Vol 5. Issue 2

February 1989

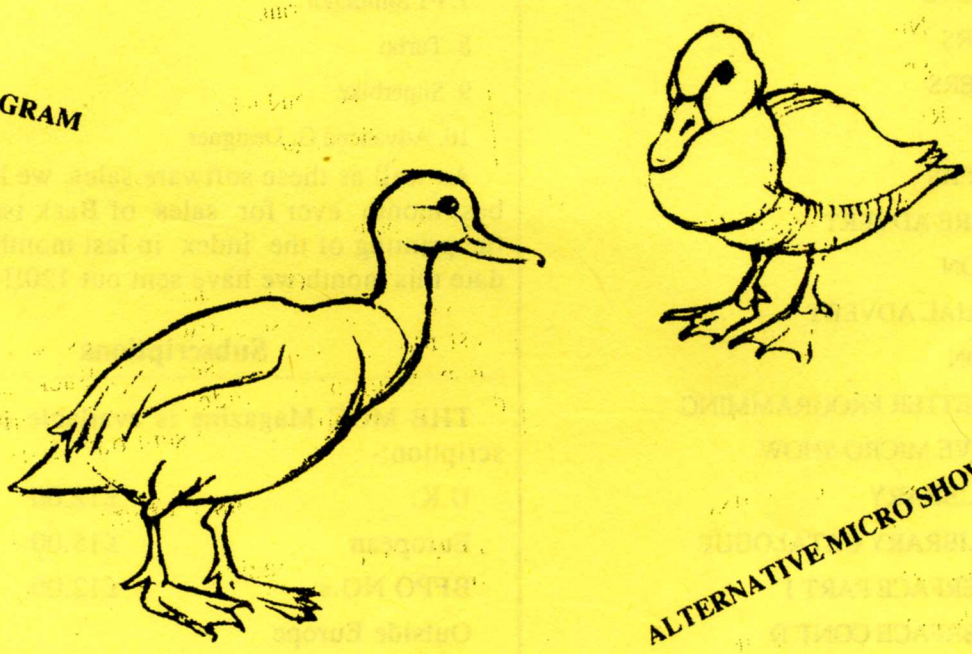
The MEMOTECH Owners Club Magazine

PROGRAMMING

ASSEMBLER BASICS

MEMOTECHNIQUES

MUSIC PROGRAM



ALTERNATIVE MICRO SHOW

MOUSE INTERFACE

13 COPSE ROAD

TOWNHILL PARK

SOUTHAMPTON

SO2 2GY

COMPETITION

CONTENTS

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.

Software Top Ten

By SALES

1. MTX Basic Tutorial
2. Assembly Language Course
3. 26 * 26 Spreadsheet
4. Rolla Bearing
5. T. Snooker
6. 3D Tachyon Fighter
7. F1 Simulator
8. Turbo
9. Superbike
10. Advanced G. Designer

As well as these software sales, we have had the best month ever for sales of Back issues (due to the printing of the index in last months issue). To date this month we have sent out 120!!

Subscriptions

THE MOC Magazine is available only by subscription:-

U.K.	£12.00
European	£15.00
BFPO NO.s	£12.00
Outside Europe	
Region A	£16.00
Region B	£17.50
Region C	£18.00

Please note these are new prices affective from this issue. The increases are to fund the larger magazine.

EDITORIAL (February 1989)

Phil, Hazel & Siobhan Eyres
13 Copse Road
Townhill Park
Southampton

MEMBERSHIP FEES

As you will have seen in the Contents page opposite, the membership fees have increased to those suggested in the Census results published last month. We hope everybody is happy with this. Last month we managed to fill 17 sides, this month we have 22!! We think this is about the maximum for 22p postage. It takes some filling so please keep the articles coming. (Thanks to everyone for putting in the extra effort in the last month or so, and sorry for any articles for which we did not have room this month)

If you have any suggestions for inproving content/layout etc. then please do tell us. The content has got a little better, we have more programs, articles and adverts and I hope the layout has improved a bit.

You will see that we have quite a bit of hardware for sale. The club has invested 'loads-a-money' this month in an attempt to keep kit in circulation. We are still on the look out for MTX 500's and 512's if you have any lying around.

MICRO SHOW

The Alternative Micro Show looks like the one we will be holding the long awaited 'get together' at. See elsewhere in this magazine for full details.

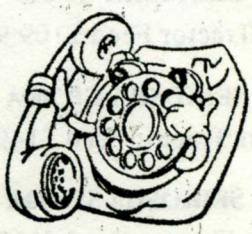
NEW TUTORIAL

This month we see the release of The Advanced Reference Manual by A.F.Software. On Page 11 is an advert for this 120 page manual. A review will be in next months magazine.

ARTICLES

This month as promised, Brian Clarke's latest masterpiece hits this magazine. This MUSIC program is pretty damn good, it is also quite long and complex, so it has to be split up into several parts. .....Lots more next month.

The Mouse Interface also gets a showing. Again it is too big to cover in one go, so we will be finishing it off next month.



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 40 back issues, 10 for volume 1, 10 for volume 2, 10 for volume 3 and 10 for volume 4.

Phil Eyres

Music Programme V.01.0

Rack leBrain Software
By Brian Clarke
Part 1

This is the start of MUSIC programme that will continue over the next couple of issues. By the end we will have a useful programme with quite a few features. It has been designed to be used with a MTX512 + disc drive. This is not an essential configuration, you can get away with a basic MTX500. Using a 500 will not allow you to string together many chords, but I am sure it is possible to shorten the programme to make more room. This programme will have the facility to save the data to disc. Non-disc users have two choices, firstly to save to cassette the running programme (which will save the data as well) and hence save your tunes, or to include the data SAVE/LOAD facility from the MTX UTILITIES tape. If you have this tape, then at this point I would load it up, so that it is there when we come to the data saving routines in the next month or so.

This programme allows the user to develop and play a tune of up to 300 or so chords (on an MTX512 + disc drive). The system allows for 6 octaves, but the notes played are simple sound commands in the format 'SOUND CHANNEL,FREQUENCY,VOLUME'. All 4 sound channels are used, although channel 3 is very limited in this mode (in fact I have limited it to 8 sounds). When all 4 channels have had their sound commands played a pause is used to control the duration of the chord. Each chord can have a duration of 1/1, 1/2, 1/3 ... 1/7, 1/8. The speed of the tune can also be varied. The notes can be 'tested' before being used or (for you clever ones) entered directly. The keybord can also be used to just 'play notes' from any (selectable) two of the available chords. All available commands are on screen for most of the time. A copy routine is included to enable a rythm to be developed for further additions.

The screen has 4 sections. Top left is the DIRECT ENTRY keys, top right is system data, central screen is note, octave, volume and duration data for 28 chords, bottom screen gives (nearly) all possible commands.

TOP RIGHT. The first line is OCTAVE. 6 octaves available, each colour coded and numbered. Octave 2 is middle c. Current octave is highlighted. Next is the notes, current again highlighted. Then the note number for channel 3 (range 1 to 8 only - no decimals used here!). Then the volume 0-15 (hex format, i.e. 0-9 then A-F) plus duration as a fraction (1/1 to 1/8 - not accurate as dependant on tune speed) and finally tune speed (actually the tune is PAUSE'd by speed/duration fraction). The lower the tune speed, the faster the tune.

TOP LEFT. Identifies the keys which can be used to play the notes directly. 2 octaves available, current (as in TOP RIGHT) and next octave up. (or 6th & 1st). Changing current octave changes display.

The display is colour coded for the octave as TOP RIGHT.

CENTRE. For each channel, identifies (colour coded for octave) note letter, plus volume (hex). Duration of chord is shown as 1 to 8, and current chord nuber is partially identified.(as final digit of chord no., thus chord 37 is marked '7'). The screen also identifies current chord range as {low} to {high} from {max}. Current channel is identified with a carret ().

BOTTOM. Fairly self-explanatory. Some keys are paired (eg SF2 & SF6) for CHORD, the left key will be lower & the right key higher for e.g. volume, speed etc. Some commands produce further messages & prompts on the lower 2 lines.

A further screen is used for some operations, e.g. SAVE/LOAD to disc, PRINTOUT to printer.

When typing in the data, please omit the REM lines - otherwise there will not be much space for the tune.

You may think it strange that the routines we have this month have large line numbers. There is a reason for this. The MTX Basic executes code with the lowest line numbers fastest, so at the beginning we have put all the pieces of code that will be executed may times during the operation of the programme. This months routines are only for setting up the screen.

Below are brief explanations of what the different routines do.

23000 - Set Auto/Manual flags. SF1 toggles between HOME and AUTO PLAY. SF5 toggles between RET and AUTO STORE. The latter is a misnomer - RET does store, the label should be INCREMENT (but if you can fit in 9 letters where I have put in 5 then please carry on!).

40000 - Genpats (for left/right/up/down arrows and SF as one character).

41000 - Screen definitions.

42000 - Variables. All variables used in the programme are defined. Line 42020 attempts to find out how much memory we have for the tune, based on a disc system. If anybody has a better formula, please let everyone know. This line should take account of -

Minor variables and small arrays use about 1K.

TN(9,CM) uses (9*5*CM/1024 + a bit)K.

TN$(13,CM) uses (13*CM/1024 + a bit)K.

Therefore if CM=1

9*5*1 + 13*1 = 58 bytes, Thus say 1 chord = 60 bytes.

The trouble is, if you enter a value too large, you won't know you have overwritten the disc control area until you can't write to the disc. So experiment, but don't blame me!

43000 - Screen text information. Useful if you have to CLS.

50000 - Startup routine, i.e. subroutines to kick it all into life.

60000 - Autostart line. If you do not have a disc system then omit the word USER from the save line.

At present you have two ways of starting the program:

Second Hand Hardware For Sale

Memtalk

MTX Speech Synthesiser Including instructions and demonstration tape £20.00 + £2.00 P&P

RS232 Board

Fulling 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

64K Memory Expansion

(Not sure if it is for a 500 or a 512?) £35.00 + £2.00 P&P

32K Memory Expansion

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

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including CP/M etc £180.00 + £5.00 P&P

MTX Power Supply

£15.00 + £2.00 P&P

MTX500 Motherboards

These boards are fully populated, but are missing the Video Processor board. They have Norway ROMS fitted and the major chips are socketed. £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

1. GOTO 60000 - this will autosave the programme and then set up the screen display. You will be asked how many chords you wish to set up. (Try small numbers to start with!!)

2. GOTO 50000 - this will 'skip' the autosave and take you straight into the screen setup. As large parts of the code are missing, the program will fall-over after it has setup the screen, if you want to stop it doing this change the GOTO in line 50010 to GOTO 50010. This will cause the program to loop, so you will not be able to use any of the keys, that will come next month!!

BRIAN CLARKE (Rack leBrain Software.)

```
22995 REM ***** SET AUTO/MANUAL FLAGS
23000 VS 5: IF IP=140 AND AS$="N" THEN LET
AS$="Y" ELSE IF IP=140 AND AS$<>"N" THEN
LET AS$="N"
23010 IF IP=136 AND AP$="N" THEN LET
AP$="Y" ELSE IF IP=136 AND AP$<>"N" THEN
LET AP$="N"
23020 CSR 24,0: IF AP$="N" THEN PRINT
"HOME"; ELSE IF AP$<>"N" THEN PRINT
"AUTO";
23030 CSR 24,1: IF AS$="N" THEN PRINT "RET";
ELSE IF AS$<>"N" THEN PRINT "AUT";
23040 IF AP$="N" THEN FOR N=0 TO 3: SOUND
N,0,0: NEXT N ELSE SOUND CH,FR,VO
23050 RETURN
39995 REM ***** GENPATS ******
39999 REM ***** SF FOR SHIFT FUNCT *****
40000 GENPAT 0,37,238,136,136,238,40,40,232,0
40009 REM ***** LEFT ARROW *****
40010 GENPAT 0,91,16,32,64,255,64,32,16,0
40019 REM ***** RIGHT ARROW *****
40020 GENPAT 0,93,8,4,2,255,2,4,8,0
40029 REM ***** UP ARROW *****
40030 GENPAT 0,123,16,56,84,146,16,16,16,16
40039 REM ***** DOWN ARROW *****
40040 GENPAT 0,125,16,16,16,16,146,84,56,16
40995 REM ***** DEFINE VIRTUAL SCREENS
*****
41000 CRVS 6,0,1,0,39,24,40: INK 1: PAPER 7: CLS
41010 REM CRVS 1,1,0,0,32,1,32: INK 1: PAPER 7:
COLOUR 4,9: CLS
41020 CRVS 2,1,0,0,14,5,32: INK 1: PAPER 3:
COLOUR 4,9: CLS
41030 CRVS 3,1,14,0,18,5,32: INK 1: PAPER 12:
COLOUR 4,9: CLS
41040 CRVS 4,1,0,5,32,11,32: INK 1: PAPER 15:
```

SM1 boards

I have not got a clue what these are, I think they are supposed to fit inside an FDX. They appear to have an Eprom on them. If anyone would like one (or two) just to have a play with then we have five. £2.00 + £0.50 P&P

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

```
COLOUR 4,9: CLS
41050 CRVS 5,1,0,16,32,8,32: INK 1: PAPER 13:
COLOUR 4,9: CLS
41995 REM ***** SETUP VARIABLES *****
42000 VS 4: CSR 3,2: PRINT "Hang on - I'm setting
up !": CSR 3,4: PRINT "There's a lot of variables.";
42005 REM ***** IP$(8)=KEYBOARD INPUT
STRING, TUNES(12)=DISC FILE NAMES FOR
DATA, Z=FOR/NEXT LOOP (as 42060)
42010 POKE 64145,128: DIM IP$(8),TUNES(12):
LET Z=0
42015 REM ***** CM=MAX AVAILABLE
CHORDS DEPENDING ON AVAILABLE
MEMORY
42020 LET
CM=INT((256*PEEK(64124)+PEEK(64123)-
256*PEEK(64168)-PEEK(64167))/60)
42030 CSR 2,6: PRINT "Setting up for";CM;"
chords": CSR 2,7: PRINT "If OK, hit else enter": CSR
2,8: INPUT "required value and <RET>";IP$
42040 IF IP$<>"" THEN LET CM=VAL(IP$): IF
CM<28 THEN LET CM=28
42050 CLS : CSR 2,2: PRINT "Setting up for";CM;"
chords !"
42055 REM *****
IP=INPUT,CH=CHANNEL,FR=FREQUENCY,VO=V
OLUME,N3=CHAN 3
FREQUENCY,N/M/Y/=FOR-NEXT LOOPS (or other
temp variable)
42060 LET IP=-1: LET CH=0: LET FR=0: LET
VO=10: LET N3=1: LET N=0: LET M=0: LET Y=0
42065 REM ***** CC=CHORD
CURRENT,CB=CHORD BASE (display),
CT=CHORD TOP (display),CR=CHORD REQUIRED
42070 LET CC=1: LET CB=1: LET CT=28: LET
CR=1
42075 REM ***** NC=NOTE CURRENT,
OC=OCTAVE CURRENT, OL=OCTAVE LOW
(direct entry), ND=NOTE DIRECT, C1/C2/C3/C4
FOR COPY ROUTINE
42080 LET NC=1: LET OC=2: LET OL=2: LET
ND=2: LET C1=1: LET C2=1: LET C3=1: LET C4=1
42085 REM ***** DU=(NOTE) DURATION,
DE=(when playing notes) loop delays, SP=(TUNE)
SPEED
42090 LET DU=1: LET DE=1.35: LET SP=100
42095 REM ***** QT(5)=QTY NOTES/CHAN+1 &
MAX QTY NOTES, CO(6,2)=CHORD COLOURS,
NF(12)=NOTE NO. FREQUENCY, OF(6)=OCTAVE
FACTOR
42096 REM ***** NP(12)=NOTE POSITION,
IN(31,2)=(direct entry) INPUT NOTE POS'N,
NUS(16)=DEC to HEX CONVERSION
42097 REM ***** ASS(1)=AUTO STORE FLAG,
APS(1)=AUTO PLAY
FLAG,DES(12,3)=KEYBOARD NOTES (1&2) AND
NOTE LETTERS(3)
42098 REM ***** TNS(13,CM)=TUNE DISPLAY
DATA:123=CHAN 0;456=CHAN 1;789=CHAN
2;101112=CHAN3;13=DURATION (1=NOTE-
2=OCTAVE-3=VOLUME) etc
42099 REM ***** TN(9,CM)=TUNE PLAY
DATA:1=CH 0 FREQ;2=CH 0 VOL;3=CH 1 FREQ
etc; 9=DURATION
42100 DIM
QT(5),CO(6,2),NF(12),OF(6),NP(12),IN(31,2),NUS(16
),ASS(1),APS(1),DES(12,3),TNS(13,CM),TN(9,CM)
42110 LET APS="N": LET ASS="N"
42120 RESTORE 42200
42130 FOR N=1 TO 6: READ CO(N,1): READ
CO(N,2): READ OF(N): NEXT N
42140 FOR N=1 TO 12: READ NF(N): READ
NP(N): NEXT N
42150 FOR N=1 TO 31: READ IN(N,1): READ
IN(N,2): NEXT N
42160 FOR N=1 TO 12: READ DE$(N,1): READ
DE$(N,2): READ DE$(N,3): NEXT N
42170 LET NU$="0123456789ABCDEF"
42180 FOR N=1 TO CM: LET TN$(13,N)="1": LET
TN(9,N)=1: NEXT N
42190 RETURN
42195 REM ***** DATA - WATCH 42200 ITEM 3
IS 1/2 (0.5) NOT 0 & 5
42200 DATA 6,1,0.5,1,15,1,9,1,2,4,1,4,12,1,8,13,1,16
42210 DATA
488,1,460,0,435,1,411,0,388,1,366,1,345,0,326,1,308,0,
290,1,271,0,259,1
42220 DATA
2,1,4,1,0,0,7,1,9,1,11,1,8,0,5,0,4,0,5,1,0,0,7,0,9,0,0,0,11
,0,0,0,0,0,12,0,10,0,0,0,0,0,0,1,1,6,1,2,0,8,1,12,1,6,0,3,1,3
,0,10,1,1,0
42230 DATA
Z,Q,C,S,2,c,X,W,D,D,3,d,C,E,E,V,R,F,G,5,f,B,T,G,H,6
,g,N,Y,A,J,7,a,M,U,B
42295 REM ***** SCREEN TEXT
43000 REM VS 0: CLS : PRINT "          EH ?"
43100 REM VS 1: CLS : PRINT " Rack leBrain
Software TUNES V01";: RETURN
43200 VS 2: INK 1: CLS : PRINT "  Direct Play";
43210 VS 2: LET Z=OC+1+6*(OC>5): PAPER 15:
FOR N=1 TO 12: CSR N,3+NP(N): INK CO(OC,1):
PRINT DE$(N,1);: INK CO(Z,1): CSR N,1+NP(N):
PRINT DE$(N,2);: NEXT N
43220 RETURN
43300 VS 3: CLS : PRINT "Octave": PRINT "Scale":
PRINT : PRINT "CH 3 Fre": PRINT "Vo  Du1/  Sp";
43310 PAPER 15: FOR N=1 TO 6: CSR N*2+4,0:
INK CO(N,1): PRINT N;: NEXT N
43320 INK 1: PAPER 12: FOR N=1 TO 12: CSR
N+5,1+NP(N): PRINT DE$(N,3): NEXT N
43330 CSR 12,4: PRINT SP;: CSR 8,4: PRINT
NU$(DU+1);: CSR 2,4: PRINT NU$(VO+1);: CSR
8,3: PRINT N3;
43340 CSR OC*2+4,0: PAPER CO(OC,1): INK
CO(OC,2): PRINT OC;: CSR NC+5,NP(NC)+1: INK
1: PAPER 6: PRINT DE$(NC,3);
43350 RETURN
43400 VS 4: INK 1: CLS : PRINT " Chan: Chord    to
of": PRINT " 0=": PRINT : PRINT " 1=": PRINT :
PRINT " 2=": PRINT : PRINT " 3=": PRINT : PRINT
" Du";
43410 CSR 12,0: PRINT CB: CSR 19,0: PRINT CT:
CSR 26,0: PRINT CM;: CSR CC+2-CB,10: PRINT
INT(MOD(CC,10)+0.5);: CSR 2,CH*2+1: PRINT ">";
43420 RETURN
43500 VS 5: CLS : PRINT " []Scale  F2F6 Chord %1
HOMEplay": PRINT " {}Octave F3F7 Dur'n %5
RETstore"
43510 PRINT " <>Volume F4 Play1Ch %2
GotoLast": PRINT " 0 Null  F8 Play8Ch %6 Goto
Any"
43520 PRINT " F1Channel%8 PlayAll EOL Save/Ld":
PRINT " F5 Copy  %3%7 Speed %4 Printout"
43530 GOSUB 23000
43540 RETURN
49995 REM ***** STARTUP ROUTINE
50000 GOSUB 40000: GOSUB 43200: GOSUB
43300: GOSUB 43400: GOSUB 43500
50010 LET FR=NF(NC)/OF(OC): GOTO 10000
59995 REM ***** AUTO START AFTER SAVE
60000 CLEAR
60010 USER SAVE "MUSIC0.BAS"
60020 GOTO 50000
```

SOFTWARE
PRICE LIST February 1989

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

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PHAID	Y
PHYSICS	Y
PONTOON & BLACKJACK	Y
POT HOLE PETE	Y
PUC-MAN	Y
PURCHASE LEDGER	Y
QOGO	Y
QOGO 2	Y
QUANTUM	Y
QUAZZIA	N
QUEST 1	Y
REVEAL	Y
REVERSI	Y
ROLLA BEARING	Y
RUTHLESS B.	Y
SALES LEDGER	N
SALTY SAM	Y
SEPULCRI SCELERATI	Y
SMG	Y
SMGII	Y
SNAPPO	Y
SNOWBALL	Y
T.SNOOKER	Y
SON OF PETE	Y
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SUPA CODER	Y
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TOADO	Y
THE DESIGNER	Y
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THE ZOO	Y
TUMBLEDOWN TOWER	Y
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Software

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SURFACE SCANNER

to replace master tapes that we have that no longer work. We only need to borrow these titles for a day or two, but we will buy them from anyone wishing to sell.

RS232

By Paul Wood

It has become apparent that several people are having difficulty with controlling the RS232 board, this article is designed to provide a method of testing the board, thus proving it's correct installation. Once this has been achieved then connection to the outside world is that much easier.

The Assembly listing has been split up into 4 discreet sections, it would have been possible to write it as one section, but written this way allows the sections to be easily identified and transferred to other programs. A brief description of the operation of the program follows.

HAVING DIFFICULTY CONTROLLING RS232 BOARDS??

BAUD 0,300 : This basic command initialises the DART communications chip to the desired baud rate, (baud is the unit of byte transfer), and bit settings,(for this article don't worry about these). As can be seen the command consists of 2 numbers, the first is the RS232 port number (either 0 or 1) and the second is the baud rate. This could be set to any of the following:- 75, 110, 150, 300, 600, 1200, 2400, 4800, 9600 and 19200. I've used 300 for this example. (NB if you change the BAUD command, you may need to re-assembly the CODE line), the Higher the BAUD rate, the faster the data is transferred. This command can be done in assembly but it's easier to use basic, and being as I like any easy life....

ASSEMBLY CODE

This has been split into 4 sections, the code has been extensively commented to explain how the sections work, below is a description as to the function of each section.

MAIN LOOP Run from 803Dh (START) to 804Dh, this basically continually loops round reading the keyboard, sending data to the port (if a key was pressed), fetching data from the port (if any received) and printing the received data to the screen.

CIN: This is the Character in routine, the first operation is to check the status register of the DART chip, from this it can be determined as to whether data has been received, if not, the code returns to the main loop. If a new data byte has been received it is held in the A register.

COUT: This is the character output routine, the character to be sent is held in the E register. The status byte if read to ensure the DART is available to send data, if the port is not available, the code loops round waiting for the port to become free to send the next byte. When the port is free, the data is transferred to the port via the A register.

VDU: This section provides the means to display the incoming data. Once received, the data (currently held in the A register) is transferred to the BC register (B is cleared to zero to ensure no spurious results), the ROM RST 10 command is then called, and in-conjunction with the 192 data byte that follows the RST 10 instruction, will write the contents of the BC register to the screen.

Assuming that the program has been typed in and saved to tape of disc, the following procedure should be used to test the system.

1. On a spare 25 way D plug, connect pins 2 and 3 together. 2. Plug this into the RS232-0 port in the rear of the computer. 3. Load in and run the program.

For every key pressed on the keyboard, the character should (if everything works) be echoed onto the screen, if not then check the program listing for

SMALL ADVERTS

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"Database 2"

for my CP/M SDX 500K. 5.25" disc's. Does anyone have a copy?

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errors, failing that, I'am afraid the hardware is suspect.

To test the second port the following changes should be made to the program:-

Change basic line to BAUD 1,300 & in the CIN and COUT routines, change 0Ch to 0Dh, and 0Eh to 0Fh.

To use the RS232 port as a printer port, firstly determine the correct BAUD rate for the printer (assume 2400 for this example) and enter the following:

```
BAUD 0,2400

POKE 64143,2
```

All commands that are used to drive the printer (LLIST, LPRINT etc.,) will now drive the printer connected to the RS232 port.

Paul Wood

```
10 BAUD 0,300
15 REM * SET BAUD RATE IN BASIC (EASIER) *
20 CODE
803D START:  CALL #0079 ;Read keyboard using
ROM routine, returns value in A
8040 LD E,A ;Transfer to E register for safe keeping
8041 CALL NZ,COUT ;If key pressed then A0 so call
output routine
8044 XOR A ;Clear A register
8045 LD E,#00 ;Clear E register
8047 CALL CIN ;Call input routine
804A CALL NZ,VDU ;Print to screen if data available
804D JR START ;Loop back round to start
804F NOP
8050 NOP ;** Read RS232 Routine **
8051 CIN: IN A,(#0E) ;Read status register if DART
to check if data available
8053 BIT 0,A ;by checking if bit 0 is high
8055 RET Z ;Return if no data available
8056 IN A,(#0C) ;Read data from DART if available
8058 RET ;Return to main loop
8059 NOP
805A NOP ;** Write to RS232 port**
805B COUT: IN A,(#0E) :See if port is free to send
data by checking if bit 2
805D BIT 2,A ;of status byte is high
805F JR Z,COUT ;If not free, loop round until
available
8061 LD A,E ;Transfer data from E register to A
register
8062 OUT (#0C),A ;Output to DART
8064 RET ;Return to main loop
8065 NOP
8066 NOP ;** Print to VDU **
8067 VDU: LD C,A ;Transfer value of A register to
BC register
8068 LD B,#00 ;
806A RST 10 ;Use ROM RST 10 command to print to
screen
806B DB 192 ;Remainder of RST 10 command
806C RET ;Return to main loop
```

DISC'S

5.25" DS DD 40T disc's for sale.
Only used once, Unmarked
RRP Price £15.00 per 10
This Month £9.00 per 10
Limited Supply

YOUR LETTERS

PROBLEMS

1. I enclose a test attempt to get a program together to simulate Telephone Digital Tones without success (I don't know how to mix the frequencies and/or the correct delays) using the MTX internal sound chip; alternatively I wondered if the interface unit coupled with a suitable chip would be better or if it is possible to generate the correct frequencies using the Speech Kit - several services using tones are available fo banking (TSB) and for shares etc.. It would save phone charges and time if the tones can be set up before making a call. (Whats the best solution?) I have tried recording the tones on tape but I think the oscillator and/or AGC may frustrate such primative non computer approaches.

Anyway the program is listed below...

Grant McKenzie Altrincham, Cheshire.

```
10 CLS : PRINT "CHOOSE SHARE"
12 PRINT
15 PRINT "DIAL UP F.T. CITYLINE 0898 123456"
16 PRINT
20 PRINT "ACORN COMPUTER (1) (G) [*1517]"
21 PRINT "BENTALLS (2) (G) [*1808]"
100 LET A1=179.34: LET B1=10.339: LET B2=9.358: LET B3=8.463: REM (A): LET B4=7.6546
101 LET A2=162.3377
103 LET A3=146.7136
104 LET A4=132.8374
500 LET V=10
600 LET P=300
1700 LET K=0: INPUT "TO INITIALISE PRESS (1) ";K: IF K=1 THEN SOUND 0,A1,V: SOUND 1,B2,V: PAUSE 500: GOSUB 12000
5050 LET S=0: INPUT S: SOUND 0,A4,V: SOUND 1,B1,V: GOSUB 12000: IF S=1 THEN GOTO 8000
5060 IF S=2 THEN GOTO 8010
8000 PRINT " ACORN COMPUTER (G)"
8001 SOUND 0,A1,V: SOUND 1,B1,V: GOSUB 12000
8002 SOUND 0,A2,V: SOUND 1,B2,V: GOSUB 12000
8003 SOUND 0,A1,V: SOUND 1,B1,V: GOSUB 12000
8004 SOUND 0,A3,V: SOUND 1,B1,V: GOSUB 12000
8005 PRINT " NEXT CHOICE ": PAUSE 1000: GOTO 10
8010 PRINT " BENTALLS (B) 1808"
8011 SOUND 0,A1,V: SOUND 1,B1,V: GOSUB 12000
8012 SOUND 0,A3,V: SOUND 1,B2,V: GOSUB 12000
8013 SOUND 0,A4,V: SOUND 1,B2,V: GOSUB 12000
8014 SOUND 0,A3,V: SOUND 1,B2,V: GOSUB 12000
8015 PRINT " NEXT CHOICE ": PAUSE 1000: GOTO 10
12000 PAUSE P: SOUND 0,0,0: RETURN
```

FUTURE ARTICLES

1. Would it be possible to produce a few small programs for those among your readers who do not possess Disc/Printer Facilities?

One thing that has puzzled me is the use of System Variables. What are they, and how do you enter and use them?

I think that a lot of people are interested in the mechanics of programming rather than the program itself.

Ernie Butler. LLANDUDNO

Phil- Brian Clarke has been 'beavering' on a new program for the club over the last few months. It has taken a lot of his time and effort to create (as do all programs!). This month we have the first part printed. Next month more will follow.

Now the magazine is larger, we have more room to print programs. Has anyone got any?

We do have quite a lot of information on System Variables, I will try and collate it and print some ar-

ticles. Alan H. has started a series of articles on the principles of programming and computers, if you want any particular areas covered then please let us know, we will try and 'gen-up' on it and print an article.

ROBOTS

Phil- I have had a look around a couple of computer/electronics shops and in a few magazines, as yet I have not found anything that I would call a ROBOT. Does anyone have a collection of old Electronics magazines? Could you look through them (on a quiet evening when it is raining and the only thing on TV is Dallas or Dynasty). There must be a project for some sort of robot somewhere.

ANSWERS

The continuing saga of saving programs under FDXB.COM to disc, only to find that they have disappeared when you try and load them. See the last issue for details.

John Hodgson has this to say:

It was over two years before I found that my version of FDXB had this bug in it. What I don't know is if it is in all versions of FDXB or only in the SDX version. What happens is this, FDXB is loaded as a CP/M file at address #100 and the first instruction is a jump to address #8103. The code is then moved to address #0, other parts of the code and the system variables are set up, and a jump is made to the Basic entry point. The problem is that the Disc Save routine does not work until a program has been loaded, after this the Disc Save works ok. What does not help is that the setup routine is different for the SDX and FDX versions.

Phil- So the basic theory is; always load something before you start doing anything for real!!.

8" DRIVES

The club has been given an 8" disc drive unit, it is mounted in an FDX case with a 240Volt power input socket and a 54way ribbon connector on the back.

Unfortunately, we do not have any interface cable or even interface board.

Do we need an interface board?

On the back of my FDX there is a cover over a slot marked for 8" drive connection. I opened my FDX to see if there was any connector? The 5.25" drives plug into an interface board on an edge connector marked J2. There is another 50 way edge connector marked as J3 which is unused. Is this the 8" drive connector? There are four lots of DIP switches on the board, will I have to change these?

Well, thats all the questions! Does anyone have an 8" drive connected to their FDX? Could you answer these questions for me? I have some 8" disc's which have been supplied with the drive, I hope there is some useful information on them.

Phil Eyres

HINTS & TIPS

Whilst experimenting with Newword recently I discovered that it is possible to simulate the ^KN (column mode) function of wordstar. However it isn't simply available, as it needs to be installed via NWINSTAL. One byte requires to be set, that is around 0760h, and needs to be set to FFh. It can be easily found by following these steps:

1. NWINSTAL

2. Special Patches Menu

3. Level 3

4. Select max chars before hyphen help

5. From here the characters are examined, skipping over by

. **This sequence is expected:**

05 00 FF FF FF FF 00 FF 00

a b c d e f g h i

a= Max hyphen chars

b= Carriage Return after Y/N

c= Right Justify

d= Word Wrap

e= Insert

f= Display Print Controls

g= NO hyphen help

h= Ruler Displayed

i= Column Mode

Where 00h represents FALSE and FFh is TRUE.

All that is required is to set (i) to FFh and then exit.

When using Newword no difference should be noted except that when a document is edited the prompt COLUMN will be displayed at all times on the top right hand side. The only thing I've found is that when including external files that are not saved in column format you are informed of this and asked if you wish to continue with the inclusion.

When marking blocks of text to move only the text to the right of the start marker till the end marker is found. This sounds the same as before, except that if the marker is dropper in column 10 then only text from column 10 onwards in any line will be be marked as part of the block. So now columns can be created and moved around at will without destroying the format of the rest of the text. I've found uses for it in preparing newsletters etc and have left it in that mode without finding any problems.

Hopefully, someone will find a way of turning it on and off at will but until then it stays.

Whilst on the subject of Newword, has anyone successfully installed to run the Amstrad DMP2000 printer? The most successful I've found is the Epson driver with a few tweaks via NWINSTAL. Is it possible to either modify he EPSON driver simply or to write one for the Amstrad? HELP much appreciated on this irratating matter.

Andrew Fox Headingley, Leeds.

Phil- Many Thanks! I have spent years using Newword to produce the mag. I have struggled and struggled to get two columns of text as he should be. All that time I was one byte away from being able to do it.

PROGRAMMING COMPETITION

We have our first winner of the programming competition! It's Mr J. Waller of Drayton, Norwich. His excellent programs which displayed the time digitally have both been added to the library for you all to have a look at. Coming a close second was Mr G Carter, Trowbridge, Wiltshire. Third place went to Paul Trainer's Memotick program which is listed here for you to type in.

I was very impressed with the standard of programming for the competition, lots of nice clear graphics and most were very easy to use.

If Mr Waller would like to get in contact with me, giving me a list of MOCPDSL software he'd like, up to a value of £10, I will pop them in the post to him.

Programming Competition 2

I'd like a program which, after being given the words to be included, can produce a wordsearch grid with the letters mingled in amongst the "red herring" characters. The closing date for this competition is the 31st March and the prize is two items of commercial software of your choice (not PDSL software).

Send your entries to: Competition, Memotech Owners Club, 12 Roebank Road, Beith, Ayrshire, KA15 2DX.

Anyone with any queries on the competition should contact the above address or phone Alan Hamilton on (05055) 2491 at sensible hours only please (and after 7pm weekdays).

TRAIN SPOTTING COMPETITION

The winner's of last month's spot the difference in the two trains competition are Claire and Steven Cockram. Can your please contact Phil Eyres on 0703 585106. The Fruit Machine tape that you should have one is corrupt, so please let us know what other piece of software you would like instead, anything from the list on page 6!! Infact, you can have a piece of software each.

Have FUN!!!

The program that came third in last months competition!!

```
1 REM ****** COGNITION SOFTWARE *******
2 REM ******     PRESENTS     *******
3 REM ******     MEMOTICK     *******
4 REM ****** BY PAUL TRAINER  *******
5 LET AL=0: GOSUB 1000
10 VS 4: COLOUR 4,1: PAPER 1: INK 15: CLS
15 CSR 14,8: PRINT "MEMO": CSR 14,14: PRINT
"TICK"
20 FOR R=48 TO 50: CIRCLE 127,100,R: NEXT
40 FOR X=97 TO 100: LINE X,191,X,140: NEXT :
FOR X=154 TO 157: LINE X,191,X,140: NEXT
50 FOR X=97 TO 100: LINE X,0,X,60: NEXT : FOR
X=154 TO 157: LINE X,0,X,60: NEXT
60 ANGLE 0: PLOT 112,63: FOR I=1 TO 8: DRAW
30: PHI PI/4: NEXT
80 FOR T=178 TO 183: PAUSE 20: LINE
T,98,T,103: NEXT
90 CIRCLE 170,130,2: CIRCLE 170,70,2: CIRCLE
96,142,3: CIRCLE 158,142,3: CIRCLE 96,57,3:
CIRCLE 158,57,3
100 LINE 92,85,162,85: LINE 92,115,162,115
110 FOR Y=191 TO 150 STEP -5: LINE
110,Y,144,Y: NEXT
120 FOR Y=0 TO 50 STEP 5: LINE 110,Y,144,Y:
NEXT
125 IF AL=1 THEN GOTO 140
130 CSR 0,0: PRINT "'E' to end": LET
AL$="000000": GOTO 590
140 CSR 1,0: PRINT "Alarm will": CSR 1,1: PRINT
"sound for": CSR 1,2: PRINT "60 sesonds,": CSR
1,20: PRINT "press space": CSR 1,21: PRINT "bar to"
141 CSR 1,22: PRINT "switch off!"
142 CSR 20,0: PRINT "Alarm set at"
144 CSR 20,1: PRINT LEFT$(AL$,2);":";
146 PRINT MID$(AL$,3,2);":";
```

```
148 PRINT RIGHT$(AL$,2)
150 CSR 20,20: PRINT "'E' to end"
590 CSR 12,11: PRINT LEFT$(TIME$,2);":";
610 PRINT MID$(TIME$,3,2);":";
620 PRINT RIGHT$(TIME$,2)
630 IF INKEY$="E" OR INKEY$="e" THEN VS 1:
CLS : STOP
640 IF AL$=TIME$ THEN GOTO 660
650 GOTO 590
660 REM****alarm sound routine****
670 IF INKEY$=CHR$(32) THEN GOTO 590
680 IF INKEY$="E" OR INKEY$="e" THEN VS 1:
CLS : STOP
690 SOUND 2,100,15: SOUND 1,300,15: PAUSE
200: SOUND 2,0,0: SOUND 1,0,0
700 CSR 12,11: PRINT LEFT$(TIME$,2);":";:
PRINT MID$(TIME$,3,2);":";: PRINT
RIGHT$(TIME$,2)
740 IF VAL(TIME$)-VAL(AL$)>100 THEN GOTO
590
770 GOTO 670
780 PRINT : INPUT " Enter your alarm time :-";AL$
810 IF VAL(LEFT$(AL$,2))>23 OR
VAL(MID$(AL$,3,2))>59 OR
VAL(RIGHT$(AL$,2))>59 THEN GOSUB 2000:
GOTO 780
890 LET AL=1: RETURN
900 FOR T=178 TO 183: PAUSE 20: LINE
T,98,T,103: NEXT : RETURN
999 REM========input==========
1000 PAPER 14: INK 4: CLS
1010 PRINT " This program will use the MTX system
clock!!"
1020 PRINT " It will also work as an alarm....!":
PAUSE 2000
1030 PRINT : PRINT " Please enter the current time
eg.": PRINT : INPUT " 123500 :-";B$: CLOCK B$
1035 IF VAL(LEFT$(TIME$,2))>23 OR
VAL(MID$(TIME$,3,2))>59 OR
VAL(RIGHT$(TIME$,2))>59 THEN GOSUB 2000:
GOTO 1030
1040 PRINT " Press C for clock only or A for alarm"
1050 IF INKEY$="c" OR INKEY$="C" THEN
RETURN
1060 IF INKEY$="a" OR INKEY$="A" THEN
GOTO 780 ELSE GOTO 1050
2000 CLS : PRINT "Wrong !": PRINT "max 24 hours,
59 mins and 59 secs": SOUND 2,500,15: PAUSE
1000: SOUND 2,0,0: RETURN
```

A Guide to Better Programming

By Alan Hamilton
Part One

"What's he on about this time?" I hear you cry. Well, two things really. Firstly, I want to go a little way to help you understand BASIC a bit better than you might already do and try and improve your programming style to make your programs easier to debug, read and to run faster.

I think it best however, to start not with BASIC and what it does but rather on how the MTX copes with the stream of information you give it in BASIC.

At its barest level, the MTX is really just a collection of some very small switches which, when programmed, get switched on or off. However, since we are fallable creatures who would soon get fed up fiddling about with switches, some means of making the switches go on and off was devised. The switches were grouped initially in 2s and then 4s and, by the time the MTX arrived, the cheapest yet most powerful way was to have them in 8s. The fact that the switches could be on or off did not go unnoticed and it was decided by those people with rather extended foreheads that the whole thing looked decidedly like binary numbers. The state of the switches at any time could be described by a list of binary numbers where 0 represented the switch being off and 1 on. e.g. 00000000 - would indicate that all the switches were turned off.11111111 - would indicate that all the swithces were turned on.

But, we mortals who are not part of the Tefal brigade (those with the odd foreheads) do not take very kindly to binary numbers so a better way had to be thought up. What did they come up with? Well, since there were two possible states of activity of each switch and that we had eight in a row, there were plainly 2 to the power of 8 possible combinations of switch arrangements. They wanted some sort of system which people would understand and could be used as easily to describe any one state of all eight switches. They came up with hexadecimal numbers which covers numbers between 0 and 16 by the following digits and numbers: 0,1,2,3,...9,A,B,C,D,E,F. This meant that if all the switches were turned on, (11111111 in binary, as above) we could call this FF in hexadecimal (from hereon known as hex). Similarly, if all the switches were off (0000000 in binary), in hex the number would be 00. I don't know about you, but I was always taught to count in decimal between the numbers 0 to 9 and I strongly suspect that the decision to go for hex was regretted. However, hex it is and we have to suffer it.

So now we have some method of being able to set our switches to any of their 256 combinations by giving a number between 00 and FF to the computer. That's great!...isn't it?...find out next month!

The Alternative Micro Show

In these days of increasing domination of PC this, PC that, an interesting show occured at the Aston Villa Sports Ground which could herald a mini-revolution in the lesser-known micros.

The Alternative Micro Show which was held on the 12th of November was the first of its kind to be entirely given over to the older machines which are not now constantly in the computer press. Co- organised by Graham Bettany, member of MOC and co-runner of the U.K. Einstein User Group, the show managed to clock up around 1200 visitors which, of course, meant quite a bit of a PR job being done by all the user groups looking for members. Take a look down the list of user groups there and see how many of the machines you remember:

Lynx User Group, Texas TI-99/4A User Group, MSX Central Computer Club, QL Super User Bureau, Reading Lynx User Group, TI-99/4A UK User Group, International Enterprise User Group, East Coast Einstein User Group, O.B.H Einstein User Group, Jupiter Ace User Group, UK Einstein User Group, Einstein Amateur Radio, Avon Einstein User Group, Bedfordshire Einstein User Group.

Rather a lot of Einsteiners were there (which is what you'd expect considering they organised it). Why weren't we there? Lack of organisation on our part I'm afraid.

The Alternative Micro Show even got a mention in Computer Shopper. So did we! "...some machines were perhaps too obscure; what of the Aquarius, Memotech (surely it should have been represented)..." Fear not!!! We will be there at the next one.

The next Alternative Micro Show (get those diaries and FiloFaxes out) is going to be from Saturday 11th November to Sunday 12th November 1989 at the Staffordshire Show Ground (Bingley Hall, Stafford...just off the M6). A good turn out is expected and the MTX will be there in full force (might even get MCL there!).

In addition to this, there may be a couple of other spin-off shows, one in London and Glasgow to appeal to the more regional users living further afield.

Most of the machines listed above which were represented by their respective user groups are Z80s. Surely, considering both the cases of the MSX and Einstein, software can be converted to run on the MTX with very little trouble. After speaking to Paul Wood (the resident expert) we have discovered that with a small amount of pochilling (a rare Scottish phrase, pronounced, "poekilling"), it could be done quite easily. At such a show, a bit of chin- wagging and finger-tapping (on keyboards) could be done and we could see the arrival of a lot of good software for the MTX quite quickly. What is required however, is that rare commodity - support.

It is about time that the older machines started doing something like this because many of them never got as fair a hearing in the computer world as they should have. I leave the last few words to the organisers of the Alternative Micro Show, "Provided enough support exists, software and hardware add ons will be produced to rival that of the current models. An essential component to this success is YOUR support through membership of user groups...Be active in your support, write with your problems and solutions." Hear, hear.

Alan Hamilton

How To Submit Articles

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.

Advertising rates

Private ads cost £2.00

Commercial rates

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)

Alan Hamilton 05055 2491

Paul Woods 0905 24260

PUBLIC DOMAIN SOFTWARE LIBRARY

12 Roebank Road
Beith
Ayrshire
KA15 2DX
All cheques payable to Memotech Owners Club

This month sees the beginning of a new disc in the library, disc 6, meaning that we are now over the 100 program limit. Looking back, it's taken us 4 years to get to 100 programs in the main library, I wonder how long it'll be 'till we're at 200!

The January Sales which we ran last month met with the kind of response we got last year...I have been totally snowed under with orders! Sadly though, it's got to stop somewhere and the prices are now returned to normal. i.e. £1.50 for two programs on tape, £2.75 and £3.75 for 5.25" and 3.5" discs respectively, adding £1 if you want the disc too.

New additions:

97. Fonts V1.2

The first update of this popular printer utility. Updated by the author, the underlining has been improved together with a few other "bug fixes".

98. Digi Clock 1

Sent in response to a recent competition, we felt that the program was so good it deserved a place in the library. It displays the time in digital fashion like a digital clock in gigantic letters.

99. Digi Clock 2

A development on Digi Clock 1 which won the competition which it was sent in for. This program uses enormous 16x16 sprites to display the time. Brilliant stuff.

100. Print Noddy

Another good program from the author of Digi Clock 1 & 2. This program will successfully print pages of Noddy onto the printer. It prints them in the order that they appear on the Noddy directory.

101. CHRGEN

A sprite editor for 8x8 sprites to add to our ever-growing sprite editor collection.

102. Space Patrol

An excellent version of the age-old Star Trek program. Complements nicely the 80 column version (Number 93). All the usual functions together with an excellent set of instructions.

CA23 - Renumber V

Another Renumber program which will tidy all those programs up no end. This one is quite interesting in that passes over the program three times, checking for errors and renumbering it at the same time. Copes with all branching commands successfully.

IMPORTANT NOTICE

Programs 82, 83, 84 and 85 despite being loadable to all users will **only** work on tape based MTX 512s. All CP/M users should copy the program(s) to tape and use MTX.COM to load the programs. Non-CP/M users with MTX512s will be able to use the program perfectly well - they will not work on MTX500s at all..

END ITEMS

When ordering from the MOCPDSL, please state the following things: Your MOC membership number, the names and item numbers of the software you'd like copied and the system you work on. Disc users please indicate clearly the disc size (5.25" or 3.5"), the memory capacity of your disc drives and the operating system (CP/M or non-CP/M) in addition to this.

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

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

Happy Memoteching

Alan Hamilton

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
93. StarTrek80
94. Graph Calc 2
95. Blaster
96. Demolition
97. Fonts V1.2
98. Digi Clock 1
99. Digi Clock 2
100. Print NODDY

DISC 6

101. CHRGEN
102. Space Patrol

Cassette Only

CA01 Renum III
CA02 Merge
CA03 Money Manager
CA04 FKEY
CA05 DBASE III
CA06 Filetech
CA07 Flight
CA08 RAMDisc
CA09 TextEd
CA10 Deci_Clock
CA11 Elements
CA12 MkBook
CA13 Optics
CA14 Dbase IV
CA15 Filetech II
CA16 Forth Extensions
CA17 Inprinter
CA18 Renum IV
CA19 New for Old
CA20 Dumpliner
CA21 3D Maze 512
CA22 Fast Graf 512
CA23 Renumber V

CP/M Software
(CP/M disc systems ONLY)

CPM01 Z80 Assembler
CPM02 EBASIC programs
CPM03 Mail Label
CPM04 Turbo programs
CPM05 Comms disc
CPM06 Small C Compiler
CPM07 Utilities Disc 1
CPM08 Prolog/Valgol
CPM09 Utilities Disc 2
CPM10 Utilities Disc 3
CPM11 Extended CP/M
CPM12 Forth
CPM13 Adventure
CPM14 8080/Z80 Translator
CPM15 ZBASIC
CPM16 Car Maintenance
CPM17 Multitasker
CPM18 Utilities Disc 4
CPM19 Stock System
CPM20 dBase progs & F.Simulator
CPM21 Utilities 5

Library Documents

Available at 50p per document, this includes postage and packing.

LL01 System Variables
LL02 VDP Chip Explained
LL03 NewWord ROM Review
LL04 RST10 Explained
LL05 Undocumented NewWord
LL06 CP/M Programming Course
LL07 Instructions For CA16
LL08 Pascal course
LL09 CP/M Introduction
LL10 Flitter
LL11 Enhanced Supercalc
LL12 Inprinter Instructions
LL13 Hitch Hackers Guide

The copying fees for software are: £1.50 for two programs on cassette (we supply the tape); 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)

List updated at 21st January 1989

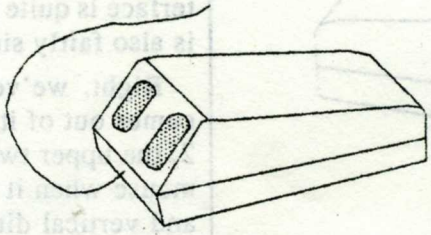
Mouse For The Memotech

Part 1
By
Mike Frymyer

Once somebody told me that in order to really get the best performance from a computer is by having fast reliable control over the cursor and display functions. And the only way to effectively do this is with a mouse.

WHAT A LOAD OF RUBBISH!!!

While it's an interesting thought, it's not even remotely true. To use a mouse in a wordprocessor is a waste of both programming space and operator time. Oh, of course its very impressive to have pull down pages or menus its mostly superfluous and doesn't actually make getting your information into the computer any more efficient.



So, why would anyone waste time designing an interface for one of the little monsters? Well, much to the gratification of a lot of people there are other types of programs around *** GRAPHICS *** Now, I am aware, that to some, this subject is a sore point, however, the integration of textual information, the correlation of data and the illustration of the result is precisely where the computer can excell.

O.K. so where does the mouse fit into all this?

Consider the problem of drawing a picture on the screen. (I'll stick with the Memotech, since thats what we are interested in).

Firstly, 2 colours or more. Naturally, if you want to use more than one colour it creates problems if you want to send the finished product to a printer. So for the time being I'll stick to one paper and one ink colour.

Second, Say you want to sketch a picture of a face. (Staying with BASIC).

Plot a circle - Main Outline Plot a circle - Right Eye Plot a circle - Left Eye

Plot a point somewhere between eyes

first step to draw a nose

Set the angle, direction of first line Draw a line, Start drawing nose Draw an arc, Bottom of nose Draw a line, Finish drawing nose

Plot a point near the bottom of the face

point to start drawing mouth Set angle, initial direction for drawing arc Arc (angle, length) draw mouth.

While at first glance this might not seem too much trouble, but stop and consider the amount of time it takes to position each part of the face that you want to draw. I don't know about anyone else but it doesn't take much time to get out of practice at doing this sort of thing.

Enter the Mouse...

Think how much easier it would be to move a cursor to the centre point of each circle you wanted to draw and simply choose the radius you want.

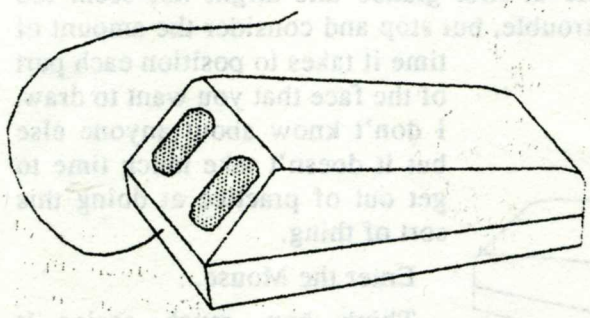
You might say that you could do the same thing with the cursor controls. Well, you could, but in order to get any real speed of cursor movement, you have to keep tapping the button. This isn't very good for your fingers or for the keyboard - if it's possible to avoid it. Well it is.

Now, as a matter of personal preference, I don't agre with over using any particular peripheral to the extent of making a whole program or system dependant on it. (Of course there are exceptions).

HEX and Numbers - are easiest put into the computer using a keypad designed for the job; Text and many standard type of commands are best with a standard keyboard; Positioning the cursor in graphics or text is easy with a mouse.

There are other items that I haven't mentioned but I think I've made my point. Now back to the problem at hand. If one wanted a Mouse, how would one make it work on the Memotech.

Firstly, a quick perusal of the popular computer magazines shows that there are two breeds of the little creatures. - BUS and SERIAL - Now which is the best way to go? I don't suppose it really makes much difference so since my own preference is to use the serial port for other things I chose the BUS model.



The particular Mouse chosen was the Tandy Digi-Mouse because at the time it was one of the most reasonably priced and easily available of all the choices I had. (And it was one of the very few that I could get free of IBM software).

So, when it finally came in the mail a brief inspection reveals a little white box and a ball and an instruction manual. Well, alright when in doubt read the instructions.

The manual, such as it is has all the information you need to get the mouse up and running, especially if you have the interface sold by Tandy which plugs into a PC clone. But, way in the back of the booklet, as with all those type of things, lives the real information. There is a pin out diagram of the 9 pin D-Connector and a timing diagram of the pulses that originate from the mouse. Originally, I wanted to plug the mouse into the second joystick port. This I thought would be convenient and when you take into consideration that a joystick is just a couple of switches ....

Well, I did manage to get an interface up and running for the second Joystick port but it was an incredibly messy piece of equipment, and I couldn't find a way to improve it. And besides being over complicated, it was going to be to expensive to get off the ground. The only reason that I even persevered that far was that I wasn't going to let an inanimate object beat me.

Anyway having wasted a month on that, the parellel port was chosen, and, (as it turns out) the interface is quite a cheap, compact unit. The software is also fairly simple as will be seen later.

Right, we've got a mouse and we know what comes out of it. The pulse trains are shown in FIG 2, the upper two traces show what comes from the mouse when it is moving. Note that the horizontal and vertical directions work identically. When the mouse moves right the top trace leads the bottom trace and vice versa.

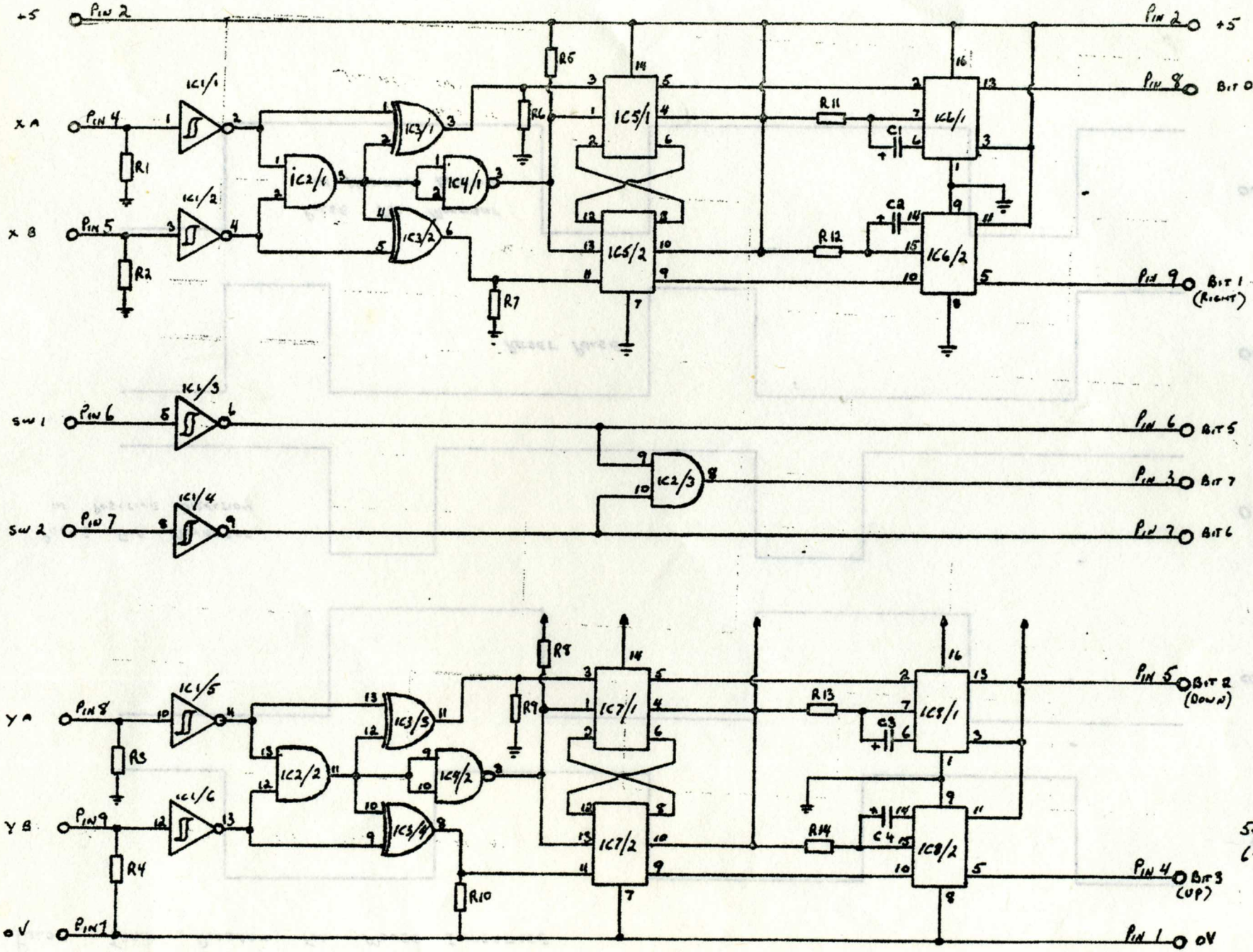
What was needed was a circuit to give a positive pulse train in which when the mouse is moving in any direction that all information for the opposite directions is either blocked or non- existent.

In FIG 1 (At the top left hand corner) the first stage of the interface accepts the output from the mouse and cleans it up to enable the rest of the circuitry to work on the signal. This is accomplished by IC 1 on all of the lines from the mouse. (From this point I'll only refer to the horizontal circuit as the horizontal is exactly the same.

Back to the Schmidt buffers.... You might look at the trace in FIG 2 and ask why a buffer like that is necessary. Well it took me a good while to convince myself that the illustration in the manual wasn't what was really coming out of the mouse. We live and learn.

We can break here conveniently and continue next month with the circuit layout and instructions.

FIG 1



MOUSE INTERFACE FOR MEMOTECH MTX SERIES COMPUTERS

CAPS

C1 - C4 3.3 µF TAG TANT.

RESISTORS

R1 - R4 560Ω
R5 - R10 4K7
R11 - R14 10 K

I.C.s

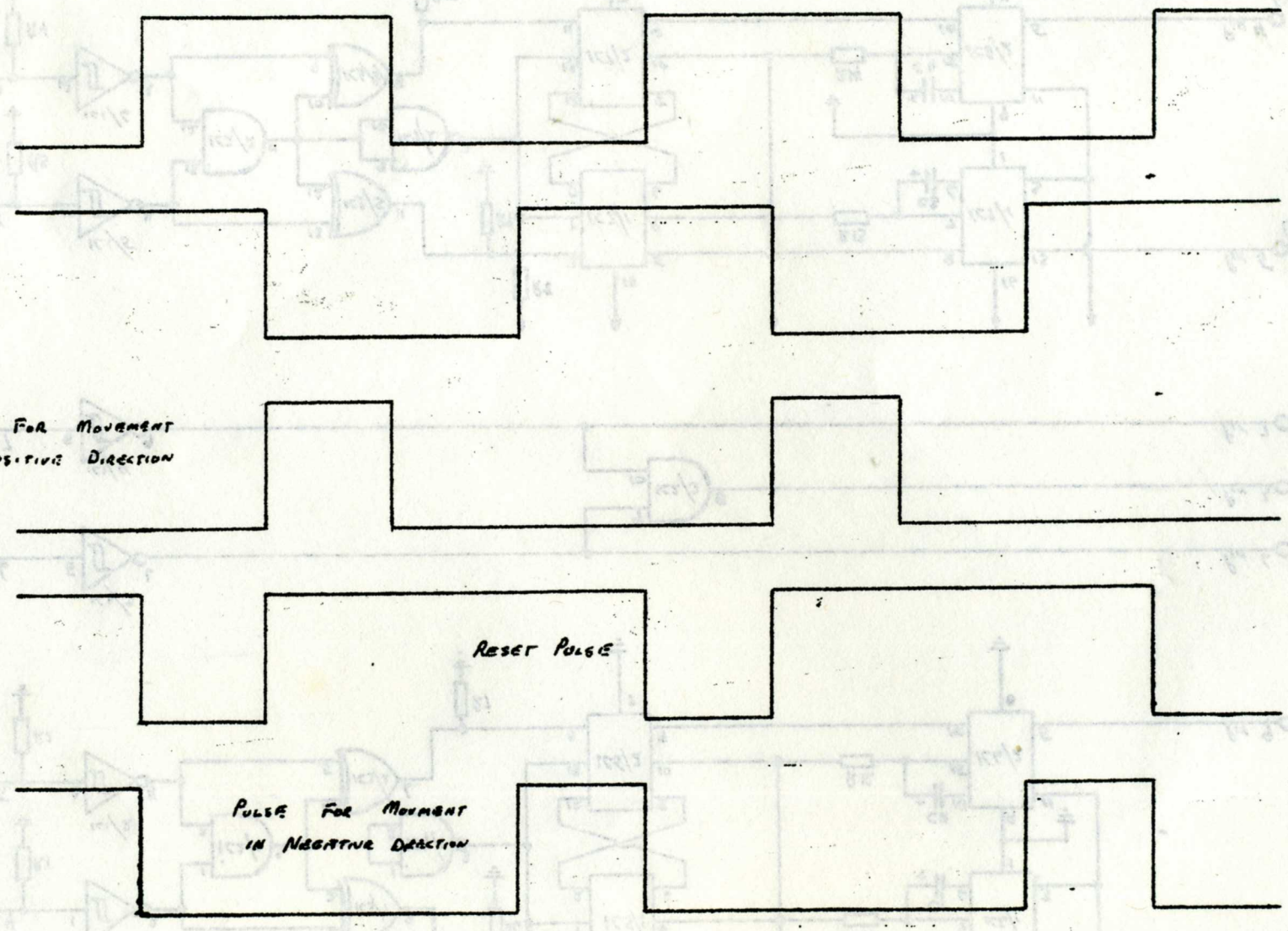
1 7414 SCHMITT TRIG
2 7408 AND GATE
3 7486 XOR GATE
4 7400 NAND GATE
5+7 74LS74 D FLIP FLOP
6+8 74LS123 2X MONO.

PLUGS

(MALE -) FEMALE

Fig 2

PULSE TRAIN DIAGRAM FOR MOUSE INTERFACE



IN THE PUBLIC DOMAIN

Recently a friend traded in his old CP/M business micro for a PC, spending perhaps nearly £2000 on the system, support software and the copying of his files, basically because of the need for utilities to tidy up his increasingly complicated business files. He wasn't too pleased to learn that CP/M utilities of that sort have been available - free - for many years, and that many of the current PC utilities appear to have been based on them, at least as a source of ideas.

In the early days of small-scale computing, after the introduction of CP/M made compatability between different systems possible, a lot of important software was written by amateurs or free-lance professionals - some of whom went on to found software houses - and was distributed in the Public Domain.

"Public Domain" is an American legal term for an arrangment by which the author agrees to give up certain rights over his product in exchange for free distribution (and free advertising! - the idea isn't completely altruistic). If your product is in the Public Domain you may not sell it, nor receive royalties on it. You can,however, still prevent anyone from claiming it as his own, selling it at a profit, or modifying it without stating that he has done so. The distributor doesn't have to do it free and is entitled to a reasonable copying fee, but it is probable that the prices which a couple of companies have recently been asking for P.D. software are actually illegal.

Most of the 3000-odd programs said to be availabe under CP/M are Public Domain. Most are known in the U.K. only to a few specialists and enthusiasts. Most are available in somewhat unclassified lumps for two or three pounds per diskful. The idea seems not to have caught on over here partly because CP/M (and, indeed, 8 - bit disk systems) were seen as a business speciality, partly because most U.S. distribution was via modem and also because a large and vocal commercial software industry was in right at the start of U.K. home computing.

Incidentally, this is different to Shareware - which you don't own, can't redistribute, but only pay for if you can use it, and programs delared to be free, freely distributable, but NOT in the Public Domain, which you may not redistribute if you have modified them in any way.

WHAT DO I GET FOR MY MONEY?

Almost anything! Anything from a pop-up calendar to a complete operating system. There are P.D. text editors and word- processors, a vast range of programming utilities such as assemblers, disassemblers debuggers and compiler toolkits. There are file-management and disk utilities, programming languages - some of horrific obscurity, but also including the famous FORTH- 83 and several languages of the PL and Algol groups - , business utilities such as print formatters and databases, and a handful of games. There are even Public Domain operating systems, although the only two to have achieved any popularity - ZCPR and EZCPR - are really very powerful extensions to CP/M.

Before would-be enthusiasts get carried away, please remember that some of these programs are hardly 'user-friendly' by modern standards, that the manuals (often only readable with the P.D. UnSQueeze utiliy) vary from superb to non-existant, and that some authors over-estimated the compati-

bility of their products. It is nevertheless usually possible in any particular case to find a utility which will run on your system. Think seriously about the following:

SORTDIR

Sort your disk directory, rewrite files sequentially and permanently clear erased blocks. Can increase apparent disk space and can speed up file access by up to 15%.

NULU

General-purpose archiving utility. Can increase disk capacity by 200 - 800% depending on drive type and file type. Extremely user- friendly.

RECOVER

Restore the file you just erased on any drive without complex manual patching.

EDIT

A user-friendly version of the dreaded ED.COM which doesn't crash its output files! (Yes, this is possible!).

VDO-KP

A Wordstar subset which provides a convenient text-editor. Well- documented, memory-resident and very fast.

EZCPR

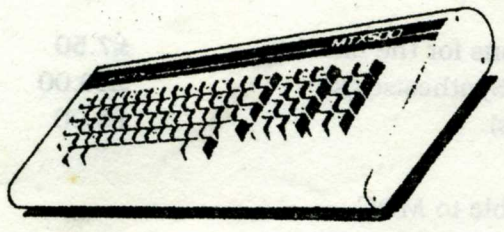
The only really successful CP/M enhancement to have become at all popular. A bit like a cross between CP/M 3.3 and MS-DOS. DIRecctory statistics, passwords, 32 user areas and a very helpful file-copy facility.

These 6 products are available from our Public Domain Program Library on the following disc's

CPM7 - SORTDIR,NULU,RECOVER

CPM9 - EDIT,VDO-KP

CPM11 - EZCPR



SOFTWARE REVIEW

BRIDGE
Reviewed By Andy Owen.
Price £5.00
Supplier MOC

This is one of a range of 'board' games by Continental Software. They were originally released in 1983 and include Chess, Draughts, Reversi and Backgammon.

As I'm sure most of you know, Bridge is a card game for 4 players with a reputation of being hard to learn and play. This game helps you to learn Bridge and also to improve your game play, without other players as the computer takes their place.

You always play South's hand along with North's (if he is dummy (ie you won the 'contract')). The computer plays the rest of the hands. The computer plays a good (and of course logical) making both a good partner and opponent - if it is at times slow. The computer also takes care of the part I find most difficult, that is - scoring.

On first loading you have to wait while the cards are shuffled, then you presented with a graphical view of your cards, arranged by suit and descending order. You are also informed as to your point tally and asked to 'bid' for the 'contract'. When the contract has been won you are asked if you would like to bid again. The computer now allows you to get down to play and displays you hand at the bottom of the screen. The card just played is displayed in the centre of the screen and in the bottom left is a display of the cards played in the last trick. A count of tricks won is in the top right. After the hand has been played all players cards are displayed followed by the score.

Instructions are on the cassette inlay and are good and concise, telling you how and when to bid, and how to play the game. They cater for a whole range of players from beginner to expert.

Only one thing lets this game down and thats its lack of skill levels.

Overall I think this game is an excellent buy and a good example of quality software, available for the MTX.

VFM 8/10 Graphics 6/10
Gameplay 8/10 Instructions 9/10
Overall 8/10