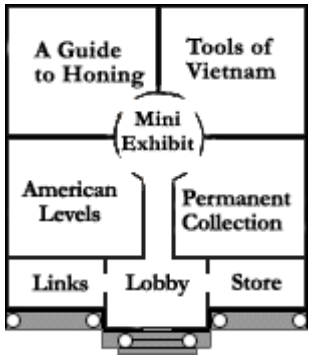
Museum of Woodworking Tools



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A Guide to Honing and Sharpening

The Four Reasons for Honing

Click on the picture to enlarge

Fresh from the Grinder

After honing and stropping (microbevel almost invisible)

1: Re-texturing the ground edge. The coarse abrasives used in a grinding wheel are necessary for the fast and cool removal of metal. Fine abrasives would be (a) unproductively slow cutting and (b) would rub more than they removed, causing heat build-up that ruins the tempered hardness of a blade. But efficient, coarse cutting wheel does exact a price. The large particles serrate the tool's working edge into a weak (microscopic) saw-tooth texture: the strongest possible sharp edge would be unified (i.e., linear and continuous), not chopped into separate "teeth," unsupported by adjacent substance. We strengthen the sharp edge by honing the bevel/edge entity on a series of ultra fine-abrasive oilstones. Good honing reduces the peaks and valleys to a virtual straight line, even viewed under very high magnification.

2: Removal of burr. As metal is ground to thin cross-section (i.e., sharpness) it does not form a neat triangular profile: the tissue-thin edge and attached debris curl over into what is called the "burr" or "wire." We must abrade or fatigue this microscopic "steel wool," to expose the underlying solid edge, via the honing process. This also straightens, burnishes and polishes the edge's component front and back faces, hence the edge itself.

3: Second bevel. Honing at a raised angle (5 degrees or so) consolidates, and strengthens the edge by forming a second (more obtuse) bevel. This is an option. Old "carpenters'" style allowed a considerable 2nd bevel to accumulate before grinding anew - this is for rugged work. An effective alternative is the now common micro bevel style shown in this lesson.

4: The final, probably commonest reason for honing is simply to restore an edge moderately **dulled by normal use**. Grinding is for major alteration of edge and bevel. Honing is for everyday finessing.