SSERC Technology Roundup

Safe use of woodworking machinery - Approved Code of Practice and Guidance

Up until now, the Safe use of woodworking machinery, 'Approved Code of Practice and Guidance' (ACOP) has only been available to buy as a book from the HSE (Health and Safety Executive) [1].

This ACOP was prepared by the Health and Safety Executive (HSE) after consultation with industry. The advice given in the Approved Code of Practice (ACOP) and guidance reflects the precautions that are widely accepted and used to reduce risks from woodworking machinery.

The ACOP contains the Provision and Use of Work Equipment Regulations 1998 that are relevant to the safe use of woodworking machinery, together with an Approved Code of practice and supporting guidance. The document covers the provision of information as well as aspects of guarding, machine stop controls, warnings, markings and maintenance and is aimed at those who have responsibility and/or control use of woodworking machinery either directly or indirectly.
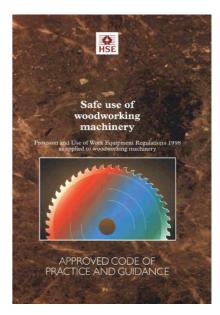
The HSE report that the woodworking industry has one of the highest accident rates in manufacturing, most of which are caused by contact with moving machinery. It is therefore good news that, Safe use of woodworking machinery, 'Approved Code of Practice and Guidance' (ACOP), which forms part of the range of topics covered in the HSE guidance for the woodworking industry [2] and gives advice on some of the precautions to ensure the safe use of woodworking machinery, is now free to download via the HSE website [4].

In many respects this document is a daily guide to safe working practice for woodworking machinery. No school technology department should be without one.

References

[1] *Safe use of woodworking machinery, Approved Code of Practice and Guidance (L114),* ISBN 978 0 7176 1630 5, £8, www.hsebooks.co.uk
[2] http://www.hse.gov.uk/woodworking/
[3] http://www.hse.gov.uk/pubns/indg 291.pdf
[4] http://tinyurl.com/SUWM-ACOP

The Code of Practice relates directly to current health and safety legislation i.e. the Provision and Use of Work Equipment Regulations 1998 (PUWER98) [3]. It has a wealth of information regarding training, machine stop controls, warnings, markings, maintenance, and much more. The use of correct guards and push stick design is also covered.

Designing cut-outs using arcs

Whether using CAD or working with a pencil in the workshop, the following formulae take the guesswork out of arc cut-outs on designed products. How often do we cut an arc into materials using two end points at an edge? The use of paint tin lids springs to mind, carefully drawing around it, with little thought of 'radius' or 'height' of the arc into the material.

Consider:
L = the length of arc on the product.
H = the maximum height of the arc into the material (rise of the arc)
R = the radius of the arc

1. Given length (**L**) across the arc and the height of the arc (**H**), what is the radius of the arc?
$$R = H/2 + L^2/8H$$

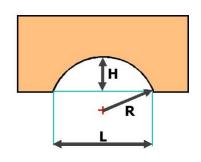2. Given the radius of the arc (**R**) and the length (**L**) across the arc, what is the rise/height of the arc?
$$H = R - \sqrt{(R^2 - L^2/4)}$$

3. Given radius (**R**) and height (**H**), what is the length (**L**) across the arc?
$$L = \sqrt{(4R^2 - 4(R-H)^2)}$$

The three formulae may be incorporated into a spreadsheet, providing a quick and easy arc calculator. The formulae have already proved useful when looking at sketches and drawings without dimensions, in particular the determining of the arc centre and radius from measuring the length of arc and height/rise of arc from the drawing.

A spreadsheet is available for download from the SSERC website.