

A photograph of the interior of a vehicle, likely a truck or van, showing the front and rear seating areas. The seats are upholstered in a brown, ribbed fabric. The side panels are made of aluminum extrusion, featuring recessed armrests. A large window is visible in the background, and a circular gauge is mounted on the wall to the right. The lighting is warm, highlighting the textures of the fabric and metal.

Recessed armrests and
cabin-length aluminum
extrusion-mounted side
panels in a 172.

SEWING AND WRAPPING SIDE PANELS

Dennis Wolter continues his in-depth guidance on Cessna interior renovation with first steps for re-covering side panels.

With the seats sewn, mounted, and set aside in a safe place, it's on to sewing and wrapping the side panels. As mentioned at the end of last month's article, the task of sewing and mounting side panels is less demanding than sewing seats. That said, some details do require close focus and planning in order to get optimum results.

Panel design

Once the aluminum or composite side panels are straightened and repaired (or newly fabricated if existing condition dictates), it's time to lay out the design of the new side panels. We like to draw the new pleating design directly on the hard side backing

using thin permanent markers. If a layout change is needed, a little lacquer thinner on a rag quickly removes an unwanted line.

With the new design laid out, it's important that all of the uncovered side panels, seats, and armrests are temporarily installed to check the alignment of the panel design and clearance of the various panels and cabin interior components.

Backing material

Then, it's on to the sewing area where we begin by bonding thin cambric backing material to the back surface of 1/2-inch 40-density foam. This cambric is the same material we used last month when sewing seats. Next, we lightly bond the cambric-backed foam to the back surface of the finish material.

All this gluing is done using light coats of Camie 300 spray



Finished Cessna door panel, upholstered in vinyl and fabric with topstitched pleats.



Repaired side panel with the new upholstery design drawn with a black marker.



Bonding cambric backing material to 1/2-inch foam using a light coat of Camie 300 adhesive



Using straight edges and drafting triangles to draw the new design on the finish side of the upholstery material with sharp chalk.

can adhesive. The Camie 300 adhesive is available in convenient spray cans at automotive upholstery supply stores. If you have a single-engine Cessna, use smaller 1/4-inch 40-density foam on the upper door panels to prevent rubbing between the close-fitting door handles and the upper door panel upholstery.

Panel layout and sewing

Now, it's time to lay out patterns and cut the various pieces of foam-backed finish material that will be sewn together to create the new side panels. The next step includes using a T-square, straightedge, or curved templates and chalk to lay out the desired pleating lines that, when sewn, will create the artistic design of the new side panels.

Once the pleats are sewn, the chalk line residue can be easily removed with a damp rag. When laying the various large pieces of side panel material, allow 1 1/2 inches of extra material allowance on any edges that will be wrapped around the perimeter of the rigid side panel.

Edges that are being sewn together need only to have the same seam allowance as required for sewing corded seat seams.

All these design pleats are then single stitched through the three materials to create a pleasant-looking, well-defined line. Do not attempt to use a folded pleat on the side panels. The thickness will create a heavy pleat that will not lay down well when the sewn cover is bonded to the side panel. Since side panels don't take the abrasion and wear that a seating surface must endure, the exposed thread of a single stitch will hold up well in this application.

Finishing touches

After stitching the side panels, it's time to fabricate and sew the cording that creates the aesthetically appealing transition between the upper and lower side panel pieces. Start by cutting 1 1/4-inch-wide strips of finish material that are 4 inches longer than the side panel. Then, fold the 1 1/4-inch strips evenly over round 5/32-inch polyurethane foam

cord, available at upholstery supply stores. Sew a single stitch closure the entire length of the folded finish material. A cording foot for the sewing machine, as described in a previous article, will be required for this process.

With the cording made, use a stapler to temporarily hold it in place along the edge of the pleated panel. Next, precisely taper-cut the foam core of the cording at each end of the panel. This creates an appealing tapered end of the cording once both finish panels and cording are sewn together.

Once the cording is stapled to the first panel and sewn in place, remove the staples. You are now ready to temporarily staple the mating panel piece and sew the two finished panels and cording together. The final side panel sewing step is to remove all staples and trim off any excessive selvage edge material as was done on the seat covers.

The design and sewing techniques I have presented in this article are those used to create basic side panels. I be-



Topstitching the new side panel design.



Custom armrest, sculpted and recessed with a highly finished hardwood inlay on a 182 door panel

lieve that side panel and armrest design is an area where major aesthetic, ergonomic, and functional improvements can be made to bring the interior of an older airplane up to the standards of the 21st century. Explaining these more complex modifications goes beyond the scope of this magazine article.

Due to the numerous photographs needed to illustrate the process of sewing typical side panels, we will make the mounting and final detailing of newly

sewn panels a topic for next month. 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.

RESOURCES

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