

Gerald's Column

by Gerald Fitton

"The moving finger writes: and, having writ,
Moves on: nor all thy Piety nor Wit
Shall lure it back to cancel half a Line
Nor all thy Tears wash out a Word of it."

The Rubaiyat of Omar Khayyám (1048 - 1122)
(Version by Edward J Fitzgerald - 1859)

Archive

You might consider this "moving finger" of Omar Khayyám to be Time. Time inexorably grinds our vivid experiences of the present into finer memories of the past and, with an inevitable gradualness, it morphs our hopes for the future into the realities of the present.

As an alternative to Time, you may believe that in his Rubaiyat, Omar Khayyám regards this finger as part of the disembodied hand which wrote "mene, mene, teckel, peres" (Daniel 5:1-31) advising the Babylonians that there was about to be a change of leadership of the nation.

The "moving finger" of our editor has written of his retirement; the leadership of our Archive Magazine is about to change. Of course we all wish Jim Nagel well but, equally, we shall all miss Paul and his occasional mistakes! What was going to fly? But crashed! I have had a long and rewarding relationship with Paul Beverley and his magazine.

When the history of RISC OS and ARM computers is written then surely Archive will feature large. Its pages have charted the rise of RISC OS from the first Archimedes to its embodiment as an emulator on Windows machines. Archive has had a glorious twenty year history and, through his magazine, Paul Beverley has become an intrinsic part of that history. I am sure that I shall not be the only RISC OS/ARM user who will miss him.

Truly, when the last twenty years become history, the Archive magazine will live up to its name as an archive of all that has been and is still wonderful about the computer we know and love. If there is one thing above all which will shine through its pages it is that all things RISC OS are totally open and transparent. Here are just a few examples.

Then and Now

There were many features of the original Acorn BBC computer which attracted me to it from the start. Those same features are those which prompted me to upgrade from a BBC Master to the first Archimedes to be sold, an A310, a decision I have never regretted.

One the things I love about my ARM computer is that I have always known exactly what is happening inside its virtual world. Even now I can still make my RiscPC do things which I am unable to control on my powerful Windows XP machine.

As well as using it regularly for 'work' (such as writing articles for Archive), from time to time I simply 'play' with it having 'fun' persuading it to do some of those things which originally endeared it to me. I can't have this sort of fun with my Windows machine! So what are these things?

BBC BASIC

When I worked at Vickers in the early 1960s I wrote programs in Fortran which did all the sums I needed to do my job but, when I bought my own BBC B in 1980 the world of 'doing sums' opened up to me in a way that made my early experience with time shared Fortran seem like a bad dream.

I wrote many little PROCs and many more FNs which carry out a marvellous number of calculations in what seems like no time at all. I wrote a little program which would discover whether 1000001 was a prime number and one I remember calculated the shape of a hanging chain which was being (dynamically) wound in from one end. It turns out to be almost, but not quite, a catenary of the form $y = a \cosh(x/a)$.

One program which I still use very regularly will find the day of the week for any date you can think of. I use it to answer questions such as "On what day of the week was Armistice Day, the 11th November 1918?" The answer is returned in a flash! One of the beautiful features of BBC BASIC is that, with it, you can access everything on the machine from the serial ports to individual bytes on a floppy. I wrote a program which allows two BBC computers to communicate with each other via their serial ports. Also I wrote a disc sector editor which could be used for all sorts of nefarious things.

All these BBC BASIC programs worked perfectly on my A310 Archimedes.

If you have never tried writing a little program in BBC BASIC then you are missing a lot of fun. You can make your RISC OS machine do almost anything you want to with a relatively simple BBC BASIC program!

Assembler

Another beautiful feature of BBC BASIC (which I still use) is that I can write PROCs containing assembler. I have used this method to create many interesting RAM Modules. I think my first one was a screen dump to a dot matrix printer.

Before BASIC V was released, BBC BASIC did not use the floating point emulator so its precision was limited to about 10 (decimal) significant figures. I wrote a BBC BASIC program which used assembler to access the FPE and do sums to about 18 significant figures. Later I used BBC BASIC to turn this program into a module which could be accessed from BASIC. I have just tried the BASIC program and it still works but, for some reason (I haven't time at the moment to investigate) the module no longer works! BASIC V does use the FPE and has greater precision than the earlier version, so my home made program is redundant - but I keep it and use it 'just for fun'.

I still 'play' with the assembler built into BASIC and create small pieces of machine code. I don't produce huge programs so I don't use C and the C Library with all its features; what I do have is lots of 'fun'! If you have never tried producing machine code using the BASIC assembler then you are missing opportunities for 'fun'!

PipeDream

PipeDream was one of the earliest independent applications to be made available for the Archimedes. It is based on View Professional and has much in common with it.

I recall the day that Paul Beverley offered me the opportunity to review it. From the first day I used it I was 'hooked'.

I remember that in my review I wrote "The spreadsheet and word processor elements which are combined within PipeDream are integrated to such an extent that you can not see the join." Like many other enthusiasts, in spite of it being "rather quirky" (to quote one user) I love using PipeDream. The thing I love most is that almost anything I (and many others) want to do with a spreadsheet can be done in PipeDream.

Open Format

Like so many RISC OS applications which came after PipeDream, the format of the data files is documented and completely transparent to the user. If you have ever tried to look at the file format of a Microsoft Word or Excel file then you will understand exactly what I mean. If you have a PipeDream manual then look at pages 197 to 202. Everything you need to know about the PipeDream file format is contained within those pages.

Even in the early days of PipeDream, RISC OS users took advantage of the information in these five pages to create PipeDream format files using BBC BASIC programs.

I must mention Francis W Aries who wrote such a BASIC application called DiscsCat.

This application looks at the directory of a floppy disc and builds up a PipeDream format file from this information. Of course the PipeDream file will load into PipeDream and the file can be searched or sorted in the usual manner.

Francis was a regular contributor to both Archive and to our PipeDream support group (called PipeLine) until his death in 1994. It is the completely open documentation of RISC OS, of BBC BASIC, the floppy disc format and of PipeDream which allowed Francis to produce this application.

Although I have referred to PipeDream the same sort of thing can be said about Impression.

The Impression file format is well documented and it has been used by many RISC OS enthusiasts in a similar way to the way in which Francis used PipeDream. Impression files can be manipulated using a text editor or, better, by using a BASIC program.

Macro Files

PipeDream was one of the earliest programs in which it was possible to record what is called a Command File. You can record a sequence of PipeDream commands and save the sequence as a Command File. Clicking on this Command File will cause the recorded sequence of PipeDream commands to be executed.

The format of PipeDream Command Files is documented on pages 43 to 48. These files can be edited using either a text editor such as !Edit or, of course, in PipeDream.

Nowadays Microsoft Excel can be used in a similar way to record what is called a Macro. These can be run in a similar way to PipeDream Command Files. Of course, there was nothing like this on other computers when this feature was introduced in PipeDream.

In spite of the inclusion of macros in Excel, I still prefer PipeDream when it comes to Command Files. Using PipeDream the whole process is totally transparent. These Command Files files can be understood easily because the format, like so many things in the RISC OS world, is so well documented.

Other Open Formats

Even before the introduction of outline fonts by Acorn the format of the bit mapped font files was completely documented and available to everyone and anyone. When outline fonts were introduced with RISC OS 2 it came with a whole load of utilities which made it possible for anyone with the relevant artistic ability to create an outline font.

Two other examples of the openness of RISC OS come into my mind. These are monitor definition files and printer drivers (I don't mean PipeDream Printer Driver files). Anyone can write their own monitor definition file using something like MakeModes. Printer driver files are a bit harder and less well documented but are still well within the reach of anyone with a printer handbook.

Openness

If there is one single thing which attracted me to RISC OS in the first place it was that every feature and file format was well documented in a way that made it accessible for me to play with. Whether I wanted to play with a DrawFile or play with the data on a floppy disc, whether I wanted to use a strange monitor or convert Impression files to Fireworkz format, whether I wanted to do this in earnest or just for fun, I could always find the information I needed to do whatever it was that I wanted to do.

This same feature of RISC OS machinery exists today. It is a machine designed for enthusiasts who want to do their own thing rather than simply a tool to be maintained by someone else. All of us who continue to use RISC OS machinery do so partly because we can control it and, with it, we can be creative in ways impossible with any other computer.

These open features will continue into the future because, as RISC OS enthusiasts, we will insist that we know all the file formats.

Farewell

So you see, the "moving finger" of our editor has written (or at least edited) twenty years of history, the history of the best computer ever to have been built. To use some modern jargon, RISC OS computers have 'empowered' their users in a way that Windows machinery never has done, never can and never will.

We, who have followed the progress of RISC OS machinery from its origins as a development of the BBC computer, have been favoured with a computer which has voluntarily given to us the power to control it. Throughout the last twenty years the Archive magazine has recorded this symbiosis; reading its pages has enlightened us; but above all, Archive has encouraged every one of us to have fun and to enjoy to the full all those things which attracted us to computers in those memorable 'first days'.

I know that all of us who have enjoyed Archive will join with me in wishing Paul total success in his new career. I know that many of you, like me, will want to say a big "Thank You!" to Paul for the massive contribution he has made to the quality of our lives either through personal contact or through the many 'having fun with computers' articles he has brought to the pages of his magazine.

Although Paul, like the "moving finger" of time, has moved on his legacy will remain with us for the rest of our lives. I for one would not ask to "lure it back to cancel half a line" and, most certainly, I have no "Tears". I insist that all the millions of "Words" which Paul has printed remain as clear in my heart as an anti aliased font and as wonderfully inspiring as the day they were written.