

A Note From A Wood Tinker

Whether you are carving a Thanksgiving Turkey, a Christmas Goose, a New Year's Roast, or a tardy wood piece that you had hoped would be done for the winter holidays, a sharp and well formed cutting edge on a fine tool goes a long way to making the act of carving a joy. With my best wishes for good cheer, a joyous Christmas, and a healthy and prosperous New Year, let's look at the second of two books added to our club library on **sharpening**.

Leonard Lee a woodworker, tool maker, and the President of both Veritas Tools and Lee Valley Tools is author of "*The Complete Guide to Sharpening*," 245 pages with multiple black and white photographs, close-ups, illustrations, and/or charts on most pages (The Taunton Press, 1995). His book's structure is similar to Ron Hock's later written "*The Perfect Edge*." Lee covers theory and equipment in his first five chapters, with the remaining chapters devoted to various tool groups. Each book's content complements the other. Lee brings a different perspective and emphasis, often with a more elaborate description. If Hock has a clarity and conciseness analogous to speaking "German", then Lee may be said to have the color and richness of "Italian". There is much to learn from both teachings. Even after reading one, the other may be read to one's benefit (which would seem to cast doubt upon each author's claim to have written the "ultimate" or "complete" guide).

The Introduction reveals Lee's writing journey and motivations. Lee says:

"Throughout [the book], emphasis is on the most effective combination of edge shape and keenness for each tool. Overriding all is the nature of the work required of each tool, because edge shape flows from this requirement.

I hope to convince you that sharpening can be done competently and economically by anyone.... I hope this book will make your woodworking more enjoyable by removing yet one more barrier between you and mastery of the craft."

Now for the smorgasbord - Lee's 16 chapters:

1. *The Meaning of Sharpness* - In 4 pages, Lee presents an interesting historical look, beginning with three standard references from history, the first being the phrase "as sharp as a serpent's tooth" which gave way to "as sharp as a tack," and then "as sharp as a razor (blade)". Lee's book writing journey began with the introduction to America in the 1970s of Japanese water stones. He wanted to compare these water stones to the natural Arkansas oilstones and Lee thought that a standard would be helpful. Exploring the idea of a sharpened razor blade, Lee contacted a scientist who agreed to make a series of photographs using an electron microscope. Photographs were made comparing a standard razor blade (carbon steel) to a Wilkinson Sword blade (stainless steel) and also to a chisel sharpened with a water stone and honed with chromium oxide. These tests showed that a woodworker could sharpen a chisel to produce an edge sharper than a razor blade. Thus, begins Lee's look at the meaning of sharpness. Ron Hock in his book "*The Perfect Edge*" writes succinctly. Lee taking a longer path verbally explores defining sharpness. Lee brings us along on his journey taking "*a roundabout way of leading you back to the proposition that a reasonable definition of sharpness should include not only the keenness of the edge but also the suitability of the shape of the edge considering both the nature of the steel and the intended use of the tool.*" Lee then gives us an overview of shape and function, metallurgy, and abrasives.

2. *The Physics of Severing Wood Fibers* - "I know. You want to go directly into tool sharpening without having to go through a course in physics. Well, you can do that if you wish, but if you read this chapter you will do a lot better job of sharpening anything that cuts wood because you will understand how wood reacts to cutting tools, dull or sharp." In 12 pages Lee describes end grain cutting, parallel grain cutting, cross-grain cutting, clearance angles, tool geometry, and much more, including a page on the use of skewed blades in carving.
3. *Metallurgy* - A much briefer (9 pages) look than Hock, who had 7 pages alone on the topic of Rust, but Lee's pages pack in: a history of steel making, quenching, alloying, a spark test for identification, hardening, and a page devoted to Japanese blade and chisel making.
4. *Abrasives* - Lee is clear and unusually concise, quickly moving from a historical perspective that recounts natural and man made abrasives to focus upon abrasive particles and their properties. In this excellent and lucid chapter, Lee asks, "what makes a good stone?" and he answers, citing five factors: particle size, particle shape, hardness, toughness, and bond. The 11 pages include 21 photomicrographs which depict various types of bench stone particles (Washita, Soft/hard/black hard Arkansas, and Japanese water stones) as well as chisel edges sharpened with these and other abrasives. Grindstones and their code system are demystified. Lee provides a framework for evaluating and comparing abrasives, while Hock excels in providing greater detail about particular abrasive materials.
5. *Sharpening Equipment* - Lee elaborates on sharpening with simple rather than complex equipment. Lee reasons that "[simple equipment] usually requires better technique because of the absence of jigs and fixtures." Nonetheless, 6 of Lee's 17 pages are on: wet and dry grinders (including truing and dressing); belt sanders; sanding drums; felt buffering wheels; and bobs including a nice description of the technique involved with charging a new felt wheel with honing compound. Lee also describes bench stones including oil stones, water stones, reconstituted stones, diamond stones, and ceramic stones. Other topics include: honing oils & waters, shaped stones, storing stones, keeping them flat, the Eclipse-style and Veritas honing guides, strops, files, sandpaper and micro-finishing abrasives. Lee recommends a basic sharpening set up with suggestions on what to buy first.
6. *Chisels* - With 18 pages & 38 illustrations Lee is much more thorough than Hock (8 pages & 23 illustrations). Lee covers lapping (flattening), setting the edge and honing, with a look at 9 specific types of chisels
7. *Planes* - 14 pages & 28 illustrations for Lee versus 26 & 73 for Hock's *The Perfect Edge* (Did I mention that Hock was a plane blade maker?).
8. *Knives* - 10 pages on kitchen knives, pocket/belt knives, chip knives, hacking knives, marking knives, filling knives, and drawknives.
9. *Carving Tools* - "If you learn to sharpen carving tools well, you should be able to sharpen anything.... The wide variety of shapes requires versatile grinding and honing systems. At the same time, the diversity also precludes the use of honing guides and demands the development of freehand sharpening skills in any would be carver." Beginning with a study of bevel angel and gouges, Lee made me understand the importance of bevel. Of 16 pages & 33 illustrations, Lee spends 4 pages and 6 illustrations with 22 figures explaining bevels. It is that important, and well taught. (Now if I can only remember what Lee wrote... Oh, yeah, "...if you have not understood all of the material in this chapter so far you should re-read it." Sigh! I understood it; Lee writes well. I just need to be able to recall it after I finish the chapter!) "Truing the sweep" is explained with practical tips and a touch of humor. Honing on a belt sander and felt wheel are illustrated and discussed, as are bent gouges, veining tools,

parting tools, inshaves, scorp, and hook knives. Bamboo skewers are recommended for honing microscorps. Lee writes with the confidence of an experienced wood carver.

10. *Turning Tools* - 12 pages on grind angles/bevel angles, scrapers, recommended grinding wheels for turners, gouges, chisels, parting tools and beading tools.
11. *Scrapers* - 12 pages, cabinet scrapers with jointing, stoning, burnishing, and resharpening. Also, curved scrapers, scraper planes, scratch stocks, paint scrapers, and restoration scrapers.
12. *Handsaws* - 20 pages, details jointing, shaping, setting and pointing, plus many types of saws.
13. *Axes, Hatchets, and Adzes* - 14 pages, much more detailed than *The Perfect Edge*, but Hock has better photos showing the use of power tools to sharpen.
14. *Power-Saw Blades* - 14 pages, including circular, steel & carbide tipped, bandsaw, chainsaw.
15. *Drill Bits* - 16 pages, on bits - twist, spade, auger, brad-point, Forstner, sawtooth, machine bits and wood bits, hole cutters, plug cutters.
16. *Peripheral Milling Cutters* - 8 pages, jointer and planer knives, router bits, milling cutters, .
17. *Other Shop Tools* - tweezers, trammel points, center punches, awls, screwdrivers, marking and cutting gauges, claw tools, nail sets, pliers, end cutters, nail pullers, scissors & shears, punches, rotary cutters, miter-trimmer blades, cornering tools, all covered in 14 pages.

Lee concludes with a brief afterword and two appendices on wood chip classification and grit standards as well as a glossary and index.

In summary, Lee's book "The Complete Guide to Sharpening" is a wonderful reference combining history with the theory and fundamentals of sharpening. It has very good chapters on Chisels and Carving Tools that contain practical advice. The entire book is well done with numerous microphotographs throughout that greatly facilitate understanding. In particular, Lee's chapters 2, 4, 5, 6 and 9 are sugar plums in a Christmas feast of sharpening knowledge. Chapter 9 on Carving Tools has an excellent description of gouge sharpening. It illuminates the reasons for bevels, by marrying sharpening technique to the practical carving necessity for a bevel's existence.

"The Complete Guide to Sharpening" is a new addition to the Mid-Wisconsin Chipper's Club library.

