

A man with glasses and a mustache, wearing a blue shirt and a dark apron, is focused on his work in a workshop. He is using a hammer to secure a piece of brown leather onto a wooden chair seat. The seat is covered with a white webbing material. The workshop is filled with various tools and furniture, including a wooden chair frame and a sign that reads "Old Guys Rule".

Upholstering a Slip Seat

Which tools to use and what techniques work best

BY MICHAEL MASCELLI

Perhaps the most common task in furniture upholstery is the familiar slip seat, so named because it often slips into a rabbeted recess in the chair frame. Some slip seats, like the one I'm upholstering here, for Mike Pekovich's Arts and Crafts side chair, sit on top of the frame and get secured from underneath through glue blocks. Despite their simple form, slip seats offer a number of options for both the look and feel of the finished chair.

Frame it out

The success of the upholstery depends on a well-made upholstery frame, and here I used common poplar; other good choices are medium-density woods like soft maple, birch, or white ash. I prefer

air-dried wood for upholstery frames, as kiln-dried stock can case harden, making the surfaces difficult to tack or staple. The frame members are $\frac{3}{4}$ in. thick and joined with sturdy glued half-laps at each corner. This seat has a traditional angular look with a 45° beveled edge on top. A rounded edge would be fine, too. All the sharp sawn or planed edges and corners are eased with sandpaper or a block plane to ensure that nothing cuts through the cover material.

Webbing provides support

The support system for the seat is upholstery webbing. You can use either traditional red-stripe jute or a modern synthetic webbing, both of which are $3\frac{1}{2}$ in. wide. After 40 years of using red

WEBBING IS THE FOUNDATION

Tacked or stapled to the upholstery frame, webbing supports the layers of padding and the coverings on top of the padding. Attaching the webbing to the bottom of the frame, as Mascelli does on this chair, allows for an additional layer of padding inside the well of the frame. Attaching it to the top of the frame is traditional for doing very flat and hard seats with just a thin layer of padding under the show cover.



Secure the first end. Fold the end of the webbing over, so a neat end is showing. Attach the strip either with upholstery tacks and an upholstery hammer (left) or an upholstery stapler (above).



Stretch and secure the second end. Simply pulling the webbing by hand won't make it sufficiently taut, so use a webbing stretcher with metal teeth to tension it. Lever downward on the webbing (far left), and tack it in place (left). Cut off the excess, fold it neatly over, and tack or staple it. Mascelli uses a stepped block clamped to the work surface to secure the frame while he installs the webbing.

stripe, I have come to appreciate synthetic webbing as another good option. The synthetic does not stretch out and rot as the jute does over many years. Either choice will provide years of good service. Here, I am using the red stripe.

On this chair, the webbing is placed on the bottom of the upholstery frame, allowing for an additional layer of padding inside the frame. This makes for a much more comfortable seat. Install the webbing with a proper webbing stretcher, tacking or stapling it to the bottom of the frame near the inside edge. The webs are alternated over and under in a simple basket-weave pattern.

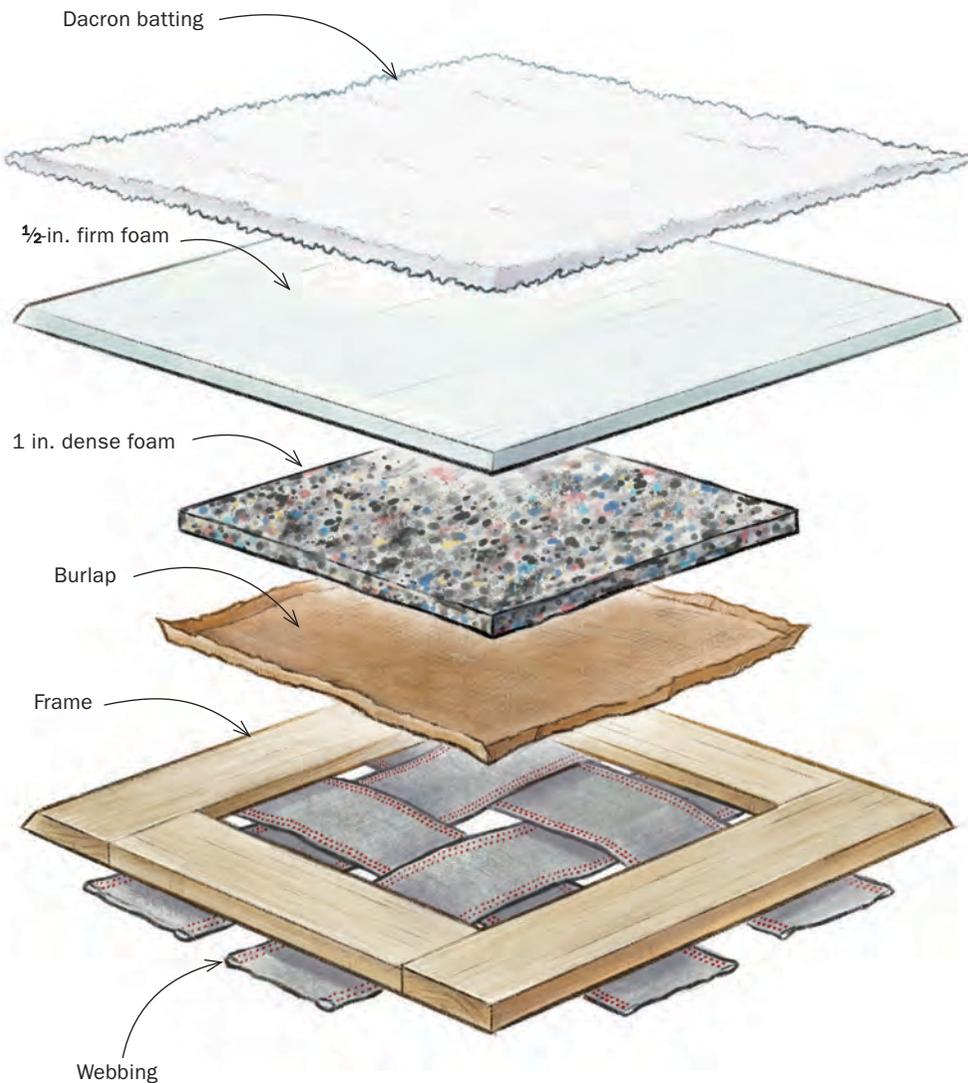
The staples are fine wire #7 (or C wire) with a $\frac{3}{8}$ -in. crown and a $\frac{1}{2}$ -in. leg length, applied with a pneumatic stapler. Although heavier than common paper staples they are much lighter than construction framing staples, which could split the frame. Five or six staples are placed on each web at a roughly 45° angle. Stapling at a 45° angle to the perimeter of the frame provides for better holding power than putting all of the staples in a straight line along the edge, which could also cause the frame to split.



Basket weave the webbing. A simple over and under pattern is perfect for the webbing. Repeat the steps carefully so that the tension is close to even on all four webs.

PADDING IT OUT

Once the webbing is secured, tack in a layer of burlap, and then you can begin adding the layers of padding. By varying the density of the foam layers you can combine good support with a soft seat. The best way to know which foam to choose is to mock up a couple of versions and see which one feels the best. For this seat, the layers are 1 in. of the densest foam available, a second layer of ½-in. firm foam, topped off with Dacron batting.



1. A BURLAP LINER



Before you add any foam, staple or tack upholstery burlap (not the same as garden center burlap) into the well of the frame. Mascelli sets a temporary upholstery tack in the center of each side, and then goes back to staple the burlap before removing the tacks and trimming off the excess.

2. A BASE OF DENSE FOAM



Rather than using 1-in. rebond upholstery foam, Mascelli uses two layers of ½-in. carpet padding, joined with spray adhesive. It's less expensive and it's easy to get. Cut the padding to size for a friction fit in the well. An electric carving knife works best, but you can also use heavy scissors or a serrated bread knife.

Online Extra

For list of sources for all of the tools and materials, go to FineWoodworking.com/292.

When using webbing tacks on light frames, the #8 or #10 are safer than typical #12 webbing tacks. Stagger the pattern so the tacks do not create a fault line and cause the frame to split.

Add the burlap, foam, and batting

With the webbing in place, flip the frame over, lay a piece of upholstery burlap into the well of the seat frame, and secure it with just enough ¼-in. staples or small #4

tacks into the inside edge of the frame to hold it in place. The burlap ensures that the foam does not sag between the webs.

The first layer of foam is usually the firmest foam available in a 1-in. thickness, the multicolored rebond foam. Rebond is very similar to carpet padding, which is what I used here. This 1-in. layer is a bit thicker than the ¾-in. well formed by the frame, and that extra height will become part of the loft or shape of the seat. The foam



3. A SECOND LAYER OF FOAM



Glue the second layer in place. Using spray adhesive, glue the ½-in. firm upholstery foam to the top of the 1-in. dense foam and the frame. Then use a knife, riding on the bevel of the frame, to cut the same bevel on the foam as you trim off the excess.

is cut to size and then simply sits in the well. The best way to know which foam to choose is to mock up a couple of versions and see which one feels the best.

For the second stuffing layer I used a ½-in. firm foam to keep with the low-profile look. This foam comes from upholstery supply companies. With this layer in place, try the seat again to make sure it will be comfortable and have the right look. Additional foam layers can be added. I install the foam with Albany Foam & Supply Ultra Foam Bond Adhesive Spray, which I buy locally, but 3M 90 also works well. To add to the gently tapered look, I beveled the foam edges to the same 45° bevel line of the frame.

Next, I wrapped everything with a Dacron batting to give a bit of loft to the otherwise flat surface of the foam. This is a nice option especially under delicate show covers. The Dacron is cut oversize, spray-glued in place, and trimmed at the bottom edge. Do not wrap the Dacron around the bottom of the frame, as it will only get in the way of the show cover and prevent the seat from sitting neatly on the frame.

Putting the covers on

The next steps are to cover the frame and padding with a cotton muslin sub-cover and then the show cover, whether it is

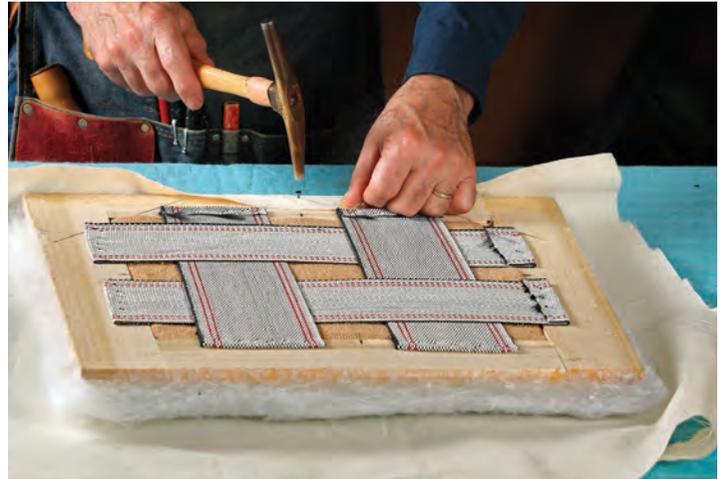
4. FINISH WITH DACRON BATTING



Again using spray adhesive, glue the batting to the foam underneath it. Do not wrap the Dacron around the bottom, because it will prevent the seat from sitting neatly on the frame. Once it's glued in place, turn the frame over, holding the batting around the edges of the frame. Use the bottom of the frame to guide the scissors while trimming the batting.

COTTON MUSLIN IS A SUB-COVER

The muslin offers two advantages. It allows the upholsterer to rehearse the cuts needed for the show cover, and it makes it much easier to change the show cover later. The process for installing the sub cover and the show cover is the same.



Wrap and tack the sides. With the muslin (or leather) cut 2 in. to 3 in. oversize in all directions, place it facedown with the frame on top of it, padding side down. Tack one side down at the center and wrap the material around gently but taut to the bottom of the frame, and half tack it in place at the midpoint of each side.



Work from the center out. Working from the midpoint to each corner, pull excess material evenly toward the corners. Do one side from the middle to each corner, tacking near the corners but clear of the fold area. Then move to the opposite side, then the other two sides. Once the material is even and taut without folds or gathers on all four sides, permanently tack or staple the sides, leaving the corner areas unstapled. Remove the temporary tacks.



It's corner time

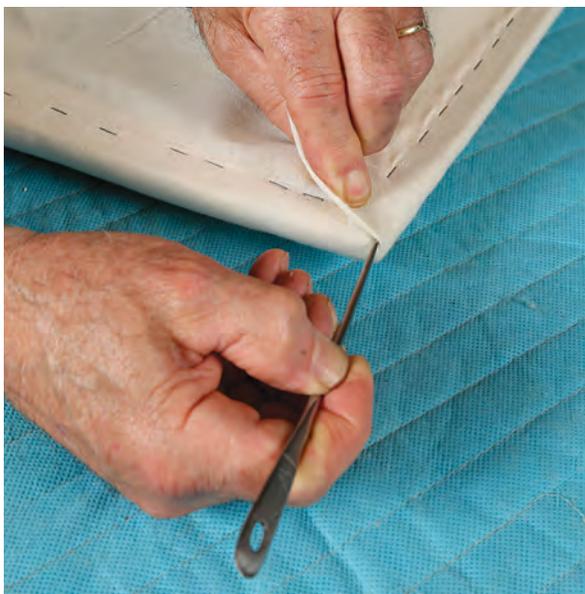
The corners are the main challenge to installing the subcover and show cover. In all cases there will be excess material there. Most of the time it is necessary to have at least some small pleats showing, and the goal is to make them as unobtrusive as possible. While seats can be done with two folds at each corner, which is sort of like making a bed, Mascelli prefers the cleaner look of a single fold.



Staple one side of the corner. On the back edge, pull any extra material taut toward the side, creating a natural fold, and staple or tack along a roughly drawn 45° line.



Mark and cut. Hold up the rest of that fold and draw waste marks to guide your cuts. Use scissors to cut away the excess material, which will be in the shape of a triangle.



Tuck and secure the fold. As you pull up on the remaining material in the corner, use a tool called an upholstery regulator to tuck and smooth the fabric in the corner. Then staple the smooth, folded corner into place. Trim off any excess material and repeat on the other three corners.

BRING OUT THE SHOW COVER

Approach the show cover the same way as the muslin subcover. With every step, but particularly with the final covering, the thing you see most you tackle last. For example, for each step, work on what will be the front of the seat last. This gives you more rehearsal time on less apparent spots before moving to the most visible corners.



Wrap, pull taut, and tack in place. Just as you did with the muslin subcover, patiently wrap the leather around the frame. Working on opposite sides of the frame, pull the leather taut and even, and temporarily tack each side in the center. Work excess fabric toward the corner and add another temporary tack near the corner. Once all four sides have been temporarily tacked, inspect the final look to make sure it's smooth. Then permanently secure the sides, leaving the corners open.

fabric or leather as on this chair. The process for installing the sub cover and the show cover is the same.

First, cut the muslin and the leather. It is helpful to make a paper or cardboard pattern that is about 2 in. to 3 in. larger than the seat, all the way around. For the muslin, just cut around this pattern. For the leather, place the pattern on the hide, put a chalk dot at each corner, and then lift the pattern to be sure there are no defects, holes, scars, or bad wrinkles in the area to be cut.

Install the muslin following the steps on pp. 54 and 55. Then place the cut leather facedown on a table padded with a clean, soft surface like a blanket. Set the frame on it and gently pull and tack the leather at the midpoint of each side. Use a #8 tack and only half set it, as it will likely have to be moved. Work from the mid-points to each corner in separate stages, so you keep control of the material and pull as much of the excess as possible toward the corners. It often helps to draw a pencil line at 45° in each corner and use it as the boundary for tacking each side.

With all the sides temporarily tacked, check the top to be sure the leather is stretched evenly with no folds or gathers. Then set the tacks or replace them with staples up to the corners. Start on a back corner and fold the excess material from the back around to the side. Working carefully, use scissors to remove the triangle-shaped piece of excess leather in the fold.

Now the fold can be closed along the 45° line and temporarily tacked. With the two back corners done, move to the front, wrap the side leather around to the front to create the natural fold, and trim out the excess. This takes a bit of practice, so don't be afraid to remove and reset the tacks as needed.



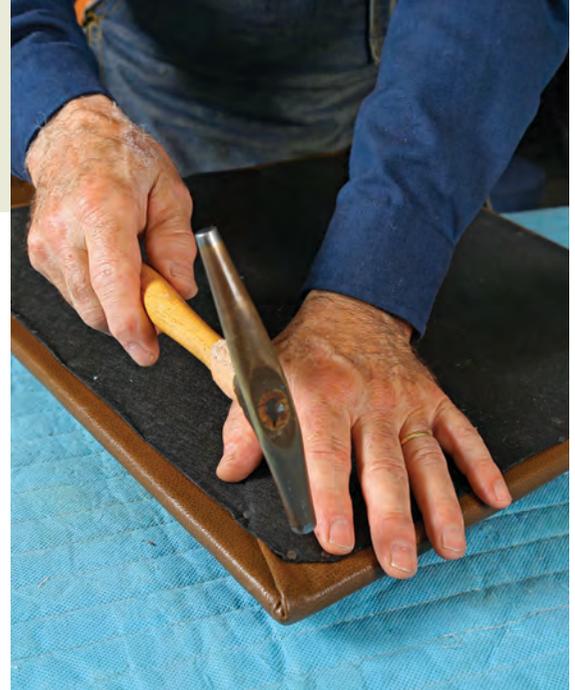
Cutting corners. Staple the 45° line on one side of the corner, then fold the other side of the corner down. Pull the extra leather away from the stapled line and cut out the waste material. Fold the corner over, smoothing it with the regulator. When the fold is smooth and taut, staple it in place. Do the same with the other three corners.



DUST COVER AND INSTALLATION

The dust cover is an optional step, but it adds a clean, professional look.

A clean finish. Cut the dust cover material about 2 in. oversize all the way around, and neatly fold it under itself, working from the middle of each side toward the corners. Use #3 or #4 tacks and space them a couple of fingers apart. The corners can be just folded under and tacked. Though Mascelli uses staples everywhere else, he prefers to see hand-tacked dust covers, as they are the only fasteners that show. It does not take long to do.



Install the seat in the chair. In most chairs the slip seat is attached using screws up through corner blocks. Make sure that you choose screws of the right length. Too long, and they'll pop out of the top of your newly upholstered seat.

With all the folds tacked, flip the seat over one last time to be sure everything is as it should be, then tack or staple the leather permanently. You must establish different staple lines for securing the subcover and show cover to the frame. The muslin should get stapled or tacked next to the webbing, and the leather show cover should get stapled closer to the outside edge, leaving room for the dust cover. Trim the excess material from the inside of the frame.

Dust cover gives a professional look

The last step is the addition of a dust cover, which is optional, but does provide a clean, professional look. Commercial upholsterers use a light black fabric called Celestra, but any light material is fine. I prefer to see hand-tacked dust covers, as they are the only fasteners that show, and it does not take long to do it. Cut the dust cover material about 2 in. oversize all the way around, and neatly fold it under itself working from the middle of each side toward the corners. Use #3 or #4 tacks and space them so that there are an equal number on a side. The corners can be folded under and tacked. Finally, attach the seat to the chair. □

Mike Mascelli teaches finishing and upholstery all over the United States.

