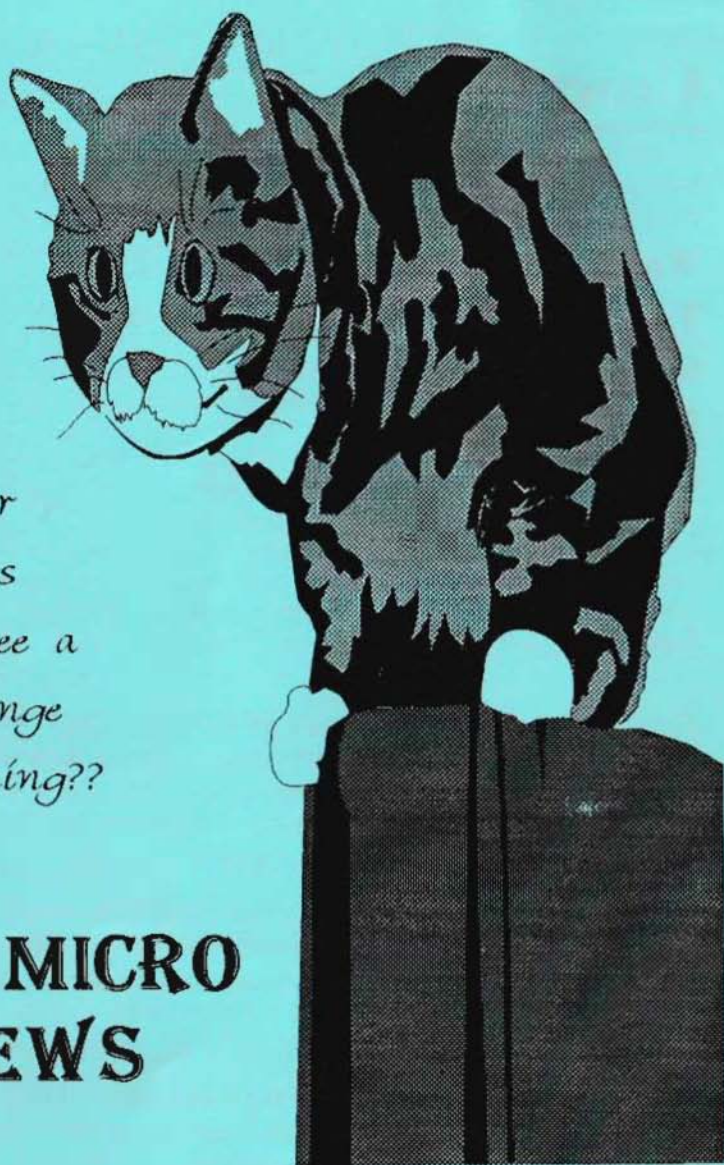


*Purr
haps
I see a
change
coming??*

ALL MICRO NEWS

VOL 2/1



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Editorial

The Riddlers in town, and it may be true there might be someone new? Watch closely for the change its coming soon, a dawning of a new moon.

But onto further serious matters, AMS7 is coming around again, enclosed in this issue is a poster for suitable adornment on any notice board etc. - this year looks like being another good time for the electronics and computing enthusiast, hope to see you there.

Milton Finesilver is compiling a bumper issue of AMN which will follow this one in rapid time- honest!! (Has April 1st gone?) Our Island dweller has drowned and Big Bad Tony is here in force!

KEEP TAPPING!!

WHAT'S AN EINSTEIN WORTH?

By The Big Bad Tony!

Hello again boys and girls. Did you see my literary masterpiece in the March issue? Actually, tucked into the March issue would be more accurate, since it was a late FOR SALE item that Graham trimmed hard and just squeezed into the tail end of the Sharward Services insert.

I got the Einstein quite a while ago, but only recently got hold of a big bundle of magazines and rushed to subscribe. I now have a collection starting from the very first EAEA newsletter, with every single issue from Einstein Monthly 1/4 to date. They make fascinating reading.

Meanwhile I'd been contacting all the Einstein people I could trace through ads in computer mags and local papers, to try and get hold of Einstein books, magazines, software, information and user groups. So far it's clear there are two sorts of Einstein in the world. Most of those built are still out there, and the first sort are the ones that are changing hands at ridiculously silly prices for a Z80 CP/M machine a decade old that not even the user group is supporting. "What user group?", you ask? Ah! I'll tell you more when I've unravelled that story!

The second sort of Einstein is the sort that either is gathering dust in attic or shed, or is used as a games machine, and can occasionally be picked up for next to nothing at a boot fair or rumble sale. This second sort is quite prevalent, though it has a habit of lurking in dark places most of the time, and can be hard to track down. There is only one real difference between these two sorts of Einstein. The second sort is nothing more than the first sort that has come upon hard times, so that it lacks software, systems disks, monitor, manuals, 80-column card and/or a working second disk drive.

As there are two sorts of Einstein, so it follows that there are two sorts of Einstein owner. The first sort may well subscribe to AMN magazine out of sheer sentiment because it once had the name Einstein on the cover, but rarely if ever contributes articles for publication, except along the lines of "I've decided to upgrade to an IBM-compatible. My Einstein cost me 500 pounds ten years ago, so you can have it for 350." If they no longer even bother to subscribe to AMN, you'll find exactly the same ad in Micro Computer Mart instead. They aren't likely to buy anything in the way of software or hardware or books or upgrades, since they long ago equipped their Einstein with everything they needed, or bought it fully-equipped (and at a price to match) from the previous owner.

It's not really surprising that this first sort of Einstein and this first sort of Einstein owner exist, since this is exactly the owner and machine that the Einstein opened Alan Sugar's eyes to, so that he combined all the good bits of the Amstrad CPC and the Einstein, threw away all the damn silly bits and the bits that cost money but weren't essential, and carved out a cushy little earner for himself providing exactly the sort of computer that people needed if they didn't need a computer.

Currently these machine seem to be the only ones impervious to the computer price slump brought about by recession and the overnight obsolescence of the entire range of MsDos machines and software cunningly wrought by fooling everyone into thinking that they couldn't possibly manage without an Amigatarimac lookalike. While the gullible fools taken in by this are crying with gratitude at getting fifty quid for their double-floppy XT or a tenner more for a hard-disk machine, and brand new PCWs are discounted right down to 199 crisp ones to clear old stock now that the range has been re-launched with 3.5-inch floppies, you still can't get a second-hand PCW of even the minimum configuration for under 150 pounds for love nor money. This proves that Alan Sugar was right and Tatung were wrong a decade ago, since Tatung are in a cut-throat market situation, and Alan Sugar has a nice cushy number with the PCW, and the only time he's come unstuck is when he followed Tatung into the IBM corporate computer jungle.

"What's this got to do with the Einstein," you ask? Well, take an Einstein with twin flippies, 80-column card, a printer and some decent word-processing software like WordStar or WP80, (not a dog of a thing like WDPRO,) and basically what you have is a superior sort of PCW. Hence Einsteins of the first sort are holding their price just as well as the PCW, for the simple reason that in essence there is no real difference between them. With a bit of fiddling you can even run PCW programs on the Einstein !

Einsteins of the second sort, however, are another matter. Despite the crazy ideas some people have about what their computer kit is worth, based on what they paid for it in a sellers' market when they were still in short trousers, the second sort of Einstein is worth exactly the same as any other discontinued unsupported obsolete computer. To give you a clue I've just paid twenty pounds for a fully working double-5.25-inch-floppy machine with printer, monitor and full history but no software, and the seller took my money and ran, before I changed my mind. I have a great stack of 8-inch CP/M machines and hard-sector 5.25-inch MsDos machines I was given for free if I carted them away, so you can work out for yourself what an Einstein of the second sort using a clone of CP/M and 3-inch flippies is worth

Well boys and girls, that's enough for now. In the next thrilling instalment I'll tell you about the second sort of Einstein owner, and about the trials and tribulations of publishing Einstein magazines.

ED .. The thought of tantalising you with Tony's next rendition was too much to bear so here it is!

THE PERILS OF PUBLISHING

By Big Bad Tony!

Hello again boys and girls. What did you think of my little piece on the two sorts of Einstein and the two sorts of Einstein owner? Actually I didn't tell you about the second sort of Einstein owner at all, but that's part of a little story that I've got for you this time. If you're sitting comfortably, I'll begin.

Once Upon A Time, Long Ago in The Days Of Plenty before the lovely Queen Margaret gave us The Poll Tax and was beheaded, there were a couple of chaps living in Sunny Sussex called Chris and Keith who ran a Great Big Einstein User Group called UKEUG. But life was hard for Chris and Keith, because by the time they'd finished working a twenty - seven hour day down the Sussex salt-mines, there wasn't any time left to write the articles for the UKEUG newsletter that no-one else had any time to write either. Chris and Keith were Very Sad, so they looked around and found a couple of clever chaps called Graham and Mike at Ipswich with plenty of time to run a local Einstein user group and write a newsletter, and they handed the job over to them.

After this Everyone Lived Happily Ever After for quite a while until Mike decided there was no future in computers, and that the future lay in learning to study history under water. Poor Graham was Left All Alone and everything got too much for him. No-one was sending in articles for the magazine, because everything there was to say about Einsteins had already been said. Then Graham had A Good Idea. He thought "If we open the magazine up to other micros as well, lots and lots of their owners will want to write about them, and that will encourage Einstein owners to write in too, and there will be lots and lots of articles to put in the magazine, and lots and lots of new readers to read them." But he thought all these other people might be put off if it said "EINSTEIN ONLY !!!" on the cover, so he changed the name to something that hinted that it was really meant for people who grew their own silicon chips and knitted their own computers.

Well, sadly, this misfired. It didn't result in lots of owners of weird and wonderful machines rushing to write for the magazine. Hardly anyone sent in articles any longer. Hardly anyone new subscribed to the magazine. If they had a weird machine they looked for a Weird Machine user group and a Weird Machine User magazine, or they just did the best they could on their own. The people who bought second-hand Einsteins asked if there was an Einstein magazine they could subscribe to, but everyone said "There used to be, but it's not around any more." No-one told them that they had to change the badge on their machine from "Einstein" to "Alternative" to have a magazine of their own.

Graham was Very Sad. It had been Such A Good Idea, but all that had happened was that even less people than before sent in articles for the magazine, and people were letting their subs lapse all the time as they sold their Einsteins to new owners, but hardly any of those new owners sent their subs in. "Einstein Monthly isn't being published any more", these new owners were told. So they didn't know it was hiding behind another name.

Graham was getting sadder and sadder. He didn't know what was wrong. "Perhaps it's the EINSTEIN User Group name putting people off," he thought. "Or perhaps it's the "Alternative" in the name of the magazine. Lots of readers are getting rid of their Einsteins and getting IBM machines. That's mainstream, not alternative. If we lose them too, soon there will be no-one but me reading the magazine, as well as no-one but me writing it."

So Graham had Another Good Idea. "I'll change the name of the magazine to ALL MICRO NEWS," he thought. "Then EVERYONE will want to read it, and EVERYONE will want to send in articles. And I will be so busy that I won't have time to run a User Group, so I'll simply pretend it doesn't exist any more."

Now that was A Brilliant Idea, wasn't it, boys and girls? But it still went wrong. There were still a surprising number of people who had once owned Einsteins keeping their subscriptions going out of sentiment for what had once been Einstein Monthly. But every month some didn't renew because they forgot, or because they had lost interest in XtalDos and WDPRO, or because 16 A5 pages of AMN just wasn't very tempting when you could subscribe to a glossy 500-page IBM magazine for the same price.

And meanwhile, Out There In The Real World, were all the poor little orphan Einsteins that didn't know they were really a superior sort of Amstrad PCW -- most of the Einsteins ever made, in fact. Hidden away in attics, down cellars, on the tops of wardrobes, at the backs of sheds or garages. And lots

and lots and lots of owners of orphan Einsteins out there with no manuals, no system disks, no software, no user group, no magazine, so they had no hope at all of restoring their orphan Einsteins to their rightful place in Society.

Everyone they asked said "There USED TO BE an Einstein user group - but it shut down." "There USED TO BE an Einstein magazine, but it gave up." A few who knew said "There's an ALLMICRO magazine." Now the people who owned Allmicro machines would have been delighted to have a magazine of their own, but sadly no-one had ever made any.

Jim at Westcliff tells me that Graham is now So Sad that no-one wants to read about Einstein or write about Einstein in his magazine any longer, that he is thinking of giving up on Albert and being the editor of a big, glossy 500-page IBM magazine instead. Of course, we all agree with Graham that he knew so much better than everyone who told him not to do it in the first place, but perhaps there is something symbolic in the name that Graham chose for his magazine after he had deleted EINSTEIN from its cover, and when he decided to kill off the Einstein User Group. Graham decided to call his magazine "AllMiNe". Without a change of policy very soon, it will be just that, all his. No-one else will be reading it or writing for it. Strange, isn't it, when there are so many orphan Einsteins out there in such desperate need of a user group and a magazine?

What this story demonstrates, boys and girls, is that you don't actually NEED to go to a University and be taught how to study history under water if you want to understand what is going on around you. You just have to sit and watch and think.

ED .. Perhaps it is time someone stirred the honey pot?! There is a lot of truth in what Tony has said and with his background and interest we hope to see some lively comment and practical input for AMN, no we are not changing the mags name!!

Serial Connections

With a plea from Walter Hetherington for a more detailed explanation on how to transfer data from the Einstein to a PC here goes;

When users upgrade / change or increase the number of computers they use there is a common problem, how to transfer existing data from one machine to another. This is in fact one of the major headaches in the commercial world where companies can become 'locked' into using one particular supplier as the cost and time required to transfer to a different system is not practical. You may have heard the phrase *Open Systems*, this is a very big buzz word and implies that system A will 'talk' to system B. The problem for the home user is just the same but on a smaller scale, but if you have spent five years compiling data on Albert and now have a PC the thought of re-keying it all again is not nice.

O.K. a few notes here on what you can usefully transfer and what you are wasting your time with. Firstly .COM programs that run on the Einstein like WDPRO, Chuckie Egg or DBase etc will not run on the PC. The machine code of the program for the Einstein is totally different to the PC. This should not really be of any consequence because it is the data that your WP or Database has created that you need, once this is loaded onto the PC you can use a PC program to manipulate it.

Database files; Dbase II and Infostar files will transfer and load into any PC database that will handle .dbf file formats. Easidata unfortunately will not - we would like to hear from anyone who has transferred database files from any other package than Dbase or Infostar. as far as we know the same problem exists with spreadsheet data from the Cracker.

WP data. There should be no problem in transferring WP files, you may have to tidy them up after they have been transferred, but WDPRO, Tasword, WP80, and Wordstar will all go across. If you can create an Ascii file from within the WP on the Einstein this will save a considerable amount of work on the PC. An Ascii file is one that uses the Ascii codes 32 -127 i.e. it just contains alphanumerics, no control codes or formatting characters **will** be present and lo and behold both the Einstein and the PC will handle these characters in exactly the same way.

From Wordstar you need a non-document file, WP80 and WP40 create an Ascii file by default, Tasword files are very nearly all Ascii, if you have a large amount of data we do have a small XBAS program that will convert the file to true Ascii - send a disk with £1 in stamps for a copy. WDPRO is the odd one out as this is really a text formatter and not a WP in the same sense as the others, WDPRO files will always have control characters in them and you will have to tidy up the layout on the PC. You can use the same XBAS file as mentioned above to remove the control codes before transferring .

Onto the actual process; the software required is serial transfer, (£19.95). This comes as three disks, dual media for the PC, (3.5" & 5.25") and a 3" disk for the Einstein, all disks containing the files SEND.COM & REC.COM. You will need a suitable cable to connect the two machines together from the RS232 port on the Einstein to COM1 on the PC, **it must be COM1**, this will usually be where your mouse is connected on a 9 pin 'D' plug on newer machines or a 25 way 'D'. (Cable £9.95 from SS). On the PC if you have a hard disk it is easiest to create a directory with the MD command, and copy the two files from the floppy disk to said directory :-

```
CD \<enter>
C:\MD EINSTEIN<enter>
CD EINSTEIN<enter>
C:\EINSTEIN>COPY A:.*<enter>
C:\EINSTEIN>REC<enter>
```

The PC will now go into a wait state with the message 'connecting to host' whilst it awaits data from the Einstein.

On the Einstein copy the file SEND.COM to the same disk that contains the file or files to be sent, this is very important as the command to send a file, and you can only send one at a time is;

```
SEND FILENAME.EXT<enter>
```

If you do not have the SEND.COM file on the same disk as the file to be sent the process cannot work. Either the SEND program will be looking for a non-existent file or a no file error will occur.

The software will only run on Einstein versions of MOS 1.2 or greater, so check this first. With the PC waiting for data we can send the file TEST.DAT from the Einstein to the PC; on Albert type:-

```
DIR<enter>
0:SEND .COM : REC .COM
0:TEST .DAT :
56k Size, 132k Free, 190k Total
```

This shows we have both the send file and the data file on the same disk. Then type:-

```
SEND TEST.DAT<enter>
Connecting
Blocks to send : 6
Sending :-
0
0:
The PC will respond with :-
Receiving file Test dat.....
File Stored on Disk
```

The cable is a crossover connection with the following pin connections :-

Einstein	PC 9 pin	PC 25 pin
1 0v	5 - Signal Ground	- 7
2 CTS	8 - Clear To Send	- 5
3 TXD	2 - Receive Data	- 3
4 RTS	7 - Request To Send	- 4
5 RXD	2 - Recevie Data	- 3

Einstein users will be aware that you can get the RS232 connector to fit in two ways, so be sure to get the right way. Once you have established its orientation mark the plug for future reference. We tested the transfer several times on different files and it worked without any problems.

It should be possible to use the COPY command on the Einstein and PC to effect a transfer, has anyone done this? It would be more involved as you would have to set up the two COM ports first but it might make an interesting project.

If you do have problems with the transfer we would suggest you boot the PC from a DOS floppy disc that contains no AUTOEXEC.BAT with TSR or other programs, just in case they are interfering with the process. You should always have a bootable floppy for your PC, because if you have problems with the hard disk you will need an alternative means of initialising the machine. To make such a diskette use the following command;

FORMAT A: /S<enter>

This will format drive A and add the system tracks on completion. It will also ensure you have a bootable floppy of the same DOS revision as your hard disk, problems will occur if you boot from floppy that is a different revision to your hard disk and it will always happen in an emergency!!

Einread

If you have a 3.5" or 5.25" disk drive attached to your Einstein there is a program called Einread, (£14.95 from SS), which runs on the PC and transfers Einstein format to PC. It will accept any Albert format i.e. 40 or 80 track SS or DS but if you have very large files to transfer we have found its reliability to be suspect and at times some data has been lost or corrupt. On small files we have had no problems, these problems may be linked to the quality of both diskette drives in use but it does offer a way of getting Einstein data onto your PC if it is not practical to have both machines close to each other. It will not transfer from PC to Albert.

Post Bag

Dear AMN,

I have acquired a SENATOR touch screen micro which seems to work OK except it does not format its own disks, so it is not much use. Does any member know the format to use? The machine uses 3.5" disks and was in use with 'Schreiber Kitchen Designs'. Also did anyone come up with a code for the Einstein Simplex accounts package, as I have the program and would like to use it!

Richard Knight, The Spinney,
Edwards Pill, LLangwn,
Haverfordwest, Dyfed, SA62 4JD.
Tel: 0437 891330.

ED .. If all fails with the 3.5" format we have a program that analyses disk format and we might be able to tell you what format will work if you send a formatted disk from the Senator machine to AMN.

For Sale, Speculator + Disks + leads + books. 4 games disks, 3 games on each disk, 6 original Spectrum tapes including Spitfire 40 and 20 Chartbusters. A snip at £20 plus postage if required.

Barry Stokes, 77 Eider Avenue,
Lyneham, chippenham, Wiltshire,
SN15 4QG. Tel: 0249 891932

Dear AMN,

When I updated Wordstar 3.3 to Dos 2.05 it never ran 100% this I think is due to a poorly printed sheet

containing the patch code, do you have a copy?

M A McCartney, Tel: 0843 299307

ED .. Patch follows;

Some users have complained that the version of Wordstar released by Tatung on the Einstein dose not work under System 5. On inspection it was found that some patches have been made which make direct reference to DOS vectors, which was incorrect, as the vectors have moved. However the pointers to thos vectors are fixed so that it is possible to make Wordstar work with past and future versions of Xtal DOS. In addition the patch below will remove some unnecessary delays inherent in the original Wordstar.

1. Backup original disc, use copy.
2. From dos LOAD WS.COM<e>
3. MOS<e>

4. Use M command enter :-

M0234 011D00.

M0254 0115.

M028E 0000.

M02AF 02061018.

M4618 CD1BC62A64C7.

M4683 2A62C71112C6CD30C621

09C618032112C6ED5B62

C7010900EDB0C9.

M46F3 CD29C6.

M4711 2A64C7.

Don't forget the full stops at the end of each line of numbers, finally do CTRL+BREAK to go to DOS and SAVE 71 WS.COM<e>

NOVELL SOFTWARE
1 ST. MARTINS CLOSE
LONDON NW1 0HR
TEL 071 267 9416

EINSTEIN OWNERS * EINSTEIN OWNERS * EINSTEIN OWNERS

If you have been feeling quite frustrated as the owner of an Einstein because of the seemingly endless and diversified supply of software for the PC and lesser computers whilst there doesn't seem to be any new software forthcoming for the Einstein, then you will be pleased to learn that Novel Software has sought to remedy this. Below is a list of some of the software available from Novel software.

80 Column Software

BANKSOC

BANKSOC is a BANK/BUILDING SOCIETY ACCOUNTS program that allows you to keep track of your Bank or Building Society Accounts with complete ease. It does not matter whether your account is with a Bank or Building Society, BANKSOC can handle transactions relating to either. BANKSOC shows the position of the accounts at a glance. The many unique features of BANKSOC allow reconciliation of your Bank or Building Society statements with ease£25.50

ACCOUNTEN

ACCOUNTEN is a GENERAL ACCOUNTS PROGRAM.

Accounten has two modules - the Accounts Module and the Transactions Module. The Accounts Module allows the user to create and maintain from one to nine hundred and ninety-nine (1-999) types of accounts, whilst the Transaction Module allows entry of transactions relating to those accounts. Accounten is very flexible and can be used as either a full double entry system of book-keeping or as a simple single entry system for the less demanding user.....£30.00

ALL PROGRAMS ARE COMPLETELY WRITTEN IN MACHINE CODE

40 COLUMN SOFTWARE

NOVEL UTILITIES

NOVEL UTILITIES is a suite of four useful programs comprising of CALENDAR, CALCULATOR, MAILLIST and SCRATCHPAD. These programs themselves are very easy to use, yet they allow a versatility to the Einstein in 40 column mode that others do not. The programs are accessed via a main menu and the user can move from one program to another with complete ease. All the programs are written in machine code, to a very high professional standard. The display is very colourful..... £20.00

Calendar Program

The program allows you to print the calendar for any year from 1753 onwards (in colour on the screen) or on a suitable printer. The colours can be any of the sixteen available on the Einstein. You can also check the day in any year and the time elapsing between two dates. The interval between the dates is given as Years, Months, Weeks and Days. Check your age anytime!

Calculator Program

The calculator allows line by line calculations using the signs for add, subtract, multiply and divide. Numbers can be either integer or decimal.

Scrappad Program

This is in fact a mini word processor and database combined. Despite the fact that it runs in 40 column mode, it allows documents to be printed in 80 columns on the printer. It supports justification, Centering, Multi-column Input and Sorting.

Maillist Program

This program allows a list of names and addresses to be entered. The lists can be sorted on any line i.e. Names, Addresses, Telephone Numbers or Postcodes. You can print labels or telephone lists. You can also print addresses on envelopes with preliminary remarks such as PRIVATE or CONFIDENTIAL etc. Entries limited by memory only.

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LONDON NW1 0HR
TEL 071 267 9416

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80 Column Software

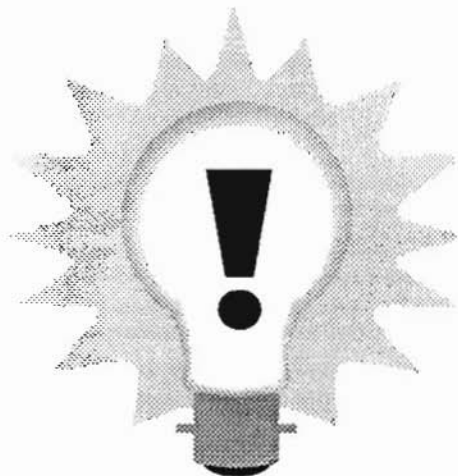
PERSONAL SCHEDULER

PERSONAL SCHEDULER is a suite of four programs comprising:

- CALENDAR PROGRAM
- SCHEDULE PROGRAM
- TASKS PROGRAM
- CALCULATOR PROGRAM

Many products for the Einstein under development, for a full list send a SAE to Novel Software, 1 St. Martins Close, London, NW1 0HR.

EINSTEIN OWNERS * EINSTEIN OWNERS * EINSTEIN OWNERS



Graphically Dumping

Dave Arts continues with his series on using Albert's graphics.

GRAPHICS DUMP

In the last chapter we saw how we could create a drawing on the screen using the mouse and save it to High Memory (&B000-&C7FF) How in addition we could recall it to the screen and save it to disc. In this chapter we will obtain a hard copy by creating a PLOTFILE from the SCREENFILE and then dumping the Plotfile to a suitably configured printer.

Now the question is **WHY** do we need a plotfile in the first place?

The reason is that the way Albert stores the Screen Data in memory which is a perfect correlation of the screen itself is not the way in which the printer requires the Data to print the Screen. Let me illustrate what I mean, Fig.1 shows a typical character cell comprising of an 8x8 grid. There are 768 of these cells in the 32 column mode (32 columns x 24lines). If we assume this cell is at Screen Position 0,0 then the data would be stored on the screen as follows C2,28,10,29,10,88,00,A5 occupying 8 consecutive memory locations in VRAM and of course 8 consecutive memory locations starting at address &B000-&C7FF. However the printer is not interested in "Horizontal Data" merely "Vertical Data" this is because the print head is composed of 8 (ED ..or 9 or 18 or 24 on the commonly used printers) vertical pins 0-7 with pin7 (D7) at the top. Consequently the new values we must feed to the printer from the PLOTFILE are NOT

C2,28,10,29,10,88,00,A5

but rather

85,80,51,28,54,01,80,11.

The following programme accomplishes this for all 768 locations 6144 bytes (768 x 8). Just as the screenfile starts at &B000 the address I've chosen for the start of the PLOTFILE is &6000 and because it extends to 6144 bytes it occupies addresses &6000-&77FF. The programme is called PLOTFILE.OBJ and is located at &8100-&81D7. The opening few bytes check that the printer is ready i.e. printer switched on and paper inserted by checking the command status register at address &20. It is worth pausing here to understand just exactly what it is we are doing. Take a look at Fig.2 which shows the command status register, note particularly bits 2,3&4 which concern the printer. BIT4 is set to Logic 0 when there is a printer error i.e.

NO PAPER, OFF LINE, or simply OFF, it will also be Logic 0 when the printer is BUSY i.e.PRINTING. BIT4 will be Logic 1 when there is no printer error. BITS 2 & 3 tell us what type of error it is. BIT 2 will be a Logic 1 when the error is "NO PAPER" otherwise it will be a 0. BIT 3 will be a Logic 1 when the printer is "OFF LINE" otherwise it will be a 0. So we can see that when the printer is switched on with paper inserted and not busy or off-line then BIT 4 will be a Logic 1 and BITS 2&3 will be Logic level 0. If we read this command status register into the accumulator and "Mask off" the unwanted BITS by "ANDing" with &1C when we compare the result with &10 if the result is a zero then we can proceed (fig.3) otherwise we remain in the loop until the situation is corrected (fig.4).

If all is well and the printer is ready the routine will continue with the PLOTFILE creation. Register HL is used to point to the start of the Screenfile address and Register DE is used to point to the start of the Plotfile address. The mechanics are as follows: The contents of the first screen position are loaded into the Accumulator and BIT 7 is tested, if it is a 0, Register C is rotated left 1 bit. If it is a 1, the Carry Flag is Set to 1 and this is rotated left into Register C. Each bit 7 is tested in this way for the first 8 addresses, leaving the required Plotfile byte in Register C. This is transferred to the accumulator and loaded into the first Plotfile address pointed to by register pair DE. This is repeated each time for BIT 6 through to BIT 0 in the same fashion. After the first 8 bytes are "assembled" the remainder is tackled in like manner until the total Plotfile is complete.

Drop into MOS and enter the code from address &8100 saving to Disc as

SAVE "PLOTFILE.OBJ",&8100,&81D7.

Now we must configure the printer to accept the data. Normally line spacing is already adjusted so that there is a gap between lines, this of course aids readability. However for our graphics dump we must eliminate this gap altogether, otherwise gaps will occur in the plot. I have a BROTHER HR 5. dot matrix printer and the following instructions are for that. For other types of printer reference should be made to its user manual for like adjustments. The configuration of the printer is accomplished in two parts The Software configuration in which command codes are sent to the printer-and the Hardware configuration which simply means we have to make certain adjustments inside the printer.

SOFTWARE CONFIGURATION

This is achieved by the basic programme "GRAFP" lines 35 and 37. Line 35 opens the printer line by the statement PRINT#1; it then outputs a Carriage return CHR\$(13) and then outputs an ESCAPE K command..This command is the "Standard bit image setting" command and is made up of 4 codes..Firstly we must send the Escape Code CHR\$(27) followed by the letter "K"..The printer then expects two more codes..The first determines whether we need all 8 pins of the printer head working for us..As we do we output code CHR\$(3). Finally we must output how wide we want the output in pixels, since we need 256 we enter a 1 here CHR\$(1). Line 37 again opens the printer line and sends an ESCAPE A..This command is the "Line pitch setting".command and is made up of 3 codes. Firstly as before we must send the Escape Code CHR\$(27) followed by the letter "A"..The printer then expects one more code which is the line pitch in 72nds of an inch..Since for no gaps we need a pitch of 1/9 th of an inch we will output 8 here (8/72nds) CHR\$(8); However on the Brother HR 5 printer this software line command has to be "enabled" by the Hardware Configuration.

HARDWARE CONFIGURATION

The Hardware configuration for the Brother HR5 is simple.Underneath the plastic top cover are 2 DIP switches. The Larger one on the left has 8 positions(FIG.5). We simply move the third switch down on the bank to the left. Now when we power up, the printer will be ready to plot the graphics dump at 1/9th inch spacing. To get back to the text mode 1/6th inch spacing, simply move this switch back to the right--WITH POWER OFF!

Now we understand how the basic extension works we'll type it in and save it as SAVE "GRAFP" on the same side of the disc as PLOT.FOBJ <NEW> this and then type in the loader "GDUMP" and save again in like fashion. Now when we load from cold we'll type RUN "GDUMP" this will load the plotfile routine and ask for your graphics filename. If last month you saved "CREATION" as a graphics file then type CREATION.GRA (no quotes) and <enter> the loader will then load this to &B000 to &C7FF and then load the basic extension GRAFP overwriting itself in the process. When GRAFP is run the PLOT-FILE is created at &6000 to &77FF and then dumped to our configured printer. The programme being in basic is rather slow - it takes about one minute to dump the graphics.There is a pause initially of about 5 seconds whilst the software configuration codes are accepted. As I say for other types of printer refer to the User Manual. Some printers may not need the Hardware mod. but ALL will need some software commands, so refer specifically to the ESCAPE K & ESCAPE A commands for your particular printer.

FIG 1

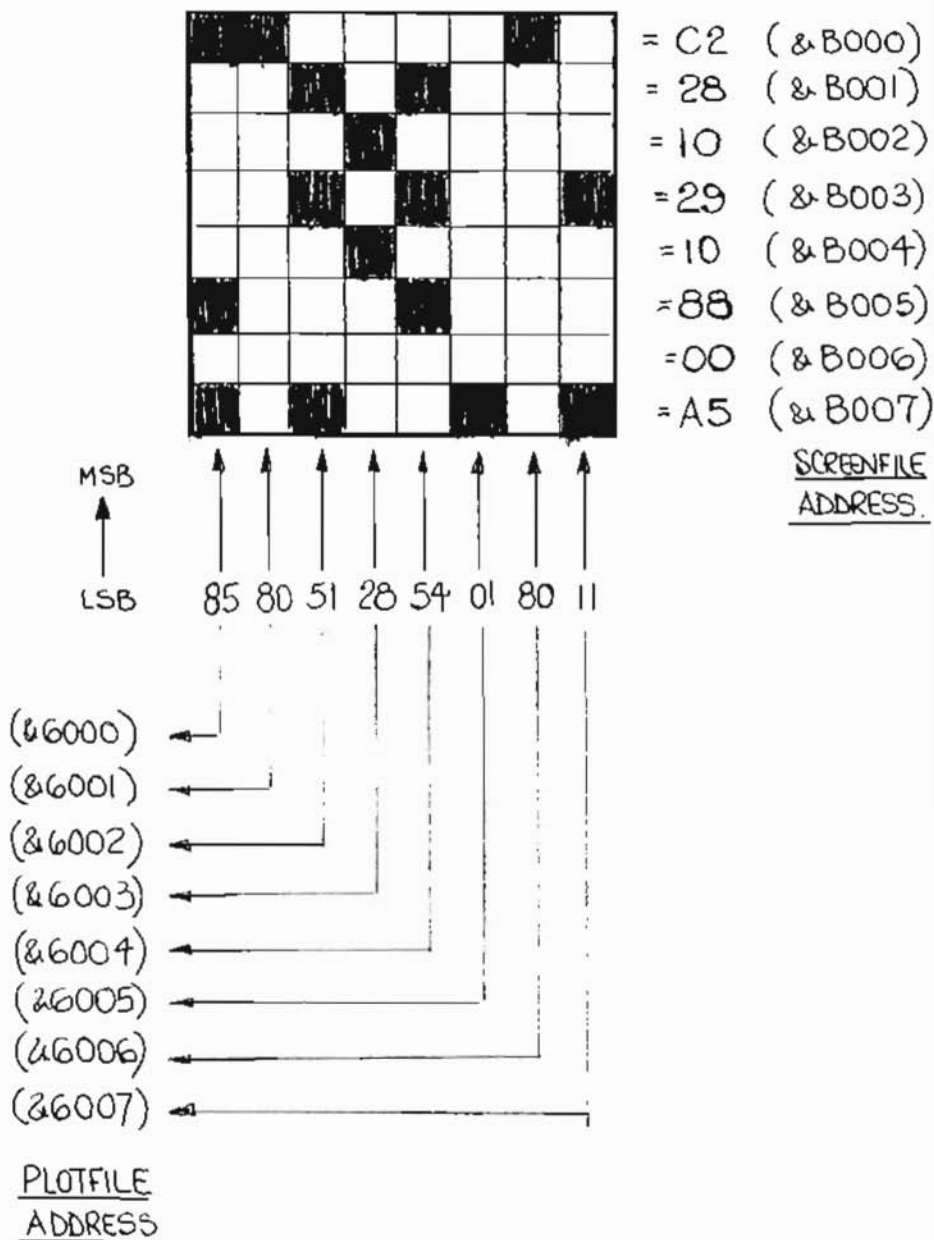


FIG.2

	D7	D6	D5	D4	D3	D2	D1	D0	
A)	X	X	X	1	0	0	X	X	PRINTER READY
B)	X	X	X	0	0	1	X	X	PRINTER BUSY OR OFF-LINE
C)	X	X	X	0	1	0	X	X	NO PAPER FITTED
D)	X	X	X	0	0	0	X	X	PRINTER SWITCHED OFF

FIG.3

E)	X	X	X	1	0	0	X	X	PRINTER READY
F)	0	0	0	1	1	1	0	0	AND 1C (MASK)
G)	0	0	0	1	0	0	0	0	RESULT OF MASK (ACCUMR.)
H)	0	0	0	1	0	0	0	0	CP10 (COMPARE &10)
J)	0	0	0	0	0	0	0	0	RESULT G-H ZERO FLAG=0

FIG 4

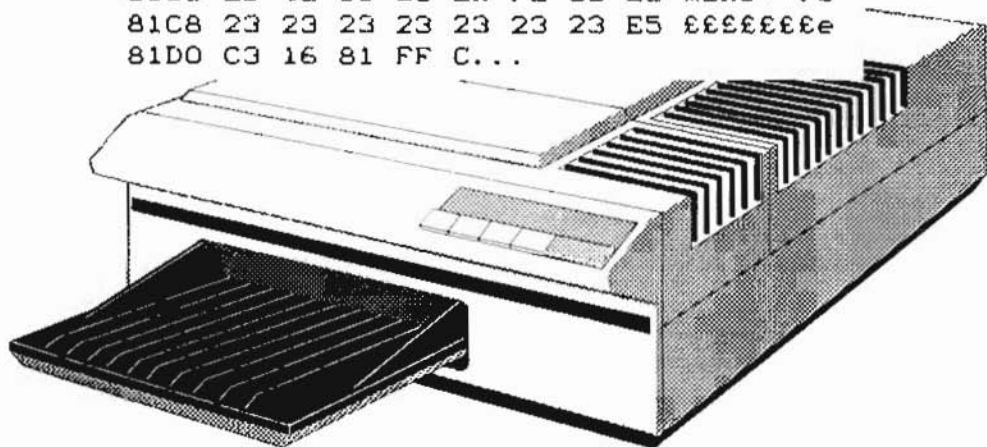
K)	X	X	X	0	0	1	X	X	OFF LINE
L)	0	0	0	1	1	1	0	0	AND 1C (MASK)
M)	0	0	0	0	0	1	0	0	RESULT OF MASK (ACCUMR.)
N)	0	0	0	1	0	0	0	0	CP10 (COMPARE &10)
P)	1	1	1	1	0	1	0	0	RESULT M-N ZERO FLAG=1

NOTE: M-N results in -ve overflow +4 -16 = -12 or put another way 256+4-16=+244 (+244 being -12: &F4); X= DONT CARE (1 OR 0)

Below is the machine code for the PLOT.OBJ program;

>T8100 81D3

```
8100 DB 20 E6 1C FE 10 C0 E6 [ f. ".@f
8108 FF 21 00 03 E5 21 00 B0 .l..e!..0
8110 E5 11 00 60 00 00 E6 FF e..`..f.
8118 06 08 0E 00 7E CB 7F 28 ....~K.(
8120 01 37 CB 11 23 10 F5 79 .7K.&.uy
8128 12 13 E1 E5 06 08 0E 00 ..ae....
8130 7E CB 77 28 01 37 CB 11 ~Kw(.7K.
8138 23 10 F5 79 12 13 E1 E5 &.uy..ae
8140 06 08 0E 00 7E CB 6F 28 ....~Ko(
8148 01 37 CB 11 23 10 F5 79 .7K.&.uy
8150 12 13 E1 E5 06 08 0E 00 ..ae....
8158 7E CB 67 28 01 37 CB 11 ~Kg(.7K.
8160 23 10 F5 79 12 13 E1 E5 &.uy..ae
8168 06 08 0E 00 7E CB 5F 28 ....~K_(
8170 01 37 CB 11 23 10 F5 79 .7K.&.uy
8178 12 13 E1 E5 06 08 0E 00 ..ae....
8180 7E CB 57 28 01 37 CB 11 ~KW(.7K.
8188 23 10 F5 79 12 13 E1 E5 &.uy..ae
8190 06 08 0E 00 7E CB 4F 28 ....~KO(
8198 01 37 CB 11 23 10 F5 79 .7K.&.uy
81A0 12 13 E1 E5 06 08 0E 00 ..ae....
81A8 7E CB 47 28 01 37 CB 11 ~KG(.7K.
81B0 23 10 F5 79 12 13 E1 22 &.uy..a"
81B8 FE 85 E1 01 01 00 E6 FF ~.a...f.
81C0 ED 42 C8 E5 2A FE 85 23 mBHe*~.&
81C8 23 23 23 23 23 23 23 E5 &&&&&&&e
81D0 C3 16 81 FF C...
```



and yes I do know someone who uses a laser printer with Albert!!

Below are the two XBAS listings;

```
5 REM GDUMP
10 CLEAR&8100
20 LOAD"PLOTF.OBJ"
30 INPUT"IS FILE ON THIS DISC? ";AS
40 IF AS="Y"THEN POKE&AOFF,1: GOTO90
50 IF AS="N"THEN POKE&AOFF,0: PRINT"INSERT DIS
C AND PRESS C <CONT>"
60 INPUTBS
70 IF BS="C"THEN GOTO 90
80 GOTO60
90 CLEAR&B000
100 INPUT"FILENAME PLEASE? ";IS
110 LOAD IS
120 IF PEEK(&AOFF)=1THEN GOTO160
130 IF PEEK(&AOFF)=0THEN PRINT "RE-INSERT MAIN
DISC AND PRESS C <CONT>"
140 INPUTBS
150 IFBS<>"C"THEN GOTO140
160 RUN"GRAFF"
```

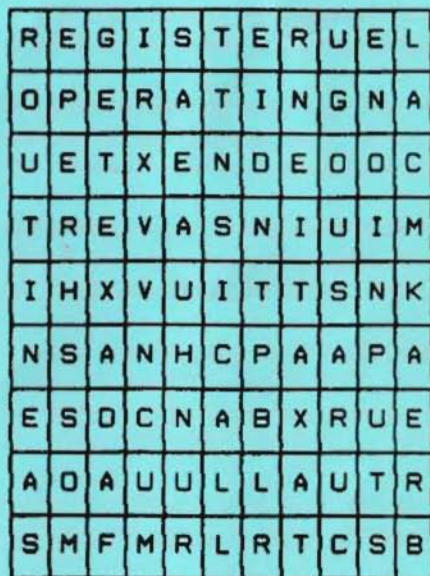
*Will I ever get a Graphic
Dump to work??*



```
5 REM GRAFF
10 CALL&8100
20 H=&6000
30 FORJ=1 TO24
35 PRINT&1;CHR$(13);CHR$(27);"K";CHR$(3);CHR$(1);
37 PRINT&1;CHR$(27);"A";CHR$(8);
40 FORK=0TO255
50 N= PEEK(H+K)
60 PRINT&1;CHR$(N);
70 NEXTK
90 PRINT&1;CHR$(10);
100 LETH=H+K
110 NEXTJ
120 LOAD"GDUMP"
```

Competition Page

Our last competition generated a good response and an interesting follow on using the same word grid. Andrew McRobbie not only solved the word puzzle and won the prize but found 9, (there may be more!), key words as used by the Einsteins operating systems, MOS, DOS and XBAS. We are'nt giving any clues to the words either. Winner will receive one of the Infacom adventure games for Albert.



Late entry!

For Sale; Twin drive Einstein with colour monitor, original software plus others. V.G.C. plus Epson printer £150 o.n.o. Tel; Mr Breed on 0909 730489.

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