



Master Carpenter

Reproducing Traditional



Get period details right with both power and hand tools

BY BILL RAINFORD

Before the American Civil War, most, if not all, architectural moldings were made in a wide variety of profiles by hand with molding planes. In the postwar period, mills became mechanized but often maintained their own sets of profiles. Although there were long periods of overlap and regional variations, it wasn't until the early 20th century that standardization of molding profiles became the norm. Standard profiles are great, unless you do a fair amount of work on old houses.

When reproducing a molding profile for a historic property, you often have to make a choice between having molding knives made, removing that detail, or replacing the profile with what is available in your area. For short runs of molding, though, there is a way to get the best of both worlds.

Recently, I was asked to re-create some of the original moldings from the Alvah Kirtledge House in Boston. Built in 1836, the house had fallen into disrepair, but it now is being restored by the nonprofit Historic Boston Inc. Using a few traditional molding planes, a rabbit plane, and a tablesaw, I'll



THE CRAFTSMAN

Bill Rainford started out helping his father and grandfather with carpentry projects around the house. His childhood exposure to the trade grew into a lifetime love of woodworking. Bill went on to graduate from the North Bennet Street School's preservation-carpentry program. He has returned there to lead workshops in preservation and also teaches traditional building at Boston Architectural College. When not teaching or building, he can be found exploring historical sites with his wife.

Moldings



COPY THE PROFILE



Take a sample. The most accurate method of copying a molding profile is to trace the profile's contour onto a piece of heavy paper. To minimize the hazards of working with materials that could be covered with lead paint, wear a respirator and gloves.



Plan stock removal. Once the profile has been traced onto card stock, cut out the silhouette, and trace it onto the trim stock. It's an easy way to see where the most stock can be removed with power tools and where hand planes are most valuable.

TOOL OF THE TRADE



PROFILE GAUGE

Also known as a molding comb or contour gauge, this tool is a flat arrangement of thin teeth or pins pushed over a molding to capture its profile and transfer it to stock or paper. The first models available were made of steel, which tended to rust. Still available from manufacturers such as Johnson or General, the better models are made from stainless steel or plastic. I use plastic models available in 5½-in., 12-in., and 18-in. lengths that I bought from Garrett Wade. The 12-in. model costs about \$40.

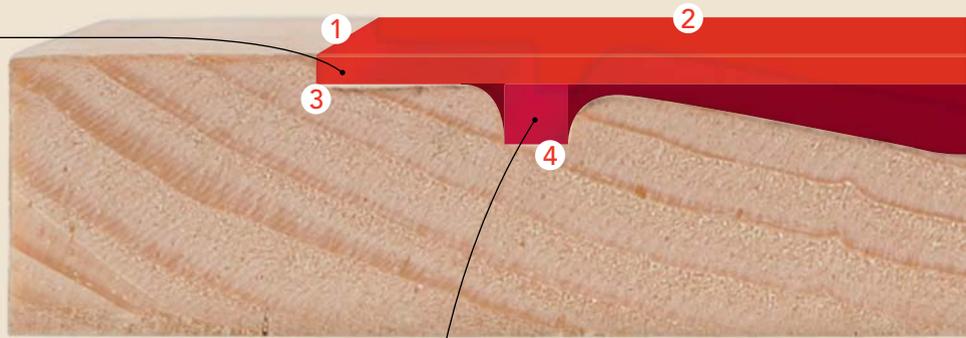


Online members can watch this *Master Carpenter* video at FineHomebuilding.com/extras.

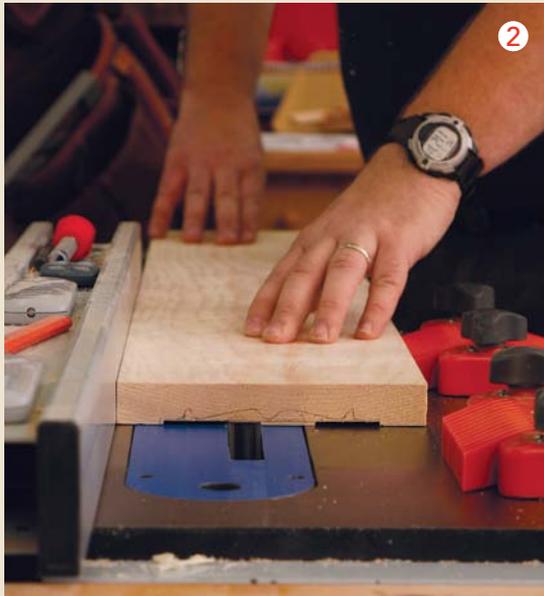
SHAPE THE PROFILE IN STAGES

Establish the field

Define the cuts with one pass. To reduce tearout and to delineate the work area clearly, use a marking gauge to incise a line on both sides of the profile.



Plow the grooves



Remove the waste fast. After setting up a $\frac{3}{4}$ -in.-wide dado stack, raise the blades to the correct height, and remove the excess stock in several passes, resetting the fence position at each pass.



Clean up the bearing surface. Use the shoulder plane to smooth the dadoed area. Then turn it on its side, and square up the perimeter edges.



Define the outer edge. With the blade set to the required depth and the fence to the correct width, run a narrow plow plane along both edges.

use the example of reproducing one antique molding profile to show how many other trim profiles can be created from scratch.

Break down the profile

The first step in the reproduction process is analyzing the molding profile. You can take a cross-section diagram from the architect's plans, a historic plan book, or a catalog. A more immediate method, however, is to trace the profile onto a piece of heavy card stock or even thin sheet metal. (The profile is easier to handle and measure when it's two dimensional.) If I can't pull a piece of molding, I use a profile gauge ("Tool of the Trade," p. 61).

Once I have the profile, I can figure the dimensions of the stock and mill as much as

I need. In this case, I bought $\frac{5}{4}$ clear white pine to match the original and milled it to a full inch thick and 8 in. wide. When choosing stock, I select the straightest grain, which makes planning easier.

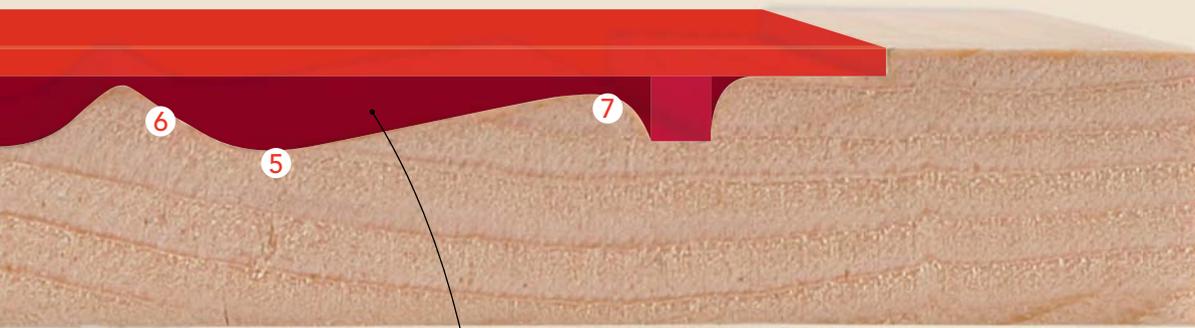
Remove stock in stages

Once I've rendered the profile, I start to strategize how to remove as much material as I can with power tools. Although a router is handy for some profiles, a dado stack on the table saw was the most efficient stock remover for this particular profile.

With power equipment, it's always safest to stay a bit back from the lines and to finish with the rabbet or plow plane, rather than risk tearing out the stock.

The sequence of planes is a progression of defining areas. You establish guidelines, then use them to steer the next part of the profile. Before I make any cuts, I draw the profile on both ends of the stock. Next, I score a line with a cutting or marking gauge to identify major transitions. After the table saw, I use a succession of hand planes to remove stock, ending with a rabbet or block plane to ease the transition between the hollow and the round. Hand-sanding finishes the profile. □

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Shape the curves



Define the inner lines. Set a fence on the stock, and make passes with a snipe's bill plane to the depth of the profile.



Rounds cut hollows. With the inner groove as a guide, use the round plane to cut the dip on each side of the center rib.



Hollows cut rounds. Working from the outer groove, create the rounded portion of the profile with the hollow plane.

TRICK OF THE TRADE

STICKING BOARD

Before I start to plane stock for moldings, I set up a sticking board, which is a length of $\frac{3}{4}$ -in. plywood a little wider and longer than the stock I'll be planing. I screw a full-length MDF fence to one side and locate four brass threaded inserts in one end of the board. Machine screws threaded into the inserts serve as stops and can be raised or lowered, depending on the thickness of the stock.



In a perfect world, one machine would do it all

For 20 ft. of trim, I've found that using molding planes is nearly as fast as a machine. The router bits of their day, molding planes were created to cut one profile, and like router bits, there's a fair number to choose from. For anyone who wants to start working with these traditional planes, I recommend the following four.

SHOULDER PLANE

This type of metal rabbit plane is used to square up dadoes and tenons.

NARROW PLOW PLANE

A narrow cutter and adjustable fence make this tool ideal for dadoes and grooves.

SNIPE'S BILL PLANE

This tool is used to cut in a narrow quirk or to start a fillet that could be followed up with a wider rabbit plane.

HOLLOW AND ROUNDS

These planes are made to be used in matched pairs. It's best to get pairs that were made by the same maker, as the radii vary a bit from maker to maker.