

## Re: Deep Rescue: Will a shuttle float?

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- *From:* "Jeff Findley" <[jeff.findley@xxxxxxxxxxxxxxxx](mailto:jeff.findley@xxxxxxxxxxxxxxxx)>
  - *Date:* Tue, 23 May 2006 08:49:54 -0400
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"Henry Spencer" <[henry@xxxxxxxxxxxxxxxx](mailto:henry@xxxxxxxxxxxxxxxx)> wrote in message  
[news:Izot7o.K5x@xxxxxxxxxxxxxxxx](mailto:news:Izot7o.K5x@xxxxxxxxxxxxxxxx)

In article <[e4skr8\\$75n\\$1@xxxxxxxxxxxxxxxx](mailto:e4skr8$75n$1@xxxxxxxxxxxxxxxx)>,  
Andre Lieven <[dg411@xxxxxxxxxxxxxxxx](mailto:dg411@xxxxxxxxxxxxxxxx)> wrote:

"Do you know how to find the square root of 9,567,281?"  
"Sure, I just tap the number in and hit the square root key...  
piece of  
cake." :-\

Thats another example of skills lost by way of modern tech...

Even in pre-calculator days, precious few working professionals could have remembered how to find a square root by hand. For low precision, you used a slide rule; for high precision, a table of logarithms, possibly extended to higher precision via interpolation. Admittedly not quite as simple as using a calculator, but still very much dependent on mechanical aids.

(And yes, I still have both and could use them if I really had to... My undergrad years straddled the transition to calculators.)

When I was in high school in the mid to late 80's, they still taught you how to use logarithmic tables for this sort of thing. I believe they even showed us how to do interpolation. Of course, by the time I got to college, calculators were generally allowed for all tests. I remember blowing nearly \$300 US on an HP28S, which by then wasn't the newest HP, but it was good enough for all my engineering classes. Matrix inversion was built into these things by now, but any serious work was generally done on a computer (usually Unix mainframe) using a math library.

Our company develops and sells NX Nastran, and the developers in that group have lots of "fun" with math. The worst math I ever did at work was in our Post Processor. I got to write the results access and transformation code that takes the raw data from the solver (things like complex stress tensors)

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and make sure the user could transform that into different coordinate systems, view individual components, and view it at different phase angles.  
Lots of ma