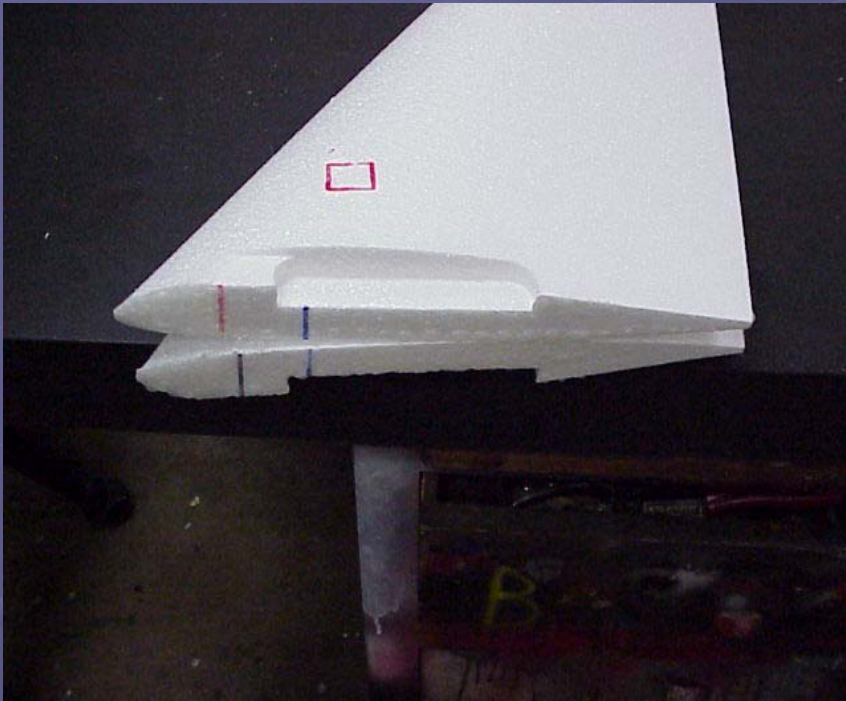# How to Build a Zagi
The
Mike's Hobby Shop
Method

Go!

- Remove wings from the box and spray the big ends with 3M77 and let dry for about 30 minutes.
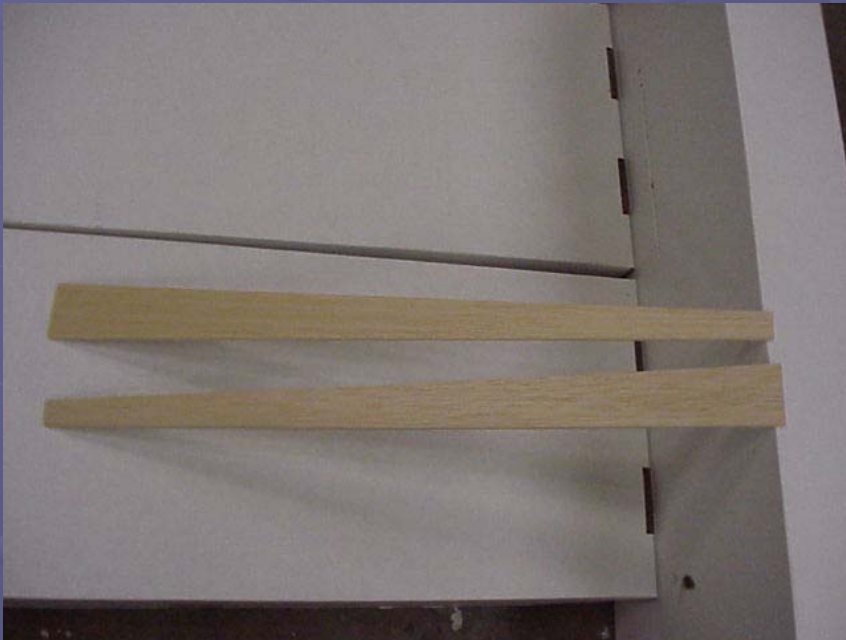
Elevon shaping

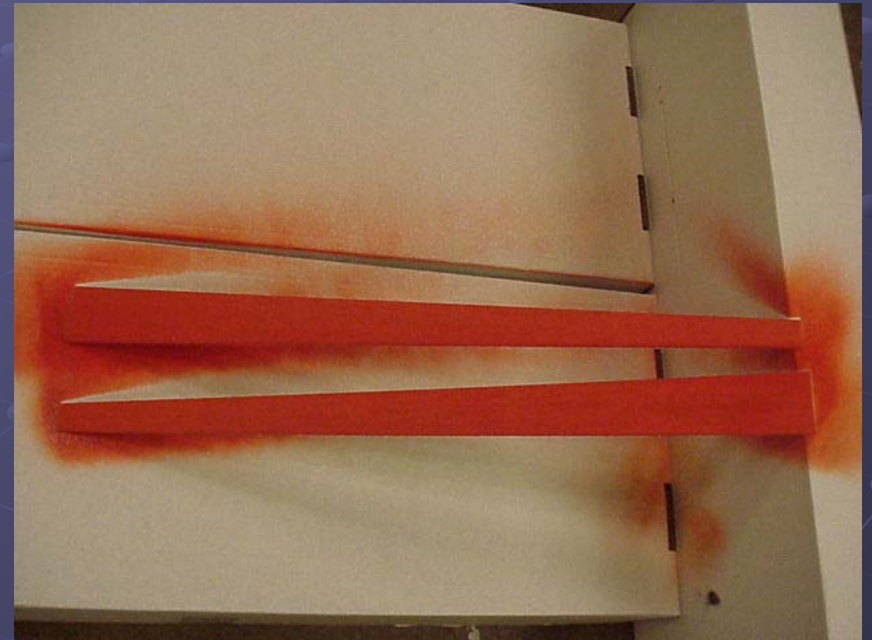- Sand elevons per the Zagi kit instructions. Make one left and one right.

Elevon painting

- Set elevons on the kit box with one end raised for painting.

Paint the top with one coat of paint. Turn them both over and paint the bottom with one coat of paint.
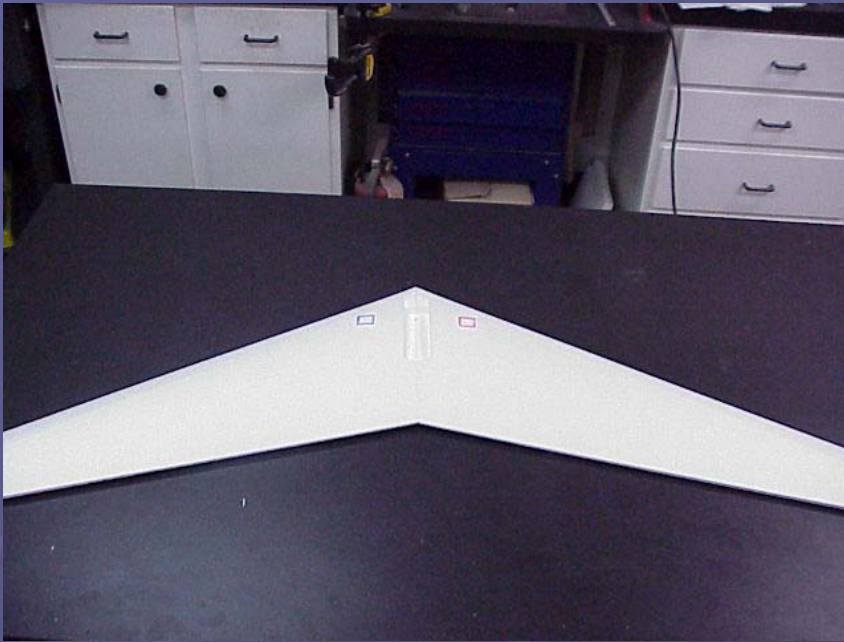
Motor tray assembly

- Find the plastic tray set top and bottom.

Remove the excess from both parts at the cut line marked on the parts. Cut vent holes out with a sharp knife or Dremel tool. Drill both motor mount holes in the bottom tray and one slot out the right side for the speed control wire to exit under the battery to the left.
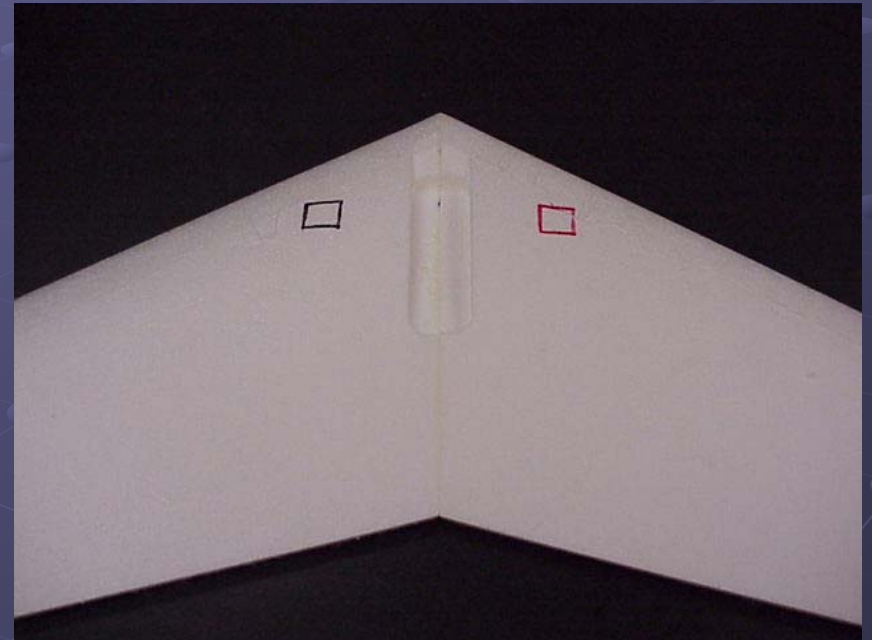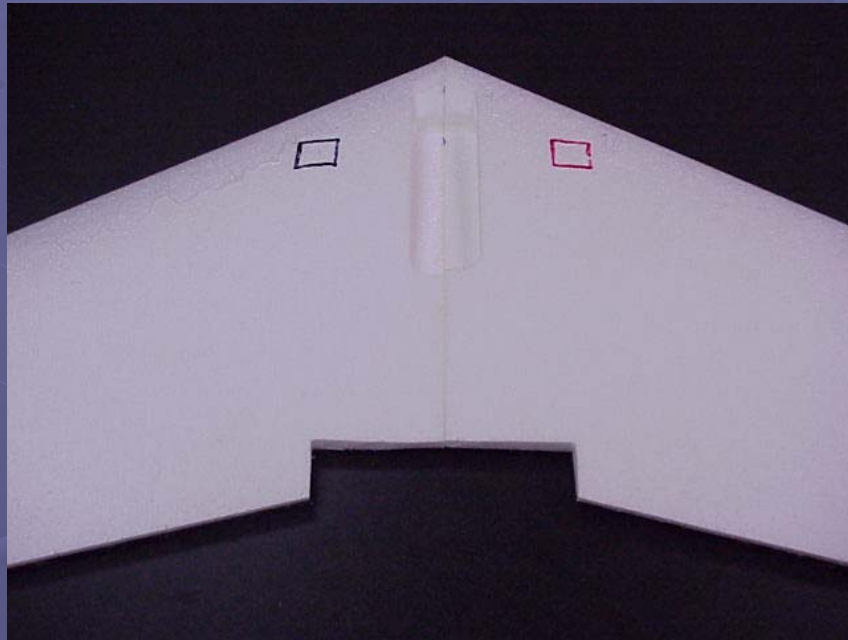
Wing

- Now that the wings have had time to dry, set them on a flat surface and press the center section together making sure to keep perfect alignment with the right and left halves. Press firmly together.
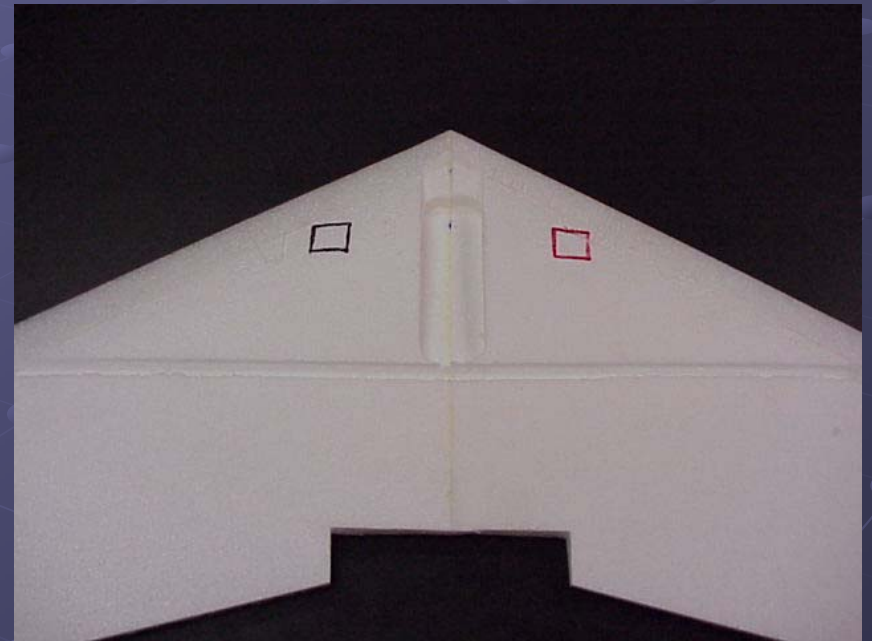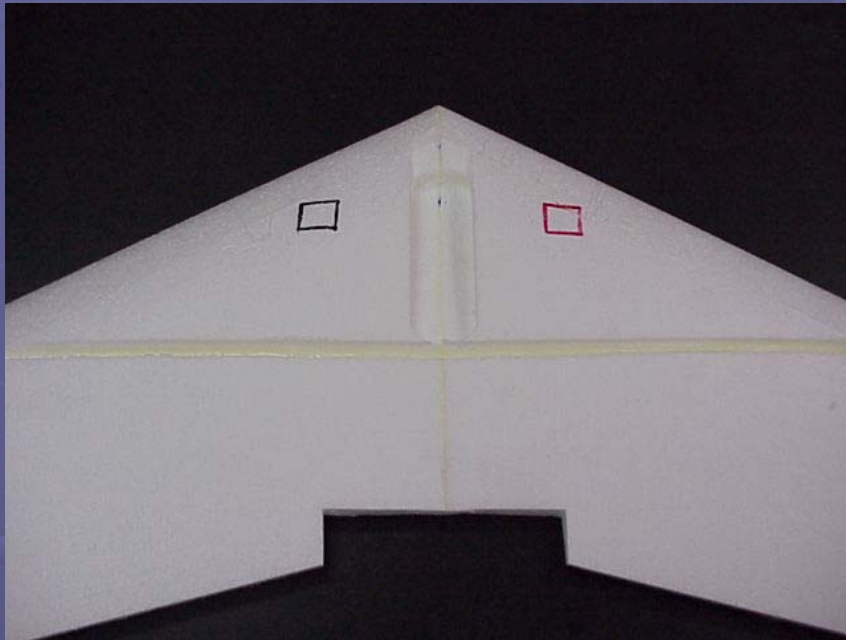
The red square should be to your right for the next step.

● Follow the Zagi kit instructions to make the cut-out on the trailing edge as shown.

Spar slot

- Cut the spar slot in the top of the wing. (not the bottom) as shown. Make sure the spar fits flat in the slot with the wing laying flat on your work area. The spar should be completely below the surface in the middle.

- Remove the spar from the slot and spray a fair amount of 3M77 into the slot.
- Let it dry for about 20 minutes.

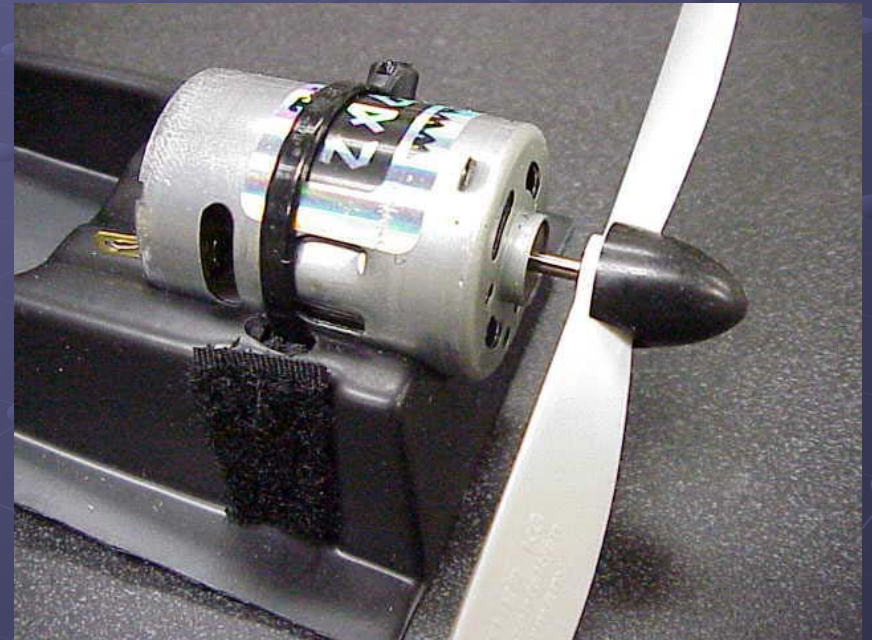Put a small drop of Shoe Goo or other silicone type glue under the motor area. Install the ty-wrap in the tray.

Install the motor as shown.
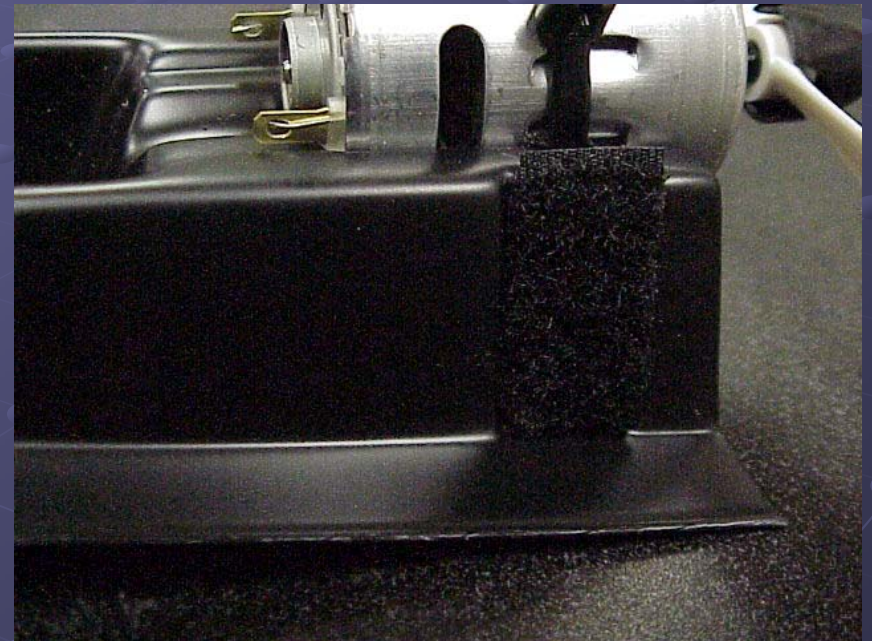
NOTE PROP DIRECTION

- Install the prop as shown. Remember the lettering on the white prop will be facing the back of the plane. Push the prop on as hard as you can to make sure you get the proper fit.

- Cut the velcro as shown. 2 full pieces and 3, ½ size pieces.

- Install 2 of the ½ size pieces to the tray sides. (one on the left and one on the right) Use the fuzzy part on the tray bottom and the hook sides on the tray top.
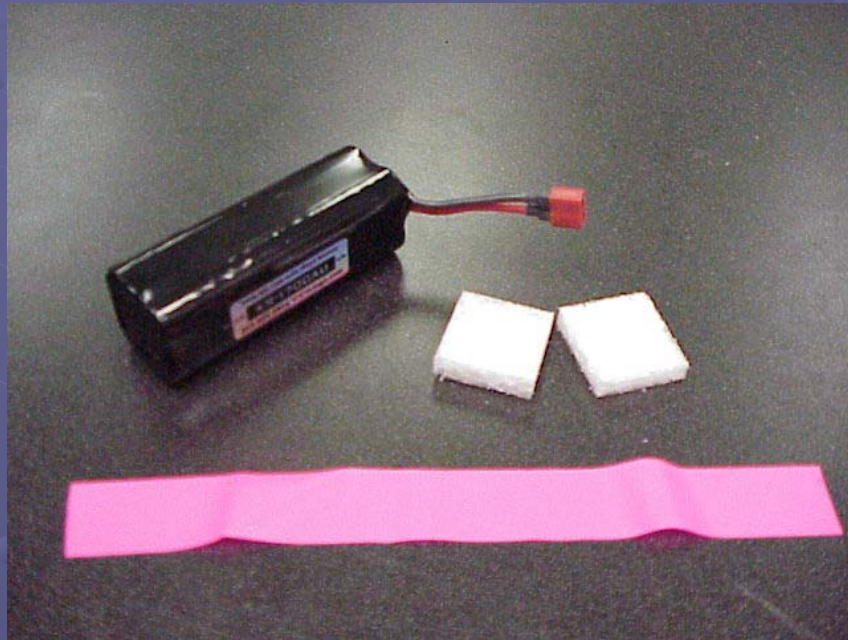
Install one of the ½ size pieces to the nose of the tray as shown.

Battery

- Locate the battery in the kit box. Install 2 full size pieces of Velcro (hook side) to the bottom of the battery as shown.
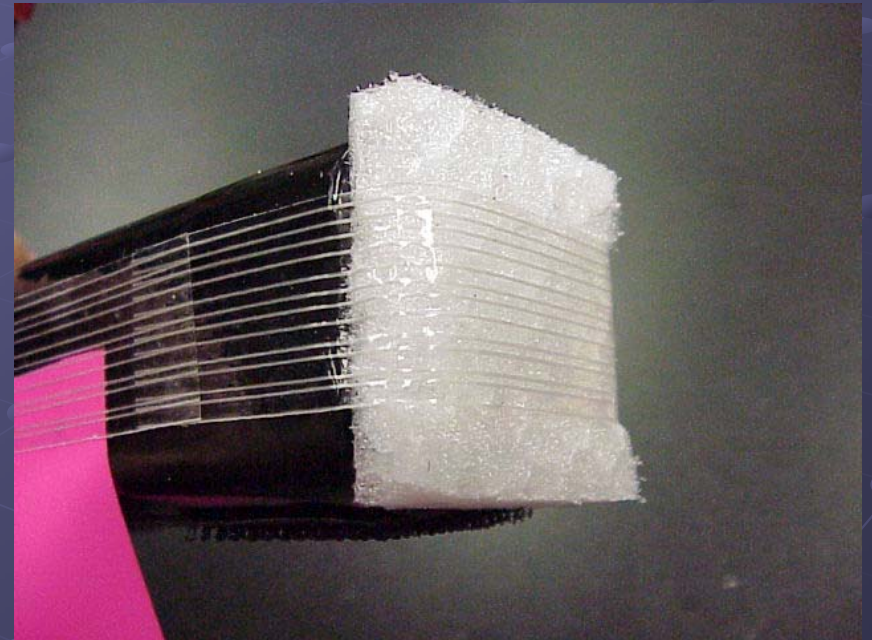
Cut 2 small pieces of foam from the scrap in the kit box as shown. They should fit on the ends of the battery. Cut one piece of plastic streamer material for the BLT system. (battery locating tape)
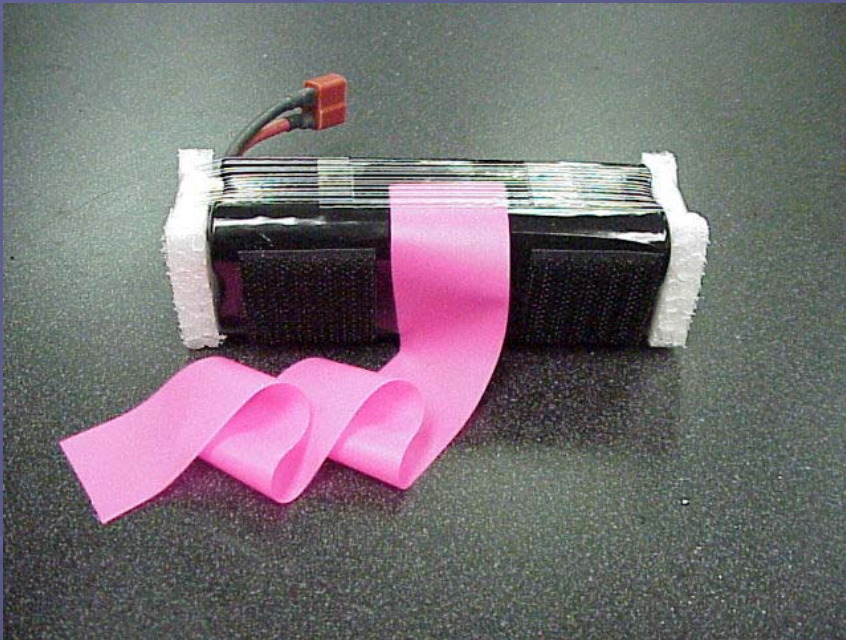
Battery pads

- Using strapping tape, attach the small foam pieces to each end of the battery as shown.
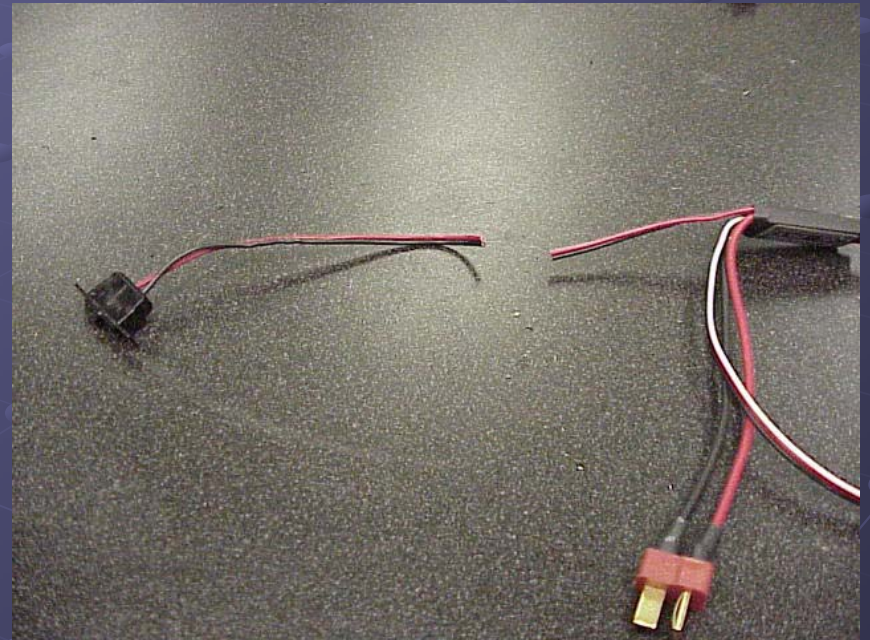
Complete battery assembly

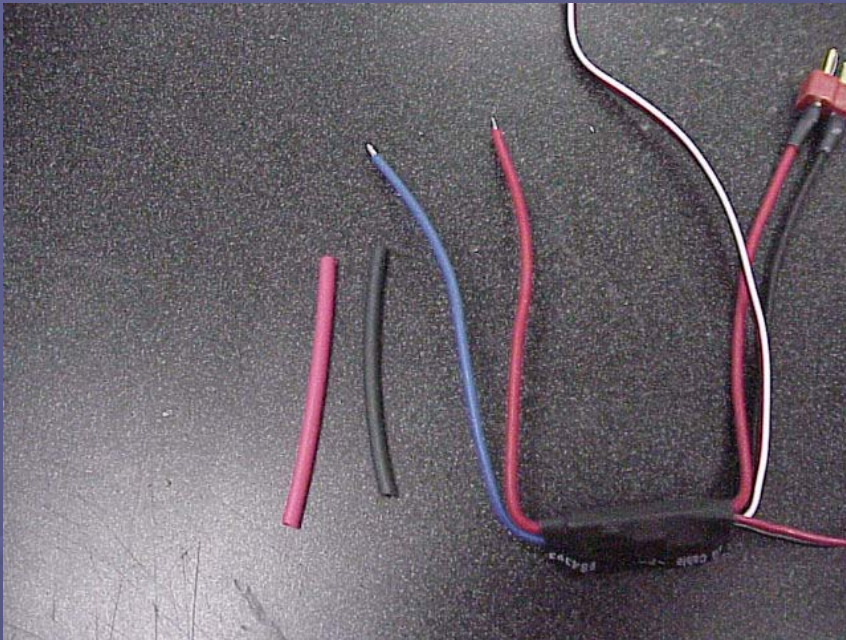- Attach the BLT system to the battery side as shown with a small piece of strapping tape.
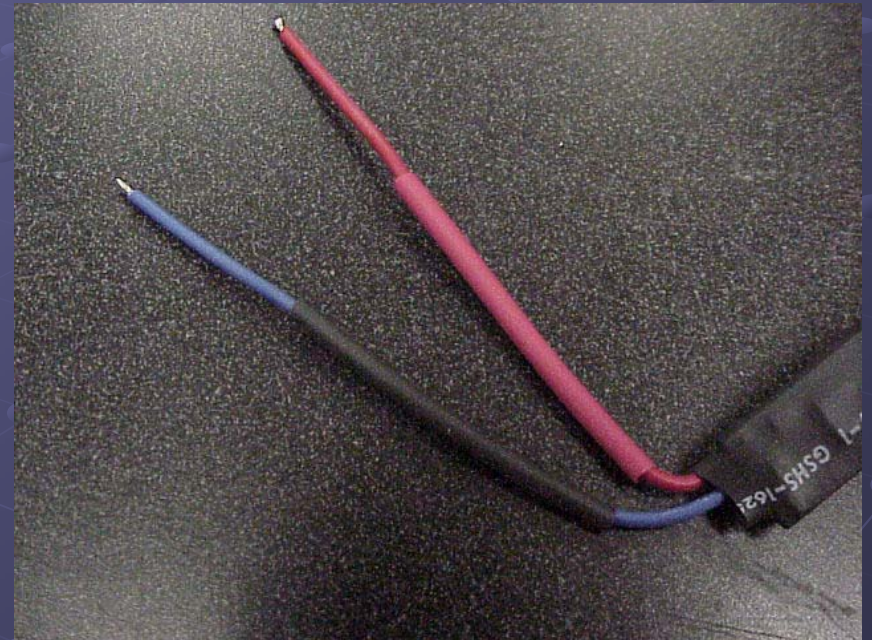
Speed control mods

- Locate the speed control. Remove the switch.

- Cut 2, 2" pieces of heat shrink for the speed control as shown.

Slide the 2 pieces of heat shrink on to the motor wires and shrink with heat as shown.

Strip and solder the switch wires then cover them with a small piece of heat shrink.

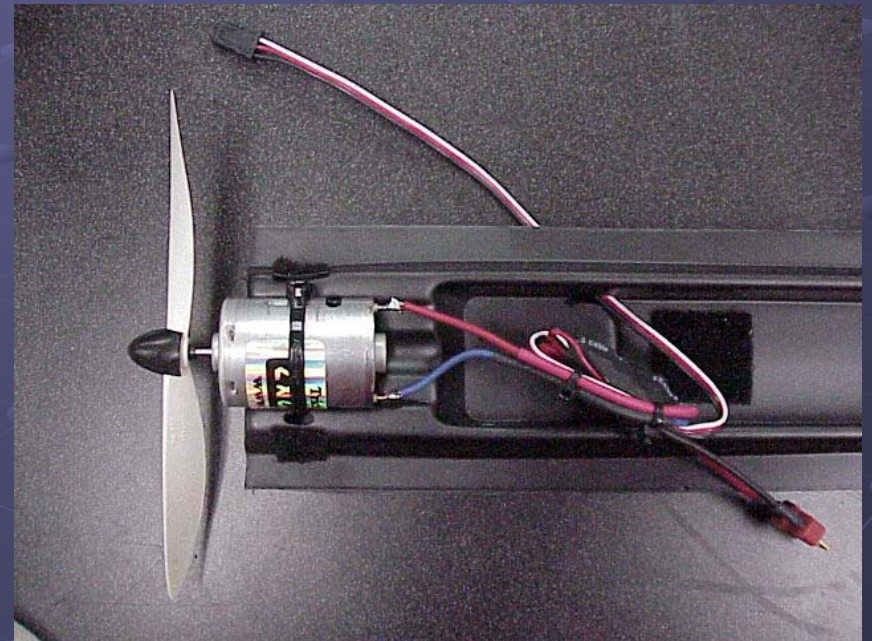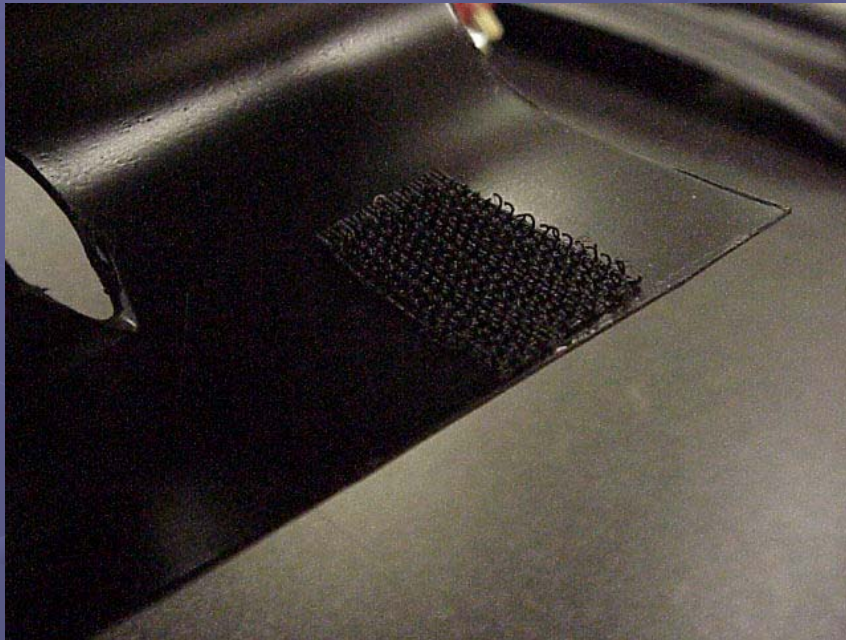Strain relieve the speed control wires with 2 small ty-wraps as shown.

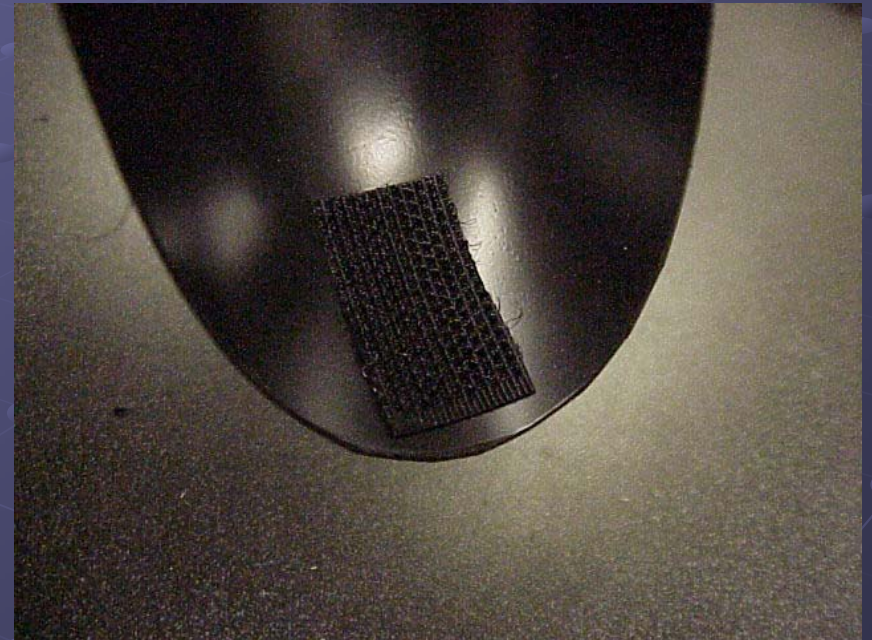- Solder the motor wires on to the motor as shown.
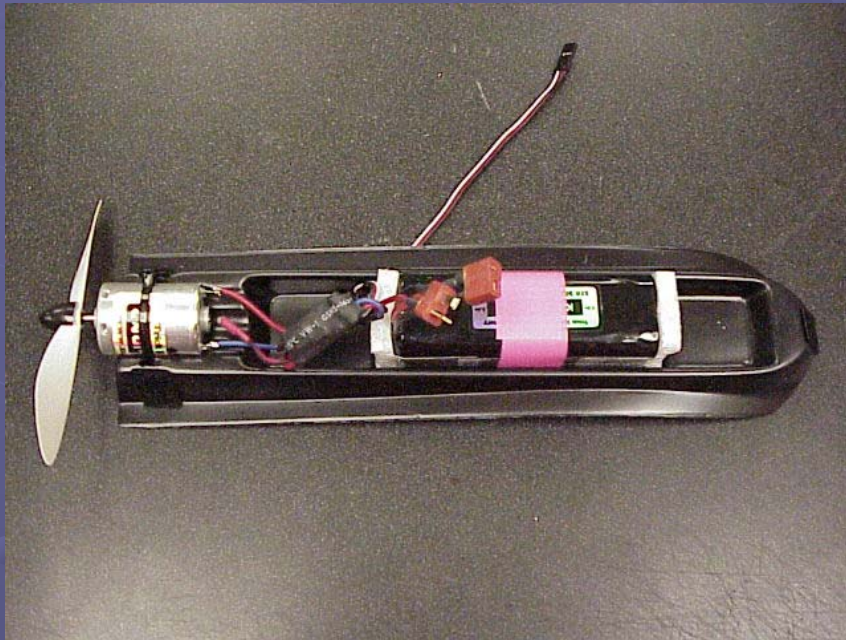
Motor tray is done

- Complete motor tray assembly.

Apply the hook side of the ½ pieces of Velcro to the tray top on both sides to align with the tray bottom as shown.

Apply one piece of the hook side ½ size Velcro to the front of the tray top as shown to align with the tray bottom.
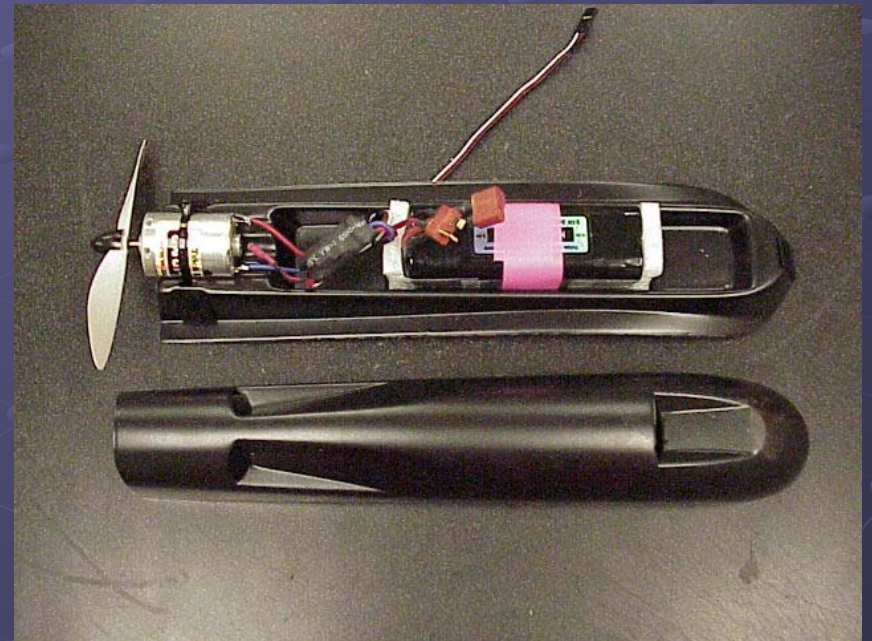
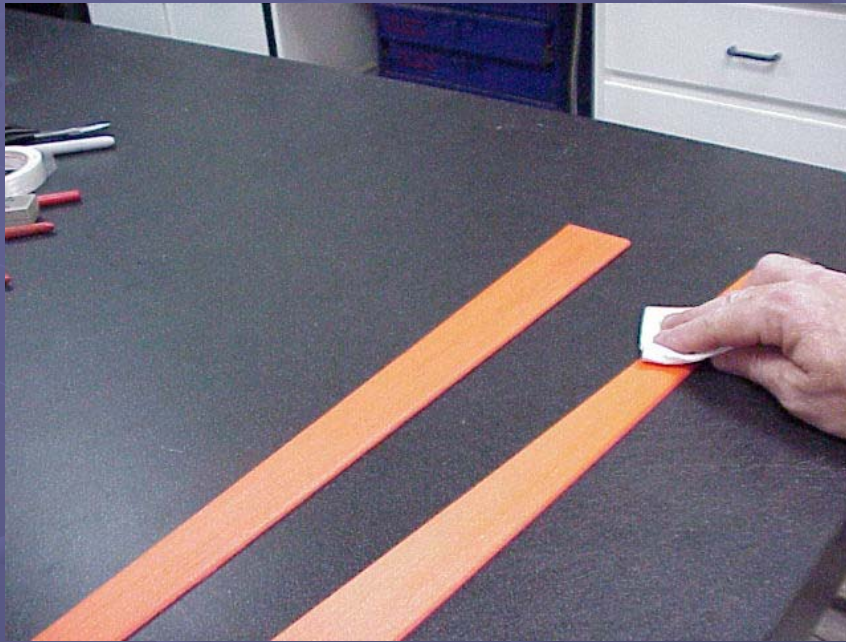# Complete motor/battery tray assembly

- Install the battery as shown. Route the speed control wire thru the hole cut in the left side of the tray just behind the battery to allow the speed control wire to extend to the receiver in a later step.

Top ready to install

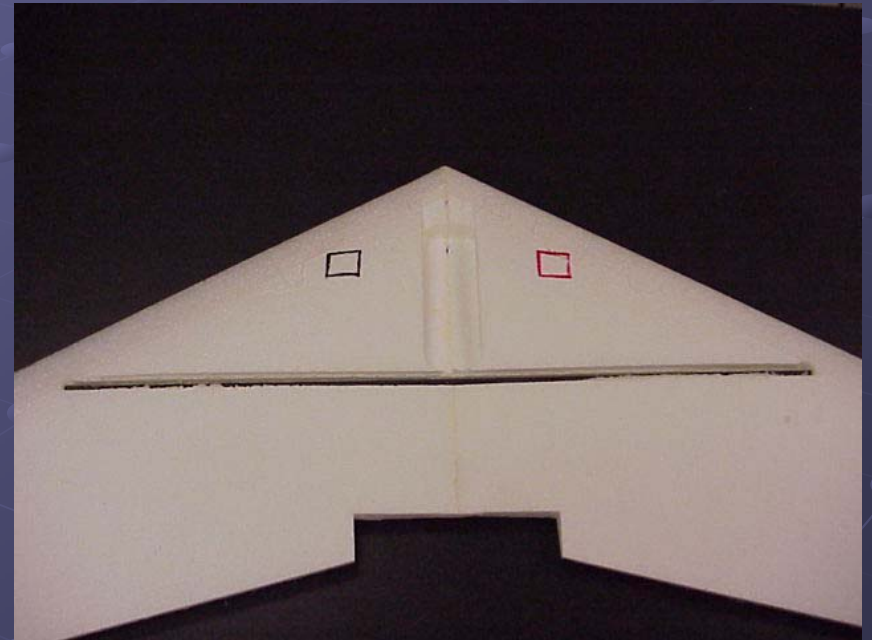- Top and bottom tray ready to install.

- Do not sand the elevons. Use a folded paper tower and polish the elevons. The paint should be a little tacky if you build fast. This is good! They will be real slick after polishing both sides of each elevon. This helps the tape stick better.
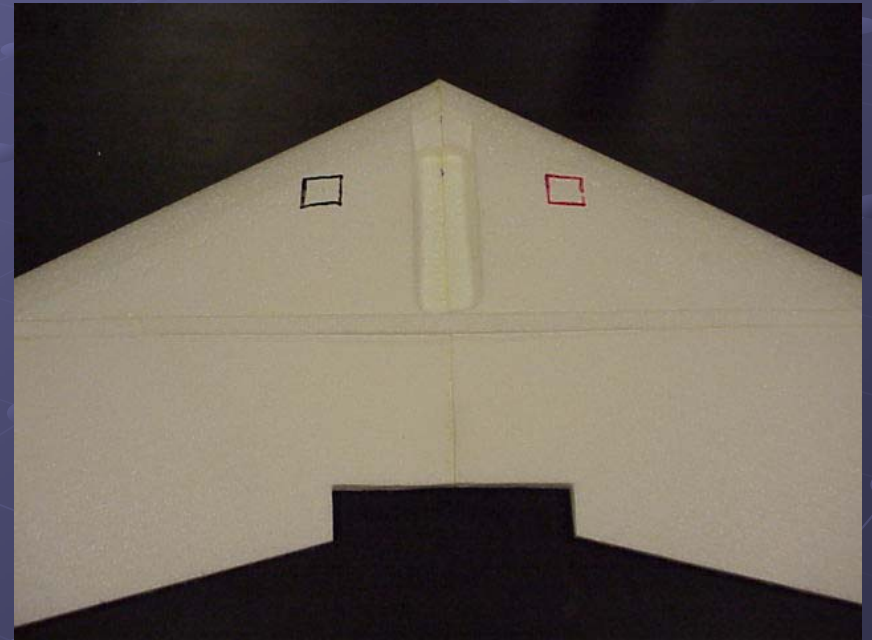
Back to the wing assembly

- Spray the spar with 3M77. (WET!) Drop it in the slot and return the wing back to a flat surface to dry for about 30 minutes. Make sure the spar fits to the bottom of the slot.

- While the spar is drying, get a pair of side cutters or tweezers and remove the strings left on the top and bottom of the wing cores. It is easier to pick them off than it is to sand them off! (less mess)

Cut a strip of foam big enough to fill the area over the spar from the scrap and spray a light coat of 3M77 onto the piece. While it is still wet stuff the scrap piece into the spar slot over the spar to make a spar cap. Let it dry for about 10 minutes.

● Sand the spar cap smooth with the wing top with a fine sand paper.

Sand the leading edge round

- Using a sanding block, remove the strings for both sides of the wing and sand the leading edge round. You can see the leading edge is flat and this must be rounded to make the Zagi fly right.

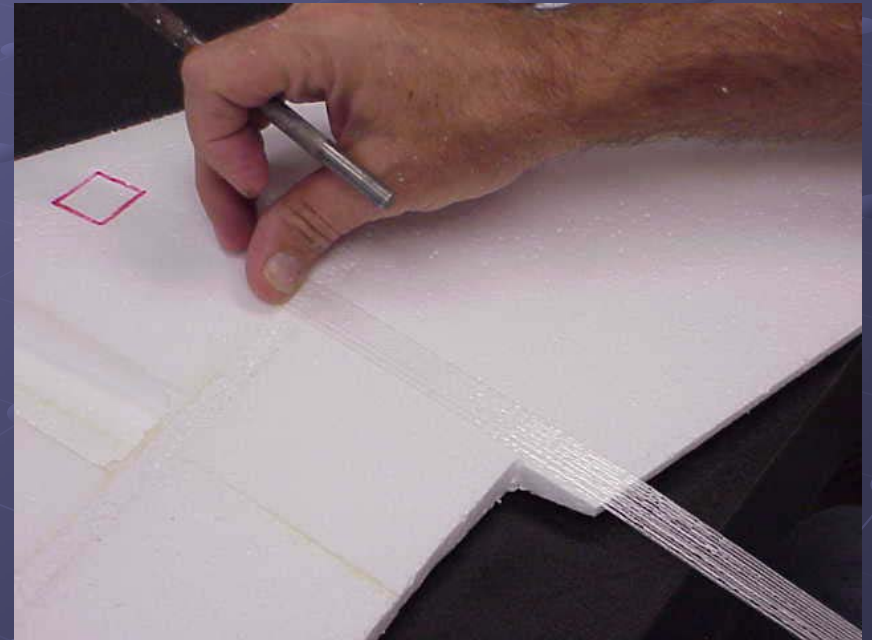# Brush the foam dust off the wing now!

- Using the OLD FORMULA 3M 77 spray, apply a light coat of glue to all areas of the wing. This will kill most of the foam dust and make the tape stick better.

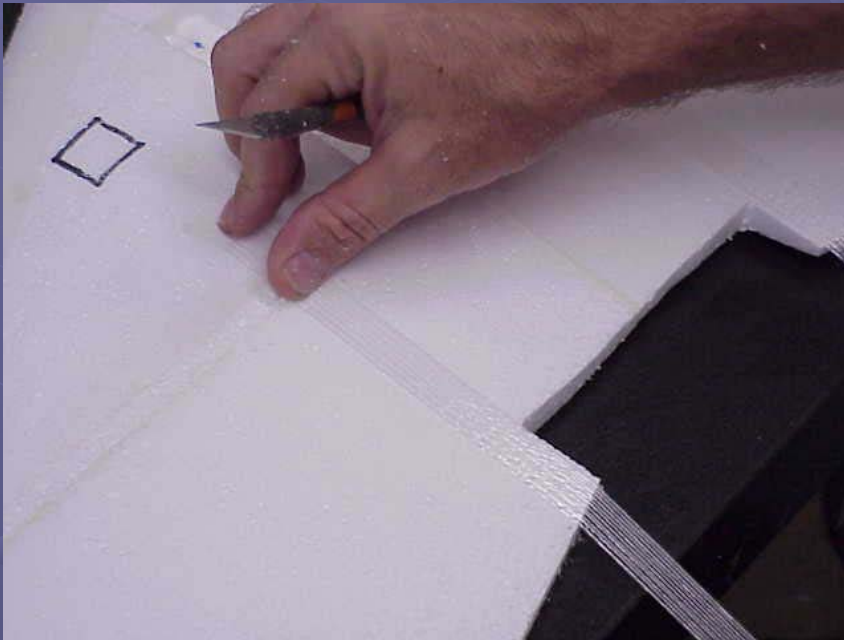- Let it dry for about 20 minutes.

Tape your Zagi

- The following pictures show the way we apply strapping tape and colored tape to the Zagi. Some of the added tape is the result of research brought on by many crashes and it should help make your Zagi last longer.

- Look at the last few pictures for some color ideas or check www.Clubzagi.com for more color schemes.
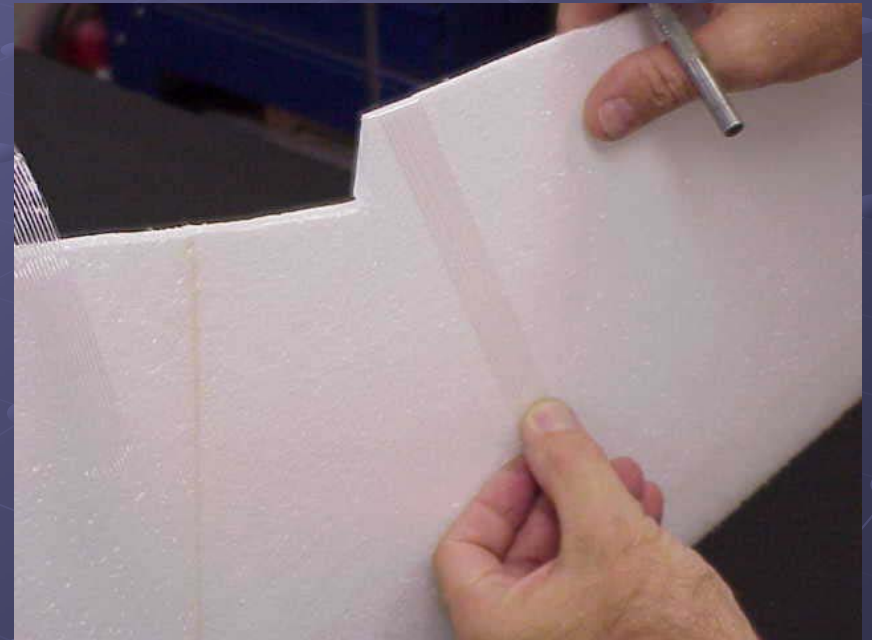
Strapping tape

- This is the first piece of tape we install. This is one of the extra pieces we use.

- Start on the top of the wing just above the spar and wrap around the trailing edge just to the right of the prop cut-out.
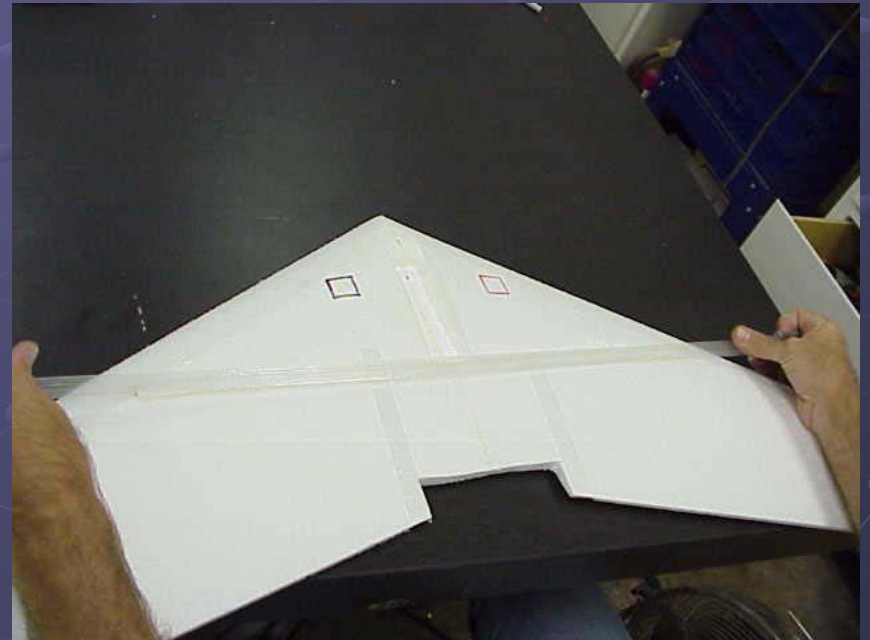
Do the same on the left side of the prop cut-out.

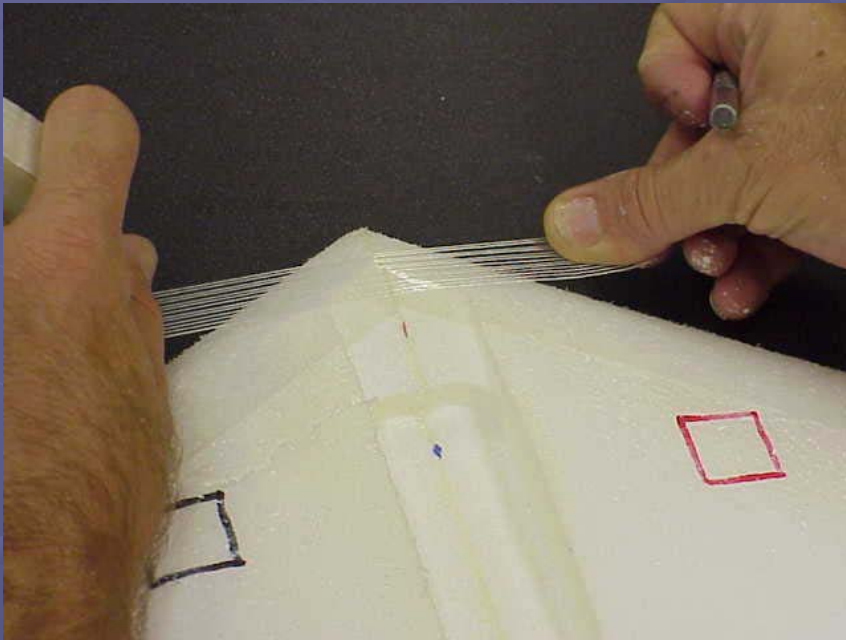- Make sure you wrap the tape all the way around the trailing edge to the bottom of the wing.
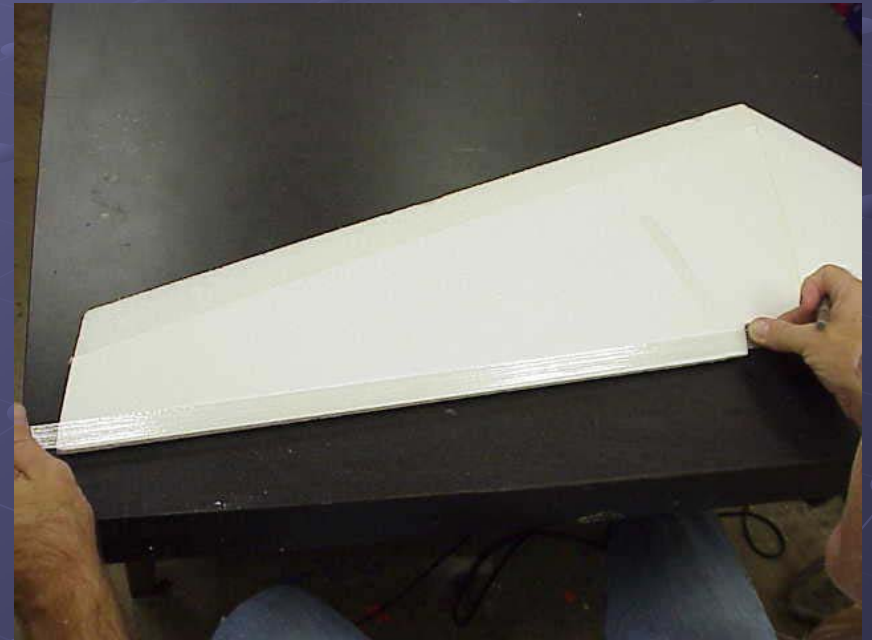
This is the same for both sides

Put one strip across the top of the wing just over the spar and wrap the ends around the leading edge about 1"

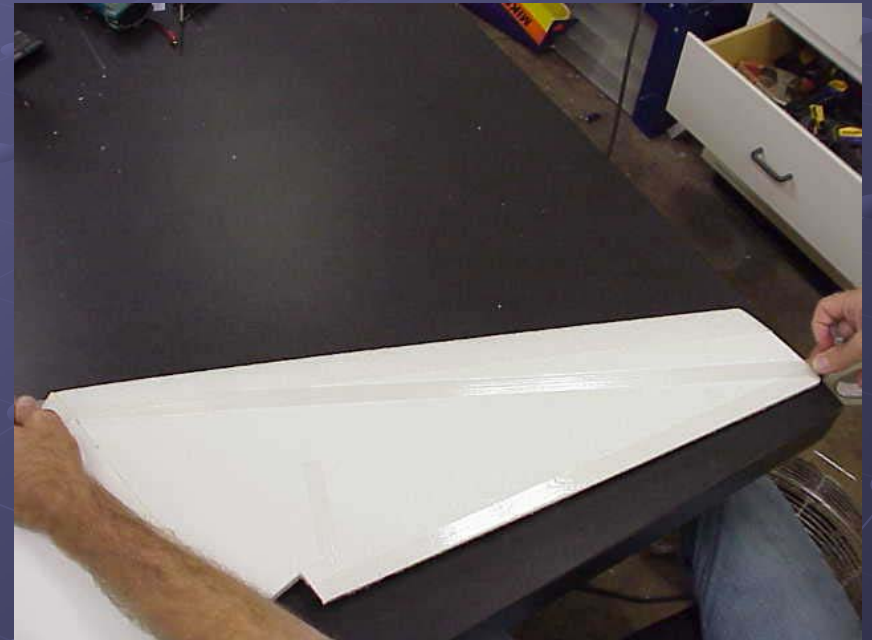We add a small strip on the top of the nose. Make sure to wrap around the leading edge about 1"

- Starting on the bottom of the wing on the trailing edge, apply one strip from the wing tip to the prop cut-out wrapping around the ends about ½"
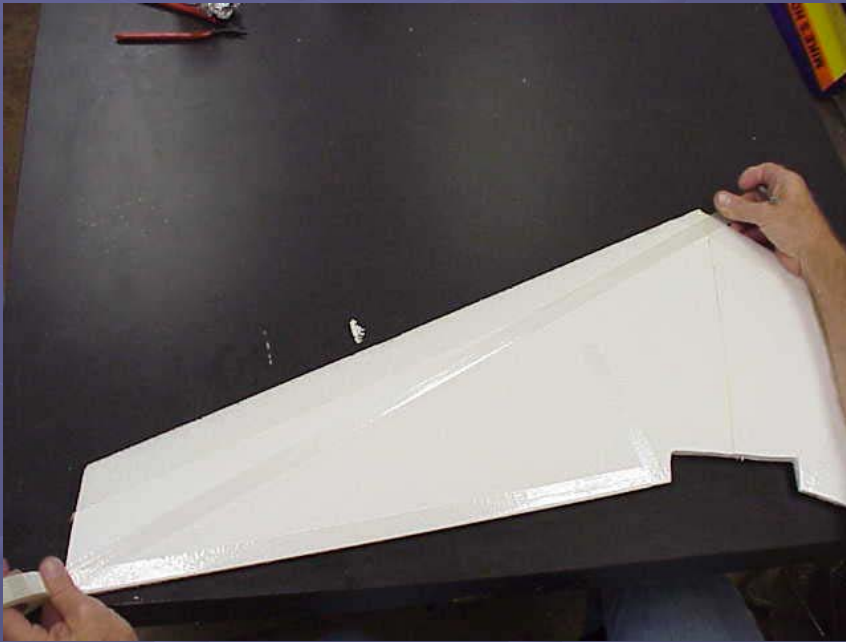
- Same as the previous ster for the other side.

Starting at the nose, apply one piece of strapping all the way to the trailing edge at the wing tip. Make sure to wrap around the ends about ½"
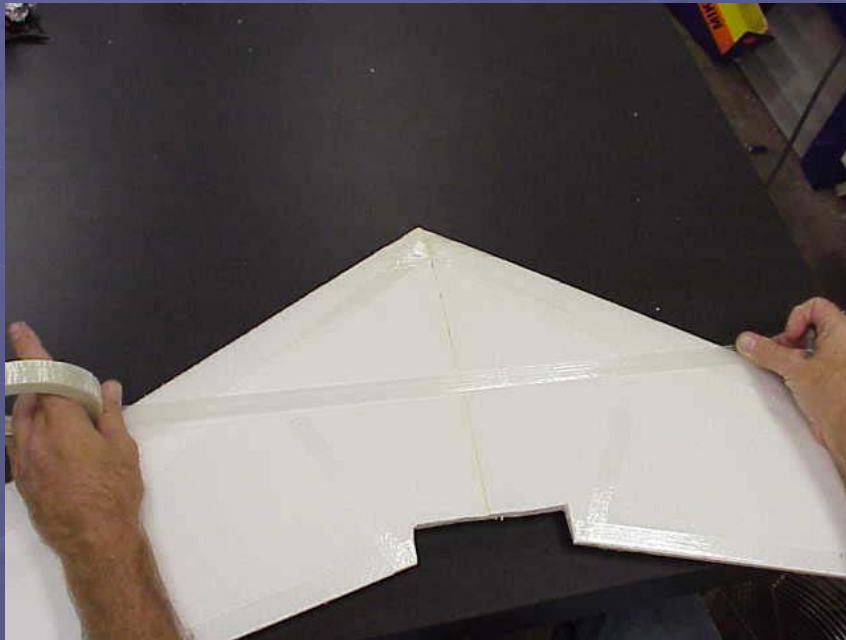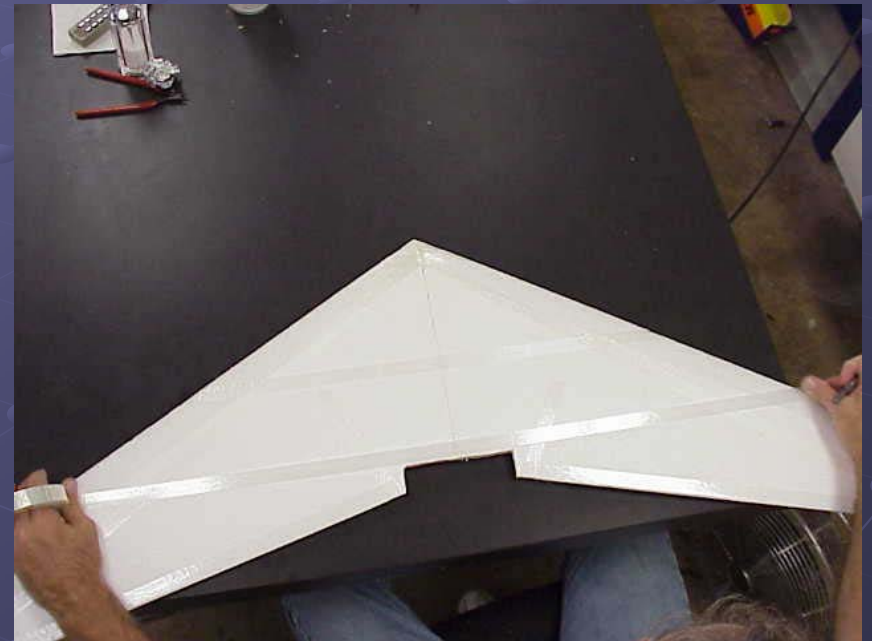
Same as the previous step for the other side.

- Apply a small piece of tape across the nose as shown and make sure to wrap the tape around the leading edge about 1"
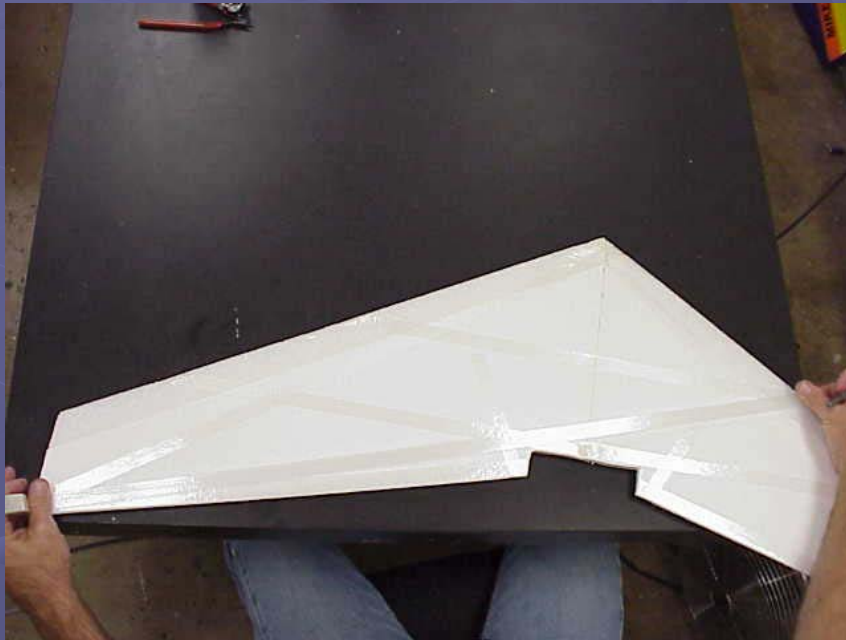
Apply one piece of tape across the wing in about the middle and wrap the ends around the leading edge about 1"
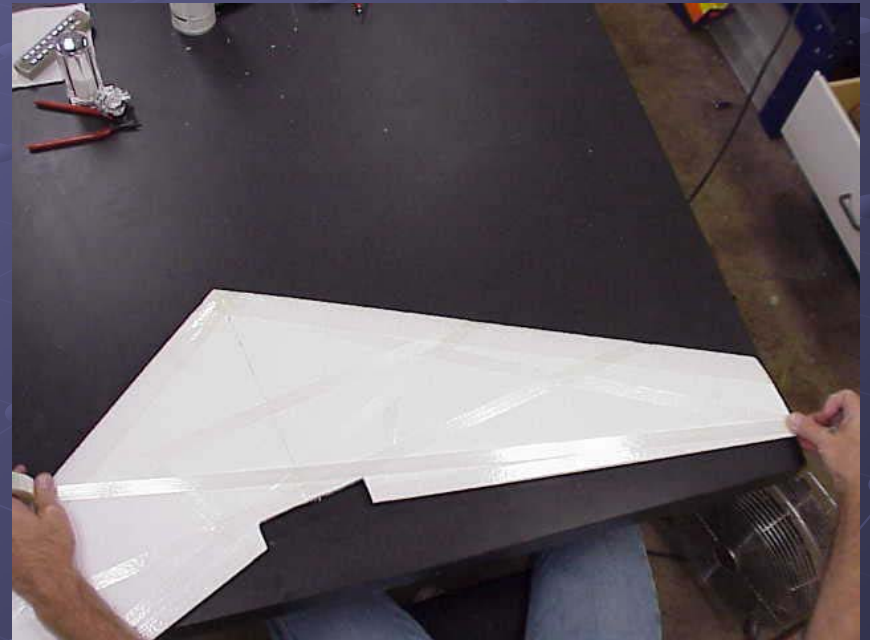
- Just in front of the prop cut-out apply one piece of tape across the wing to the leading edges and wrap around about 1"
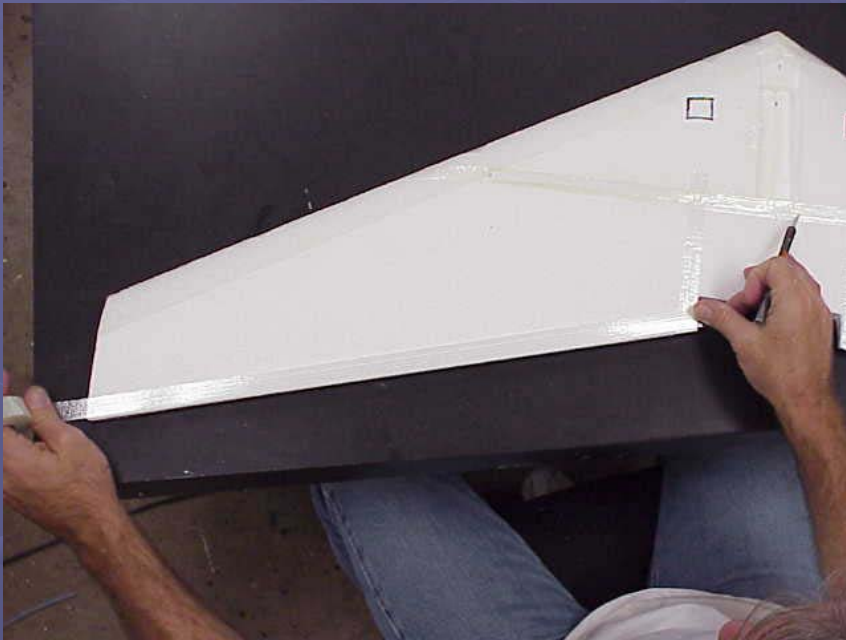
- Starting at the wing tip trailing edge, apply one piece of tape across the wing just passing the corner of the prop cut-out to the leading edge of the opposite wing leading edge. Make sure to wrap the end around about ½"

- Same as the previous step for the opposite wing.

Strapping tape on the top of the wing
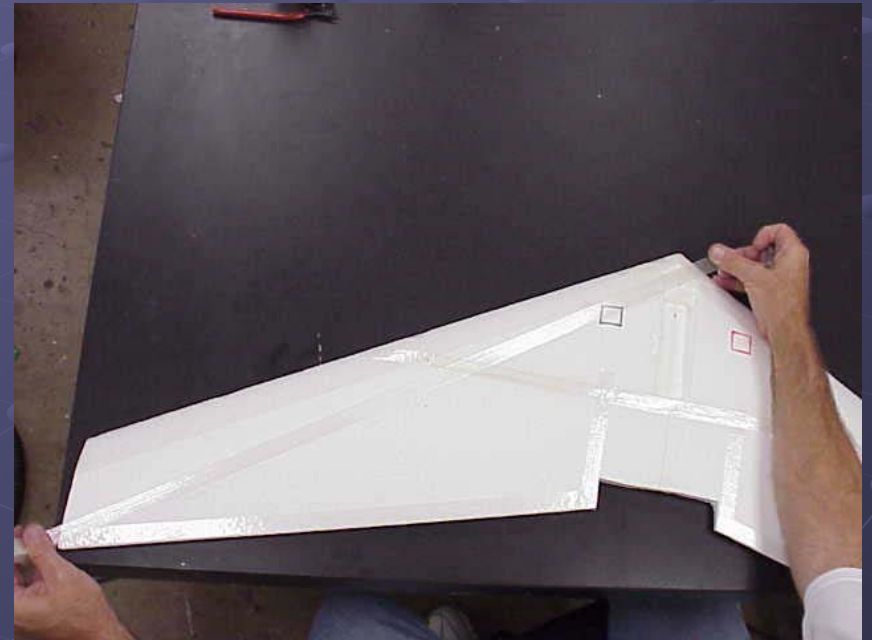

- Start with the trailing edge as before.
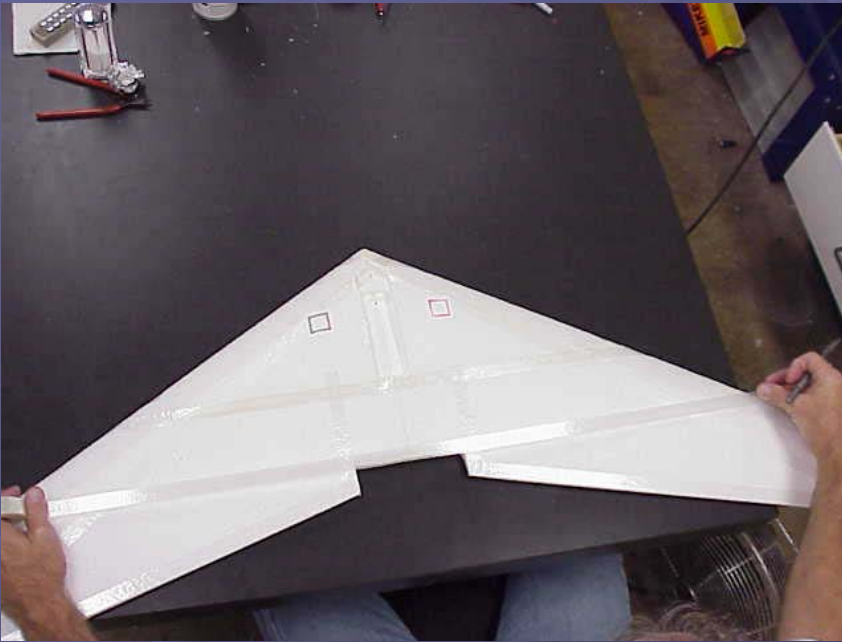
- Do both wings.

Starting at the nose, apply one piece of strapping all the way to the trailing edge at the wing tip. Make sure to wrap around the ends about ½"
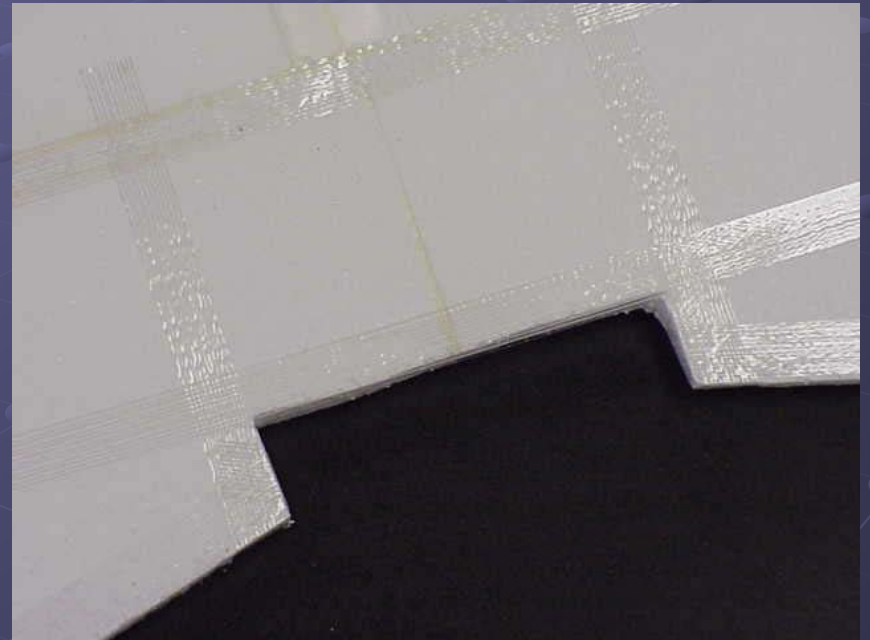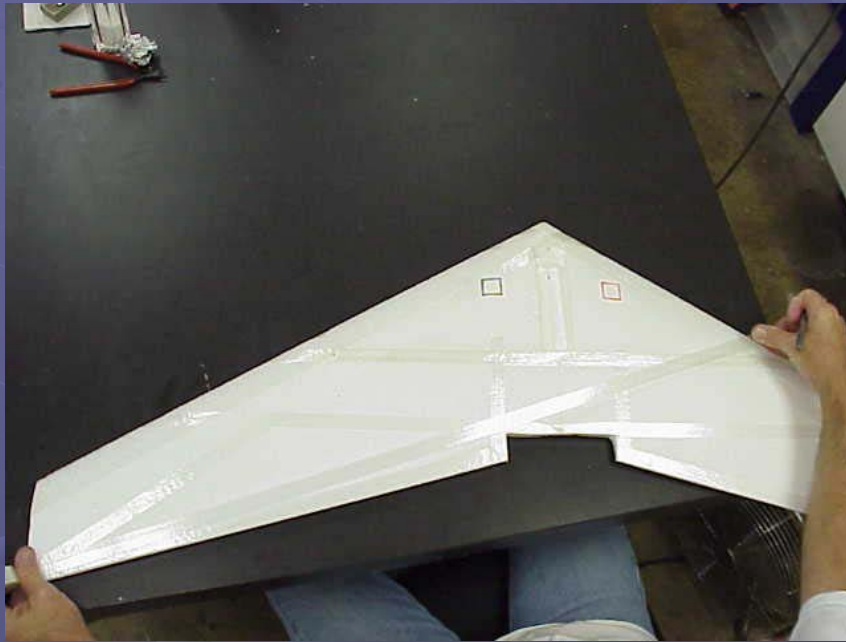
- Same as the previous step for the other side

Just in front of the prop cut-out apply one piece of tape across the wing to the leading edges and wrap around about 1"
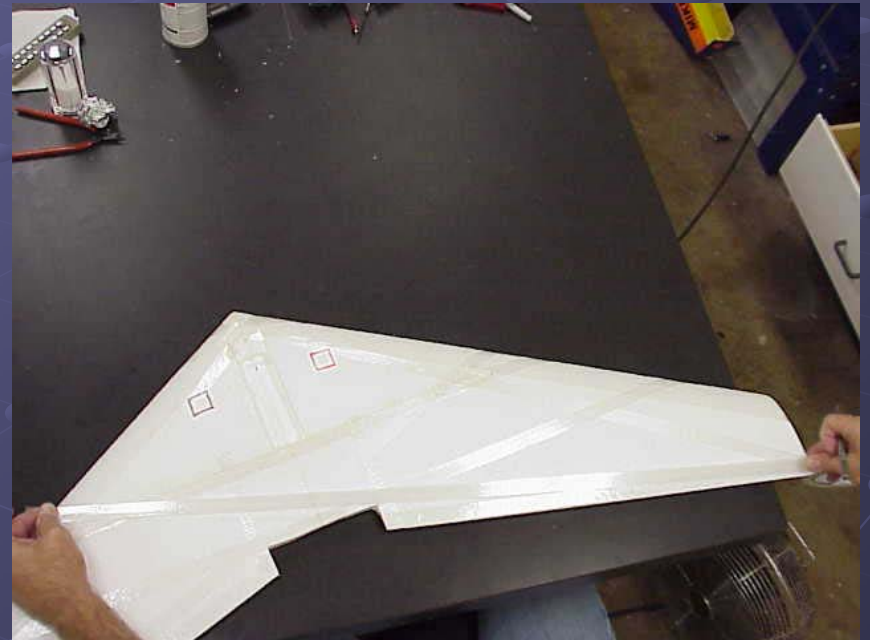
This is the finished area around the prop cut-out.

- Starting at the wing tip trailing edge, apply one piece of tape across the wing just passing the corner of the prop cut-out to the leading edge of the opposite wing leading edge. Make sure to wrap the end around about ½"
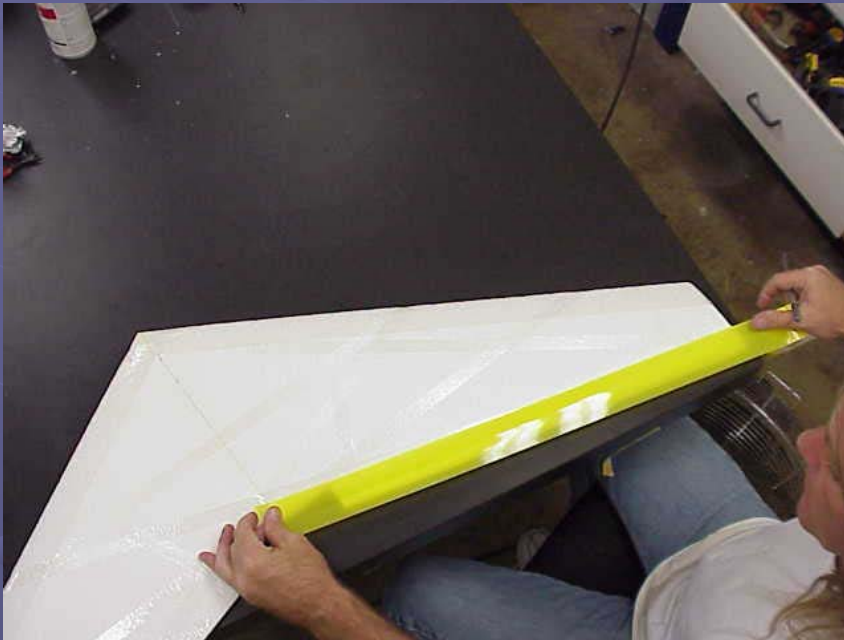
- Same as the previous step for the opposite wing
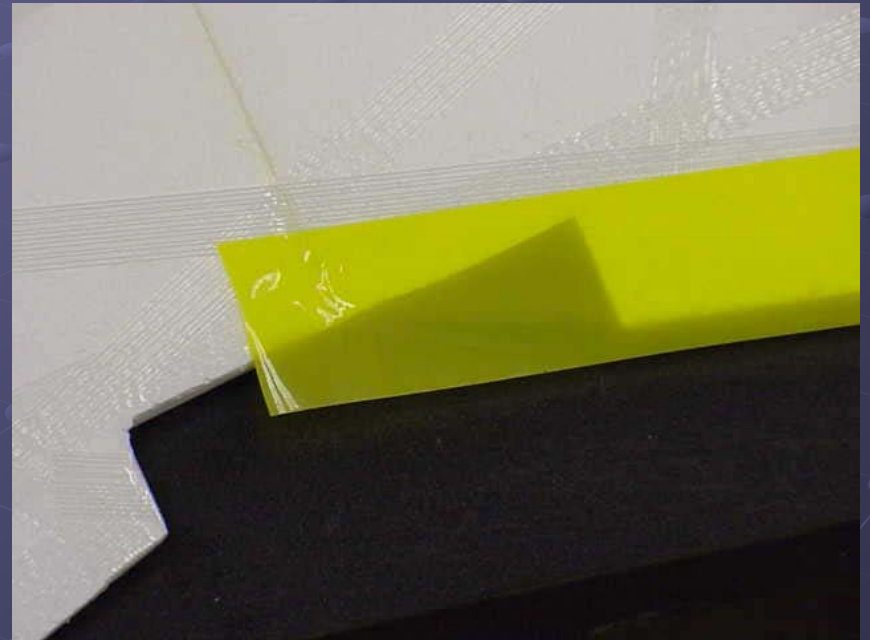
Time to add color!!!!

- The next steps are the most important steps to make a warp free wing. DO NOT stretch the tape more than necessary to make it lay flat.
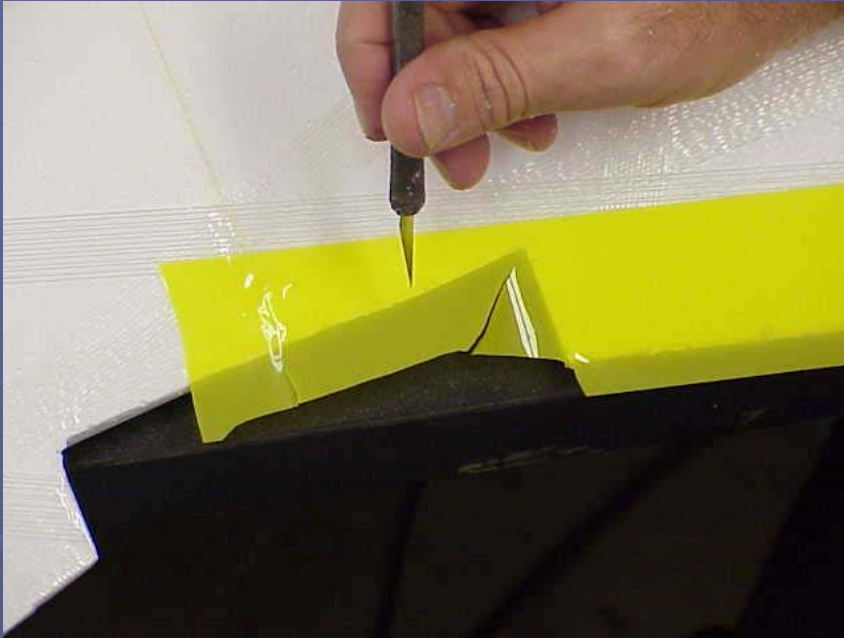
Pick your color now

- Starting on the bottom of the wing lay one piece of tape from the center to the tip allowing the tape to hang over the trailing edge about ½"

- Press in place

Note the overlap in the center
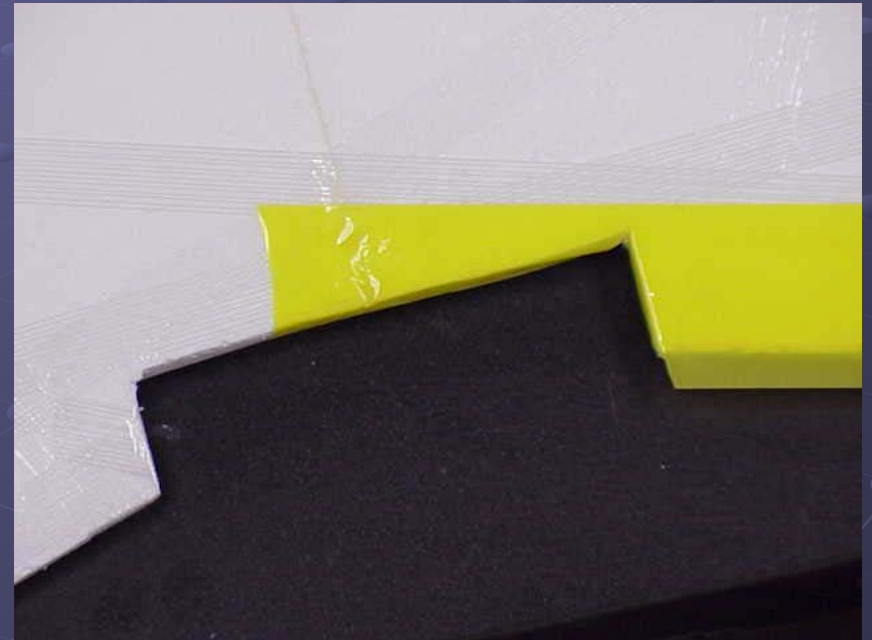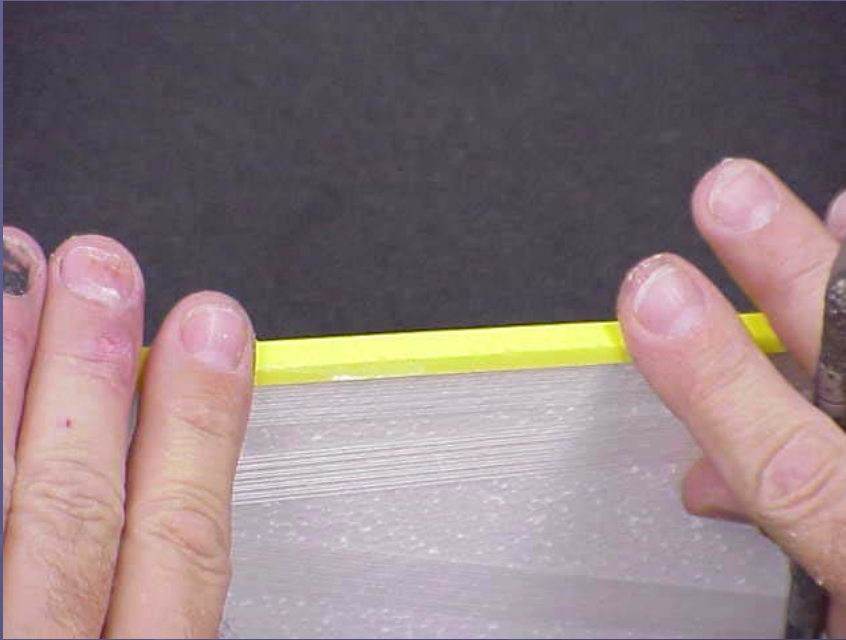
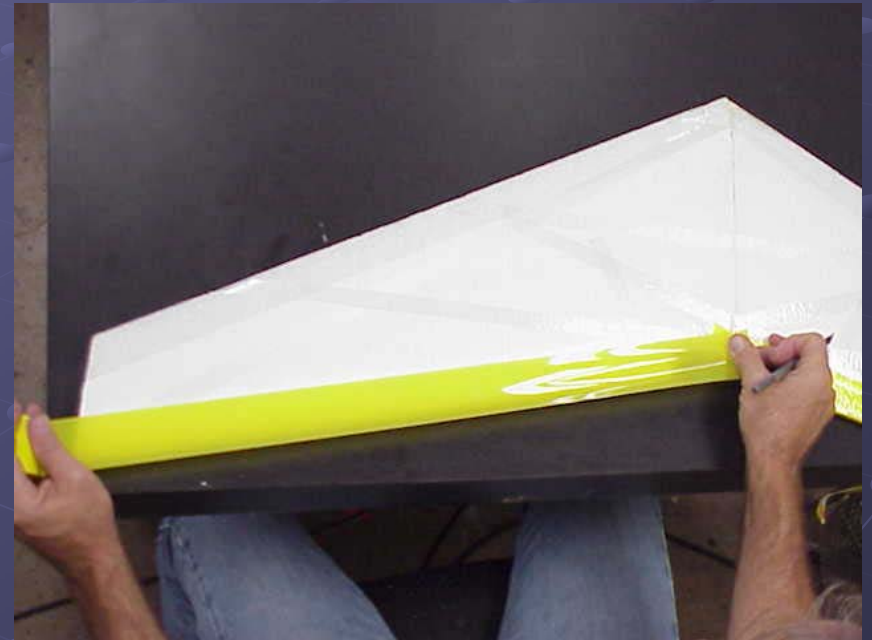Cut the excess as shown

Fold the tape around to the top of the wing.

Remember, you are working on the bottom of the wing first.

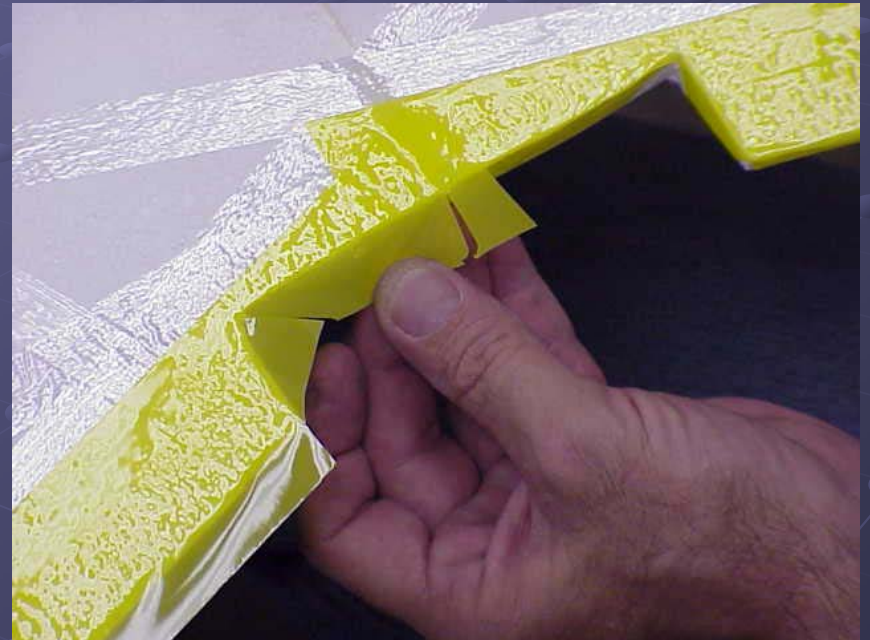Now fold the overlapped piece over the trailing edge as shown.

Now do the same to the other side of the wing bottom.

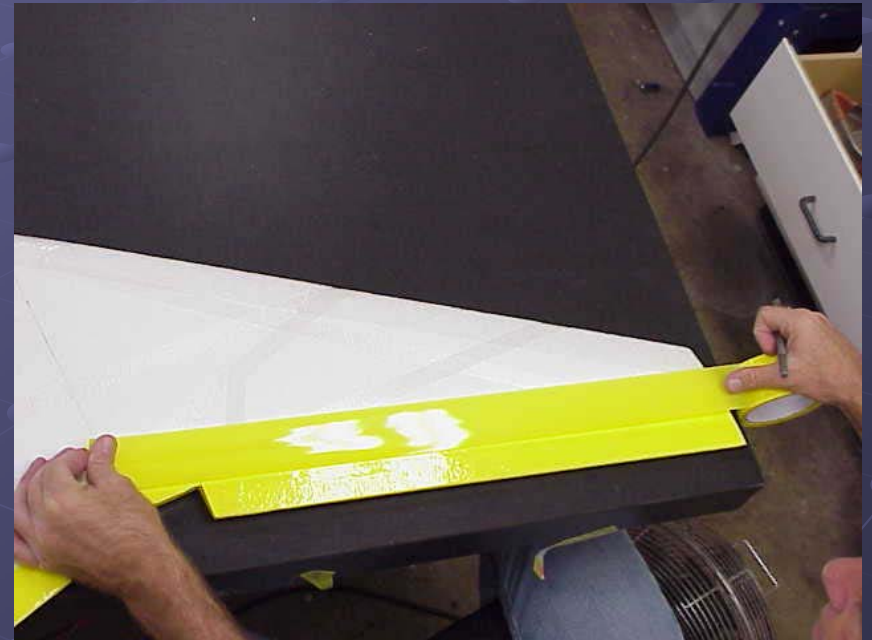Make the same cuts to remove excess tape before folding around the wing.

Fold them around as before.

Do the same with the piece around the trailing edge.

- Now start back on the first wing half with your second piece of tape. Remember to overlap about ¼" over the fires piece. Cut the tape long enough to overlap in the middle about 1" to 2" and the tip about ½"

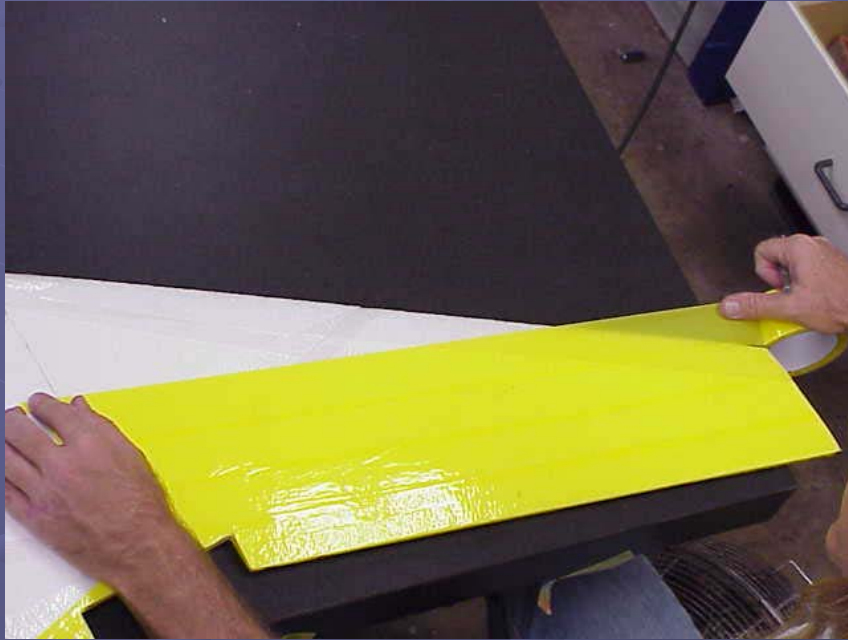- Fold the excess tape over the tip and press in place.

Apply the next piece of tape as shown. Allow the same overlap in the center and at the tip as in the step before.

- Make sure to trim the tape with a slight curve near the leading edge at the tip to allow the tape to lay flat on the tip.
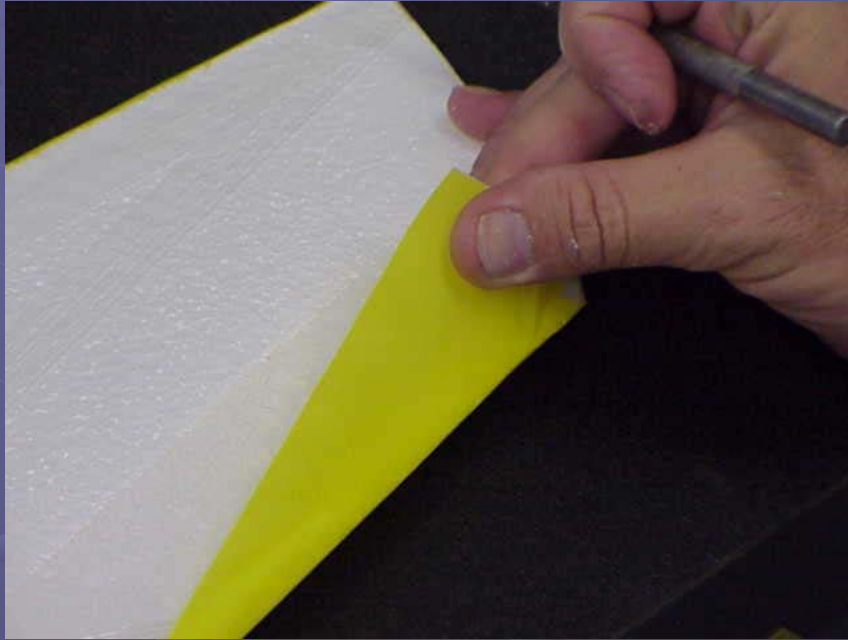
- Press firmly in place.

On the following pieces you will have to allow more tape to pass the leading edge so you can cut and wrap it around the leading edge.
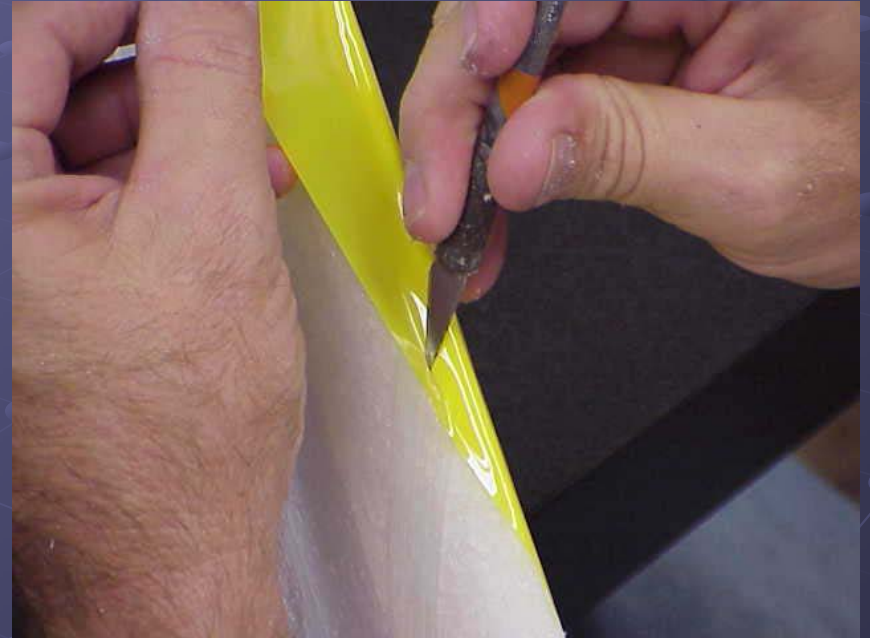
- After you have the piece pressed in place, hold the end near the leading edge with one hand.

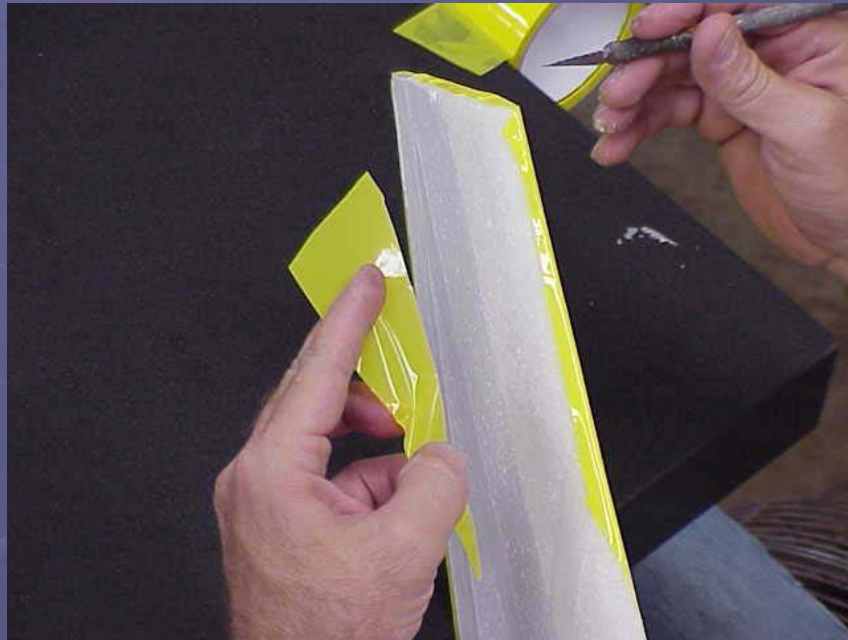Fold it around the leading edge as shown. In this picture, the wing is flipped over to show you how we wrap and cut the tape.

Again, holding the tape tight, cut the excess tape allowing about ½" of overlap around the leading edge.

Cut off the excess and press the tape firmly in place around the leading edge.

- Same as the previous step. Allow for the wrap around the leading edge.
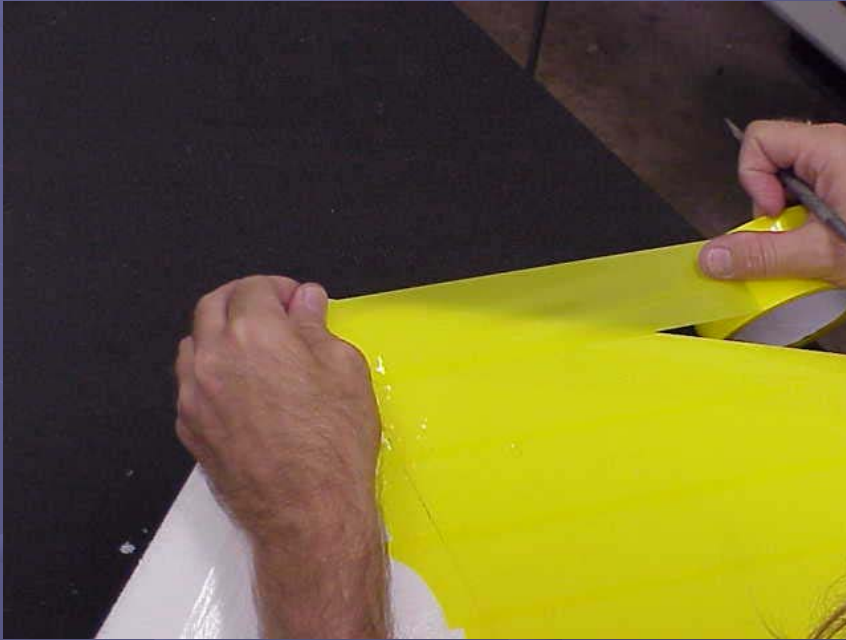
Wrap it around and cut off the excess.

- Next piece!

- Almost done with this part.
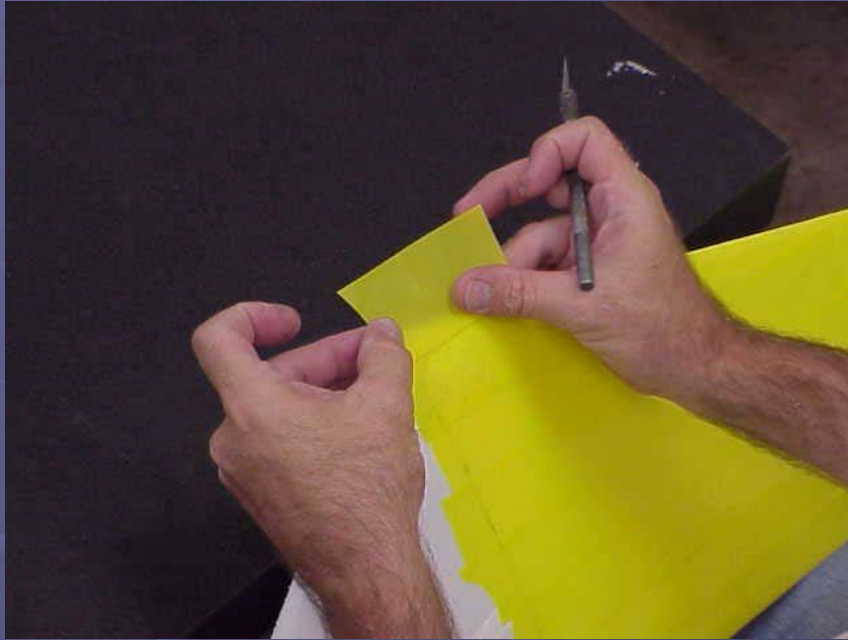
Last one on this part.

- Remember to make the overlap about ½" on the leading edge.

Sometimes, depending on how much you overlap the tape over the previous piece you might have to finish the nose with a small piece of tape as shown.
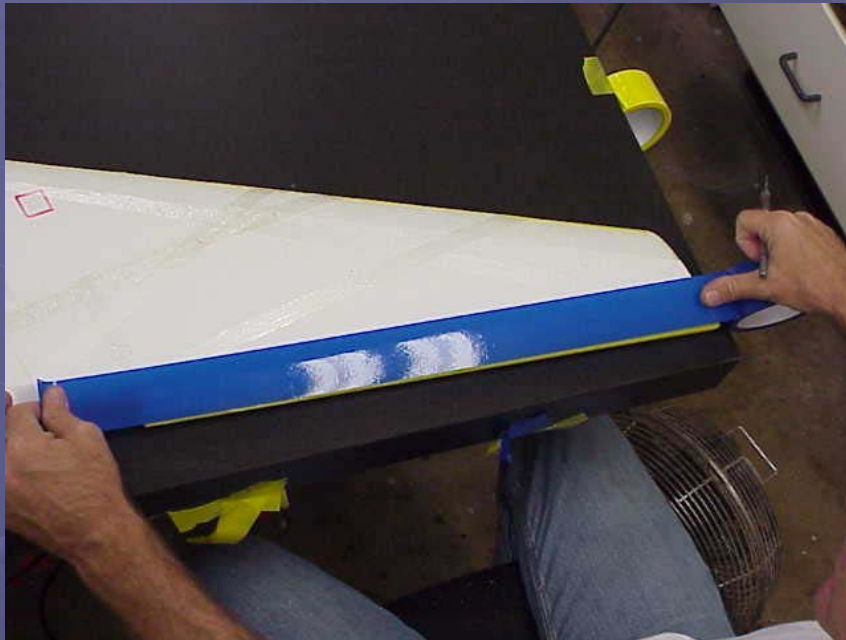
- Cut off the excess and wrap as before.

Repeat the previous steps for the other half of the wing bottom.

Wing top

- Starting at the trailing edge apply tape as shown. Do not wrap the tape around the trailing edge as you did on the bottom. Just line the tape up with the trailing edge and overlap it at the tip and center.

This parts gets a little tricky. When you cut the excess off, remember you will be wrapping around the ends and on to the other tape. If you have a second color as we are using you will need to make sure how much to cut off to make clean seams around the edges.

Cut as requires to allow the tape to overlap the tape from the bottom of the wing that wrapped around in the previous steps.

Again on the trailing edge of the wing top apply a piece of tape as shown. Do not wrap around the trailing edge, just line it up along the trailing edge and press firmly in place.
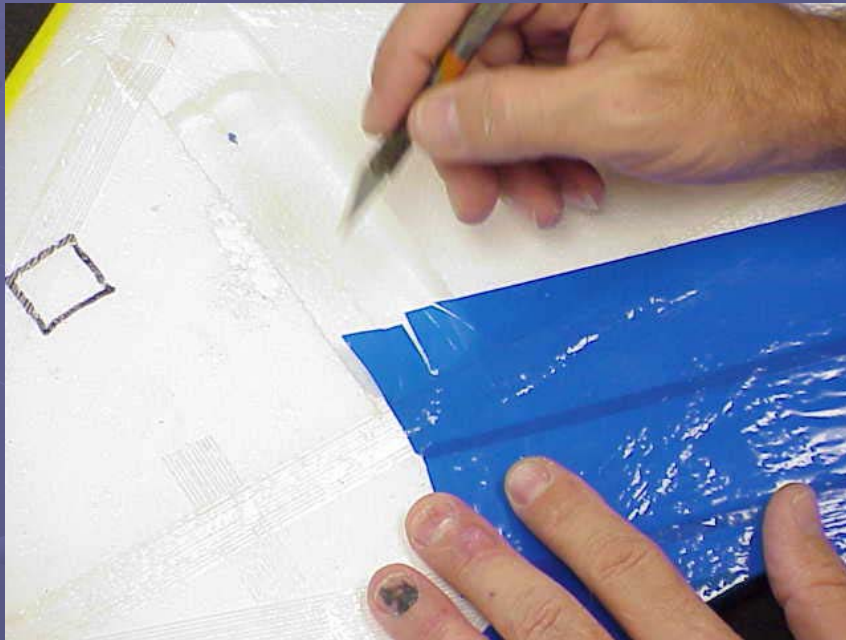
- Second piece on the top. Allow the tape to overlap about ¼" over the previous tape. You will see dark stripes where the tape overlaps. Make sure to keep it straight so it will look good.

- Third piece, same as before. Make sure to keep the overlap on the tip to about ½" max.

Where the tape crosses over the battery cut-out you will need to make a few small slits in the tape to allow you to fold it down in the battery compartmenr as shown
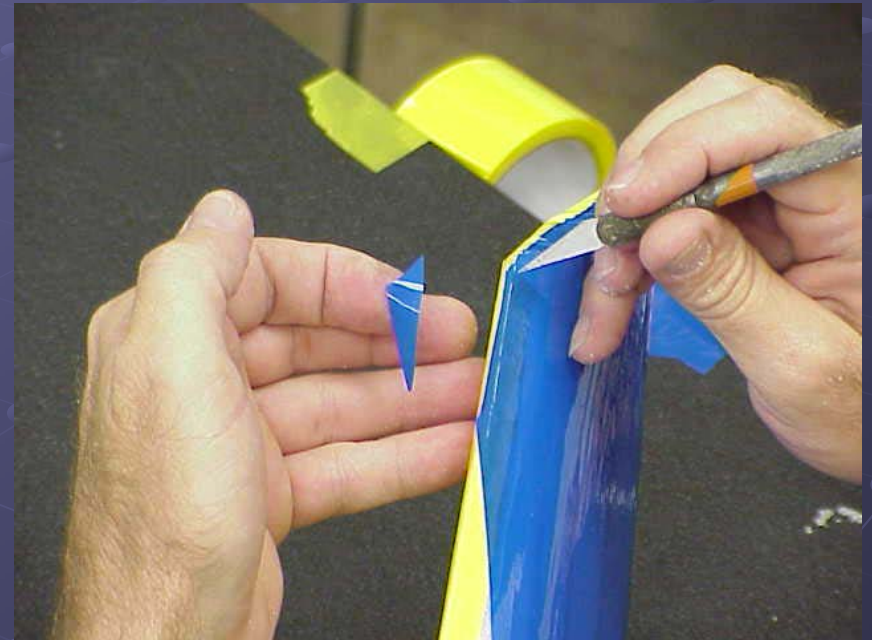
Press the tape around the corners as shown. Press them firmly in place.

On the leading edge you will need to make real clean cuts to keep the leading edge looking neat or you might decide to go back after you are done and add a contrasting color stripe over the leading edge to cover the mistakes you make when trimming.
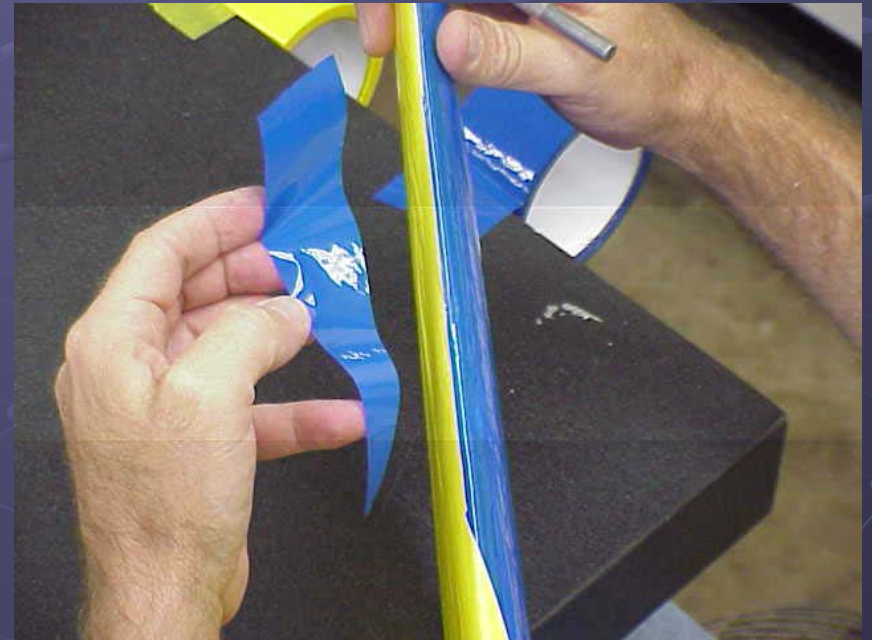
- Cut off the excess on the leading edge.

Forth piece.

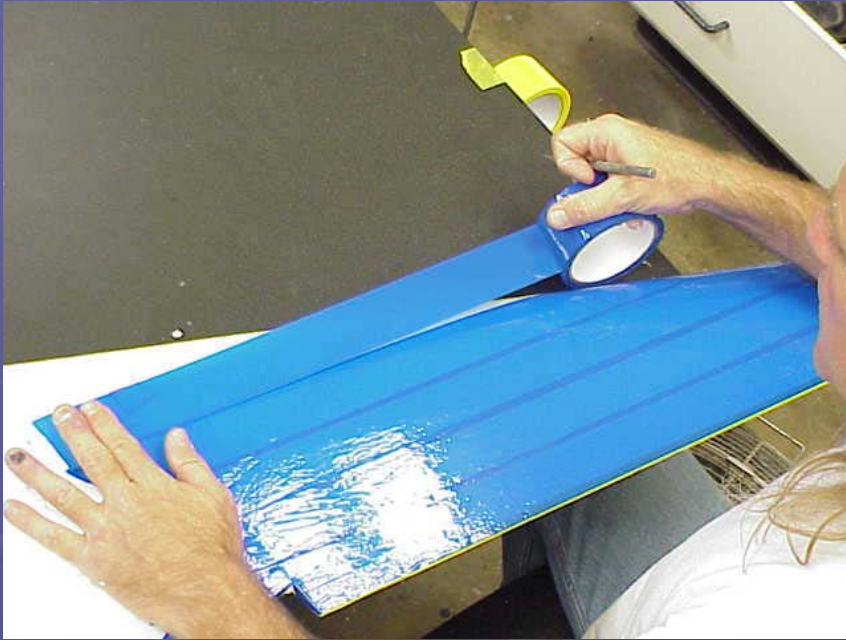Fold the center of the tape into the battery compartment as shown.

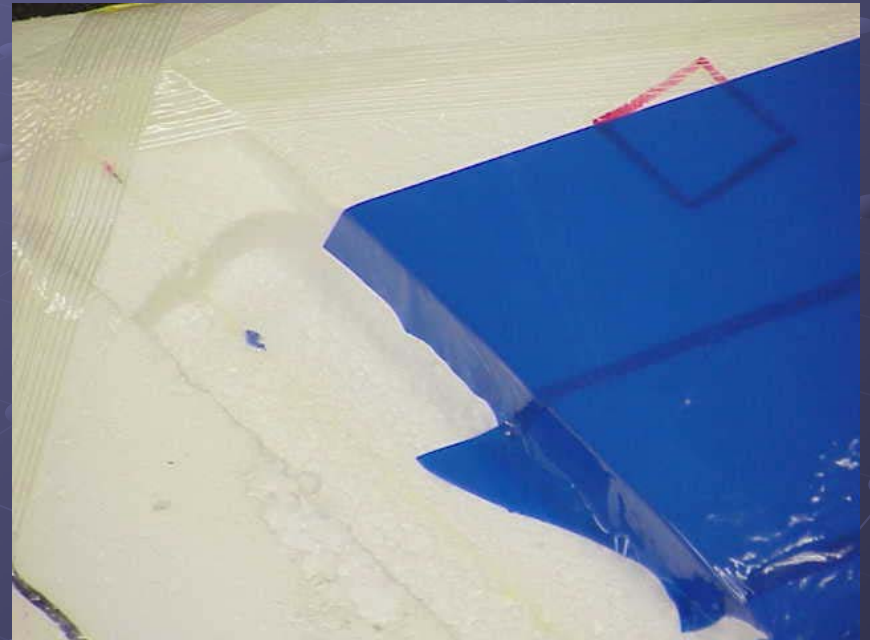Again, make sure to make your cuts look good on the leading edge.

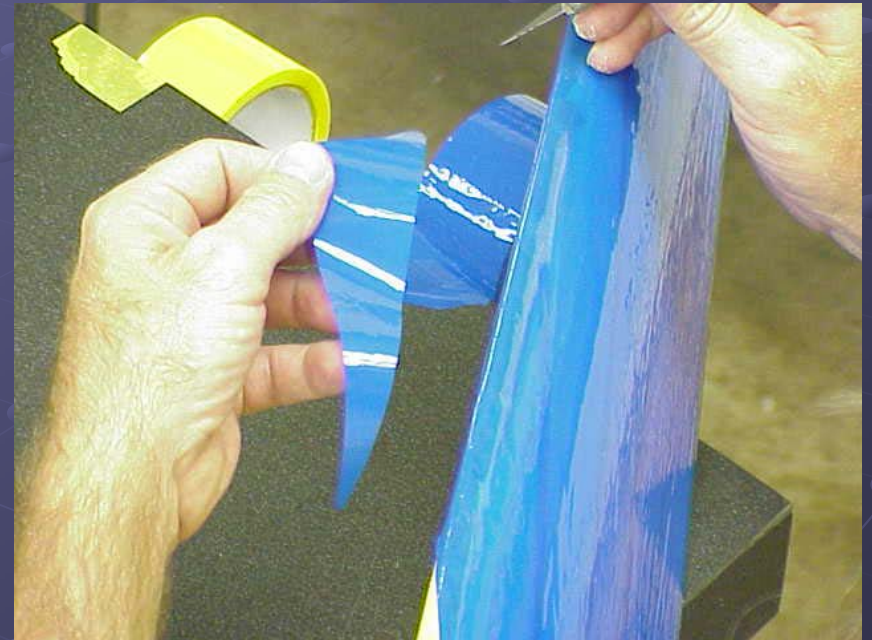- Remove the excess and press firmly in place.

Fifth piece.

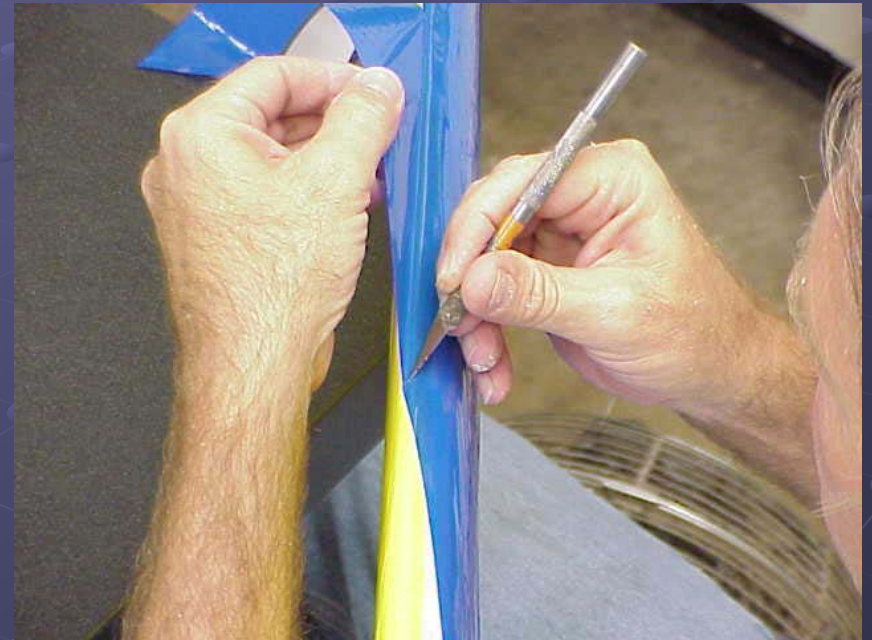Again press the tape into the battery compartment as shown.
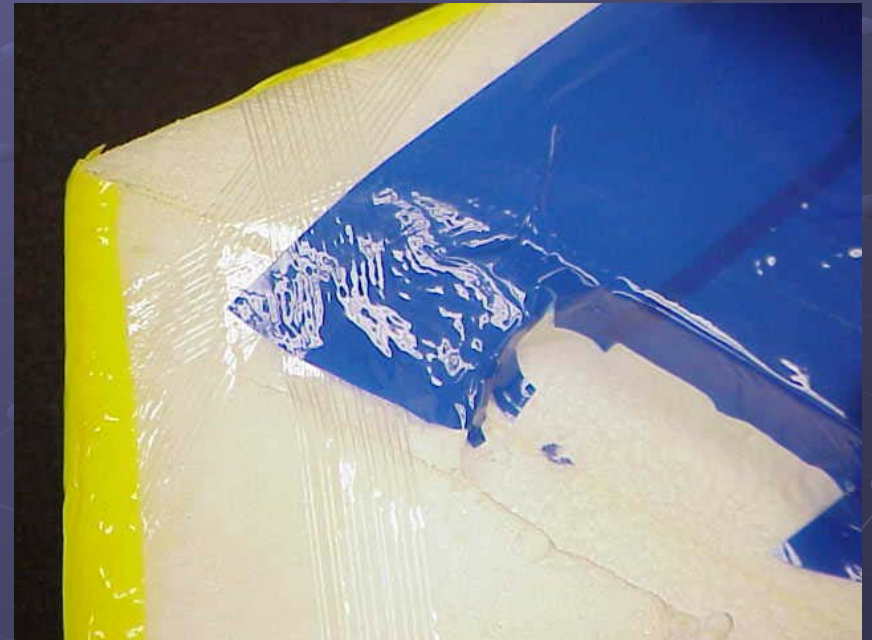
Trim the leading edge.

● Remove excess and press in place.
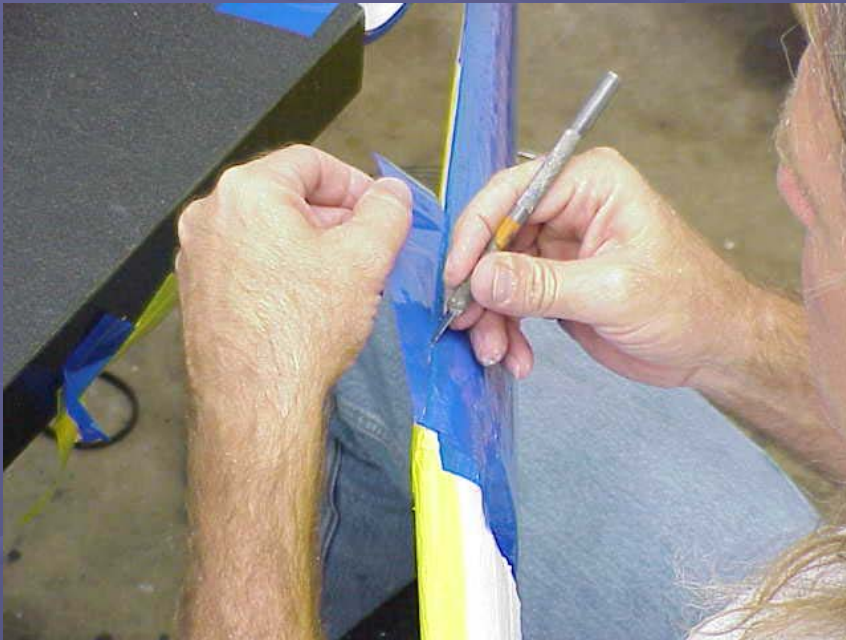
Sixth piece!

Trim, remove excess and press in place.

You might need to make some small slits in the tape to get it to fold around the front end of the battery compartment as shown.

- Last piece on this part. You will only need a short piece of tape. Hold it tight and press it around the leading edge and nose.

Cut off excess and press in place.

Do the other half now.

- Repeat the previous steps for the other half of the wing top.

More 3M 77

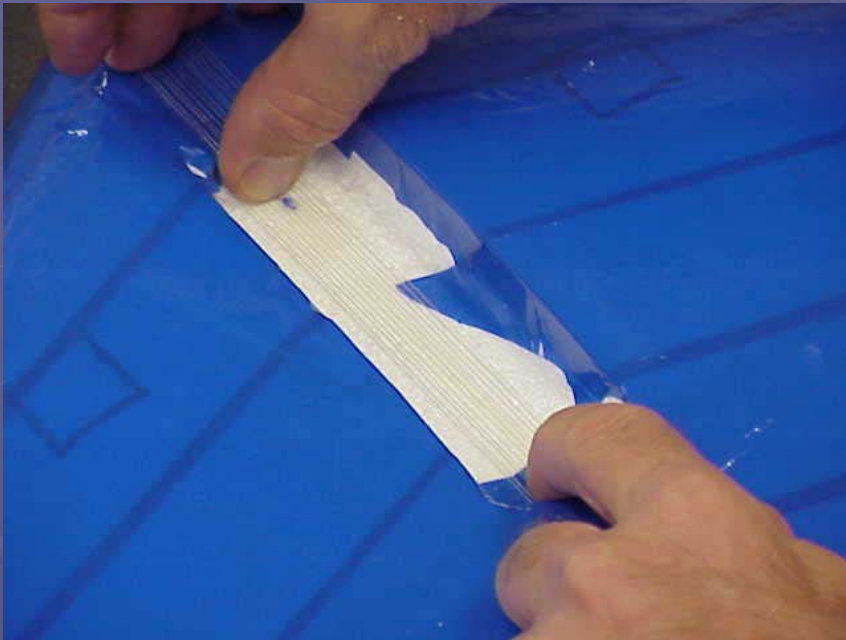- Spray a light coat 3M 77 to the center section. Let it dry about 20 minutes.

- Some strapping tape in the center section under the battery/motor tray helps. We use 3 small strips as shown. One in the center.

- Press it firmly in place following the battery cut-out from the front to the back.

Apply a shorter piece to the left of the center piece.

- Apply a shorter piece to the right of the center piece.

Press them firmly in place.

Mash all the tape flat

- I use a paper towel to press all the tape down. This allows your hand to slide freely over the tape.

- Start at the center and work your way to the tips. Make sure you get all the tape pressed down around the edges.
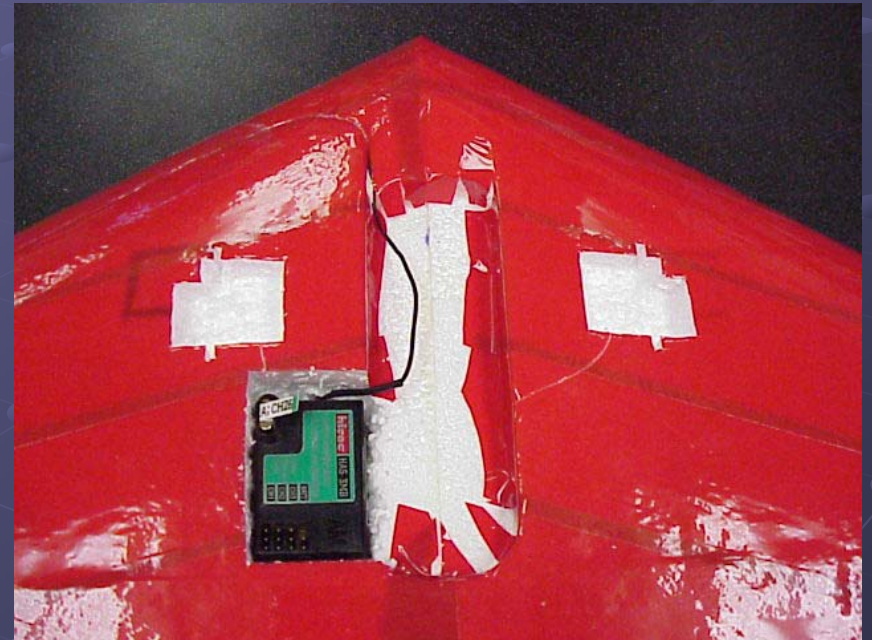
Heat gun time

- With a heat gun you can work out small wrinkles from the covering. Work fast or you can melt the foam under the tape. You can use this method later to get some twist out of the wing and remove wrinkles you get from crashes.
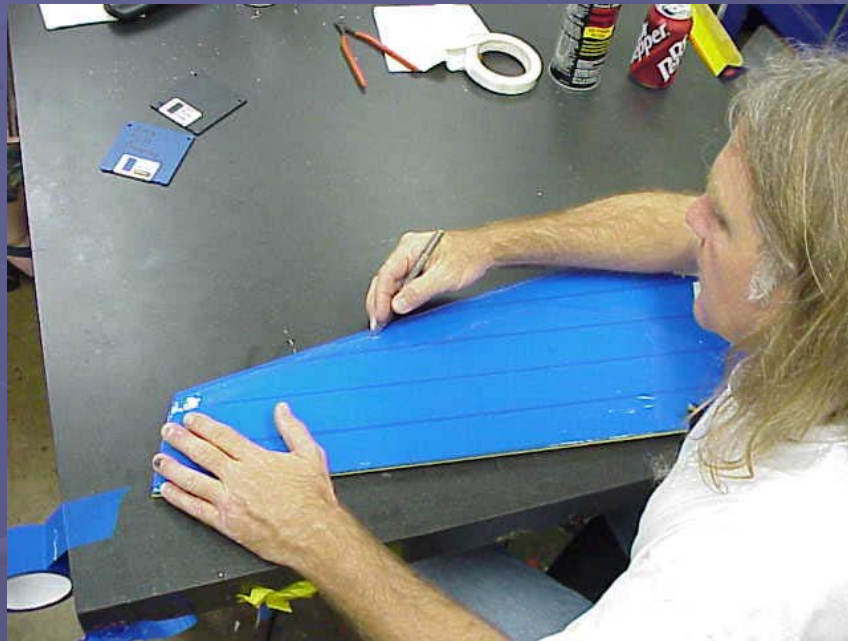
Radio installation

- Mark and cut out the foam for the servos and receiver as shown. The receiver is placed in the receiver compartment for clarity

Cut the antenna slot

- With a new sharp blade, start at the left wing tip on the top about ½" back from the leading edge. Make a shallow cut, about ¼" deep, into the top of the wing.

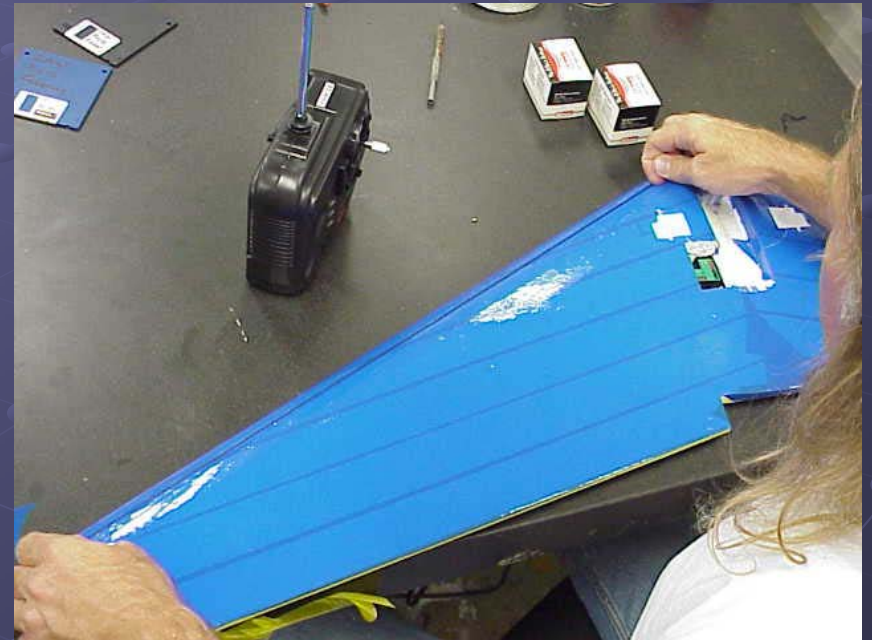Follow all the way down the leading edge to the center of the wing.

- As you get to the center, turn the cut toward the battery cut-out area along the left side.

● Stick the receiver antenna into the slot you just cut.

Apply a little tension to the antenna as you push it into the slot starting from the center of the wing to the left tip.
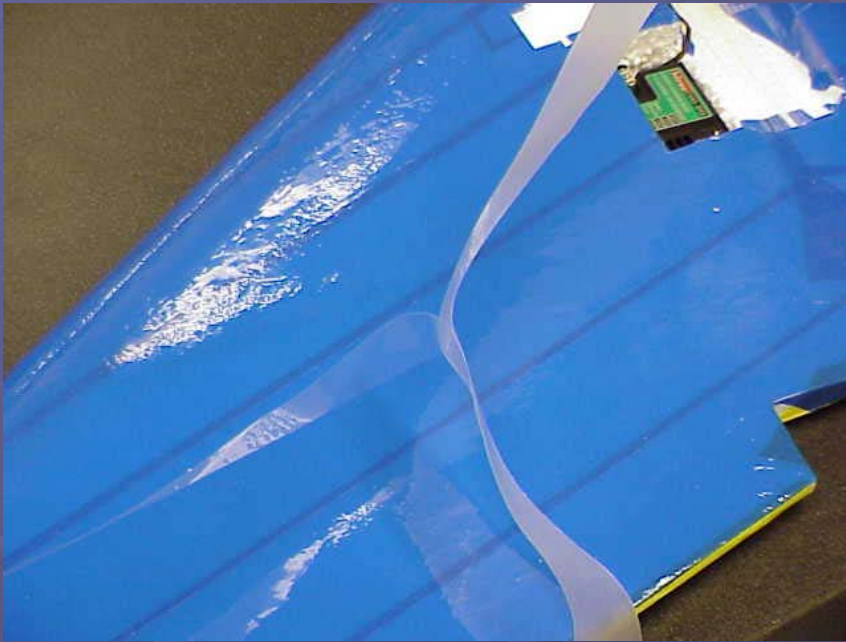
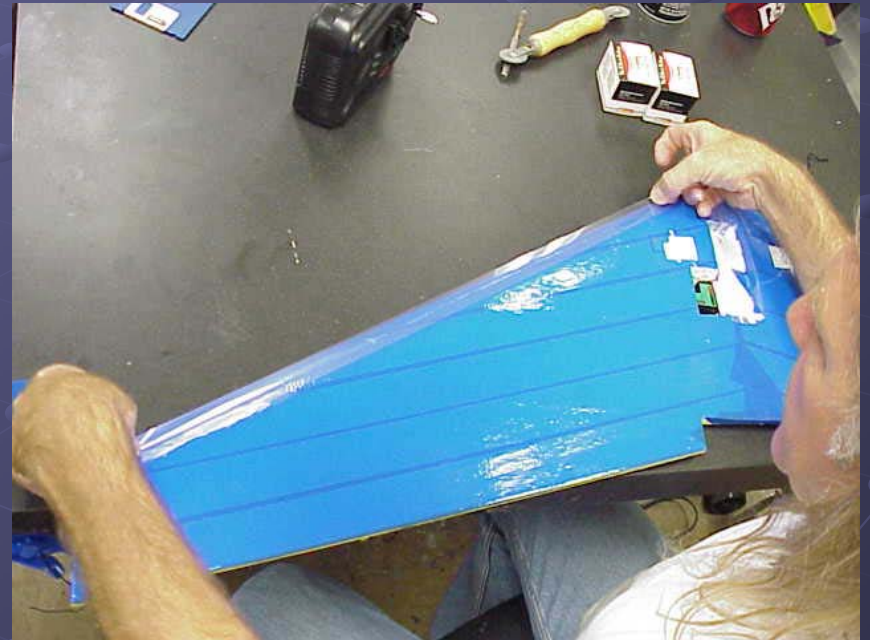Use your finger nail to push the antenna just below the surface.

We use the control surface tape to cover the antenna. You may chose to use colored tape to cover the antenna.
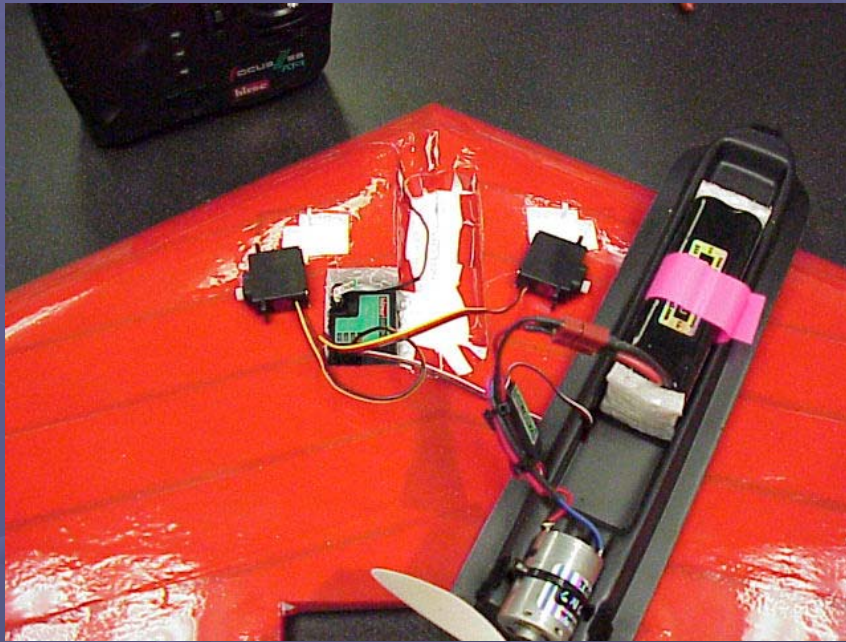
Remove the backing from the hinge tape.

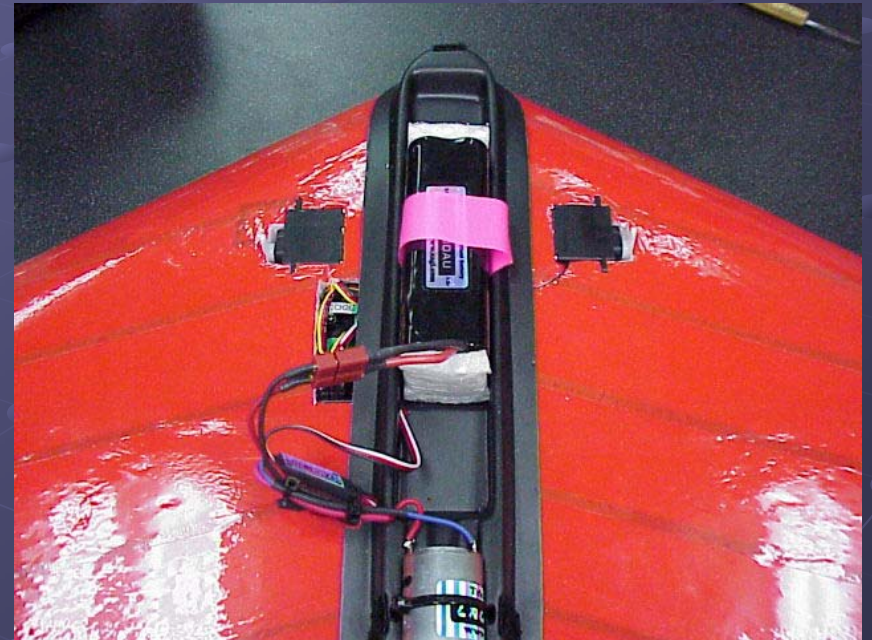Stretch it out over the antenna and press it into place.

- Where the receiver antenna is running along the battery cut-out in the we, we have added a short piece of strapping tape to keep it pulled along the left side of the wing. This helps prevent the antenna from being cut or torn in the case of a crash.
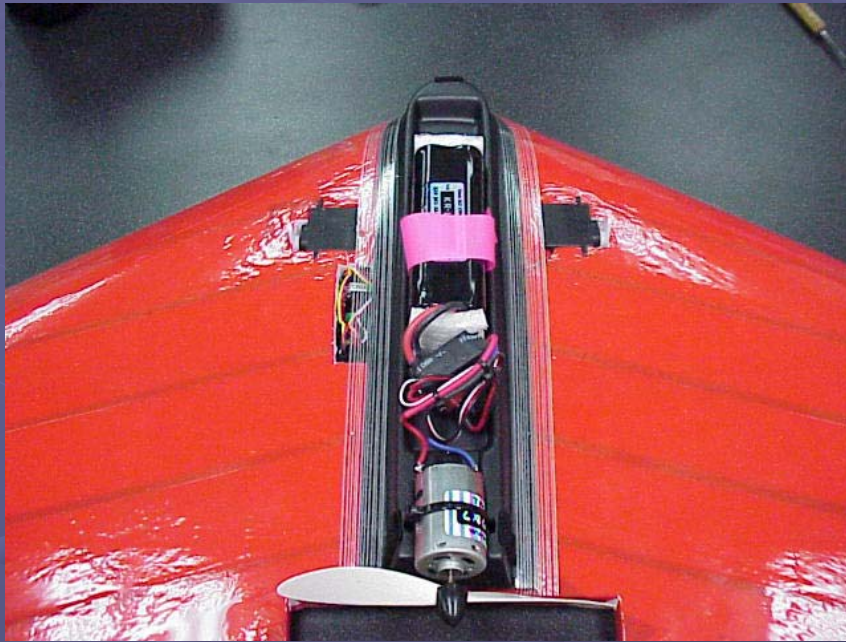
Connect the completed motor tray to the receiver and servos to test for proper operation. DO NOT RUN THE MOTOR WITHOUT HOLDING IT!

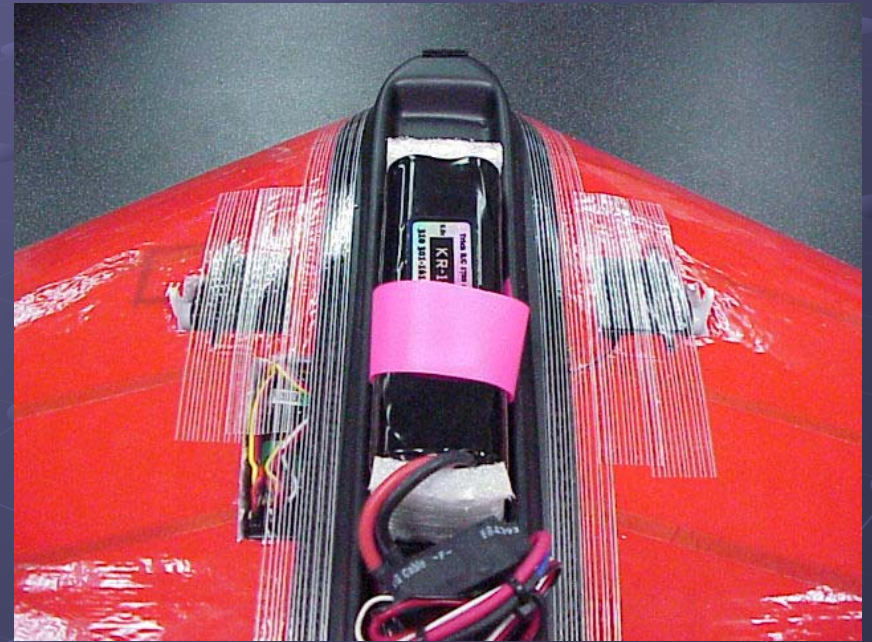Press the servos into the wing and set the motor tray onto the wing. Check for a proper fit at this time.
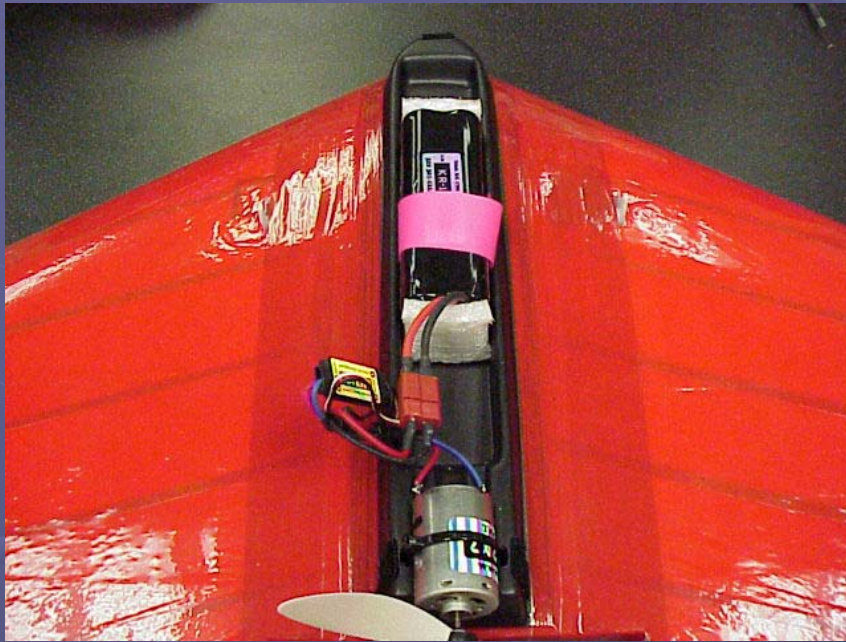
More 3M 77

- Spray a real light coat of 3M 77 on each servo and let it dry about 10 minutes. This will help the strapping tape in the next step stick to the servos better.

Apply one strip of strapping tape to each side of the motor tray. Allow the extra length of tape to wrap around the wing in the front and back of the motor tray.

Spray a small amount of 3M 77 to the top of each servo. Let it dry then lay 2 short strips of strapping tape to cover each servo.
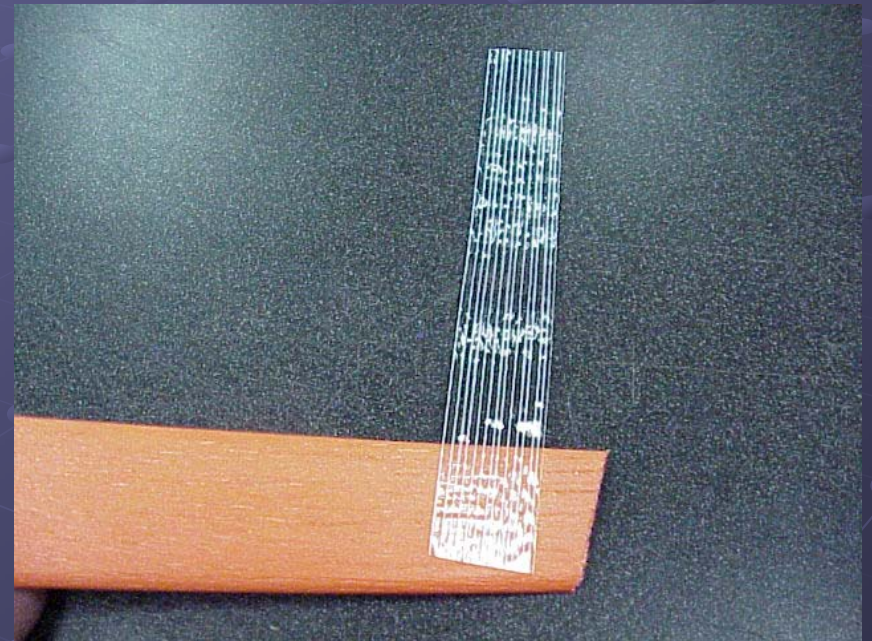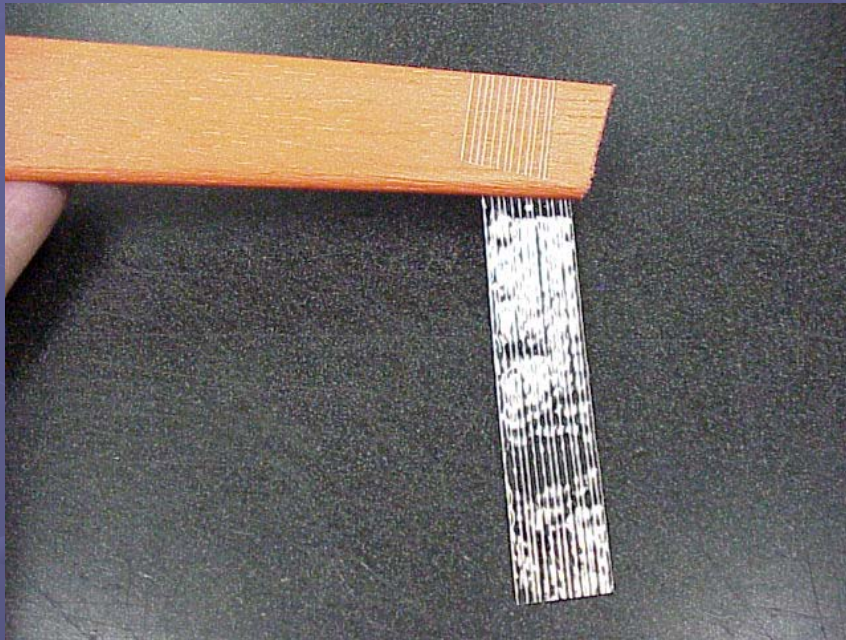
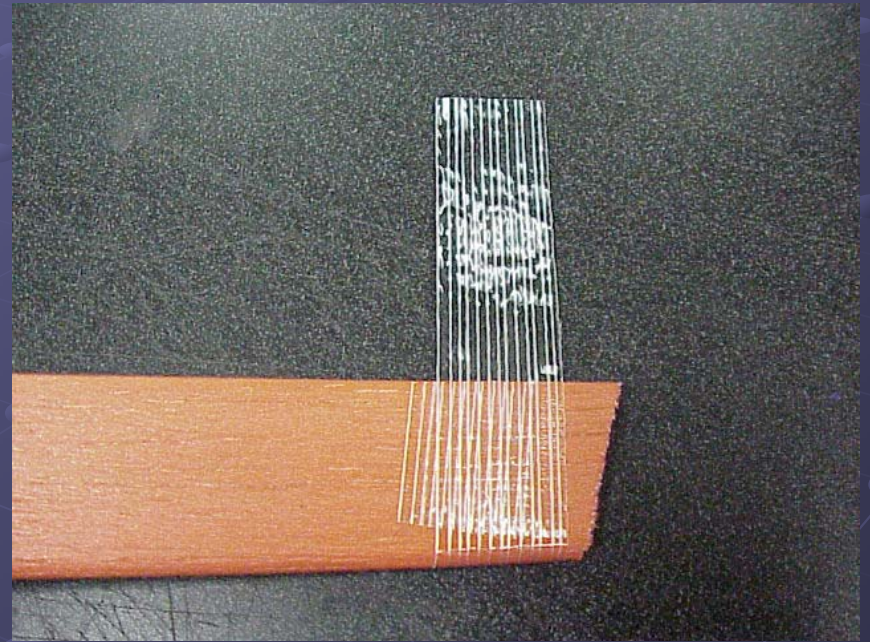Cover the strapping tape with colored tape for a nice finished look.

Hinges

- This is a little tricky to explain. First cut 4 lengths of strapping tape for each side. (8 total) Starting on the top of each control surface stick the tape on facing forward.
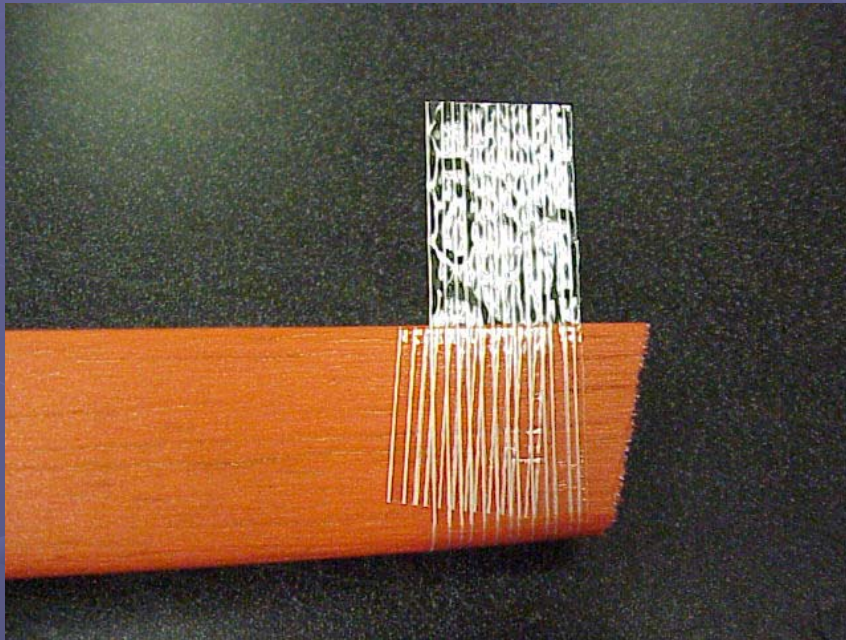
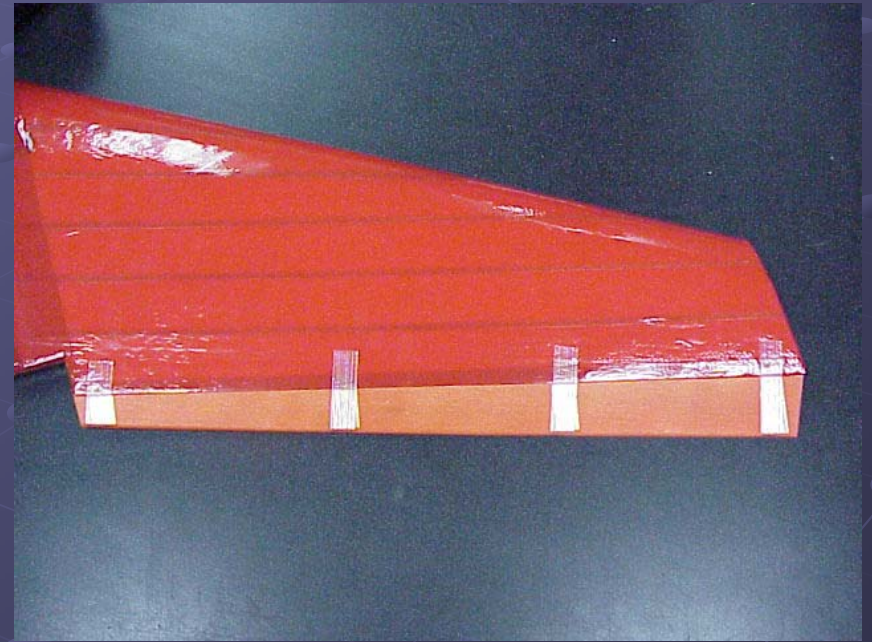- Wrap around the leading edge to the bottom of the control surface.

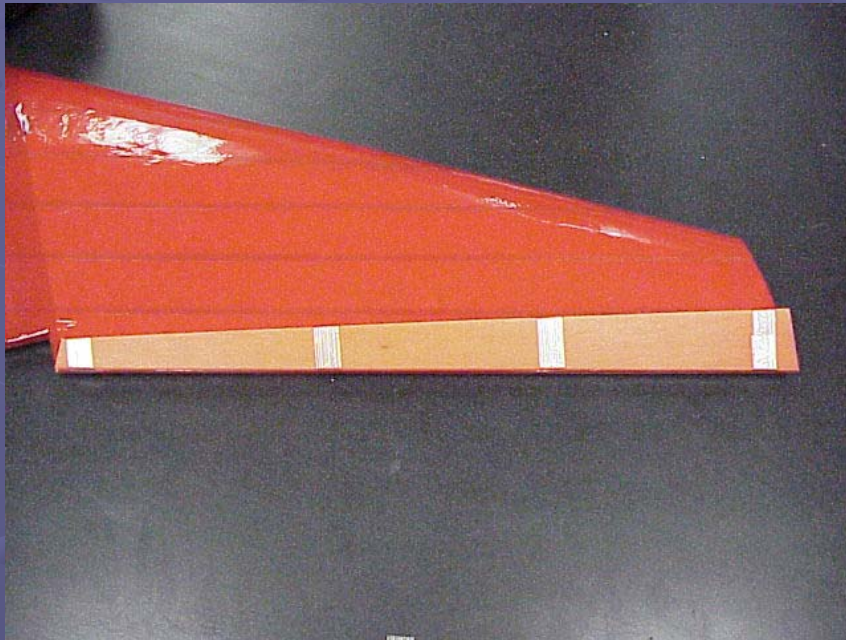- Continue the wrap back to the top.

- Cut off about .75" past the leading edge of the control surface.

- Do this to each elevon 4 times evenly spaced apart.

- From behind the airplane deflect the elevon down about .5" to allow for control throw and place the elevon onto the wing without any gap between the wing and elevon. Press the tape firmly in place.
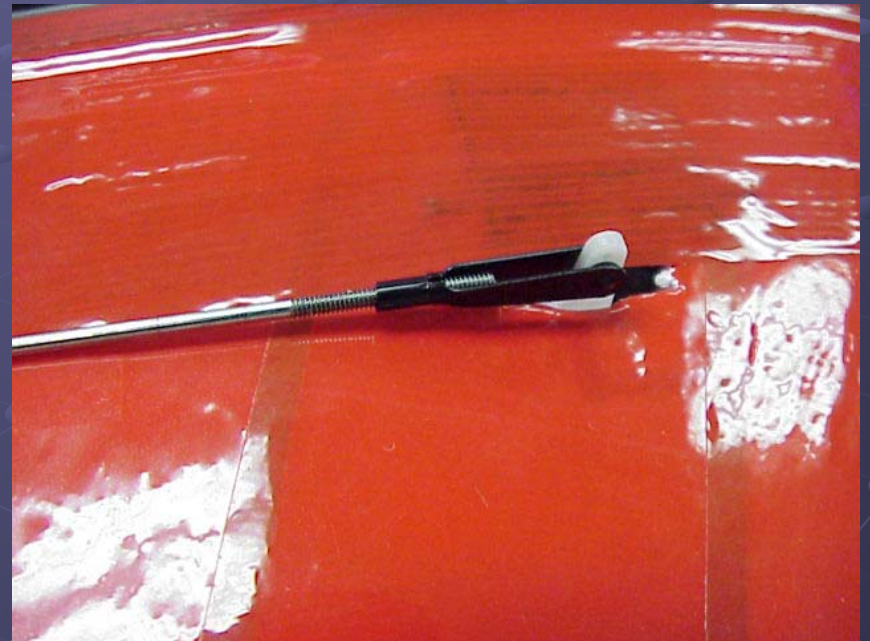
- Flip the elevon all the way up and onto the wing.

- At this point put a short piece of strapping tape on the back side of each hinge to the bottom of the wing.
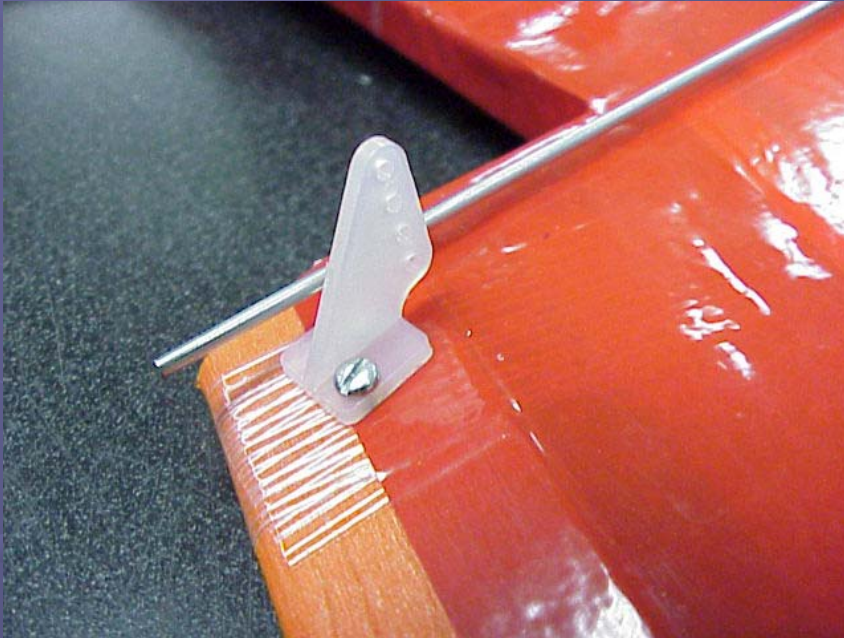
Hinge gap seal

- No picture for this step yet.

- Using the same color tape you used on the top of the wing, apply a piece of tape along the hinge gap along the trailing edge overlapping the elevon about ½" and press the tape firmly in place.
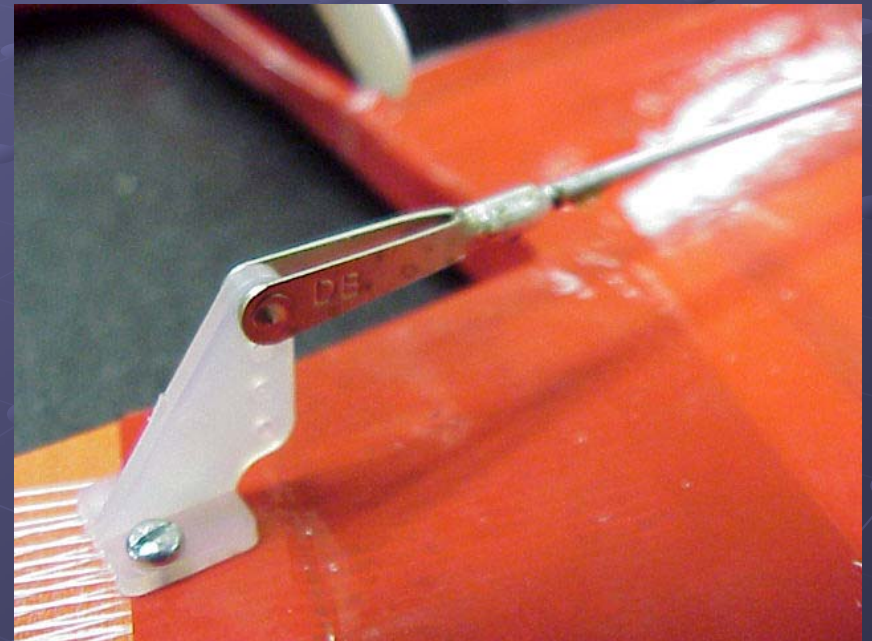
Control links

- Install threaded clevis to the servo and thread the rod into the clevis half way.

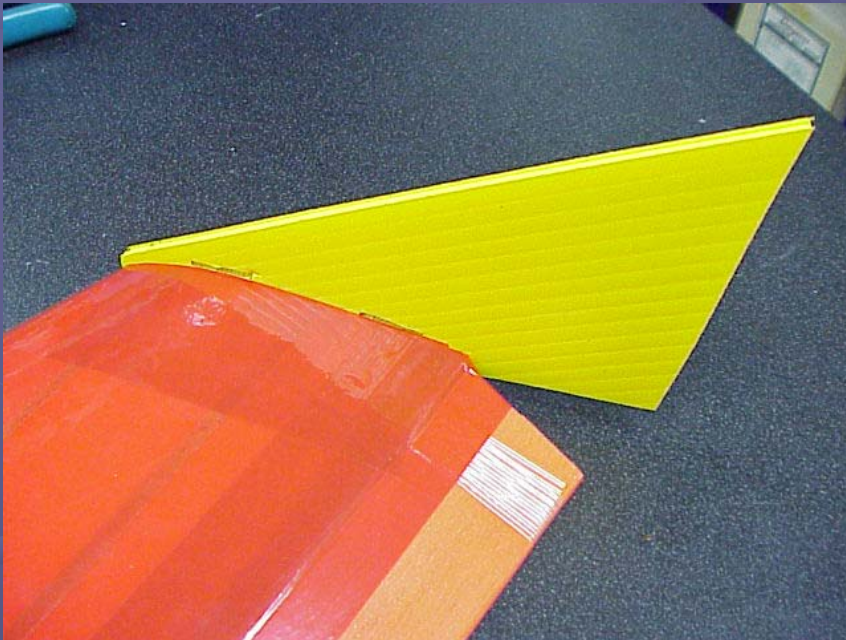- Install control horn to the elevon as shown.

- With the radio on, cut the rod to length and use a solder clevis to complete the control linkage. Remember to reflex the elevon slightly (up) before soldering.
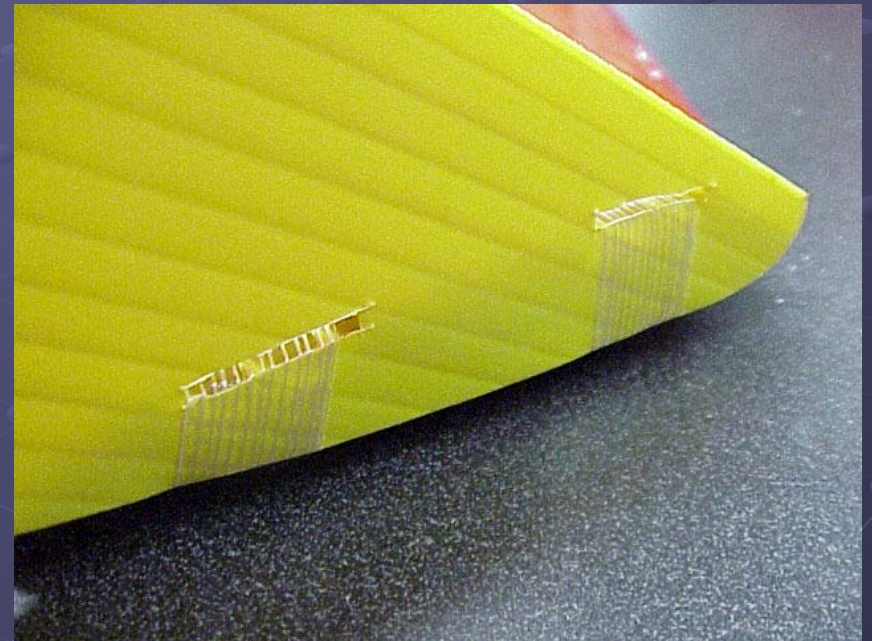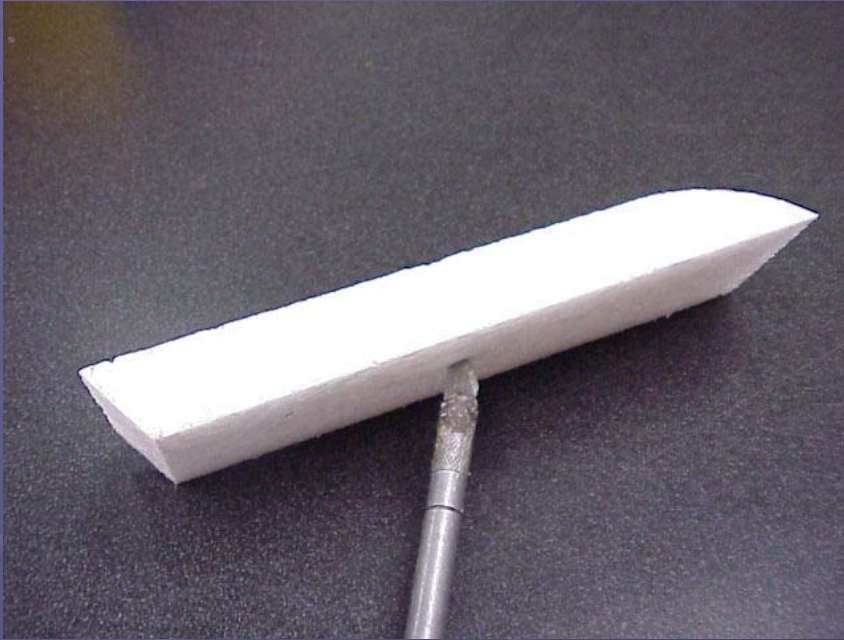
Tip mods

Install the coroplast tips as shown. Do not use the Trick R/C supplied tips. They flutter badly.

- Side view of the tape on the tips. Note the 2 slots cut in the tips and the tape wraps around to the bottom of the wing.
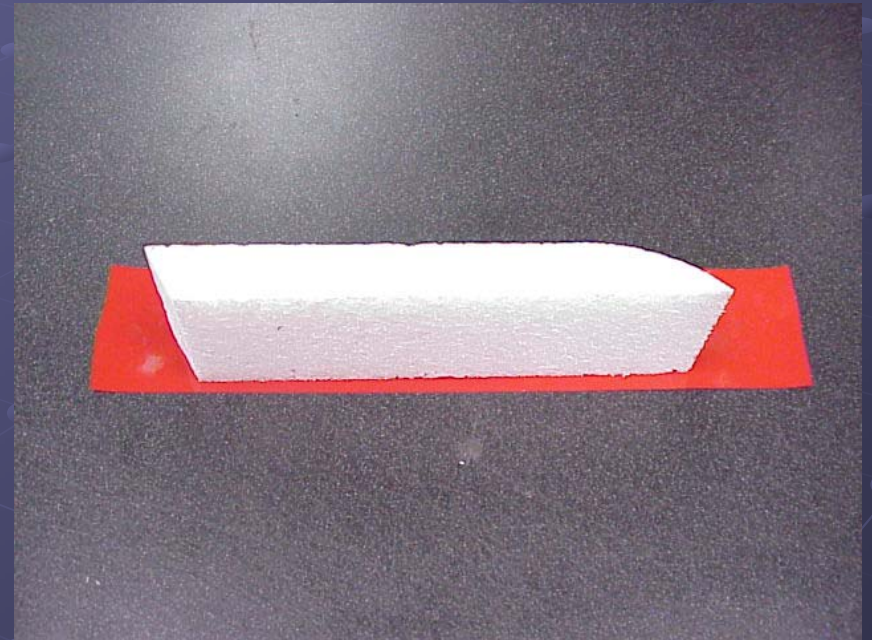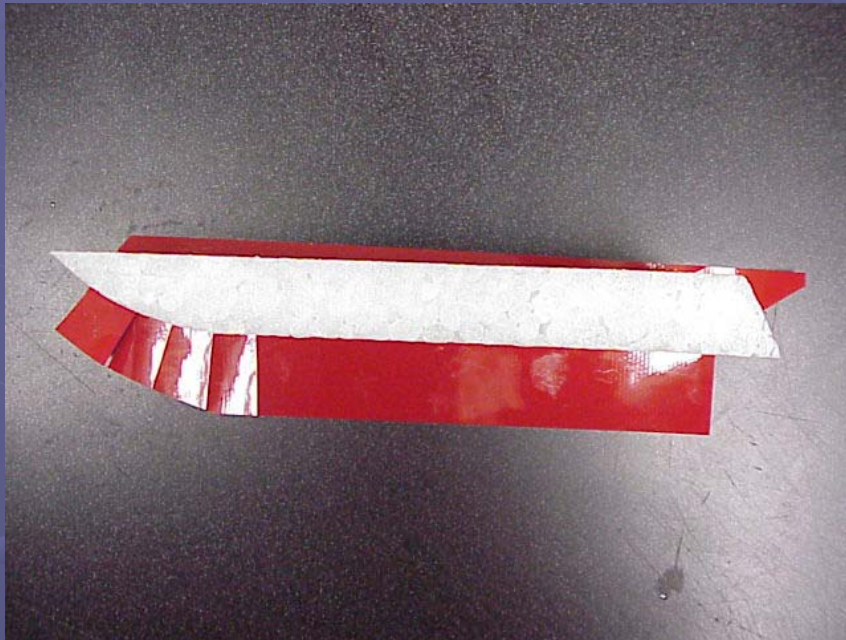
Launch/Landing Skid

- Use the Mike's supplied cut skid. Stick it on an Xacto knife and spray a light coat of 3M 77 on all sides.
- Let it dry

Apply a strip of tape as shown on one side.

- Make small cuts to allow the tape to fold around the bottom sides about .5"

- Only allow about .25" of overlap on the top side.

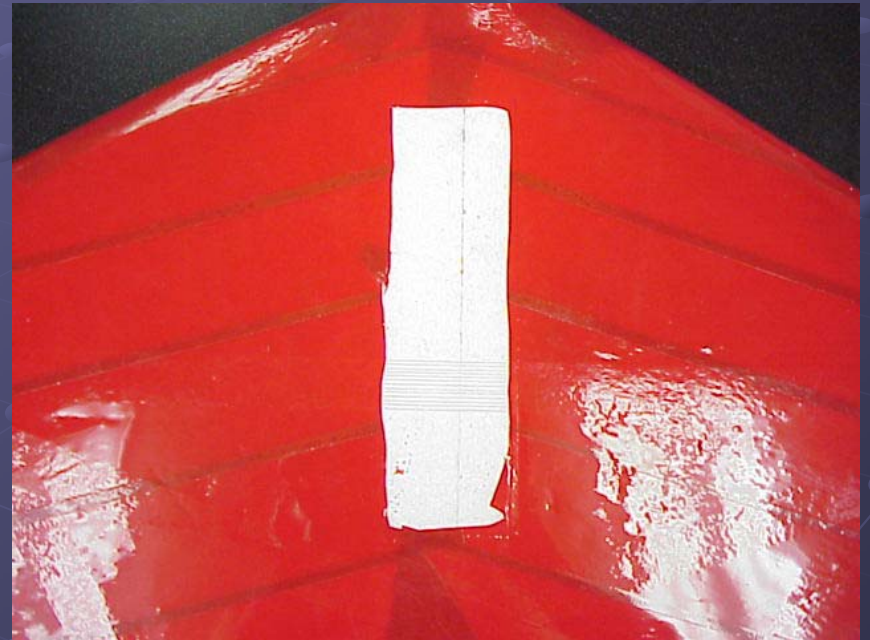- Fold tape around as shown.

Now do the other side the same.

After both sides are done apply a strip on the bottom to seal the 2 sides together allowing .25" overlap on the front and back.
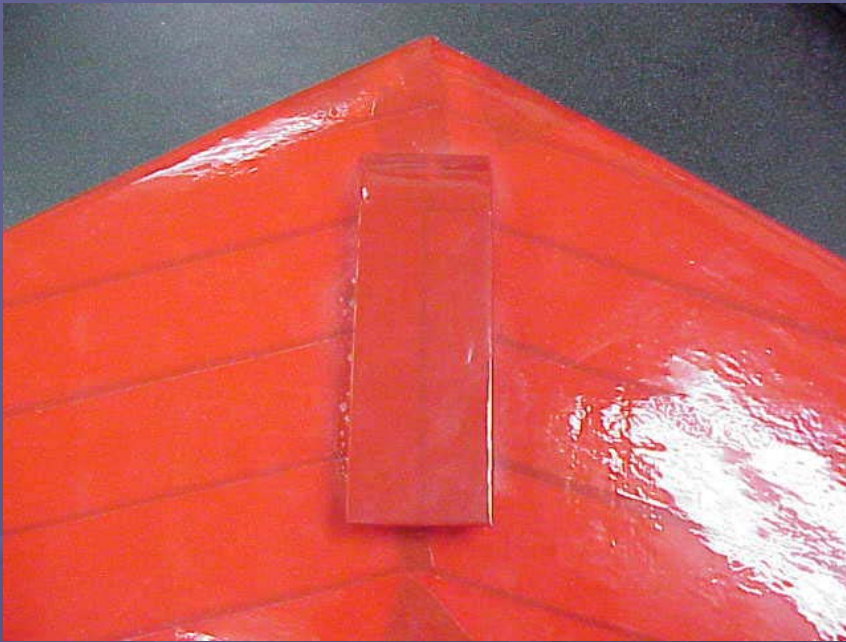
- This is what the bottom looks like after the tape is applied.

- Lay the skid on the bottom of the Zagi and remove the colored tape from the wing.

- Spray both with 3M77 and allow then to dry 15 minutes

Press the skid to the bottom of the wing.

Completed Zagi

- When it comes to color for your Zagi you can be creative!

Another color scheme

- Just remember to pick colors that add contrast to identify the top from the bottom.

Let us know what you think

- If you have questions or comments for Mike send emails to: mike@mikeshobbyshop.com

- If you need more help in construction or other information on Zagi's send emails to: info@mikeshobbyshop.com