

Buying Lumber

*Know what to look for
and what to avoid*

by Vincent Laurence

I remember cruising the aisles of a home center, while still in college, looking for wood to make a stereo rack. I was making the move from pine 1x12s on cinder blocks, and I wanted to do it right. But something *wasn't* right with the hardwood lumber at the home center. It was stacked upright, all surfaced and plastic-wrapped. In its packaged uniformity, the lumber had all the appeal of shrink-wrapped chickens lined up in a supermarket cooler.

Today, there are few things I enjoy more than pawing through stacks of walnut, cherry or bird's-eye maple. Even roughsawn boards are enough to set me building projects in my head. For me, the wood itself is a big part of the reason for woodworking.

But you have to find the wood first. Then you need to know what you're looking for—and what to avoid. There are a lot of different places to find wood, each with its advantages and disadvantages. And wood is available in many forms: air dried and kiln dried, quartersawn and flatsawn, roughsawn and planed. Quartersawn and flatsawn are defined in the glossary on pp. 38-39 and are discussed later in this article.

Given the opportunity, I always buy roughsawn. Lumber that's already been planed, especially 1-in. stock, may be too thin if I have to resurface it after I get it back to my shop. If you don't have a jointer and planer, you can often find a local professional woodworker who will surface your lumber for a fee. I've also known woodworkers who've taken woodworking courses at a local high school just to gain access to its woodworking equipment.

Wood is seldom defect-free. Lumber producers have developed grading systems to classify lumber quality (see the box on p. 39 for





Choosing lumber is part of the pleasure of woodworking. Coming across wide stock, like this poplar board, is like stumbling on a gem in the rough. Hardwood lumberyards (above) generally have a broader selection than local sawmills.

an explanation of lumber grading). That information is helpful in a general way, but the small-shop woodworker is better off knowing about particular defects—which are acceptable, which are not—and what to do about them.

Where to find it

Wood for building furniture is available from a lot of different places. I've disassembled pallets. I've picked up burls left by the side of the road when a tree's been taken down. I've even taken logs out of the firewood pile. But mostly, I buy wood from lumberyards and sawmills.

Lumberyards—Lumberyards—not building-supply dealers—are the obvious place to start looking. These places deal primarily in hardwood lumber, though most also sell sheet goods like plywood or medium-density fiberboard (MDF). Hardwood lumberyards generally carry kiln-dried rather than air-dried stock, sometimes roughsawn and sometimes planed. Planed lumber costs more because more labor has gone into it. If you want your lumber planed, most lumberyards will do it for you for a price.

To find a local lumberyard, look under "lumber" in the yellow pages. The places that specialize in hardwood lumber usually will say so in their advertisements. Ask other woodworkers or your local woodworking store about good yards, too. Lumberyards generally have a wide selection of both local, nonlocal and exotic species (see the photo above). Many will order something for you



Photo: Boyd Hagen

Hidden beauty—Lumber that's been outside a while, especially if it's left uncovered, will turn gray. To see the true color of the wood, cut or plane away a little of the weathered surface. But ask first.

A lumber-buyer's glossary

Board foot (bd. ft.): A unit of measurement equivalent to 1 in. by 12 in. by 12 in.

Bow: A curve along the face of a board from end to end, like a ski.

Casehardening: A defect caused by improper drying, which results in a board with latent stresses and possible honeycombing. A casehardened board cannot be resawn without problems.

Checking: Cracks resulting from uneven drying. They may be at the ends of a board or throughout the board as a result of casehardening.

Crook: A curve along the edge of a board from end to end.

Cup: A concave face on a board.

Equilibrium moisture content (EMC): A board is at equilibrium moisture content when it neither takes up nor gives off moisture in the surrounding environment.

Flatsawn: Sawn parallel to a tangent of the tree's growth



Bow



Cup

rings. Flatsawn lumber shows face grain, with oval, U- and V-shaped patterns.

Flitch: A slice of the tree from bark to bark.

Four-quarter (4/4): Lumberyard/sawmill jargon for 1-in. stock. And 6/4 (pronounced *six-quarter*) is 1½ in., 8/4 is 2 in. and so on.

Grain: The predominant ori-

if it's not in the yard. Some yards require minimum orders, but even if they don't, buying 100 bd. ft. usually entitles you to a price break. The next price break may be at 300, 500 or 1,000 bd. ft.

Check out several yards, and weigh selection, attitude and price. I've been treated wonderfully on many occasions by the staff at a big yard near where I live, but I've also had to deal with surly, unhelpful staff. If you're not buying what they consider a significant amount, the staff may not consider your business worthwhile.

Lumberyards buy from a number of different suppliers. The beautiful cherry you see today may not be available next week, so buy plenty while you have the opportunity. One final item: Some yards sell primarily to furniture manufacturers or large-volume shops and don't want you to pick through their stacks. Explain that you need certain boards for the project you're about to begin, and tell them that you'll restack everything neatly when you're done (be sure to deliver on that promise). If they still won't let you pick your own lumber, go elsewhere.

Sawmills—Generally, sawmills are more friendly than big lumberyards. You can get to know the guy who's sawing your wood, ask him to be on the lookout for something special or have him saw something just for you. Prices at a mill tend to be lower than at lumberyards, too—sometimes dramatically so. Besides, you're supporting a small business and buying a local product. To find them, look in the yellow pages under "sawmills," or just ask around.

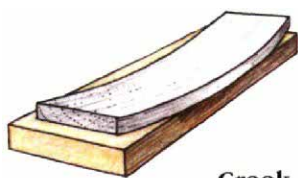
About the only downside to buying from a mill is that the wood

selection is limited to what's available locally. In addition, the wood may not have been kiln-dried, so you may have to acclimate the wood for a while before using it. Ask the mill owner if the wood is kiln-dried or air-dried.

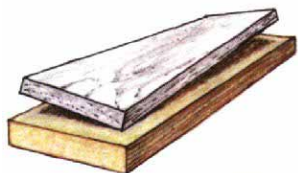
Some mills, like lumberyards, aren't interested in your business. They're perfectly happy making baseball-bat blanks, pallet stock or whatever is their bread and butter. Still, it's worth checking out. A Vermont woodworker I know got all his figured maple for pennies on the dollar from a mill that sold all its plain maple to furniture manufacturers. The furniture manufacturers just didn't have any use for that irregular stuff, and the mill was happy to get rid of it.

Woodworking stores—I haven't bought lumber from a woodworking store, primarily because I haven't been able to get over the sticker shock. These businesses, which sell tools and books as well as lumber, generally look like boutiques and have prices to match. Usually, their lumber is already surfaced to make it more appealing. It is attractive, but if it starts warping while on display (which often happens), the ¾-in. board you take home likely will have to be taken down to ⅝ in. or even ½ in. before it's flat again. High prices and surfaced wood also have kept me from buying wood from building-supply companies or home centers.

Other sources—Check the classifieds. I once bought more than 100 bd. ft. of walnut at \$1.25/bd. ft. from a guy who was being transferred by his company. There are lots of ways to find wood.



Crook



Twist

entation of cells in wood. Grain direction can be seen in the growth rings of a board.

Honeycomb: Large checks all the way through a board and evident on its surface, which indicate casehardening. The checks are a result of improper drying.

Kiln dried (KD): Wood that has been dried in a kiln, usual-

ly to a moisture level of 6-8%.

Pith, pith tracks: The pith is the very center of the tree. A pith track is the hollow or papery cross section of the pith that's exposed when a tree is cut into boards at its center.

Quartersawn: Quartersawn lumber is made by sawing a tree into quarters and then sawing boards so the growth rings run perpendicular to the face of the board. It's dimensionally more stable than flat-sawn boards and often reveals beautiful fleck in species such as oak (red and white), cherry and sycamore.

Rough lumber: Unplaned lumber.

Sapwood: The outer rings of a tree, through which the sap flows. Sapwood always is light colored in contrast with the heartwood.

Twist: Wood that looks like it's spiraling.

Wane, wany: Wane is where the natural edge of the tree tapers so that it shows up on the edge of a board. —V.L.

Many woodworking tool stores have bulletin boards listing tools and wood for sale. Industrial arts teachers may have recommendations. Even your local chamber of commerce may know who's selling lumber nearby.

What to look for, what to avoid

Wood is an organic material. It's not uniform. That's its curse and its beauty. Some of wood's "defects" are spectacular, like burls and bird's-eyes. Others, like loose knots or knotholes, checks, pith and bark pockets are less desirable and must be worked around. Count on buying at least 30% more than you think you need.

Defects and what to do about them—Some defects are fatal. Others aren't. Sapwood, for instance, while not considered a defect by grading organizations, is avoided by many woodworkers because its lighter color doesn't match the heartwood. You can work around it by putting it on the inside of a case piece or on the underside of a table. Or you can just live with it. Some woodworkers make sapwood part of a design.

Boards with pith tracks (see the glossary for unfamiliar terms) aren't a problem as long as they're thick enough to allow the pith to be planed off. I've filled pith tracks on the edge of a board with five-minute epoxy darkened with artist's oil colors. The pith ended up looking just like a sound pin knot.

A sound knot is not a problem if you're looking for a rustic feel, if you can incorporate it into your design, or if it's at the end of a

Lumber grading: what do you really need to know?



Hardwoods and softwoods are graded differently and by a number of organizations. Even the names assigned to various grades differ from organization to organization. But let's concentrate on the most widely recognized rules for grading hardwood lumber, which come from the National Hardwood Lumber Association (P.O. Box 34518, Memphis, TN 38184-0518; 901-377-1818). The following NHLA publications explain all you could want to know about grading: *An Introduction to Grading Hardwood Lumber* (\$2), *An Illustrated Guide to Hardwood Lumber Grades* (\$5) and *Rules for the Measurement and Inspection of Hardwood and Cypress* (\$7).

The fundamental premise in grading hardwood lumber is that any given board is going to be cut into defect-free furniture components. With this in mind, lumber graders calculate how many potential clear components (or cutting units) are in a given board. Three things count in determining grade: the minimum size allowed for the clear sections, how few of these sections there are, and what percentage of the board's total area consists of these sections. The basic principle is that the larger the clear sections and the fewer of them, the higher the grade.

The best way to get the lumber you need is to see what a mill or lumberyard is selling as No. 1 common or selects. Get what you can use from these lower grades, and spring for higher-grade lumber only when you absolutely need long, wide, clear boards.

The grades: The best lumber grade is FAS (firsts and seconds). Firsts and seconds are really two grades, but they're only sold together. Firsts must yield at least 91 ²/₃% clear cuttings on the worst face. Seconds must yield 81 ²/₃% clear cuttings on the worst face. FAS boards must be at least 6 in. wide and 8 ft. long, and the minimum size of clear cuttings that count toward the specified yield is 3 in. by 7 ft. or 4 in. by 5 ft.

The two next-best grades, FAS1F (FAS one face) and select, are graded using both faces. For both, the best face must meet FAS requirements, and the other face must be No. 1 common. FAS 1F boards, like FAS boards, must be at least 6 in. wide and 8 ft. long. Selects can be just 4 in. wide by 6 ft. long.

No. 1 common lumber must be between 66 ²/₃% and 83 ¹/₃% clear. The smallest No. 1 board can be 3 in. wide by 4 ft. long. Minimum clear-cutting size is 3 in. by 3 ft. or 4 in. by 2 ft.

No. 2A and No. 2B lumber usually is grouped together. Boards must be at least 3 in. wide and 4 ft. long. Minimum clear-cutting size is 3 in. by 2 ft.

No. 3A, No. 3B and "below grade" lumber generally is not considered furniture grade. —V.L.



Tools for buying lumber (above): leather gloves, tape measure, notepad. A block plane and alcohol help reveal grain and color.

Buy your wood where you can pick your own (right). But whatever you don't take should be restacked the way you found it.



board. Even a knot that's in the middle of a board is not a problem if you can take components from both sides of it.

End checking is normal, but you'll lose the checked portion of the board plus at least an inch or so. Extensive face checking most likely means the wood's casehardened, which is a serious defect. You won't want the board.

Cup or crook in a board isn't a problem. Because the deformation is in one plane, a jointer should take care of it quite easily. If you buy a cupped or crooked board, be sure that it's sufficiently thick or wide, so it will be useable once it's flattened or straightened. Cutting boards into smaller pieces before milling and using the jointer will take care of mildly bowed boards. Twisted boards are best avoided.

Grain, figure and color—Quartersawn lumber will move less than flatsawn lumber, so it works better in situations where tolerances are critical. A door frame is a good example. Quartersawn lumber is more work for the sawyer, however, so it's more expensive. For the same reason, it's also sold separately from flatsawn stock of the same species.

Figured woods are beautiful but generally difficult to work. Bird's-eyes in particular want to pull right out of the board when being planed. Curly woods also will tear out if you're not careful. Still, I buy figured woods and love them. You can identify most kinds of figure in the rough by looking for irregularly fuzzy patch-

es on the faces of the boards. (See *FWW*#99, pp. 63-66 for a more complete discussion of figured woods.)

Try to get boards from the same tree when you can. How can you tell? Color, grain density and figure are clues. Also, look for knots in the same location and similar profiles if the boards are fitchsawn. For straight-edged boards, dimensions are a good clue. If you run across three or four that look alike and are all 97 1/4 in. long, ranging from 6 in. to 8 in. in width, that's a pretty good indication they're from the same tree. Often, you can figure out the order in which the boards were cut.

What to bring to the lumberyard or mill

When I buy lumber, there are a few items I always bring (see the photo at left above). They include leather work gloves, a tape measure and a rough cut list, broken down by thickness and the sort of grain I'm looking for in each component. I bring a calculator for figuring ballpark board footage and a pad to keep track of boards, board footage and how much I'm spending. A pad is also helpful for sketching, so I can figure out whether I can get the components I need from particular boards.

I try to remember to bring a block plane (if I forget, I use my knife), so I can expose a bit of smooth wood on rough planks, as shown in the photo on p. 38. This is especially important if the lumber's been stored outside for a while; walnut will turn a gray that's almost white, and maple turns a dark gray. I like to know



Ordering wood sight unseen

by Ken Textor



Ordering lumber from faraway dealers is a good way to buy wood that isn't available locally. The prices are comparable, even with shipping, and there are many woods you just can't get any other way. I've ordered dozens of species from all over North America for more than 15 years, and I've learned that there are three steps in getting what you want: specify, specify, specify.

You want what? The first time I ordered poplar I was asked, "That yellow poplar or white poplar you want?" Later, I found out that yellow poplar is also known as tulipwood, tulip poplar and canary wood. Learn all you can about the species you want, including its many names, before you call a dealer.

The next thing you must specify is the grade. This can be a real quagmire. If the dealer uses the National Hardware Lumber Association's grading standards, you're all set. But if his system's unconventional (many are) or if you haven't done business with this dealer before, you're better off just asking for clear planks. That's not an official lumber designation, and it will cost more, but it's generally understood to mean no knots, bark pockets, splits, gouges or the like.

Also, even though some dealers may be insulted, tell them you can't use seriously warped, cupped or twisted stock.

Once you've agreed on the specifications, find out what the total price is and what you're paying per board foot. Write it down along with the description of the lumber that you and the dealer have settled on, and send the dealer a confirming fax or letter with all that information on it. As for payment, most dealers these days prefer one of the major credit cards.

The wood's in the mail: I've had lumber arrive looking as if it was dragged behind the truck, not shipped in it. It's a good idea to ask the dealer how he'll package your wood. Make suggestions if you're not satisfied with his reply.

These days, lumber shipments are usually sent by UPS or a similar courier service. If the load exceeds size or weight requirements, the dealer probably will choose a common carrier. Some common carriers only will deliver to the shipping terminal nearest you, so ask if this is the case. Once, I assumed that the freight carrier would deliver to my door. Late one Friday afternoon, I received a surprising phone call. "You've got 500 bd. ft. of hickory here," the terminal dispatcher told me. "You've got 48 hours to pick it up." I managed to get my wood before the terminal closed for the weekend, but not without difficulty. □

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what sort of color I can expect after the wood's been planed. (Before cutting or planing, it's a good idea to ask someone at the yard or mill if it's okay to cut or plane the wood.)

I sometimes bring a rag and a small can of denatured alcohol. The alcohol gives an instant preview of what the wood will look like finished. And I usually bring a handsaw for cutting long boards down to size.

At the yard, I try to be as independent as I can. Once a worker at the yard takes down a stack or two of wood with a forklift, I restack the pile as I'm going through it, and I stay out of the way. The less of a pain you are to the yard staff the more welcome you'll be.

After I've loaded my lumber and paid up, I tie an old red T-shirt to the end of the longest board and head off into the sunset. And if I've spent more than I'd planned, which is usually the case, I just remember James Krenov's maxim in *The Fine Art of Cabinetmaking*. "A good rule is to buy as much as you can sensibly afford of any wood that excites you and then, quickly, buy a little bit more." □

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