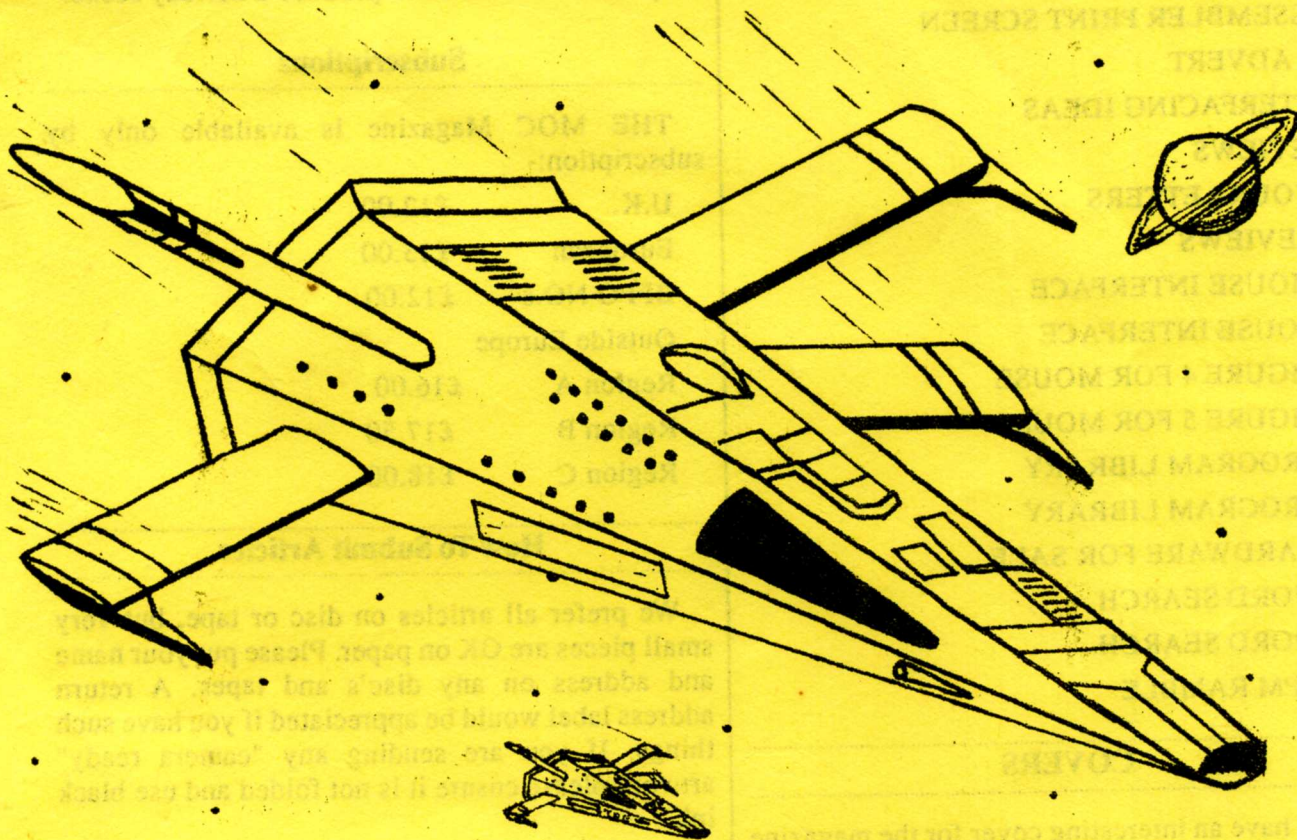


MEMOTECHNIQUES

PRINT SCREEN FEATURE

HARDWARE FOR SALE



MUSIC PROGRAM

REVIEWS

MOUSE INTERFACE

13 COPSE ROAD

TOWNHILL PARK

SOUTHAMPTON

SO2 2GY

NON MASKABLE INTERRUPTS

CONTENTS

1. EDITORIAL
2. MUSIC PROGRAM PART 3
3. MUSIC PROGRAM
4. MUSIC PROGRAM AND SMALL ADS.
5. ASSEMBLER PRINT SCREEN
6. ASSEMBLER PRINT SCREEN
7. IT ADVERT
8. INTERFACING IDEAS
9. REVIEWS
10. YOUR LETTERS
11. REVIEWS
12. MOUSE INTERFACE
13. MOUSE INTERFACE
14. FIGURE 4 FOR MOUSE
15. FIGURE 5 FOR MOUSE
16. PROGRAM LIBRARY
17. PROGRAM LIBRARY
18. HARDWARE FOR SALE
19. WORD SEARCH
20. WORD SEARCH
21. CPM RAMBLE

COVERS

If you have an interesting cover for the magazine or an interesting picture for the cover then please send it to us. The cover can be of anything but it must be mostly white, large areas of black do not duplicate very well.

A FREE piece of software for each monthly mag.

This months winner is Mr T.D. Eudall from Oakham, Leicestershire. (Please let use know which piece of software you would like!).

Competition

This months competition rules are simple. The best program that makes good use of the System Variables.

And for the non technically minded... A second competition. The best picture drawn in VS 4, using only basic commands to produce a holiday scene.

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We prefer all articles on disc or tape, but very small pieces are OK on paper. Please put your name and address on any disc's and tapes. A return address label would be appreciated if you have such things. If you are sending any "camera ready" artwork please ensure it is not folded and use black ink.

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Quarter Page £7.50 Half Page £15.00

Telephone contacts

Please only ring at sensible times!

Phil Eyres 0703 585106

(Ansa Machine when not available)

Paul Wood 0905 24260

EDITORIAL (May 1989)

Phil Hazel & Siobhan Eyres
13 Copse Road
Townhill Park
Southampton

PROBLEMS

I suppose that running something like a club, must bring problems now and then. We have been very lucky in 5 years to have had very few. However this month, the Program Library has had problems. Alan Hamilton wanted to make the Program Library a separate club with its own membership fee, in order to make it better. I disagreed, wanting it to stay totally under club membership. It seems quite an impressive library to me at present. Alan insisted on returning his MTX equipment to the club in payment for a loan, but refused to send back the library disc and tapes. He claimed that he has burnt them! Fortunately we have recovered all of them so everything is back to normal.

So we have a problem that requires attention:-

1. Orders sent to Alan; I really do not know what to do here, I do not want anyone to end up losing money (much like with ORION). But what can I do about cheques that you have sent to Alan?. I think all we can do for now is say that any orders sent to Alan and not received should be sent to me again and I will send them out. Please keep a close check on any cheques sent to Alan, I do not think that he would cash them, but problems are problems.

I have written some more about this in the Program Library Pages.

Basically, from now on, do not send any orders to Alan.

MICRO SHOW

I have left this bit from last month, just to keep jogging your memory!!

There is an Alternative Micro show in November, on the 11th and 12th to be precise, in Stafford. I will be going, maybe for one day or two if there seems to be a lot of interest. So pencil this date in your diary.

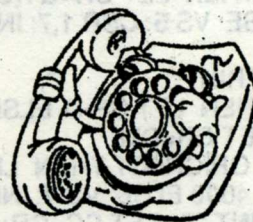
ARTICLES

The Music programme completes this month, please look on the Letters Page for an Erratum to last months. The program is now available from the program library.

The mouse interface also concludes this month, I know several of you are trying it out. Let us know how you get on.

BOOKS

This month we have some of the original MTX computing books for sale. Not many of them ...just some!!!. They will be sold on a first come first served basis as this can be the only fair way. Leave a message on the answer phone if you would like to secure one.



The Club Hotline is between 7 and 8 pm any evening. During the day and after 8.00pm 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 43 back issues, 10 for volume 1, 10 for volume 2, 10 for volume 3, 10 for volume 4 and 3 for volume 5.

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

MUSIC PROGRAM V.01.0

Racklebrain Software
By Brian Clarke
Part II (The Conclusion)

This is the final part of the Music Programme, listed below is all the remaining code necessary to make the program run. In the Letters Page is an erratum for the errors that have crept in so far. All errors have evolved because of the transfer of the data from CPm to MSDOS. This process seems to do funning things with ' and ' signs.

This program is now available from the program library.

I hope you have fun with this - having written the programme, all my son asks is 'how do I convert the data to drive my MIDI setup'. This is one reason why I have saved the TN(9,CM) array to a separate file, for further development. Another possible use could be to save many short tunes to disc, and play them in sequence. If anybody wishes to develop this further, please do so and pass the data on to the club. All the best.

BRAIN CLARKE (Racklebrain Software)

```
21000 IF AP$<>"N" THEN FOR N=1 TO 3:
SOUND N,0,0: NEXT N
21010 IF IP=137 THEN LET CR=QT(CH+1):
GOTO 21030 ELSE VS 5: CSR 1,7: INPUT
"Chord No. ";CR;
21020 CSR 1,7: PRINT " "
21030 IF CR<1 THEN LET CR=1 ELSE IF
CR>CM THEN LET CR=CM
21040 IF CR<CB OR CR>CT THEN LET
CC=CR: GOSUB 4000 ELSE VS 4: INK 1: CSR
CC+3-CB,10: PRINT " "; LET CC=CR: CSR
CC+2-CB,10: PRINT INT(MOD(CC,10)+0.5);
21050 IF TN(CH+1,CC)<>0 THEN GOSUB 2000
21060 IF AP$="Y" THEN SOUND CH,FR,VO
ELSE IF AP$="C" THEN FOR N=1 TO 3:
SOUND N,TN(N+1,CC),TN(N+5,CC): NEXT N
21070 RETURN
21995 REM ***** PLAY CHORD(S)
22000 IF IP=131 THEN GOTO 22500 ELSE IF
IP=135 THEN LET C1=CC-8: LET C2=CC
22010 IF IP=143 THEN LET C1=1: LET
C2=QT(5)
22020 IF C1<1 THEN LET C1=1 ELSE IF
C2<C1 THEN LET C2=C1 ELSE IF C2>CM
THEN LET C2=CM
22030 GOSUB 1000: IF IP=135 AND
TN(CH+1,CC)=0 THEN GOTO 22500
22040 FOR N=0 TO 3: SOUND N,0,0: NEXT N
22050 GOTO 10000
22500 FOR N=0 TO 3: IF N=CH THEN SOUND
N,FR,VO ELSE SOUND
N,TN(N+1,CC),TN(N+5,CC)
```

```
22510 NEXT N: PAUSE (SP/DU)*DE: IF
AP$="N" THEN FOR N=0 TO 3: SOUND N,0,0:
NEXT N
22520 IF AP$="Y" THEN LET AP$="C"
22530 GOTO 10000
23995 REM ***** CHANGE SPEED
24000 VS 3: INK 1: PAPER 12: LET Z=0: FOR
N=1 TO 1: LET Z=Z+1: LET M=INT(Z/3+1): LET
SP=SP+M*(IP=138)-M*(IP=142)
24010 IF SP>9999 THEN LET SP=9999 ELSE
IF SP<8*DE+1 THEN LET SP=INT(8*DE+1)
24020 CSR 12,4: PRINT CHR$(5);SP:: LET
IP=ASC(INKEY$): LET N=N+((IP=138) OR
(IP=142))
24030 NEXT N: RETURN
24995 REM ***** SAVE/LOAD
25000 VS 6: CLS : PRINT "SAVE/LOAD":
PRINT "=====": PRINT
25010 USER DIR ".DAT"
25020 CSR 1,22: PRINT "F1-SAVE F2-RELOAD
F3-ERASE F4- QUIT";
25030 CSR 1,23: PRINT "F5-SAVE TUNE &
PROG. Well?": LET Z=0
25040 LET IP=ASC(INKEY$): IF IP<128 OR
IP>132 THEN GOTO 25040
25050 IF IP=131 AND INKEY$="" THEN GOTO
10000 ELSE IF IP=131 THEN GOTO 25050
ELSE IF IP=129 THEN GOTO 25400 ELSE IF
IP=132 THEN GOTO 25900
25060 CSR 1,22: PRINT CHR$(5):: IF IP=128
THEN PRINT "Save "; ELSE IF IP=130 THEN
PRINT "Erase ";
25070 INPUT "Tune Name (NO .DAT) ";IP$
25080 FOR N=1 TO 8: IF IP$(N)<" " THEN LET
N=8: GOTO 25090 ELSE LET Z=N
25090 NEXT N: IF Z=0 THEN GOTO 25070
ELSE CLS
25095 REM ***** SAVE DATA
25100 IF IP=128 THEN GOTO 25200
25110 PRINT "Erasing ";IP$;" files": LET
TUNES$=LEFT$(IP$,Z)+".DAT"
25120 USER OPEN#1,TUNES$,"O"
25130 USER KILL#1
25140 USER CLOSE#1
25150 LET TUNES$=LEFT$(IP$,Z)+".TUN"
25160 USER OPEN#1,TUNES$,"O"
25170 USER KILL#1
25180 USER CLOSE#1
25190 GOTO 25000
25200 PRINT "Saving ";IP$;" files": PRINT : LET
TUNES$=LEFT$(IP$,Z)+".DAT"
25210 USER OPEN#1,TUNES$,"O"
25220 PRINT "Saving ";TUNES$
25230 USER PRINT #1,CM
25240 USER PRINT
#1,CC,CB,CT,SP,CH,AP$,AS$,QT(1),QT(2),QT(3)
,QT(4),QT(5)
```

```

25250 FOR N=1 TO 13
25260 USER PRINT #1,LEFT$(TN$(N),QT(5))
25270 NEXT N: USER CLOSE#1
25280 LET TUNE$=LEFT$(IP$,Z)+".TUN"
25290 PRINT "Saving ";TUNE$
25300 USER OPEN#1,TUNE$,"O"
25310 FOR N=1 TO QT(5)
25320 USER PRINT
#1,TN(1,N),TN(5,N),TN(2,N),TN(6,N),TN(3,N),TN(7
,N),TN(4,N),TN(8,N),TN(9,N)
25330 NEXT N: USER CLOSE#1
25340 GOTO 25000
25400 CLEAR : DIM IP$(8),TUNE$(12): LET
CM=28: LET IP=129: LET Z=0: LET N=0
25410 CSR 1,22: PRINT CHR$(5);"Load":
25420 INPUT "Tune Name (NO .DAT) ";IP$
25430 FOR N=1 TO 8: IF IP$(N)<"7" THEN LET
N=8: GOTO 25440 ELSE LET Z=N
25440 NEXT N: IF Z=0 THEN GOTO 25420
ELSE CLS
25450 PRINT "Loading ";IP$;" files": PRINT :
LET TUNE$=LEFT$(IP$,Z)+".DAT"
25460 USER OPEN#1,TUNE$,"I"
25470 USER INPUT #1,CM
25480 CSR 2,6: PRINT "Setting up for";CM;"
chords": CSR 2,7: PRINT "If OK, hit <RET> else
enter": CSR 2,8: INPUT "required value and
<RET>";IP$
25490 IF IP$<>" " AND VAL(IP$)>CM THEN LET
CM=VAL(IP$): IF CM<28 THEN LET CM=28
25500 GOSUB 42050: VS 6: PRINT "Reading
";TUNE$: LET IP$=LEFT$(TUNE$,Z)
25510 USER INPUT
#1,CC,CB,CT,SP,CH,AP$,AS$,QT(1),QT(2),QT(3)
,QT(4),QT(5)
25520 FOR N=1 TO 5: IF CM<QT(N) THEN LET
QT(N)=CM: NEXT N
25530 FOR N=1 TO 13
25540 USER INPUT #1,TN$(N)
25550 NEXT N: USER CLOSE#1
25560 LET TUNE$=LEFT$(IP$,Z)+".TUN"
25570 PRINT "Reading ";TUNE$
25580 USER OPEN#1,TUNE$,"I"
25590 FOR N=1 TO QT(5)
25600 USER INPUT
#1,TN(1,N),TN(5,N),TN(2,N),TN(6,N),TN(3,N),TN(7
,N),TN(4,N),TN(8,N),TN(9,N)
25610 NEXT N: USER CLOSE#1
25620 LET CR=CC: GOSUB 23000: GOSUB
24000: GOSUB 4000
25630 GOTO 10000
25900 CLS : PRINT "SAVE PROG + TUNE":
PRINT "====="
25910 PRINT : PRINT : USER DIR".MUS"
25920 PRINT : USER STAT
25930 PRINT " I hope you've enough disc space
!": PRINT
25940 PRINT " Enter full name with extension
'MUS' ": PRINT : PRINT : INPUT TUNE$
25950 USER SAVE TUNE$
25960 GOTO 25620
25995 REM ***** PRINTOUT
26000 VS 6: CLS : CSR 15,1: PRINT

```

```

"PRINTOUT": CSR 15,2: PRINT "====="
26010 PRINT : PRINT "F1 - SIMPLE = 80
COLUMN": PRINT : PRINT "F2 - SIMPLE >120
COLUMN": PRINT : PRINT "F3 - COMPLEX":
PRINT : PRINT "F4 - QUIT"
26020 PRINT : PRINT "(Simple will not support":
PRINT "compressed print.)"
26030 LET IP=ASC(INKEY$): IF IP=128 THEN
GOTO 26100 ELSE IF IP=129 THEN GOTO
26500 ELSE IF IP=130 THEN LPRINT
CHR$(15):: GOTO 26500
26040 IF IP=131 AND INKEY$="" THEN GOTO
10000 ELSE IF IP=131 THEN GOTO 26040
26050 GOTO 26030
26095 REM ***** SIMPLE <80
26100 CLS
26110 LPRINT "Rack leBrain Music Software":
LPRINT "*****": LPRINT :
LPRINT "NOTES IN SEQUENCE ORDER":
LPRINT "====="
26120 LPRINT : LPRINT "Listed is 'Note' 'Octave'
'Volume' for each channel, plus 'Duration'":
LPRINT "Octave 2 is Middle C, Channel 3 is
Sound only.": LPRINT
26130 LPRINT "The speed is set at";SP;" and
there are";QT(5);" chords": LPRINT
26140 LPRINT
"CHORD", "CH.0", "CH.1", "CH.2", "CH.3", "DU":
LPRINT "-----": LPRINT
26150 FOR M=1 TO QT(5): LPRINT M, : FOR
N=0 TO 3: IF TN(N+1,M)=0 THEN LPRINT :
GOTO 26180
26160 IF N=3 THEN LPRINT TN$(4,M);"
-";TN(8,M): GOTO 26180
26170 LPRINT
TN$(N+1,M);ASC(TN$(N+5,M))-48;TN(N+5,M),
26180 NEXT N: LPRINT "1 /";TN(9,M)
26190 NEXT M
26200 LPRINT : LPRINT : LPRINT "SOUND
COMMANDS IN SEQUENCE ORDER": LPRINT
"====="
26210 LPRINT : LPRINT "Listed is 'Channel'
'Frequency' 'Volume' for each sound channel,
plus pause.": LPRINT
26220 FOR N=1 TO 80: LPRINT "-": NEXT N:
LPRINT : LPRINT
26230 FOR M=1 TO QT(5): FOR N=0 TO 3
26240 LPRINT
"SO.";N;";";TN(N+1,M);";";TN(N+5,M),
26250 NEXT N: LPRINT "PAU.";INT(SP/TN(9,M))
26260 NEXT M: LPRINT : FOR N=1 TO 80:
LPRINT "-": NEXT N: LPRINT : LPRINT : GOTO
26000
26495 REM ***** SIMPLE >80
26500 CLS
26510 LPRINT "Rack leBrain Music Software":
LPRINT "*****": LPRINT :
LPRINT "NOTES IN SEQUENCE ORDER PLUS
SOUND COMMANDS"
26520 LPRINT
"====="
26530 LPRINT : LPRINT "Listed is 'Note' 'Octave'

```

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```
'Volume' for each channel, plus 'Duration' -
Octave 2 is Middle C, Channel 3 is Sound only.":
LPRINT
26540 LPRINT "With 'Channel' 'Frequency'
'Volume' for each sound channel, plus pause.":
LPRINT
26550 LPRINT : LPRINT "The speed is set
at";SP;" and there are";QT(5);" chords": LPRINT
26560 LPRINT
"CHORD","CH.0","CH.1","CH.2","CH.3","DU","SOU
ND COMMANDS plus PAUSE": LPRINT : FOR
N=1 TO 120: LPRINT "-": NEXT N: LPRINT :
LPRINT
26570 FOR M=1 TO QT(5): LPRINT M,: FOR
N=0 TO 3: IF TN(N+1,M)=0 THEN LPRINT :
GOTO 26600
26580 IF N=3 THEN LPRINT TN$(4,M);"
-";TN(8,M): GOTO 26600
26590 LPRINT
TN$(N+1,M);ASC(TN$(N+5,M))-48;TN(N+5,M),
26600 NEXT N: LPRINT " / ";TN(9,M),
26610 FOR N=0 TO 3
26620 LPRINT
"SO.";N;";";TN(N+1,M);";";TN(N+5,M),
26630 NEXT N: LPRINT "PAU.";INT(SP/TN(9,M))
26640 NEXT M: LPRINT : FOR N=1 TO 120:
LPRINT "-": NEXT N: LPRINT : LPRINT
26650 IF IP=130 THEN LPRINT CHR$(27);"@";
26660 GOTO 26000
26995 REM ***** ALTER DE DELAY VARIABLE
27000 VS 6: CLS : PRINT "DE DELAY": PRINT
"=====": CSR 3,22: PRINT "{,} or HOME";
27010 CSR 5,10: PRINT "DE =";CHR$(5);DE
27020 IF ASC(INKEY$)=26 THEN CLS :
RETURN
27030 LET
DE=INT(DE*100+0.5+(ASC(INKEY$)=10)-
(ASC(INKEY$)=11))/100: REM IF DE<1.1 THEN
LET DE=1.1
27040 GOTO 27010
```

ASSEMBLER PRTSCREEN

By Chris Ledsam

Here are two listings which answer AF Wilsons challenge for a BUGFREE "PRTSCREEN" program when dumping NODDY files from screen to printer.

As the routine also dumps the other text screen types without error I think that they are the answer he is seeking. The listing for the MTX printer has the addition of only 6 bytes and has a different key press.

I took it upon myself to make the routine for those of us who use a serial printer. This routine uses the ROM routine #0CAB instead of #0CE3 and is a subroutine on its own.

The second routine can be used for both types of printer (serial and parallel). It is necessary to POKE the byte 64143 (IOPL) with 1 for parallel or 2 for serial. When using the serial printer you must also set up the BAUD rate and channel (ie BAUD 0,4800).

As to the keypress for both routines, I've changed this from CTRL - P to the PAGE key on the numeric key pad.

My own printer does not have all the CTRL codes that other printers do, so I have had to adapt the routine for that. However, I have left AF Wilsons routine as intact as possible.

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EX. BASIC	MINEFIELD
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Listing for PARALLEL printers

```
0 CODE
4007 INTON: LD HL,#BF21 ;VECTORST point
400A LD (#FAA2),HL ;USERNOD jump
vector
400D LD (#FA99),HL ;Interrupt vector
4010 LD A,#C3 ;Jump instruction
4012 LD (#FAA1),A ;Placed in USERNOD
4015 LD (#FA98),A ;and Interrupt
4018 LD A,(#FD5E)
401B OR #9F
401D LD (#FD5E),A
4020 RET
4021 VECTORST:LD A,(#FD7D)
4024 CP #1D ;"PAGE" key used
4026 RET NZ ;instead of "CTRL P"
4027 TEXTDUMP:LD HL,(#BF5C)
402A PUSH AF
402B LD A,L
402C OUT (2),A
402E LD A,H
402F AND #3F
4031 OUT (2),A
4033 POP AF
4034 LD HL,#BF56
4037 LD C,6
4039 SETPRNTR:LD B,(HL)
403A CALL #0CE3
403D INC HL
403E DEC C
403F JR NZ,SETPRNTR
4041 LD DE,(#BF5E)
4045 SENDTEXT:IN A,(1)
4047 LD B,A
4048 CALL #0CE3
404B DEC DE
404C LD A,D
404D OR E
404E JR NZ,SENDTEXT
4050 LD A,32
4052 LD (#FD7D),A
4055 RET
4056 LINEFEED:DB 27,"A",12
4059 COLWIDTH:DB 27,"Q",40
405C SCRNST:DW 7168
405E LENSERN:DW 960
4060 RET
20 CODE
41DC MOVECODE:LD HL,#4007
41DF LD DE,#BF07
41E2 LD BC,89
41E5 LDIR @PROGRAM = 41E7 RET
30 RETURN
100 SAVE "PRNTSCRN"
110 GOSUB 20
120 RAND USR(48903)
```

130 NEW

Listing for Serial and Parallel Printers

```

0 CODE
4007 INTON: LD HL,#BF21
400A LD (#FAA2),HL
400D LD (#FA99),HL
4010 LD A,#C3
4012 LD (#FAA1),A
4015 LD (#FA98),A
4018 LD A,(#FD5E)
401B OR #9F
401D LD (#FD5E),A
4020 RET
4021 VECTORST:LD A,(#FD7D)
4024 CP #1D
4026 RET NZ
4027 TEXTDUMP:LD HL,(#BF6A)
402A PUSH AF
402B LD A,L
402C OUT (2),A
402E LD A,H
402F AND #3F
4031 OUT (2),A
4033 POP AF
4034 LD HL,#BF64
4037 LD B,6
4039 SETPRNTR:LD A,(HL)
403A CALL #BF57
403D INC HL
403E DJNZ SETPRNTR
4040 LD DE,(#BF6C)
4044 SENDTEXT:IN A,(1)
4046 CALL #BF57
4049 DEC DE
404A LD A,D
404B OR E
404C JR NZ,SENDTEXT
404E LD A,0
4050 LD (#FD7D),A ;Puts 0 in LASTKY
4053 LD (#FD75),A ;and in PRORPL
4056 RET ;resetting for SCRNR
output
4057 POUT: EX AF,AF'
4058 LD A,1
405A LD (#FD75),A
405D EX AF,AF'
405E PUSH DE
405F CALL #0CAB
4062 POP DE
4063 RET
4064 LINEFEED:DB 27,"A",12
4067 COLWIDTH:DB 27,"Q",40
406A SCRNST:DW 7168
406C LENSCTR:DW 960
406E RET
20 CODE
4201 MOVECODE:LD HL,#4007
4204 LD DE,#BF07
4207 LD BC,105
420A LDIR @PROGRAM = 420C RET

```

```

30 RETURN
100 SAVE "PRNTSCRN"
110 GOSUB 20
120 RAND USR(48903)
130 NEW

```

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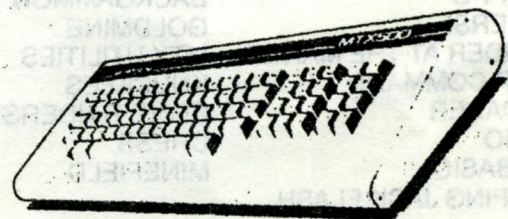
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and cartoons with the common theme
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Contributions come from the rich, successful and famous - and not. They come from IT users and organisations for computer professionals as well as suppliers of hardware and software. They are company Chairmen, Managing Directors... Consultants, Programmers and Analysts. Some have chosen (possibly needed) to remain anonymous. They have given their best one-liners, favourite after dinner stories and illustrated humour. And they've given freely.

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INTERFACING IDEAS

By Phil Eyres

I have now got a few good ideas for interfacing projects, and a source for buying some kits to build. Firstly, let me describe a few ideas that have been floating around in my brain.

Obviously, the robot I keep on talking about. This is one of those fanatical things I would just love to have a play with. I have some information on a couple of kits to build that would need some modification to allow them to be connected to the MTX. Both are similar, one is for the Amstrad and the other the Spectrum.

Now for a couple of other projects, starting with the easiest.

A biological amplifier!!! Sounds good Eh!! Such a device would be connected to one of us humanoids, feeding information about us to the computer. Could be used a lie detector. I think we need to little projects to do this. Firstly, an A to D convertor and then the biological amplifier. Again, I can get hold of both kits, it is just a case of connecting them to the MTX.

Now, this next one requires a bit of 'pre-amble'.

The other day I went to a small company called DEC UK. They have just built a nice new glass-house locally. Everything was very designer, including the conference rooms. When we walked in, like magic the lights came on. Real impressive that was. This little eye had spotted us come in and 'hey-presto' on with the lights. Take this one stage further, with another sensor to detect whether or not the lights actually need to come on and you have the ultimate gadget to impress everyone with. The big snag is that I do not have any kits that will do this.

It is about time that the club did a bit more with interfacing projects. The problem I have is time, I just haven't got enough. The club will fund any or all of the above ideas plus any other good ones. If you are interested please let me know, we'll sort something out and hopefully get some really good projects on the road.

PROGRAMS

A while ago I managed to get hold of some fairly old listing for mostly extinct computers. Some of the ideas however are really good, for instance:-

WADUZITDO - this very curious title was for a language written in 256 bytes or less. There are plenty of pages of written text about it and programs written in 6800 and 8080 assembler. This is an article reall worth reading.

ACRONYMS - As it says this program converts words into acronyms. It does not say what machine it is written for, but it all looks like fairly standard Basic to me.

GOBANG - This is an intriguing board game again in Basic.

If anyone would like copies of these then please just let me know.

SOFTWARE

Rather than take up a whole page this month with the software list I will restrict it to only the changes that have happened. Around the magazine on different pages you will find some pages of Special Offers that we have this month.

Add these tapes to the list:-

Cobra, Felix In The Factory, Ghostly Castle & Quazzia

Change these items to being available:-

Surface Scanner, Fathoms Deep, Fire House Freddie, Highway Encounter.

Take off list:-

Manic Miner & Memocheque.

We have had loads of trouble this month with the Assembly Language Course tape, in that programs 4,5 & 6 refused to load. The problem is now cured and all members with outstanding tapes, should now have received them. If you have not then please let us know.

One point that I do not think I have mentioned is that most of the titles we have are infact second hand, this has come about because of all the hardware we are buying, most people choosing topo sell there software as well.

Hazel is at present getting together a totally updated software reviews booklet.

Phil Eyres

REVIEWS

CPM UTILITIES

Reviewed By
Phil Eyres
Author:- Graham Mitchell
Price £15.00 + VAT

There are several utilities on this CPM disc, the first of which is MENU.COM.

This is designed to make your CPM system easier to use. It allows you to create menu sheets using for instance Newword in Non documnet mode. Each menu screen can have up to 37 options and you can link up to 36 menus together, this gives you many more options than you are ever likely to use.

It is really 'super-wizz', you can have colour in the menus and they are totally flexible. Once created and working, CPM becomes very idiot proof, saving the need for long cammand - paramater lines. Everything can be executed by one key press.

The system uses the SUBMIT.COM program provided with CPM to activate your menus, along with a couple of other programs provided on the utility disc.

I tried this out on a twin 500K FDX system. When running this from disc it worked well. It is slightly on the slow side executing the menuing programs I then loaded it up into the 500K of silicon disc that I have. It went like lightening, it's really great, just the thing if you've got a lot of work to do.

The only fault that ever has occured is if you do not exit the menuing system the correct way. It tends to hang up requiring the reset keys to cure it.

The documentation is very good with nice easy to read sentences, with all the little features explained.

There are several other little utilities the best of which are the UNERASE command and CODE.COM which is an encryption program. Also there is PERASE which will permanently erase files from discs. A backup utility for making the best use of discs when doing backups.

All in all my opinion is that this is some of the best CPM software I have seen. Graham deserves a good 'pat on the back' for his efforts.

This program is available through the club, on disc. An advert is placed elsewhere in this issue.

ADVANCED REFERENCE MANUAL

Reviewed By
Phil Eyres
Author:- Alan WILSON
Price £15.00

Having had a review copy of this manual for some time now, it is now ready for release.

The first thing that struck me about this creation was the professional manner in which it was layed out, this thought occured to me even before I had got through the index pages, even though the review copy was unbound. Everything is layed out well with good use of the WP/DTP techniques which must have been used to create it.

So what is the manual about?

The main bulk of the manual concentrates on MTX graphics. Covering every aspect in detail, from basic operation to the detail involved in each possible mode of operation. This accounts for over half of the pages. Then there are sections covering:

1. Screen Dumping (Printer Control)
2. Keyboard And joystick control
3. MTX Sound

Assembler routines run riot in this manual, barely a page goes by without one. Thus, it is definitely not for your 'Basic' programmer. It is aimed at the assembler programmer who would like to be able to control the function of the MTX better. I am sure that the assembler routines will hold every owner of this manual in very good stead, for their own program writing.

I think the above paragraph sums the manual up. It is very good quality, but definitely for the technically minded.

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Your letters

Harry Seekings, Kew

HINTS AND TIPS

Little snippet of info:-

The correct memory chips to buy for a memory expansion card are:-

M3732L - 20RS or M3764 - 15RS or equivalent

These are 32K * 1bit chips and you will need 8 of them to populate the board completely.

A few odd points:

I too have had saving problems with FDXB.

Using Newword I abandoned using the Epson driver - it will not handle the user print commands properly, implementing them a line late or not at all. I assume this is because it inserts dc2 & dc4 between ESC and next command as noted on p.10 issue 6 vol4. Frankly, I think the Epson driver is a waste of time.

I have had problems with monitor display and some minor corruption of contents of silicon disc which appear to be caused by shifting connections between the 3.5" drive and computer. disconnection and reconnection solves it temporarily; has anyone else had these problems?

Memotech MTX Series Advanced Reference Manual

This comprehensive 120 page LASER printed book, discusses the main Memotech hardware devices/controllers (ie VDP, Sound chip, keyboard handler, RAM/RDM, etc) and how to program this hardware from Z80 assembly language.

All Z80 listings have been designed to be modular, interactive and informative. Figures and Flowcharts are also included to show algorithms and program flow and program design. The majority of this book is devoted to programming graphics and sprites. This book is a must for all those interested in the MTX and its also ideal for those wanting to learn to program in Z80.

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QUESTIONS

Is there a poke or routine to stop the MTX from sending an auto line feed to the printer? I ask this because I also have my printer connected to a Sharp which does not issue one and I have the DIP switches set for that micro and every time I need to print through the MTX I have to fiddle that particular dip switch. This switch is now broken so I am stuck until a repair is done.

Paul Trainer, Leeds.

PROGRAM Erratum

Below is a list of the corrections to the lines of the music program.

```
2020 FOR Y=1 TO 12: IF  
DE$(Y,3)<>TN$(CH+1,CC) THEN GOTO 2040  
ELSE IF NC=Y THEN LET Y=12: GOTO 2040
```

```
4000 LET CC=CR: FOR Y=0 TO 3: SOUND  
Y,0,0: NEXT Y: IF CC>CT THEN LET CB=CC-8  
ELSE LET CB=CC-24
```

```
4040 FOR Y=CB TO Z: FOR M=0 TO 3: IF  
Y>QT(M+1) THEN GOTO 4070
```

```
14040 CSR NC+5,NP(NC)+1:PAPER 6:INK 1:  
PRINT DE$(NC,3):LET FR=NF(NC)/OF(OC): IF  
AP$<>"N" THEN SOUND CH,FR,VO
```

```
20170 IF C3>C2 AND C4<C2 THEN GOTO  
20400 ELSE IF C3>C2 THEN GOTO 20300
```

```
20400 LET Z=C4-C2: FOR N=C3 TO C2 STEP  
-1: FOR M=CR TO C1: GOSUB 20700: NEXT M:  
GOSUB 20800: NEXT N: GOTO 20900
```

SPIRAL

```
10 VS 4: PAPER 1: CLS: PAPER 1
```

```
20 FOR A=0 TO 97.2 STEP .01
```

```
30 PLOT 128+(.87*A*SIN(A)),  
96+(1*A*COS(A))
```

```
40 NEXT
```

```
50 GOTO 50
```

REVIEWS

ON CUE

Reviewed By

Andy Owen

Author:- Ian Heath

This is a two game package featuring Snooker and Pool, released in 1988 on both Spectrum and Amstrad, as well as the Memotech, by Mastertronic.

POOL

This game opens by asking you to choose from the 7 options ranging from number of players to setting up the table and starting. Once you have started you have to type in your name and choose the level of play. You then place the white and break. Spin can be set on the large white ball in the top right of the screen, to the left of which is the power indicator. Although it has an easy to control system the correct angle and power are difficult to judge and the computer nearly always won even on novice level.

The graphics are as to be expected, with a good static display, but when the balls move they tend to flicker and move with varying speeds. Occasional colour clash (rare-even on lesser computers, nowadays) is annoying and avoidable.

Instructions would have been nice, but are really unnecessary as the game explains itself as you play - by means of a message window.

SNOOKER

The game opens as for POOL, control is effected by the same method as above but the computer is slightly less skilled at snooker than at pool so easier to beat. A colour is nominated after potting a red by moving the cursor over it and pressing fire.

All normal rules of snooker seem to be obeyed except the play again rule. Lack of instructions is more annoying with this game as they may have disclosed more functions.

The graphics are essentially the same, with smaller balls and slightly better animation (although ball movement slows more noticeably when more than one moves) and no noticeable colour clash.

SUMMARY

Although the computer is slow to shoot in both these games it is better than having no computer opponent. The lack of sound is forgivable but it

would have added to the game. (Maybe some coughing in the background to add realism!!)

Altogether an enjoyable, if occasionally annoying, package; I preferred his earlier release Angle-Ball which was, unfortunately only released on Spectrum and Amstrad (but probably written on the MTX as these two were) - maybe we'll see it in the future.

Instructions N/A
Graphics 60%
Playability 70%
Addictiveness 60%
Sound N/A
VFM 75%
Overall 70%

MOC

MTX BASIC TUTORIAL

This book has been designed to teach the absolute novice the basic skills of programming in Basic, what the commands on the MTX do; and how to use them. This course is also meant for those programmers who would like to improve aspects of their programming. Useful routines are included in the book like FILL (for filling an area on the screen), bouncing ball, true circles; and a host of helpful programming tips.

The book is well and logically set out, easy to read and follow. Many examples are given. Very well presented - professionally bound and attractive.

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MOUSE INTERFACE

Part 3
By Mike Frymyer

Put the program of listing 2 into the computer, plug in the interface, plug in the mouse and run the program. If all is well, when the mouse is at rest the screen should have the number 16 printed at regular intervals.

When the mouse is moved the number should change as follows:-

North (up)	20	South (down)	24
East (right)	18	West (left)	17
Nth + E	26	Nth + W	25
Sth + E	22	Sth + W	26
PB 1	48	PB 2	80
PB 1 + PB 2	240		

LISTING 2

```
100 LET X=INP(7)
110 PRINT X,
120 GOTO 100
```

If you don't get these results then the problem depends on the differences between yours and these.

If there is a missing direction then the problem can be on or a number of things:-

Dry solder joints Broken track on the circuit board Missing link Dead IC (Don't discount this even if you get, for example, and Up but no Down. In the first circuit I put together, 1/2 if IC 6 had died, and it took a fair time for me to convince myself that it actually happened).

If everything is still looking correct, then enter the program of Listing 1 and you've got the rudiments of a mouse system in your Memotech.

LISTING 1

```
LD HL,START;ROUTINE TO MOVE
LD DE,#F900;MOUSE S/WARE TO
LD BC,#0100;HIGH MEMORY
LDIR
LD HL,#FA98 ;*****
LD (HL),#C3;SET THE INTERRUPT
INC HL ;VECTORS
LD (HL),#00
INC HL
LD (HL),#F9
LD HL,#FD5E
LD (HL),#1F
RET
START:
DI ;*****
```

```
BACK:
PUSH HL
PUSH DE
PUSH BC ;SAVE REGISTERS
PUSH AF
IN A,(#07) ;LOOK FOR AN INPUT
AND 239 ;REMOVE UN-USED BIT
JP ONOFF ;JUMP TO ROUTINE
BIT 6,A ;*****
JP NZ,PB2 ;TEST
BIT 5,A ;FOR
JP NZ,PB1 ;EACH
AND #0F ;EXPECTED
CP #01 ;VALUE
CALL Z,LEFT
CP #02 ;OF
CALL Z,RIGHT
CP #04 ;INPUT
CALL Z,DOWN
CP #05 ;FROM
CALL Z,DL ;THE
CP #06 ;MOUSE
CALL Z,DR ;INTERFACE
CP #08
CALL Z,UP
CP #09
CALL Z,UL
CP #0A
CALL Z,UR ;*****
DONE:
POP AF
POP BC
POP DE ;RETURN REGISTERS
POP HL
EI
RET ;RETURN TO MAIN ROUTINE
UP:
RST 10
DB #81,#0B ;CURSOR UP
CALL DELAY1
RET
DOWN:
RST 10
DB #81,#0A ;CURSOR DOWN
CALL DELAY1
RET
LEFT:
RST 10
DB #81,#08 ;CURSOR LEFT
CALL DELAY1
RET
RIGHT:
RST 10
DB #81,#19 ;CURSOR RIGHT
CALL DELAY1
RET
UL:
CALL UP
CALL LEFT
RET
UR:
CALL UP
CALL RIGHT
RET
DL: CALL DOWN
CALL LEFT
```

```

DR:          RET
            CALL DOWN
            CALL RIGHT
            RET
TOGGLE:     LD A,(BUFF) ;*****
            BIT 0,A;MOUSE INTO SERVICE
            JP NZ,RESET;IF OUT
            SET 0,A
            LD (BUFF),A
            RET
RESET:      RES 0,A
            LD (BUFF),A
            CALL DELAY2
            RET
ONOFF:     BIT 7,A ;TEST TO SEE IF
BOTH BOTTONS ARE PRESSED
            CALL NZ,TOGGLE ;IF BOTH
BUTTONS ARE PRESSED
            LD HL,BUF ;LOCATION USED TO
KEEP TRACK OF MOUSE IN OR OUT
            BIT 0,(HL) ;OF SERVICE
            JP Z,DONE ;IF MOUSE IS
NOT IN SERVICE
            JP BACK
PB1:       RST 10 ;ROUTINE FOR FIRST
PUSH BUTTON
            DB #81,#20 ;PRINTS A SPACE
            CALL DELAY2
            JP DONE
PB2:       RST 10 ;ROUTINE FOR
SECOND PUSH BUTTON
            DB #81,#83 ;PRINTS CHR$(131)
            CALL DELAY2
            JP DONE
BUFF:      DB #00 ;USED TO TELL IF
MOUSE IS IN SERVICE
            RET
DELAY1:    LD C,#08
RING1:     LD B,#88
LOOP1:     NOP
            DJNZ LOOP1
            NOP
            DEC C
            JP NZ,RING1
            RET
DELAY2:    LD D,#10
LOOP2:     CALL DELAY1
            DEC D
            JP NZ,LOOP2
            RET

```

A BOX FOR THE INTERFACE

The only thing left to do is put the interface into a container of some sort. The box that the prototype was encased in was made of 1mm thick aluminium. It was constructed from 4 pieces of two different shapes. Two strips of 210mm * 25mm and two pieces of 122mm * 122mm. The aluminium is bored and bent as in Fig 5.

If you're not into metalwork there are boxes on the market that will do the job just as well. And, if you're so inclined, the board will sit quite happily inside the computer or card cage. The only thing to remember in any case is to insulate the bottom side of the board. I used a piece of a shirt box top but there are many other things that will do the job.

Well, thats about all!!! I hope that if you have been making this that it all works ok.

Mike Frymyer

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SCREEN DUMP

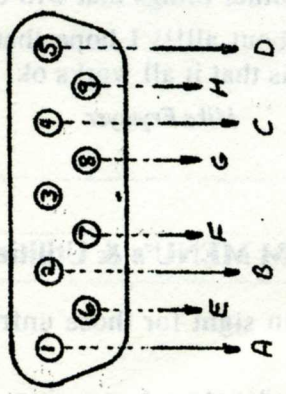
```

10 VS 4
20 LPRINT CHR$(27); "3"; CHR$(3);
30 FOR Y=191 TO 0 STEP -1:
   FOR REP=1 TO 2: LPRINT " ";
40 FOR AA=1 TO 2
50 LPRINT CHR$(27); "K";
   CHR$(255); CHR$(64);
60 FOR X=(AA-1)*128 TO (128*AA)-1:
   LET A$=GR$(X,Y,1): LPRINT A$;
70 NEXT AA: LPRINT : NEXT REP: NEXT Y

```

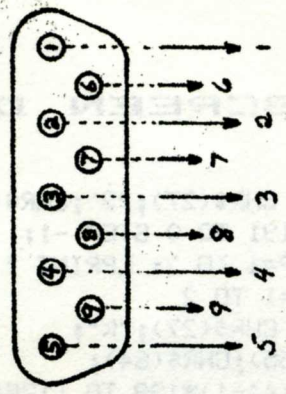
Fig 4

'D' Type Socket To Mouse
→ REAR VIEW →



PIN	DESIGNATION
1	0V
2	+5V
3	NC
4	HORIZONTAL (XA)
5	HORIZONTAL (XB)
6	SWITCH 1
7	SWITCH 2
8	VERTICAL (YA)
9	VERTICAL (YB)

'D' Type Plug To COMPUTER
→ REAR VIEW →



PIN	DESIGNATION
1	0V (PART PIN 16)
2	+5V (PART PIN 11)
3	BIT 7 (PART PIN 12)
4	BIT 1 (PART PIN 15)
5	BIT 0 (PART PIN 6)
6	BIT 5 (PART PIN 13)
7	BIT 6 (PART PIN 9)
8	BIT 3 (PART PIN 14)
9	BIT 2 (PART PIN 7)

PIN OUTS OF PLUGS SOCKETS FOR MOUSE INTERFACE AS SEEN FROM REAR. ALSO SHOWING WHERE EACH PIN IS CONNECTED TO CIRCUIT BOARD.

PROGRAM LIBRARY

By Phil Eyres

At this point if you have not read the editorial page, then please do. It is relevant to what is happening here.

With Alan now departed all P.D. software should be ordered from 13 Copse Road All previous copying fees and rules still apply.

Overleaf is a list of all of the software at present we do not have copies of all the library documents but we are trying to get hold of them.

What we really need is a couple of willing members to help with the task of making catalog documents for each disc. If you are interested please let us know. This also applies if you are interested in reviewing new items for the library.

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GAP FILLER

```
10 REM .... ALPHABET SPRITES
20 REM .... JAMES HEWSON
30 REM .... 14.07.88
100 DIM G(8)
120 CTLSPR 0,9: CTLSPR 1,1: CTLSPR 2,26:
CTLSPR 3,26: CTLSPR 5,26: CTLSPR 6,1
130 VS 4: CLS: COLOUR 1,0
140 FOR N=1 TO 26
150 CSR 0,23: PRINT CHR$(64+N);
160 FOR Q=1 TO 8: LET G(Q)=0: NEXT Q
170 FOR Y=0 TO 7
180 LET Y1=Y+1
190 FOR X=0 TO 7
200 IF GR$(X,Y,1)=CHR$(1) THEN LET
G(Y1)=G(Y1)+2^(7-X)
210 NEXT X
220 NEXT Y
230 GENPAT3,N,G(8),G(7),G(6),G(5),G(4),G(
3),G(2),G(1)
240 SPRITEN,N,128,100,RND*255,128-(RND
*255),15
250 NEXT N
300 PAUSE 2000: RUN
```

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70. Fonts
71. Dunc
72. Headliner
73. Morse Tutor
74. Building Societies
75. Measurements
76. Clock
77. Clock 80
78. 3D Maze
79. Graphics Calc
80. FastGraf

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82. Card Index
83. Appointments
84. Phonebill
85. Calender
86. Bouncy Ball
87. Hiscroll
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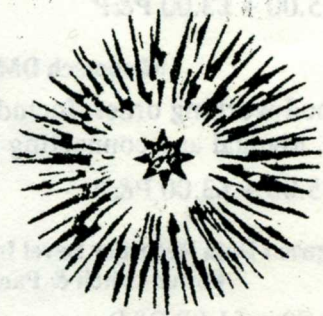
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Pascal ROM Board

Fully Populated, ready to plug in and go. Including manual.

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Fully populated with chips including fly leads. £25.00 + £1.00 P&P

32K Memory Expansion

(Not working - PROM CHIP BLOWN) Useful for extra memory chips! £10.00 + £2.00 P&P

32K Memory Expansion

For MTX 500. We have three in good working order. £25.00 + £2.00 P&P

MTX 512

Unit in working order including power supply and a manual which is not in to good a condition. All other leads are missing. £35.00 + £3.00 P&P

TAXAN KP-810 PRINTER

1 off ONLY

As New

140 Characters per second, DRAFT/NLQ, Tractor or Friction Feed, Manual, Graphics Dumping. Includes 4ft printer connecting cable.

£125.00 + £2.50 P&P

Shinwa Cp 80

Good working order. Includes 2 ink ribbons. Tractor Feed. Centronics.

£75.00 + £3.00 P&P

Memotech DMX 80

Good working order. Includes ink ribbon, Tractor Feed, Manual and connecting cable. Centronics.

£75.00 + £3.00 P&P

Ferguson Data Recorder Level Indicator, Tape Counter, Power switch & Pause Button.

£9.00 + £1.00 P&P

MTX500 Motherboard

This board is fully populated, but is missing the Video Processor board. It has Norway ROMS fitted and the major chips are socketed.

This is the last board. One of the others has been proved to be working as is now being used!! £15.00 + £2.00 P&P

MTX500 Motherboards

These boards have most of the IC's, but are missing the Video Processor board and a few support devices. They have Norway ROMS fitted and the major chips are socketed. They should be ideal for spares or for more memory chips! £10.00 + £2.00 P&P

MTX 512

BOXED in good working order. With manual and monitor lead.

£40.00 + £3.50 P&P Each

MTX Dust Covers

Two secondhand dust covers for your MTX 500 or 512. A must for keeping that keyboard clean.

£3.00 + £0.50 P&P Each

FDX 500K single disc

Everything you need, the controller, the drive and a manual. This is the CPM system with all the discs.

£140.00 + £4.00 P&P

Microvitec Colour 14" Monitor

A superb monitor for use with the MTX and SDX systems. Costs over £250.00 new

£100.00 + £3.50 P&P

Ferguson Cassette Deck

Ideal for MTX's.

£5.00 + £1.00 P&P

SDX 80 Column Boards

This board takes you must of the way to a cpm system, all you need are the upgrade ROMs for your system.

Cont'd on Page 20

WORD SQUARE COMPETITION

JOHN GREEN

This programme is in response to the competition printed in Vol 5 Iss 2. Below is a brief resume about the programme:-

Line 720 fixes the size of the square depending on the length of the longest word LW and the number of words NW.

Lines 725 - 735 set up the variables

Lines 300 - 310 fills the array A\$(SS,SS) with *s.

Line 45 puts all entered words into a long string.

Line 55 checks how many characters can still be entered.

Line 75 decides whether the word will be entered forwards, backwards, or in some diagonal fashion by giving an increment of +1, 0 or -1 to X and Y.

Line 80 won't accept 0 for both XI and YI or we wouldn't go anywhere.

Line 85 selects random starting place and lines 90 - 145 fit the word in and change the *s to appropriate letters.

Line 320 fills the remaining spaces randomly with letters.

(John can you please let us know which two pieces of software you would like!!)

THE PROGRAM

```

10 GOSUB 500
15 GOSUB 700
20 GOSUB 300
25 PRINT
30 PRINT "Input the words in order - starting
with the longest and finishing with the shortest."
35 FOR N=1 TO NW
40 CSR 1,6+N: PRINT "Word number ";N;" is ";
INPUT " ";W$
45 LET A(N+1)=LEN(W$): LET X$=X$+W$: LET
B(N+1)=LEN(X$)
50 CSR 2,22: PRINT CHR$(5)
55 CSR 2,22: PRINT "Characters left = ";64-LEN
(X$)
60 NEXT N
65 PAUSE 2000: CLS
70 LET M=2
75 LET XI=INT(RND*3)-1: LET YI=INT(RND*3)-1
80 IF XI=0 AND YI=0 THEN GOTO 75
85 LET X=INT(RND*SS)+1: LET
Y=INT(RND*SS)+1
90 IF X+A(M)*XI>SS OR X+A(M)*XI<1 OR
Y+A(M)*YI>SS OR Y+A(M)*YI<1 THEN GOTO
85
95 LET F=0
100 FOR N=B(S)+1 TO B(S+1)

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105 IF A$(X+F*XI,Y+F*YI)<>"*" THEN GOTO 70
110 LET F=F+1
115 NEXT N
120 LET F=0
125 FOR N=B(S)+1 TO B(S+1)
130 LET A$(X+F*XI,Y+F*YI)=MID$(X$,N,1)
135 LET F=F+1
140 NEXT N
145 PRINT "Word ";S;" is fixed."
150 LET M=M+1: LET S=S+1: IF S<NW+1 THEN
GOTO 75
155 PAUSE 2000
165 LPRINT
170 FOR J=1 TO SS: FOR K=1 TO SS
175 CSR 15-NW/4+K,(24-SS)/2+J
180 LPRINT A$(K,J);" ";
185 NEXT K
190 LPRINT
195 NEXT J
198 LPRINT : LPRINT
200 CSR 1,22: PRINT "Press [M](and wait)to
swop *s"
205 LET T$=INKEY$: IF T$="M" THEN GOSUB
320 ELSE GOTO 205
210 PAUSE 500: VS 5: CLS
215 CSR 4,12: PRINT "Do you wish to go again?
Y/N "
220 LET T$=INKEY$: IF T$="" THEN GOTO 215
225 IF T$="Y" OR T$="y" THEN GOTO 15 ELSE
GOTO 800
300 FOR J=1 TO SS: FOR K=1 TO SS
305 LET A$(K,J)="*"
310 NEXT K: NEXT J
315 RETURN
320 FOR J=1 TO SS: FOR K=1 TO SS: IF
A$(K,J)="*" THEN LET
A$(K,J)=CHR$(INT(RND*25+65))
325 NEXT K
330 NEXT J
335 FOR J=1 TO SS: FOR K=1 TO SS
340 CSR 15-NW/4+K,(24-SS)/2+J
345 LPRINT A$(K,J);" ";
350 NEXT K
355 LPRINT
360 NEXT J
365 LPRINT
370 CSR 1,1: LPRINT "Words to find:": PRINT
375 LET S=1
380 FOR N=B(S)+1 TO B(S+1)
385 LPRINT MID$(X$,N,1);
390 NEXT N
395 LPRINT
400 LET S=S+1: IF S<NW+1 THEN GOTO 380
405 CSR 1,22: PRINT CHR$(5)
410 RETURN
500 CSR 14,8: PRINT "WORD SQUARE"
505 CSR 13,10: PRINT "by JOHN GREEN"
510 VS 5: PAPER 8: INK 15: PAUSE 5000: CLS
515 PRINT "In this program the total number of

```

characters which can be entered as words is 64."

520 PRINT

525 PRINT "For example you can have 8 words each of 8 characters, or 16 words of 4 characters or any combination as long as the total is less than 65."

530 PRINT

535 PRINT "The reason for this is twofold. The first is to keep the result available on the screen."

540 PRINT

545 PRINT "The second is that the maximum length of an undimensioned string is 64 characters."

550 PRINT

555 PRINT "Make sure that you set your MTX in UPPER CASE mode."

560 CSR 2,22: PRINT "Press SPACE BAR to continue"

565 LET T\$=INKEY\$: IF T\$<>" " THEN GOTO 565

570 CLS : PRINT "The screen has been set to DSI. To highlight the discovered words on the screen proceed as follows:"

575 PRINT

580 PRINT "Press <CTRL>^ to enable the cursor. Press <CTRL>F,A to change ink colour. Go back to <CTRL>F,O before pressing<RET>."

585 PRINT

590 PRINT "Use the cursor keys on the keypad to move the cursor to cover the appropriate letters"

595 PRINT

600 PRINT "Once above the selected letter press that key on the keyboard then continue with the cursor keys."

605 PRINT

610 PRINT "Remember that in DSI the BREAK key is disabled. To exit and return to VS 5 press<RET>"

615 CSR 2,22: PRINT "Press SPACE BAR to continue"

620 LET T\$=INKEY\$: IF T\$<>" " THEN GOTO 620

625 RETURN

700 CLEAR : CLS

705 INPUT "Number of words? ";NW

710 CSR 1,2: INPUT "Longest word length? (<= 12) ";LW

715 IF LW>12 THEN GOTO 710

720 LET SS=LW+INT(NW/2)+1

725 LET X\$="": LET S=0

730 DIM A\$(SS,SS),A(NW+1),B(NW+1)

735 LET A(1)=0: LET B(1)=0: LET S=1

740 RETURN

800 CLS : CSR 4,12: PRINT "Thank you for playing - goodbye "

You then plug in a monitor and your up and away. CPM, Newword & Supercalc provided.

These boards will require that you make a lead to connect the board to a monitor. We will provide the necessary diagram.

£50.00 + £2.00 P&P Each (We have two!!)

1 Meg SDX Controller

One SDX controller, that connects on the left hand bus connector. Ideal for use with one of the above 80 column cards above. The only extras you should need are a 1meg disc drive and a 5volt power source. £50.00 + £2.00 P&P

TANDY COLOUR PRINTER

This is an amazing little device. It actually used 4 coloured pens to draw/print on roll paper (3 rolls provided). It connects to the parallel port (cable supplied) and is controlled easily from Basic. The Manual provided is very good and has worked examples.

£35.00 + £2.00 P&P

Please make cheques payable to Memotech Owners Club. Address all correspondence to 13 Copse Rd, Townhill Park, Southampton. SO2 2GY.

SPECIAL OFFER 3

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We only have a few of each.

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GRAPHICS

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TOADO

BLOBBO

Psychotic's Anonymous

Dose 1

At times I think many of us may feel that the CP/M operating system is really just for psychopaths or sadists (or sadistic psychos). However, we have a habit-forming and hopefully totally addictive cure:

This new part of the magazine is intended for all those CP/Mers out there who are lacking in imagination, information or just plain interest for their superior system and may be hanging on the edge of insanity because what they wanted to work, simply didn't.

Hopefully this will become a regular feature of the magazine in which I will talk exclusively about CP/M on the MTX, getting the most from it, how it works and some information on it that you may not know. I also intend to do some smallish listings which are written in various languages and systems under CP/M to enable you to do a bit of typing too.

However, you're not getting off the hook that easily. I want some feedback! I want your ideas, programs, dodges, hints and tips on the CP/M system that you've found.

This month, I will begin with a listing of a super biorythms program for SuperCalc which was sent to me by Brian Houghton, CP/Mer extraordinaire...

Simply type in under SuperCalc the formulae and values as shown into the relevant cells (that's the B1, C1 etc) and do a couple of ! (re-calcs) to get it going. You should, having typed in the formulae, enter into the relevant cells your date of birth, and today's date and your values will be calculated. Have fun!

MTX Printer Connecting Cables

Only £7.00

Will fit all standard Centronics type printers

B1= "DAY

E5= IF(C5<=2,F5,G5)

C1= "MONTH

A6= '-

D1= "YEAR

A7= "TOTAL DAYS

A2= '=

C7= E5-E3

A3= "BORN

A8= '~

B3= 2

A9= "PHYSICAL

C3= 8

C9= ((C7/23)-INT(C7/23))*23

D3= 1937

A10= '=

E3= IF(C3<=2,F3,G3)

A11= "EMOTIONAL

A4= '-

C11= ((C7/28)-INT(C7/28))*28

A5= "TODAY

A12= '=

B5= 7

A13= "MENTAL

C5= 2

C13= ((C7/33)-INT(C7/33))*33

D5= 1988

A14= '-

Any suggestions, comments or ideas for this section would be gratefully accepted. Please send your correspondence to Phil Eyres, 13 Copse Road, Townhill Park, Southampton, SO2 2GY.

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