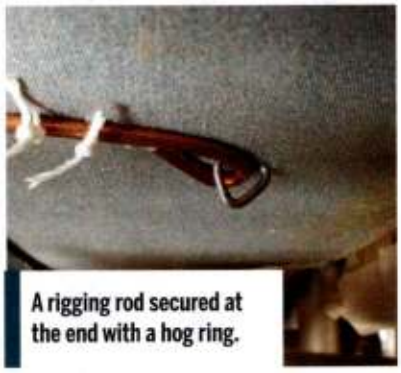
SECURING SEAT COVERS

Placing your seat covers will give you a chance to see the results of all those hard hours of upholstery work. **By DENNIS WOLTER**

Last month, we ended with the sewing of various seat cover components. To recap, using a small screwdriver, we removed the temporary staples we put in before sewing the seams. We trimmed down the 1/4-inch excess seam allowance to 1/8 inch for leather or vinyl covers. For seats using fabric, we trimmed to 3/16 inch, in order to prevent unraveling at the seams.

After having sewn and trimmed the seat covers, we attached the Dacron rigging twine to the retaining rods and canvas tabs that are sewn to the back surfaces of the finished upholstery material at the pull-in points. We mentioned this process last month, but I think it bears some repeating.

Make sure the length of the rigging twine extends well below the securing rack at the base of the seatback frame. Cut about a 3/4-inch slit in the seat foam where the pull-in is to be located. Next, using a long straight needle, poke the twine through the slit and the canvas seatback sling. Turn the seat cover finished side out and pull it over the seatback.



A rigging rod secured at the end with a hog ring.

Attaching upper seat covers

Now, the fun part begins. Start pulling the strings, drawing the rod into the 3/4-inch slit made in the seat foam, and lightly securing each length of rigging twine to the rack at the base of the seatback with a simple knot. Do the same thing for the end tab strings that were sewn to the seam of the upholstery fabric or vinyl at each end of the pull rod. Loosen the single knot and adjust the pulling pressure of each length of rigging twine until a wrinkle-free and aesthetically appealing contour is created at the low point of the contour on the seat face.

Once all the rigging is correctly adjusted, add two more tightly tied knots to permanently secure the twine at the base of the seatback. Not only does this process produce a

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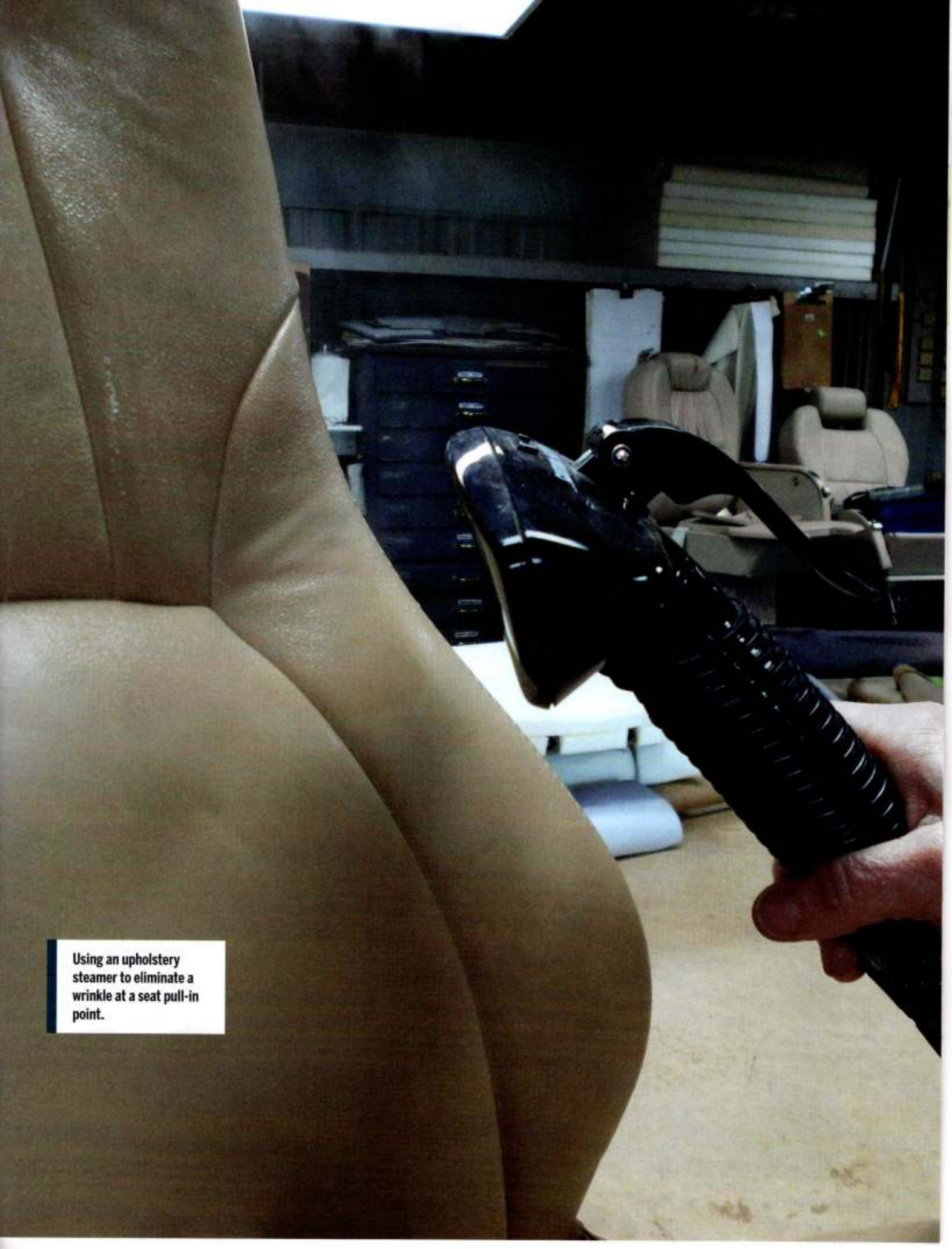

Using an upholstery steamer to eliminate a wrinkle at a seat pull-in point.

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very nice-looking seat but it also creates a durable and stable seat that will never lose its designed shape. A permanent structural connection has been established between the finished cover and the seat frame. Never rely on glue or Velcro to hold a seat cover in place. This rigging process takes longer, but over the past 47 years of building seats in this manner, we have yet to be asked to fix a sagging seat or seam failure.

The final detail in the process of sewing and mounting a seatback is to close out the base of the pulled-over seatback cover. Over the years, we have experimented with countless ways to do this. We have tried and rejected using Velcro, extruded semi-rigid plastic closure strips, and hand sewing the bases closed.

We finally determined that the most controllable, convenient, and aesthetically pleasing process is to bond a 3/4-inch wide strip of 0.040-inch aircraft aluminum spanwise to the bottom of the seat material; front and back. We then use #6 upholstery sheet metal screws and finish washers to close the bottom of the seatback. It works great!

Seat bottom covers

Now, we're ready for the task of installing the cover on the seat bottom, a little easier than doing the back. Since the seat bottom is open and not covered by upholstery, all you need to do is repeat the 3/4-inch slit and rigging twine pass-through process described above. Once the strings are in place, turn the seat sling-side up. Fabricate a retaining rod with a closed loop at each end and secure in place. Then, carefully bond the finish material to all four edges of the base frame.

You will have to cut neatly around the seat frame tubing, actuating levers, and tracking feet. Reference the old seat cover for a pattern to see where these cuts were located. It is fairly obvious what to do, but if you aren't sure, practice with some scrap material. Apply a coat of contact cement on both bonding surfaces (the frame and the material). Pay attention to the glue manufacturer's drying time instructions to ensure a good, long-lasting bond at this critical phase of the mounting process.

Finishing touches

With the seat cover secured to the base frame, it's time to set the tensions on the rigging twine as we did on the seatback.

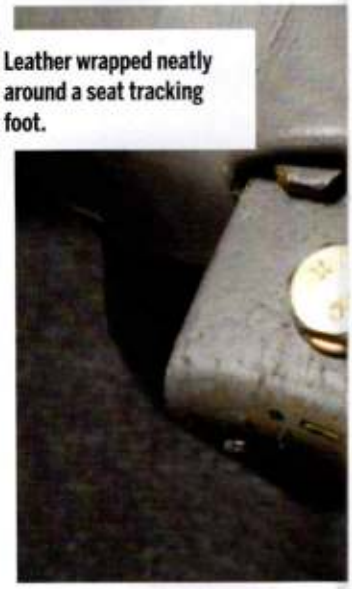
As an extra measure of security, we like to apply a little drop of contact cement to each triple-tied rigging twine knot. Once dry, there is no possibility of a knot coming loose. Finally, we install hog rings in the end loops of the steel rod to firmly secure it to the seat sling.

If some light wrinkling develops in the finish material at the pull points, we use a steamer to get them to disappear. You can buy an inexpensive steamer, or one can be rented at a tool rental place. Your steam iron can even create enough moisture and heat to do the job, but be careful not to let the hot surface of the iron come in contact with the upholstery.

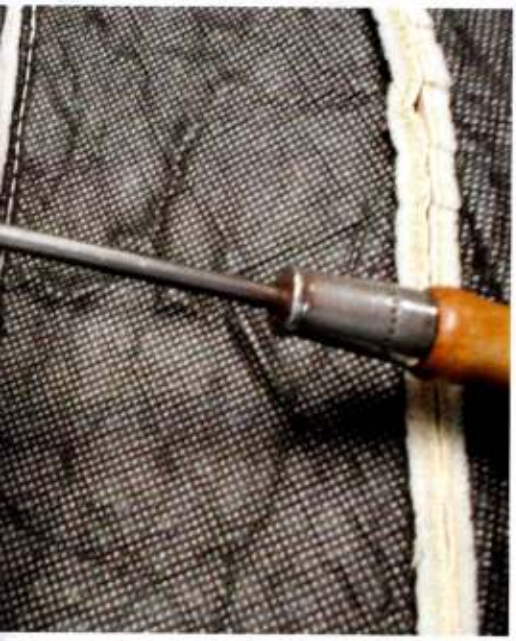
So much for these challenging seats! Next time we will move on to side panels, a little less daunting. Until then, fly safe!

Industrial designer and aviation enthusiast **DENNIS WOLTER** is well-known for giving countless seminars and contributing his expertise about all phases of aircraft renovation in various publications. Wolter founded AirMod in 1973 in order to offer private aircraft owners the same professional, high-quality work then only offered to corporate jet operators. Send questions or comments to editor@cessnaflyer.org.

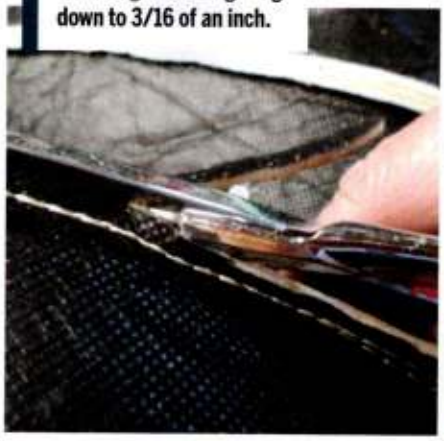
Removing the temporary staples with a small common screwdriver.



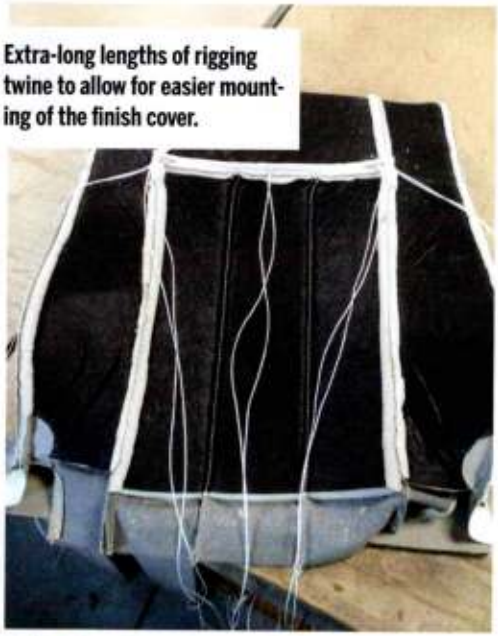
Leather wrapped neatly around a seat tracking foot.



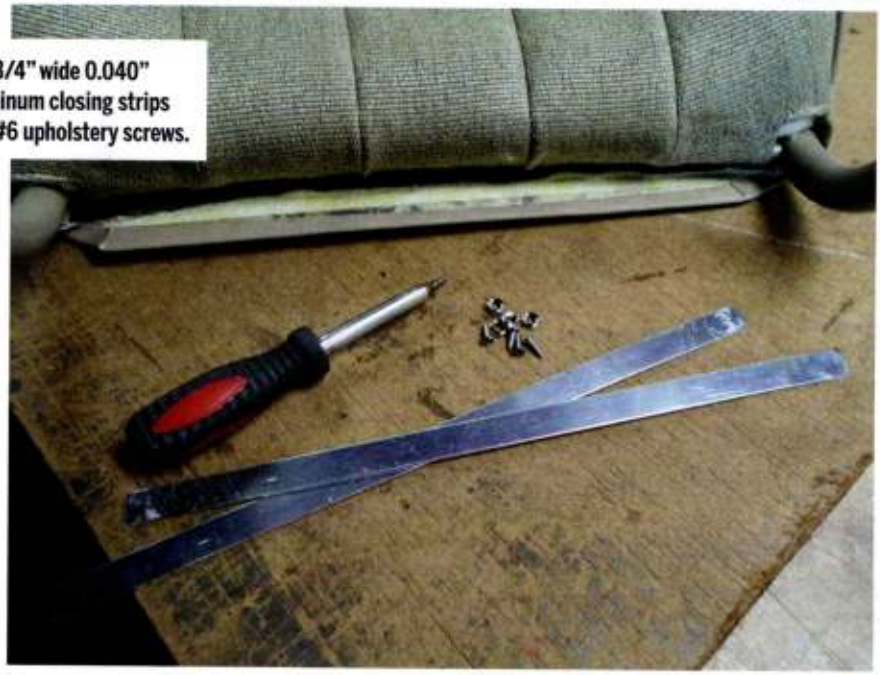
Trimming the selvage edge down to 3/16 of an inch.



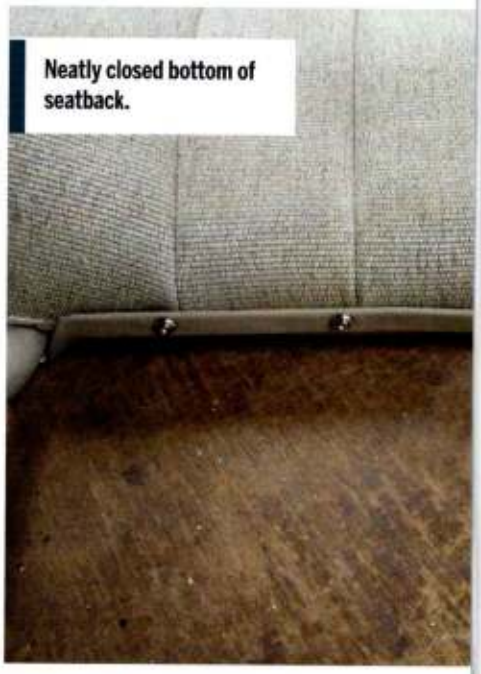
Extra-long lengths of rigging twine to allow for easier mounting of the finish cover.



The 3/4" wide 0.040" aluminum closing strips and #6 upholstery screws.



Neatly closed bottom of seatback.



A small drop of contact cement ensures that a triple-tied rigging twine knot will never come loose.