

Catenary Bowl by **Keith Davidson**

Two of the first things I learnt when I first became interested in turning was 1) the importance, or otherwise!, of the golden ratio in proportions etc. and 2) that curves in turned work look good if they are of catenary form i.e. the natural shape of a hanging heavy rope or chain. In the absence of any other bright idea, I thought the catenary might suit a Zebrano blank, to become a bowl. It turns out that this shape can be modelled (where have I heard that word recently?) by the mathematical hyperbolic cosine function, COSH. The guts of the maths is pretty fierce, but the Excel spreadsheet has this function built in. So I wrote a few lines to generate a table of heights and radii to suit my blank, and the computer did the calculations in milli- if not micro- or nano-seconds. I managed to get the computer to plot these figures in a chart quite easily, but then the fun started; trying to get the computer to collaborate with the printer to produce an actual size drawing which was, eventually, printed directly onto stiff card. All this before I'd even mounted the blank. And it didn't even tell me how to avoid catches!

