

ALL MICRO NEWS

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EDITORIAL

Yes your right I have acquired some new fonts for the DTP and just to make you suffer I will go against all the good rules and use them all together! As we are not getting a great deal of input from you guys out there subscribing to AMN we have decided to take a fresh look at what we produce and see if we can change it in any way for the better. We would like to appeal to a certain sector of IBMPC users as well as the Einstein, we realise that IBM users are not going to subscribe to AMN when there are so many good PC mags on the news stands but we feel there is an opportunity for AMN to help certain users of one or two particular programs. So if we could specialise in supporting a certain package say a low cost DTP for starters we could produce an interesting mag in which people would have a common interest. We would also like to feature on certain Einstein software, starting from scratch to more advanced techniques.

Now we would like you to tell us which packages you think would be suitable for this approach, both for PC and Einstein, so please do tell us!! We have also decided to make AMN a bi-monthly publication starting with this edition, January 1993. Anyone recently subscribing for 12 issues will still get the said amount. See back page for rates.

Keep tapping!!

Software Review :- SOUTHERN BELLE

by Ted Cawkwell

As a trainspotter from a long way back I was thrilled to get this disk to review. Now I could be an engine driver at last! Would I be mortified to discover what I had lost? Would my BR pension be as good as the one I have now? Would it really have been worth it?

For the benefit of the curious I will digress slightly; No I do not still have my anorak! Indeed, I remember that I wore a double breasted suit (with large lapels) and carried a 'mac' over my shoulder when the weather called for it. The main requirement was for capacious pockets for all the Ian Allen reference books, spare pencils (Mr Biro had not yet emerged, and the fountain pen was too unreliable), binoculars, cameras and notebooks, plus adequate supplies of food and drink. As it was wartime the camera and binoculars were dicey possessions and were used with furtive glances around! Ah! They were the days! I did attain the dizzy heights of the footplate a few times but, of course, the controls were verboten!

Today I am actually driving a fast passenger train from London to Brighton and I can do what I like with the controls! I must admit, though, that you have to be a real enthusiast to suffer the sheer boredom of watching black and white skeleton bridges and stations slowly approaching the cab due to the limitations of Albert's memory bank. The author was well advised to incorporate a five times increase of speed to get the one hour journey over in 12 minutes. In the event, 12 mins. is little enough time to attend to all of the requirements of the boiler and firebox as well as paying attention to signals and timetable requirements.

Well, I suppose I had better get on with the review. The disk boots up directly but is copy protected so you have to use the original. There are two instruction sheets and the directions are pretty comprehensive, the second sheet giving a thorough explanation of the various controls. Where Symbol Shift is printed the INS/DEL key is meant and where CAPS Shift is printed I can find no equivalent key on the Einstein, therefore you cannot exit from the Demonstration or Training runs at all. Pressing X does get you out of the High Speed Run however. Using the ALPHA LOCK per pro CAPS SHIFT just locks everything up. The other control keys do seem to work as advertised. At the opening screen you are given 10 options running from a high speed Demonstration run to a problem run, which is a random choice of the other options plus extra problems (like ice on the rails). The final choice is to LOAD a saved game.

After a few careful runs of the demonstration, I tried the most elementary training run available, operating only the regulator, cutoff and brakes. Once I got moving I went to 5x speed and did quite well (I thought!) until the approach to Brighton station. This is difficult, it is hard to tell that you have really arrived and I was rewarded with a message accusing me of crashing into Brighton station! It will never be the same again! My overall score was 13% with Economy 23%,Timing 18% and Safety 0%!

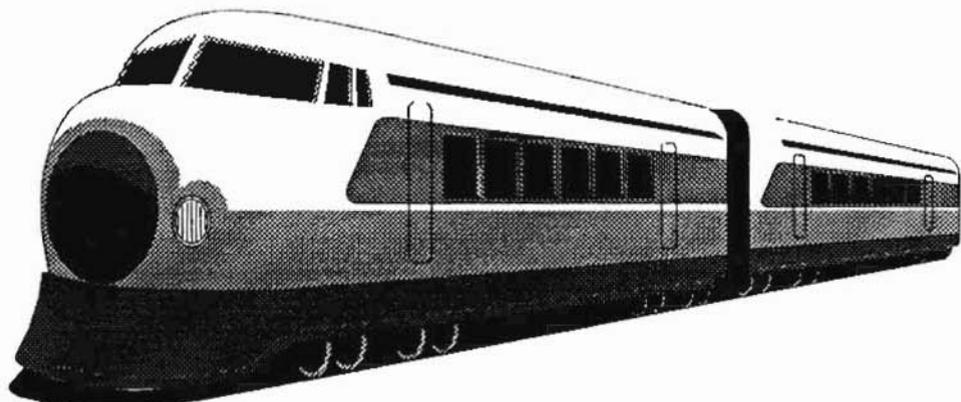
My next attempt was much better except that I was so cautious at Brighton that I was stopped OUTSIDE for minutes wondering when the game would be over! My overall this time was 62%(fail) with economy 49%,timing 52% and safety 85%. Encouraging at least! I still haven't qualified as a driver (70%) but have made some interesting runs culminating in the 'Southern Belle' (pride of the Southern Railway) where I didn't do too badly, unlike my attempt at the problem run where there was ice on the lines and I slipped so badly that the boiler ran out of water and my fusible plugs melted. And this was whilst I was still in Victoria Station!

There is a lot more to Belle than meets the eye, you have to get yourself into the part and constantly check the timetable, signals, firebox and boiler and if you do this properly the time flies by. The poor graphics are the main stumbling block, it is very difficult to be sure exactly where you are at stations and this is where you can lose many marks. The boiler thermometer is also a bit difficult to read as if it has a built in delay but you can get used to it, and the damper control takes a bit of practice.

There is provision for SAVEing a part completed run and loading it in again at the start of the next session. There are some nice programming touches; the damper position is controlled by the amount of smoke from the chimney and four different smoke levels are available at the 1-4 keys for comparison; and the whistle is quite good if a bit muted. There is no chuff-chuff sound with the program, an excellent decision I think! The graphics other than those of the passing countryside are pretty good and everything you need is to hand - just for the press of the right button. I confess that I enjoy this game but I am prejudiced - I can almost smell the steam! On balance it is one for the enthusiast and like Flight Simulation among others there are periods of boredom interspersed with spells of frenetic activity but it is better than driving on a motorway! At least,you know you are going to survive the moments of sheer terror!

A passing thought I believe the examiner for the Belle later became a Driving Test examiner, he sounds just like the one I got! but that is another story. In the meantime enjoy your train driving and don't forget to whistle when approaching a tunnel, yes there is a penalty for that too! I am now off to try and break the record for the London to Brighton run. At the last attempt I ran out of coal 10 miles from Brighton.

Finally referring back to paragraph one, I find the pension pretty poor, maybe I had a lucky escape! Or, conversely, on my performance so far, perhaps BR's passengers did! One of my sons did better, he wanted to be a fireman (!) and is one and gets his own program on the tele every weekend!



O.K. so it doesn't use steam!, it's the only clip art close to hand!!
Southern Belle is £12.95, available from Sharward Services as usual!



But this might have!! Well I had a space to fill!

AMS 6 Review

Despite the economic climate and the weather! well actually the weather was good, AMS6 accelerated into over 60 trade stands, 5 charity stands and around 3,000 visitors. Some of the traders actually sold out of certain items!! which goes to tell that many goodies were well priced.

The usual chaos surrounded the Bring & Buy Sale despite being trebled in size to last year! but again many bargains were had. This year saw the continuance of last with support holding for the Atari 8 bit, Albert still there but with little new software or hardware, a few bits for the other lesser known 8 bit machines, but huge amounts of software and ad-ons for the IBM clones, STs and Amigas.

Bingley Hall really is a vast area and this has the advantage that you are not cramped for space, either as a visitor or an exhibitor. A somewhat unusual exhibit was an Amstrad 1640 that had caught fire and melted, this scarred smoked colour molten plastic mess still worked!! There must be an inner meaning to this somewhere?? Moving round the hall there was the usual price competition for disk sales, 720k 3.5" were down to £15 for 50, and disk boxes were being nearly given away at around £3. Shows are a good place to stock up on media, so long as you haven't got a long trek back to the car, no problem here as there is plenty of parking close by, but you can get a little carried away with silly prices.

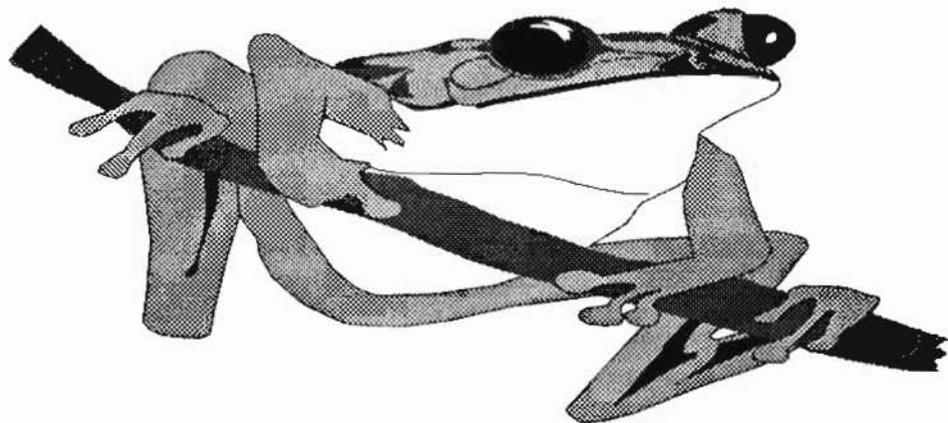
Computer Manuals were a late booking and had on sale a large selection of up to date books and manuals, I think we are in the wrong game when you look at the price of most technical manuals, still compared to the hours you can spend sitting frustrated, battling away with your computer over the syntax of some silly command a few choice explanations are worth the cost! A good few stalls had early revisions of top end software products such as Corel Draw, Pagemaker etc. at very reasonable prices around £50 - £100 and for most of us mere mortals these revisions are more than adequate, I have always felt that the major software houses would make more profit if they sold the packages at a cost the average user could afford, £500 for Pagemaker 4 or £400 for Paradox 4 puts them out of reach to a lot of users and definitely encourages piracy, still it's a funny old game!

There were many regular exhibitors, which must reflect well on the day, Frank from Satellite Surplus had a wide range of aerials and all the other bits that go with them, I think we have too much TV as it is! (but I do miss the live football!) TekData disappointed this year as they usually have plenty of quality goods at knock down prices, talking to them they explained that they have been so successful in moving products that they considered 'junk' during the year that very little was left. They did have some complete second user XT systems with hard disks for £100, they went very quickly!

The Atari 8 bit XL machine is a strange beast, people are still using it! We sold advance tickets to visitors from Aberdeen and Micro Discount sold some to visitors from Ireland and Holland! Certainly there were plenty of exhibitors supporting said machine and let's hope it continues to buck the trend and carry on for many years to come. Page 6 Publishing still run their magazine supporting the 8 Bit and there were 3 User Groups present on the day

B+H were plodding along as usual and thankfully Jim Ellacott and his wife Betty made it this year complete with Einstein PD library and an ever expanding IBM library. There were at least two other shareware libraries present and the quality of some of this software is just staggering. It is well worth considering the shareware programs that are available before purchasing a major commercial product, you have a good chance with the ST, Amiga or PC of finding something equally as good for a fraction of the price.

Next years show is on the 13th November and I expect it will be here before I can blink, is it true that the speed of passing time is directly proportional to your age??



DOG FIGHT

(A GAME BY D. WILLIAMS WITH UPDATES BY MIKE SMALLMAN)

This game by Dave Williams gave me the excuse I needed to use a routine I wrote some time ago that reads the keyboard. The keyboard routine does not speed up the game much in this case, but it does allow you to move diagonally and shoot at the same time. Also with a little work one could from this idea produce a quite entertaining little game. As usual it is also hoped that at the same time you will learn something about assembly language...

Here is the original game of Dogfight, type it in and try it. Then try the modifications I've made and see what you think.

```
10 REM*****
20 REM*
30 REM*   D O G - F I G H T   *
40 REM*
45 REM*
46 REM*
50 REM*   by David Williams   *
60 REM*
70 REM*       for UKEUG       *
80 REM*
90 REM*****
100 SHAPE4,"070810202021223E 2221202010080700 F088848282C2223E
22C282828488F000"
110 SHAPE0,"0101FF0344084909 480443FF02040C0C 8080FFC022109290
1220C2FF40203030"
120 BCOL11:TCOL1,0:CLS40:MAG2:GOSUB510
130 PRINT@3,2;"You are the gunner in a world-war 1"
140 PRINT@3,4;"bomber which is being chased by four"
150 PRINT@3,6;"fighters. You must shoot them down"
160 PRINT@3,8;"before they get you. The gun-sight"
170 PRINT@3,10;"can be moved as follows:"
180 PRINT@11,13;"LEFT = "':TCOL15,4:PRINTCHR$(136);" "':GOSUB500
190 PRINT@11,14;"RIGHT = "':TCOL15,4:PRINTCHR$(132);':TCOL1,0
200 PRINT@11,16;"UP = "':TCOL15,4:PRINTCHR$(139);" "':GOSUB500
210 PRINT@11,17;"DOWN = "':TCOL15,4:PRINTCHR$(138);':TCOL1,0
220 PRINT@3,20;"Press space-bar to test the machine"
230 PRINT@3,22;"gun and start the action.";
```

```

240 A=INCH:IFA<>32THEN220:ELSEGOSUB490:POKE64326,48
250 BCOL7:TCOL1,0:CLS:POKE64318,136:F=500:B=300:TCOL15,6
260 FORA=0TO2:PRINT@3,A:MUL$( " ",35):NEXT:A=1
270 PRINT@4,1,"AMMO":@33,1,"FUEL":GOSUB510
280 S1=11:S2=12:S3=15:S4=4:N=32
290 X=RND(3):Y=RND(3):U=RND(500):PRINT@33,3:F:PRINT@3,3:B:
IFU=10THEN590
300 IFX=YTHENF=F-1
310 IF F=10 OR B=0 THEN590
320 SPRITE0,124+H,15+V,1,4
330 SPRITE1,100+Y,50-X,S1,0
340 SPRITE2,74-Y,100+X,S2,0
350 SPRITE3,124+Y,160-X,S3,0
360 SPRITE4,164-Y,60+X,S4,0
370 IFS1+S2+S3+S4=28THEN520
380 A=PEEK(64326)
390 IF A=11THENV=V+2:GOTO290
400 IF A=10THENV=V-2:GOTO290
410 IF A=8THENH=H-2:GOTO290
420 IF A=4THENH=H+2:GOTO290
430 IF A=32THENB=B-1:GOSUB450
440 GOTO290
450 IF H=-24ANDV=34THENS1=7
460 IF H=-50ANDV=86THENS2=7
470 IF H=0ANDV=144THENS3=7
480 IF H=40ANDV=46THENS4=7
490 PSG6,15:PSG7,71:PSG8,16:PSG9,16:PSG10,16:PSG12,16:PSG13,0:RETURN
500 TCOL1,A:PRINT" and "':TCOL15,4:PRINT" SHIFT"':TCOL1,0:RETURN
510 PRINT@16,A,"DOG-FIGHT":RETURN
520 SPRITEOFF:BCOL2:TCOL1,0:CLS:F=500-F
530 PRINT@3,2,"Nice shooting. You have";B;"rounds"
540 PRINT@3,4,"of ammunition left and have consumed"
550 PRINT@3,6,"a total of";F;"gallons of fuel.":H%=F/11
560 PRINT@3,8,"Your aircraft has received";H%;"hits -"
570 PRINT@3,10,"but none of these are serious."
580 PRINT@11,16,"Again (Y or N) :":F=89:GOTO610
590 SPRITEOFF:BCOL6:CLS:PRINT@9,5,"THE COCKPIT IS ON FIRE":F=74
600 PRINT@11,16,"Press key J to jump.":
610 A=INCH:IF A<>F THEN 610:ELSE RUN

```

Save the above with SAVE "DOG"<E> and run it then try the following modifications.

```

92 CLEAR&8000
94 LOAD "SITES.OBJ"
180 PRINT@11,13;"LEFT = N"
190 PRINT@11,14;"RIGHT = M"
200 PRINT@11,16;"UP = Q"
210 PRINT@11,17;"DOWN = A"
285 CALL &8000
290 X=INT(RND(3)):Y=INT(RND(3)):U=RND(500):PRINT@33,3;F:
PRINT@3,3;B
295 POKE &9003,0
310 IF F=10 OR B=0 OR U=10THEN590
320 Y1=100+Y:Y2=38-Y:Y3=124+Y:Y4=164-Y
322 X1=52-X:X2=198+X:X3=160-X:X4=60+X
330 SPRITE1,X1,Y1,S1,0
340 SPRITE2,X2,Y2,S2,0
350 SPRITE3,X3,Y3,S3,0
360 SPRITE4,X4,Y4,S4,0
380 CALL &8008
390 A=PEEK(&9003):IF A=1THEN B=B-1:GOSUB 450

```

Delete lines 400 to 430 (An easy way to delete a line is to just type the line number followed by ENTER)

```

450 HX=PEEK(&9001):HY=PEEK(&9000):HY=191-HY
460 IFHX=X1ANDHY=Y1THENS1=7
470 IFHX=X2ANDHY=Y2THENS2=7
480 IFHX=X3ANDHY=Y3THENS3=7
485 IFHX=X4ANDHY=Y4THENS4=7

```

Delete line 600

Finally modify line 610

```

610 A=INCH:IF A<>89ANDA<>74THEN END:ELSE CLS:GOTO180

```

All we need now is the machine code to read the keyboard. After saving your modified Dogfight program with SAVE "DGMOD" <E> you now have to reset your machine with no disc in the drive. This puts you into MOS, next type the following code.

The <E> means press the ENTER key

To enter the code first type M 0100 <E> Just type in the following code, be careful to get it exactly the same as follows;

```
0100 3E64320090320190 <E>
0108 01003BCD2C800E08 <E>
0110 3A0090ED79E5E13A <E>
0118 0190ED79E5E13E04 <E>
0120 ED79E5E13E01ED79 <E>
0128 CD3180C9D5CFC1D1 <E>
0130 C91EDFCD8080CB77 <E>
0138 20073A00903D3200 <E>
0140 901E7FCD8080CB47 <E>
0148 20073A01903D3201 <E>
0150 901E7FCD8080CB4F <E>
0158 20073A01903D3201 <E>
0160 901EBFCD8080CB77 <E>
0168 20073A00903C3200 <E>
0170 901EFECD8080CB77 <E>
0178 20053E01320390C9 <E>
0180 3E0E010200ED797B <E>
0188 010300ED79010200 <E>
0190 3E0FED79ED78C9. <E>
```

Don't forget the full stop after the last C9. Put a DOS disc in your drive and press CTRL and BREAK to boot your machine. Save the code you have just entered, with SAVE 1 SITES.OBJ <E>

You can now run the program Dogmod from XBAS and you should see a difference in the way the keys operate. If your machine crashes you'll have to go back and check that you've entered the machine code correctly.



Seems
quite
tame to
me!!



LETTER FROM AN ISLAND DWELLER 3

Well Christmas and the new year have come and gone. I shall be back at university in a couple of days and I've still got three essays to write by the time I go back aaghh! Our amateur dramatic group is hoping to put on 'Blythe Spirit' in March but we don't seem to have anyone for the lead...

One of the tasks that I've taken on recently is one set by my History tutor at the university. He's very interested in ship archaeology and in fact runs a course which I attend. One of the problems with archaeology is surveying, underwater this becomes even more of a problem. A surveying technique which was used on the Mary Rose was one of fixing hooks into solid parts of the ship then using conventional surveying to locate their position. Once these points are known relative to one another, one simply hangs one end of a measure on a hook then swims to a point on an object to be surveyed. The measurement of length from the fixed point to the object is recorded. This process is repeated from at least two more fixed points and the results are then fed into a computer which, using Pythagoras, works out and plots the position of the point on the object.

This method is relatively quick, cheap and accurate. The problem for the small scale archaeological team is that the program that plots the positions costs over #2000. This is where I come in, I thought it would be interesting to write such a program. The trouble is, my machine code programming abilities are limited, I have problems with mathematical functions. Basic isn't really suitable so I decided it required either 'C' or Pascal, neither of which I know anything about. In the end I plumped for Pascal.

I got a copy of the Turbo Pascal tutor disk for the PC from Jim and set to work. Disk 038 contains the Turbo Pascal tutor program and a number of Pascal programs that are referred to throughout the tutorial. On loading the disk and typing go I was greeted with a menu screen with some confusing option letters at the bottom. I soon learned that by pressing the ESC key I could step through the document files on the disk. The tutorial and the Pascal files are held in compressed form under Manual.exe and Files.exe both of which I transferred to my hard drive. These have to be placed in separate directories as they have common named files when expanded. The files are expanded by simply typing the executable file name from the DOS prompt. You can then print out the 71 pages of the manual and begin the learning process. There was supposed to be a program that printed out the manual but I couldn't find it?? I used Turbo Pascal V.** and found no problems in running the tutorial programs.

The pace is very easy going and you soon get used to the, what was for me, strange format of Pascal programming. Unfortunately the tutorial is a basic introduction to Pascal and it doesn't cover plotting and mathematical calculations which is what I require. I also obtained, from Jim, some Pascal utilities on P039 and P040. These have a number of graphic Pascal programs, but I was unable to get these to run. It appears they call other routines from the disk, but when I tried to compile the programs my version of Pascal kept telling me there was an error. Has anyone out there tried these??

Back to the tutorial, as a basic introduction to Pascal programming I can't fault it. However it could do with an update, is there an advanced tutorial out there Jim???

Competition

Win 5 PD or Shareware disks of your choice for adding a suitable caption to the image below. Please state format of disk required i.e. 3", 3.5", 5.25", Einstein or IBM PC.



Go on have a go, amuse yourself and us! and don't forget we give a ten pound voucher for any competitions sent in.

FURTHER O.S. MYSTERIES

As you know the Einstein has two operating systems, these are DOS and MOS. The system which we are interested in this article is the Machine Operating System (MOS). This is a series of instructions which is the base for any program which is run on the computer be it DOS, BASIC or any anything we write ourselves. This MOS is written in a module form i.e. There is a module which accepts input from the keyboard, another which prints to the screen etc. etc..

Why is MOS written in this form? I'm glad you asked that question as it shows you are awake and following what I am saying. Taking the subject of input from the keyboard, this may be required in various forms. One character only or a string of characters, but each input has to be checked to see if it is either a valid character or a control code etc. All this checking can be done with one module which is CALLED by the routine being used. So, how does this help us? Well by knowing the starting address of the modules and what information they require we can use them in our own programs. Why? You do ask a lot of questions don't you. If we can use the routines which are already in the computer it saves us a lot of time and space in our programming.

Where do I find the entry points? YOU don't. When MOS was written a routine (module) was included which when given a number within a certain range, works out which routine you are CALLing. The advantage of using this method is, if a new MOS is produced and routines have been moved, they can still be used with no changes to CALLing programs as the MOS itself still knows where the routines are.

The definition of a MCAL is :

1. Calling the MCAL routine
2. Passing a function number to the routine
3. Supplying any values required by the routine we are calling

To execute a MCAL we first, issue a ReStarT 8 instruction (RST08) followed by the function number (in HEX). When completed the MCAL returns to the address after the function number.

Consider the following.

We have in our program a menu which requires a character input to decide the next action. The coding to collect this input could look like this:

OBJECT CODE	MNEUMONIC
CF	RST08 (ROM CALL)
9C	DB 9C (FUNCTION NUMBER)

Function number 9C is the MCAL which will wait for a key to be pressed and will return with the value of the key pressed in the A register. To display this input we could continue our coding like this.

CF	RST08
9E	DB 9E

Function number 9E will output to the screen the contents of the A register. We don't have to put the value in the A register as function 9C has done this for us. We can now continue and check that this number is a valid one and act accordingly.

Type in the following short program. From the DOS prompt type MOS and press the ENTER key (I shall indicate this key by <E>).
Next type M0100 <E> and enter the following:

```
AF9CFE393802CF9EC30001. <E>
```

Note the full stop after the final number, you must include it.

You can now save this little program by pressing Y <E> which will return you to DOS and then typing SAVE 1 PRKEY.COM<E>

Now type PRKEY try typing something, all may seem well except for... what's that the numbers 0-8 don't work? nor does the space bar!!! Don't panic it's just a little program to show you what you can do with MCALS. Just press CTRL and Break and all will be well. O.K. this program is not a lot of use but it is using a MCAL from one of your own programs. This could be just the beginning of your foray into the world of MCALS.

See Einstein User Vol???????????????? for a complete list of calls.

(Back copies of Einstein User, originally produced by Tatung and then B+H are available from Sharward Services at £1.50 inclusive of P+P).

MACHINE CALL DEMONSTRATION PROGRAM

Following on from the previous article on MCALs, here's a little program that again doesn't do a lot but it does show how they can be used in your programs.

The RST08 function number we shall use in this demonstration is C8, this will draw a line between two given points. The X coordinate is held in the scratch pad location FB96 and FB97, the Y coordinate is held in scratch pad locations FB98 and FB99. These coordinates are loaded into two of the Einsteins registers, namely the IX and IY registers. We also change the type of line drawn by altering values in the scratchpad locations FBA8 to FBAB. Anyway try the program and you'll see what can be done with MCALs.

```
10 RST
100 GOSUB 3300
200 SPRITE 1,100,125,15,0
300 REM MAIN ROUTINE
400 SPRITE 31,X,Y,09,4
500 PRINT @22,2;"TIME = ";TIM
510 PRINT @ 5,2;"HITS = ";HIT
600 TIM=TIM-1:IF TIM<0 THEN STOP
700 Q = KBD
800 IF Q = 53 THEN X = X+1
900 IF Q = 54 THEN Y = Y+1
1000 IF Q = 55 THEN Y = Y-1
1100 IF Q = 56 THEN X = X-1
1200 IF Q = 32 THEN GOSUB 2000
1300 MOV = INT(RND(4))
1400 IF MOV = 1 THEN X = X+3
1500 IF MOV = 2 THEN X = X-3
1600 IF MOV = 3 THEN Y = Y-3
1700 IF MOV = 4 THEN Y = Y+3
1800 GOTO 300
1900 REM END OF MAIN ROUTINE
2000 REM CALL MCAL ROUTINE
2200 CALL &8000
2300 POKE &8020,&FF
2400 CALL &8000
2500 POKE &8012,&A9:POKE &8016,&A8
2600 CALL &8000
```

```

2700 POKE &8020,00
2800 CALL &8000
2900 POKE &8012,A8:POKE &8016,&A9
3000 IF X>95 AND X<110 THEN IF Y>124 AND Y<130 THEN HIT =
HIT+1:X=X+INT(RND(30)):Y=Y-INT(RND(30))
3200 RETURN
3300 REM INITIALISE
3400 MAG 3
3500 X=150:Y=120:TIM=3000
3600 BCOL1:GCOL10:CLS
3700 SHAPE 0,"00000000013F4141"
3800 SHAPE 1,"FF41413F01000000"
3900 SHAPE 2,"000000000F80404"
4000 SHAPE 3,"FE0404F800000000"
4100 SHAPE 4,"0000000000000001"
4200 SHAPE 5,"0B0F000000000000"
4300 SHAPE 6,"0000000000000000"
4400 SHAPE 7,"A0E0000000000000"
4500 DRAW 0,165 TO 255,165
4600 DRAW 0,35 TO 255,35
4700 FILL 3,170,9
4800 FILL 3,12,9
4900 FOR F=0 TO 100:XX=INT(RND(255)):YY=40+INT(RND(125)):PLOT
XX,YY:NEXT F
5000 FOR F=&8000 TO &8028
5100 READ D:POKE F,D
5200 NEXT F
5300 DATA &3E,&72,&32,&96,&FB,&AF,&32
5400 DATA &97,&FB,&21,&6B,&00,&22,&98
5500 DATA &FB,&3E,&FF,&32,&A9,&FB,&AF
5600 DATA &32,&A8,&FB,&32,&AA,&FB,&32
5700 DATA &AB,&FB,&DD,&21,&00,&00,&FD
5800 DATA &21,&24,&00,&CF,&C8,&C9
5900 RETURN

```

Don't forget to save the program before you run it, otherwise if you've made a mistake entering the data your machine will crash and you'll have to type it all in again. I'll leave you to play around with the program but suggest you take a look at the keyboard routine in the modified 'DOG FIGHT' program elsewhere in this mag. You may want to add the routine to this program, see if you can work out how to do it. A bit of sound wouldn't go amiss either!!

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Einstein Software

View Data, Communications use ..	£8.95
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TM01 Colour Monitor .. £78*
Internal 3" disk drive kit £30*
External 800k 5.25" disc drive, metal case with external Einstein PSU, data cable ... £38*
External 3.5" 800k disc drive , metal case inc psu ... £55*

All prices include VAT please add £1 P+P for Software and £2 P+P for hardware.

All items marked with an asterisk are second user but in good condition with a fail on install warranty, i.e. we will refund or replace if it does not work when installed. A lot of these are one offs so please telephone first to check availability.

IBM PC and Accesories

Micrographix Draw Plus for Windows, includes 2,200 clipart images, (list £150) .. £75

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20 Meg tape streamer with software, connects to floppy cable ... £35*

Hercules and Parallel printer port card £7.95*

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management software, driver software and free Lemmings game ... £19.95

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3.5" disks 720k * 10 - £4.50, 720k * 50 - £20.25

3.5" disks 1.4M * 10 - £6.75, 1.4M * 50 - £32

5.25" disks 720k *10 (Verbatim) - £4, 5.25" disks 1.2M * 10 £5

All disks include labels and sleeves.

5.25" to 3.5" metal frame adapter, includes power and data converter ... £6

720k 3.5" disk drive, Teac, ... £30

1.44M 3.5" disk drive, Teac, ... £40

All types of printer ribbons and toner cartridges supplied, please ring for quote.

For Sale; Twin Drive Einstein with colour monitor, complete with manuals and various disks ... £150. 5.25" external disk drive with PSU ... £70 ono.

Mike Pugh, Tel; 0564 823966.

For Sale; Speculator with books, leads and disks. 4 games disks each with 3 games on, 6 original Spectrum tapes including Spitfire 40 and 20 Chartbusters. £20 plus postage if required.

Barry Stokes, Tel; 0249 891932.

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