

PERFORMANCE PROFILE

northern red oak

(*Quercus rubra*)

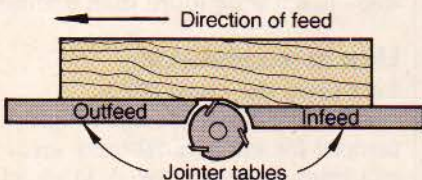
Filled red oak

Unfilled red oak

Machining methods

As most woodworkers will attest, red oak works wonderfully, but it does require power tools. Even then, the wood sometimes takes special handling. *Our observations:*

- Feed red oak on the jointer so that the knives' rotation follows the direction of the grain flow (see sketch, below). Failure to do this generally produces chipping.
- Due to red oak's open, straight grain, it offers only moderate resistance to ripping.
- Red oak quickly dulls anything other than a carbide blade.
- Too fast a feed rate on the table or radial-arm saw, or with the



- router, can cause burning, although burns sand off easily.
- Red oak tends to splinter. So, use shallow router passes on end grain

and a backing board clamped to the exit side on cross-grain work.

- Metal, such as a clamp bar, touching glue squeeze-out produces a dark blue stain. Lay wax paper over the glue line.
- Red oak grips screws, but even with pilot holes, lubricating the threads with paraffin eases driving.
- Although red oak sands readily, try garnet paper for hand-sanding and with orbital sanders. For belt sanders, we prefer oxide-type abrasives. Swirls and other sanding marks come off nearly effortlessly.
- For the smoothest possible finish, fill red oak's grain with a paste-type filler. The filled wood (see photo, top right) has less dramatic grain contrast, but it requires fewer coats to build the final finish. For a lighter fill, sand surfaces with Danish oil as a lubricant. The sanded-off fiber packs the grain.

Carving comments

Only the most accomplished carvers tackle hard red oak, and then mostly for relief work. You

won't get far without a mallet and very sharp gouges. Some tips:

- Change from a shallow bevel (of 15°–20°) to a deeper bevel of 25°–30° when you rough-in the outline of a relief design. Your gouges stay sharp longer. Then, when it's time to do the details and complete the carving, grind to a shallow bevel again for shaving.
- *Our advice:* Avoid slices along straight grain with stop cuts.

Turning tricks

- When turning between centers, combat splinters by entering the wood with a sharp tool, such as a clean-cutting skew, and taking shallow cuts, especially when first rounding the turning square.
- *Our turning tip:* Keep tools sharp to cut rather than abrade. And, don't start at one end and cut all the way to the other. Remove wood a little at a time in each section because the grain may run on a bias and splinter away. ♣

SHOP-TESTED TECHNIQUES THAT ALWAYS WORK

Any exceptions, and special tips pertaining to this issue's featured wood species, appear under headings elsewhere on this page.

- For stability in use, always work wood with a maximum moisture content of 8 percent.
- Feed straight-grained wood into planer knives at a 90° angle. To avoid tearing, feed wood with figured or twisted grain at a slight angle (about 15°), and take shallow cuts of about 1/32".
- For clean cuts, rip with a rip-

profile blade with 24–32 teeth. Smooth cross-cutting requires about a 40-tooth blade.

- Avoid drilling with twist drills. They tend to wander and cause breakout. Use a backing board under the workpiece.
- Drill pilot holes for screws.
- Rout with sharp, preferably carbide-tipped, bits and take shallow passes to avoid burning.
- Carving hardwoods generally means shallow gouge bevels—15° to 20°—and shallow cuts.

RED OAK AT A GLANCE

Cost	\$\$\$
Weight	🐘🐘🐘🐘
Hardness	TTTTT
Stability	△△△△△
Durability	🕒🕒🕒🕒🕒
Strength	💪💪💪💪💪
Workability	🔪🚫
Toxicity	☠️☠️☠️☠️☠️
Look-alike	White ash