Peak Of Flight

NEWSLETTER

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IN THIS ISSUE

Filling Spirals and Seams

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Filling Spirals and Seams

By Chris Michielssen

Tim did a recent video showing how to fill balsa wood grain using Elmer's Carpenter's Wood Filler. (In the video, Tim showed the old Elmer's Fill N' Finish tub. All new Elmer's Filler is now renamed Carpenter's Wood Filler.)

The balsa grain on your fins is filled and smooth, but what about the body tube, launch lug, and nose cone seams? In this article, we'll tackle a sometimes-overlooked aspect of rocket finishing: filling the tube seams. In the pictures, you'll notice I'm going back and forth between brown and white body tubes. The filling techniques are the same for both types of tubes.

Dope based Sanding Sealer and Balsa Fillercoat is getting scarce and very expensive. Elmer's Carpenter's Wood Filler (CWF) can do the job inexpensively without all the dangerous fumes. When buying CWF pick out a tub with an orange lid, and look for the word "Interior".

Figure 1: Elmer's Carpenter's Wood Filler

Don't buy the Pro-Bond "Max" formula CWF, and avoid the black label tubes and tubs. These are made for exterior use. It's very gritty, dries hard, and is very difficult to sand.

You'll have to thin the CWF with water to fill seams and balsa. A good starter mix ratio of water to CWF is 1 part water, 2 ½ parts CWF.

Figure 2: Thin the Carpenters Wood Filler with water before use on seams and balsa.

Mix well until smooth. To mix it up, don't shake it. Use a stir stick and work it for a few minutes until it's smooth with no lumps. Keep your mixed filler in a small airtight container. If it starts to thicken or dry out you can add small amounts of water and re-mix.

Continued on page 3

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Filling Spirals and Seams

Figure 3: Finding seams on the tube

Run your fingernail across the body tube. If you can feel the seam it will show up when the model is painted.

Figure 4: Marking the seams

The seam is hard to see, especially on brown tubes. You can't fill what you can't see. Using a mechanical pencil, draw the lead down the seam trough, marking it down the entire length of the tube. Don't worry, spray paints will cover the pencil lines.

Figure 5: Dip an old X-Acto blade into the mixture

Dip just the tip, about 1/4" of an old X-Acto knife blade in the mixed filler. Don't use a new blade, you'll just be dulling it in the next step. Wipe the excess filler off the back of the blade onto the lip of the container. This is important, you won't need all the filler clinging to the blade.

Figure 6: Use the blade to apply the Carpenter's Wood Filler

Set the filler blade tip in the seam, working it back and forth in the trough. This pushes the filler directly in the seam and eliminates any trapped air. If the blade stays in the seam trough, you end up with less filler to sand off later.

Continued on page 4

Filling Spirals and Seams

Continued from page 3

Dip and repeat the entire length of the body tube. It sounds like a lot of work, but like anything else it gets quicker and easier as you go. There is no need to scrape off the excess raised filler, let it dry as is.

Figure 7: Sanding the filler

Let the filler dry a few hours before sanding or you run the risk of knocking the filler out of the seams. On the left, the picture shows a brown tube with the dried filler in the seams. Sand down most of the dried filler with 220 grit, knocking off the top almost to the body tube surface. I use a sanding block with 220 grit. Follow with 400 grit next to smooth, leaving just the filler in the seams.

Any remaining tube seams will be filled with a spray and sand of automotive filler/primer.

Figure 8: Sanded after primer

Here's a recent build. You can see some filler/primer remaining in the seam (over the CWF filler) at the center running from the top left to the lower right of the tube. The tube is now ready for the white undercoats.

Filling Launch Lug Seams

People rarely fill the seams in launch lugs but it's easily done! You'll find it easier to fill the lug seams before gluing the lug onto the body tube. CWF is water based and does not seal filled surfaces so the wood glue will stick to it.

Continued on page 5

Filling Spirals and Seams

Continued from page 4

Figure 9: Insert a Q-Tip into the launch lug

Push a Q-tip into the launch lug for an easy painting handle.

You don't have to fill the launch lug seams using a dull knife blade, just brush the filler over the lug and let dry.

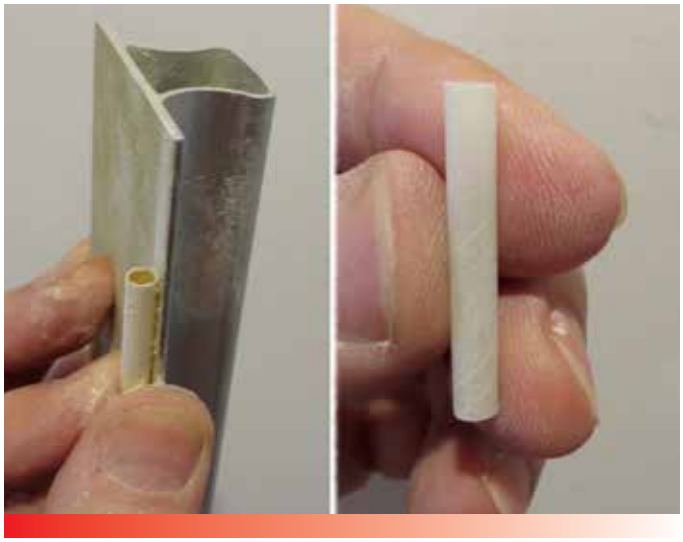

Figure 10: Sanding the launch lug

Sand off the dried filler, again removing most of it with 220 grit, then smooth to surface with 400 grit. On the right, you can see the filled lug seams after final sanding.

Filling Nose Cone Molding Seams

Blow molded plastic nose cones will typically have mold seams on opposite sides. The older the molds, the deeper and rougher the seams. First, sand off any raised molding flash with 220 grit sandpaper. Recessed seam troughs will still remain.

Figure 11: Use super glue on the nose cone seam

Some builders use Squadron Putty to fill plastic joints. It has a plastic solvent in it but the putty starts to dry as soon as it is squeezed out of the tube. I've had very good results using the cheap, Dollar Store medium super glue on nose cones.

Continued on page 6

Filling Spirals and Seams

Continued from page 5

Figure 12: Using super glue on the nose cone seam

On the left is the new Apogee PNC-33 nose cone. After sanding, there was a very slight recess seam. Run a bead of medium super glue down one side of the nose cone seam. The bead should be raised over the surface. Only do one side at a time, the glue will run. Block the nose cone so it sits horizontally as the glue dries. This thick glue bead will take a few minutes to dry.

After the first seam side dries, apply a glue bead over the seam on the other side. Let it dry thoroughly.

Sand the glue line to surface with 220 grit. You can also use a fine diamond file to remove the glue bead. The dried Super Glue is hard to sand, like a hard plastic. Afterward, smooth sand the glue with 400 grit. It's hard to see the clear glue in the seam after sanding and you won't find the seam after painting. Follow-up the CWF filling with a good grade automotive filler/primer and final smooth sanding. Like any new technique, this might take some practice. At the next club launch, you could get a few compliments on your building techniques.

About the Author:

Chris Michielssen is an avid builder and flyer of low power model rockets. He produces Odd'l Rockets and accessories, available from Apogee Rockets at www.ApogeeRockets.com/Oddl_Rockets.

His building blog, www.modelrocketbuilding.blogspot.com, is followed by 1,250 people each day worldwide.