Top Flite P-47D Build

By Paul Fleming

4/21/2015

The P-47 has always been one of my favorite airplanes. Last September my Hanger 9 P-47 came home in a bucket due a servo failure resulting in un commanded rolling. The plane had been out of production for a while and was no longer available for sale.

Searching the web I found Top Flite offered a P-47D with a three inch larger wing span. This plane is offered as an ARF or an RTC. Since I don't care for the "Tar Heel Hal color scheme or the Monocoat covering I bought the Ready To Cover version and saved a hundred bucks. The box is the ARF box with a RTC sticker.

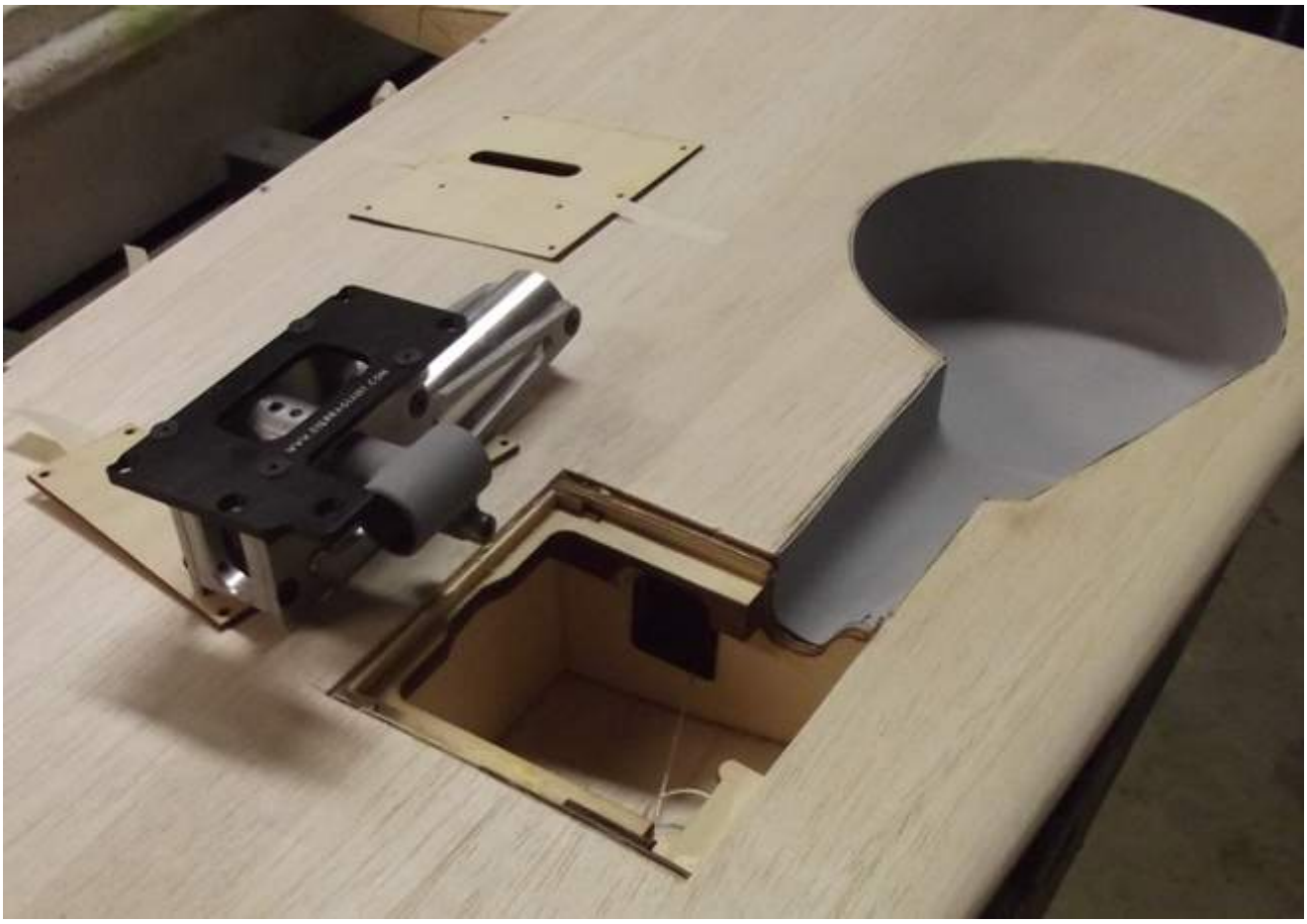
This airplane is designed for gasoline power and I prefer electric. I do not expect this will be a difficult conversion. I plan on using a Rimfire 1.60 with 12s LiPo for power. I will not select the batteries until the plane is just about finished. The weight of the batteries will be the determining factor in their capacity. The idea is to get the most capacity that the CG will allow.

Access to install the flight batteries was the first decision. I have a basic idea where the batteries were to go from previous P-47. The internal structure of the TF P-47 lends itself well to adding a hatch on the top of the fuselage with little effort. Once the hatch opening was finished I applied 3/4oz fiberglass cloth to the fuselage. Rather than resin I used Minwax Polycrilic. The benefit of the Polycrilic is its low weight. The Polyacrilic is water based, as it drys 75% of it's weight evaporates. I used two coats and then primered the fuselage with Rustoleum spray can primer.

Two heavy coats of primer were applied to fill the cloth weave. Most of which will be sanded away to a smooth finish.

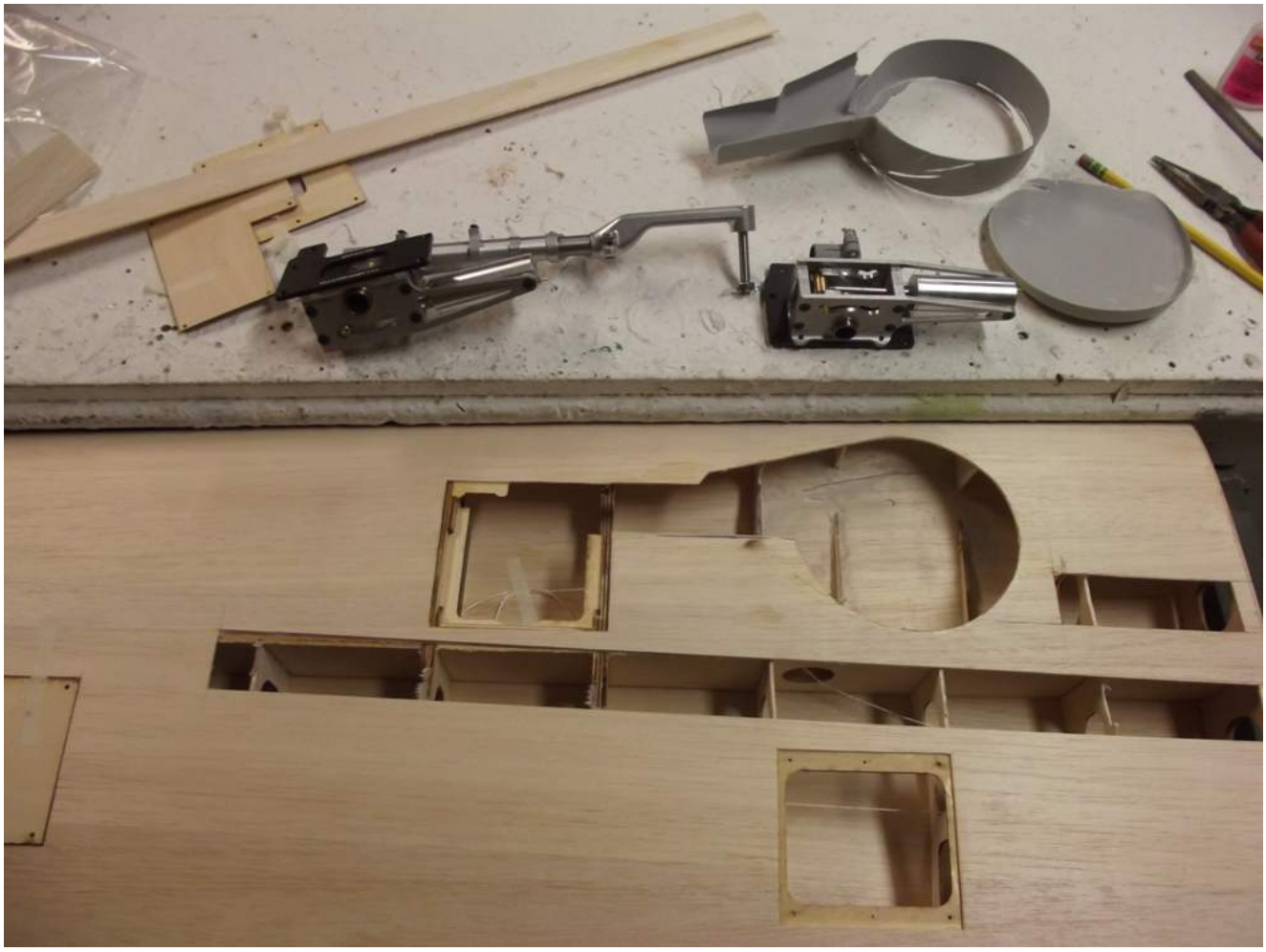
4/23/2015

After a couple hours of sanding primer I decided to see how much work would be involve installing the Sierra Landing Gear. The plane was built for Robart retracts, but Sierra's are much more heavy duty and more scale looking. As I suspected they were too big. I went on line to the RC Scale Builder web page www.rcscalebuilder.com looked up the Top Flite P-47 forum and found a build that had pictures of how a builder had modified his wing for the new gear. It's a little hard to see below but the gear isn't going in that hole.



I also found a discussion on the weak main wing spar box. The problem seems to be the wing spar box is plywood that is not constructed out of heavy enough material. I have decided to strengthen the wing box with carbon fiber. I went to Dragon Plate Products www.dragonplate.com. To see what is available.

There was a wealth of carbon fiber mats, tubes and shape structures. Ok this is the place to get what I need. Now what do I need. Since the plane comes already sheeted I removed a couple of strips of balsa sheeting on both sides of the spar. With the wing opened up and access to the spar box I can see where to strengthen.

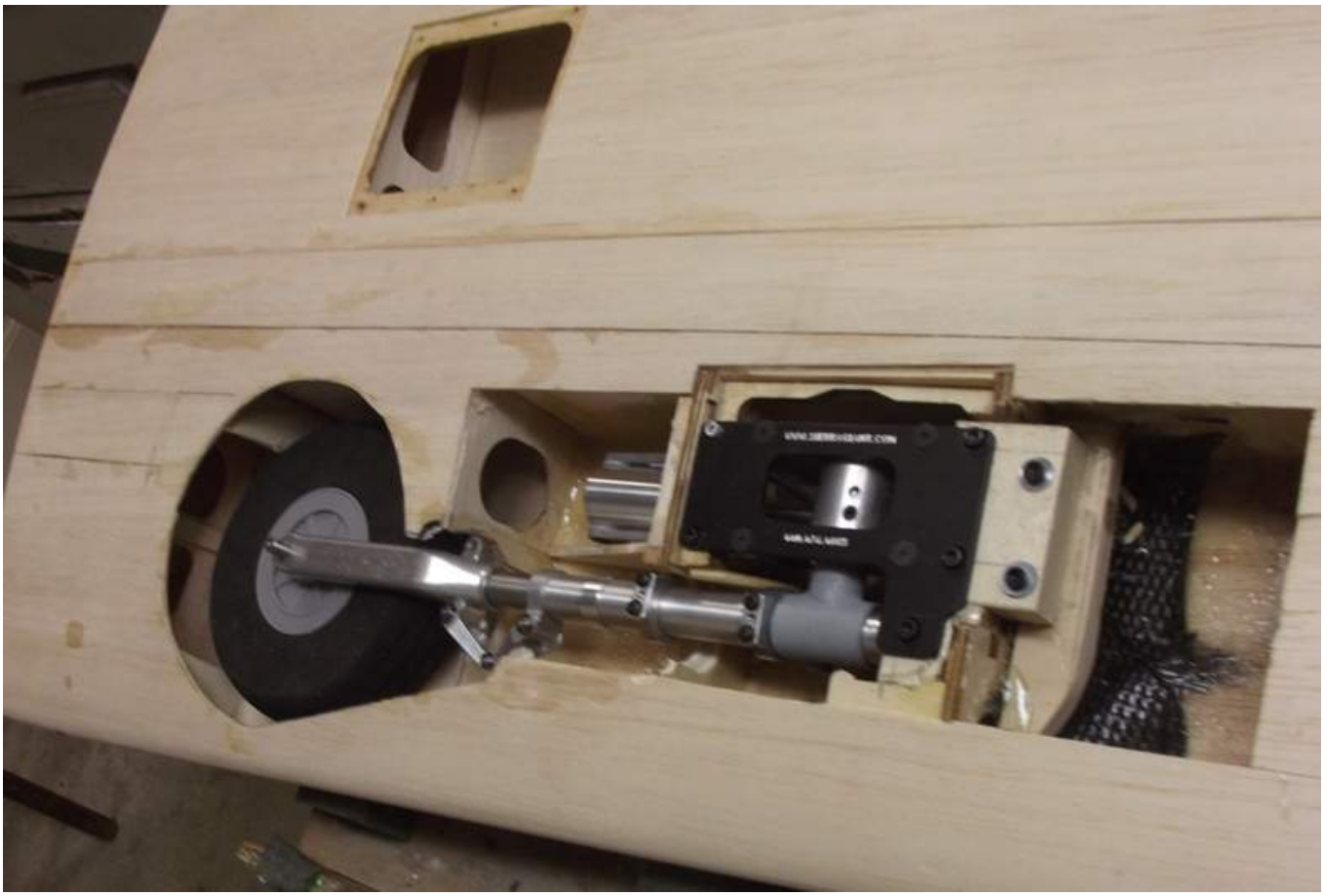


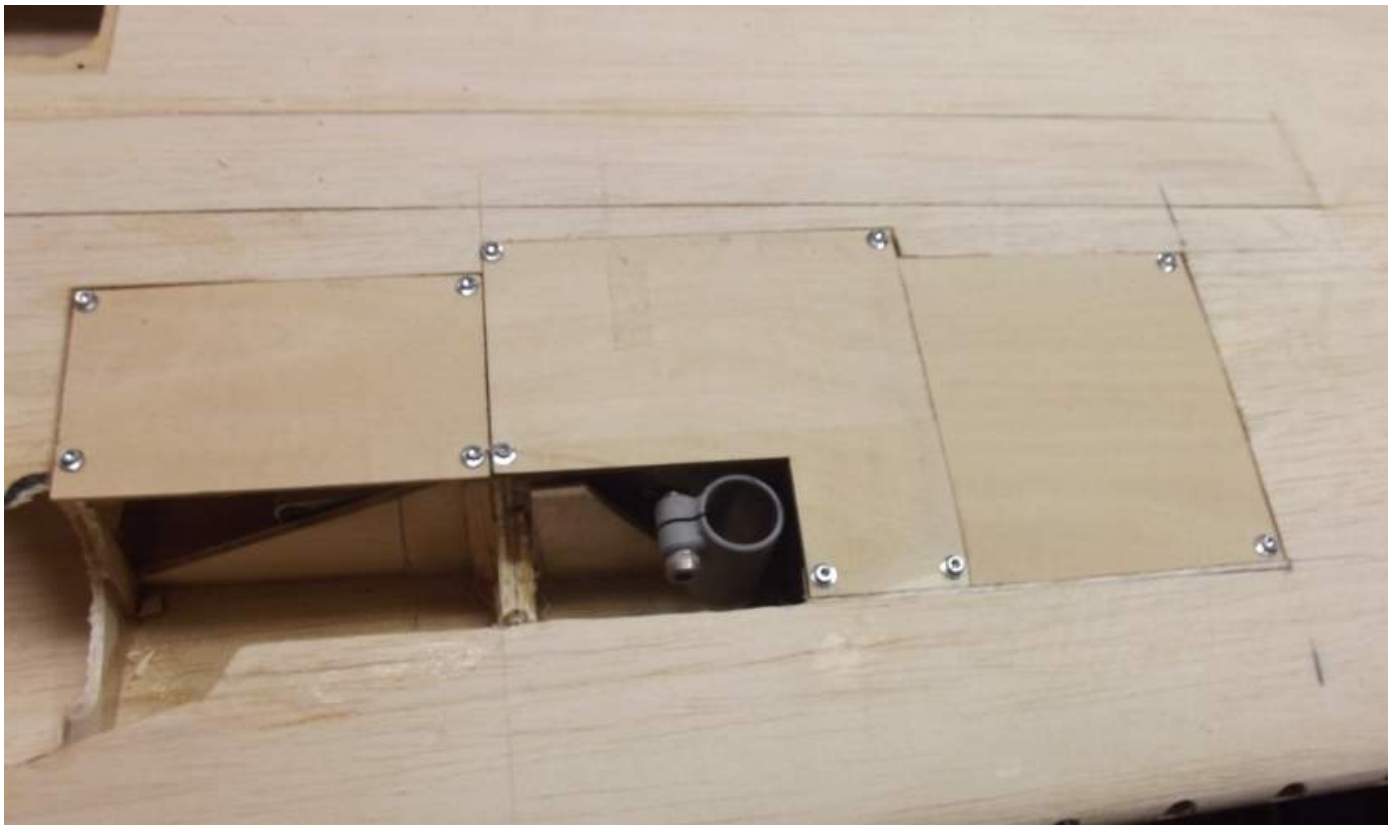
The wing uses an aluminum joiner sandwiched between two light ply outer skins that slide about eight inches into the wing spar box on both sides of centerline. I think I will reinforce from centerline out one rib past the landing gear bay.

Next I will mount the landing gear. Then I will order the carbon fiber sheets and tubing I need to finish this little project.

4/30/2015

I fiber glassed the landing gear bays and reinforced the wing ribs with carbon fiber. This is going to be a 25 pound airplane and it needs really stout gear supports. Due to the much larger size of the Sierra gear I had to cut away quite a bit of structure to make the gear easily removable. With the carbon fiber and West Systems Epoxy the wing is now far stronger than when I started.

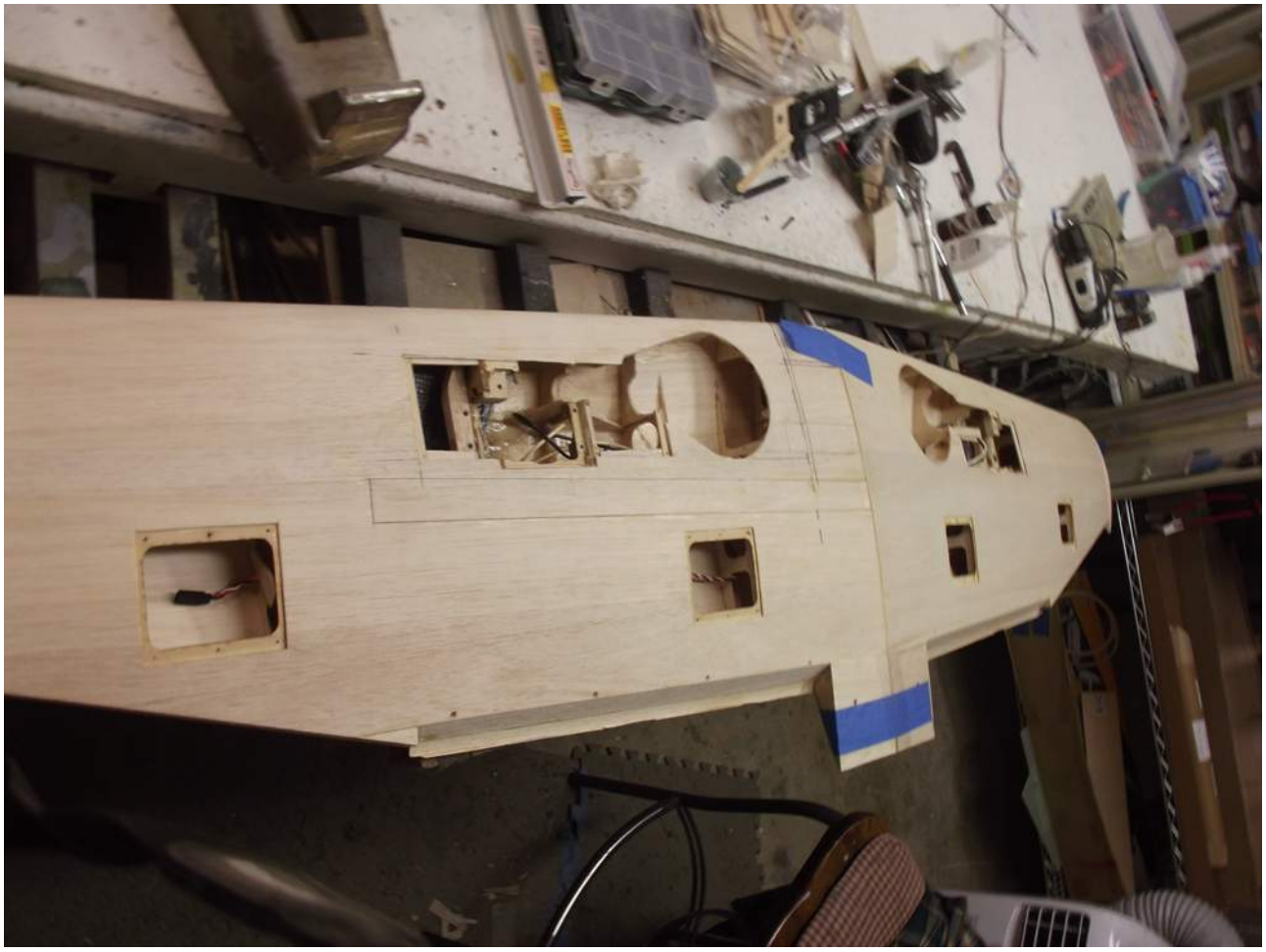




That takes care of the right wing. The the air lines and servo extensions have been installed.

5/6/2015

With the landing gear foundations installed in the left wing it is now time to join the wing halves. The Spar Joiner was an 1/8" piece of aluminum sandwiched between to 1/16" pieces of ply. I dry fitted the Spar Joiner and index dowels. Everything lined up correctly. I slid the wings apart applied five minute epoxy liberally and taped the halves together.

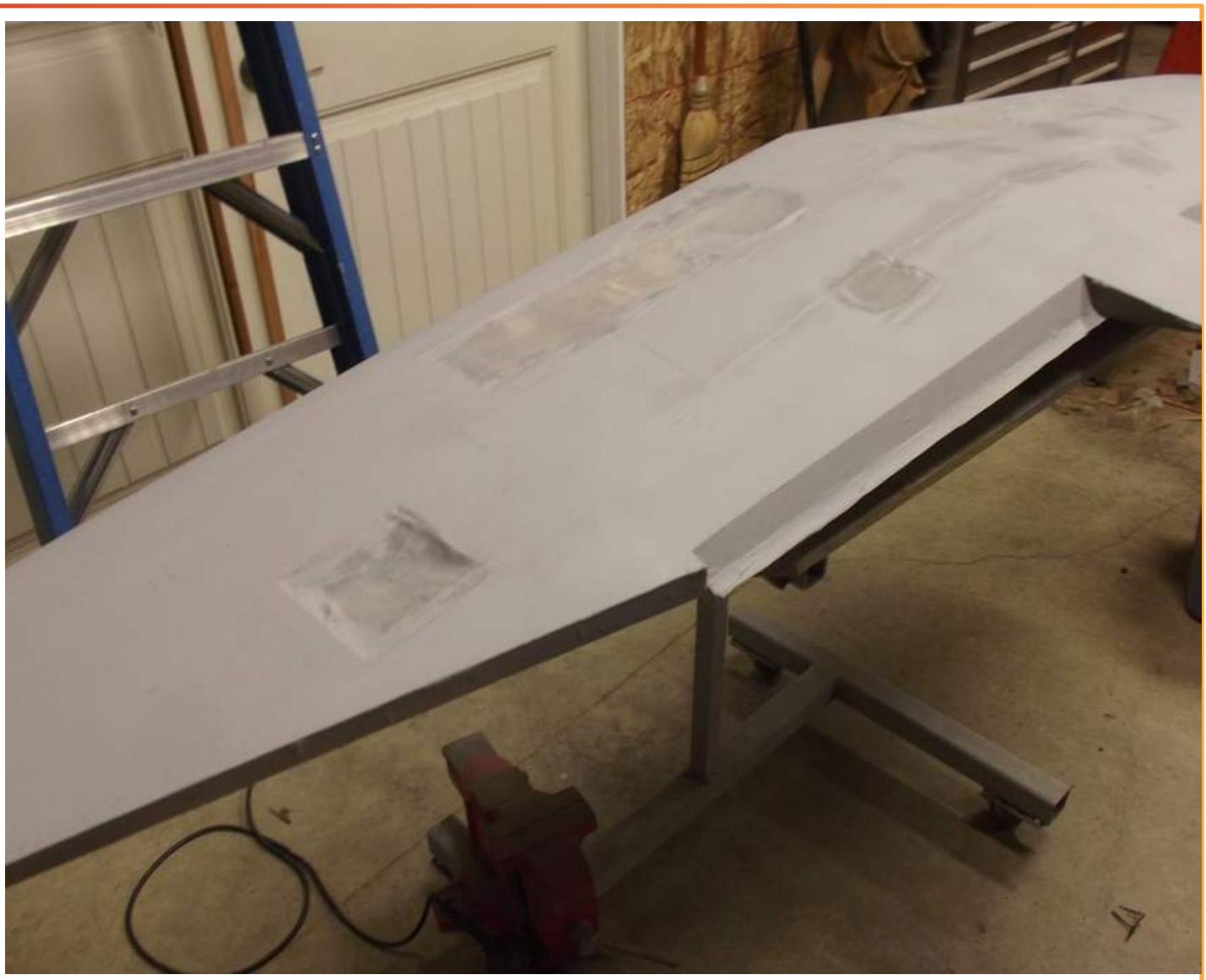


When the epoxy had dried I sanded the bottom of the wing and applied a Carbon Fiber strip to the skin over the spar. Two coats of West System Epoxy was used to bond the Carbon Fiber.

Once the Carbon Fiber is sanded and smoothed into the wing I will cover the wing with ¾ ounce fiber glass cloth. The shape of the wing is such the flat landing gear doors that came in the kit won't contour to the wing shape so it will be necessary to lay up fiber glass main and secondary gear doors.

5/7/2015

The wing is now glassed on both sides. Rustoleum auto primer was applied in two heavy coast. Once the wing is sanded it will be possible to form the landing gear doors.



5/11/2015

The top of the wing has been glassed and is ready for primer. For a change of pace I went back to work on the fuselage. I built the battery hatch, added magnets and index pins to hold it closed. I installed a Rimfire 1.60 electric motor using a Great Planes adjustable mount. The cowling mounts were installed on the firewall. The cowling is held on with 4x40 button head cap screws


1.60

The cowling is very lightly constructed. I will add a couple of layers of 3 oz glass cloth and epoxy to stiffen it up. Reinforcing the cowling is really necessary since I will be flying off some rough grass strips and ending up on it's nose is a good possibility.