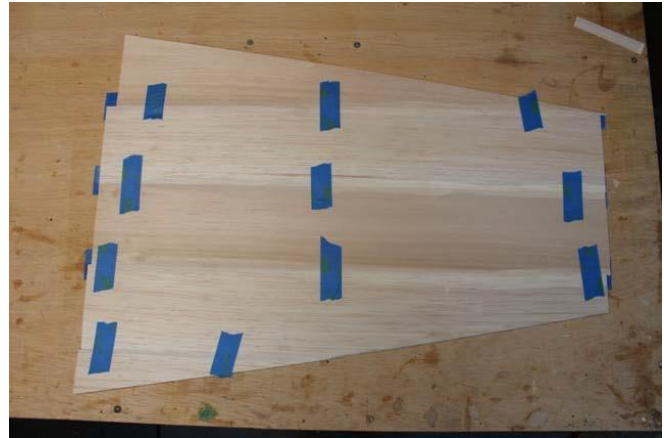
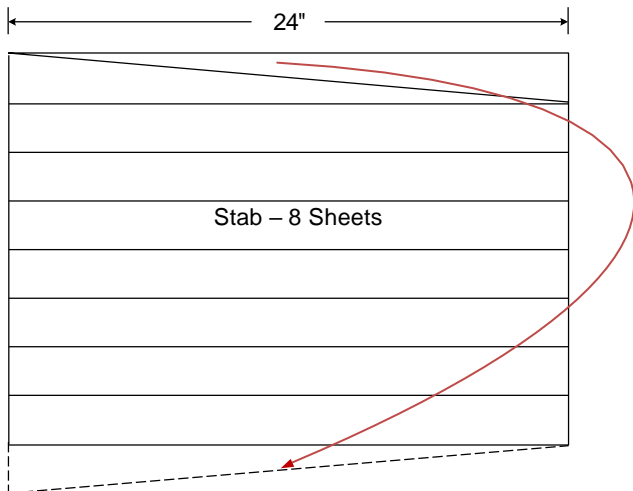


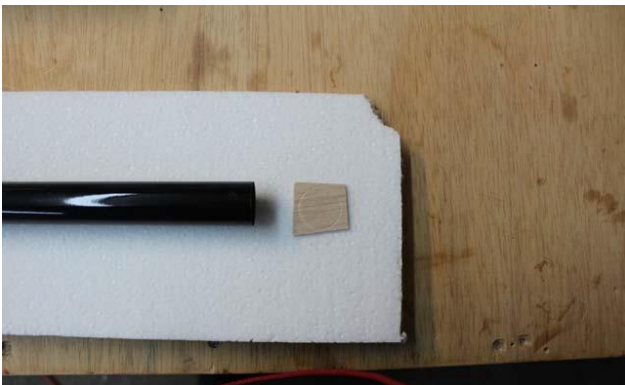
# Kam-Aero Extra 300

## Stab Sheeting:

- Make your skins using the same method as you did for the fuselage foam parts. The stabs require 8 sheets (4 per stab) of 4 x 48" A-grain sheeting. **Note: these measurements are for the 125.5 Extra.**



Prepare the Stab core for sheeting: Stab tube sleeve installation.

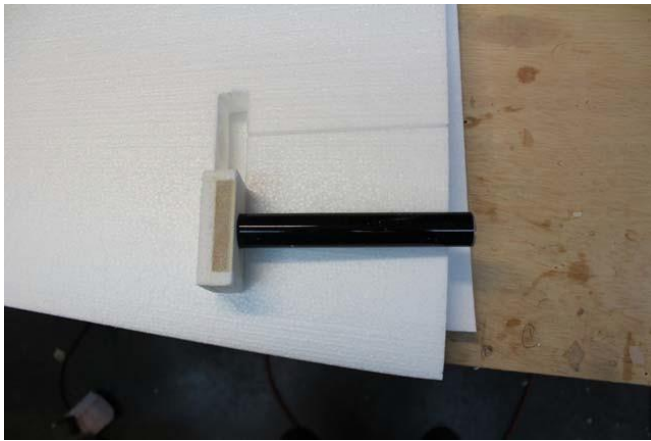


- Cap the end of the stab tube sleeve with scrap 1/16" balsa. I use med CA for this.
- Insert the sleeve into the stab core and mark to cut. Measure and cut the sleeve to length: 6 11/16" (the sleeve needs to extend out of the core by a 1/4" to allow the stab root to capture the sleeve). Note: Make sure to cut your sleeve as close as possible to the needed length and not more. The provided sleeve is for both stabs and the center section for the fuselage.
- Locate and trim / fit the lite ply stab socket support plate. The socket support plate will be glued to the inner (root) side of the bay. Using scrap foam, make a spacer so that there are no voids in the foam core at the tube end. Mark the top and bottom edges of the ss plate and foam backer in order to trim so that the top and bottom are flush with the stab core surface. Notes: You may need to sand or slightly relieve the bay in the stab core for the socket support plate to fit. The stab tube sleeve needs to extend completely through the support plate AND the foam spacer on the back side of the plate. Use the sleeve and a twisting motion to cut a hole in the scrap foam spacer block.

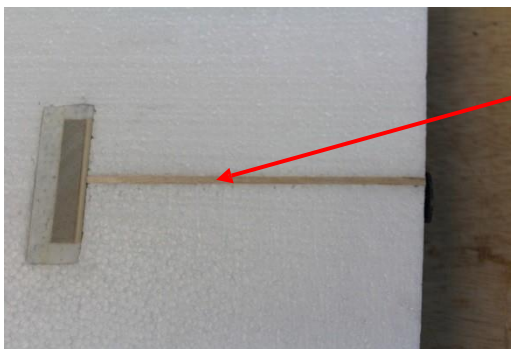
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- Dry / test fit the completed socket support assembly and tube sleeve in to the stab.
- Tape around the socket support assembly with painter's taper to protect the foam and gently sand the assembly until it is perfectly flush with the stab core surface (top and bottom). Note: This is a critical step as it's important that the sheeting is glued to the entire surface of the stab with no voids.



- (Optional) Use a scrap piece of balsa and make a 1/8" strip to fill the hot wire slot.
- Scuff the sleeve with sandpaper, and using either epoxy or polyurethane glue (Gorilla Glue or similar), glue the socket support assembly and socket into the stab core. Note: This process must be completed as one step with the SS assembly and then socket installed as part of the same process.

- Liberally coat the front, back, inboard and outboard sides of the socket support assembly and fit into the stab (do NOT put glue on the top or bottom).
- Liberally coat the socket (sleeve) with glue. Using a twisting motion, slowly work the sleeve into the stab core. Make absolutely certain the sleeve is completely installed. Notes: It is helpful to gently flex the stab core from front to back so that the socket hole opens up slightly. You can do this by placing a 1/16" x 1/4" strip of scrap balsa (that's at least as long as the tube) directly under the socket hole (between the top shuck and stab core) and then lightly weighting the leading and trailing edges of the stab. I also like to add some glue through the wire slot as I am twisting the sleeve into place.

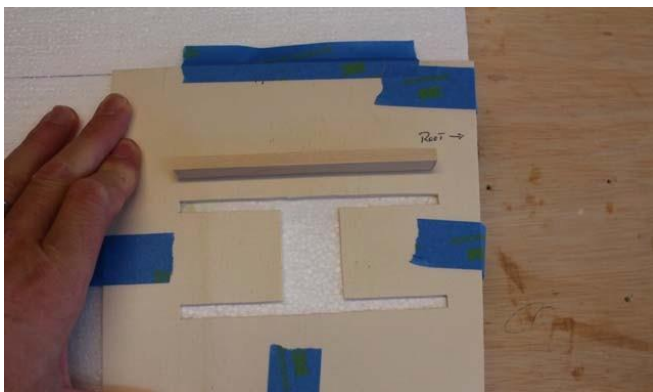
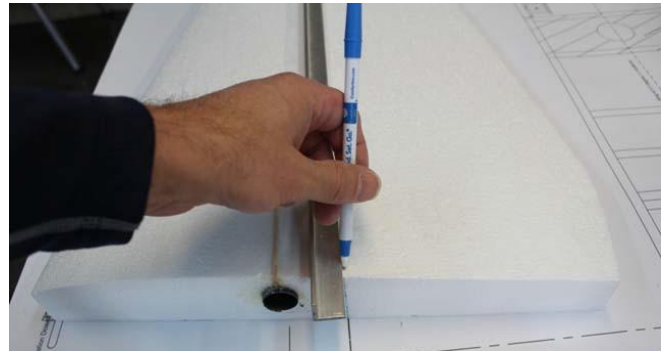
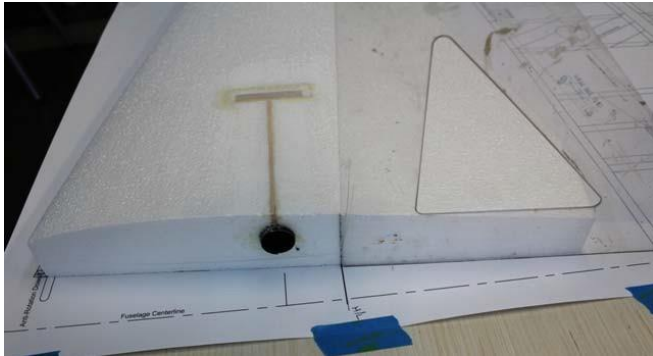
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- Wipe any excess glue (if filling the wire slot, do so at this time), cover both the top and bottom of the assembly with wax paper, place the stab core assembly into the shuck (top down) insert the carbon stab tube into to socket (eliminates any chance of the sleeve deforming while the glue cures), place the bottom shuck on the stab and lightly weight the entire assembly until the glue has cured.

Servo Bay and Rails: **Important - Verify your servo dimensions before cutting the foam and mounting the rails, servo case sizes can vary slightly from one mfg. to another.**

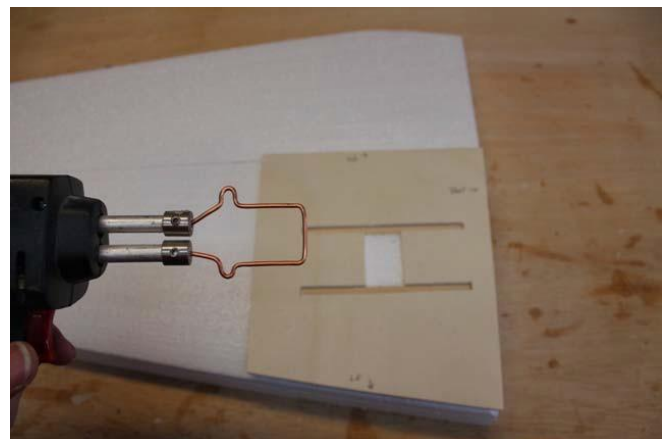
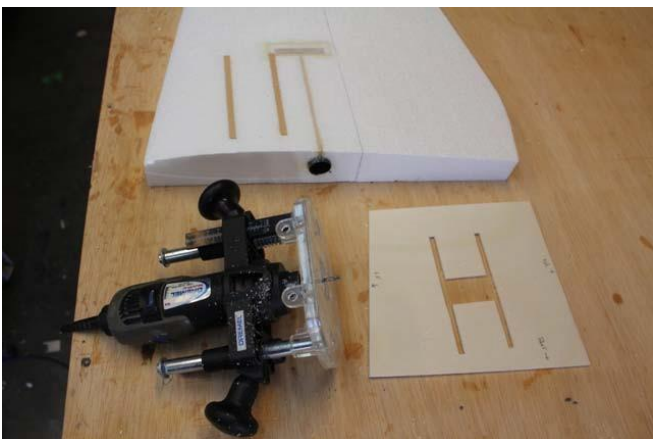
- Mark the elevator hinge line on the root and tip of the stab and transfer to the stab bottom.



- Using your stab plans, make a template to mark / cut your servo bay and servo rails locations. I make the template so that it aligns with the hinge line, stab root, and leading edge. Note: When using your plans for reference and measurements, make certain you are using the foam core lines and not the finished stab outline.

- Cut four (4) 5" servo rails from the 1/4" x 1/2" basswood stock.

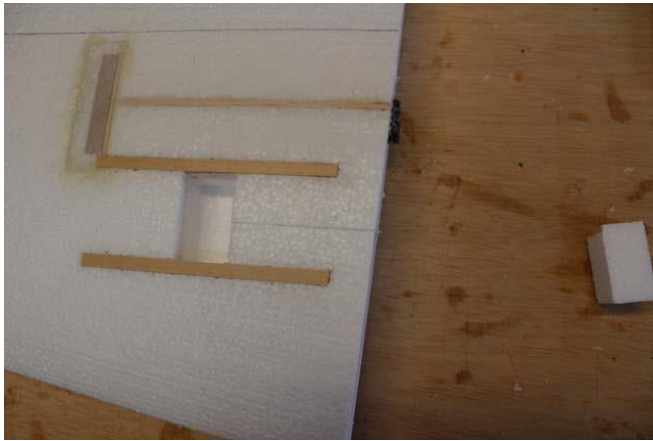
- With the template affixed to the foam core, use a Dremel (or similar) with a router attachment to cut the channels for the servo rails (yes, it's messy).
- Using either the router or a hotwire jig in a soldering gun to then cut the servo bay into the foam.



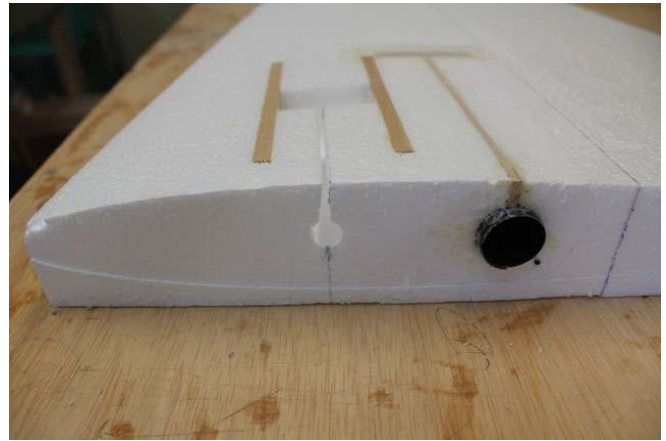
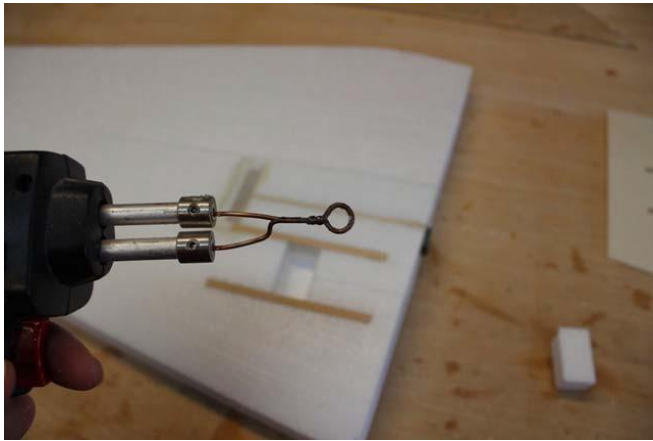
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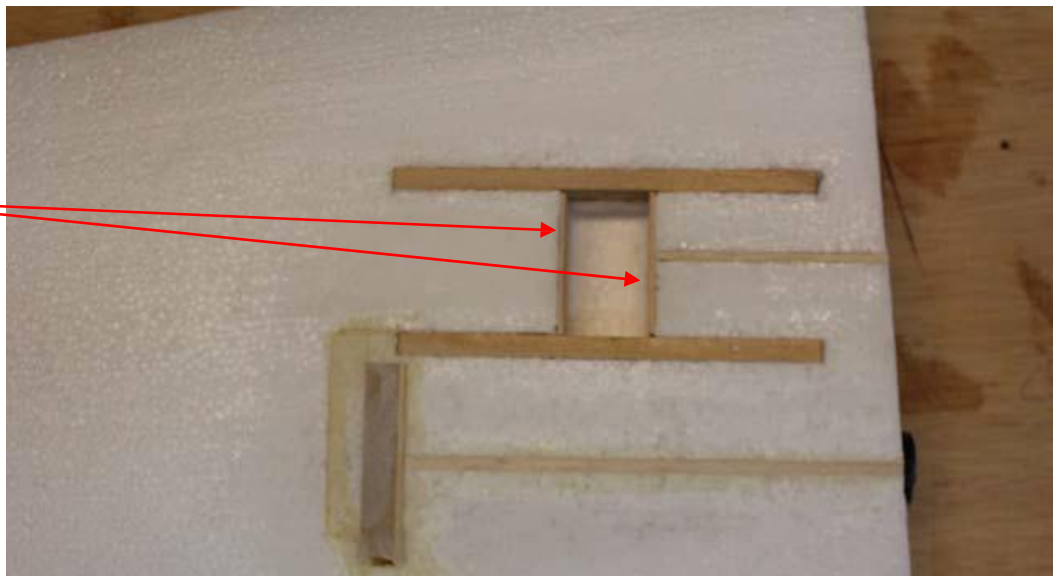
- Plan and mark your servo wire channel and wire exit location. Note: Refer to your fuse side plans to ensure your wire exit hole will be in a location that does not overlap with a truss member or longeron. The wire channel should enter the servo bay between the servo rails (mid-bay), not beneath one.
- Use a router or hotwire jig to cut the servo wire channel.



- Use a scrap piece of balsa to make a filler strip for the servo wire channel and glue in place with either polyurethane glue or aliphatic resin.
- Glue the servo rails in place using epoxy.

- Optional -  
I like to complete the servo bay by using scrap balsa to make sides.

Note: Make sure to mark and cut a hole for the servo wire on the root side piece.



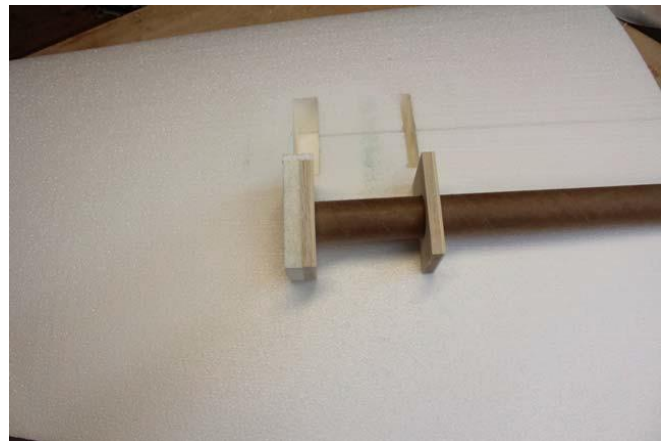
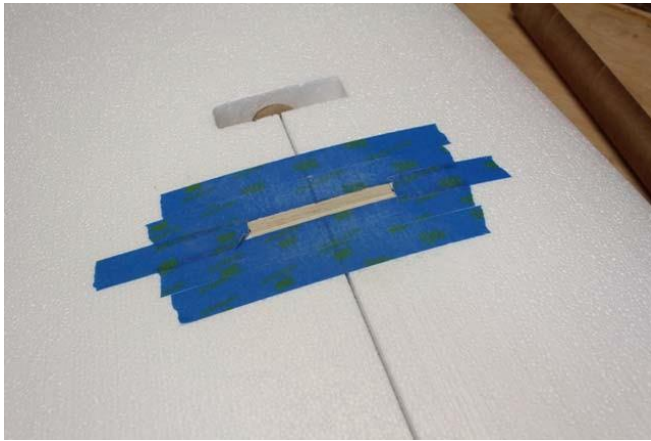
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- When all assemblies are glued in place, carefully sand the servo rails, filler strips, and socket support assembly to ensure they are all flush with the surface of the stab core.
- Lightly sand the entire stab core if needed to remove any high spots, then brush / blow clean. The stab is now ready for sheeting.
- Repeat the process for the other stab.

### Wing Sheeting

- Prepare your wing cores and wing tube sleeve using the same method as you did for the stabs.
- Cap the end of the stab tube sleeve with scrap 1/16" balsa. I use med CA for this.
- Fit the two (2) wing tube socket supports into the wing core. Take care to ensure these are a snug fit in the bays, use scrap foam if necessary to fill any voids.

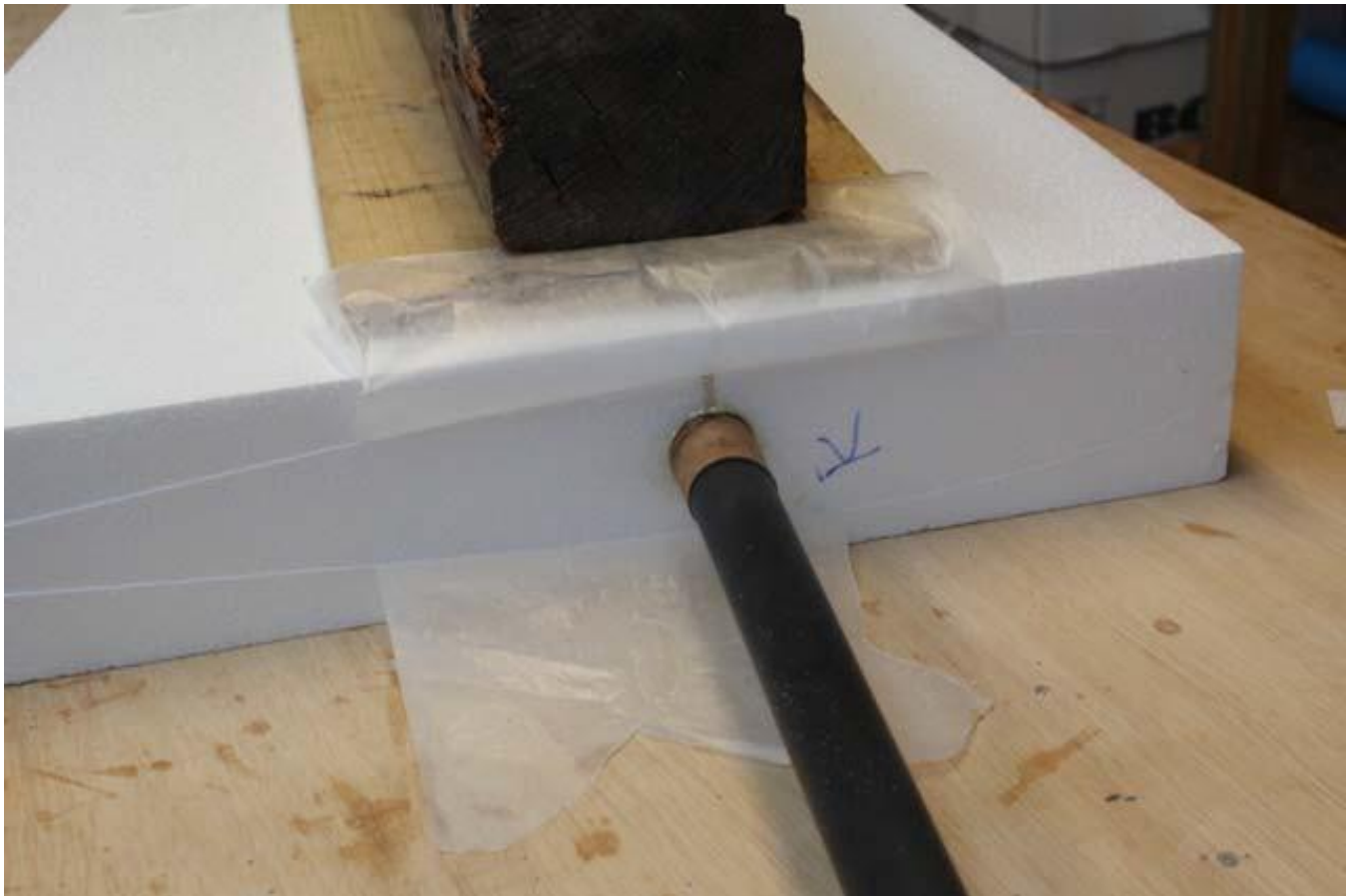


- Sand the socket supports so that they are flush with both top and bottom surfaces of the wing core.
- Using scrap balsa, cut and fit a filler strip to fit into the wire hot wire channel, sand flush to the surface of the wing core.



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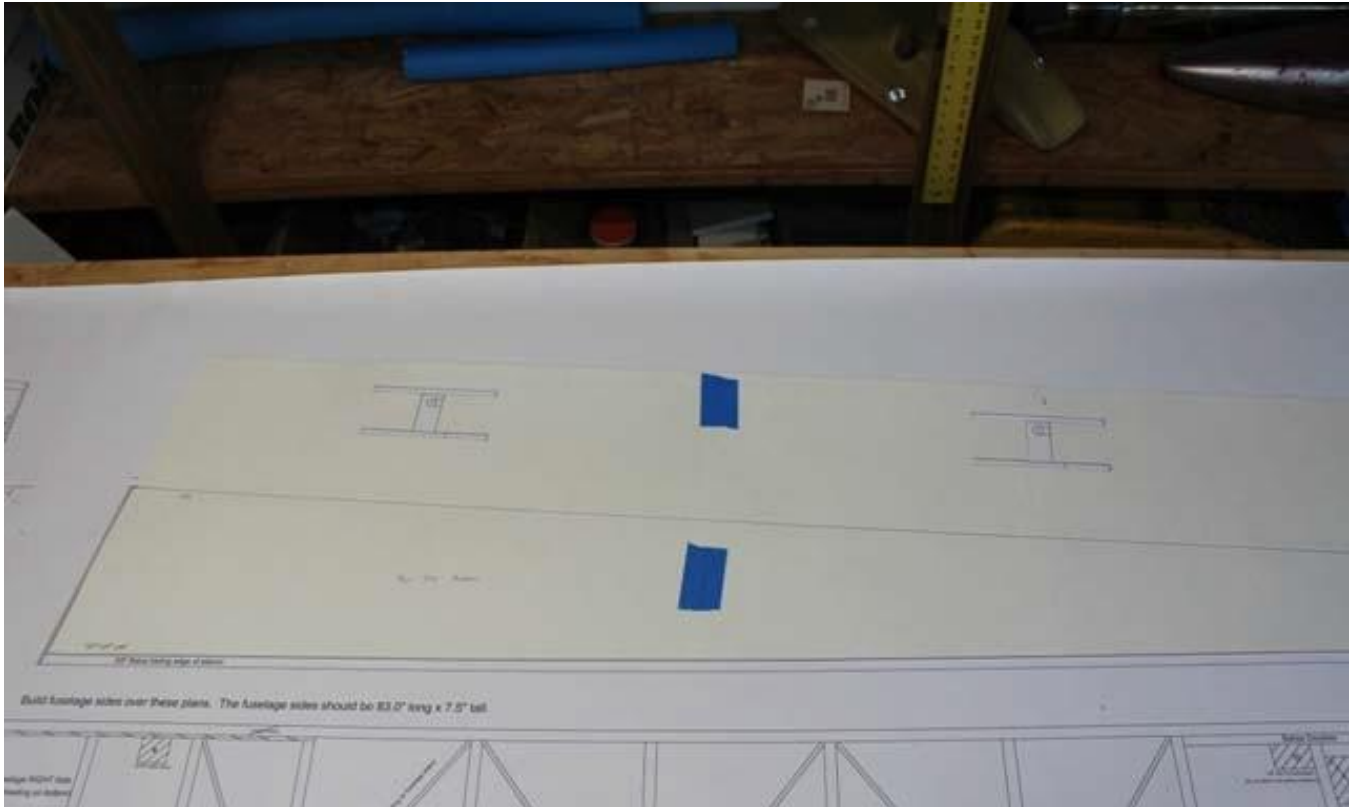
- Scuff the wing tube sleeve with sandpaper, and using either epoxy or polyurethane glue (Gorilla Glue or similar), glue the socket support assemblies and socket into the wing core. Note: This process must be completed as one step with the SS assemblies and then socket installed as part of the same process.
- Liberally coat the front, back, inboard and outboard sides of the socket support assemblies and fit them into the wing (do NOT put glue on the top or bottom).
- Liberally coat the socket (sleeve) with glue. Using a twisting motion, slowly work the sleeve into the wing core. Make absolutely certain the sleeve is completely installed. Notes: It is helpful to gently flex the wing core from front to back so that the socket hole opens up slightly. You can do this by placing a 1/16" x 1/4" strip of scrap balsa (that's at least as long as the tube) directly under the socket hole (between the top shuck and stab core) and then lightly weighting the leading and trailing edges of the wing. I also like to add some glue through the wire slot as I am twisting the sleeve into place.
- With waxed paper on the top and bottom of the wing, place the wing core in its shucks, insert the wing tube, and weight the top of the wing assembly while the glue cures.



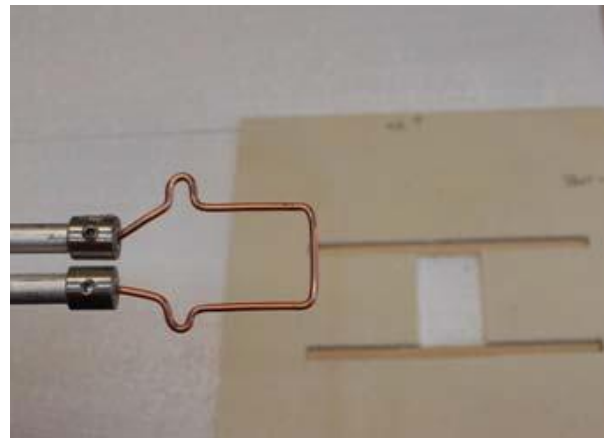
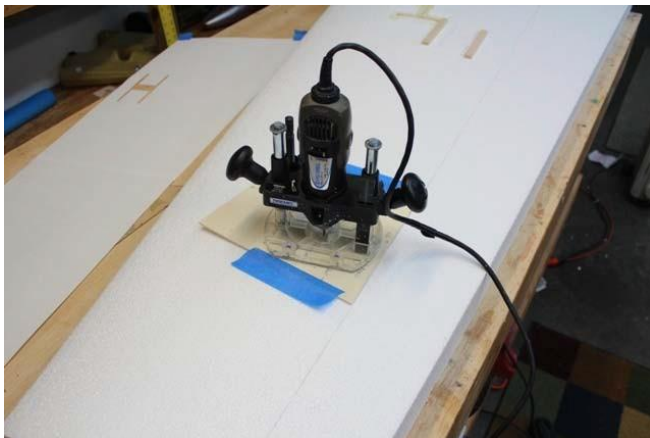
Note: If you've used polyurethane glue for this step, it's helpful to wipe excess glue as it expands every few minutes (easier than sanding it away later).

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- Using the aileron plans sheet, make a template for your aileron servo locations (I use poster paper for this, but you can also simply cut the aileron plans from the plans sheet and use that).



- Using your template, transfer the servo locations to the **bottom** of the wing core.
- Cut eight (8) 5" servo rails from the ¼" x ½" basswood stock.
- With the template affixed to the foam core, use a Dremel (or similar) with a router attachment to cut the channels for the servo rails (yes, it's messy). **Important - Verify your servo dimensions before cutting the foam and mounting the rails, servo case sizes can vary slightly from one mfg. to another.**
- Use either a router or a hotwire jig in a soldering gun to cut the servo bays into the wing core.
- Plan and mark your servo wire channel and wire exit location. Note: Refer to your fuse side plans



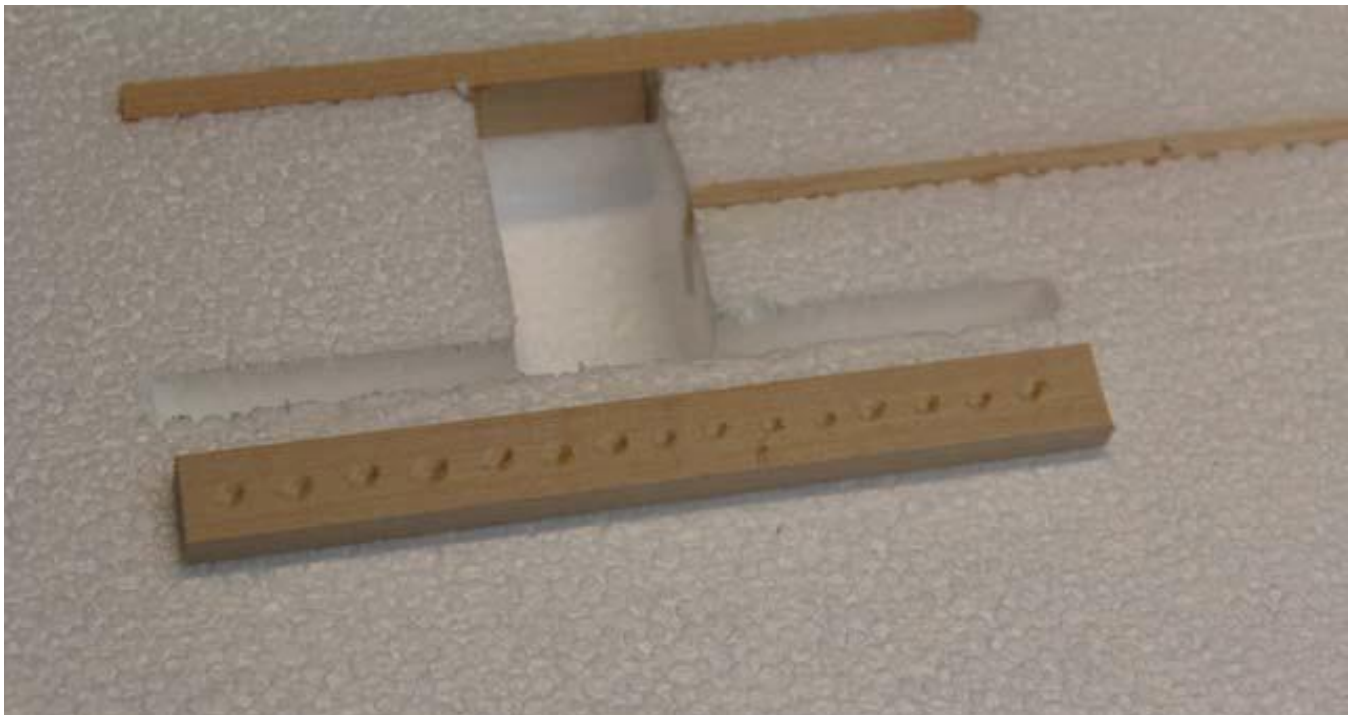
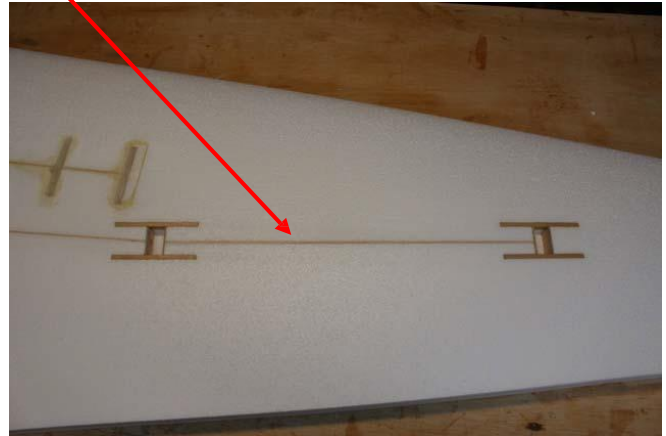
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to ensure your wire exit hole will be in a location that does not overlap with a truss member or longeron. The wire channel should enter the servo bay between the servo rails (mid- bay), not beneath one.

- Use a router or hotwire jig to cut the servo wire channel.
- Optional: Use a scrap piece of balsa to make a filler strip for the servo wire channel and glue in place with either polyurethane glue or aliphatic resin.



- Glue the servo rails in place using epoxy. Note: Using a drill press to dimple the glue side of the servo rails increases the gluing surface area (optional).

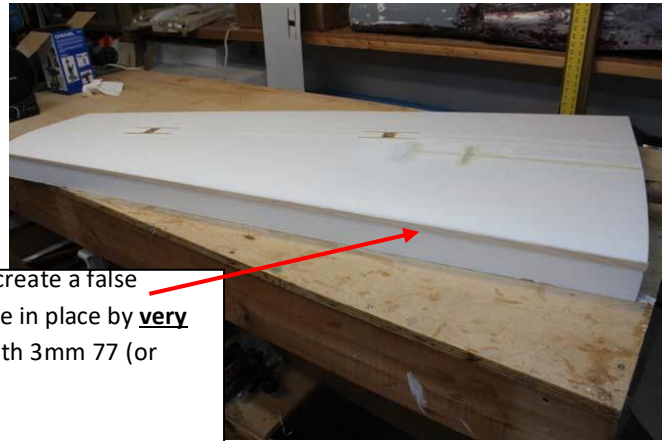


- Optional: I like to complete the servo bay by using scrap balsa to make sides.

Note: Make sure to mark and cut holes for the servo wires where appropriate.



- Lightly sand the entire wing core to ensure all installed assemblies are flush with the wing surface, and remove any ridges remaining from the hot wire cutting.
- Optional: Prior to sheeting, I like to add a false leading and trailing edge to the wing. This is helpful when vacuum bagging due to the tendency of the bag to curl the sheeting overlap around the edge of the core. The false leading and trailing edge will be removed when the excess sheeting is trimmed away after vacuum bagging, leaving a clean and true edge.



1/16" Scrap balsa used to create a false leading / trailing edge. Glue in place by **very lightly** misting the balsa with 3mm 77 (or similar) spray adhesive.

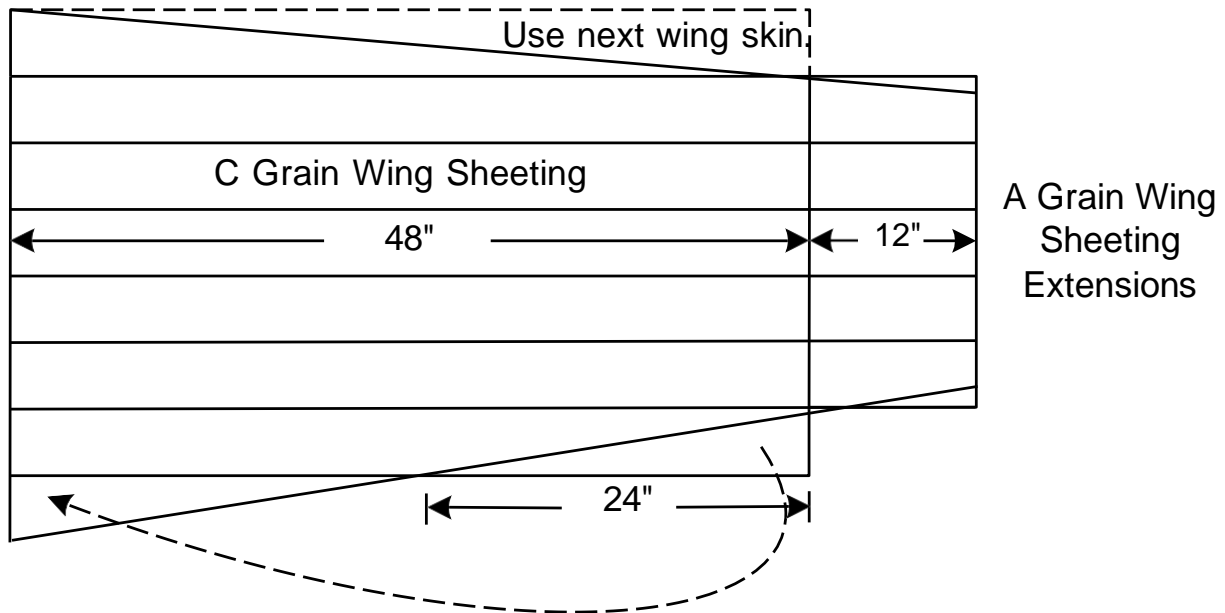
This completes the wing core preparation.

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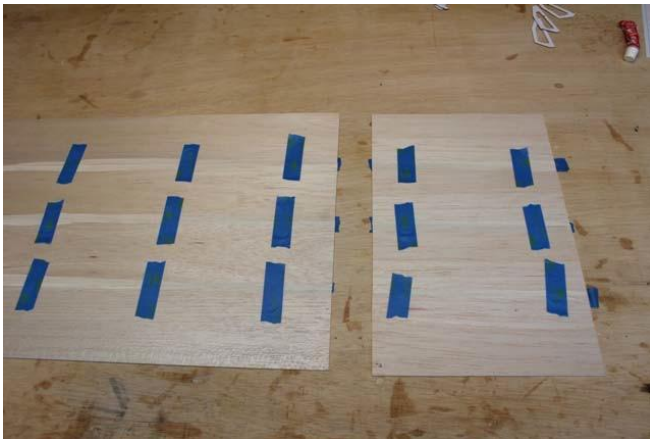
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## Wing Skin Preparation (This layout for the 125.5" Extra)



- Locate the pack of 4" x 48" x 1/16" C grain wing sheeting. From your unused sheets of A grain sheeting, cut 10" sheeting extensions. Use the above sheeting layout guide to fabricate your wing skins using the same methods outlined for the other foam core parts. Note: Check the skins for size **before** gluing.



- Trim the skins to size by placing them in the wing shucks and outlining with a sharpie marker. Use the shuck as a guide - this will leave the skins about 1/4" oversized all the way around.
  - Optional: I like to spray the glue side of the completed wing skins with hair spray. I get unscented at a dollar store. The hair spray help seal the balsa to a degree and helps prevent too much glue from seeping into the wood pores.
- Lightly sand the glue side of the skin after the hair spray has dried.

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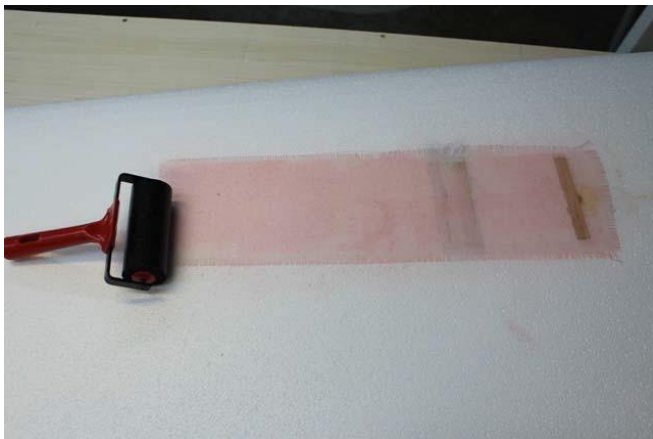
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- Prepare the wing core for sheeting by adding the 5oz fiberglass spar extension to the wing (top and bottom). The fiberglass cloth should be placed about 1 - 1 ½" inboard of the inner socket support, and extend outward over the second socket support towards the wing tip.



- I use a **very light** misting of 3m 77 (or similar) to hold the cloth in place while the wing is being handled and worked with. Note: This is **only** to help hold the cloth in place. Use a **very light** coating on the cloth, and **NEVER** spray glue directly onto the foam.
- Once the wing core and wing skins are fully prepped, apply the sheeting to the wings using a quality laminating resin such Ez Lam or West systems.



- Apply glue to the fiberglass cloth first - YOU MUST MAKE CERTAIN THE CLOTH IS FULLY WETTED OUT. I use an old credit card to gently spread the epoxy; then use a medium - hard rubber roller to ensure the cloth is completely wetted. Excess epoxy can be removed by blotting with a paper towel.
- Apply glue to the wing skin. Use a credit card, hotel key card or plastic spreader to fully coat the wing skin. Note: It helps to add a couple drops of

red Rit dye to your epoxy so that you can more easily see where you've spread glue and identify any dry spots.

- Carefully align and position the skin on the wing core - make sure not to disturb the fiberglass cloth, turn the wing over (placing it into the proper shuck half) and repeat the process for the second side.
- With both skins glued and aligned in the shucks, either weight or vacuum bag the wing until cured.
- Repeat for the second wing.

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