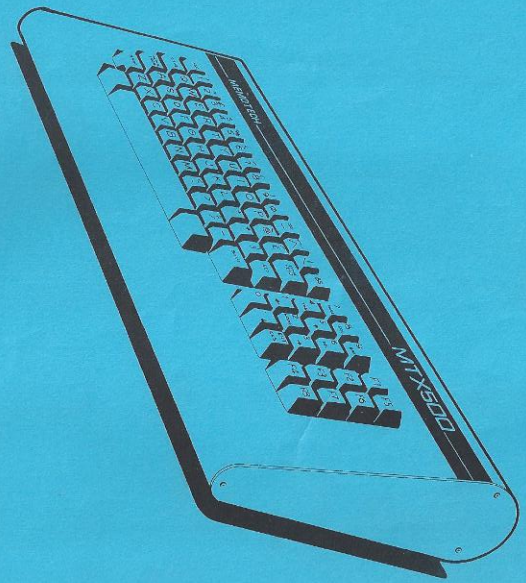
# memopad

Memotech Computer User Club Magazine




MEMOTECH SERIES
MTX

CONTENTS MARCH 1985



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# EDITORIAL

Memotech are at the last hurdle ! For the past few months Memotech have been working day and night to secure a massive order from the USSR. At the exhibition in Moscow, a few weeks back, the Company scored a big triumph by having a computer to show the Russians that not only had a Russian keyboard, but also had the ROM re-written to display and follow commands given in Russian. The trade papers have been singing the Company's praises ever since! The final fence is on the 27th of this month when the Russians decide which computer they will buy for the schools. If this order is secured by Memotech it will have been a joint effort by the Company and the Spectrum Group, who have devoted all their time to pushing the MTX/FDX to the head of the queue. I think this dispels any myths regarding the sour grapes that exist between Spectrum and Memotech. We are keeping everything crossed, and wish the Company every success 'back in the USSR'.

The first thing you should notice when you open the magazine is that we have tried to improve the quality once again. We get a lot of criticism from various members regarding the magazine, and sometimes we wonder why we are doing this at all ! As you are aware, the club started from scratch and we have had to learn the hard way. We have made a great effort to improve the magazine with each edition - but we are still learning, and we still do not have enough time to all the things we would like to do. The magazine does impress some people we have been approached to organise a User Group for another company who thought that Genpat was excellent. However, this is out of the question at the present, as we still have a great deal to do for the Memotech. It would be nice though, if those members who took the trouble to write in with a complaint, occasionally sent in word of thanks when they were pleased with something we have done right !

Let me remind you of the MANCHESTER COMPUTER TRAINING COLLEGE'S BOOK ON MACHINE FOR THE MEMOTECH. This book has received very good comments from members who have already taken the plunge. You can obtain the book for 7.95 by sending a cheque to the College at, Norvic House, 1-7 Hilton Street, Manchester M4 1LP.

We shall soon be in a position to offer members a small board that fits snugly inside the MTX and allows the computer to access Teletext transmissions when hooked up to a modem.... the price is very reasonable, and we shall cover this in more detail in the April edition when it is expected that stocks will be ample.

# HI SCORES

HIGH SCORES : HIGH SCORES...Can you do better ??

| | | |
|---|---|---|
| GOLDMINE | 8,995 | Daljinder Singh |
| ASTRO-PAC | 147,180 | Dave Smith |
| BOUNCING BILL | 14,184 | Alan Dobson |
| SNAPPO | 111,670 | Richard Franks |
| KNUCKLES | 999,999+ | Sally Street |
| NEMO | 17,610 | Richard Nash |
| COBRA | 8,924 | Richard Nash |
| MISSION ALPHATRON | 50,020 | Patrick Wyles |
| TAPEWORM | 126,415 | Tammy Brooks(age 12) |
| TOADO | 126,332 | Jon Andrewartha |
| POT HOLE PETE | 75,080 | Alan Hill |
| MAXIMA | 271,000 | Lawrie Wemyss |
| STAR COMMAND | 140,430 | Ian Nichols |
| PHAID | 26,000 | Sally Street |
| OBLOIDS | 46,850 | Sean Haverty |
| KILOPEDE | 61,504 | Jon Andrewartha |
| 3D TACHYON FIGHTER | 6,130 | Sean Haverty |
| CONTINENTAL RAIDERS | 106,240 | Sean Haverty |
| BLOBBO | 93,315 | Elizabeth Mahon |
| QOGO 2 | 20,220 | Trefor Smith |
| MINEFIELD | 823 | Graham Hill |
| WILLI-WORM | 10,000 | Sally Street |
| TURBO | 6,500 | Richard Nash |
| THESSUS & LABRYNTH | 609 | Richard Nash |
| ASTROMILION | 30,830 | Tony Neal |
| AGROVATOR | 179,777 | Richard Franks |
| DOG FIGHT | 315 | Richard Franks |

Can you beat these high scores ? Do you have a high score for a game not mentioned above ?

P.S. Joanna Gill scored over 14000 on Toado and she is only 5 years old. Embarrassing isn't it ?

# GENPAT Opening Times

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| MONDAY ..... | 9-15am | till | 6-00pm | | 7-00pm | till | 10-00pm |
| TUESDAY ..... | 9-15am | till | 6-00pm | | 7-00pm | till | 10-00pm |
| WEDNESDAY ..... | CLOSED | ALL | DAY | | CLOSED | ALL | EVENING |
| THURSDAY ..... | 9-15am | till | 6-00pm | | 7-00pm | till | 10-00pm |
| FRIDAY ..... | 9-15am | till | 6-00pm | | 7-00pm | till | 9-00pm |
| SATURDAY ..... | 9-30am | till | 4-30pm | | CLOSED | ALL | EVENING |

SUNDAY DEFINITELY NO PHONE CALLS ON THIS DAY PLEASE !

## REVIEW

# QOGO 2 MEGGASTAR

Qogo2 is a difficult but outstanding game with many complications. The game is not easy to control because movement is diagonal which means you must use the TAB,DEL,INS & CLS keys instead of the more usual cursor keys. In fact, the game is more or less impossible to play using the keyboard.

As with all Chris Sawyer's games, the graphics are very good, and the intrepid Qogo must avoid many varied and interesting creatures. The way that colour has been utilised gives the impression that the blocks are 3 dimensional - the colour is really exceptional and has to be seen to be believed.

Unlike many other games I have played it has an amazing title and a good demonstration mode which displays all of the 50 screens. The sound effects are good, and there is a catchy, haunting tune that continues throughout the demonstration mode. Also included is a high-score list which must be a plus on any game.

The whole idea of the game is exactly like its predecessor though the screens are different, and much more difficult. As in the earlier version you must bounce Qogo on each block thus changing its colour - sometimes you may be required to jump onto a block more than once to change it to the specified colour in order that you can proceed to the next screen. The game gets progressively harder, and all sorts of dangers are in store for poor old Qogo.

Marks out of Ten
Graphics ..... 8
Colour ..... 8
Sound ..... 7
Control ..... 7
Value ..... 8.5

This is a GREAT game and worth buying

TREFOR SMITH

**ED'S COMMENT: This is a really excellent game,my niggle is with the fact that we now have a QOGO2 which is a more extended version of QOGO and the games players who purchased QOGO must now fork out more money to get the updated version. ★

## REVIEW

# HUNCHY SYNTAXSOFT

Hunchy is a very enjoyable but difficult game, and I could not get beyond the low levels of the program. A nice touch to this game is the fact that it is just as easy to play on the keypad as it is with the joystick.

The graphics are good but use of colour is average. No tune - which may be a a prayer answered to some game players - built into this game though the sound effects are reasonable. It is a game of average speed, and because the game is difficult it has a tendency to become addictive - here come those sleepless nights again.

The game involves crossing walls, jumping over obstacles and missiles, and if it is anything like the arcade version, rescuing Esmeralda. at the end of each wall is a bell which you must ring to move to the next level. Also, there is a swan which loses you a life if it reaches the opposite side of the screen. ★

Marks out of ten.
Graphics ..... 8
Colour ..... 6
Sound ..... 5
Control ..... 8
Value ..... 7

The game is very good for the price charged by the club

TREFOR SMITH

## REVIEW THE MAN from G.R.A.N.N.Y /SYNTAXsoft

The Man from Granny is a text adventure, written in basic, and one of the type where you begin the game not knowing your objective - I personally found this a bit off-putting at the start. In a nutshell, you are an agent whose mission is to find and kill the secret agent from CROW

The game consists of three parts, and once you have moved on to the next part, you cannot go back to a previous part without restarting the game - there is no Save & Load facility.

Part one involves collecting the main objects that you will need at a later stage of the game - you also have to find out where the CROW agent is located. The second part is concerned with your journey to the locale where you hope to find your target. The final part is concerned with your search for, and the elimination of the agent from CROW.

There are many distractions in your quest, and lots of ways to get yourself killed. Many objects are not required on your mission, and it is up to you to decide which ones you will actually require to complete your task.

The game definitely seems to invite you to take the whole thing lightly - there are some amusing but seemingly pointless incidents, and several of the personalities you meet seem intent on trying to kill you. For example, what would you do if a shopkeeper kicked you in the ribs then asked if he could help you ?

I played this after finishing a Level 9 game, so I found it a bit disappointing but I would recommend it as a light-hearted change which shouldn't take you too long to solve. ★

DAVID GLOVER

## REVIEW DATAFILE BRUNNING

Although Datafile contains some minor irritations, the more you use it, the more it grows on you and it does perform its functions to a high degree of satisfaction.

Because the program does not support an opening menu initial operation tends to be a little more complicated than is necessary - I suppose the author assumes that the manual can answer all queries. However, the manual is not always at hand, I mislaid the instructions for a short while and using the program was difficult. So I must express a preference for a menu driven program.

You must open a new record by pressing "N" and this can become very tiresome if you are inputting large amounts of data. On the other hand, the EDIT facility is very easy to use, and the same can be said of the REUSE facility which allows you to amend a record and retain both the original and the amended file in memory.

At first, remembering to use the down arrow to change fields within a record caused me difficulty - pressing RET by mistake takes you out of the record completely.

The LOADing & SAVEing of data is quite fast for a taped based system. To load a file of 33 records with 17 fields took less than 33 seconds. On a data file produced by Ellstree Computers the same file took 5 minutes.

The printer section is menu driven, and in my opinion, contains the major shortcoming of the program - why, oh why, do software houses always assume that all end-users have an Epsom compatable printer ? ( Mine isn't). Another minor niggle is that I would have preferred to be able to omit the field names and some of the fields from the print format so that envelopes could have been addressed with Datafile.

In conclusion, I welcome Brunning's Datafile to the ever growing catalogue of software titles for the MTX. Datafile is very good value for money, and I use the program most working days . and will continue to do so. ★

John Tomlins [A.I.S.M.M]

# HARDWARE REVIEW SPEAKEASY SYNTAXSOFT

I thought at first the information sheets sent with the synthesiser would not be enough to really get the best out of the add-on. However this is not the case With the tape of the Basic program, and an assembly program I had lots of fun getting the system to talk.

The synthesiser comes in a beige coloured box with a black and red top label with the name SPEAKEASY on it. The unit plugs into the left hand side of the computer, and from the left side of the unit is a 3.5mm jack socket for the sound output

To start with I tried feeding the output into my tape recorder but this proved unsatisfactory. The instruction sheets mention a Tandy amplifier with a built in speaker as a useful item to go with the synthesiser - I bought this amplifier from Tandy, and it made all the difference.

The synthesiser uses allophones which are labelled with decimal numbers (0 - 63). Allophonic code numbers are also given ( DD2 ) and these help to select resonants and 'colour' words.

Decimal values 0 - 4 are pauses from 10ms to 200ms and are intended to be used at points of silence - 50ms between words etc. I found these to be inadequate and with most words I used 100ms, and with others 150ms. I also used longer stops between letters than those given.

Some words sound oriental if enough silent sound is not outputted, but hard sounding words such as TIGER are easy to produce whereas the soft words, FROM are difficult but can be created if you try hard enough.

This is a very good item at a reasonable price. Do buy it, and please do as asked in the accompanying leaflet: Write a program including the speech synthesiser and send it to Genpat.

I have only one complaint with this unit and that is, it has not got a continuation socket so that once it is in place you cannot add on another plug-in unit. I waited a long time for the unit, but it was worth it. ★

John W. Smith

The Tandy amplifier is catalogue number 277-10088 200 mw.

## REVIEW MINER DICK XAVIER/ine

My very first thoughts when reading the blurb on this program were, "Oh no! Not another Pot Hole Pete. However, after playing the game, all I can say is do not let this put you off.

The game is excellent. Yes, it does follow in the footsteps of Pot Hole Pete but the colour and sound excel - remember, the sound on P H P was mediocre to say the least. The idea of Miner Dick is exactly that of the latter game except with this game you are only treated to 20 screens. This is enough, I can assure you.

A full review of this program will follow in the next edition, so please do not order as it is not yet available.

If you are thinking of adding this type of game to your collection it may be worth waiting for the release of MINER DICK. ★

K.H.

## MEMBRAIN

1. USER EXTEND Add new commands to the standard MTX. Includes DEC-HEX,DEC-BIN converters,CODE SAVE,LOAD & VERIFY,SCREEN DUMPS and FREE = memory left plus 7 more utilities. ..... 8.00p

2. H&L DUMP Dump graphics and text to your printer at the press of a key - very fast, recommended by GENPAT. ..... 4.50p Excellent value !

3. SPOOLER This utility dumps graphics and Front Panel screens to your printer while you get on with programming etc.
Why hang up your computer while the printer is busy ? This software runs independently of other programs.....Must be seen to be believed. ..... Only 4.00p

4. FKEY DEFINER Define the function key on your MTX .... with this utility they will hold text or commands up to 80 characters in length. Simulates the BBC *KEY command. Comprehensive instructions supplied and it can be used within your own programs. ..... 4.00p

SEND CHEQUES AND P.O.'S TO* MEMBRAIN SOFTWARE, 25 High Road, Redworth, Newton Aycliffe, Co. Durham.

# REVIEW UTILITY ex Tri-Com

After harassing TRI-COM for some while, I eventually received my copy of the utility package complete with an instruction pamphlet. The program loaded first time, and the instructions are clear, and easy to understand.

After loading a prompt appears on the screen and asks for a memory address to locate the code [ fully explained in the pamphlet] and once the start address has be given the more familiar READY prompt re-appears and you are the free to program in the usual way.

The utilities provided are: OPTIONAL LET & GOTO, RENUMBER, DELETE, MERGE, and USER-DEFINABLE KEYS.

Optional LET & GOTO allows you to enter code without typing these keywords but they are displayed in the listing when the line is entered into the Basic program. RENUMBER does just that with <Start at Line X>,<Increment>,<New first line number> all catered for. It cannot cope with a program line that contains RESTORE but this is the only limitation I have encountered. DELETE allows blocks of code, or every nth line between preset parameters to be deleted. MERGE merges two programs provided that their combined length does not exceed 32k.

Whilst the preceding routines are useful, the USER-DEFINABLE keys routine is the one that I have used the most. Each key may be re-defined to hold a string which can be a Basic Keyword, another character, or whatever you require. The re-definition is executed via a menu and is effortless to use. The revised key definitions may be saved, verified and loaded on tape.

I have set up the function keys to hold printer control codes ( F4 = LPRINT CHR$(27);"W";CHR$(1);) so you can see just how easy life is made by this sort of utility.

All in all, this is just what a utility program should be: Easy to use, useful, not too expensive, and no unwanted frills. It's a pity that it is so difficult to get a copy.

CLIVE TAYLOR

ED: We hope to have this package on the Syntaxsoft label before very long, and we will let you know as soon as we have set up the deal with the author.

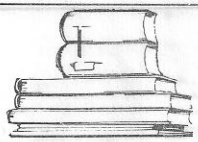
# REVIEW SPOOLER Membrain

SPOOLER is a utility program written for the MTX by Stephen Varley of Membrain Software. It allows the user to emulate mini-computers and spool printer output whilst enabling the user to carry on with more useful work. Front Panel and Graphic screens can be dumped to any Epson type printer just by pressing one of two keys.

Once the program is loaded, it resides at the top end of memory and is completely transparent to the end user. To dump a Panel screen you first enter Panel then type 1. You are now free to carry on computing while the screen is dumped to the printer. The same procedure is required for the Graphic screen but this time you must type 0. A few restrictions are placed on the user, but I have not found these restrictions an inconvenience when using the program.

Extensive documentation is provided within the program with the option to print them if you so desire - a nice touch.

I have used this program for some time and find it a very useful tool, and at such a small price, excellent value or money:



# BOOK PAGE

With very few books available for the Memotech, you may like to spend a few idle hours searching for these three books in your local bookshop. None of them refer to the MTX or RS machines, but all are very useful.

No matter what people say, if you want to explore graphics, graphs or complex plotting, you do need some knowledge of mathematical functions. Many books weigh so heavy that it is positively painful to pick them up. However, I've found two which are both light (in terms of weight and style) and yet of much value to the non-mathematically minded amongst us.

1. FUN MATHEMATICS ON YOUR MICROCOMPUTER by Czes Kosniowski : Cambridge University Press (1983) : #5.95

Highly recommended. Fairly technical, but very well written and very clear. Topics covered include sequences, series, polar co-ordinates, geometry, matrices, games of strategy, differential equations, contours and 3D graphics. Of those listings I've so far tried, I've had little problem in running them on my RS. (If you find the book, look at pages 135-8. This program, for instance, runs almost without amendment.) I've seen this book in W H Smith.

2. EXPLORE MATHS WITH YOUR MICRO by David Johnson : Heinemann : #3.50

Possibly of more use to children or parents who want to look at the type of maths which is being done at school. Topics include multiples, fractions and decimals, squares and square roots, factors and primes. Written with Sinclair machines in mind, the book is more about ideas than long listings.

Lastly - for those of you with the Pascal ROM board. There are a lot of heavy and expensive books on the market, but few that are both affordable, readable and findable. Try this one.

3. MASTERING PASCAL PROGRAMMING by E. Huggins : Macmillan Master Series : #2.95

Excellent value for money. Very readable, well written and clear. The book outlines all the aspects of the language that beginners are likely to need to know about - although those aspects which are specific to Hi-soft's MTX/RS version are, of course, not covered. Nevertheless, as a general introduction, and at this price, I'd say the book is unbeatable. The book should be available in your local W H Smith's.

(For those of you who have back issues of PCN, look back to issue No. 29, page 55. I'm trying to locate this book. If I'm successful, I'll pass on any comments).

ALAN STURGESS


FOR SALE: MEMOTECH 512 COMPUTER <Little Used> COMPLETE WITH 8 GAMES, 1 DEMO TAPE, 6 EMPTY TAPES, 2 BOOKS.
AS NEW £165.00 O.N.O
TELEPHONE MR. B.W.HOWES ASHFORD 52547

# VIEWPOINT

I have received a letter from Anthony Morris which I am publishing unedited. My personal comments are added at the end of the letter.

Dear Sirs,

I am quite pleased that I joined Genpat as I find Memopad interesting and useful, and I have received helpful advice in reply to my letters. The discount on software and hardware is another reason why I am considering renewing my subscription when the time comes.

I was concerned, after I had joined, to learn that Genpat was receiving financial aid from Memotech for the magazine. This must make it very difficult to be objective and it seemed to be born out in the editorials. However when I read issue 5 my fears were dispeled and I thought that at last the users of MTX computers had an organisation that could put pressure on Memotech and other manufacturers to make improvements.

Oh dear. Someone at Memotech must have had a word with the naughty boys at Genpat and it now seems that the fault lies with us purchasers.

The threat that you ask us to use against the computer magazines and Memotech's view that they are doing the magazine a favour by advertising appear to me to be very child-like approaches which will only antagonize. The publishers have no financial nor moral obligation to push Memotech items. Sending letters such as the one in the April issue of Personal Computing Today, or our own programs to the magazines would be more constructive and would give free publicity.

Am I being unfair ? The list of unfulfilled promises is long. A small selection would read:-

"Advanced Programming on the MTX" advertised early last year, then withdrawn.

Memotech's announcement that programs for the B.B.C. computer can now be translated to MTX has come to nothing.

New, cheap disc drives announced last year. Still no news and very little detail.

Continental Software advertised programs over a year ago that are still not available.

Problems with Tri-Com.

I am still awaiting for the new user manual four months after paying for it.

Even you have had difficulties. For example: problems over the first issue, and "Front Panel Teach-in".

So an independent user group is required and you should be in an ideal position to fulfill this need.

Best wishes for the continuation of the club.

Anthony Morris.

My comments

Genpat is totally independent of Memotech and the Company do not have any say in the editorial content of the magazine. Agreed, that from time to time, we may publish an announcement from the Company, as we did with the cheap disc drive. However, as far as editorial content is concerned they are not allowed to interfere, and they have never expressed a wish to do so.

Editorial comment is purely my own personal point of view, and I still stick to my comments in the last edition. I do not think it is childish to make approaches, or even use a little black-mail on the publishing houses. I think I am in a better position to know how publishing houses work in relation to content and advertising - it is very naive to assume that large advertisers do not get better coverage of their products.

Submitting programs to magazines will be rewarded with a letter similar to the one received by Neil Emsen [see below]. Now tell me, if they have so many programs for the MTX, why haven't we seen one for the past four months ?

The computer trade is in a depression and magazines suffer from the same cash-flow problems that manufacturers do - The demise of BIG K & WHICH MICRO. Most of the magazines make money from advertising and not from the cover price. Advertisers choose magazines on the strength of their circulation and I still say that if enough members contacted the same magazine stating their intention to drop their subscription, that magazine would soon change its attitude to the MTX. I hope to be able to demonstrate this fact in the next edition.

Memotech's BBC converter: This did happen and some schools received copies, but Memotech could not find an IN TRAY large enough to hold the writs that Acorn threw in the direction of Witney.

MTX manual - sore point - there is not a day goes by without us approaching Memotech or Phoenix. In fact, the solution is almost at hand, and this is a direct result of Genpat's involvement, and Genpat's solution.

Problems with Tri-Com. Who, in all honesty, can blame Memotech for this little episode. The man deserves to be shot. I spoke to Wallinger two weeks ago and offered to produce the software and fulfill his orders to members. He said, "I'll put them in the post right away, thank you very much." We are still awaiting the tapes. However, we are not faint hearted here, and we have now contacted the authors and we hope to be in a position to supply members with the software within the next few weeks. You must realise, however, that we have to start from scratch: make masters, get duplication organised etc., and we can't do this overnight. This doesn't really solve the problem because the man is still walking free.

Yes, it is true, we have had problems. We were promised initial set-up support which wasn't there when the money had been spent, and this left me in a rather delicate position with my Bank Manager, but as I have said, we are not faint hearted, and with over 3000 members we now have a great deal of influence with the Company:this was demonstrated the other day when I threatened to go to Denmark and import their single disc drive. As a direct result of this Memotech have promised 100 drives by the middle of the month with a further 100 drives each month after that.

It is very easy to become convinced that nothing good is happening with the computer but this is not so - exciting events are taking place, but unfortunately, I cannot make them public at this moment in time. It would be a

very poor organisation that didn't listen, and try to help, the Company when they ask for support, and finally, I can find nowhere in my editorial that lays the blame at the users door.

Many thanks,Anthony, for your concern, and for taking the trouble of sending such a good letter. Genpat will continue to criticise,push,pull and do all the things that are necessary to help members,but we will never do anything that will cause harm to the Company.

Keith Hook.

PETE BAMFIELD 24 Windlesham Gardens, Brighton, East Sussex wants to meet up with other MTX owners in his area. His phone number is: 0273-737884

GARY LIVERMORE 405, Baker Street, Enfield, Middlesex would also like to meet people who are interested in MTX computing. Phone: 01-363-8055

TOM HATTON 7, Edale Close, Hazel Grove, Stockport, Cheshire SK7 6JZ wants to SWOP GOLDMINE,KNUCKLES,MINEFIELD,MURDER AT THE MANOR,BACKGAMMON, POTHOLE PETE. All originals ring Tom on 061-483-0736.

CPL ALAN JONES Supply Squadron, RAF Gatow, BFPO 45 is an 'adventure nut' and is willing to help anyone experiencing difficulties with ALICE, COLOSSAL ADVENTURE, ADVENTURE QUEST, & DUNGEON ADVENTURE. Don't forget the S.A.E if you write for advice.

FOR SALE Goldmine,Blobbo,nemo, Star Command, Minefield, Chess, Nuckles, - all originals 2.50 each. WANTED PASCAL ROM .....Phone Matthew on 0622-842823.

M.PAVER wants to know if anyone has found a way of changing the paper and ink colours on the Noddy pages. This is possible but you must interface with the USERNOD in the system variables..... Has anyone done this ? We haven't had the time.

ALAN STURGESS Wants to sell or swap RETURN to EDEN, 7.00 or swap for LORDS OF TIME, ADVENTURE QUEST, DUNGEON ADVENTURE. 21, Malsis Road, Keighley, Yorkshire BD21 1EY

IAN NICHOLS Wants some advice on ALICE. " I have collected a casket of gold coins, a jewel encrusted sceptre, a golden key, a silver necklace, a bag of diamonds, a potion,a sword and all the other bits of paraphernalia necessary to collect these [they are presently in the room with the glass table where the key and the potion were found]. I am now stuck for something to do, as I haven't found anywhere that looks like the 'Goal Square' and I seem to have run out of places to explore [unless there is more than one way out of Grimbley Forest when you get lost]. Does the caterpillar on the mushroom do anything useful [ apart from teleporting you to the road leading to the ditch] ? Help please !!

STEVE SCOTT Has managed to find five out of the six treasures... can anyone tell him where the RED STONES are hidden ? Steve says he knows they exist because he has peeked into the program - but even this doesn't help !

PETER LEES 30, Princess Road, Shaw, Lancs OL2 7A2 would like to get in touch with any other MTX owner within a ten mile radius of his locale.

COMPUTER MAGAZINES : MEMOTECH PROGRAMS

1. On 16 Oct 84 I sent to PCN in London a copy of the home accounts program that you requested a few weeks ago.

2. I recieved no reply or acknowledgement of my submission.

3. Last week I had the program returned with the enclosed two letters. I think that when you read the second you will understand why I am sending it to you.

4. If they have "a large backlog of programs" for the Memotech which they don't seem able to print what is the point of sending more other to swamp them with Memotech articales which they seem to have no intent in publishing.

5. Anyway I find personally that I get more out of GENPAT and MEMOPAD than any magazine can give me.

6. I fully support your Editorial of issue no 6 and will get round to writing to some of the mags.

Yours sincerely

Neil Gunn

Features Section,
Personal Computer News,
Evelyn House,
62 Oxford St
London W1

Dear Contributor,

Thank you for your recent submission, which has been assessed as follows (relevant assessment ticked):

1. We intend to publish it shortly - please contact us if you have any queries. Payment will be at our standard rate of £82 per thousand words.
2. We feel your program has some good ideas, and would like to publish it if it were developed further.
3. We have recently published a similar article - program enclosed.
4. Your tape/disk wouldn't load - program enclosed.
5. We have a large backlog of programs for your machine, and wouldn't be able to publish your article for some time - program enclosed.

[illegible]

As a wife and mother ( and a computer user), I am keenly interested in what my husband and children make of the MTX.

We all find the MTX itself a very worthwhile machine and are relatively satisfied with our buy. it is unfortunate that there are so few home education programs for children at the lower age ranges ( i.e pre-school) - let's hope that this will remedy itself in time .... but how long? there is also a gap in programs for the 6-10 year age group - too old for First Letters,Spelli-Copter etc, and too young for Physics 'O' level. So I was pleased to see that you intend to have an educational section in Memopad. Having said that, I do not entirely agree with Mr. Sturgess' article.

I think that many teachers have the wrong concept of computers in the classroom. They tend to use the computer as an isolated piece of equipment which is at best an extra backup to the classroom work, but it should not be so. It should be a significant part of the work that is being done, and therefore the software that is written should be as flexible as possible. The point being that the most important part of the education package is teacher education & teacher awareness of the almost infinite possibilities that a computer can be put to - it should be used as a tool, like a book, and not as a gimmick.

There is another point that should be made: the computer could easily turn into an ogre for a shy child. the teacher should be aware, all the time, of the possibility that a child may need help with a problem. The computer cannot explain if the child has difficulty reading what is on the monitor. The computer cannot help if the child is frustrated by too many mistakes, and the only advice is the help command. The spoken word, the smile, the encouragement must come form a person who is aware of the problem.

Yes; I agree, there is a tremendous potential for the use of computers in education but only if they are interacted with humans.

I look forward to Mr. Sturgess' comments on the very different uses of educational needs and programs for the child using the computer at home.

Chris Johnson.

ED: Chris Johnson has shown a tremendous understanding of the problems involved with using computers in the classroom. I would like to know if teachers actually discuss using computers in schools, with the parents, and if many parents seek out the teacher, or are in fact bothered how the computer is used ?

Dear Keith,

I am compelled to write after reading the review of Level 9's game RETURN TO EDAN by Nigel Church.

After reading the review I felt that a lot of people will be put off buying this excellent game. I have completed the game, I did find it hard in places, but if Nigel had put his mind to it he could have got started a lot quicker !

Clue 1 When you get out of the stratoglider find the mole hill (on screen clue:= 'Ground is very soft') then DIG and a tunnel will be uncovered. Without giving too much away, a certain location in the network of tunnels and COMFORTABLE CAVE, Kim can be saved from Snowballs engine blast.

Clue 2 If you cannot get past the LEVIATHAN try planting the EGG - this grows into a HOUSE PLANT. Then type IN.

CPL Hurley, IHSC Engr Br, Shape, BFPO 26.

# ONE LINERS

```
10 REM MARTYN WHITELEY
20 REM Type in this one liner and see what it does
30 REM What other computer could produce such effects from a one line program ?
35 REM Use abbreviated keywords
40 VS 4: PAPER 1: CLS : COLOUR 4,1: GEMPAT 3,1,60,64,99,99,99,99,64,60: CTLSPR 0,1: CTLSPR 2,32: CTLSPR 5,32: CTLSPR 6,1: FOR N=1 TO 32:
SPRITE N,1,100,100,RND#255,RND#255,RND#16: SOUND 1,N#10,15: NEXT : GOTO 40
10 REM A workhorse for automatic selection using function keys
20 REM Using the shift key option it can be expanded to use all 16 f-keys
30 REM by SEAN HAVERTY
40 LET A$=INKEY$: LET A=ASC(A$)-128: IF A<0 OR A>7 THEN GOTO 10 ELSE ON A GOTO 100,200,300,400,500,600,700,800

5 REM Draw a pretty picture ! from Memopad Issue 2
10 VS 4: CLS
20 FOR A=0 TO 125.7 STEP .03
30 PLOT 128+(55*SIN(A)),96+(65*COS(A)*SIN(A*.95))
40 NEXT
45 REM Set a narrower line spacing than normal on the printer
50 LPRINT CHR$(27);"A";CHR$(8);
55 REM Dump the graphics screen to the printer using the DMI80's
56 REM standard bit image designation command.
60 FOR Y=191 TO 7 STEP -8: LPRINT CHR$(13);CHR$(10);CHR$(27);"K";CHR$(255);CHR$(0);: FOR X=0 TO 254: LET S$=GR$(X,Y,8): LPRINT S$;:
70 STOP
                                                                    NEXT X: NEXT Y
```

# CONVERTING CONNECT 4

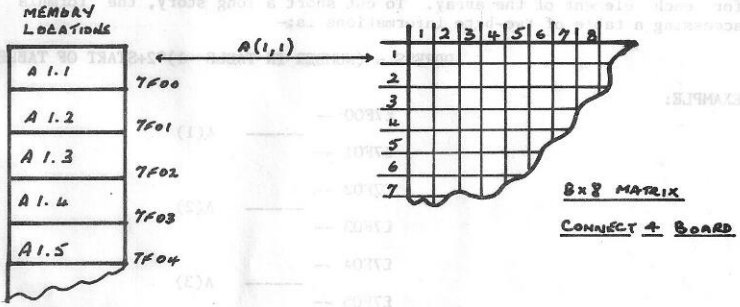
90% of the programming involved with the game Connect 4 deals with the manipulation of arrays. Before we proceed to convert the Basic program into machine code it would be wise to take a look at how arrays can be stored in memory when programming in assembly language.

Normally, Basic arrays are stored in memory sequentially. That is to say, an array of the Dimemnsion A(2,2) will be stored in memory as follows:

```
7F00H   DB  00 ..... A(1,1)
7F01H   DB  00 ..... A(1,2)
7F02H   DB  00 ..... A(2,1)
7F03H   DB  00 ..... A(2,2)
```

*DB = Define Byte which is set to zero in the example - this can, of course, be set to values of your choice.

In Basic, if we wanted to access A(2,2) we could use the statement : LET X = A(2,2) or PRINT A(2,2)




To find the correct entry point into this type of array from machine code we must first set up a table of pointers to the rows, and then use this pointer to access the columns. The coding could possibly look like this:-

Access A(2,1)

```
;Pointer Table
;
ONE:  DEFW  TAB1   ..... A(1)
TWO:  DEFW  TAB2   ..... A(2)
;
;Array is stored as:
;A(1,1),A(1,2),A(2,1),A(2,2)
;
TAB1: DB 00
      DB 00
TAB2: DB 00
      DB 00
;The following coding would be used to access A(2,1)
;
```

```
      LD HL,(TWO)       ;HL now points to A(2,---
      LD A,1            ;Find A(2,1)
      OR A              ;Clear Carry Flag
      ADD A,L           ;By adding offset to L
      JR NC,SKIP        ;If L was less than FF before ADD A then NC [HL=£38FF
                        ;add 1 = £3900]
      INC H             ;Else add 1 to H
SKIP:LD L,A             ;And HL = A(2, + 1)
      DEC L             ;Subtract one because A(2,1) is first entry in table
      LD A,(HL)         ;HL now points to A(2,1) & A contains data from A(2,1)
```

This routine is very basic, but it does serve to demonstrate how data can be accessed from ordered tables. However, it would be better to load A with the correct column before entering the subroutine, and in this way you can access any column you wish.

This type of routine is only useful when the array or table contains one-byte information. If we use the table to store 16-bit values we must jump two places for each element of the array. To cut short a long story, the formula for accessing a table of two-byte informations is:-

ADDRESS = (NUMBER IN TABLE -1)*2+START OF TABLE

EXAMPLE:

```
£7F00 --
        ------   A(1)
£7F01 --

£7F02 --
        ------   A(2)
£7F03 --

£7F04 --
        ------   A(3)
£7F05 --
```

It would be prudent to mention, at this point, that all Z80 based computers store information LSB (Least Significant Byte)FIRST, MSB (Most Significant Byte) LAST. E.g. £7FAB is stored in memory as:-

```
£7F00   £AB
£7F01   £7F
```

LD HL,(£7F00) would result in H = £7F & L = £AB

This means we do not have to worry when loading double registers, as the computer automatically loads the registers the correct way around.

There are many ways to access data from a table such as the one above, but my favourite, and the one I find most useful is by utilising the STACK POINTER.

Remember that the Stack builds down from the highest memory location to the lowest whenever data is PUSHED onto it - the Stack Pointer is decremented by two bytes.

```
SP ----÷ £6802
   PUSH HL
SP ----÷ £6800
```

It is therefore logical that when we POP a value off the stack, the Stack Pointer is incremented by two bytes.

```
SP --÷ £6800
   POP HL
SP --÷ £6802
```

Make sure you are always aware of the above facts, they can be used to great advantage in your future programs.

Anyway, are you getting the picture ? By using the Stack Pointer (SP) to access the Pointer Table we can use the HL register pair to find the correct element in the array. However, the first thing we **must** do whenever we use the SP in another area of memory is to save it's **present position**, otherwise it will be lost, and the whole program will crash °

The code for using the Stack Pointer to access an array can look like this:-

```
        LD (STACK),SP          ;Save Stack Pointer address
        LD SP,TABLE            ;SP now points at entry address
        LD A,(ROW NUMBER)      ;  A(n
LOOP:   POP HL                 ;First element
        DEC A
        JR NZ,LOOP             ; Do it until A = 0
        LD A,(COLUMN NUMBER);E.g A(2,n)
        DEC A                  ;Align it  see note above
        SLA A                  ;Times 2
        LD D,00
        LD E,A
        ADD HL,DE              ;HL NOW = A(n,n)
        LD E,(HL)              ;Lsb
        INC HL
        LD D,(HL)              ;Msb
        EX DE,HL               ;HL now holds data from  A(n,n)
        LD SP,(STACK)          ;Get SP back so that we can
        RET                    ;Return to caller.
```

The calling routine could utilise the above code to find A(2,3) by using the following code before calling the subroutine.

```
COL :DW 00
ROW :DW 00
;
LD HL,#0203
LD (COL),HL
CALL SUBROUTINE
```

In the above, HL is loaded with the Row/Col when the instruction LD (COL),HL is implemented, the value in L is put into COL, and the value of H is put into ROW.

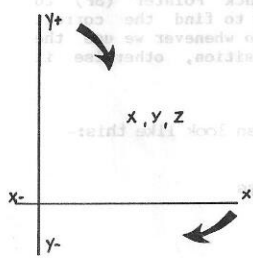
Next month we shall start converting the program starting with the screen set up and the array buffers. So it will pay you well to study what has just been discussed. ★

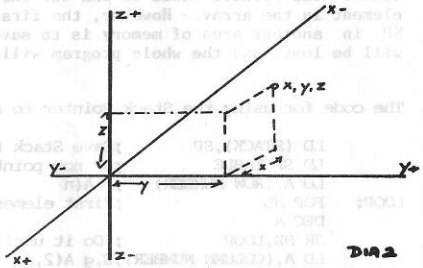
# 3D GRAPHICS PT2

J.R. MAJORS

First I should like to apologise for missing last month's issue with this article - pressures of work just did not leave time. Hopefully, the rest of the articles will be in consecutive issues.

In the article in Issue 5 we looked at two dimensional graphics and introduced some ideas we are going to need now - translation, rotation and how to carry out these operations on an image using matrix mathematics. First, how do we define a point in three dimensions? Diagram 1 shows a two dimensional presentation with two axes, x and y which form a 'plane' or surface. We drop this surface down as in Diagram 2.




And we add another axis, the 'Z' axis to define our point. Where in two dimensions we could find a point using x,y (diag 1) we now use x,y,z as you can see in Diagram 2.

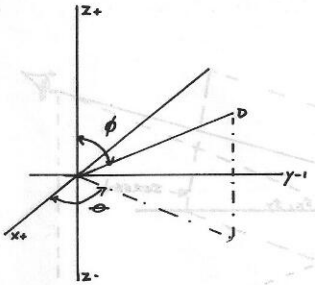
There is another way of defining a point on this system of three axes and we shall be using this too. This system is shown on Diagram 4.

This system again uses three pieces of information, but instead of x,y and z we have 'd',the distance in a straight line from the point to the origin where the x,y and z axes meet, and the two angles marked, the angle between the line d and the z axis and the angle between the x axis and the line origin to x',y' on the diagram. This is called the spherical coordinate system and defines the point by d,theta ( ), phi ( ). Now,if you remember from the last article we used a three by three matrix to move an object round the screen in two dimensions. We did this by multiplying the vertices (all the x,y's) by this matrix. So for the three-dimensional image we add another row to our matrix and we can carry out the same operations on our new x,y,z points using a 4 by 4 matrix. If you remember, the diagonal elements in our 3 by 3 array for two dimensional graphics controlled the scaling and the same is true now. Below is the matrix used to multiply our points x,y,z to control the scaling of the object along each axis i.e. to stretch or shrink it along that axis.

```
(x,y,z,1) A~0~0~0
          0~B~0~0
          0~0~C~0
          0~0~0~1
```

Notice that we have again added the '1' to the x,y,z as we did to the x,y of the two-dimensional article. Don't worry about it - it's explained in the 2-D article and it isn't vital to understand why it's there. The last matrix was one used to stretch or shrink the object. The one below is for translation, that is to move the whole object to either side, or up or down.

Dia 3




```
(x,y,z,1) 1~0~0~0
          0~1~0~0
          0~0~1~0
          H~K~L~1
```

Where H gives us an offset along the x axis, K an offset along the Y axis and L an offset along the Z axis.

Finally, rotation about each axis - as shown in the diagram below - you can take your galleon or cup and rotate it in any one of the three ways shown.

The matrices for this are, for the rotation about the x, y, z axes respectively:

```
(x,y,z,1) coso~sino~0~0
          sino~coso~0~0
          ~~0~~~~0~~0~0
          ~~0~~~~0~~0~0
```

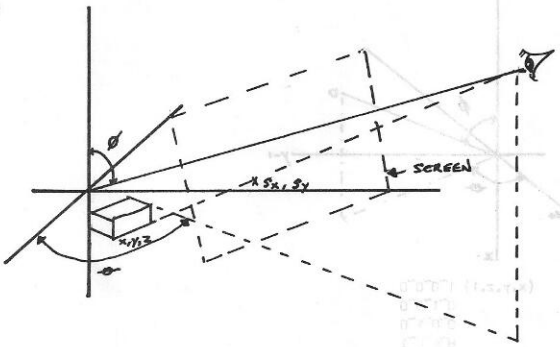
```
(x,y,z,1) 1~~0~~~~0~~~~0
          0~~coso~sino~0
          0~-sino~coso~0
          0~~~~~0~~~~0~0
```

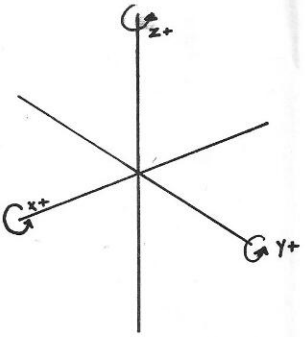
```
(x,y,z,1) coso~0~-sino~0
          ~~0~~1~~~0~~0
          sino~0~~coso~0
          ~~0~~0~~~0~~1
```

Now, it seems easy so far. However, although we have seen how to transform our coordinates, we still have three coordinates, and to plot on our screen we have only two, x and y. So we have to transform our three coordinates into two. Look at the following diagram which shows an eye - the observer's position - and the screen interposed. We draw lines from each point to the observer's eye and where they intersect with the plane of the screen gives us the x,y's of the screen(which we will call sx and sy).

Look back to Diagram 4 and now consider the point defined to be the observer. If we change the angle o we can rotate our view circling round the object. If we change the angle a (phi) we can rotate our view over the top of the object and back round under it. So we must fit all these features into our program. We have one more intermediate step to look at before we get to the production of our screen x,y's from the original x,y,z's. Imagine our observer's eye is immediately above the object on the line of the z axis. This is shown in the following diagram.

DIA 4




DIA 5

By similar triangles, BA/OB=DC/OB. In the same way SY/D=Y/Z so SY=D*(Y/Z) and we can also get SX=D*(X/Z) Now SX and SY are our screen coordinates, so if we can turn the original coordinate system round to get the z axis pointing in the same way as in the diagram we can produce our SX's and SY's as we did a couple of lines back.

In the next article you will see how to change the coordinates in the way we want by a series of matrix operations. We will write a program with one operation condensing these matrix operations and with inputs so that you can move an object in three-dimensional space and, hopefully, understand how you are moving it so you can set up your own programs.


MTX CRIB CARD AVAILABLE WITHIN THE NEXT TWO WEEKS !

Quite a few members have written to me over the past few months to say what a nice idea it would be if MTX owners could have a CRIB CARD similar to the one offered to BBC,AMSTRAD,COMMODORE users. Well, we managed to talk Gordon Rae at Phoenix Publishing to come up with one for us, and he has done a provisional print of 1000. They are only available, at present, through Genpat, and will cost you 1.99 + 27p P.P. They will be sent out on a first come first served basis. If it proves successful then Gordon will do a re-print and it will then go on sale in the shops which will obviously help the Memotech name.

The Crib Card documents all the commands available on the MTX in a logical manner with the correct syntax required for using the commands. It is supplied on laminated card, and protected in a plastic wallet - it save keep having to look in the manual. Subjects covered are: Basic commands, assembler commands,noddy commands, RST 10 calls, and many more.

# ASSEMBLER

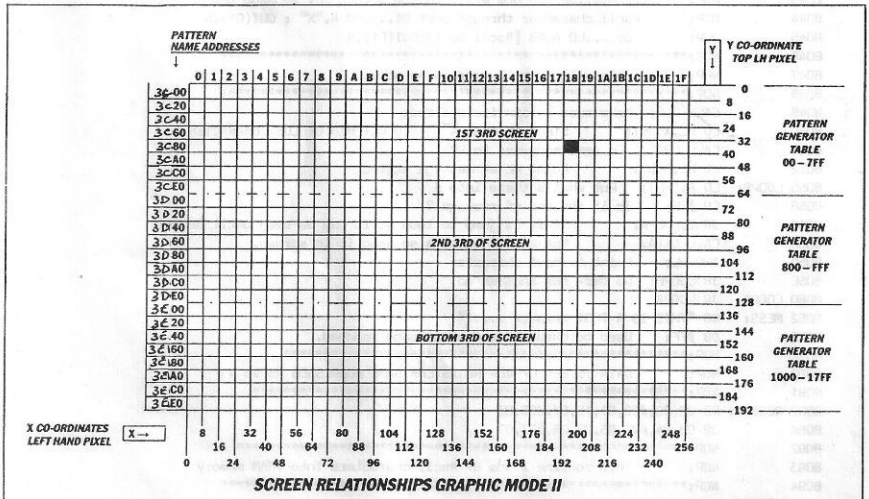
This month we are going to do something useful ! I know that a lot of members are still experiencing difficulties when trying to set up a Graphics screen from scratch. The following code does this for you. Once you have entered the listing, you have a set-up that you can use for future programming. The code is fully documented and sets up GRAPHIC MODE 2 as a character mapped screen which means that you can manipulate complete graphic blocks 8 bytes at a time. The locations are still the same as those used by MTX Basic but you will NOT be able to use RST10 calls to write to the screen.... you must use a format similar to the one used to print the message to the screen.

For an explanation of the data bytes used to set up the VDP Registers refer to Issues 2 & 3. The screen is located at 15360 decimal and this is the very first location on the screen....equivalent to CSR 0,0. By sending an address within the range 15360 - 16127 you can write anywhere on the screen. A full Ascii character set is provided, and you can, again, use this, or alter the characters to use within your own programs.

The BORDER colour is always that of the lowest four bits used to set the colour of the text which, in this case, is green. If you alter the next to last data byte in memory location #808A (#F3), you will see the effect this has on the border.

The program has been assembled on a MTX500 but will work on a 512 without modification. All 512 owners need to do is enter the assembler by typing ASSEM 5 and use addresses from #4007 instead of #8007.

The program will display a message on the screen and stay there until you press BREAK. The computer will then put you into the FRONT PANEL. Just type B and answer the Basic? prompt with Y and you will be returned to Basic. Don't forget to save your program before you run it. ★




**SCREEN RELATIONSHIPS GRAPHIC MODE II**

"LOCATION OF ■" BY PIXEL 192, 31 (SEE NOTES)
BY PATTERN NAME TABLE → 3C98H

```
5 CODE

8007          LD SP,(#FA96);      Make sure Stack Pointer loaded from system
8008          NOP;*****************************************************
800C          NOP; SET UP VDP REGISTERS AND LOAD ASCII CHARACTERS INTO VRAM
800D          NOP;*****************************************************
800E          LD B,08;          Number of VDP Write Registers.
8010          LD HL,REGSET;     Make HL point to VDP Register Data.
8013 LF1:     RST 8;          This command does => LD E(HL):INC HL:LD D,(HL):INC HL.
8014          CALL REG;         Call Subroutine to send Register No & Data.
8017          DJNZ LF1;         DJNZ loops until B Register = 0 in this case 8 times.
8019 INIT:    LD HL,256;        HL points to first Ascii character in top third of
801C          NOP;        Generator table which starts at 0000Hex ~~ Ascii 32 is first
801D          NOP;        printable character [Space] (8*32 = location 256)
801E          CALL ASCMVE;      Call subroutine to fill all 728 bytes of
8021          NOP;        Character generator [ 91 characters * 8 = 728 bytes]
8022          LD HL,2304;       2nd Third of Generator table
8025          CALL ASCMVE
8028          LD HL,4352;       Bottom third of generator table.
802B          CALL ASCMVE
802E          LD HL,8448;       Point to equivalent colour table location for
8031          NOP;        Top third of graphics generator.Colour table is 8192 bytes
8032          NOP;        higher in vram so add 8192 to character position = Col pos.
8033          CALL COLSET;      go send relevant information.
8036          LD HL,10496;      2nd third colour table.
8039          CALL COLSET
803C          LD HL,12544;      bottom third colour table.
803F          CALL COLSET
8042          NOP;        Everything is now set up for G2 screen in a character mapped
8043          NOP;        format..We can now write to the screen bby sending the
8044          NOP;        Ascii character through port 01....LD A,"X" : OUT(01),A
8045          NOP;         or....LD A,88 [Ascii no X]:OUT(01),A
8046          NOP;*****************************************************
8047          NOP;    LD This will print a message on screen
8048          NOP;*****************************************************
8049          CALL CLS;  Make sure screen iss cleared.
804C          LD HL,15361;        START OF SCREEN + 1 TO GET RID OF LOST CHARACTER
804F          CALL LRAM;  Go send addresss to VDP
8052          LD HL,MESS;         Point HL at message string
8055 LOOPB:   LD A,(HL);    Put what's there into A
8056          CP #FF;     Is it the end of message ?
8058          JR Z,LOOPA;         If it is jump to loop so it can be seen until Break!
805A          CALL DATA;          Not end of message so send it to screen.
805D          INC HL;     Point to next character
805E          JR LOOPB;   Go back for another go.
8060 LOOPA:   JR LOOPA
8062 MESS:    DB "THIS IS A TEST message ....>"
807E          DB #FF;     Used to check if end of message reached.
807F          NOP;*****************************************************
8080          NOP;        DATA TO SET UP VDP REGISTERS SAME ADDRESSES AS VS 4
8081          NOP;*****************************************************
8082 REGSET:  DB 02,00,#C2,01,15,02,255,03
808A          DB 03,04,#7E,05,07,06,#F3,07
8092          NOP;*****************************************************
8093          NOP;        This routine loads 91 Ascii characters into VRAM memory
8094          NOP;*****************************************************
8095 ASCMVE:  LD BC,728
8098          CALL LRAM;HL POINTS TO VRAM POS
809B          NOP;ON ENTRY
```

```
809C          LD HL,ASCII
809F AGN:     LD A,(HL)
80A0          OUT (01),A
80A2          INC HL
80A3          DEC BC
80A4          LD A,B
80A5          OR C
80A6          JR NZ,AGN
80A8          RET
80A9          NOP;*************************************************************
80AA          NOP;       Routine to fill colour bytes F= white col of 1's:4=Blue col of 0's
80AB          NOP;*************************************************************************
80AC COLSET:  LD BC,728
80AF          CALL LRAM;HL POINTS TO VRAM
80B2          NOP;ON ENTRY
80B3 AGN2:    LD A,#16;  COLOUR OF CHARACTERS 1 = black(Col of 1's): 6= red (Col of 0's)
80B5          OUT (01),A
80B7          DEC BC
80B8          LD A,B
80B9          OR C
80BA          JR NZ,AGN2
80BC          RET
80BD          NOP;          write to VDP registers
80BE          NOP;          OR 80 hex makes sure bit 7 is set which is required by processor
80BF          NOP;          so that it knows that you want to write to VDP register
80C0          NOP;          Data is sent first followed by Register number.
80C1 REG:     LD A,E;       Get data byte
80C2          OUT (02),A;          send it
80C4          LD A,D;       get Register number
80C5          OR #80;       make sure bit seven of register number set
80C7          OUT (02),A;          send it
80C9          RET;          return to caller.
80CA          NOP;*************************************************************
80CB          NOP;          two routines to send VRAM address when a routine is going to
80CC          NOP;          write to VRAM
80CD          NOP;          the first routine LRAM Uses tthe HL registers
80CE          NOP;          the 2nd routine VRAM uses the DE registers... this is so that you can
80CF          NOP;          use either pair of regi3sters within your program... you can of
80D0          NOP;          just one routine if you so wish !
80D1 LRAM:    PUSH AF;      save A register
80D2          LD A,L;       Get low byte of VRAM address
80D3          OUT (02),A;          send it
80D5          LD A,H;       get high byte of VRAM address
80D6          OR #40;        make sure that bit 6 = 1 and bit seven = 0
80D8          OUT (02),A;          so that VDP knows you are wanting to send a VRAM address
80DA          POP AF;       after sending get A reg back and
80DB          RET;          return to caller
80DC VRAM:    PUSH AF
80DD          LD A,E
80DE          OUT (02),A
80E0          LD A,D
80E1          OR #40
80E3          OUT (02),A
80E5          POP AF
80E6          RET
80E7          NOP;  *************************************************************
80E8          NOP;          the following two routines are used for setting up a VRAM
```

```
80E9            NOP;        address before reading from Vram  you must make sure that bits 6 & 7
80EA            NOP;        are 1's by ANDing 3Fh with the High byte of the address.
80EB            NOP;*****************************************************************
80EC LREAD:     PUSH AF;    save A register
80ED            LD A,L;     Low byte of address
80EE            OUT (02),A;         send it
80F0            LD A,H;     Get high byte of address
80F1            AND #3F;      make sure bits 6&7 are 1's so that VDP knows it's a read!
80F3            OUT (02),A;         send it
80F5            POP AF;     get A reg back before
80F6            RET;        returning to caller.
80F7 READ:      PUSH AF
80F8            LD A,E
80F9            OUT (02),A
80FB            LD A,D
80FC            AND #3F
80FE            OUT (02),A
8100            POP AF
8101            RET
8102            NOP;************************************************
8103            NOP;        This is the actual sending of data to VRAM routine.
8104            NOP;        A is saved just in case it held other information from main
8105            NOP;        program & the data is sent to this routine in the C reg
8106            NOP;*****************************************************************
8107 DATA:      OUT (01),A;         send it!
8109            RET;        return to caller
810A            NOP;************************************************************
810B            NOP;        this reads from VRAM
810C            NOP;************************************************************
810D READIN:    IN A,(01); Get value into A register
810F            RET;        and return to caller
8110 VDP:       PUSH AF
8111            IN A,(02)
8113            LD C,A
8114            POP AF
8115            RET
8116 CLS:       LD HL,768
8119            LD DE,#3C00
811C            CALL VRAM
811F CLS1:      LD A,32
8121            OUT (01),A
8123            DEC HL
8124            LD A,L
8125            OR H
8126            JR NZ,CLS1
8128            RET
8129 ASCII:     DB #00,#00,#00,#00,#00,#00,#00,#00
8131            DB #20,#20,#20,#20,#20,#20,00,#20,00
8139            DB #28,#28,00,00,00,00,00,00;"
8141            DB #48,#48,#FC,#48,#FC,#48,#48,00;#
8149            DB #20,#F8,#A0,#F8,#28,#F8,#20,00;$
8151            DB #C8,#C8,#10,#20,#40,#98,#98,00;%
8159            DB #70,#88,#70,#60,#94,#88,#74,00;&
8161            DB #30,#40,#20,00,00,00,00,00;'
8169            DB #30,#40,#80,#80,#80,#40,#30,00;(
```

```
8171  DB #60,#10,#08,#08,#08,#10,#60,00;)
8179  DB #20,#F8,#70,#70,#F8,#20,00,00;*
8181  DB 00,#20,#20,#F8,#20,#20,00,00;+
8189  DB 00,00,00,00,#60,#20,#40,00;,
8191  DB 00,00,00,#F8,00,00,00,00;-
8199  DB 00,00,00,00,00,#30,#30,00;.
81A1  DB #08,#08,#10,#20,#40,#80,#80,00;/
81A9  DB #70,#88,#98,#A8,#C8,#88,#70,00;0
81B1  DB #60,#A0,#20,#20,#20,#20,#F8,00;1
81B9  DB #70,#88,#08,#70,#80,#80,#F8,00;2
81C1  DB #70,#88,#08,#30,#08,#88,#70,00;3
81C9  DB #10,#30,#50,#90,#F8,#10,#10,00;4
81D1  DB #F8,#80,#F0,#08,#08,#88,#70,00;5
81D9  DB #70,#88,#80,#F0,#88,#88,#70,00;6
81E1  DB #F8,#08,#10,#20,#40,#40,#40,00;7
81E9  DB #70,#88,#88,#70,#88,#88,#70,00;8
81F1  DB #70,#88,#88,#78,#08,#88,#70,00;9
81F9  DB 00,00,#30,#30,00,#30,#30,00;:
8201  DB 00,#30,#30,00,#30,#10,#20,00;;
8209  DB #18,#20,#40,#80,#40,#20,#18,00;<
8211  DB 00,00,#F8,00,#F8,00,00,00;=
8219  DB #C0,#20,#10,08,#10,#20,#C0,00;>
8221  DB #70,#88,#08,#70,#40,#00,#40,00;?
8229  DB #70,#88,#A8,#B0,#80,#48,#30,00;@
8231  DB #20,#50,#88,#88,#F8,#88,#88,00;A
8239  DB #F0,#88,#88,#F0,#88,#88,#F8,00;B
8241  DB #70,#88,#80,#80,#80,#80,#70,00;C
8249  DB #F0,#88,#88,#88,#88,#88,#F0,00;D
8251  DB #F8,#80,#80,#E0,#80,#80,#F8,00;E
8259  DB #F8,#80,#80,#E0,#80,#80,#80,00;F
8261  DB #70,#88,#80,#98,#88,#88,#70,00;G
8269  DB #88,#88,#88,#F8,#88,#88,#88,00;H
8271  DB #F8,#20,#20,#20,#20,#20,#F8,00;I
8279  DB #F8,#10,#10,#10,#10,#90,#60,00;J
8281  DB #88,#90,#A0,#C0,#A0,#90,#88,00;K
8289  DB #80,#80,#80,#80,#80,#80,#F8,00;L
8291  DB #88,#D8,#A8,#88,#88,#88,#88,00;M
8299  DB #88,#88,#C8,#A8,#98,#88,#88,00;N
82A1  DB #70,#88,#88,#88,#88,#88,#70,00;O
82A9  DB #F0,#88,#88,#88,#F0,#80,#80,00;P
82B1  DB #70,#88,#88,#88,#A8,#90,#68,00;Q
82B9  DB #F0,#88,#88,#F0,#A0,#90,#88,00;R
82C1  DB #70,#88,#80,#70,#08,#88,#70,00;S
82C9  DB #F8,#20,#20,#20,#20,#20,#20,00;T
82D1  DB #88,#88,#88,#88,#88,#88,#70,00;U
82D9  DB #88,#88,#88,#88,#88,#50,#20,00;V
82E1  DB #88,#88,#88,#88,#A8,#A8,#70,00;W
82E9  DB #88,#88,#50,#20,#50,#88,#88,00;X
82F1  DB #88,#88,#88,#70,#20,#20,#20,00;Y
82F9  DB #F8,#08,#10,#20,#40,#80,#F8,00;Z
8301  DB #E0,#80,#80,#80,#80,#80,#E0,00;]
8309  DB #80,#80,#40,#20,#10,#08,#08,00;\
8311  DB #38,#08,#08,#08,#08,#08,#38,00;[
8319  DB #20,#50,#88,#00,00,00,00,00;^
8321  DB 00,00,00,00,00,00,#F8,00;_
8329  DB #60,#80,#40,00.00.00.00.00;`
8331  DB 00,00,#60,#10,#70,#90,#78,00;a
8339  DB #80,#80,#80,#F0,#88,#88,#70,00;b
8341  DB 00,00,#70,#88,#80,#88,#70,00;c
8349  DB #08,#08,#08,#78,#88,#88,#78,00;d
8351  DB 00,00,#70,#88,#F0,#80,#78,00;e
8359  DB #30,#48,#40,#E0,#40,#40,#40,00;f
8361  DB 00,00,#70,#88,#78,#08,#F0,00;g
8369  DB #80,#80,#80,#80,#C8,#88,#88,00;h
8371  DB #10,00,#30,#10,#10,#10,#7C,00;i
8379  DB #10,00,#30,#10,#10,#90,#60,00;j
8381  DB #80,#80,#90,#A0,#C0,#A0,#90,00;k
8389  DB #60,#20,#20,#20,#20,#20,#70,00;l
8391  DB 00,00,#50,#A8,#A8,#A8,#A8,00;m
8399  DB 00,00,#B0,#48,#48,#48,#48,00;n
83A1  DB 00,00,#70,#88,#88,#88,#70,00;o
83A9  DB 00,00,#70,#88,#88,#F0,#80,#80;p
83B1  DB 00,00,#70,#88,#88,#78,#08,#08;q
83B9  DB 00,00,#90,#68,#40,#40,#40,00;r
83C1  DB 00,00,#70,#80,#70,#18,#F0,00;s
83C9  DB #40,#40,#F0,#40,#40,#48,#30,00;t
83D1  DB 00,00,#90,#90,#90,#90,#68,00;u
83D9  DB 00,00,#88,#88,#88,#50,#20,00;v
83E1  DB 00,00,#88,#A8,#A8,#A8,#70,00;w
83E9  DB 00,00,#88,#50,#20,#50,#88,00;x
83F1  DB 00,00,#88,#88,#78,#08,#88,#70;y
83F9  DB 00,00,#F8,#10,#20,#40,#F8,00;z
8401  RET
```


## It's a Winner!

The ONE LINER competition certainly brought out the best in you, and the competition was a great success. Some very useful routines surfaced and a great deal of pleasure was had typing in the entries.

The winner was the first choice of each judge, and I must say, I agree. The winner is Mr. I.D. Midwinter for his excellent one liner which appeared in Issue Six

# PROGRAM LISTING

## UTILITIES

Eric Roy

The following five listings will provide the Memotech with the ability to save and load code, merge programs, restore New'ed or reset programs, renumber program lines, and an interrupt driven section that will drive some of the above programs.

Rather than have one listing for this utility program, Eric has split the code into four sections to make entering and testing them easier than one large block.

The programs were written on an MTX 512 but are designed to work in the last two pages of the Basic program area [#BE00 - #C000] which makes them compatable with the MTX 500 provided that no Basic program overwrites the mentioned memory area.

There is no *ORG statement allowed in the MTX assembler which means that code that requires locating at a certain address must be moved up in memory using the FRONT PANEL'S MOVE command. After each listing has been entered and saved to tape,make a note of the start & end address of the program. [If you are using an MTX512 they will be the same as the listings, MTX 500 will be different]. Enter the Panel by typing PANEL <RET> and move the program to the following addresses:-

LISTING 1 OLD

Move> 4007 [500 use your start address]
End> 408C [ " " " " " " " ]
To> BE00

LISTING 2 MERGE As above but answer To>BEA0

LISTING 3 RENUMBER " " " " " To>BF20

LISTING 4 INTERRUPT " " " " " To>BF60

It is only necessary to relocate as above until you have tested and debugged the listings because LISTING 5 SCLOAD has been written to save and load the above routines as one block. Remember to move the routine up in memory before you test it.

** ED If you don't know how the front panel works see Issue 4. The ORG statement which is used in most tape based assemblers allows you to specify where the code will load into memory. E.g ORG #76F4 would load the code into memory at that location.... the MTX does not provide this facility because it is meant to be used as 'in line' code with Basic.

LISTING ONE OLD

This utility will restore a Basic program that has been NEW'ed or lost after the two RESET keys have been pressed. To test the OLD program enter:

LET O=USER(48640)

This calls the SAVEB,SAVESV part of the program. SAVEB saves the first 8 bytes of the program area as these are changed to 08 : 07 : 06 :.... 01 if the RESET keys are pressed. MTX 500 owners should change the LD HL,(#4000), LD HL,(#4002) etc in the SAVEB & RESTB parts of the program to LD HL,(#8000),LD HL,(#8002) etc. SAVESV saves the current values of the system variables connected with Basic,Noddy & Arrays.

You should now enter NEW or press the reset keys to erase the program, having done this, enter, as a direct command

LET O=USR(48707)

This calls RESTB,RESTSV which will restore the values saved. Type LIST <RET> to prove that the program has been recovered.

To provide full protection for your program OLD should be driven via the INTERRUPT routine <see Listing Four>.

LISTING TWO MERGE

To MERGE two programs MAIN & SUB, say, where MAIN is the main program and SUB is the sub program to be added to the main program, use the following procedure: NOTE THE OLD PROGRAM MUST BE IN MEMORY AT #BE00 before you use the MERGE command.

First load the SUB program and then enter as a direct command CLEAR <RET> followed by

LET M=USR(48800)

This calls the SUB part which in turn calls the OLD routine to save the system variables from the SUB program. A copy of the SUB program is then taken and moved up in memory to start at address #C400. This address was chosen as the Memotech memory from #C000 upward is used to store the variable names and values used by the Basic program - it is most unlikely that any variables will be created during a MERGE , so this area can quite safely be overwritten. To be on the safe side however, #C400 still provides over 10K to be merged.

Now load the MAIN program and enter LET M=USR(48820) this calls the MAIN part of the MERGE program which first checks to see if there are any NODDY pages to be merged. If this proves to be so, these are moved to the end of the SUB program.

NONOD then moves the SUB program plus the NODDY pages down to the end of the MAIN program - this is why the MAIN NODDY pages were moved down or else the move down in memory by SUB would have overwritten them.

The MERGE part of the program calculates the NEW program system variable values by taking the SUB values, stored by OLD, and adding them to the values set in the computer when the MAIN program was loaded.

Care should be taken when MERGEing NODDY pages that each page has its own unique name, otherwise pages with the same name will result in the SUB program NODDY pages being the only pages shown when PLOD "Page Name" is used.

<WE WILL CONTINUE THIS PROGRAM IN ISSUE 8>

```
100 CODE

4007 SAVEB:  LD HL,(#4000); SAVEB saves the first 8 bytes of basic.
400A         LD (#BE88),HL; Store for 8 bytes #BE88 to #BE8F.
400D         LD HL,(#4002)
4010         LD (#BE8A),HL
4013         LD HL,(#4004)
4016         LD (#BE8C),HL
4019         LD HL,(#4006)
401C         LD (#BE8E),HL
401F SAVESV: LD HL,(#FAA4); Save Top of Noddy.
4022         LD (#BE90),HL; Store for system variables #BE90 to #BE9D.
4025         LD HL,(#FAA7); Save Top of Current Basic Page.
4028         LD (#BE92),HL
402B         LD HL,(#FAAA); Save Bottom of Basic.
402E         LD (#BE94),HL
4031         LD HL,(#FAAC); Save Top of Each Basic Page.
4034         LD (#BE96),HL
4037         LD HL,(#FACC); Save Top of Arrays.
403A         LD (#BE98),HL
403D         LD HL,(#FACF); Save Baselin.
4040         LD (#BE9A),HL
4043         LD HL,(#FAD6); Save Pgtop.
4046         LD (#BE9C),HL; All system variables now saved.
4049         RET; End of save routine.
404A RESTB:  LD HL,(#BE88); Restore 8 basic bytes.
404D         LD (#4000),HL
4050         LD HL,(#BE8A)
4053         LD (#4002),HL
4056         LD HL,(#BE8C)
4059         LD (#4004),HL
405C         LD HL,(#BE8E)
405F         LD (#4006),HL
4062 RESTSV: LD HL,(#BE90); Restore system variables saved.
4065         LD (#FAA4),HL
4068         LD HL,(#BE92)
406B         LD (#FAA7),HL
406E         LD HL,(#BE94)
4071         LD (#FAAA),HL
4074         LD HL,(#BE96)
4077         LD (#FAAC),HL
407A         LD HL,(#BE98)
407D         LD (#FACC),HL
4080         LD HL,(#BE9A)
4083         LD (#FACF),HL
4086         LD HL,(#BE9C)
4089         LD (#FAD6),HL; All system variables restored.
408C         RET

Symbols:
SAVEB4007SAVESV401F
RESTB404ARESTSV4062

110 REM ********************************
120 REM ****      'OLD' COMMAND      ****
130 REM ****    MTX 500,512 MICROs   ****
140 REM **** (c) Eric Roy. June.84 ****
150 REM ********************************
```

```
100 CODE

4007 SUB:    CALL #BE00;  Store system variables of 'SUB'.
400A         LD HL,(#FAAA);  HL=Start address of 'SUB'.
400D         LD DE,#C400;  DE=Destination address of 'SUB'.
4010         LD BC,(#FACC);  BC=Length of 'SUB'.
4014         LDIR;  Move 'SUB' from HL to DE.
4016         LD (#BE86),DE;  Store end address of 'SUB' after move.
401A         RET;  NOW LOAD 'MAIN' PROGRAM.
401B MAIN:   LD HL,(#FAA4)
401E         LD DE,(#FAA7)
4022         AND A
4023         SBC HL,DE;  HL=Length of any Noddy pages in 'MAIN'.
4025         JR Z,NONOD;  If no Noddy pages then jump, else
4027         PUSH HL
4028         POP BC;  BC=Length of 'MAIN' Noddy.
4029         LD HL,(#FAA7);  HL=Start address of 'MAIN' Noddy.
402C         LD DE,(#BE86);  DE=End of 'SUB' program.
4030         LDIR;  Move 'MAIN' Noddy to end of 'SUB'.
4032         LD (#BE86),DE;  Store new end address of 'SUB'.
4036 NONOD:  LD HL,(#BE86);  HL=End address of 'SUB'.
4039         LD BC,#C400;  BC=Start address of 'SUB'.
403C         PUSH BC;  Save start address.
403D         AND A
403E         SBC HL,BC;  HL=Length of 'SUB'.
4040         PUSH HL
4041         POP BC;  BC=Length of 'SUB'.
4042         POP HL;  HL=Start address of 'SUB'.
4043         LD DE,(#FAA7);  DE=End of 'MAIN' basic.
4047         LDIR;  Move 'SUB' to end of 'MAIN'.
4049 MERGE:  LD HL,(#BE90);  Calculate 'NEW' system variables.
404C         LD DE,(#FACC)
4050         ADD HL,DE
4051         PUSH HL
4052         LD (#FAAC),HL;  'NEW' Top of each basic page.
4055         LD HL,(#FAA7)
4058         LD DE,(#FAAA)
405C         AND A
405D         SBC HL,DE
405F         PUSH HL
4060         LD BC,(#BE92)
4064         ADD HL,BC
4065         LD (#FAA7),HL;  'NEW' Top of current basic page.
4068         POP HL
4069         LD BC,(#BE9C)
406D         ADD HL,BC
406E         LD (#FAD6),HL;  'NEW' PGTOP.
4071         LD HL,(#FAA4)
4074         AND A
4075         SBC HL,DE
4077         LD BC,(#BE98)
407B         ADD HL,BC
407C         LD (#FACC),HL;  'NEW' Top of arrays.
407F         POP HL
4080         LD (#FAA4),HL;  'NEW' Top of Noddy.
4083         RET

Symbols:
NONOD4036MERGE4049
SUB4007MAIN401B
```

# PROGRAM LISTING TEASER

Pete Bamfield

Here is a real brain teaser [ Pardon the pun!] 3D graphics add to the enjoyment of this little game. It's amazing what you can do when you put your mind to it. Full marks for this one - I really enjoy playing it.

Instructions

When you first enter the game a number of pegs are randomly placed on the board. Each of the 9 squares is given a number from 1-9 to correspond with the numeric keypad. To alter the pegs, press a key for a square containing a peg. The board will change as follows:-

1. Pegs on squares will be removed
2. Pegs will appear on vacant squares
3. A limit of 30 moves is set & a puzzle can be restarted at any time.

The object of the game is to place pegs in 8 of the 9 squares but leave the centre on vacant. To alter a square press the corresponding key on the keypad.

```
1 REM TEASER v.VI
2 REM
3 REM P.V.Bamfield Feb 1985
4 REM
10 DIM AD(5,2),B(3,3),K(9,2),M(4,2),P(3,3,2),PG$(4,7)
17 REM
18 REM Csr
19 REM
20 FOR B=1 TO 3: FOR A=1 TO 3: READ P(A,B,1): READ P(A,B,2): NEXT : NEXT
22 DATA 13,4,16,4,19,4,  12,8,16,8,20,8, 11,13,16,13,21,13
27 REM
28 REM UDG
29 REM
30 GENPAT 1,129,24,60,60,60,60,60,24,24: GENPAT 1,130,24,60,60,60,60,60,60,60: GENPAT 1,131,60,24,0,0,0,0,0,0
32 GENPAT 1,132,24,60,126,126,126,126,126,126: GENPAT 1,133,126,60,60,60,60,126,126,126
33 GENPAT 1,134,126,126,126,126,60,0,0,0
34 GENPAT 1,135,60,126,255,255,255,255,255,255
35 GENPAT 1,136,255,126,126,126,126,126,255,255
36 GENPAT 1,137,255,255,255,255,255,255,126,60
37 REM
38 REM Array
39 REM
40 LET B$=CHR$(10)+CHR$(8)
42 LET B=129: FOR A=1 TO 3: LET PG$(A)=CHR$(B)+B$+CHR$(B+1)+B$+CHR$(B+2): LET B=B+3: NEXT : LET PG$(4)=
44 LET L$="": FOR A=1 TO 32: LET L$=L$+"*": NEXT
47 REM
48 REM Kybd/move
49 REM
50 FOR A=1 TO 9: READ K(A,1): READ K(A,2): NEXT : FOR A=1 TO 4: READ M(A,1): READ M(A,2): NEXT : GOSUB 370
52 DATA 1,3,2,3,3,3, 1,2,2,2,3,2, 1,1,2,1,3,1
54 DATA -1,0, 1,0, 0,-1, 0,1
97 REM
98 REM Start
99 REM
100 VS 4: COLOUR 0,1: COLOUR 1,15: COLOUR 2,1: COLOUR 3,15: COLOUR 4,9: CLS
102 CSR 1,1: PRINT "TEASER": CSR 1,2: PRINT "^^^^^^": CSR 26,1: PRINT "KEY": CSR 26,2: PRINT "^^^"
104 CSR 26,3: PRINT "789": CSR 25,5: PRINT "4 5 6": CSR 24,7: PRINT "1  2  3"
107 REM
108 REM Board
```

" "+B$+" "+B$+" "

```
110 LINE 55,47,103,160: LINE 103,160,160,160: LINE 159,160,207,47: LINE 207,47,55,47
112 LINE 76,95,186,95: LINE 90,131,172,131: LINE 111,47,119,160: LINE 151,47,142,160
114 LINE 55,47,55,39: LINE 55,39,207,39: LINE 207,39,207,47
117 REM
118 REM Set-up board
119 REM
120 LET C=0: FOR B=1 TO 3: FOR A=1 TO 3: LET B(A,B)=0: LET X=P(A,B,1): LET Y=P(A,B,2): CSR X,Y: PRINT PG$(4);
122 LET D=INT(RND*2)+1: IF D=1 THEN  GOTO 126
124 LET B(A,B)=B: CSR X,Y: PRINT PG$(B);: LET C=C+1
126 NEXT : NEXT : IF C=0 OR C=5 THEN  GOTO 120
128 LET LS=0: LET MV=0: CSR 7,20: PRINT "[1-9] Select square": CSR 8,22: PRINT "[Q/q] quit puzzle"
197 REM
198 REM Play
199 REM
200 LET CA=0: CSR 1,4: PRINT "Last": CSR 1,5: PRINT "move";LS: CSR 1,7: PRINT "Move";MV;" ": IF MV=30 THEN
202 LET S$=INKEY$: IF S$="Q" OR S$="q" THEN  GOTO 304 ELSE  IF S$<"1" OR S$>"9" THEN  GOTO 202
204 LET S=VAL(S$): LET SX=K(S,1): LET SY=K(S,2): IF B(SX,SY)=0 THEN  GOTO 202
206 CSR P(SX,SY,1),P(SX,SY,2): INK 9: PRINT PG$(SY);: LET CA=1
220 LET AD(1,1)=SX: LET AD(1,2)=SY: LET C=1
222 FOR A=1 TO 4: LET AX=SX+M(A,1): LET AY=SY+M(A,2): IF AX<1 OR AX>3 OR AY<1 OR AY>3 THEN  GOTO 226
224 LET C=C+1: LET AD(C,1)=AX: LET AD(C,2)=AY
226 NEXT
227 REM
228 REM Remove/replace pegs
229 REM
230 FOR B=0 TO 2: FOR A=1 TO C: LET MX=AD(A,1): LET MY=AD(A,2): LET PX=P(MX,MY,1): LET PY=P(MX,MY,2)
231 IF B(MX,MY)=0 THEN  GOTO 250
232 REM Down
233 REM
234 INK 9: ON B GOTO 236,238,240
236 CSR PX,PY: PRINT " ";: CSR PX,PY+1: PRINT LEFT$(PG$(MY),4);: GOTO 260
238 CSR PX,PY+1: PRINT " ";: CSR PX,PY+2: PRINT LEFT$(PG$(MY),1);: GOTO 260
240 CSR PX,PY+2: PRINT " ";: LET B(MX,MY)=0: GOTO 260
247 REM
248 REM Up
249 REM
250 INK 3: ON B GOTO 252,254,256
252 CSR PX,PY+2: PRINT LEFT$(PG$(MY),1): GOTO 260
254 CSR PX,PY+1: PRINT LEFT$(PG$(MY),4);: GOTO 260
256 INK 15: CSR PX,PY: PRINT PG$(MY);: LET B(MX,MY)=MY
260 NEXT : NEXT : INK 15: LET LS=S: LET MV=MV+1
267 REM
268 REM Solvrd?
269 REM
270 LET C=0: FOR B=1 TO 3: FOR A=1 TO 3: IF B(A,B)<>0 THEN  LET C=C+1
272 NEXT : NEXT : IF C=8 AND B(2,2)=0 THEN  GOTO 300 ELSE  IF C=0 THEN  GOTO 306 ELSE  GOTO 200
297 REM
298 REM End
299 REM
300 GOSUB 320: CSR 9,20: PRINT " PUZZLE SOLVED ": GOTO 310
302 GOSUB 320: CSR 10,20: PRINT " MOVE  LIMIT ";: GOTO 310
304 GOSUB 320: CSR 10,20: PRINT " QUIT PUZZLE ";: GOTO 310
306 GOSUB 320: CSR 12,20: PRINT " NO PEGS "
310 CSR 3,22: PRINT "Press  [RET] to play again"
312 IF INKEY$<>CHR$(13) THEN  GOTO 312 ELSE  CSR 0,20: PRINT CHR$(5): CSR 0,22: PRINT CHR$(5): GOTO 120
319 REM
320 CSR 0,20: PRINT L$: CSR 8,22: PRINT CHR$(5);: RETURN
```

GOTO 302

# LIGHT LINES

## GRANT PASMORE

This is a delightful game to play. You will also notice that the game is very fast even though it has been written in Basic.

The idea is to trap the computer's light line so that it cannot move. However, you must not collide with the stars etc or you will lose a life.

```
5 SAVE "Light Lines": VS 4: COLOUR 4,1: COLOUR 2,1: CLS : PAPER 1: GOTO 450
10 LET CS=0: LET PS=0: GENPAT 0,37,255,129,189,165,165,189,129,255
20 LET CX=52: LET CY=90: LET CDI=INT(RND*4)+1: LET PX=196: LET PY=90: LET DI=1: CSR 4,0: PAPER 1: INK 15: PRINT "COMPUTER ";CS;"    PLAYER ";PS
30 IF CS=5 THEN  CSR 2,5: PRINT "THE COMPUTER HAS BEATEN YOU": GOTO 450
40 IF PS=5 THEN  CSR 2,5: PRINT "YOU HAVE BEATEN THE COMPUTER": GOTO 450
80 COLOUR 3,13: LINE 6,5,249,5: LINE 6,6,249,6: LINE 249,180,6,180: LINE 249,179,6,179: LINE 6,180,6,5: LINE 7,179,7,6: LINE 249,5,249,180:
LINE 248,6,248,179
90 ATTR 2,1: FOR A=178 TO 175 STEP -1: LINE 8,A,247,A: NEXT A: FOR A=2 TO 22: CSR 1,A: PRINT "                                        ": NEXT A
100 LINE 8,7,247,7: ATTR 2,0: COLOUR 3,14: FOR A=1 TO (PS+CS+2)*50: PLOT (INT(RND*240)+8),(INT(RND*172)+7): NEXT A: ATTR 3,1
110 INK 7: FOR A=0 TO (CS+PS)*2: CSR (INT(RND*30)+1),(INT(RND*21)+2): PRINT "%": NEXT A: CSR 6,12: PRINT " ": CSR 24,12: PRINT " ": COLOUR 3,15
120 IF INKEY$="" THEN  GOTO 180
140 LET KEY=ASC(INKEY$): IF KEY=8 THEN  LET DI=1: GOTO 180
150 IF KEY=10 THEN  LET DI=2: GOTO 180
160 IF KEY=25 THEN  LET DI=3: GOTO 180
170 IF KEY=11 THEN  LET DI=4
180 LET PX=PX+(DI=1)-(DI=3): LET PY=PY+(DI=2)-(DI=4): IF GR$(PX,PY,1)=CHR$(1) THEN  GOTO 380
220 PLOT PX,PY: LET TSX=CX: LET TSY=CY: IF RND<.01 THEN  GOTO 260
230 LET CX=CX+(CDI=1)-(CDI=3): LET CY=CY+(CDI=2)-(CDI=4): IF GR$(CX,CY,1)=CHR$(1) THEN  GOTO 250
240 PLOT CX,CY: PLOT (INT(RND*240)+8),(INT(RND*172)+7): GOTO 120
250 LET CX=TSX: LET CY=TSY
260 ON (INT(RND*4)) GOTO 270,280,290,300
270 IF GR$(CX+1,CY,1)=CHR$(0) THEN  LET CDI=3: GOTO 120
280 IF GR$(CX-1,CY,1)=CHR$(0) THEN  LET CDI=1: GOTO 120
290 IF GR$(CX,CY+1,1)=CHR$(0) THEN  LET CDI=4: GOTO 120
300 IF GR$(CX,CY-1,1)=CHR$(0) THEN  LET CDI=2: GOTO 120
310 IF GR$(CX+1,CY,1)=CHR$(0) THEN  LET CDI=3: GOTO 120
320 IF GR$(CX-1,CY,1)=CHR$(0) THEN  LET CDI=1: GOTO 120
330 IF GR$(CX,CY+1,1)=CHR$(0) THEN  LET CDI=4: GOTO 120
370 LET EX=CX: LET EY=CY: LET F=240: LET A=-3: LET PS=PS+1: GOTO 400
380 LET EX=PX: LET EY=PY: LET F=50: LET A=10: LET CS=CS+1
400 SBUF 2: SOUND 2,F,0,A,0,75,1: SOUND 3,3,15: GOSUB 440: GOSUB 440: PAUSE 1000: SOUND 2,0,0: SOUND 3,0,0: ATTR 3,0: GOTO 20
440 FOR A=1 TO 6: PLOT EX+A,EY: PLOT EX+A,EY+A: PLOT EX+A,EY-A: PLOT EX-A,EY: PLOT EX-A,EY+A: PLOT EX-A,EY-A: PLOT EX,EY+A: PLOT EX,EY-A: NEXT A: RETURN
450 CSR 5,19: PRINT "PRESS ANY KEY TO PLAY": IF INKEY$="" THEN  GOTO 450 ELSE  GOTO 10
```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**********

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This is a March special offer, only orders received by 21st April 1985

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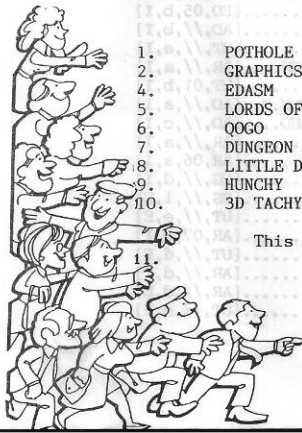
## Genpat's TOP SELLERS



| | | |
|---|---|---|
| 1. | POTHOLE PETE | Continental. |
| 2. | GRAPHICS ±AGROVATOR | Syntax. |
| 4. | EDASM | Syntax. |
| 5. | LORDS OF TIME | Level 9. |
| 6. | QOGO | Continental. |
| 7. | DUNGEON ADVENTURE | Level 9. |
| 8. | LITTLE DEVILS | Syntax. |
| 9. | HUNCHY | Syntax. |
| 10. | 3D TACHYON FIGHTER | Continental. |
| 11. | | |

This chart is based on sales from within the Club only.

# SOFTWARE

KEY:
Program name.....[Type of program,Issue reviewed,Price,Availability]

Type of program : BS=Business AR=Arcade TW=Tactical wargame UT=Utility
ED=Educational AD=Adventure BG=Board game CG=Card game WD=Withdrawn
Price : a=#4.95 b=#5.95 c=#6.02 d=#6.95 e=#7.95 f=#8.75 g=#12.75
h=#21.25 i=#4.50 j=#16.57 k=#13 l=#8.95 m = #9.95
Availability : I=In stock E=Expected soon U=Unavailable
N.B. Please note that the prices quoted are special club discount prices

PAYROLL.....[BS,//,h,I]
SALES LEDGER.....[BS,//,g,U]
NEMO.....[AR,//,c,I]
SUPER MINEFIELD....[AR,//,c,I]
PHAID.....[AR,//,c,I]
TOADO.....[AR,//,c,I]
TAPEWORM.....[AR,//,c,I]
ASTROMILON.....[AR,//,c,I]
POT HOLE PETE.....[AR,02,c,I]
MUSIC PAD.....[WD,02,c,I]
DENNIS
& THE CHICKEN...[AR,//,c,U]
PONTOON&BLACKJACK..[CG,06,c,I]
MAXIMA.....[AR,01,c,I]
M CODER.....[UT,//,c,U]
JOHNNY REB.....[TW,//,c,I]
THE KEY TO TIME....[AD,//,c,I]
STAR COMMAND.....[AR,01,d,I]
TURBO.....[AR,02,d,I]
KNUCKLES.....[AR,//,e,I]
REVERSI.....[BG,//,e,I]
FIRST LETTERS 1....[ED,03,f,I]
MATHS 1.....[ED,//,f,I]
SNOWBALL.....[AD,04,f,I]
LORDS OF TIME.....[AD,//,f,I]
COLOSSAL ADVENTURE.[AD,02,f,I]
SPELLI-COPTER.....[ED,05,b,I]
UTILITIES 1.....[UT,//,a,I]
COMPOSER.....[UT,//,k,I]
SALTY SAM.....[AR,//,a,I]
MISSION OMEGA.....[AR,//,a,I]
BRUNWORD.....[BS,02,j,I]
GOLDMINE.....[AR,//,c,I]
LITTLE DEVILS.....[AR,04,a,I]
AGROVATOR.*.....[AR,04,b,I]
HUNCHY.....[AR,//,a,I]
MISSILE COMMAND &
ARCADIANS.....[AR,//,a,I]
SON OF PETE.....[AR,//,d,I]
*FLUMMOX .....[AR,//,b,E]
ESCAPE FROM ZARCOS.[AR,//,d,I]
ROAD RUNNER .....[AR,//,a,E]
TAPE TO DISC.....[UT,//,d,I]

PURCHASE LEDGER.....[BS,//,g,I]
BASIC BUSINESS.....[BS,//,b,I]
KILOPEDE.....[AR,//,c,I]
BLOBBO.....[AR,//,c,I]
MISSION ALPHATRON.....[AR,//,c,I]
OBLOIDS.....[AR,01,c,I]
CONTINENTAL RAIDERS....[AR,//,c,I]
ASTRO PAC.....[AR,//,c,I]
QOGO.....[AR,02,c,I]
SNAPPO.....[AR,//,c,I]
DENNIS
GOES BANANAS.....[AR,//,c,U]
THE ZOO GAME.....[AD,03,c,I]
GAUNTLET.....[AR,//,c,U]
COBRA.....[AR,//,c,I]
MURDER AT THE MANOR....[AD,//,c,I]
FIREHOUSE FREDDIE.....[AR,06,c,I]
DRAUGHTS.....[BG,//,d,I]
3D TACHYON FIGHTER.....[AR,04,d,I]
BACKGAMMON.....[BG,//,e,I]
CHESS.....[BG,//,f,I]
WORD & PICTURE.....[ED,04,f,I]
PHYSICS 1.....[ED,//,f,I]
ADVENTURE QUEST.....[AD,//,f,I]
DUNGEON ADVENTURE.....[AD,01,f,I]
RETURN TO EDEN.....[AD,//,f,I]
HELI-MATHS.....[ED,05,b,I]
EMERALD ISLE.....[AD,//,b,I]
EDASM.*.....[UT,//,e,I]
DOODLEBUG DESTROYER....[AR,//,a,I]
GRAPHICS.....[UT,01,b,I]
THE MAN FROM GRANNY.*..[AD,//,a,I]
ALICE IN WONDERLAND....[AD,//,c,I]
HAWKWARS.....[AR,//,a,I]
BOUNCING BILL.....[AR,06,a,I]
BRIDGE.*.....[CG,//,d,I]
MEMWORD.....[BS,//,l,E]
MEMOSKETCH.....[UT,//,e,E]
QOGO 2 .....[AR,07,d,I]
CANVAS .....[UT,//,d,E]
CHAMBEROIDS .....[AR,//,d,I]
LES FLICS .....[AR,//,d,E]
USER EXTEND .....[UT,//,e,I]

| | |
|---|---|
| SPOOLER .....[UT,//,a,I] | H & L DUMP .....[UT,//,a,I] |
| BASIC EXTENSIONS...[UT,//,d,I] | DATA FILE .....[UT,//,g,I] |
| FATHOMS DEEP.....[AR,//,d,I] | TARGET ZONE .....[AR,//,d,I] |
| ICEBERG .....[AR,//,a,E] | MINER DICK .....[AR,07,d,E] |
| SUPER BIKE .....[AR,//,a,E] | FIG FORTH .....[UT,//,g,E] |
| CAVES OF ORB .....[AD,//,m,E] | BORIS & THE VAMPIRES ..[AR,//,b,E] |
| MEMO-CHEQUE.....[UT,//,d,E] | |

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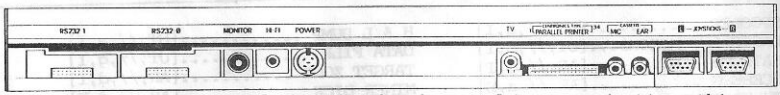
Member PAUL WOOD won the competition featured in last months end statement. The puzzle was ,of course, referring to the RS232 output. Paul will receive a copy of Qogo2 within the near future.




If any of you have been wondering what has happened to communications this past two weeks - the answer is simple: we have all been ill ! Yes, the Flu bug has swept through Genpat like the plague. I have never, ever, felt so ill as I have the past weeks. We have been reduced to working just a couple of hours a day, and then it has been a case of get back to bed quick. So do not worry, we are still here, and all letters will be answered as soon as possible.

The software scene is very active this month. We now have in stock: Megastar's QOGO2 , SON OF PETE , ESCAPE FROM ZARKOS , SURFACE SCANNER , CHAMBEROIDS , AND FATHOMS DEEP - ALL EXCELLENT GAMES. We have also received stocks of LEVEL 9'S "EMERALD ISLE" this is an excellent adventure and is at the new low price of 5.95 to club members.

MEMOSKETCH is almost ready for release and if you want a drawing package that is out of this world, then this is the package for you. The screens you can design with this package are almost unbelievable.When you purchase the utility you get two examples on the tape, and I can assure you, you will be amazed. All members who have already purchased please be patient, we will get them to you as soon as possible, but we completely goofed on the expected sales and have had to do a re-duplication. Syntaxsoft have also got the very first Graphic Adventure "The Cave's of Orb" 9.95 and this will now be ready for release by the middle of April due to a hold up with the art work.

We can still report that membership is growing by an average of 12 new members per day, and we seem ready to become a very big club.... with a lot of clout!

By the time you receive this edition, subscribers to PCN will have seen that we have advertised within the pages of that magazine, and in return they have published an article on the MTX. Many thanks to all members who did take the trouble of writing to the mags. The excercise was worth while, and some magazines have even printed the letters - it is nice to see that a lot of members are willing to support the club and the MTX.

At the time of writing this End Statement the lads from Memotech are over in the USSR and the crunch comes on the 27th of this month. I am keeping my fingers crossed that they pull off the coup of the century, and bring the order back with them..... this order will have far reaching effects on the U.K user, and we will all reap the benefits.

Let me now turn to the subject of letters. When you write to the club please do not enclose queries with orders. If you want information please write the questions on a separate sheet of paper. We have enormous problems in keeping track of the letters after the orders have been despatched. And please do not forget to include a stamp etc for a reply.

Finally, we have a little treat for you. Any member who orders 3 new releases, or more, will also receive a random free gift of a Continental title .... these cannot be specified, they are as stated, randomly selected. However, as you know, they are worth at least 5.95, so it is a good saving. There is no tape of the mag this month, but we will have a bumper one in April when we shall be bringing you a review of Syntaxsoft's FIG FORTH [12.95], extended error messages for you to type in, and a colouring competition for the under 9's. We shall also start listing the first of your many attempts at coding & decoding messages - this has been a really good competition, and we shall now start looking for the winner. I am sorry to have to report that the USER MANUAL court case has not yet been to chambers so we are still at stalemate.

Please take care, and keep those programs coming in.