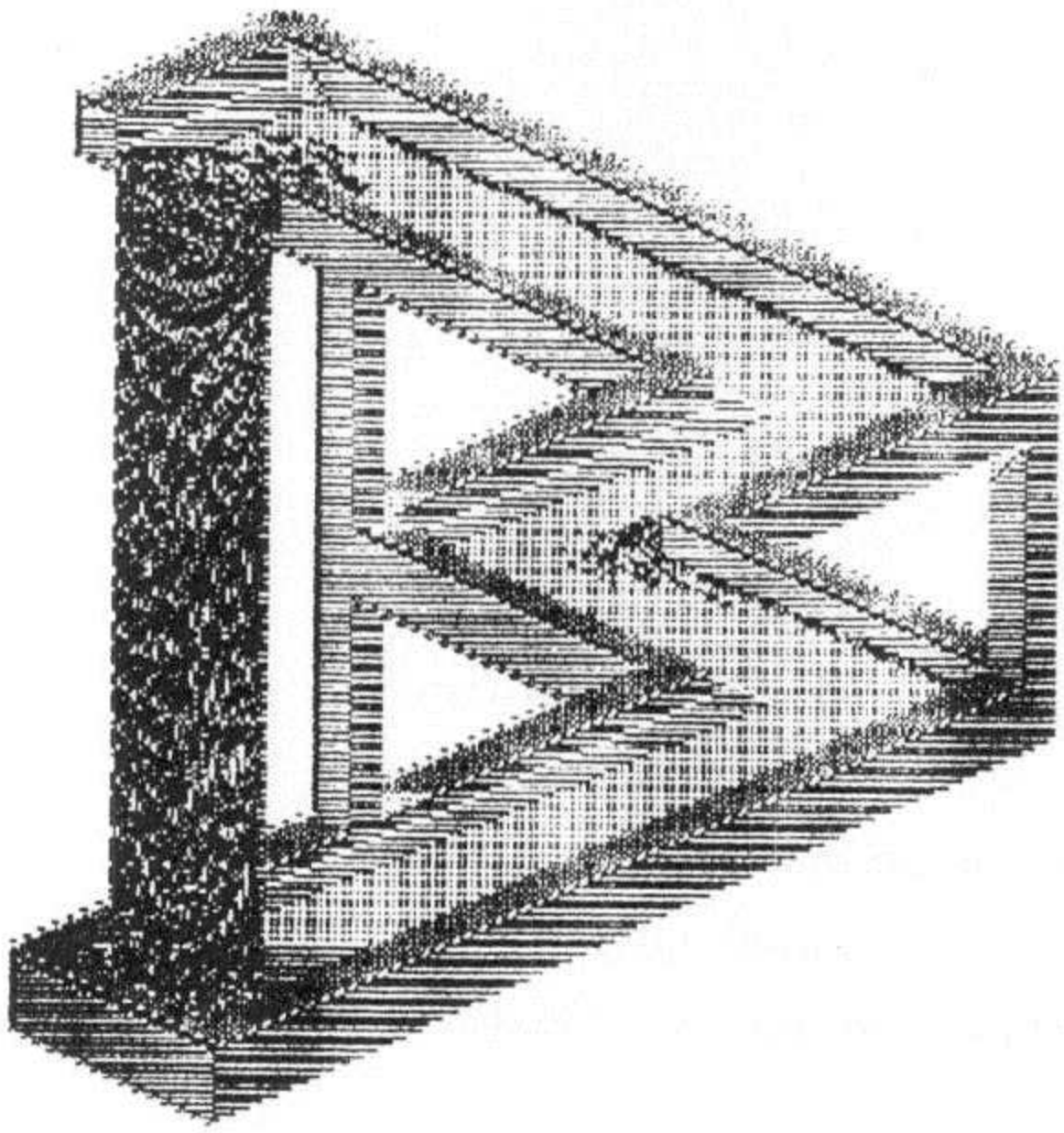
Memotech MTX World



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Editor - Andy Fox

Printer - Stewart Harvey

PD Software - Brian Houghton

Coordination & Typeset - Alan Hamilton

Repairs - Paul Wood

Membership Secretary - Gordon Carruthers

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"Memotech MTX World"

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Editorial

Seasons Greetings from all of the "A Team" who are beavering away as you read this in order to ensure The Software Source Source really does achieve its goal of TOTAL QUALITY of service to the members.

Can I firstly wish a hearty welcome to all newcomers that have joined us recently, and to assure you all that we are intent on bringing together MTX users the world over.

Thanks once again to Alan for the front cover (and for DTP'ing this journal!) to brighten the day.

Later in this issue can be found a report on the Alternative Micro Show (and you thought you'd heard the last about it!). I don't know what you will be hoping that Santa will be bringing you, but I'm hoping for about ten more hours in each day so that more time can be devoted to the MTX as well as doing all the other major tasks like going to work and sleeping!

As Alan has been ploughing on with his course on BASIC, how's about someone coming forward to do one or a series about maths programming and graphics associated to them. Not as boring as you might think as some very interesting and puzzling displays can be created from very simple instructions.

Another aim would be to set up an adventure helpine as we now have most of the adventures ever released for the MTX. Anyone wishing to contribute, contact me, and by the next issue I hope to be able to announce where we stand (North of a dark cave, with a bird in a cage) and advise you all as to what level we can help.

Still the number of articles is dwindling, putting greater pressure on us to write them ourselves. Soon our supply of "Interesting" ones will dry up so I'm now pleading with you all to think over Christmas/New Year about what you can contribute to the journal and take part in YOUR users group.

On a brighter note I must finish, now is the time to celebrate the birth of Christ, eat, drink and be merry. The next journal will be mailed in the last week of February 1990, so the deadline is the end of January please.

MERRY CHRISTMAS & A HAPPY NEW YEAR!!

Andy Fox

PD Software Library

New Additions

CA29 BASHIFT by Allan Ayre. This very clever assembler program was sent in as a partial solution to the extra RAM problem described in issue two by Andy. I was so impressed that I put it in the library. It uses upper pages of memory as ramdiscs to which you can load and from which you can retrieve BASIC programs. As far as I can establish with an unexpanded CP/M system it works, and is simple to use as long as you keep track of what went where.

CA30 WORD is a wordsquare program written by John Waller.

CA31 OTHELLO is also by John. I am not a sufficiently competent player of the game to express opinions on its strategy (even simple version have always beaten me!), but it is certainly well presented.

Oops!

I must confess to a blunder with CPM024 - POWER.

Firstly, it isn't a disc editor, but a CCP (Command Console Processor) replacement vaguely similar to ZCPR. Secondly, it has such an uncanny resemblance to POWER! - which is most certainly not Public Domain - that I feel we must suspend sale of it until we have established its status.

More new additions

CPM031 - HELP. This is a selection of *.hlp files on various languages and utilities, both public domain and commercial. Includes MBASIC, CBASIC, EBASIC, ASM, MACRO-80, HELP, PASCAL, FORTRAN, COBOL, PL/1. Most of the files are small enough to put on your working discs to provide on-line help.

CPM032 - SMALL-C. This is another implementation of the Dr Dobb's Small C compiler. It is a much fuller version than the one on CPM006 (it includes floating-point) and has a much more standard syntax. It does require, however, ZMAC & ZLINK, which are on the disc, but you could probably also use Macro-80 and Link-80 if you put the proper directives into the output

files. The full compiler source is provided, the system being powerful enough to compile modified version of itself.

CPM033 - MEX. Modem Executive is a modem driver. Phone number database, auto-dial, redial, several Kermit protocols.

CPM034 - LOCK/UNLOCK. Password protection and file encryption is not only for the deeply paranoid, but for anyone who may wish to prevent other users of his terminal accidentally damaging or erasing something (Alan-> or for someone with something to hide!!). A few assorted utilities on the disc as well.

CPM035 - MBASIC+. How to interface MBASIC with assembler. Also contains "Logical Names", which allows CP/M command to be temportarily renamed. A couple of other general utilities are also included.

News

JRT Pascal comes with an enormous manual which I have managed to turn intoa huge *.HLP file-tree, which will probably replace the original manual on any discs you order. This enables you to read the manual on-screen, paging back and forth as needed, while still having the option of printing it all out.

Incidentally, I am going on holiday from the end of November until just before Christmas. In practice this means that although the house will be occupied and mail collected, nothing will be done about The Software Source correspondance untll just after Christmas. It will help yourselves as well as me if you don't send orders over this time as otherwise the holiday plus the clearing of the backlog would result in considerable delays.

Dr BL Houghton.

Please refer to "The Guide To The Software Source" or Issue 2 of "Memotech MTX World" for details on ordering from the PD Software Library.

All mail regarding the PD Software Library should be sent to: The Software Source PD Software Library, c/o Dr BL Houghton, 1 Saxon Drive, Rowley Regis, Warley, West Midlands, B65 9RD, United Kingdom. **NO PHONE CALLS PLEASE!**

Disc Systems - I

The Memotech Disc Systems

Amongst several unhappy episodes with computer systems from micro to mainframe I have had in the past several years, the one which sticks out in my mind as being possibly the worst occurred only yesterday.

In the course of my studies I use a DEC/VAX mainframe which runs a PRIME network of approximately 250 terminals scattered around the campus in various guises from the very suave PT2000 terminals by PRIME themselves to the disgusting Televideo 910 ones which look as if they've come out of the Ark.

Anyway, here I was merrily programming away, using the inbuilt Minitab stats package when I discovered, somewhat to my horror that the bleeding terminal had crashed. "How!", I hear you cry...I wish I knew. I was spooling a test run of a program to calculate this and that onto the very sizeable hardisc when all sorts of gibberish appears on the screen and, much to my surprise at the time, an actual audible tone eminated from the rear of the very hot case of the Televideo. Having got over the shock of the fact that Televideo had got as far as installing speakers in their terminals (you can tell I'm not a fan of Televideo!) this was a case for the Computer Services guy who seemed to know what he was doing.

After much mucking about and switching off of terminals, unplug-ging rather conspicuous looking cables and frowning, the whole thing decided to work again. Sitting back down in front of the horrible thing, I started to read some of the error messages which the operating system, PRIMEOS, had generated as a vague attempt to throw everyone completely. All sorts of references to illegal partitions on hardisc and so on.

The upshot of all this was the general realisation that the Memotech computer should think itself lucky that it has a (relatively) friendly disc operating system too.

The second, and less frightening experience which I would like to bring to your attention was an excursion into Mess Dos with GW BASIC on Hewlett-Packard Vectra PC. It was thought a brill idea to demonstrate to us how to use the file handling commands and how flexible Mess Dos was.

Needless to say I found the explanations rather miserable and longed to get back to the MTX's system which is, on the whole, in my considered opinion, good.

However, I hear from a reputable source that there is something of a large vacuum of knowledge on the ways and means that one goes about actually programming the MTX in BASIC to perform the intricacies of serial and parallel disc access. I believe also that there is something approaching mass hysterics about what on earth disc files are, what serial and parallel disc access is and just how to go about getting more out of the disc drive other than just LOAD and SAVE.

So, as you might have imagined by this point, I am going to explain it, or at least try. Where though, do I start? Is it with the concept of disc systems, or with how the non-CP/M and CP/M systems are so similar? No. Let's go in at the deep end.

In all the examples I will give I will use the command USER. All CP/M users trying out the examples in FDXB or similar should change all references to USER to DISC.

One of the biggest facets of the MTX disc system is that it has the ability to load and save variables. This means that serious use can be made of the computer for word-processing and spreadsheets since you will have the ability to save data that you were manipulating and retrieve it at a later date. Such a facet you might think of as a cornerstone of the computing idea, but sadly the bog-standard MTX does not have the ability to save variables on cassette and hence really renders the machine, while tape based, somewhat at a disadvantage for serious use.

In order for the disc system to save variables onto a disc, it must have somewhere to put the information. To do this, a filename is used. A filename is really only a tag which is fixed onto an amount of data, or a program, or variables or whatever so that you will be able to retrieve it at a later date. Therefore, it is advisable that you pick meaningful names rather than A or B or something like that.

The non-CP/M disc system conforms to the CP/M convention of eight characters and an extension for a filename. The eight characters can be anything except * / . and ?. There are special reasons why you can't use these symbols but for the meantime, just accept that you can't use them. Having decided on a filename, you should add an extension such as:

.BAS for a BASIC program .DOC for a Newword file .ASM for an assembler file .DAT for data .TXT for an ASCII file

As I have said, it is not essential that you add an extension but when you come to the disc on which it is stored at a later date you will be able to tell which file is what.

As a quick aside for a moment, I was asked recently what the difference between a file and a program was. As I have wittered on so far about files and programs I should point out that everything you put on a disc is a file of some sort, whether it is a program, variables, text, whatever. The analogy I gave at the time was to think of a road. There are many different types of vehicles on the road, cars, trucks, buses, but they are all vehicles.

Hacing now grasped the concept of filenames and files, we can now start to get into the meat of the disc systems which is serial and parallel files for variables.

Since serial files are easiest to begin with, we'll start with them. The concept of a serial file is like best visualised as a stack of pieces of paper. When you write something into a serial file, it is like writing something onto a piece of paper and putting it at the top of the stack. As you write on more bits of paper, and keep putting them on top of the stack so moves the first piece further and further down. To get at the first one, you must go through all the subsequent bit of paper to get to it. It is because of this, that the name serial is applied, since there is usually a series of items of information in a stack.

The other analogy to take is that of a cassette with programs on it. A cassette deck is a serial storage device since in order to get to the program halfway through the tape, you have to go through the ones at the start of the cassette.

One other item of information pertinent to the discussion at this point is the fact that the disc system has the ability to have four different channels of information open at once to communicate with. These different channels may be used within the same file, or with some in one file and some in another. Each of the four available channels are numbered from one to four and are given a # prefix so that the computer knows that you are talking about a channel.

Before a serial file can be used, it must be opened. This is where the first command is used:

USER OPEN CHANNEL,FILENAME.EXT,TYPE

CHANNEL we have just discussed and FILENAME you know about already,

so we should now talk about what the "TYPE" is.

As far as we are concerned at this point there are only two TYPES of files: INPUT and OUTPUT. Any particular, at this stage, can be one or the other. What you would enter as the type of the file is either

"O" for output or "I" for input

We are, at this point, interested in writing information onto the disc, and so would select I. Try this:

USER OPEN #1,"TEST.DAT","I"

This will open channel number 1 of the file called TEST.DAT as a serial input channel. To actually put information into the channel, we use the next new command:

USER PRINT CHANNEL,INFORMATION

INFORMATION can be a variable such as A$ or PHONE. It can also just be a number or a message of some sort. In the latter case, you should enclose the message in inverted commas:

USER PRINT #1,"THIS IS A TEST OF THE MTX DISC SYSTEM."

The above will write the message onto the disc in channel 1 of "TEST.DAT".

Having successfully opened a file and written some information to it, we are finished with that particular channel so we want to close it:

USER CLOSE #1

Will close channel 1 for input. If we wished to re-access this channel we would have to use USER OPEN again.

Hopefully now you can see that the filename specified by USER OPEN is merely to provide the computer with a name to store any information to enable the user to recover it at a later date. The actual disc operations rely solely on channel numbers with the computer sorting out what goes to which filename.

Writing information to the disc is all very well, but we want to get it back! Therefore, we have to re-open our file for output as opposed to input:

USER OPEN #1,"TEST.DAT","O"

This will open our channel and give us access to what is in the file in channel 1. To actually get the information, we have to give it somewhere to go first of all when it comes off the disc. To do this we use the USER INPUT command:

USER INPUT #1.A$

This will take the first item of information off the stack of information in channel one and put it into the variable named A$. Thereafter, we are free to do anything to A$ as necessary. The information still remains on the disc - all we have done is merely copy what is there into a variable.

It should be pointed out though that you have to match the type of variable that you are going to put the information into with the information itself, i.e. you can't try to put "THIS IS A TEST" into a variable like PHONE, since PHONE is a numeric variable.

You could PRINT the information onto the screen or chop it up into little bits if you like, but what I particularly want you to understand is that the information is merely copied.

To finish off with this time, a fairly elaborate example:

```
10 REM PROGRAM TO WRITE THE DATE INTO A DISC FILE
20 USER OPEN #1,"DATE.DAT","I"
30 INPUT "Enter todays date in format DD.MM.YY >";DD.MM.YY
40 USER PRINT #1,DD
50 USER PRINT #1,MM
60 USER PRINT #1,YY
70 USER CLOSE #1

10 REM PROGRAM TO RETRIEVE THE DATE FROM A DISC FILE
20 USER OPEN #1,"DATE.DAT","O"
30 USER INPUT #1,DD
40 USER INPUT #1,MM
50 USER INPUT #1,YY
60 USER CLOSE #1
70 PRINT "The date is ";DD;"/";MM;"/";YY
```

More next time... Alan Hamilton

Programmer's Notebook

AUTHOR: NIGEL COOPER

REQUIREMENTS:

LANGUAGE: MTX BASIC

NOTES: A great little program ! Suitable only for Epson or "compatible" printers.

```
5 VS 4: CLS
10 LET YY=255: LET XX=1: LET Y=0: CRVS 6,1,0,8,15,16,32: CLS
20 PRINT CHR$(30): CSR 0,0: DSI
25 VS 4
30 FOR X=0 TO 126
40 IF GR$(X,Y,1) = CHR$(1) THEN PLOT YY,XX: PLOT YY,XX+1:PLOT YY,XX
+1.01: PLOT YY,XX-0.09
50 LET XX=XX+1.5
60 IF XX>190 THEN LET XX=1
65 ATTR 2,1: PLOT X,Y:ATTR 2,0
70 NEXT X
80 LET YY=YY-1: LET Y=Y+1
90 IF Y=129 THEN GOTO 100 ELSE GOTO 30
100 VS 5:CLS: PRINT "FINISHED! AT LAST!": PRINT : PRINT "PUTTING
YOU INTO DSI": PAUSE 3000: VS 4: DSI
```

Memotech (MTX) , Einstein and MSX Computers

AFW Software Manuals - the next step forward in programming

-oooooo-

Advanced Reference Manual (ARM) ..... £ 15

The Software Source Journal (v1 i1) say that "its a gigantic book ... it is a friendly book, it is clear & concise & where possible avoids excessive use of computer terminology. The listings are complete modules, which you could slot in easily to any program. Another point so often overlooked is that all such programs have been tested on a CP/M system. This book is the sort of technical publication that has been lacking from the bookshelves of many a MTX programmer ... you should be able to enhance your programming capabilities dramatically."

The bulk of the 124 page Laser printed manual (six chapters) covers the VDP and its graphic capabilities. The rest of the manual is devoted to RAM and ROM architecture and page switching, screen to printer dumps, keyboard and joystick control, and Sound . The assembler subroutines are modular in design and are fully documented with accompanying flow diagrams and figures when necessary. By the end of the manual you will have built up a comprehensive and powerful Z80 toolbox. The graphic subroutines are ideally suited for both MSX and Einstein users who share the same CPU and VDP technology as the MTX. A MSX appendix is also supported to allow greater compatibility,see below.

-oooooo-

MSX Appendix ..... £ 2

This useful booklet provides a comprehensive dossier of the MSX hardware , and the key BIOS calls ,so that the text of the ARM is compatible with the MSX system. If your thinking of writing software for both machines then MSX Appendix and ARM are a powerful tool to have.

-oooooo-

Power Graphics for the MTX , MSX and Einstein Computers ..... £ 8

The speed of the assembler with the simplicity of BASIC. Power Graphics give you this and more because all the subroutines are fully compatible with MTX , MSX and Einstein computers. As with ARM,the subroutines are modular, flexible and self contained. The documentation for each subroutine is now far superior and the subroutines included offer greater programming scope with particular reference to CAD and DTP applications. The subroutines include: PLOT ; DRAWLINE ; DRAWBOX ; FILLBOX ; TRIANGLE ; BORDER ; GRPINK and GRPPAPER ; CLSSCR ; etc.

-oooooo-

MTX Tape to Disc Conversion Booklet ..... £ 5

Convert such favourites as: Toado, Sepulcri, Agrovator, Kilopede, Murder at the Manor, Qogo ,etc and learn a lot about the MTXOS, BASIC and the front PANEL. Included is a superb PANEL utility.

-oooooo-

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Machine Code Made Easy

Continued from last issue

The last example will show the above Basic program converted to machine code. In Basic, when you store data, you assign it to a variable name and let Basic find a location to store the data. With machine code you must first fix an area of memory that you wish to use to store data. You can do this with a DB instruction. If you put a label name in front of it the label will act like a Basic line number. that means you can reference that location by name. For example

LABNAME:DB 0

To put data into these locations just follow these instructions

LD HL,LABNAME

This will find the address of th DB location LD (HL).123 Store your data at the label address.

We can now use these instructions to complete the final program.

```
10 CODE
8007 RST 10
8008 DB #4C
8009 RST 10
800A DB #83.16.3.1
800E LD HL.N1
8011 LD (HL).15
8013 LD HL.N2
8016 LD (HL).0
8018 LD HL..N3
801B LD (HL).15
801D LD HL.N4
8020 LD (HL).191
8022 CALL LINE
8025 LD HL.N2
8028 LD (HL).191
802A LD HL.N3
802D LD (HL).250
802F CALL LINE
8032 LD HL.N1
8035 LD (HL).250
8037 LD HL.N4
803A LD (HL).0
803C CALL LINE
803F LD HL.N2
8042 LD (HL).0
8044 LD HL.N3
8047 LD (HL).15
8049 CALL LINE
304C RET 10
```

```
804D DB: #83,16,3,15
8051 RST 10
8052 DB #85,2,45,30,45,161
8058 RST 10
8059 DB #85,2,45,161,220,161
805F RST 10
8060 DB #85,2,220,161,220,30
8066 RST 10
8067 DB #85,2,220,30,45,30
806D RST 10
806E DB #83,3,10,2
8072 RST 10
8073 DB #8E,"THIS IS A TEST"
8082 RST 10
8083 DB #83,3,13,10
8087 RST 10
8088 DB #88,"MEMOTECH"
8091 RST 10
8092 DB #83,3,12,13
8096 RST 10
8097 DB #8A,"MTX SERIES"
80A2 RST 10
80A3 DB #83,3,9,21
80A7 RST 10
80A8 DB #90,"COMPUTER PRO-
GRAM"
80B9 RET
80BA LINE: RST 10
80BB DB #85,2
80BD DB 0
80BE N2: DB 0
80BF N3: DB 0
80C0 N4: DB 0
80C1 RET
Symbols: N1 80BD
N2 80BE  N3 80BF N1 80C0
LINE 80BA
1000 GOTO 1000
```

The following is a full list of data strings, that when called with a RST 10 instruction, will execute Basic commands.

RST 10 BASIC

DB #83,1,x,y PLOT x,y

DB #85,2,x1,y1,x2,y2 LINE x1,y1,x2,y2

DB #83,3,x,y CSR x,y

DB #82,4,n Paper n

DB #81,5 Erase to end of line

DB #82,6,n INK n

DB #81,7 Sound the bell

DB #81,8 Backspace, cursor left

DB #81,9 Tab right

DB #81,10 Line feed, cursor down

DB #81,11 Cursor up

DB #81,12 Clear screen and clear cursor

DB #81,13 Carriage return, cursor to screen left

DB #83,14,p,x CTLSPR p,x

DB #8B,15,p,n,d1,d2,d3,d4,d5,d6,d7,d8

GENPAT p, n ,d1 ,d2 ,d3 ,d4, d5 ,d6, d7, d8

DB #83,16,p,n COLOUR p,n

DB #84,17,p,n,v ADJSPR p,n,v

DB #89,18,n,p,xp,yp,xs,ys,col SPRITE n, p, xp, yp, xs, ys,col Note: The SPRITE parameter yp is a two byte value

DB #84,19,p,n,d MOVSPR p,n,d

DB #83,20,dir,dis VIEW dir,dis

DB #81,21 Insert key

DB #81,22 Delete key

DB #81,23 Back key

DB #81,25 Tab key

DB #81,26 Home cursor

DB #81,25	Set 25line mode
DB #81,29	Set page mode
DB #81,30	Cursor on
DB #81,31	Cursor off
DB #82,27,83	Standard character font
DB #83,27,66,48	American character font
DB #83,27,66,49	English character font
DB #83,27,66,50	French character font
DB #83,27,66,51	German character font
DB #83,27,66,52	Swedish character font
DB #83,27,66,53	Spanish character font
DB #82,27,73	Insert a blank line at the cursor
DB #82,27,74	Deletes the current cursor line
DB #82,27,75	Duplicates the current line
DB #83,27,88,99	Simulates CONTROL c
DB #84,27,65,p,state	ATTR p,state
DB #89,27,89,n,t,x,y,w,h,s	CRVS n,t,x,y,w,h,s
DB #83,27,90,n	VS n
DB #85,27,67,x,y,b	GR$ x,y,b (result in system variable WKAREA (#FE1A))

Many thanks to John Hodgson for this excellent article, which was spread over two issues due to its size. Alan.

From us all at

The Software Source

we would like
to wish all our
members
a very merry
Christmas
and a prosperous
New Year

Here's to a new decade!

Phoenix
Memotech Manuals

One of the most desirable extras to have for the Memotech is a decent manual. Memotech Limited got a lot of complaints from users about abguity in the original manual, and for ridiculous errors in it.

As a result, Memotech Ltd commissioned Phoenix Publishing Associates to re-write the entire standard manual. But what with things being the way they are, they were never sold in very many numbers due to the fact that GENPAT went down before it really got off the ground.

However, The Software Source has managed to get a large supply of these manuals and are able to supply them to its members for the knock-down price of £4.00.

The manual is 252 pages in length, and the normal A4 size. It bares a considerable resemblance to the old manual, even to the extent that it has a glossy black cover. Do not be decelved though. Inside lurks the answers to many of the questions that you might have been left asking otherwise.

It deals much better with Noddy, and actually has more than a passing reference to the built in assembler.

As if all this wasn't enough there's the index we've always wanted along with the sort of friendly advice we've always needed.

This is a totally exclusive offer and although we have a large number for sale of these manuals we expect you'll be very keen to get hold of a copy from us, so, ***GET IN QUICK!***

Send cheques/postal orders/ international money orders for £4.00 to: Memotech Manual Offer, The Software Source, 12 Roebank Road, Beith, Ayrshire, KA15 2DX.

Price includes postage and packing. Please allow seven days (UK) for delivery.

Exclusive Offer!

Sentinel

JC Hodgson

Sentinel consists of a pair of utility programs, CSAVE and CLOAD, that allow you to save any CP/M file to tape and reload it back into a CP/M file on any size disc format. The only restriction is that there must be enough RAM available to load the complete file that is to be saved or loaded. These programs were first written in 1984. Of the versions under review, CSAVE was written by T Brewer in 1984 and modified by Andy Key in 1987. CLOAD was re-written by Andy Key in 1987.

The programs are easy to use and have two commands:

CSAVE filename.ext or CSAVE filename.ext N

and CLOAD filename.ext or CLOAD filename.ext N

There is no tape verify option, but the tape copies produces seem to be reliable as the MTX tape system copies. As far as I can tell, the code is saved in the same format as the MTX tape SAVE but it has a different file header. CLOAD checks for a special marker in the file header and will only load files that were saved with CSAVE. You cannot search for a filename on the tape so must position the tape at the point just before the start of the program you wish to load.

The instructions, on two and a half sides of A4 paper, are well presented, but on examination we disappointing. One page is used how to tell you how to back up your Sentinel disc, but only thirteen lines on how to use the programs. Some of the information is, to say the least, misleading. The instructions state that before you save a file to tape it must be copied onto your Sentinel disc, and implied that programs loaded from tape have to be loaded onto the Sentinel disc. This is not so. Files can be saved to or loaded from any disc. No mention was made that a file can be loaded with a name different from the name it was saved with. Also, no mention was made ode the second parameter that will suppress the tape save/load messages.

Summary

Sentinel is a very good product and well worth the inclusion in any CP/M library. However, the instructions did not come up to the same standard.

Back Issues

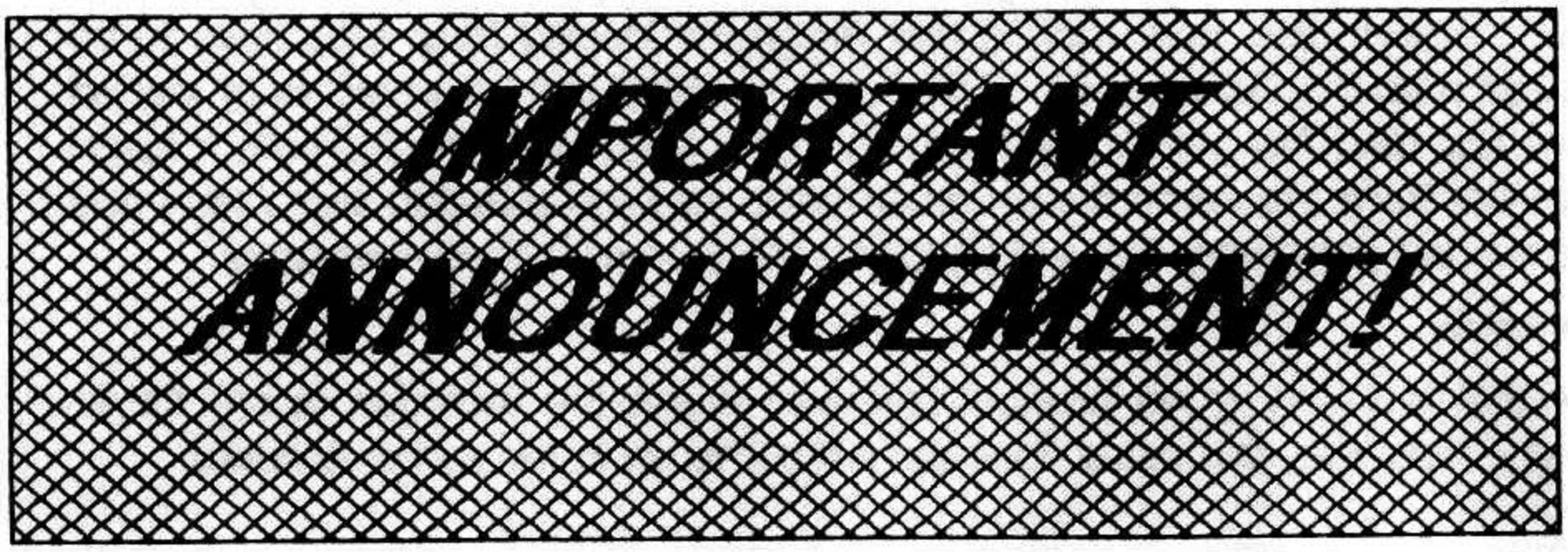
Many members have been asking over the past few months about the possibility of making available the first issue of the journal since the majority of members missed the first one.

In a totally non-characteristic move, we managed to print precisely the right number of the first issues, so much so that we don't at present have any at all. However, we are here to listen to what you want. So, if you would like a copy of the first issue of The Software Source journal, send us a note of your membership number, name and address along with a cheque or postal order for £2, including P&P.

If enough of you send in for a journal to make a re-run of the journal economic, then before long you'll get it. However, if there isn't an economic number, I'm afraid we'll have to scrub the idea until there is and your cheques will be returned.

We do have stocks, however, of the second and third issues, again, each of which are available for £2.

If you would like to avail yourself of this service, please send all correspondance regarding it to: The Software Source, 12 Roebank Road, Beith, Ayrshire, KA15 2DX. Cheques/Postal orders payable to The Software Source.



Ed Returns...

Dear Ed,

Does anyone have details of the 6485 CRT Chip used in the 80 column CP/M card as it seems to be impossible to find a technical manual on it. Also with reference to the MSX machines, can anyone supply more details about its screen chip?

Mike Frymyer - Tasmania

Ed -> I have a number of articles about the 6845 which I will send to anyone interested. This versatile chip is used in a number of other computers and is very under-used on the MTX. As for the controller in the MSX please pass any details to me and I will make them generally available. We do have the tech specs of the VDP chip in the MTX if it is wanted.

Dear Ed,

Is it possible to use the Star LC-10 on the MTX without modifications. It would be used for standard listings etc and graphic screen dumps. If not are there any low cost printers that could be used with any changes?

C Cochram

Ed-> The basic rule (what a bad pun - Alan) for printers is: If it is Centronics (parallel) it should work on a standard MTX via the printer port on the back. If it works and is capable of graphics then dumps are possible. However, in order for graphics programs like Memosketch to print correctly the printer needs to be Epson compatible, as most dump routines are designed round this format.

Alan-> Have you actually tried the LC-10 with the MTX? If so, I am extremely surprised that it isn't working since I have an LC-10 and it works perfectly (this journal was printed with it). If you can let us know what isn't working we might be able to track the problem down. What I would say is that ensure that you are not receiving interference from something close by, for example a TV or telephone. Assuming you have accounted for this, the next possibility is that the MTX itself is interfering with the parallel printer signal coming out the MTX. Try shoving a plastic card between the ribbon cable

and MTX. Quite often when the MTX is warm the radiation of heat coming off the case is enough to scramble the information on lower-quality ribbon cables. The next possibility is of course that the printer is not working. Try it out on someone else's machine and try the two self-test options on the printer (hold down PAPER FEED and switch on or ON-LINE and switch on). If these work, the printer is working. One thing you must be quite sure of is that the printer is set to emulate an Epson LX-800. To check this, take the plastic lid off the top and look at the first set of DIP switches. If the one marked 1-6 is at the OFF position (i.e. towards you), the printer is set as an IBM Proprinter and you should switch it back to ON (Epson).

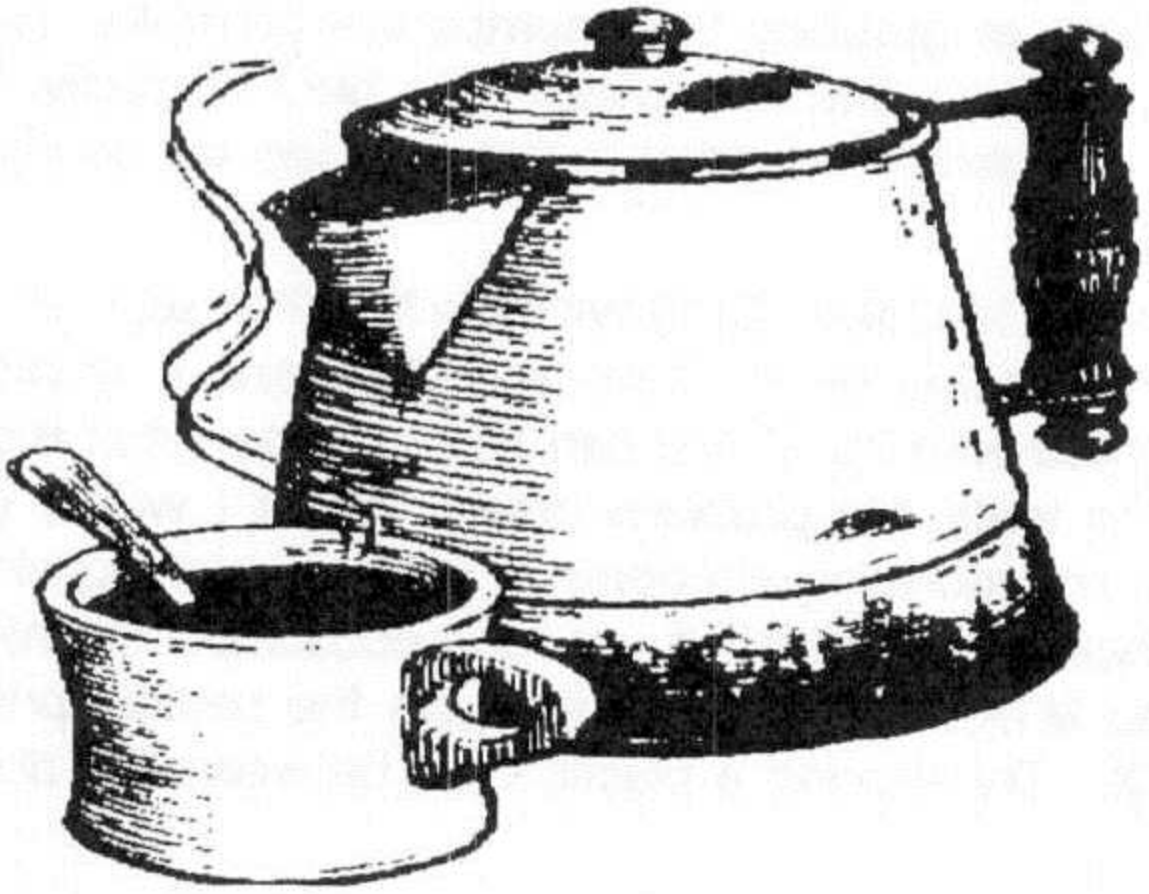
Next Issue

In keeping with our perogative of attending to our member's needs we are going to run our census a little earlier than intended. The census will be popped in the envelope along with the journal, so look out for it.

Your response to the census will be vital since we need to know what our members want to be sure of providing the sort of service which you want.

Along with the census next time will be The Software Source's constitution which some of you may have and some may not. We are required by law to supply you with a copy of it and hence are doing so.

The Soft-ware Source is THE users group all other



com-puters wished they had sup-porting them!

Classified Advertisements

This is a service which we hope will appeal to all members: The ability to advertise anything and everything (provided it's legal!) **FREE OF CHARGE!!** Which can't be bad by any means. As if that wasn't enough, you can keep your advertisement in as long as required, just tell us when you want it removed. Simply either cut out or photocopy this form with all the relevant details and post it off to Alan. Please note that the wording of your advertisement should include your name and address etc. All advertisements are accepted in good faith and selling pirated software is illegal. Anyone found doing so will have their membership cancelled.

++

The Software Source Classified Advertisement Form

Name:_____ Membership Number:_____

Address:_____

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Please insert my advertisement for (delete as appropriate)

1 2 3 4 5 6 more than 6 issues.

Here is the wording of my advert:

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The Final Word for Atari ST. COnverted IBM version. This is a serious program for professional writers. List price £150.00. Offers around £45.00 to Paul Trainer, 1 Montagu Gardens, Oakwood, Leeds, LS8 2RN. Tel: 0532 498985.

Brother HR-10 daisywheel printer. Includes two daisywheels, ribbon, manual, tractor feed unit (worth £55). Fantastic quality print, fast and reliable. Centronics interface, everything supplied. Bargain £99. Alan Hamilton,12 Roebank Road, Beith, Ayrshire, KA15 2DX.

Memotech 64K Memory Expansion. Internal card for MTX500 £30 including P&P.

Extended length MTX case top. Will enclose motherboard, 80 column card and memory extension. Requires extra length base plate. £2 including P&P.

Andy Fox, 56 Rochester Street, Bradford, BD3 8ED.

Reviews of commercial and public domain software wanted. Send to the editor.

VDP Programmer's Manual by Texas Instruments £5. **FDX (5.25") Memosketch** graphics program £3. **Complete MOC Magazines** (45 issues) £23. **SDX Operators Manual**, Memotech 1st technical report (very rare) - includes sound, graphics, joystick, interrupts, cassette i/o, RST28, PCW MTX programs, system variables. £10. Alan Wilson, 24 Blenheim Place, Larbert, Stirlingshire, FK5 4PP.

Is anyone interested in a meeting near Nottingham? Exhibition planned in December with Einstein Users (similar machine to MTX). More details from Midlands Einstein Users Group, (0602) 215505 (Scott Huxley).

Quantity of keyboard overlays for MTX keyboard. Quality printed to fit over the funtion keys. Clearance price of £2 for 10. Send cheques/po's to Keyboard Overlay Offer, The Software Source, 12 Roebank Road, Beith, Ayrshire, KA15 2DX. Price is inclusive of VAT, P&P

Hardware Shop

The Software Source hardware shop sells all you need for the computing DIY enthusiast looking to improve their machine:

32K Memory expansion Boards (with replacement PAL chip) - £19.99

64K Memory expansion Boards (with replacement PAL chip) - £29.99

RS232 boards (both sockets provided) - £19.99

Pascal ROM (including manual and expansion board) - £19.99

Newword ROM (Including manual and expansion board) - £19.99

We are also able to provide a unique system for all existing non-CP/M users which means that they will no longer have to shell out vast sums to run the power of CP/M systems. We have 56 column CP/M chips which replace your existing non-CP/M ROM to give you CP/M in 56 columns and **TV OUTPUT** - **NO MONITOR IS REQUIRED!** Run Newword, the CP/M version on your telly as a colour monitor!!! Please phone for a quote for your system!

JUST IN!!!!

MTX 512 computer -£50.00

Upgrade from 512/500 to Series 2 512 with 256K - £60.00

Disc controller upgrades (not including drive) - £20.00

SDX BASIC non-CP/M upgrade to 56 column CP/M system - £20.00

(500K disc systems only available)

All cheques/postal orders/international money orders payable to The Software Source. Send all orders to: The Software Source, 12 Roebank Road, Beith, Ayrshire, KA15 2DX. Allow two weeks for delivery. Prices full inclusive of VAT, Postage and packing.

Mystakes

The rock keeps rolling, gathering no moss, but the pace seems to have overtaken my fingers, and once again we MUST publish an addendum to the last issue. (or in other words - what the Butler didn't see)

Firstly, the editor is Andy Fox and not Alan, just so that the right person gets the flak. Secondly, the article entitled, "My Memotech Can be fun" should also have had "(and useful too)" and was written by Gordon Carruthers. Another unacknowledged author is Arthur Hills whose article, "Hints for the MTX" appeared in the last issue.

Odd control characters slipped into the text: First was in "Merge Printing with Newword" page 15 line 13 should be split such that the second .av starts on the next line. The second was in "Machine Code Made Easy", written by John Hodgson, page 38. The RST 10 and DB instructions should have been on two lines, in the form:

```
RST 10
DB #8C,"PRINT STRING"
```

Again on page 38, the broken down listing was not fully published as intended, but hopefully the idea was conveyed. Should you want the article re-run at a later date in order to get the whole thing right, then let Andy know. One thing which we are in fact working on is a reprint service of articles which we have published, more in due course about that though.

Finally, PLEASE note that Andy's address should be used for all general correspondance, address Alan only if you want him.

The "motto" of The Source is to take a Pride in Service and we don't feel that the last issue was up to the standard we have set, so apologies all round. Hopefully this journal takes up the standard again, and apologies again to those authors who were not credited with their work.

Restoring 'lost' Files

Anyone who has used Newword and had their MTX crash on them may be interested to discover that it is possible to regain the majority, if not all, of the file being edited so work isn't wasted.

All that is needed is a dummy file the size of the text to be recovered and a disc / memory editor such as POWER (CPM024 in the Public Domain Library), reboot from the POWER disc and enter the utility.

Examine memory from around 9500h (DUMPX 9500 A000) until the start of the text is found. Continue from here to establish the end address of the text left in memory. Record both addresses then divide the length of text by 80h. This will determine the number of records to be written out. i.e. Text start 5900h end 5A00h would require 2 records (5A00 - 5900 = 100h / 80h = approximately 2).

In order to save this text the dummy file must be accessed directly, so the GROUPS (areas of disc) it covers must be found. (GROUP filename).

The list of numbers after the = are the Group numbers. The text can then be replaced on the disc via a direct write to the tracks on the disc (WRITEGR 1st-group-number start-address number-of-records). The data is now preserved, which can be verified by TYPEing the file (TYPE filename). If stray data is present on the new file then it can be removed using Newword.

I hope you find this useful, and should you want any further details please contact me.

Andy Fox

Comment

It may be looked upon as strange that in a computer which is now five years old, that so much movement should be taking place when most other machines are lying down and gracefully, if not quietly, dying.

What then is happening to the MTX? Well, as you will all be aware, The Software Source appeared on the scene due to the feeling that MOC under the total control of Phil Eyres wasn't going anywhere. That was fine, and for a while things were looking rosy since the Memotech user now had two sources of backup for their favourite machine.

However, again as you will all know, Phil threw in the towel and packed MOC in which leaves The Software Source, the new users group, holding the baby. Quite a turnaround really, but not a very nice one. Few eight bit machines can claim to have had three users groups, two of which folded. Many of the others, for example, the Dragon 32/64 have just the one and seem to manage quite nicely.

I have to say that when I first heard the news about MOC going down, I couldn't help think that I had played some part in this since, perhaps, there isn't enough room in the world of the MTX for two users groups. There is always the flip side of the coin which shows that Phil had been doing it for five years and the strain was beginning to tell - The Software Source was the best way to keep the MTX alive and give him a rest.

Personally, I hope that is the case. Despite all the things which were said and done, the last thing any of the people involved in the running of The Software Source would want was to see MOC crumble over the head of some competition.

Anyway, enough looking back. Where do we go from here? Well, the MTX is low. It is fading, or rather was. The Software Source has managed, somewhat strangely to get people interested in the MTX again, most particularly with the possibility, nay, probability, that emulators will be arriving to take both Einstein and MSX software. There is also the probability that we will be able to sell new VDP chips to give the same graphics resolution as an Atari ST running in hi-res, except that you'll also have 256 colours, something

which the ST won't give you when in hi-res.

However, that's all very well, but I have some news for you. I think we are looking now at the prospect that any real development in what the MTX can do, and, lets face it - it can do a lot more than many others, will be in some sort of common interface which will allow portability much more than the standard MTX system. This leads us onto CP/M. Thankfully, we have the inexpensive option to run CP/M on the MTX, something which is hardly the case with the BBC.

Again, as you are probably already aware, there is an enormous pile of software available for CP/M and, to be perfectly frank, if the MTX is likely to survive for another five years, it looks as if it is going to be with a combination of CP/M and some good emulators.

Do not however think that this problem afflicts the MTX only. No. The Einsteins and MSX systems are in a similar position, their saving grace is CP/M because there are people writing programs for CP/M even today.

You may well also think that CP/M is dying. Far from it! Alan Sugar of Amstrad saw to that with the PCW and CPC machines to which there is, of course, an enormous following.

Alan Hamilton

MTX Fontastic

The Software Source has been given the exclusive rights to sell this fantastic bit of software by one of the MTX's foremost programmers. With a range of icons and different fonts, you can spruce up any printing you need to do with this brilliant program which now also incorporates banner printing. It costs only £4.50 on cassette or disc and is available from the usual address.

A Five Bit Mouse

JS Raybould

One day after I had an attack of PERIPHERAL NONEXISTANCE I decided in desperation I had just got to have a mouse. The following debate on the virtues of mice between my wife and son was quickly settled with an explanation of what a mouse was, at which point they promptly lost interest.

The next step was to find one that emulates a joystick, that turned out to be the Commodore (wash my mouth it with soap!) 1351 Mouse and at less than £30 a bargain I thought. I promptly sent off for one and within a week it arrived (Ed-> the post is improving these days!). With great expectations I plugged my new mouse into the joystick port and "WOW" nothing happened.

On investigating this I found that the MTX joystick port has not 5 volt supply on pin 7 of the port, and the port itself is very 'noisy' hich was upsetting the poor mouse. So I built a simple unit to isolate the mouse from the MTX allowing signals to go from the mouse to the joystick port but not allowing the noise from the port to reach the mouse. The unit also gives the 5 volt supply to pin 7 of the mouse socket.

The circuit is bullt using 5 Opto isolators, a 5 volt regulator and a female and male 9 pin DIN D connector. I made a PCB for my own interface but it could be just as easily be made on a piece of Veroboard. As well as working well. the port also doubles up as a 5-bit input port.

The diagram of the unit has been made as easy to follow as possible, and the 5-bit demo program demonstrates how the right joystick port can be used as a five bit port.

Just run the program and press any or all of the arrow keys or home key, and you will get a number between 0 and 31 which is what you will get if you connect any or all of the pins 1, 2, 3, 4 and 6 to pin 8 (ground) of the mouse interface.

If anyone has any problems with it, drop me a line and I will do my best to help.

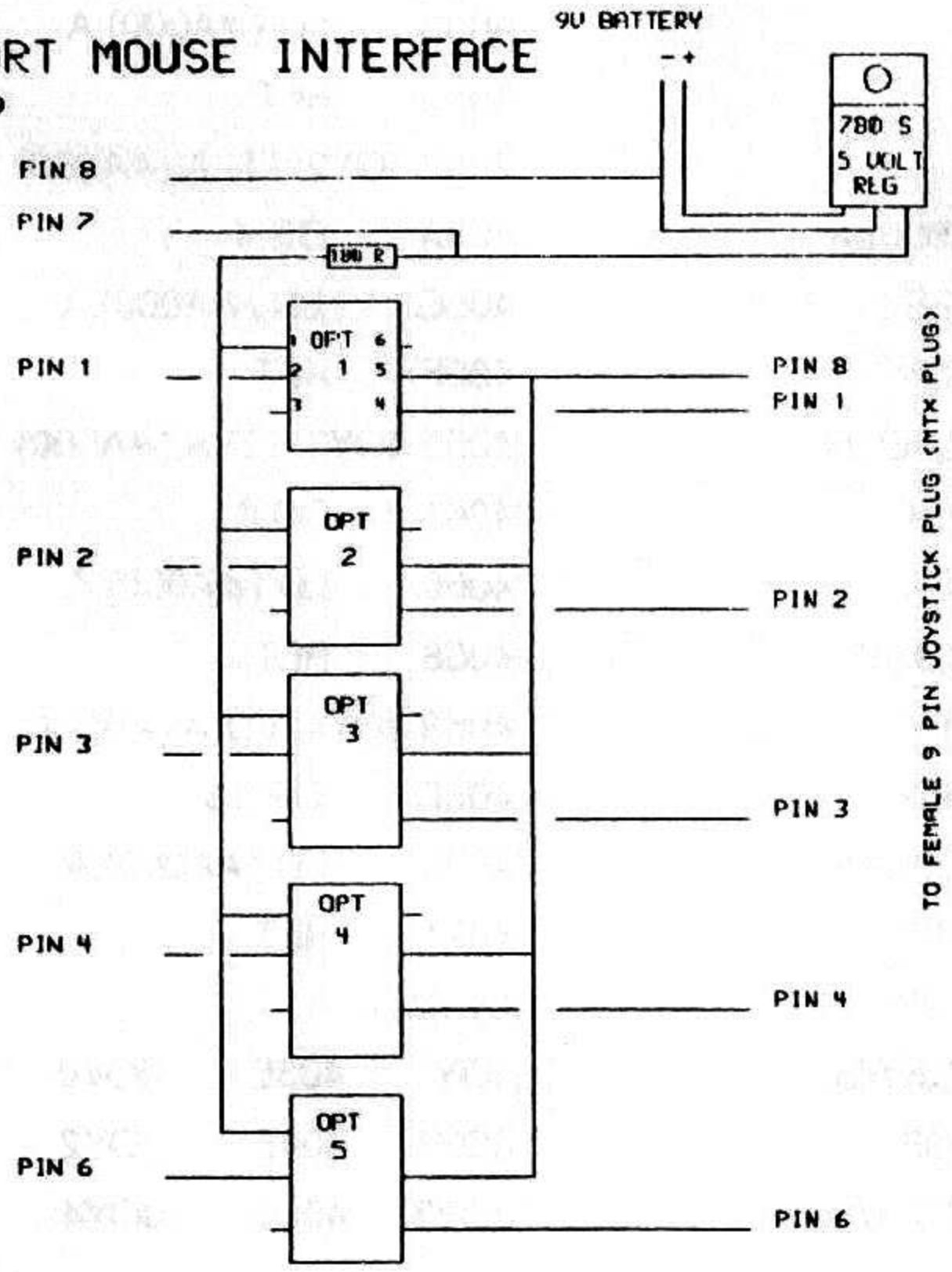
John Raybould, 76 Brushfield Road, Linacre Woods, Chesterfield, S40 4XE.

```
5 GOTO 100
10 CODE
4010    LD A,0
4012    LD (#A000),A
4015    LD A,#FB
4017    CALL JOY
401A    CALL Z,JOYO
401D    LD A,#BF
401F    CALL JOY
4022    CALL Z,JOY
4025    LD A,#F7
4027    CALL JOY
402A    CALL Z,JOY2
402D    LD A,#EF
402F    CALL JOY
4032    CALL Z,JOY3
4035    LD A,#DF
403A    CALL Z,JOY4
403D    RET
403E JOY: OUT (5),A
4040    IN A,(5)
4042    CP #7F
4044    RET
4045 JOY0: LD A,(#A000)
4048    OR 1
404A    LD (#A000),A
404D    RET
404E JOY1: LD A,(#A000)
4051    OR 2
4053    LD (#A000),A
4056    RET
4057 JOY2: LD A,(#A000)
405A    OR 4
405C    LD (#A000),A
405F    RET
4060 JOY3: LD A,(#A000)
4063    OR 8
4065    LD (#A000),A
4068    RET
4069 JOY4: LD A,(#A000)
406C    OR 16
406E    LD (#A000),A
4071    RET
Symbols:
JOY     403E    JOY0    4045
JOY1    404E    JOY2    4057
JOY3    4060    JOY4    4069
11 RETURN
100 GOSUB 10
110 CLS: CSR 5,0:PRINT PEEK (40960)
120 GOTO 100
```

NOTE: MTX500 USERS' CODE WILL START AT 8010.

5 BIT PORT MOUSE INTERFACE

JS RAYBOULD 1989



OPT 1-5 ANY TYPE OF LOW COST OPT-ISOLATORS

NOTE: PINS 3 & 6 ARE NOT USED ON ANY OF THE ISOLATORS.

MTX Directory Network

Dear Alan

I am thinking of setting up a MTX directory network. It is hoped to generate lists of MTX users per region and or per major city/town. This will quickly bring MTX'ers closer together now that support for the machine has almost ceased, Software Source excepted, with GENPAT and MOC closing up shop and with Memotech themselves washing their hands of the 8-bit MTX altogether.

The MTX directory information is necessary to gauge the total number of MTX'ers so that the software and hardware requirements can be planned for. Also if sufficient numbers are available then possibly we may even approach software houses for MSX and Einstein machines to convert across some of their programs on the MTX, little effort being involved.

I am writing to you (The Software Source), Phil Eyres and Memotech to start with and then to advertise to MTX'ers via PCW and MicroMart to alert them of the directory. Any information you can provide would be very useful - prinout of names and addresses or old invoices (thus avoiding the Data Protextion Act - until a directory can be compiled). All names will be kept in strict confidence and each name will be contacted to confirm if they are still a MTX user and to see if they object to their name being added to the list.

Alan Wilson, 24 Blenheim Place, Larbert, Stirlingshire, FK5 4PP

This sounds like a great idea although we are unable to supply the names and addresses of the people which are members of The Software Source due to the declaration on the membership form. However, we have published Alan Wilson's letter to enable those who are interested to get in contact with him direct. Rest assured that the mailist of The Software Source will not be divulged, but I urge all members to get involved in this project since it is long overdue and time to get on with the process of bringing the Memotech up to date.

Alan Hamilton

Blank Media

Cassettes

C12 - 49p
C20 - 59p
C30 - 64p
C50 - 69p
C62 - 73p
C70 - 78p
C80 - 83p
C92 - 87p
C96 - 93p
C100-98p
C120-120p

Discs

Unbranded:

5.25" for 250K drives 40p ea.

5.25" for 500K or 1MB drives 50p ea.

3.5" for 1MB drives 115p ea.

Branded (3M, Verbatim or Dysan) - you choose.

5.25" for 500K or 1MB drives 160p ea

3.5" for 1MB drives 190p ea.

Labels

(Supplied on tractor feed reams)

3.5" x 1.5" 1 across per 1000 £7.10

3.5" x 1.5" 2 across per 1000 £7.90

4.0" x 1.5" 1 across per 1000 £8.60

4.0" x 1.5 2 across per 1000 £9.40

2.75" x 1.5" 3 across per 1000 £6.50

Printer ribbons

(only a selection - we can get any one you want)

Amstrad DMP2000/3000 £3.50 ea

Panasonic KXP1080/1090 £4.50 ea

Star LC10 £4.50 ea

Star NL10 £5.50 ea

Epson FX/RX80/MX £3.50 ea

Citizen 120D/LSP10 £4.50 ea

Mannesman Tally MT80/MT80+ £4.50 ea.

Paper

11" x 9.5" 60 gsm per 2000 £19.95

11" x 9.5" 70 gsm per 2000 £23.45

11" x 9.5" 80 gsm per 2000 £25.25

A4 60 gsm per 2000 £24.30

A4 70 gsm per 2000 £25.95

A4 80 gsm per 2000 £29.55

A4 90 gsm per 1000 £16.75

Misc

5.25" disc cleaning kit £5.95

3.5" disc cleaning kit £5.95

Mini-Vac £7.95

80 Column printer stand £14.95

Alternative Micro Show

After driving down from Bradford, in horrible weather, to the show, the first sight was a glorified cattle hall. Inside was warm and clean and there to greet me was Paul Wood who'd kindly agreed to set up The Software Source stand. We knew Alan would be able to attend due to college work pressures (Alan-> And lack of money!!), but never-the-less, the "A-Team" would carry on without Hannibal, all this and meeting for the first time.

With Paul's computer set up having the demo ROM on it, a space was available for me to have a machine running to do software transfers and demo program for anyone interested. With our stand every growing with the stuff that kept appearing out of boxes we finally settled down to await the onslaught of the masses flocking to join the best micro users group around. Just before the doors were due to open John Hodgson arrived, with him his "grown up" MTX.

His machine was an extended case version that Memotech had produced as a trial and never released. This machine, for those that didn't get the chance to see it is about half as long again as a normal MTX, the extensions being on both sides of the keyboard, presenting a long sleak black work area on each side, and inside it can fit the motherboard, 80 column board, and a number of memory or rom cards.

With having so much equipment on the stand we did tend to suffer a few problems with power dropouts, but thankfully it only seemed to affect the TVs badly, letting them roll of tune regularly.

All about the show were stands for other clubs for various machines and whilst looking around at one point, I found one supporting the Jupiter Ace. This for anyone who didn't see its original launch was similar to the Sinclair ZX81 in shape and price but used FORTH rather than BASIC. Needless to say, it didn't seem to take off very well but hadn't disappeared totally as I thought it might.

Of more interest to the club were stands from the Einstein and Lynx who are both similar to the MTX (Alan-> the former more so than the latter). It is hoped that after chatting to people connected to those machines we may be

able to bring together more knowledge and convert some of the software between systems. It would seem that the major software house that ran the first MTX users group was also doing a lot of work for other machines like the MSX and I was surprised to see one of the MTX title screens from SuperBike and Memosketch on an MSX computer at the show.

Never fear though, your users group is not going to dissolve or become more interested in other machines. All we want to do is tap into the wealth of information, expertise and software that is available in order to offer it on the MTX and make it the Number One computer in the 8 bit home market. Everything is there, but it just needs some expertise and time to bring it out.

Other stands were selling second hand equipment, computers or related, and sometimes the relation was pretty broad. Bargains were there to be had, if you knew what you wanted and took the time to look around.

Come the end were some sore throats and lighter wallets but all in all an enjoyable day. The chatting with other groups continued during the clearing, meaning that The Software Source was amongst the last to

leave.

Personally, I felt it was more of a glorified car boot sale but with the chance to meet other people who have an interest in the computer you use. I'd like to thank all those who turned up and came over to chat to us, and hopefully you all got something out of the visit. Also the software and articles you brought along for us, sorry if it hasn't been returned yet but I am getting through the backlog as quickly as work will permit.

Finally the main people of the day must be thanked for manning the stand for the day and providing us with a backup and info whenever needed. Thanks to Paul Wood, John Hodgson and Brian Houghton who gave up their time, and also to the friend of Paul's who helped out all day but whose name I can't remember.

I'd like to think we can got to further show like this and meet a little more often as there is so much knowledge to be shared and a little conversation in informal surroundings sparks off many different asides.

I hope to see more of you in the future and look forward to hearing more from you as the months go by.

Andy Fox

CP/M Section

The library has grown much faster than any of us expected. We now have over 7 megabytes of CP/M-only software. This is a rather approximate figure as shoving 35 disks in one at a time and typing STATC C: is not all that accurate, but the result is not far from the truth. There is also a 'limbo' section of stuff of doubtful copyright status; files whose missing documents make it difficult to use them; files that do totally incomprehensible things; and programs requiring special hardware - we have a good chess program, and an interesting small business graphics package, but both are written for a Kaypro with Enhanced Graphics Adaptor.

All of this stuff is not, of course, of equal importance. Popular and useful utilities tend to recur, and are often mixed up with material of much more doubtful value. If something is worth doing, then it has been done lots of times - we must have at least eight or nine programs to generate improved directory listings.

I shall spend some time gradually building up a dBase II file of the most important stuff, so that we can publish report forms generated by it, rather like the one Andy published for commercial software in the last issue.

At this point most PD libraries start thinking about putting out compilation discs. These are selected utilities - tested as far as possible - with their documentation (if available) and with a brief introduction. The utilities on any one disc usually have a common theme. Several of our discs, for example, Forth, Prolog and Small-C are essentially compilation discs. It is usual to make a small charge (typically about £5) for such discs because they are laborious to put together, and because the user does not have to waste time finding out what he's got.

I would be interested to get some feedback from you on this subject. Do you want compilation discs? If you do, then what would you like compiled? Some suggestions are:

TEXT PROCESSING

FILE HANDLING

SYSTEM UTILITIES

BUSINESS UTILITIES (e.g. mailing lists, labels)

SCIENTIFIC APPLICATIONS (e.g. dBase, MBASIC, EBASIC)

Since it may take days or even weeks of research and testing to put one of these discs together, it would be nice to know in advance that Someone Out There wants it!

Since we started out I have been using this page to stimulate some interest in some of the unique CP/M utilities. The last column produced a package from John Hodgson containing the original ZCPR (thank you, John). Both John and I have doubts about the mating of this monstrously complex program with the equally horrific (and wildly atypical) MTX CBIOS. I can even imagine a competition - "given a CPMnn.COM image, WHERE IS THE CCP?" - solutions require Macro-80 and would be greatly facilitated by possession of SYSGEN (if this will work with the rather exotic MTX BIOS, which by Sod's Law I rather doubt).

HELP is a very clever program which most CP/M users will probably have heard of, used, and never thought about. It allows you to set up indexed text files in which the first few lines (typed in the normal way) generate a menu calling a corresponding number of blocks each beginning with a colon. Display is paged and you can move backwards or forwards through the block. The really clever bit is that indexes can be nested with other indexes, forming a complete tree structure. A book on a floppy disc!

FIND (--- FILE [expression]) will find a string in a textfile. Big deal? Well, Yes! Both parameters can accept wildcards and [expression] can include only wildcards but optional alternatives. Typing FIND with no paramters prints out the full instructions. FIND reports the name of each file and the line containing a match to [expression]. A complete search of 5 years' personal correspondance for a letter containing a specific name (with two alternative in two different languages) took fifteen minutes to reveal that none of the 115 files matched (yes, that's right, I'd scrubbed it, but at least it was quicker than loading each one into Newword and discarding it!).

Dr BL Houghton, The Software Source PD Software Library, 1 saxon Drive, Rowley Regis, Warley, West Midlands, B65 9RD.

Tape Interfaces

I have had several letters about tape interfaces and the problems associated with them. I feel that reader may find it helpful to understand the origin and nature of these frustrating devices in order to make best use of them.

Formatted tape systems, best known in the micro world as tape streamers and the famous (or infamous) microdrive, have been around since the 1960's, but the early microcomputers were too primitive to support the operating systems needed to run them. In addition the hardware involved was (and remains) rather expensive.

By the time the need for an electronic means of saving and restoring programs had been felt, the domestic cassette recorder seemed to offer the most attractive storage device, particularly as monitor programs stored on EPROM which would carry out the transfer of the contents of RAM to and from tape were fairly easy to develop.

A number of early improvements were made - for example, the introduction of file name headers and data length pointers. (The very early systems had merely dumped the entire block of RAM to tape with no filename). Actual communication protocols remained variable. The general idea is to send a continuous high frequency tone - the background whistle heard on many programs - and to modulate this with pulses encoding binary 0s & 1s in a variety of ways. Whereas mainframe / minicomputer decks and tape streamers use 8-track heads to record each byte acors a 0.5" or 0.25" tape (the microdrive uses a single track head and doesn't concern us here), unformatted drives have to record each bit serially, in an agreed order and with start and stop signals to indicate the end of each byte. The HF carrier not only suppresses random magnetic fluctuations on the tape, but gives some indication of an end-of-file condition.

A conference in 1974, which might have standardised this string-and-sealing-wax system was abandoned after receiving news of the first issue of CP/M, making it obvious that the tape systems of this type had no long-term viability. They have undergone little development since. The very considerable speed increases from the 100 baud of the very early systems to the 2400 baud used by some of the last ones (including the MTX) has more

to do with improved tape technology than with changes in the basic system.

Does this matter?

None of this has been intended as padding, nor to waste time, but to illustrate the nature of the problem.

1) The audio tape recorder was never made to be used in this way. Firstly, it is designed to handle normal audio signals and not fast digital code. Secondly, it is meant to output to the human brain and not to another electronic system. The brain does very sophisticated low-level processing of its input data, and your tape deck does not need to remove transient noise from its output, as odd noises are simply not heard unless they are too intrusive or have a regular rhythm. Your computer, however, tries to read them as valid data, with the results that we all know and love.

2) The whole SAVE/LOAD system is quite primitive by comparison with disc or formatted tape systems. Apart from an ability to start and stop the tape at the beginning and end of the operation, there is absolutely no feedback between computer and tape. The tape moves at its own speed and all the signals are assumed both to be relevant and to arrive at the right time. If anything goes wrong with this assumption, the error cannot be detected, and garbage will result.

How does this help me?

It is a pity that there is no room to discuss the many weird and wonderful solutions to loading problems which filled the pages of magazines in the days when almost all UK home computer users were forced to use tape interfaces. They fell into a group of 'solutions' which almost certainly had no effect whatsoever, and another group (e.g. FM tape decks and rewrites of the SAVE/LOAD routine) which probably worked, but usually at the cost of producing tapes incompatible with any system not similarly modified.The most useful compromise is probably to take the following precautions:

1) The most quoted problem seems to be that of a latch-up between programs. This is because every time a signal is detected when a header is expected the LOAD routine writes it to the screen. If the garbage contains illegal control characters, then the VDP will latch up. So, leave plenty of space between programs, record and index of TPI numbers to the tape and position the tape appropriately before loading anything. If it does latch up, type <HOME><EOL><RET> until you get the "Ready" prompt, then retype the LOAD command line.

2) Always use the best quality audio tape (there is no such thing as "computer tape" for unformatted interfaces), and don't expect to be able to re-use it as many times as in audio applications.

3) Make sure your system is properly earthed: check your household earth, as some are decorative rather than functional.

4) A tape recorder is a small box filled with dust traps which becomes electrostatically charged in use. **USE A VACUUM CLEANER REGULARLY.**

5) The Capstan-and-pinch-wheel mechanism is not the world's most advanced transport mechanism; it gets dirty and get magnetised. Buy a head-cleaning kit and an electronic head demagnetiser from the likes of Tandy, and use them at least once every two weeks.

Dr BL Houghton

Hardware For Sale

Memotech MTX512 Series 2 (256K),

Hantarex Monochrome Monitor,

3.5" Disc Drive & Silicon Disc,

80 Column card & RS232's connected

Memotech DMX80 Dot Matrix Printer

All manuals and software supplied,

also "Programming the Z80" by Rodnay Zaks

The lot for *£250* inc P&P. Not willing to split.

Contact: Mr Wall, Lilac Cottage, Low Road, North Tuddenham, Dereham, Norfolk. NR20 3AB. Telephone (Swanton-Morley) 8116.

Alan's Page

Having taken a break away from the hustle and bustle of the journal production, I found myself launched back into it in as a result of the breakdown of computer equipment with our new DTP'er. This gave me a chance to get my grubby hands in on the journal again and to have my say with my own page. At this present moment, Andy knows just about as much about this page as you do, so we have a case where the editor doesn;t quite know what is in the journal! Never mind, as long as we have gotten a hold of our standard again, and are leading the way with computer users group journals.

Somehow or other I have managed to engineer the creation of a heavyweight. GENPAT were renown for filling their pages full of listings, with very little meat in between. Here, however, I appear to have done the complete reverse: lots of text and very few listings. Personally, I feel we should "lighten" it up slightly, since the odd listing always makes you switch the computer on, rather than just reading about it. You will, of course, get your chance to air your views next time because we'll be running the census. Having administrated the census for MOC, one of the complaints I always got was that MOC was far too technical. However, the reverse complaint has been levelled at The Software Source - more technical info please. OK, will someone willing to do a techincal section please step forward? I don't have time to do it, neither does Andy. Also, we need program listings and articles. I'm not just saying this as a matter of course: **WE REALLY DO!!!** We are nearly cleaned out article-wise for the next issue so we need something from you over Christmas. If it doesn't appear then the journal will have to become quarterly.

Anyway, enough of my ranting and raving. It occurs to me that the title "Alan's Page" is a bit mundane so I'm looking for (polite) titles for it, which best befits the sort of zany (?) comment, information, tips, gossip and so on that it likely to appear in it from now on. If you are a reader of Computer Shopper, you'll know all about Zygote...suggestions for names please!!

Alan Hamilton.

ws Desk...News Desk...News

After a poor response to his excellent "MTX Fontastic" program, Paul Trainer has asked The Software Source to take over the marketing of it. Yet another MTX writer gives up his enterprise.

The Scottish Alternative Micro Show, which was held the week after the national Alternative Micro Show was reported to be "poor". The Software Source were not in attendance at this one due to a lack of prior warning on the part of the organisers.

We now believe to have most of the commercial software which was ever released for the MTX, and some which was never in the past. We are trying to get in touch with Level 9 software who own the rights to the best adverntures which were ever released on the MTX to see if we can get a licence to sell them.

The MTX Speech Synthesiser is here!

No expensive hardware modifications necessary - just load the program! Speech can be used in ANY program which you may write.

An ABSOLUTE BARGAIN at £4.50 from The Software Source at the usual address. Full instructions included!!

Glossary

CRT - Cathode Ray Tube - What your telly or monitor has got that you stare at for hours.

Dump - A term used to refer to the transferral of what appears on the screen to an image on paper. Usually referred to as "Screen Dump".

Font - A redesigned character set which might be used for a specific purpose such as an alternative language like Chinese or for designing graphics.

Label - Used in assembler programming to allow the programmer the reference particular sections of his program easily. They also allow a program to be moved about in memory easily without the need to re-located all the different sections of the program by hand. Also the thing containing your name and address which came on the front of the envelope which the journal arrived in.

Machine Code - A lower form of computer program which is very rarely used by programmers. The computer turns all programs written on it into machine code so that it can execute the commands.

Mainframe - A large and very powerful computer which can perform many millions of calculations every second. Many large companies and banks have mainframe computers to which hundreds and sometimes thousands of users are connected. One of the largest is a Cray 3, used by the Atomic Energy Authority. The Met Office use a Cray 2 (we think) to simulate weather patterns,

Peripheral - Something which is attached to the computer to allow input or output to be made. The most common peripherals are: TV, printer, joystick, disc drive, cassette deck.

Resolution - When referring to computers, normally states the number of dots which the computer can control on the screen (pixels). The MTX's resolution is 256x192, some computers are capable of 1024x1024!!

Contacts

General

For general information, membership renewal forms, journal contents, commercial software, 3.5" to 5.25" to 3.5" conversions: **The Software Source, 56 Rochester Street, Bradford, BD3 8ED. (0274) 668765.**

PD Software Library

For all public domain software orders, latest updates and general enquiries about the ever growing PD library: **The Software Source PD Software Library, 1 Saxon Drive, Rowley Regis, Warley, West Midlands, B65 9RD.**

Hardware Problems / Repairs

For all hardware repairs / reconfigurations, communications difficulties or other hardware problems: **Mr Paul Wood, 12 Bishops Avenue, Worcester, Worcs, WR3 8XA. (0905) 24260.**

Miscellaneous

For marketing, advertising, constitution, accounts and other details not specified under anyone else's name, contact: **Alan Hamilton, The Software Source, 12 Roebank Road, Beith, Ayrshire, KA15 2DX.**

Programming Problems

(mail only - no phone calls please)

BASIC & Pascal - Alan Hamilton, 12 Roebank Road, Beith, Ayrshire, KA15 2DX.

Assembler - Paul Wood, at above address.

All others - Andy Fox, 56 Rochester Street, Bradford, BS3 8ED

ALWAYS QUOTE YOUR MEMBERSHIP NUMBER IN ALL CORRESPONDANCE WITH US. WITHOUT IT WE WILL NOT BE ABLE TO HELP YOU.