y
WORD & PICTURE	5.00	Y

A HACKER'S GUIDE TO CP/M

Brian Houghton

Since CP/M was the first practicable microcomputer operating system, it wasn't long before users wanted to improve it (by getting rid of the infamous TTY-oriented 'DEL' function, for example). Advanced books on CP/M are full of examples of how to alter the BIOS. The Memotech system manual has only the advice NEVER to alter anything other than the system size. Just in case you think all is really simple, the usual CP/M-generating utility SYSGEN is replaced by WRTBIOS, WRTCPM and SYSCOPY, CONFIGUR.COM is replaced by CONFIG.COM and the usual vehicle for BIOS alterations · MOVCPM · is included 'for the sake of completeness'.

The reason for this is historical. The Memotech home computers were cut-down derivatives of a business machine made by the parent company as one of the last and most-advanced of all Z-80 based micros. It had a special BIOS with so many enhancements as to almost deserve a new version number. The subsequent demand for disc-based computers lead to the PDX, HDX & SDX machines and new rewrites of CBIOS.ASM. The latest of these, prior to the new 3.5" disc computers marketed by the current Company seems to be officialy dated 03·Apr·84, but there may well be other versions in circulation. The peculiar features of CBIOS.ASM when compared with the same file on other systems seem to be provisions for such utilities as STARTUP.COM and F.COM. This, and the fact that the system as supplied uses the maximum possble Total Program Area(TPA) means that it is not on to do *anything* which increases the size of CBIOS.HEX without having to accept a smaller TPA.

All this started when I thought it might be useful to have a facility which would print a warning if the printer wasn't enabled. I still haven't written one, but now know much more about modifying the MTX BIOS. The changes suggested in this article are all supported by Digital Research, and are, to that extent, 'safe', although dedicated hackers will know that *no* changes to an operating system are *entirely* safe and should always be made and tested on disks containing nothing else of importance.

I am afraid that space makes it necessary for this to be a "What you do!" rather than a "Why you do it" account. Anyone wishing to pursue the subject in depth should consult the references below.

The changes described are:

1. Make delete behave like backspace;

2. Improve the behaviour of ^S in TYPE so it does not abort if you've left a character on input;

3. Specify CP/M size in 256-byte pages (so if you do increase the size of the BIOS you don't have to lose TPA a whole kilobyte at a time;

4. Install a permanent command to be executed at any cold or warm boot.

GETTING STARTED

The working disk · which must be in your default drive because of the way DDT operates · must contain the following files:

ASM.COM, DDT.COM, WRTBIOS.COM, MOVCPM.COM, WRTCPM.COM and STARTUP.COM.

Load CBIOS.ASM into a text-editor and make two changes before copying it to your working disk:

1. Change the value of SYSIZE from 61 to 59.

2. Find the startup message (about 3 pages on) and change the date to the current date, taking care to keep the same number of characters in the date string.

Once you have got CBIOS.ASM on your working disk type ASM CBIOS and, if nothing went wrong with the assembly (you did use the non-document mode of your word-processor, didn't you?), type ERA *.PRN.

CHANGING MOVCPM.COM

Although you can operate directly on CP/M, it is much easier to patch MOVCPM to make changes 1 to 3 above for you. I will give very abbreviated versions of what you see on the screen. *Always* check your source file with the DDT disassembler (L‹addre›‹RET›) before changing anything. Computer responses are shown in normal type: what you type is italicised.

DDT MOVCPM.COM

DDT VERS 2.2

NEXT PC

2700 0100

   ;1. Make rubout identical to delete.

·L141B

141B	MOV	A,B
141C	ORA	A
141D	JZ	09EF

A141B

141B	*MVI*	*A,8*
141D	*JMP*	*0A07*
1420		

   ;2. Improved ^S in type.

·L1350

1350	CALL	0923
1353	POP	B
1354	PUSH	B

·A1350

1350	*CALL*	*92A*
1353	{Italic Dot!}	

  ; 3. Define TPA in 256-byte pages.

·L165

0165	CPI	10
0167	JC	0172
016A	MVI	L,00
016C	MOV	H,A

```
·S166
0166   10          40
0167   DA          .(Italic Dot)
·A16D
016D   NOP
016E   NOP
016F   .(Italic Dot)
·L1A2
01A2   ANI         FC
01A4   MOV         H,A
01A5   PUSH        H
01A2   ANI         FE
01A4   .(Italic Dot)
·GO          ; i.e.: G-ZERO and not GO!
A·SAVE 39 MOVCPM2.COM
A·WRTBIOS (CBIOS.HEX is on the disk, isn't it?)
A·MOVCPM2 236 *
CREATING MEMOTECH 59-K CPM SYSTEM
READY FOR WRTCPM OR
SAVE 35 CPM59.COM
A·SAVE 35 CPM2.COM
```

BUILDING A REBOOT COMMAND STRING

This is only really useful if you need to discreetly reset your terminal on boot-up to some configuration which is overwritten by some programs. Alternatively, you might want a menu program for a commonly-used disk. This facility will then solve the problem of returning to the menu on exiting from one of the selections.

The effect is similar to using an AUTOEXEC.BAT file with MS-DOS - the command is executed after every warm or cold boot and is not echoed to the screen.

Let's assume an auto program called MENU.COM:

```
A·DDT CPM2.COM
NEXT   PC
2400   0100
·D980
```

This should display the start of the BIOS, with the Digital Research copyright notice on the second line.

```
·S987
0987   00      4      ; number of letters
                         in command.
0988   20      4D     ; 'M'
0989   20      45     ; 'E'
098A   20      4E     ; 'N'
098B   20      55     ; 'U'
098C   20      0      ; Terminating NULL.
```

You can enter a string long enough to overwrite the D.R. notice, but it must begin with a length byte and must end with a zero.

A HACKER'S GUIDE TO CP/M

```
A·GO
A·SAVE 35 CPM2.COM
```

Congratulations! Users who have got to this point are now the proud posessors of their very own customised CP/M, stored in inert form as a dummy .COM file containing the BIOS and a bootstrap loader. To put it into commission:

```
A·DDT CPM2.COM
·GO
A·WRTCPM C: ; the drive designation is optional
```
(default is A:)

The terminal will respond with:

New CP/M system written to drive C:

Warm booting from this drive may cause a system crash. (It won't, as long as you have been careful!)

NOTE

If you are interested in more D.R or CPMUGUK patches don't do the one about friendlier error messages. Believe it or not, this was done years ago by Orchid/Memotech. ("What were the bloody messages like before, for God's sake?")

Did someone ask about the printer status routine? Read PORT(4) and AND it with 1. If the result is 1 then the printer is off- line or switched off.

REFERENCES:

1. CP/M - The Software Bus
   Clarke, Eaton & Powys-Lybbe
   ISBN 0-905104-18-8

2. Mastering CP/M
   Alan R. Miller
   SBN 0-89588-068-7

PUBLIC DOMAIN SOFTWARE LIBRARY

Due to a slight technical hitch last month (i.e. a cock-up on my part) I ommitted the description of 71 DUNE which was entered in the library. So to keep everyone happy, here it is:

71. Dune Written

by Nigel Cooper, this very funny and well-implemented version of the ever-popular "FARMER" program is set around James Herbert's "Dune" books.

After almost one year of operating the library. I have had to totally computerise my system for processing orders due to the horrific amount of paper-work gathered and the gradual slowing down of the turnaround time for orders. So, to try and counter this from now on all orders will have an order ref number which should be quoted if there's some sort of problem with anything you receive. It is now therefore essential that you include your membership number when ordering. The reference number will be made up like this:

Z000/00000/000000

Your memb.no/order no/date order was processed

Anyway, enough of that, onto the new additions this month:

89. Morse Sound Tutor

Not to be confused with the other Morse Tutor (73) this program teaches morse code by "ditting and dahhing" the pulses for letters which are displayed onscreen. The program even incorporates a facility to alter the words per minute ratio of the program.

90. Graphic Sound Editor

This program is the worthy successor to Number 20, Composer. It represents graphically the frequency and amplitude and so on that is required to produce sounds on the MTX and lists all the current values at the top of the screen in the order required by the SOUND command. Clever stuff. Thanks to Peter Burns for this one.

91. Cassette Inlay Labels

A program to produce and print nice little labels which will keep your cassette stock looking decidedly neat and tidy. Requires an Epson compatible printer though.

92. Printerdraw

This is a new drawing package specifically designed to produce high-quality hard-copies of pictures drawn onto any Epson compatible printer by Mike Rohan/Nigel Cooper. It features a variety of printer dumps and a very easy to use drawing routine.

93. StarTrek 80

A brilliant program which has been written by (as far as we are aware) one of the only Memotech users from America. This program has been written around the famous version which originally started out life on mainframes. It is written for the 80 column system and as such will only work on systems suitably equipped. However, it requires the 80 column and 40 column screens to be run simultaneously. Very good fun.

CA19 New for Old

At last I've managed to get a hold of this program! It was first published by us several months ago and has entered the library for all to use. Load it before starting your session of computing, and if all fails and you have to type NEW or do it by accident, this program will recover it for you.

CA20 Dumpliner

Another brilliant program from Nigel Cooper. This program allows you to produce large characters of both double height and double width on the graphics screen, beef them up by building them to look more "chunky" and nunumber of screen dumps for any Epson compatible printer.

CPM16 Car Maintenance

Written by Edward Pardo (our American member) this is a whole suite of programs written for both E-BASIC and PDXB to help you look after your car. It is really an 'expert system' in that you are given a menu from which you select the particular problem afflicting the car and from that the program suggests remedies and so on. Very clever programming, and helpful instructions makes this disc one of the most useful in the library.

Many thanks to all those submitting work to the library, in particular, Nigel Cooper and Mike Rohan whom appear to have been slaving over hot aluminium for hours with their work. Keep up the good work everybody! Just in case anyone was wondering, the entire stock of software in the library now runs to 4.68Mb or 4680K or, if you prefer, 4976640 Bytes.

PASCAL PROGRAMMERS!

The MOCPDSL has a large number of Pascal Macro listings available for you to modify for your own use. Please contact the library for more details.

3.5" disc copies of the library from: Paul Wood, 12 Bishops Avenue, Worcester, Worcs, WR3 8XA. Phone him on 0905 24260.

Paul also has set up a bulletin board for modem users. It accepts all baud rates and so there should be no problem for anyone with a suitably equipped system. The Board's number is 0905 52536. As if that wasn't enough, Prestel users can also leave messages for Paul (or the club!) on Mail Box Number 090524260.

Happy Memoteching

Alan Hamilton

Disc 1

01. Hex/Dec/Bin
02. CGEN
03. D-Draw
04. Whist
05. Mem-Save
06. MTX-Draw
07. LOGO-Draw
08. Simplex Tableau
09. Breakeven
10. Statistics
11. Unsolved Problem
12. Radio Routines
13. Light Cycles
14. Hex/Dec/Bin
15. Character Ed.
16. Quasimodo
17. Planner
18. Hanoi
19. Noble
20. Hi-Lo

Disc 2

21. Composer
22. Anova
23. Cashflow
24. Reversi
25. Full Time
26. Panel 3
27. Word Pro
28. SwMice
29. TNT TIM
30. Sw3D Funct1
31. Sw3D Funct2
32. SwSpEd
33. SwMathe
34. OXO
35. Solitaire
36. Cross Numbers
37. Avoid Seven
38. Numerology
39. Chemin

40. Dice

Disc 3

41. Reversi Vers 2
42. ISOT
43. DBase
44. Diary
45. Terminal
46. Skittles
47. Card-Ind
48. 2 * H & W
49. Hangman
50. Account
51. Mastermind
52. Connect 4
53. Jrny Into Dngr
54. Connect 4 V2
55. Patience
56. Life
57. Enigma
58. FKEY
59. SkyDiver
60. Dice

Disc 4

61. MPG
62. Spooler
63. Labels
64. Ski Version 2
65. PNT/BJCK
66. Biorythms
67. Perpetual Calender
68. Flitter
69. Stock Control
70. Fonts
71. Dune
72. Headliner
73. Morse Tutor
74. Building Societies
75. Measurements
76. Clock
77. Clock 80

78. 3D Maze
79. Graphics Calc
80. FastGraf

Disc 5

81. Orbiter
82. Card Index
83. Appointments
84. Phonebill
85. Calender
86. Bouncy Ball
87. Hiscroll
88. FastWorm
89. Morse Sound
90. Sound Editor
91. Cass. Inlays
92. Printerdraw

The copying fees for disc software are: #2.75 on disc for 20 programs (or #3.75 if you want us to supply the disc). 3.5" disc copies are available also at #4.75 including disc, #3.75 excluding. When ordering discs please state exactly the system you have: Disc capacity, operating system & disc size. All cheques/postal orders payable to Memotech Owners Club please.

Compilation disc

Mixed bag of programs of all sorts #1 (excluding disc)

SYSTEM VARIABLES
PART II

We have the system variables stored on Newword diskette. If you have any updates too these variables, please send them to us. The updated document is avail-able is available from the program library.

FA9B   NODLOC   DS 3

Contains JUMP address used by MTX RING Local Area Network.

FA9E   FEXPAND   DS 3

PANEL Expansion. Before executing a PANEL com-mand the computer looks here for a JUMP instruction. Normally contains RET .

FAA1   USERNOD   DS 3

NODDY Expansion. Works as FEXPAND above.

FAA4   NBTOP   DS 2

Top of NODDY in the current page.

FAA6   NBTPG   DS 1

Current NODDY page.

FAA7   BASTOP   DS 2

Top of BASIC in current page.

FAA9   BASTPG   DS 1

Current BASIC page.

FAAA   BASBOT   DS 2

Value from which virtual addresses are calculated , normally #4000.

FAAC   BASTPO   DS 32

Top of each BASIC page, (MAX 16).

FACC   ARRTOP   DS 3

Points to top of Arrays.

FACF   BASELIN   DS 2

Contains number of current line being executed.

FAD1   BASLNP   DS 1

Contains page number for BASELIN.

FAD2   PAGE   DS 1

Contains current page configuration.

FAD3   CRNTPG   DS 1

Contains number of current BASIC page.

FAD4   PGN1   DS 1

Space for temporary variable used by BASIC in-terpreter.

FAD5   PGN2   DS 1

FAD6   PGTOP   DS 2

Contains address of top of current page.

FAD8   GOSTACK   DS 105

GOSUB Stack. Stores GOSUB return addresses.

FB41   GOPTR   DS 2

Pointer into GOSUB stack for next return address.

FB43   GOSNUM   DS 1

Number of GOSUBS on GOSUB Stack.

FB44   FORCOUNT   DS 1

Counter of number of nested FOR loops.

FB45   CTYSLT   DS 1

Selects keyboard configuration for different countries.

FB46   DATAAD   DS 2

Data Pointer for READ statements.

FB48   DATAPG   DS 1

Page holding Data above.

FB49   DESAVE   DS 2

Stores the current BASIC program position on sav-ing to tape.

-- SYSTEM VARIABLES SAVED TO HERE --

FB4B   START   DS 200H-3

Start of Keyboard Buffer.

FD48   SETCALL   DS 3

Temporary JUMP address location used for single stepping in PANEL.

FD4B   RICHJL   DS 3

Temporary Variable used for single stepping in PANEL.