The Right

Board in the Right Place

A guide to selecting the best wood for each part of a piece of furniture

BY LOUIS IRION

Wood is the constant among woodworkers. It doesn't matter if you build contemporary furniture that borders on sculpture or exacting period reproductions—at both extremes and everywhere in between there is great pleasure and great impact to be gained from working with wonderful wood. In my case, having grown up the son of a period furniture maker and having run my own period shop for 20 years, furniture has always meant reproductions. But it was a book by James Krenov, given to me by my wife soon after I started out, that opened my eyes to the paramount importance of the wood. I've come to think of wood as the star of a piece of furniture—I think its natural beauty should be showcased, unadulterated by heavy stains and homogenizing glazes.

Over the years, I've spent more and more of my time on the trail of wood: buying logs, having them sawn, drying, sorting and storing them, and then selecting just the right wood for the many pieces of furniture being built by the men in my shop. With this article, I hope to convey some of what I've learned about lumber and particularly about selecting specific pieces of wood for the various parts of a piece of furniture. Although I've chosen a Newport secretary to illustrate the reasoning behind my wood selection for a complex piece, the principles can be applied to any furni-

Photos, except where noted: Jonathan Binzen

SELECTING WOOD FOR A SECRETARY

The principles of selecting wood for furniture cut across stylistic and period boundaries. I've chosen to demonstrate some of them by describing the wood needed for a Newport secretary. Such a complex piece illustrates a wide variety of situations and tests the versatility of a cabinet wood, requiring, in different parts, great figure, strength, ability to hold carved detail, stability and a range of other properties.

BACK OF LOWER CASE

Planks of secondary wood, shiplapped and run horizontally, are nailed or screwed into a rabbet. The top plank may be left off during fitting of the desk interior while lower planks stabilize the case.

DESK INTERIOR

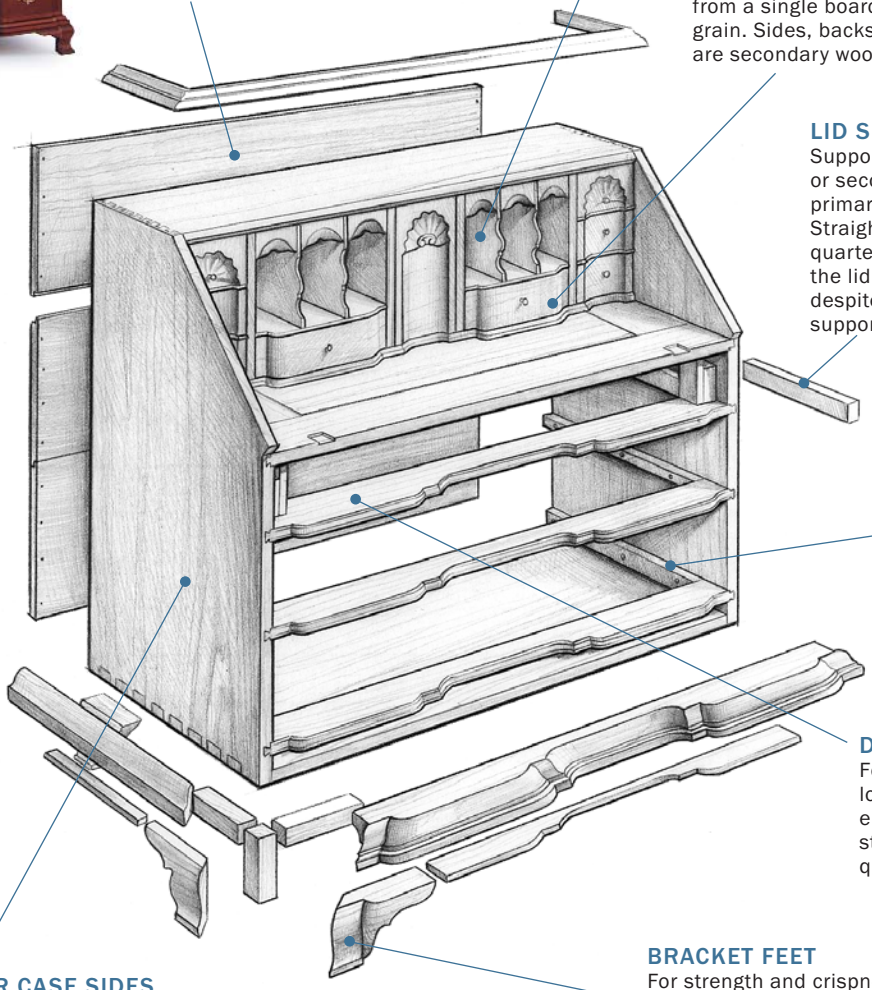
No need for flashy wood here. Choose straight grain, low figure.

INTERIOR DRAWERS

Fronts should be cut consecutively from a single board with strong grain. Sides, backs and bottoms are secondary wood.

LID SUPPORTS

Supports may be either primary wood or secondary wood with a cap of the primary wood glued on the front end. Straight-grained stock is essential; quartersawn material is ideal because the lid support must never stick, despite the tight fit required for best support of the lid.



DRAWER RUNNERS

Runners should be made of straight-grained secondary wood; for increased wear, maple is sometimes substituted for a softer secondary wood like poplar.

DRAWER BLADES

For maximum stability in these long pieces supported only at the ends, choose straight-grained stock with little figure; quartersawn material is best.

LOWER CASE SIDES

Optimally, the lower and upper case sides should be cut from a single, wide board long enough to nest all four parts.

BRACKET FEET

For strength and crispness of carving, the feet should be cut from dense, straight-grained stock. All of the feet should be taken from one plank, if possible, and laid out so that the grain wraps around the front feet.

ture in solid wood. Some of the methods I recommend require extra time, but the rewards are great.

Got a match?

A great deal of the period furniture that has been my inspiration appears to have been built mostly from lumber from the same tree, and I try to follow this ideal. There is tremendous variation within every species of wood—in color, grain and even density—and these differences are often obvious only after a finish has been applied to the piece. I combat this by using matched lumber whenever possible. Matched wood—planks cut from the same tree—is much simpler to work with because the maker does not have to examine every piece for color and grain matches. Of course, the average lumberyard will not have boards stacked in sequence, but with a little detective work you may be able to identify boards cut from the same tree. Small mills may also be a source for matched lumber. And there are a number of specialty dealers (like myself) who sell matched planks and will ship the wood, if necessary.

Photo, this page (top): courtesy of Irion Co. Furniture Makers

PEDIMENT BOARD
This piece should be cut from a single, wide board of calm stock that won't compete with the pediment panels applied to it.

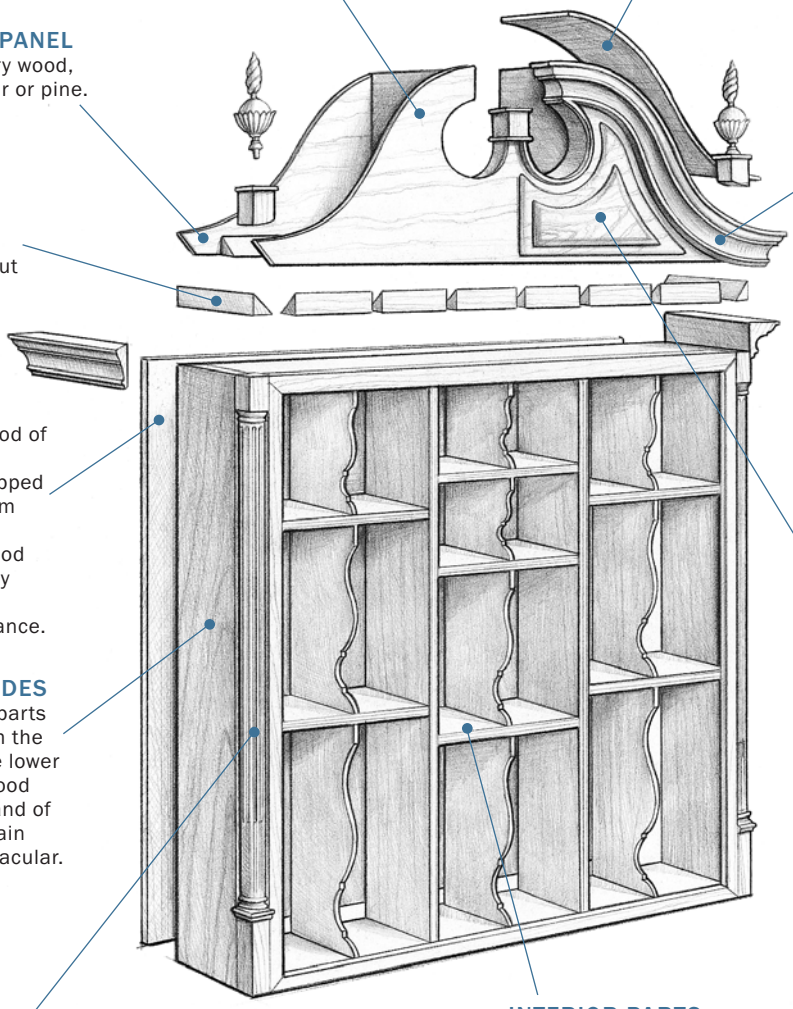
BONNET COVER
Sliced thin and stained dark, this secondary wood should have its grain run front to back.

BONNET BACK PANEL
Made of secondary wood, traditionally poplar or pine.

GLUE BLOCKS
Can be cut from secondary wood scrap; most anything will do, but avoid punky or knotty stock.

BACK OF UPPER CASE
Use secondary wood of quiet appearance. Boards are half-lapped to keep cracks from opening between them when the wood contracts, and they are beaded for an appealing appearance.

UPPER CASE SIDES
If possible, these parts should be cut from the same plank as the lower case sides. The wood should be dense and of excellent color; grain need not be spectacular.



QUARTER COLUMNS AND FINIALS
Straight-grained stock is best here, and it should be dense so it holds detail well. Figured stock would be harder to carve and might compete with the lines of the carving. All of the finials should come from the same plank, but because they stand apart, it isn't necessary for them to match any other part of the cabinet.

INTERIOR PARTS
Use primary wood with straight grain and decent color. Avoid defects and try to use matched or like lumber, but wood for these parts need not be spectacular.

PEDIMENT MOLDING
Lay out curved moldings so that they lie parallel to the long grain; the wood should be straight grained and unfigured. The straight side sections of molding should be cut from the same stock.

PEDIMENT PANELS
One of the focal points of the piece, these panels should be resawn and book-matched from stock with good color and strong grain or figure. The pediment panels should match the door panels, the lid and the drawer fronts.

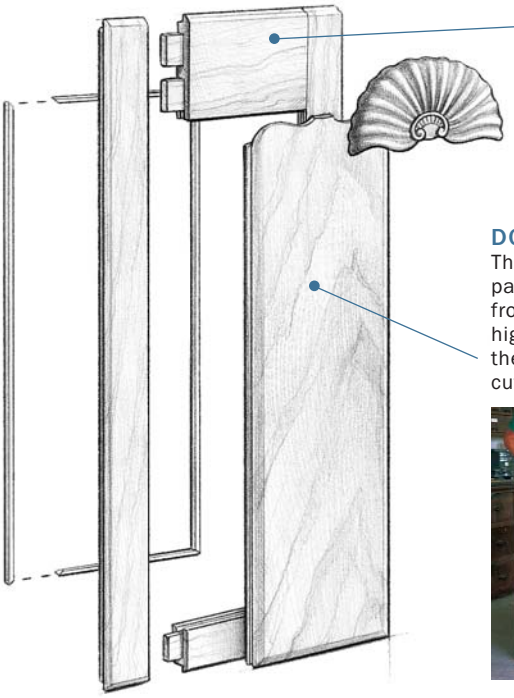
It is particularly important to match the focal parts of a piece of furniture, especially those that are on the same plane or face. In a piece like the Newport secretary above, the primary focal points are the pediment panels, the door panels, the lid and the lower drawer fronts. In an ideal situation, these parts should all be cut from the same plank or set of planks and should contain the strongest grain and/or figure in the piece. The wood for rails, stiles and face frames should usually be chosen from calmer-grained stock: These parts should support rather than upstage the panels. If an important part of a piece is not in the same plane as other focal points—the top of a low desk or the top of a table, for instance—you want a special piece of wood, but it does not necessarily have to match any other part.

Wide is good

To me, there's no contest—wide boards are best. Yet a certain attitude persists: *Wide boards are unstable.* This myth, passed on from one woodworker to another, is overdue for debunking. I have been building

Drawings: Bob La Pointe

PICKING WOOD FOR THE DOORS AND LID



DOOR RAILS AND STILES

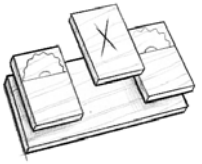
These parts should be cut from the same plank. They can have some figure but should not upstage the panels.

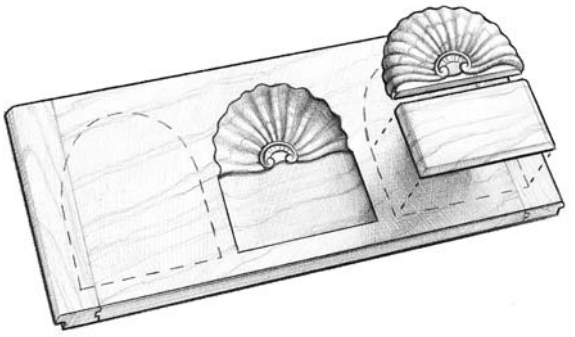
DOOR PANELS

The door panels, along with the pediment panels, the lid and the three large drawer fronts, are the focal points of the piece, so the highest-quality wood should be reserved for them. If possible, all of these pieces should be cut from a single 12/4 plank with good density and good to very strong grain and figure. If one large plank is not available, try to find planks from a matched set. The strongest figure should go into the door panels, all three of which can be resawn from a single piece of 12/4 stock, yielding a triple match.

DESK LID

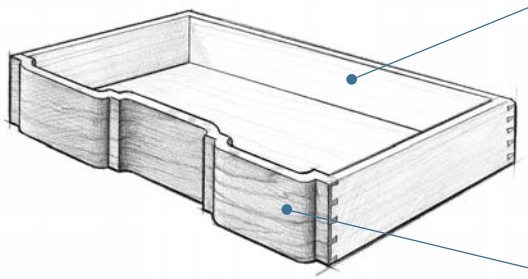
The lid should be resawn. The blocking is shaped and then glued back in place, resulting in a perfect grain match. The shells can be carved from the same wood, but if the wood is highly figured, straighter-grained wood of similar color can be substituted for crisper carving. The breadboard ends should come from the same plank as the lid.





DRAWER SIDES, BACKS AND BOTTOMS

These parts are made of secondary wood, most often pine or poplar. Bottoms are one piece where possible, with the grain running side to side to minimize wood-movement problems.



DRAWER FRONTS

Strong figure and deep color here should match the lid, door panels and pediment panels.

furniture with wide boards—one-piece sides for cases, tops for tables, etc.—for years, and I have examined many period pieces and have seen far fewer problems with single, wide boards than with glued-up panels. Yet over and over I hear woodworkers say that gluing up narrow boards to form a wide panel is more prudent than using wide stock. I understand the theory behind reversing the growth rings to avoid warping in a glued-up panel, and it is valid for joining narrow boards cut from small logs. But wide boards come from big trees, and they are typically cut close to the center of the log, where the grain orientation is typically rift or quartersawn—the most stable lumber in the log.

When you consider the beauty of the grain or figure moving across a single, wide board and compare it to the potential disharmony of mismatched boards, it isn't really worth debating. Wide material may not always be available or practical, but for it to be shunned as unreliable just doesn't make sense.

Obtaining the best-quality matches and sizes of lumber often requires extra effort. As much as possible, I have logs sawn to my specifications. Although that's not possible for most woodworkers, it's advantageous to know that the closer you get to the saw, the more you'll know about your wood. I tend to have logs sawn against convention; mills typically saw for clear lumber without regard to width; they constantly turn the log to find a clear face. In general, this results in long, narrow boards with fewer knots and defects. Yet I would estimate that most boards used in furniture are 4 ft. long or less, so for furniture makers, wide boards with some problems that can be worked around are more valuable than narrow, clear boards.

Organized storage is crucial

Whether you have a few dozen boards on hand or a few thousand, an organized system of storage is critical if you want to be able to retrieve lumber quickly. I keep my lumber on horizontal racks with as much information as possible on the end of each board (see the photos on the facing page). This way, I can identify the major characteristics of a board at a glance, simplifying the search to a great extent. The board I am

looking for is invariably on the bottom of the rack, but at least digging it out should not be an exercise in futility.

I cut up damaged boards into usable pieces and store them so they can be readily accessed. If a set of boards has great figure or grain but a lot of problems, it gets cut into drawer fronts and panels and is kept together on short racks. Short, wide pieces resulting from a defect are cut and stored for tops and panels, and crotches and figured pieces are separated from the straight grain, labeled and kept on short racks as well.

Don't rush the lumber

Even wood that has been carefully stickered, dried, labeled and stacked is not ready to use. From the time it was cut, the wood has had other wood stickered or stacked on top of it in piles or packs to keep it flat. When it finally gets all of those other boards off its back, the wood wants to move a little and adjust to the humidity of its new environment.

When you have pulled the boards for an upcoming job, stand them up so the air can circulate freely around all sides. In a few days, rough-mill the wood, let it stand a few more days and then mill it to final dimensions just before use. If you are making a large piece, don't mill all of your parts to finished size at once; finish-mill only those pieces you will be machining and assembling right away. Good furniture is designed so that all of its components work together to stabilize the piece, and its parts—the sides, top and bottom in a well-joined case, for instance—work to keep each other straight. So the safest place for your wood is in the piece of furniture, and for best results the wood should be milled as close as practically possible to the time that the parts will be connected.

All wood will meander when left to its own devices, but properly dried wood that has acclimated to the shop and been worked and assembled in a reasonable amount of time will present minimal problems. In a world where so much is hurried, the wood is going to dictate the pace, and you either heed its nature or pay in frustration and disappointment. I think this is one of the properties I have come to love most about wood. It can't be hurried. □

Louis Irion sells lumber for fine furniture in Wellsboro, Pa.

Label your lumber when you stack it

Big stack or small... *Unsorted lumber can be a nightmare to pick through. The author keeps thousands of board feet organized and easily accessible by reading each board as he stacks it and recording its dimensions and other features on the end. He sorts not only by species but also by figure and by length.*

The Louie decimal system. *The author's code tells him this board is one of a set of five cut from log No. 2; it is 19 in. wide; it has two clear 5-ft. cuttings and a 3-ft.-long section that will yield excellent drawer fronts; it is curly cherry; and it rates an A-minus for figure.*

Shorts deserve separate racks. *For easy retrieval and efficient use of storage space, the author built separate racks for short planks.*