

Sharpening Small Tools

By Ian Bradley

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Ian Bradley is well known and respected for his many informative books relevant to our hobby.

With only 100ish pages this gets down to the meat quickly.

We are taken through the process from the start, with information on the Stones and we learn about Arkansas Stone, Turkey Stones, Oilstone Slips, Razor Hones and Grindstones, then onto stones manufactured from different abrasive materials. Ian gives lots of information on the advantages each material has as well as the pitfalls. For manual stones, a Protective Case is essential for support and protection, again details are abundant on how to make these, showing the

differences necessary for different users. For rotating grindstones that most are familiar with we are given the speeds they have to be run at for efficient cutting and your safety, for used at the wrong speed the stone could explode and injure those close by, along with an explanation of the tools needed to keep the stone truly circular and the correct shape. Worn surfaces lack the sharp cutting edges on the individual pieces of abrasive material so dressing to remove them is covered.

For accurate sharpening of Hand Tools, Ian gives examples of simple devices for holding them at the correct angles for sharpening, and for adjustable jigs he gives the angles needed and how to calculate them using simple Geometry for the best results when using a Manual Stone technique.

Most will expect to use a powered circular stone, and as expected, he covers this, giving examples of simple jigs to make and use to achieve the complex angles required on machine tools.

The next section is on 'Metal Working Tools', here the Rake, Side, Front and Top clearance angles are explained, and examples of set-ups that will allow you to achieve these accurately and repeatably.

I think most of us have at some time in the past treated the sharpening twist drills as our 'Marmite' with most, due to lack of correct tuition, hating to attempt it. Advice is here on drills, counterbores, Endmills, Slot drills and Countersinks.

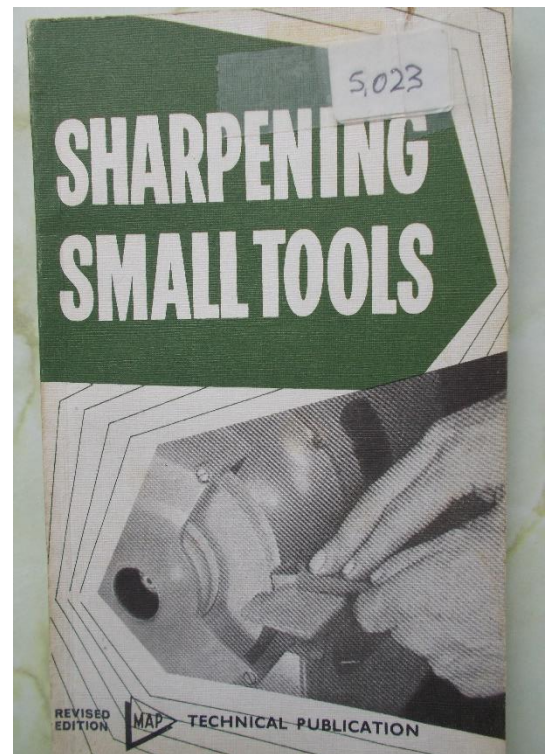
Reamers are made to cut to a size, and one would expect them to be made on some form of tool Grinder to maintain the accuracy, Ian explains how, when getting slightly dull, can be stoned to regain that sharp edge.

Most of us would consider a Tap or Die to be a disposable item (a sad reflection of our progress as a species) Ian steps in and shows how a Dull Cutting edge can be sharpened to give these humble devices a second life, most relevant when we are trying to finish a project.

Scrapers are a tool that have seem to faded into the background, but the tool has a place in all toolboxes and will true up a surface quickly or create a small clearance on a sliding part without resorting to filing or Abrasive Cloth, here Ian clearly shows how sharpen and even convert old files to useful scrapers.

Cold Chisels, Centre Punches, Scribes, Dividers, Tin Shears, End Cutters and Wad Punches, I don't think there is anything left to sharpen!!

Wood Working Tools, (my dear old father was a Joiner/Machinist and 'Drummed into me' as a child, "if it is not sharp enough to shave with it, it won't cut wood") Here we see Ian covering all the essential things Planes, the different types, the different angles the blades are set at and why, the importance of the 'Back Iron' and how to set it and if required, true it up. Simple Jigs and their uses are explained.



Hand Routers (Mothers Foot), Chisels, Gouges, Spokeshaves, the types, the angles and the techniques are all explained with comprehensive diagrams. Hand Saws, yes, the ones you can actually sharpen!! and how to true up, set and file to sharp, likewise circular saws, how to first (missed by many) true, then set and sharpen. He goes on to cover the wealth of Centre Bits, Auger bits, Expanding Bits, Spoon Bits and finally the often 'much abused' but very useful Bradawl.

The final section covers Knives, Scissors, Razors and Drawing Tools, I think many assume, particularly scissors, just have to have a 'Sharp' edge to cut, failing to understand they cut by 'shear action', but once again Ian covers these 'Tools' in detail, demonstrating the shape they should be and the surfaces to be ground/sharpened to what angle.

Like a lot of folks....I think I know how to sharpen my tools.... But I have to say this is a small book, but packed full of very precise and valuable information, it is a good reference book for those 'who know how to' and a Must Read for those starting out in any direction ie Metal or Wood or indeed both.