Constraints
Show the locations of constraints and describe the degrees of freedom (DOF).

Results
Include pictures of key stress and displacement plots. It is useful to tabulate or graph results when reporting a high number of load cases.

Conclusion
Report the key findings of the analysis and confirm if the objectives have been met. Recommendations for product improvement are always welcome.

References
List the references used for material data, loads and any hand calculation equations.

21. Closing Comments

Finite Element Analysis is an essential everyday tool for engineers and is gaining popularity. FEA software is increasingly being given away with CAD packages and is becoming easier to use as the developers improve the graphical user interfaces. There is the temptation to jump in and put blind faith in the numbers that come out of the box. I hope that I have shown you some of the pitfalls and things to watch out for when doing FEA.

The beauty about FEA is that you don't need a brain the size of a planet (lucky for me!) and you don't need to know hundreds of mathematical equations. You just need a few good books for the hand calculations such as *Roark's Formulas for Stress and Strain (Young & Budynas)* and *Mechanical Engineer's Data Handbook (Carvill).* I took most of the equations in this paper from these two books.

Checking your FEA results with hand calculations will give you confidence in your own work and provide ammunition when your boss says
'I don't believe you!'