

e-Musing 5.

It is well over 6 months since **e-Musing 4** was put up on this web site, and while I am damn sure that no one actually reads these inputs – or if they do, they certainly never bother to respond in any way to either the questions asked or to topics which could be considered contentious. Anyhow, the continuation of one of my favourite “rants” was preordained in the newspapers during August – on a number of fronts! The topic is the continued dumbing-down of our children’s education. Firstly we had yet more record “A”-level results forecast, so much so that one commentator said that a raise from the 96% achievement of last year to whatever new “High” would be achieved this year “...would make them unfailable”! Following closely on this were a number of articles where the UK’s poor schooling was claimed to be failing UK plc in all our scientific needs.

Oh Dear! I do hate to pour cold water on the achievements of pupils taking “O” and “A” levels and I am absolutely sure that the huge majority work very hard to achieve their results. But when one then sees, for one example, the standard of English that regularly features in government handouts, newspapers, and even on the high street, one seriously doubts whether any of the improvements regularly trumpeted by various ministers are other than a real bit of science fiction. How can we (the public) contribute to any improvement? Well for a start, we can refuse to accept anything that we see that is less than acceptable. This is simple and a start. To try and drag up standards by whatever means we have at our disposal is much harder work, and probably more unrewarding. But without trying we will surely see our manufacturing and scientific base steadily drifting eastwards to where education is still recognised as a major benefit, and where pupils have the ethos of working to achieve; something that ours have long given up. The final part of this over-long rant is the headline that Degrees are now forecast to cost the average student £35,000 at the conclusion of their course! This raises my blood pressure on two counts – education up to end of University should be “free” as this is the foundation of UK plc., and degrees should have true academic strength, and what on earth is the value of any degree that has no real academic value?



The image is from the 1950’s, comes from elsewhere on the web (Carioca Yearbooks: “More, Wiczek & Stekley with their slide rules as seniors in 1950”. ea yearbooks.com) and shows a class of bright and shiny pupils (who must now be octogenarians) being taught how to use a slide rule. This type of teaching indirectly included the correct order to carry out calculations as well as an understanding of the numbers involved in the calculation due to the mental arithmetic required to come up with the correct place for the decimal point.

On a totally different subject – but allied to our modern general dumbing down and the use of slide rules – the proper order of calculation. There are “entertainment” programs on the television where simple calculation is needed, and it is very obvious that a large proportion of the public has no idea that there is a proper order for carrying out calculations, let alone actually doing so. There was a fascinating article in an *Oughtred Society Journal* where, in passing, the author covered the order in which calculations should be performed. For example: $2 + 3 \times 4 = 20$ or 14 , effectively depending on where brackets would be placed, and brackets must be included to give precision to what is required of the calculation:

$$(2 + 3) \times 4 = 20$$

$$2 + (3 \times 4) = 14$$

However, purists would probably correctly say that the “equation” needs no brackets because if you do the sums in the correct (only) order, you get the (only) correct answer, which is 14!

Now most of us will have been taught via some sort of mnemonic to help us remember that the proper order of calculation is Multiplication, Division, Addition and Subtraction. Hence (as the author said in his article) “**My Dear Aunt Sally**”, which apparently originates in America. I had never heard of “Aunt Sally”, at my school in the colonies we were taught a nonsense mnemonic (which must have worked as I have never forgotten it) which was “**BODMAS**”. This may have been an improvement on Aunt Sally, as it included more functions. It stood for: **B**rackets, **O**f, **D**ivide, **M**ultiply, **A**dd, **S**ubtract; anything else was done at the end e.g. trig functions. This seems to have been used (in a number of similar forms) throughout the English (as against American) speaking world

Having enjoyed the article, I e-mailed the Dutch author to tell him about my mnemonic, and to ask what they were taught in Holland. His answer was: “In the Netherlands we use: “**Mijnheer Van Dalen Wacht Op Antwoord**”, or: Mr. van Dalen waits for answer. **M** for machtsverheffen / powers, **V** for vermenigvuldigen / multiply, **D** for delen / division, **W** for wortel / roots, **O** for optellen /add, **A** for aftrekken / subtract”.

Which promptly raises the question: what were you taught? Answers please via the web site, I will collate for an update on this site at a later stage.