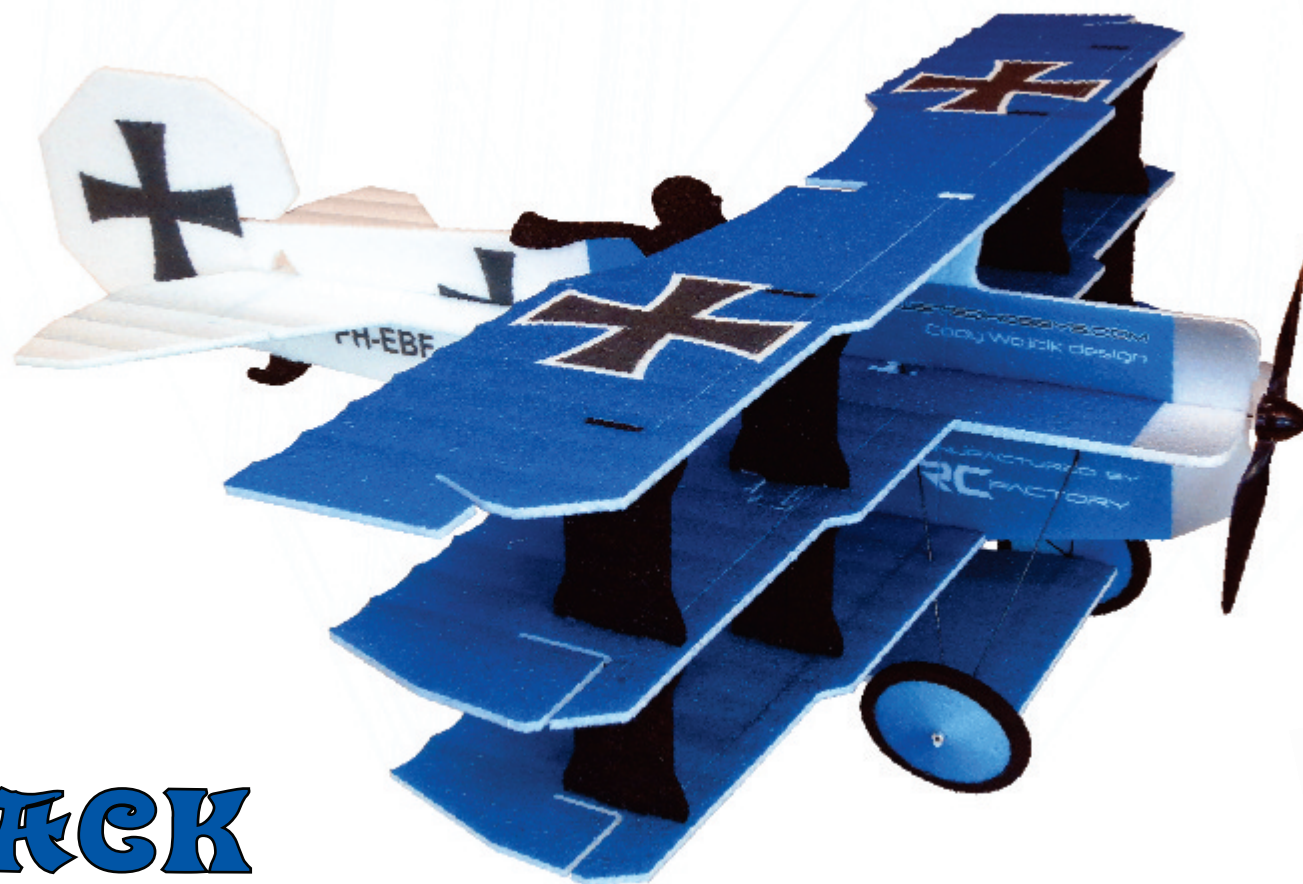


MANUFACTURED BY

RC FACTORY



CRACK FOKKER

A CODY WOJCIK DESIGN

MOTOR: 1x 24-26g / 1400-1500kv Outrunner
ESC: 1x 10-20 amp
SERVOS: 4x 7-9g
PROP: 1x 9 x 4.7 slow fly
BATTERY: 2s 600mAh

TWISTED
HOBBYS

RADIO: 5 channel
WINGSPAN: 35"
LENGTH: 34"
AUW: 250-280 grams

SAFETY NOTES

- Before assembling and flying this model, read carefully any instructions and warnings of other manufacturers for all the products you installed or used on your model, especially radio equipment and power source.
- Check thoroughly before every flight that the airplanes' components are in good shape and functioning properly. If you find a fault do not fly the model until you have corrected the problem.
- Radio interference caused by unknown sources can occur at any time without notice. In such a case, your model will be uncontrollable and completely unpredictable. Make sure to perform a range check before every flight. If you detect a control problem or interference during a flight, immediately land the model to prevent a potential accident.
- Youngsters should only be allowed to assemble and fly these models under the instruction and supervision of an experienced adult.
- Do not operate this model in a confined area.
- Do not stand in line with, or in front of a spinning propeller and never touch it with any object.

IMPORTANT: PRIOR TO ANY ASSEMBLY

Please Note: after removing kit from shipping box, lay each piece flat on a hard surface, this will allow the airframe to straighten out if lightly bent from shipping. Do not worry since EPP is very pliable and can be bent back if out of shape.

TWISTED HOBBYS

Website: www.twistedhobbys.com – email: sales@twistedhobbys.com

Thank you for your purchasing a Twisted Hobbys' model. Please read through the entire manual before beginning to build this model. If you have any questions please contact us at the above indicated email address.

WARNING INFORMATION

This R/C Aircraft is not a toy! Read and understand the entire manual before assembly. If misused, it can cause serious bodily harm and property damage. Fly only in open areas, and AMA (*Academy of Model Aeronautics*) approved flying sites. Do not overlook the warnings and instructions enclosed or those provided by other manufactures' products. If you are not an experienced pilot and airplane modeler you must use the help of an experienced pilot or an authorized flight instructor for the building and flying of this model aircraft.

These instructions are suggestions only on how to assemble this model. There are other ways and methods to do so. Twisted Hobbys has no control over the final assembly, the materials and accessories used when assembling this kit, or the manner in which the assembled model, installed radio gear and electronic parts are used and maintained. Thus, no liability is assumed or accepted for any damage resulting from the use of the assembled model aircraft or from this instruction manual including but not limited to direct, indirect, incidental, special, and consequential damages. By the act of using this user-assembled product, the user accepts all resulting liability. In no event shall Twisted Hobbys' liability exceed the original purchase price of the kit.

SHIPPING DAMAGE

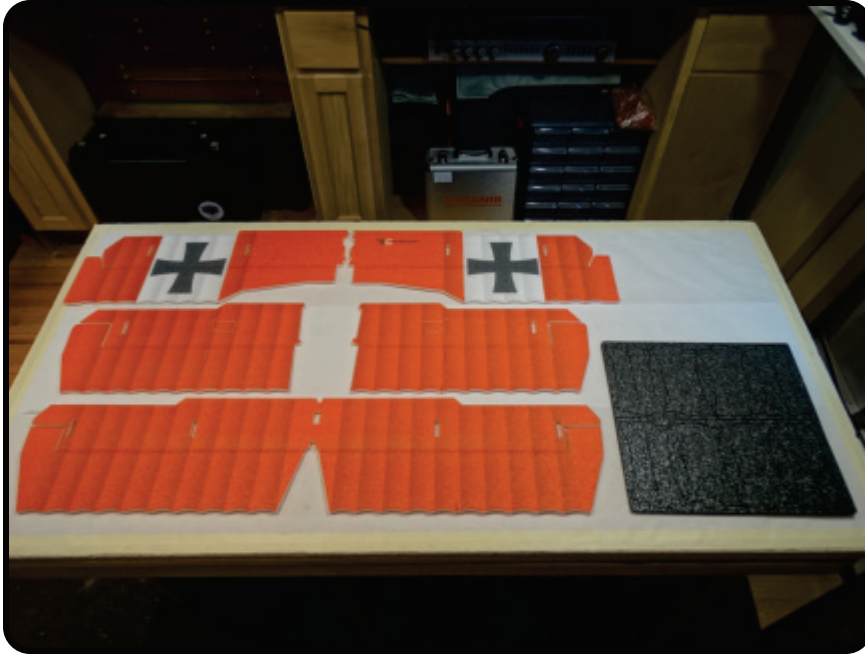
Twisted Hobbys checks each plane before shipping to ensure that each kit is in fine condition. We have no bearing on the condition of any component parts damaged by use, modification, or assembly of the model. Inspect the components of this kit upon receipt. If you find any parts damaged or missing, contact Twisted Hobbys immediately. We will not accept the return or replacement of parts on which assembly work has already begun. Twisted Hobbys reserves the right to change this warranty at anytime without notice.

OUR MISSION

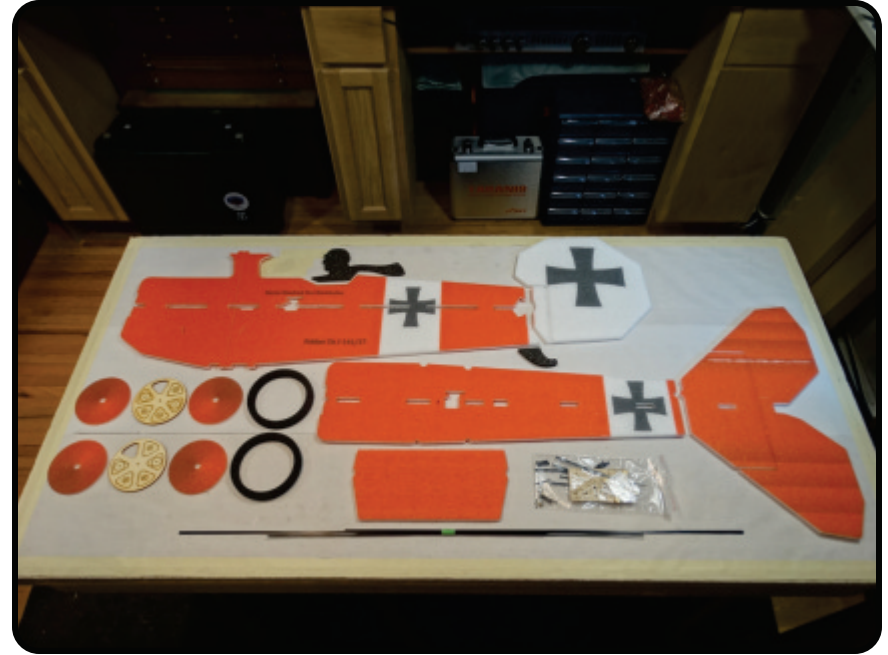
To provide the best products and service to our customers at the lowest prices possible. We take great pride in our company, our commitment to customer service and in the products we sell. Our online store is designed to provide you with a safe and secure environment to browse our product catalog.

Thank you for shopping with Twisted Hobbys!

KIT CONTENTS



Wing Parts

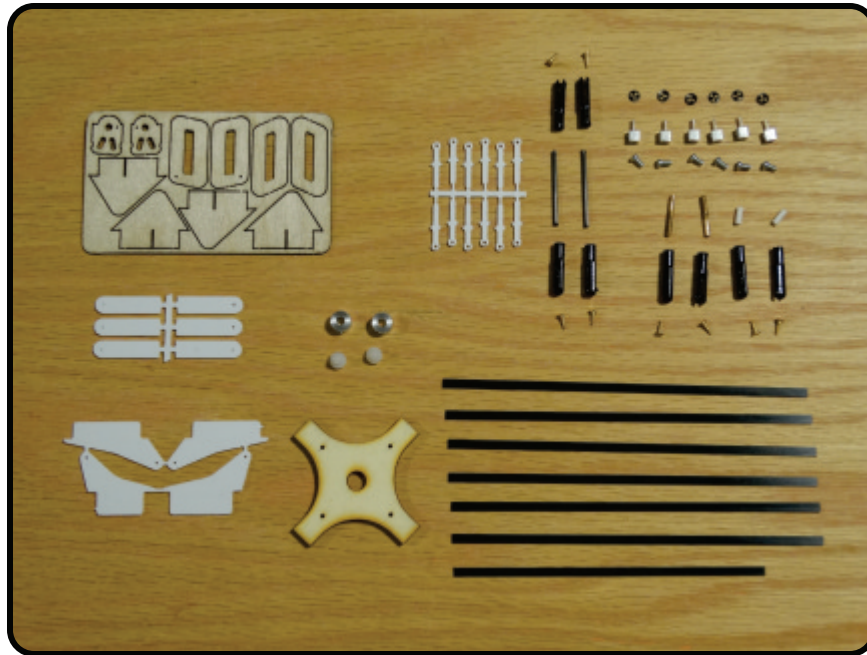


Fuselage Parts

Double check that you have all the above pictured items. Note -
Some kits might have slight deviations from the above pictured items.

DETAILED DESCRIPTIONS OF ITEMS WILL BE CALLED OUT IN THE BUILD STEPS

KIT CONTENTS (cont.)



Hardware and Small Carbon

NEEDED ITEMS



Power Combo & Misc Items

Double check that you have all the above pictured items. Note - Some kits might have slight deviations from the above pictured items.

DETAILED DESCRIPTIONS OF ITEMS WILL BE CALLED OUT IN THE BUILD STEPS

TOOL AND ADHESIVES NEEDED



Tools shown and listed are suggestions only. Depending on your building technique you may not need everything indicated – and/or – you may find that other tools available to yourself may be of benefit to your Build.

It is also recommended that you have a flat building surface, one that will accept stick pins and push pins. An Acroscopic Ceiling panel from your local hardware store fits this bill nicely, and will lay flat on your work table. Over size / long push pins are available at your local craft store. These two items are by no means required, but will aid in the building process, and can be used for future projects

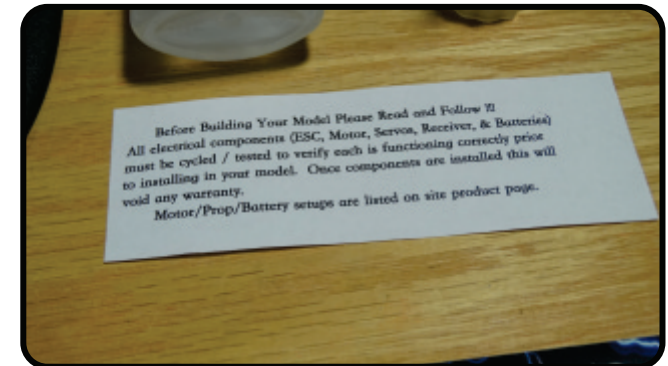
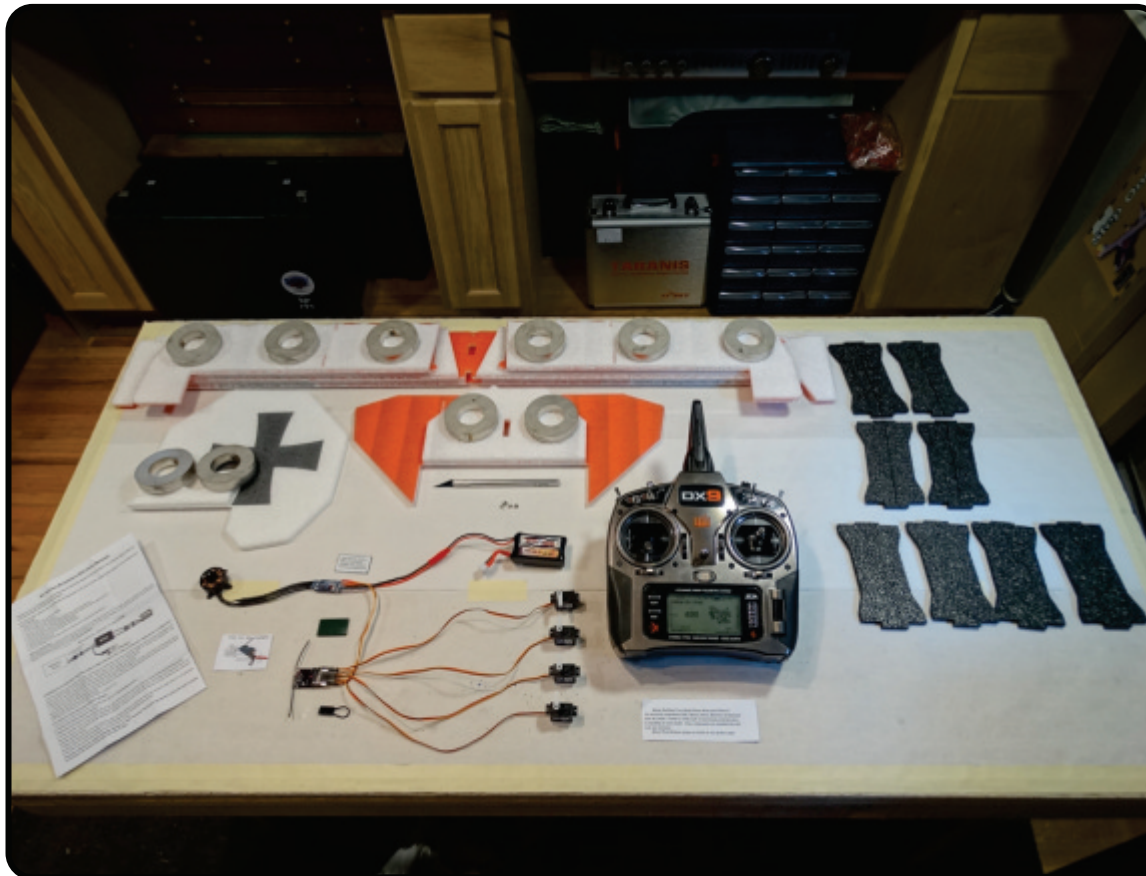
- **Lighter**
- **Small Drill Bits**
- **Tape Measure and Ruler**
- **Black Sewing Thread**
- **Welders or Foam Tac Glue**
- **Hobby Knife w/new Blade**
- **Needle Nose Pliers**
- **Wire Cutters**
- **Low Temp Hot Glue Gun**
- **Course Sand Paper**
- **Scissors**
- **Small Phillips Screw Driver**
- **Thin and Medium CA**
- **CA Applicator Tips**
- **Activator**

THE BUILD

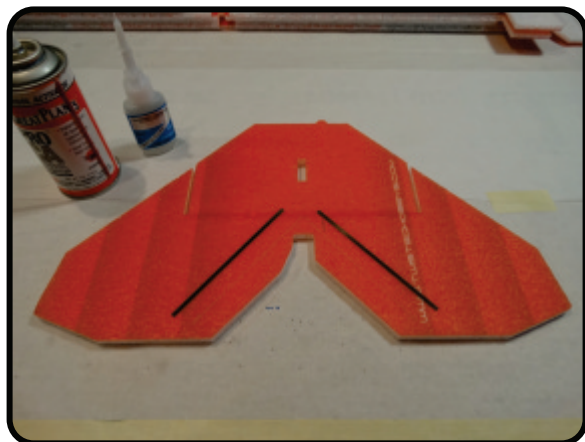
CONSTRUCTION METHODS:

Building surface should be at least 2ft x 4ft and flat. Weights or some small heavy objects will be handy for holding things in place during the time glue is setting.

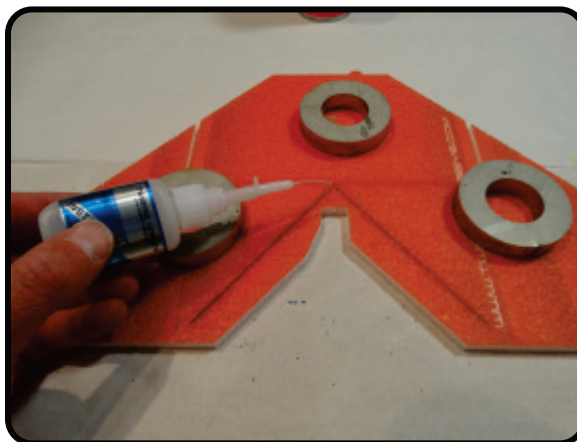
Welders or FoamTac glue is used for FOAM TO FOAM joints. Thin and Medium CA can be used on the PLASTIC TO FOAM and CARBON TO FOAM joints. **When using the Welders or FoamTac glue for a butt joint, apply a thin film to each surface, allow to sit briefly per mfg instructions, then assemble.** Note that this method will create a nearly instant bond, so locate carefully when bringing the two pieces together. **If alignment is necessary or a slip joint, do not allow the glue to tack up,** simply apply and join immediately, you will have several minutes to locate the two parts before the glue sets up. In most cases the parts being glued can be handled with care in 30 minutes, full cure is approx 24 hours.



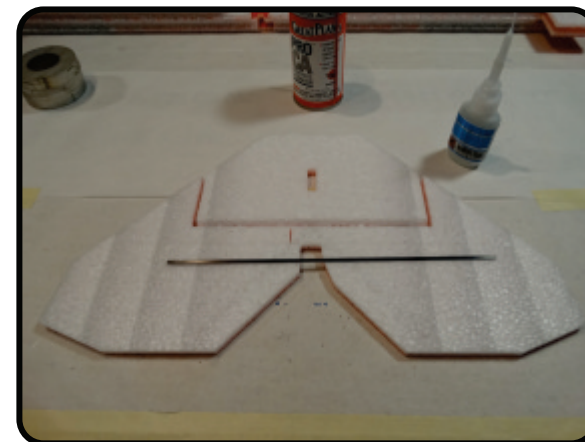
- ☐ Locate all the items pictured to the left.
- ☐ Gently bend all the hinged surfaces back onto themselves and weigh down for about 1 hour.
- ☐ Remove all the black wing trusses from their sheet, note that they are all the same outside shape, but some are slotted for carbon.
- ☐ Create a model on your transmitter
- ☐ Following your radio mfg. instructions, bind your radio to the power combo components
- ☐ Calibrate the ESC.
- ☐ Confirm all components work properly.



Locate the elevator and two of the 3x0.5x120mm carbon strips from the hardware bag. These install from the top side of the elevator. Hinge relief cut should be facing down.



Lay the spars into their pre-cut slots and secure with CA and kicker. Make sure that everything is nice and flat before gluing.



Flip the elevator over and locate the 3x0.5x250mm spar from the bundled carbon parts.



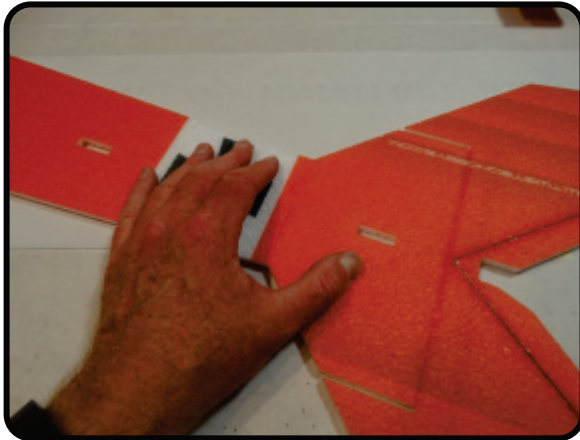
Lay the spar into it's pre-cut slot and secure with CA and kicker. Make sure that everything is nice and flat before gluing.



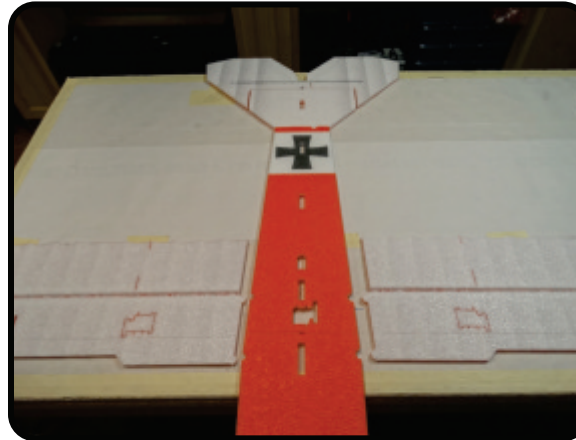
Locate the center horizontal fuselage section. Above picture is shown looking at the TOP of both pieces.



While looking at the top of each piece, you should notice that the parts are "keyed" to insure correct orientation. Apply a skim coat of glue to each surface, and let tack up for a minute.



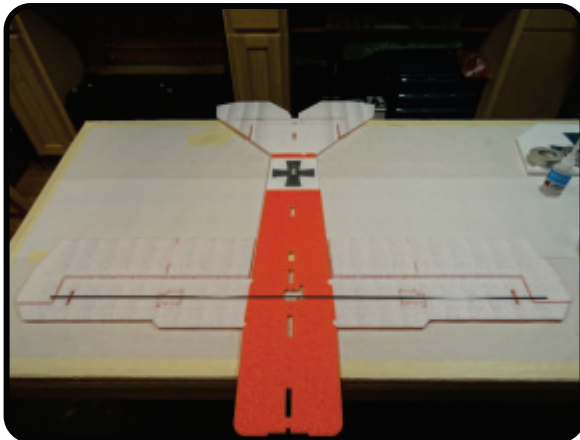
Once the glue has tacked up, join the two pieces together. Note - Welders will take about 4 or 5 minutes to tack up, and FoamTac will take 1 or 2 minutes.



Locate the two center wing halves. Lay all the pieces out as shown. Now we are looking at the BOTTOM side. The wings and fuselage are different thickness, so they need to be assembled this way.



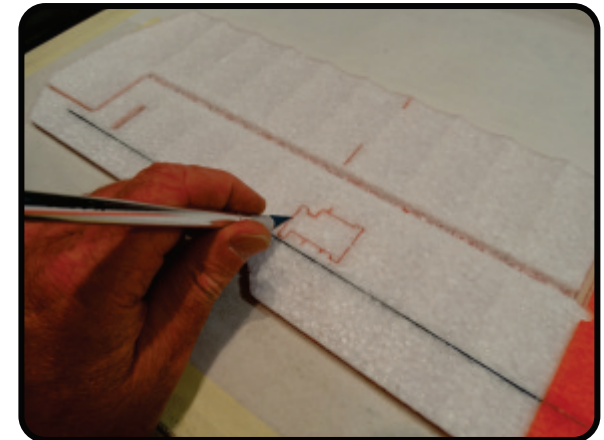
Assemble the wings with the tack up method, again while looking at the bottom side, this will insure that the top side surfaces will be flush.



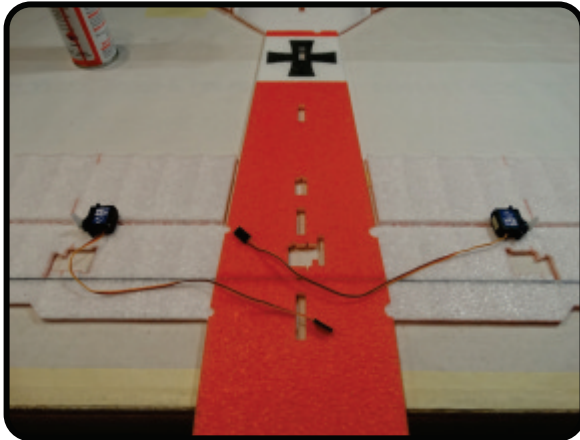
Locate the 3x0.5x750mm wing spar from the carbon bundle. Check the fit and cut a little at the seam of the wing and fuselage if needed.



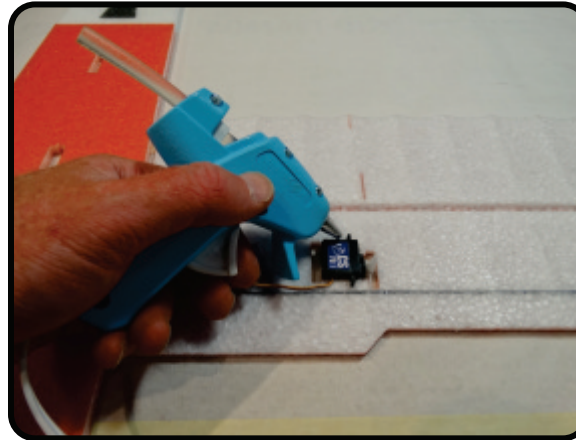
Lay the spar into it's slot, and while making sure everything is flat, secure with CA and Kicker.



Remove the servo scrap from each wing. If using the power combo components, these cutouts will fit the servos perfectly.



Locate the servo that you will use for the ailerons. Note that the output shafts will face forward and outward, and the servo horns should point straight up while looking at the bottom.



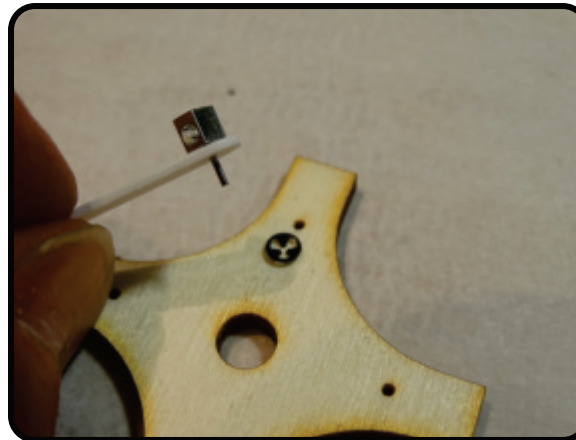
Make sure your servo is electronically centered and that the horn is secured with its little screw. With low temp hot glue, attach the servo. Note - far side of wing and servo should be flush.



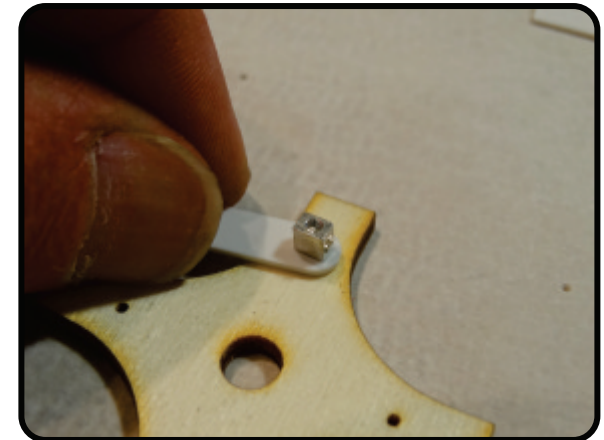
Locate all the above items. Note that the aileron horns are the ones with the shorter tabs, for the thinner wing material.



All the Quik Links get attached to the end of the gang horns.



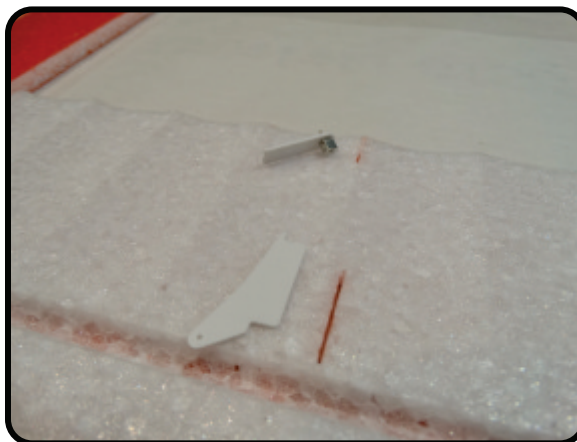
If you don't already have a clever way to install the clips, you can use the motor mount from the kit. Place the clip over the hole, and press on.



Press until the pin of the Quik Link is fully seated onto the back side of the gang horn.



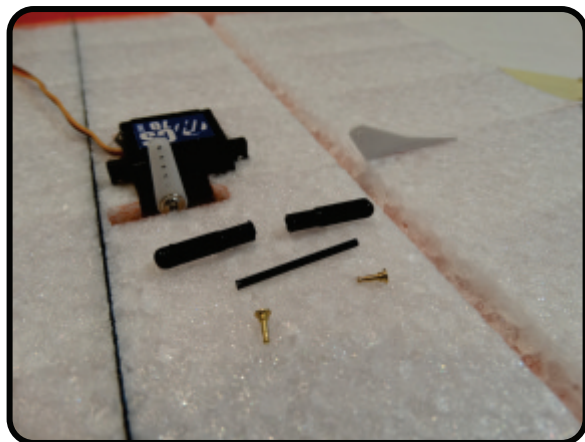
Repeat the previous step for all six of the gang horns.



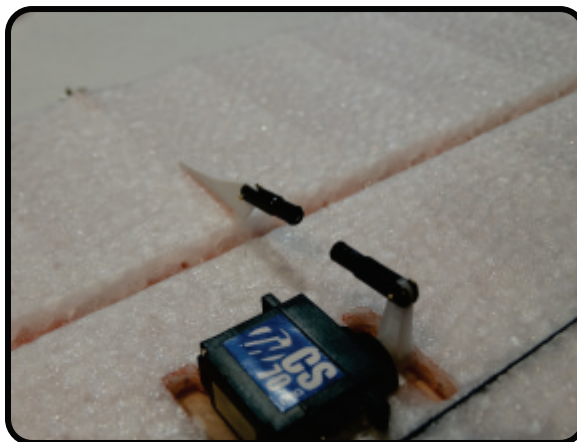
Squeeze a little glue into the slots for the aileron and gang horns, put a skim coat of glue on the mating surface of each horn and install.



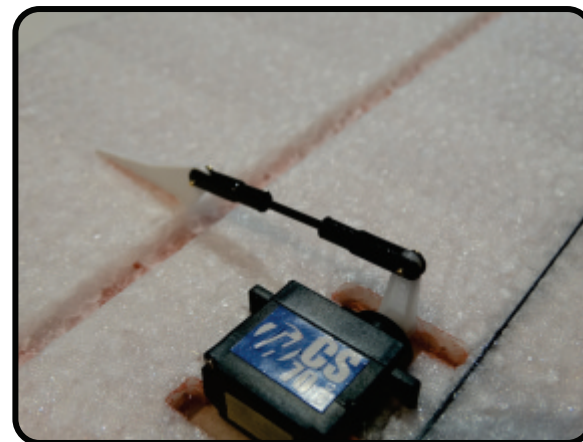
Quik Link should be installed so that the set screw hole is facing outward, and the aileron horn hole should be directly over the center of the hinge line. Repeat for the other wing.



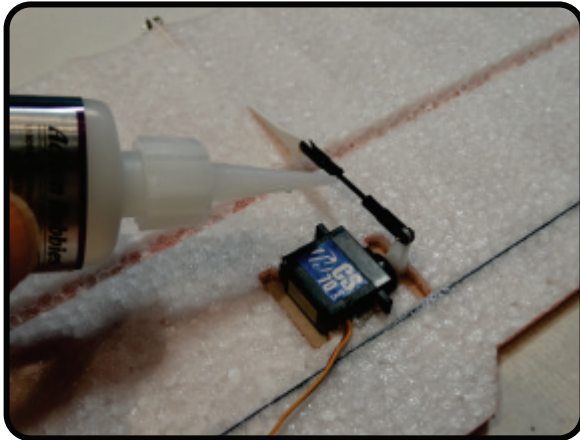
Once the glue for the horns has dried, locate the above items from the hardware bag.



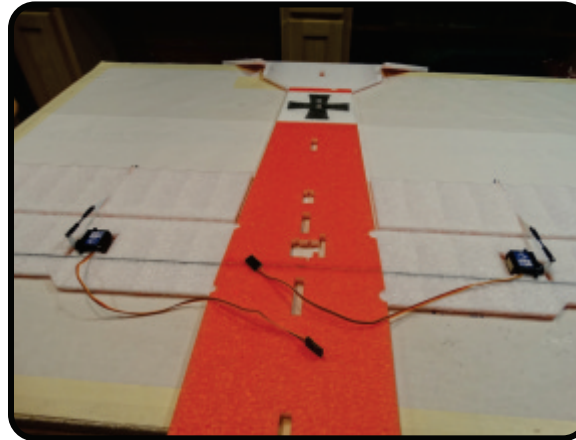
Install a clevis onto the servo horn and one onto the aileron horn as shown above.



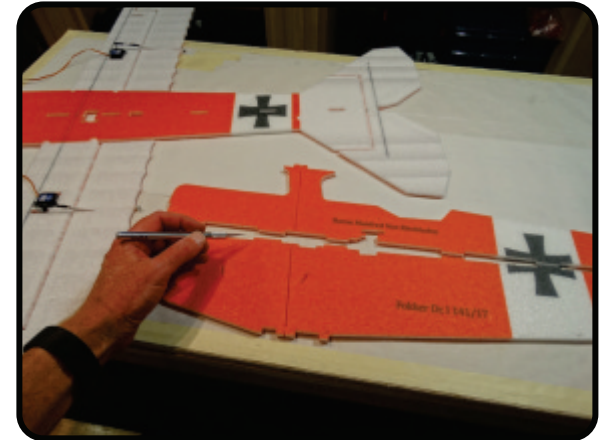
Fit the short round carbon rod in between as shown, flex the aileron back a little to make some clearance.



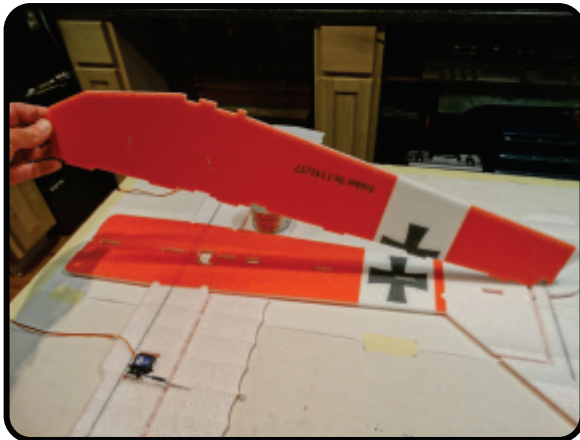
With the aileron flat and the servo horn centered, secure the parts with a drop of Medium CA. As an alternative, 5min. epoxy could also be used for securing these items.



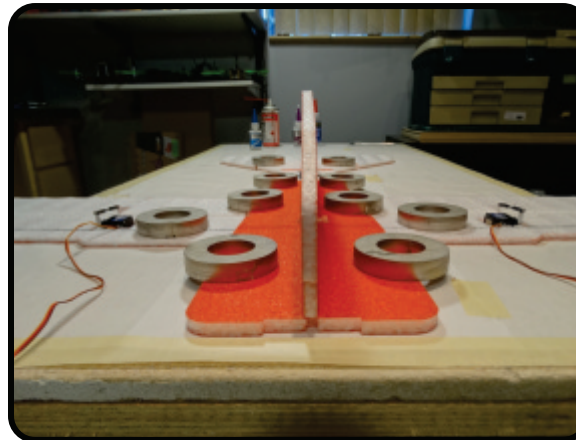
Repeat all the previous steps as needed for the other aileron.



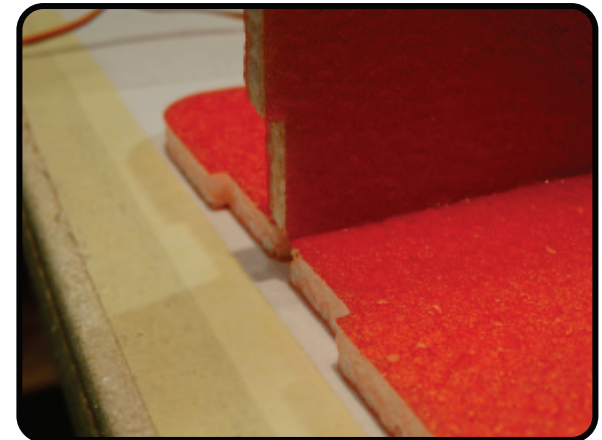
Locate the vertical fuselage piece as shown and split it down the center of the cutout slots. Set the top half aside, bottom side will be glued on in the next step.



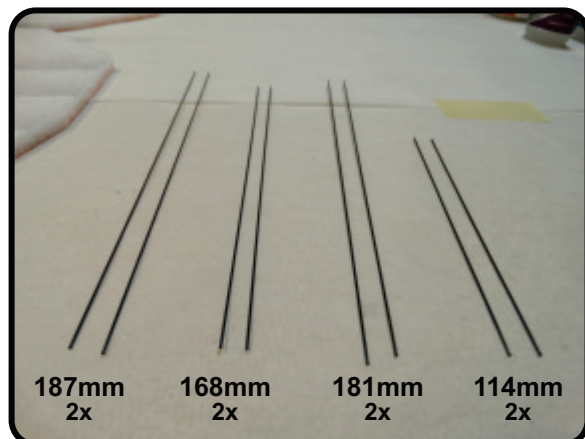
Apply a medium bead of glue and assemble while the glue is still wet. Check to make sure the tab and slots are fully engaged with each other.



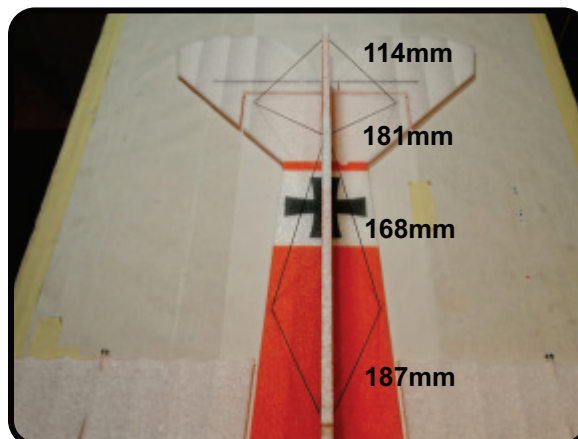
Verify that the every thing is flat, straight and true. Weigh down the horizontal members if needed.



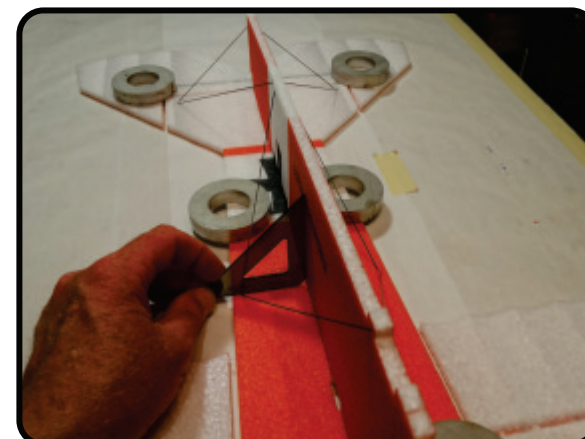
Before the glue set, make sure that the front motor mount area shown above is flush in the recessed areas. This is important for proper motor mount installation in a later step.



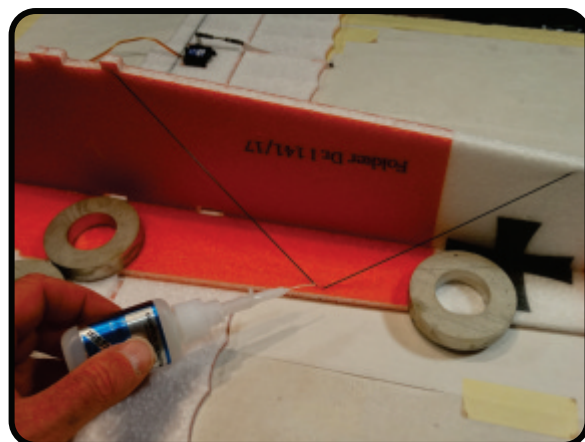
From three of the 0.8x500mm round carbon rods, cut the quantity and lengths as indicated above.



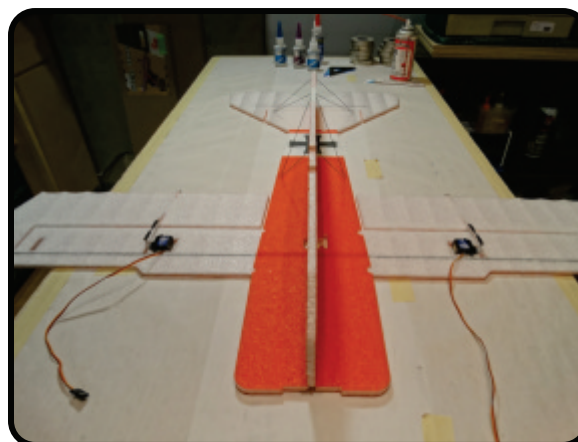
DRY fit all the rods into the pre-cut slots with the lengths in the positions shown above.



While the rods are still "loose", adjust them so that the lower vertical fuselage section is square.



Once satisfied with squareness, secure all the rod ends with thin CA and hit with kicker.



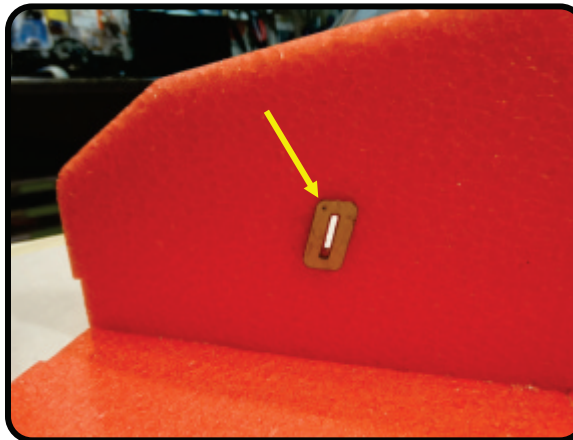
When complete, every thing should be nice and straight.



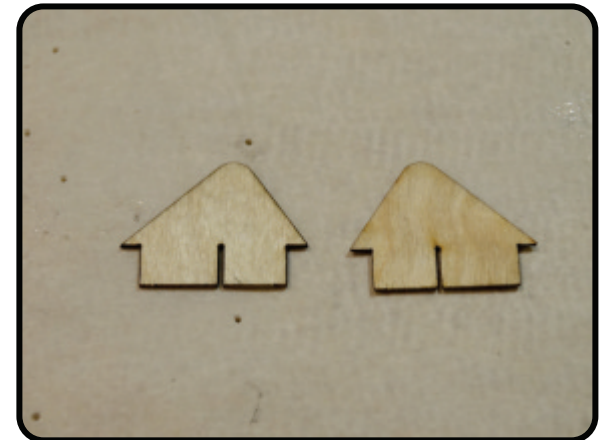
Locate the four wooden pieces shown above, note that two of them have a tiny hole, this will be used to locate them in the next step.



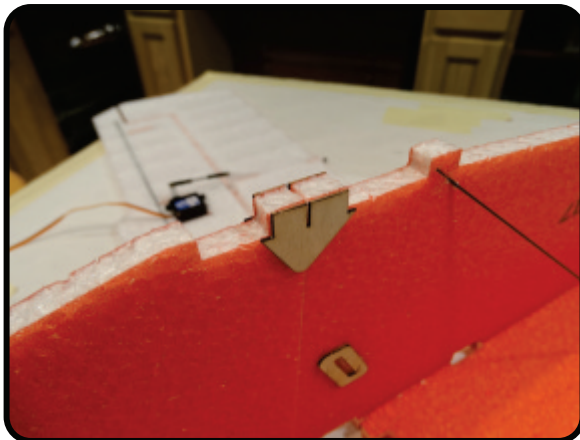
Put a skim coat of glue on the pieces and attach them as shown. Line up the cutouts in the wood with the cutouts in the foam. Note the orientations and locations.



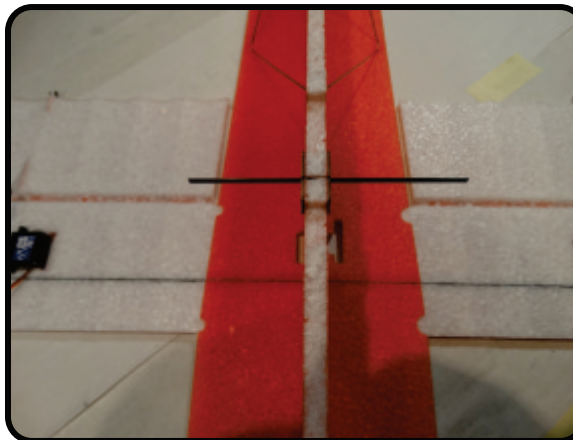
Detail view of the forward wood piece. For proper installation the tiny hole should be positioned as shown above.



Locate the two wooden pieces pictured above. These are in the same wood kit as the previous pieces were taken from.



Apply a skim coat and attach the parts as pictured above. Note that the profile of the wood part should match the profile of the foam for proper alignment in future steps



To ensure proper alignment of the slots in the wood and the slots in the foam, one of the small rectangle pieces can be used as a gage.



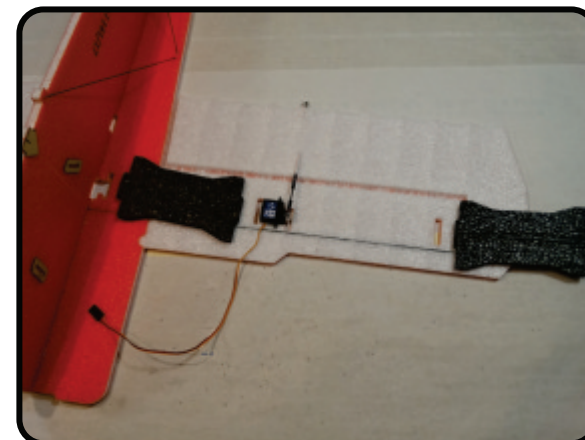
Locate the four wing struts with the slits, and four of the 3x0.5x120mm carbon rectangles. Note there should be two left and two right hand wing struts.



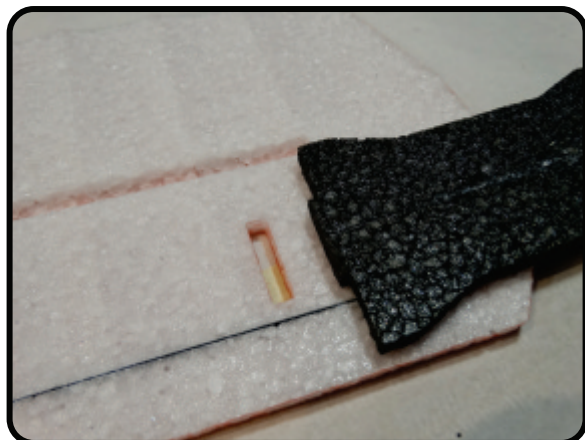
Install the carbon into the slot and secure with CA and kicker. Make sure the strut stays flat and that the carbon spar remains flush.



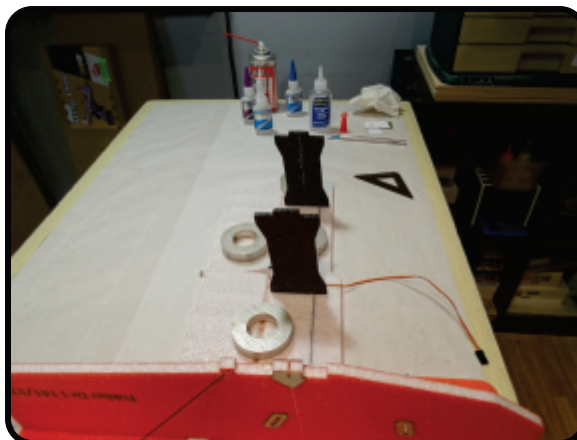
Repeat the process with the rest of the struts as pictured above.



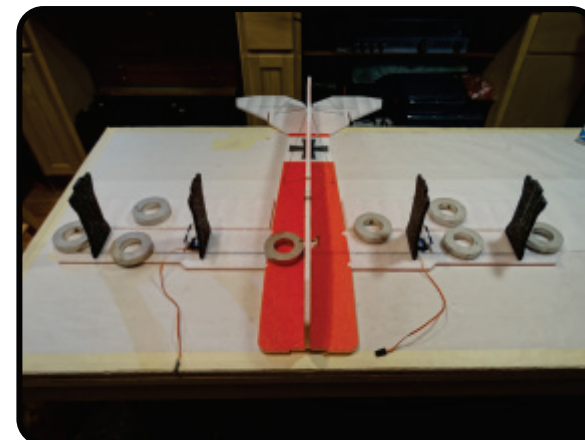
Struts will install as shown above. One with carbon outboard and a plain one on the inboard. Note that there are short and long tabs. Short tabs install into the wing in this view



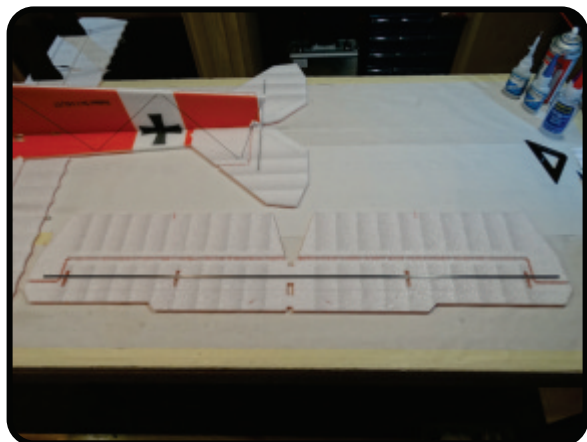
As mentioned in the previous step, it is the short tab that installs into the wing, AND it is also imperative that you position the struts so they lean BACKWARDS.



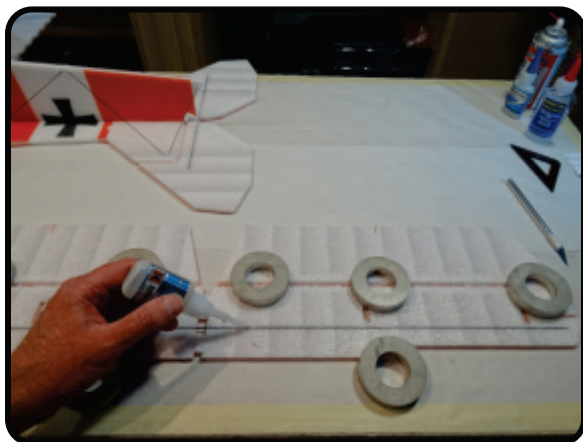
Once you have ensured that the proper tab is installed into the wing, also check that the orientation of the struts are leaning backwards as pictured above.



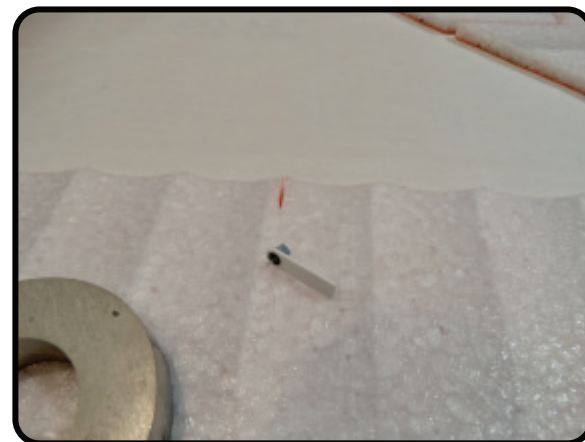
Glue all four struts into their slots. Note - as mentioned, it is the outboard ones with the carbon inlay and the plain ones on the inboard positions.



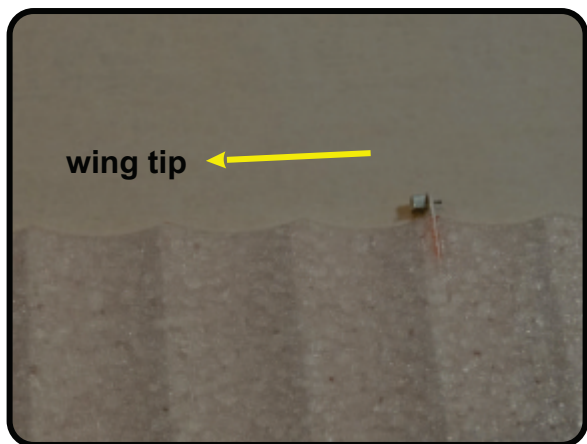
Locate the bottom wing, it is the one that is not split. Also locate one of the 3x0.5x750mm spars.



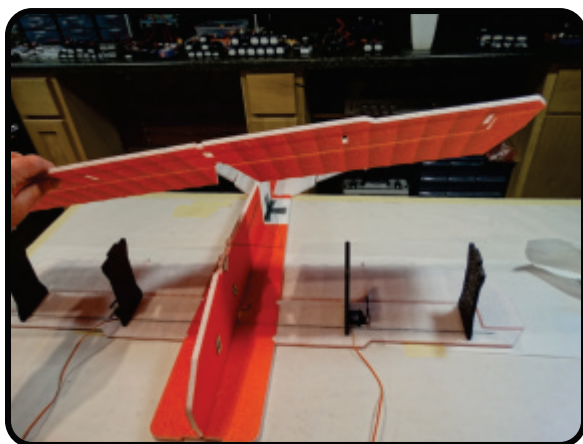
Lay the spar into it's precut slot and secure with CA and Kicker.



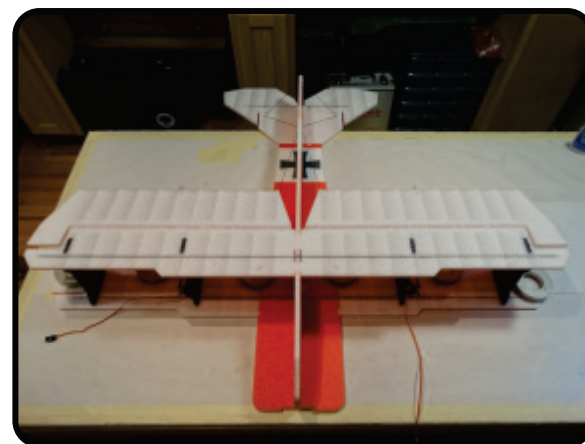
Locate two of the gang horns that were assembled earlier with the Quik Links. Install into the slot on the trailing edge. Either FoamTac or CA can be used.



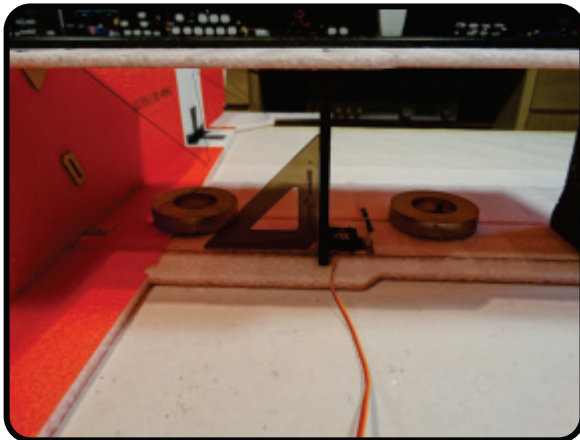
Install gang horn so that the side of the Quik Link that has the threaded hole is facing the wing tip.



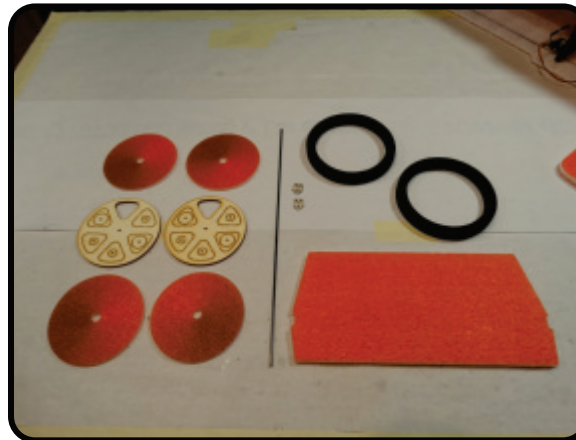
Test fit the bottom wing, make sure all the tab and slots line up and fully engage with each other. Apply glue to all the mating surfaces and join the pieces while the glue is wet.



Press all the joints together firmly, wipe away any extra glue. Make sure the leading edges of the middle and lower wing are parallel.



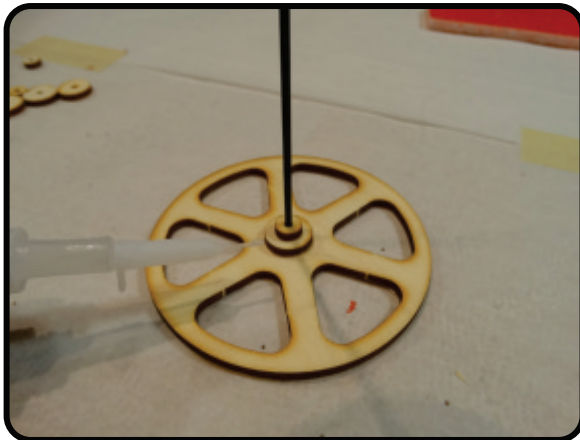
With a small builder square check that all the wing struts are square to the wings. Set aside to allow the glue to dry.



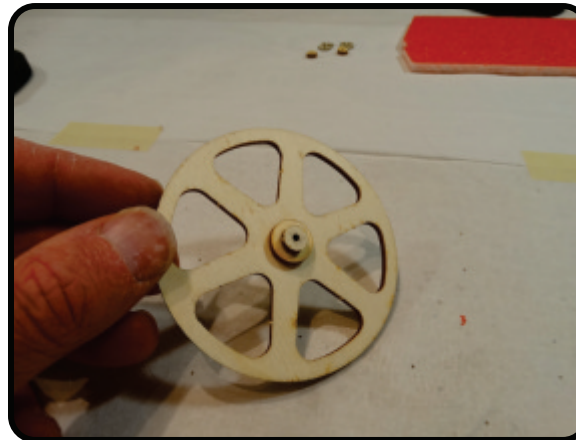
Wheels and Landing Gear are next. Locate all the pictured items.



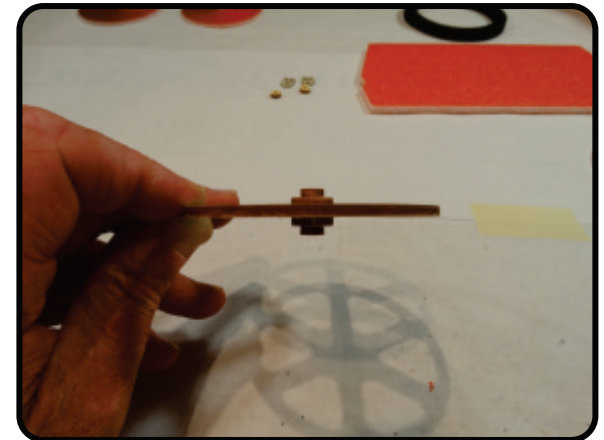
Cut out the little rounds and triangles from the wood wheel ring. The triangle pieces are scrap and can be discarded.



Stack the wheel ring, large washer and small washer as shown. Use the axle to align the center holes and secure all three pieces together. Note - use Med. CA or 5 minute epoxy. Keep axle free.



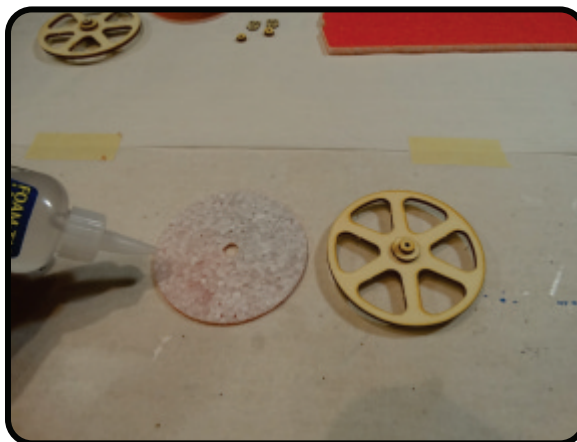
Remove the axle and apply a little more glue if needed to make a strong bond.



Repeat the process for the far side of the wheel ring so that you have the configuration pictured above.



Repeat the process with the other wheel ring so that you have two identical wheel ring assemblies.



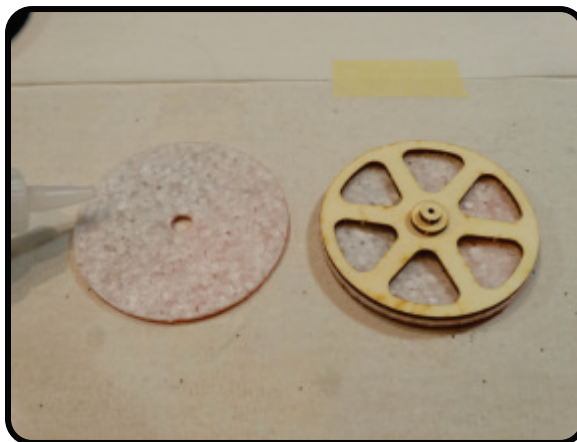
Take one of the foam hubs and apply a skim coat of glue around the diameter as shown.



Apply a matching skim coat of glue around the diameter of the wheel ring assembly as shown.



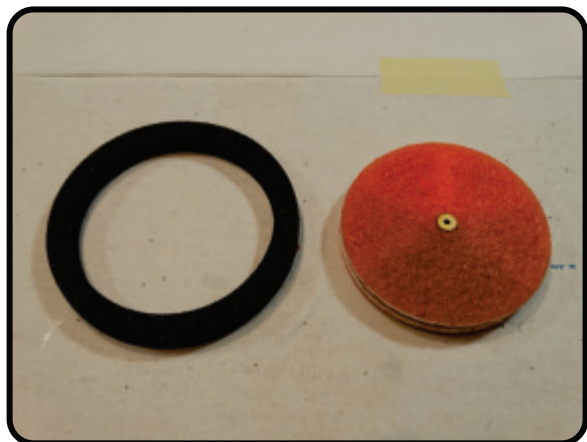
Once the glue has tacked up, join the two pieces together.



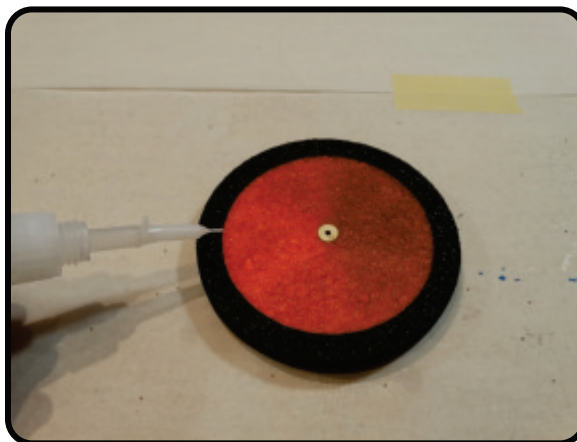
Repeat the process for the other side.



When complete you should have a nicely dished center wheel section as shown above.



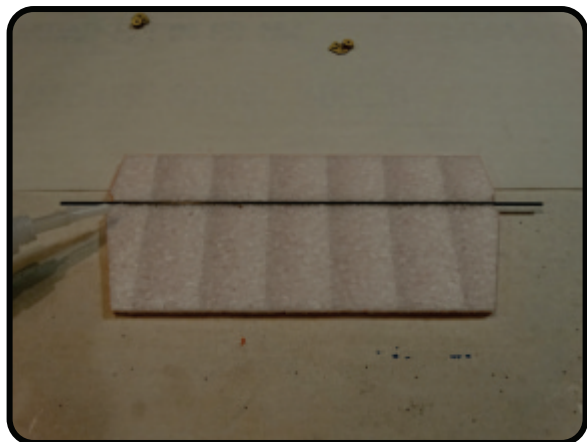
Locate one of the black tire foam pieces, and install the hub assembly into the center of it.



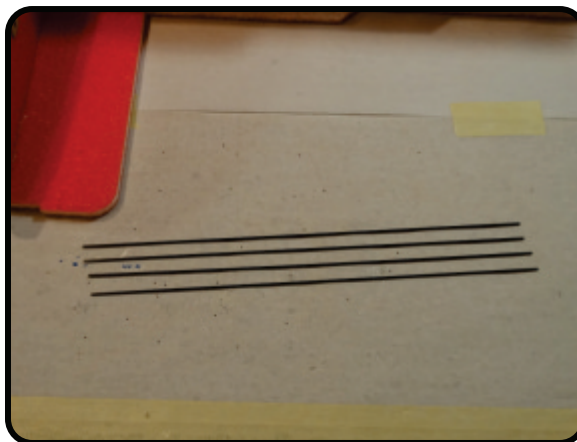
The thickness of the black piece and the thickness of the hub where it meets are similar thickness. Match up the edges and secure the two parts together with thin CA and kicker.



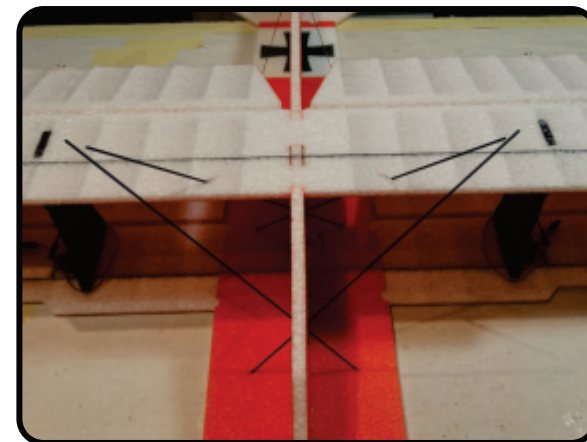
Repeat the process for the other the other wheel. Set them aside for now.



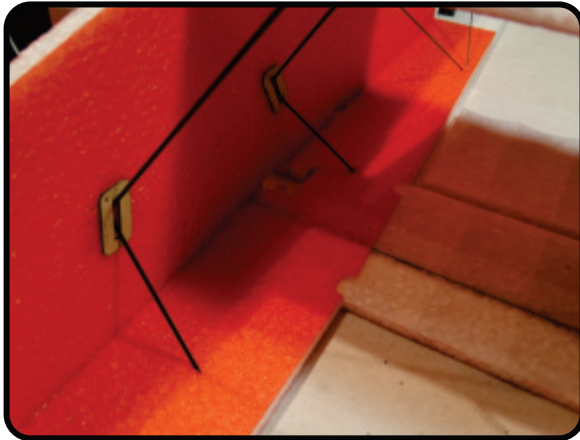
Locate the landing gear wing and the 2x270mm dia carbon rod. Center the rod in the slot and secure the two pieces together with thin CA and kicker.



Locate the four 1.5x250mm dia round rods. Note - there are other rods in the kit of slightly smaller diameter, make sure you get the right ones.



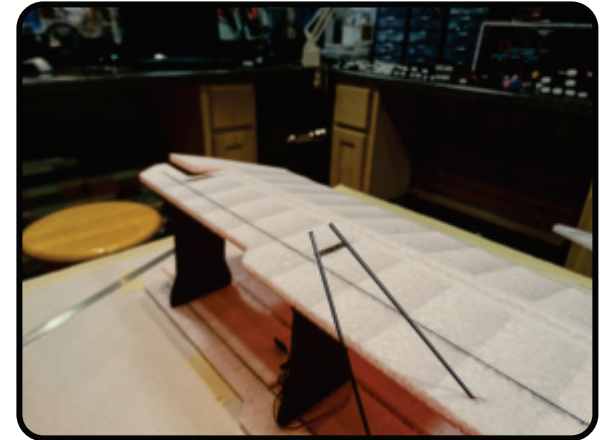
Slide the two front rods thru the fuselage and into the forwards slots. Slide the two rear rods thru the wing, then fuselage then the rear slots of the fuselage. NO GLUE yet.



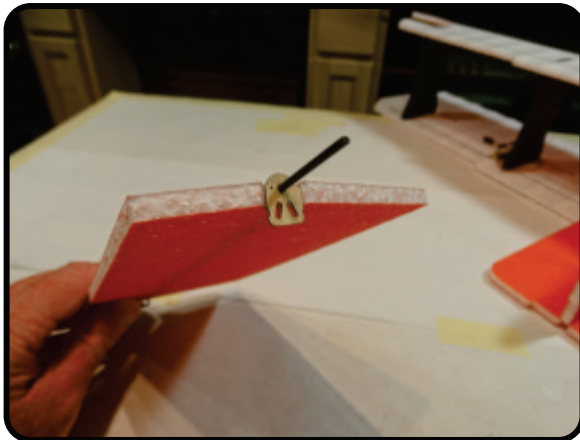
Both parts of rods should cross at the point where the wood doublers are. They might fit a little better one way than the other. Ends should stick into the horizontal fuselage section.



The front rods will be slightly longer, this is normal. Also, the ends will not match up, they will be about 1/4 to 1/2 inch apart, this too is normal.



Clip the front rods so that they are level with the rear rods.



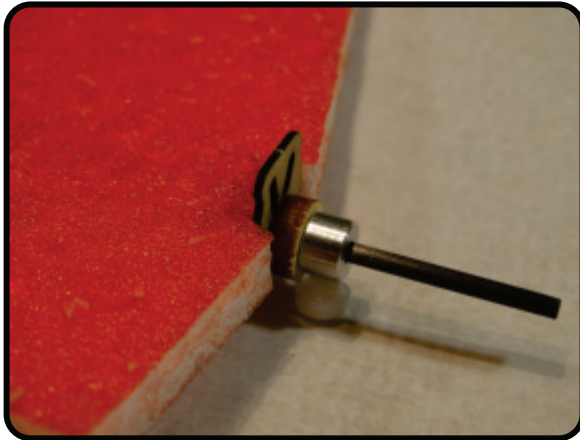
Grab the Landing Gear wing and slide on one of the little wood pieces as shown. Note - orientation is critical. The little hole should be facing forward and up like the picture above.



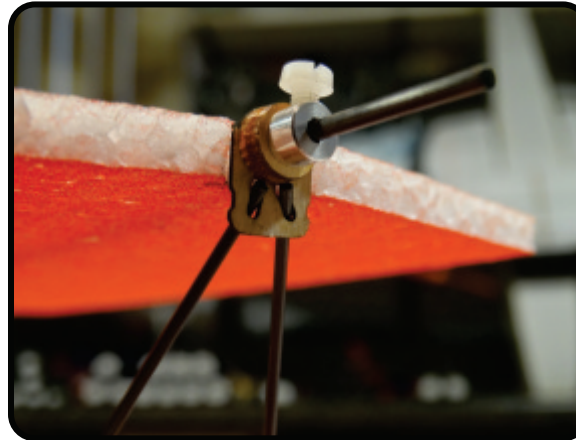
Slide on one of the remaining small washers as shown. NO GLUE.



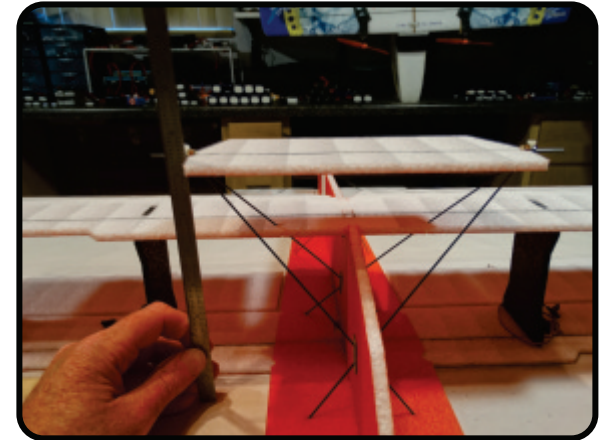
Grab one of the wheel collars and use it to hold the two wood pieces tight in position. NOTE - This is just temporary. The collar does not install here, it is just used as an aid in the next steps.



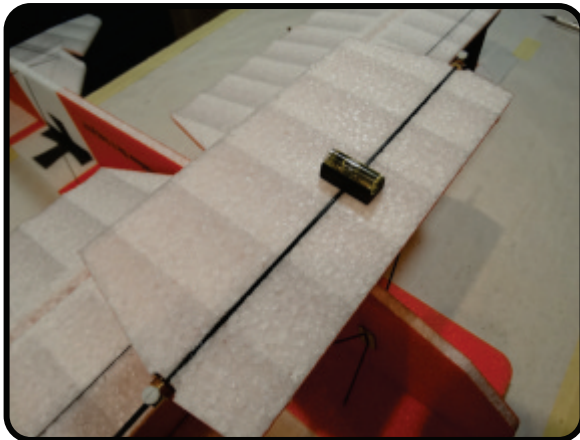
Another view of how the wheel collar is used to hold the wood pieces in place. Repeat this process on the other end of the axle.



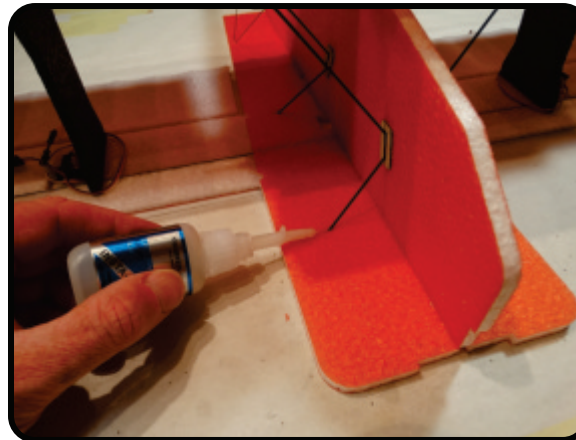
Dry fit the ends of the landing gear rods so that they stick thru the wood part with the slots and butt up against the wood washer as shown.



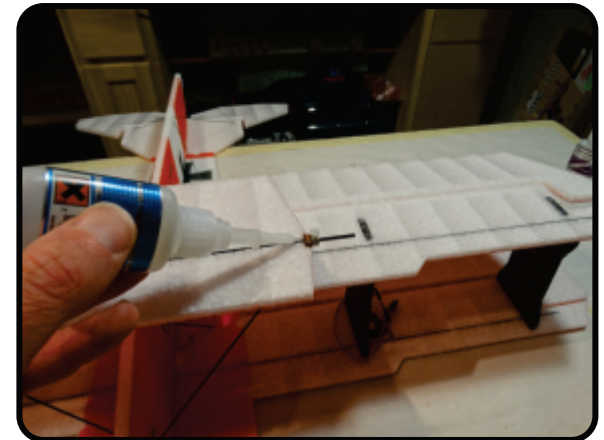
Repeat the previous step with the other side. Now, with a ruler, make sure that both axles are the same distance from the work bench. Tweak around if not until they are.



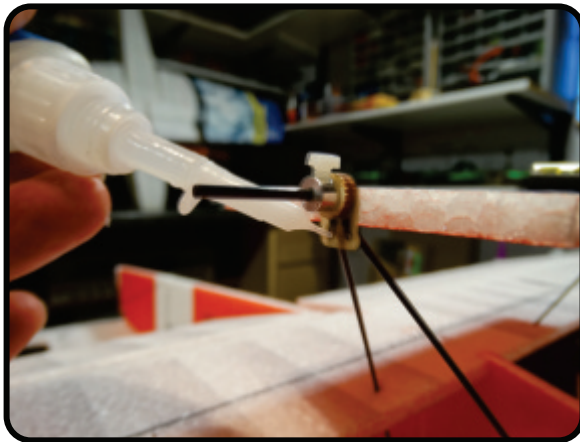
With a small bubble level, position the Landing Gear wing so that it is level front to back as shown.



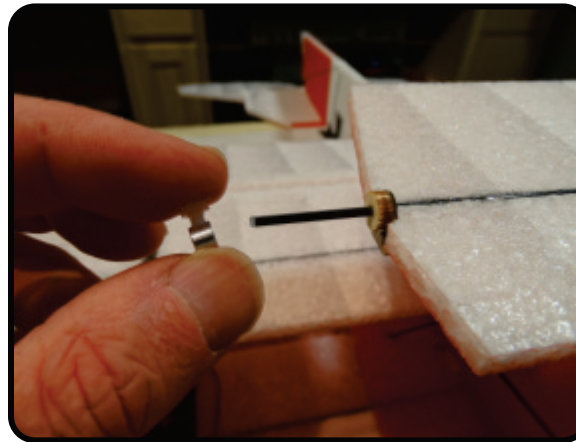
Double check that every thing is level in both directions. Apply thin CA to the rods where they contact the fuselage as shown above.



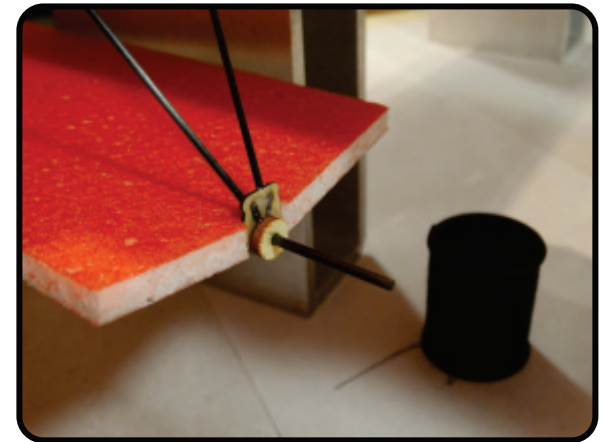
Put a drop of thin CA on the small wood part with the slots where it contacts the foam. Sparing at this time, you only need it to hold. Joint will be made stronger in a moment.



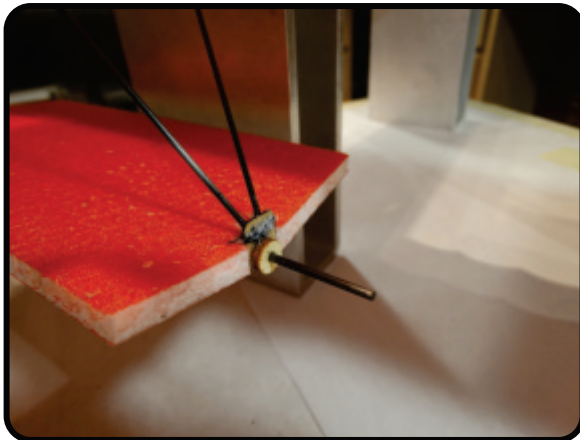
Add a drop of CA to the point where the rods come thru the slots of the wood piece, again just enough to hold.



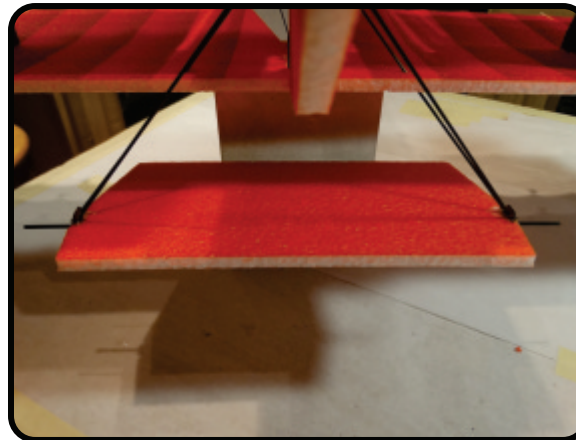
Remove the wheel collars and set aside for later.



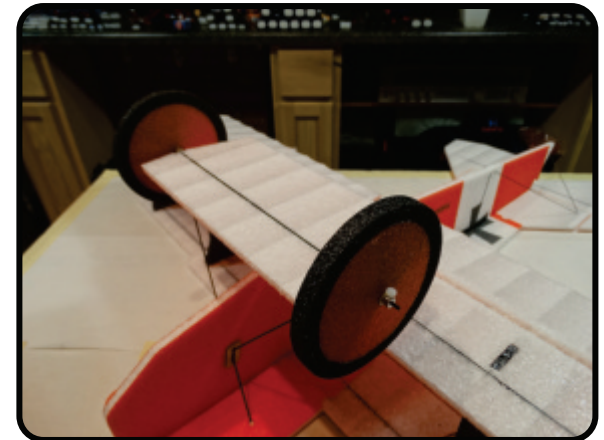
Flip the plane over, brace it up on some blocks and add some more CA to the mating parts. Get about 8in of black thread.



Wrap the thread around the joint area about 10 or 15 times, then soak with thin CA and set with kicker.



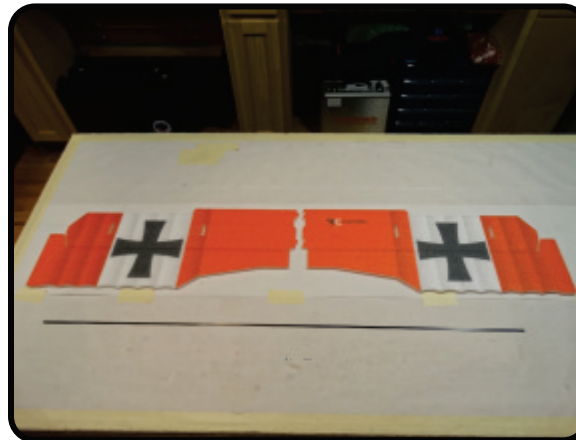
Repeat for the other side.



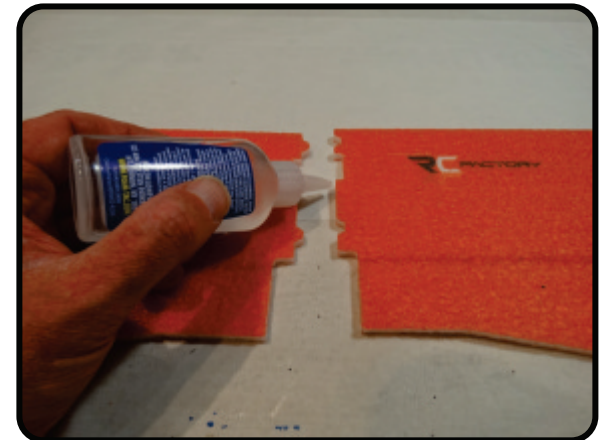
Install the wheel assemblies and the wheel collar as shown above. Small little flats can be add to the axle where the screws contact for a more robust clamping action.



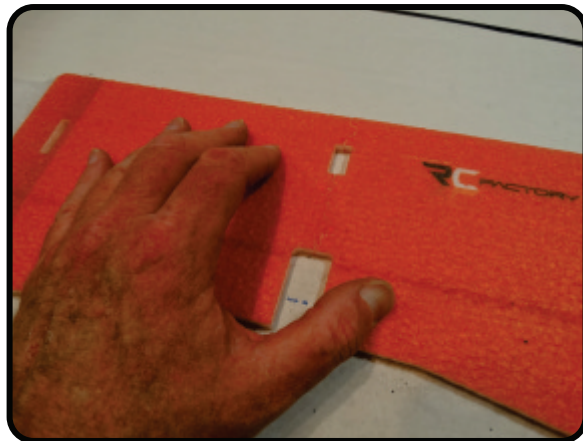
Squeeze some FoamTac into the slotted area of the wood doublers where the landing gear rods cross. Do this for the front and rear, and from both sides. Let the glue dry a little before handling.



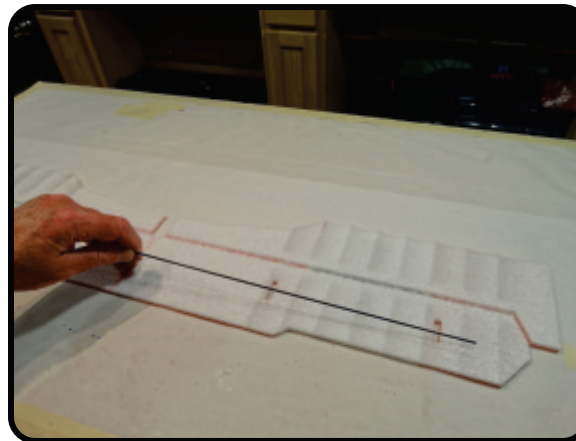
Locate the upper wing halves and the last of the 3x0.5x750mm spars.



Apply a skim coat of glue to each surface of the joint and allow the glue to tack up for a minute or two.



Bring the two halves together. Make sure and align the round keys and the slot for the spar.



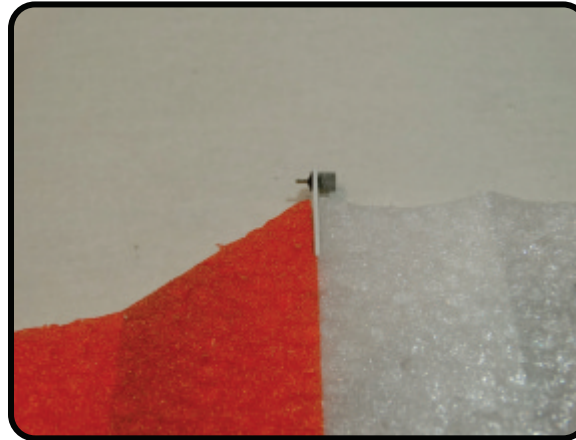
Flip the wing over and lay the spar into it's precut slot.



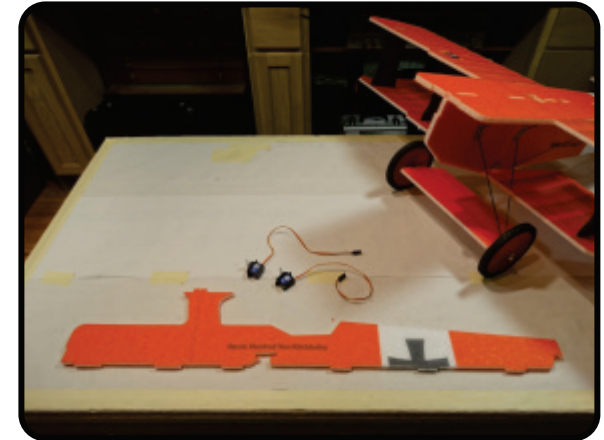
While keeping the wing flat with some weights, apply thin CA to secure the spar to the wing.



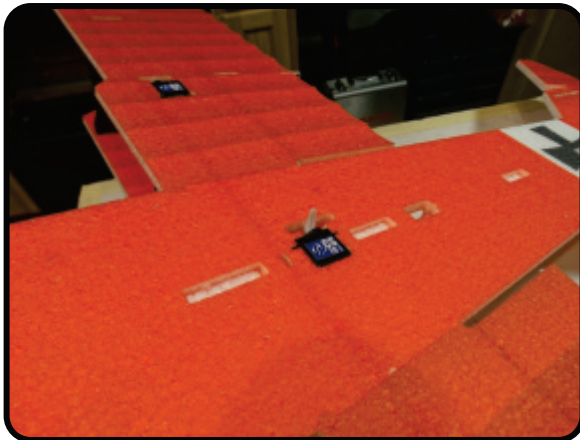
Locate the last pair of gang horns. Apply a little glue to the slot and the mating surfaces of the horn.



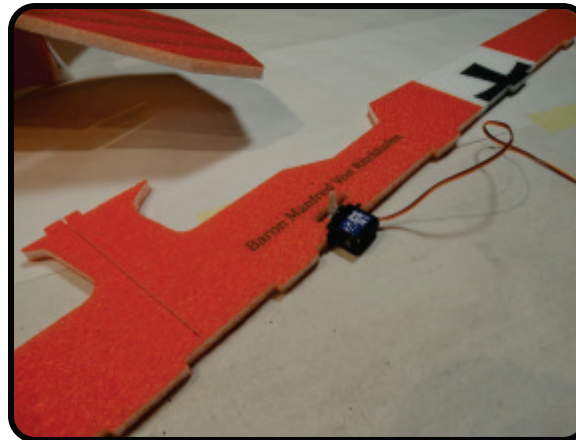
Install into the slot, wipe away any extra glue. NOTE - make sure that the head of the Quik Link is facing outward, towards the wing tip. This will make installing the screw easier.



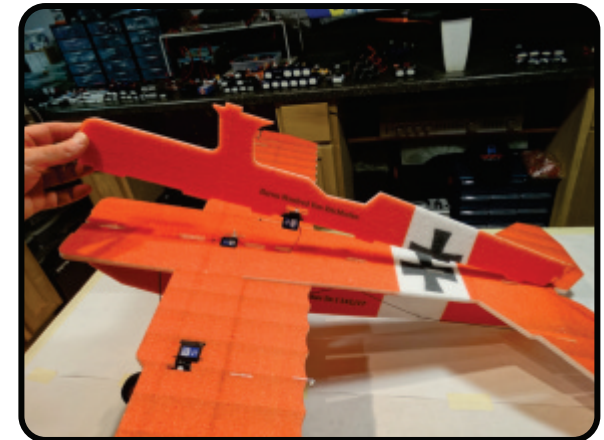
Locate the elevator and rudder servos that will be used, as well as the upper fuselage section.



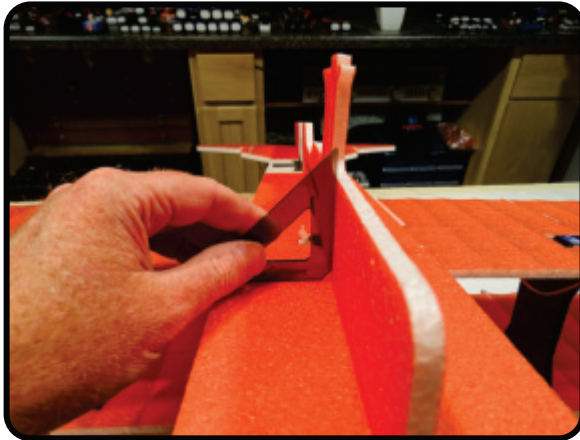
Install the rudder servo as shown. Make sure it is centered and that you have secured the horn with it's little screw to the servo.



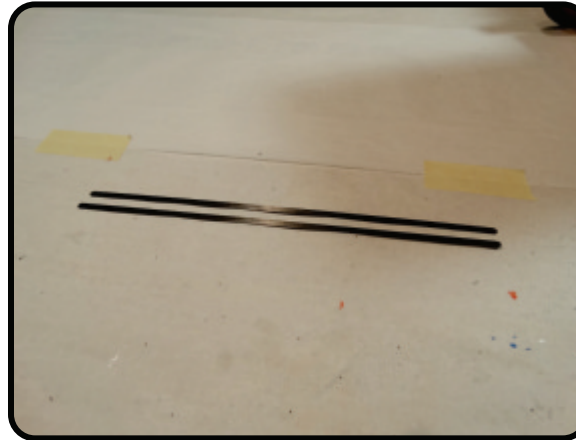
Install the rudder servo into the vertical fuselage section as shown. Make sure the orientation is as pictured, that the servo is centered and that the horn is secured with it's screw.



Apply glue to all the mating surfaces, including all the tabbed and slotted areas. While the glue is still wet, join the pieces together.



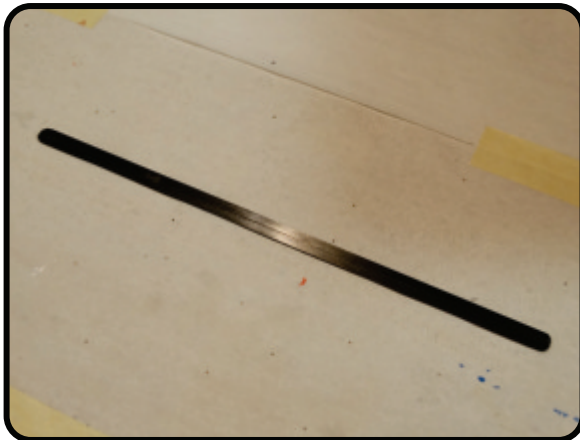
Press the two pieces together a couple times along the length of the fuselage to insure a solid bond and check for squareness.



Locate the two 4x0.5x230mm long spars as shown above.



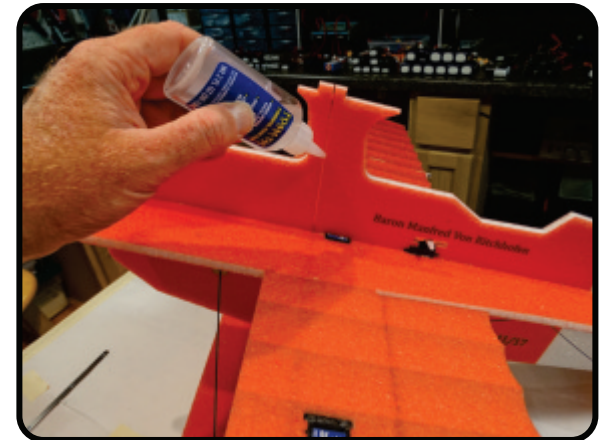
Match the two pieces up side by side like pictured and secure them together with 5 or 6 drops along their length.



Once the two spars are joined together, round off the ends a little. This will make it a little easier to slide into its slot in a later step.



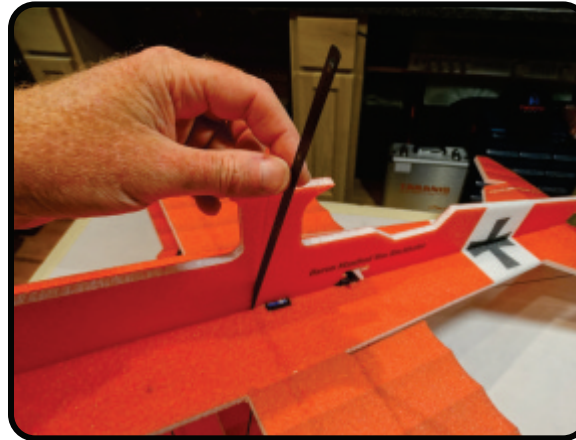
With a hobby knife, clear the path where the spar will install.



Squeeze some glue into the slot. Make sure and get the upper and lower fuselage slotted area.



Apply a skim coat of glue to both sides of the spar.



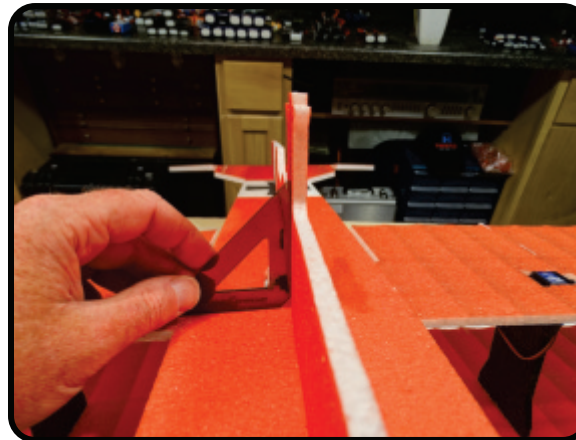
Starting from the position pictured above, start sliding the spar into the fuselage slot.



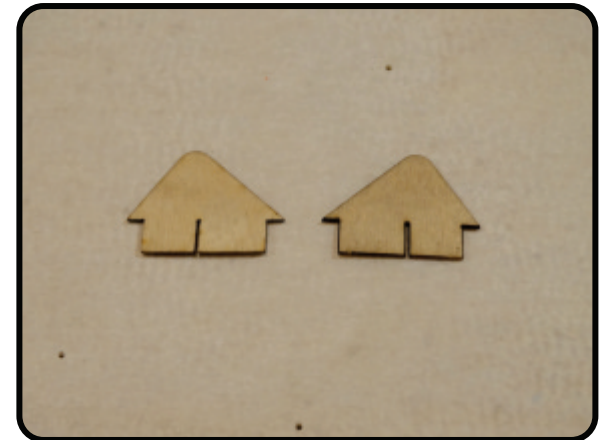
Work it down slowly into the slot, bend the center strut a little to give the spar a clear shot into the lower fuselage area.



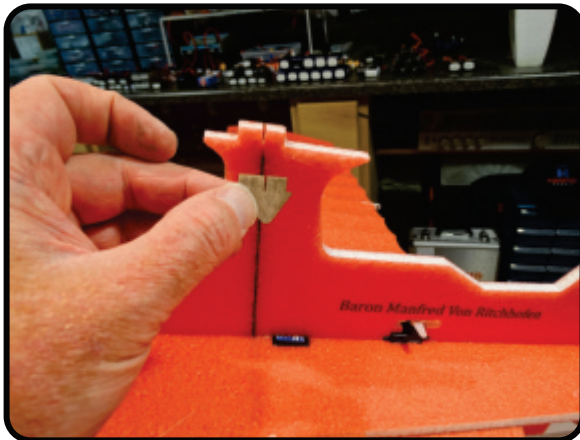
Make sure the lower end of the spar engages the area at the bottom where the wood doublers are. Check for flushness and wipe away any extra glue.



While the glue is still wet, check for squareness and adjust as needed.



Locate the remaining two fuselage doublers pictured above.



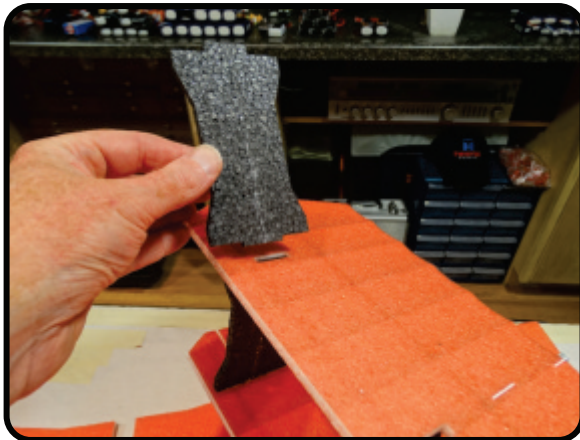
Apply a skim coat of glue to the back side of the doubler and locate to the upper end of the center strut. Make sure the orientation is correct, do the other side and match to foam profile.



Locate the remaining wing struts. You should have two with carbon spars and two plain ones.



Note that it is the shorter tabs that will engage into the CENTER wing, and that the struts with the carbon are installed into the outboard slots.



Apply glue to the mating areas and install the outboard strut as shown. Note that the strut should be leaning FORWARD at the top for proper installation.



Install the inner wing strut, and as with the outer one, small tab into the center wing, and leaning forward.



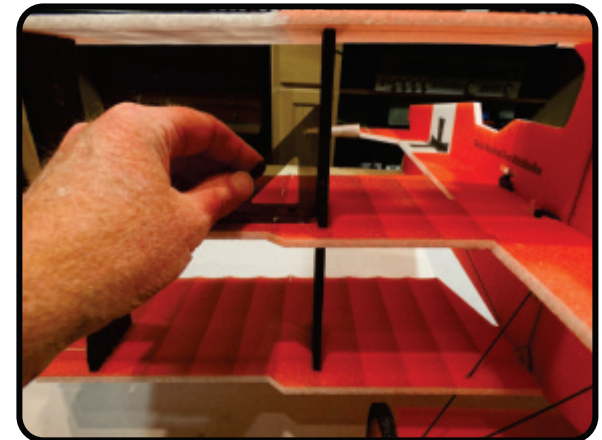
Install the other inner strut with the same procedure as the previous two.



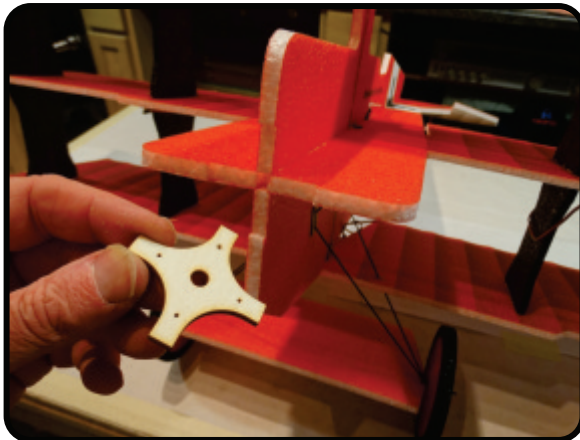
And finally the last strut. This should be one with the carbon. Let the glue dry a little while.



Test fit the wing. Once happy, apply glue to all the mating surfaces and tabbed and slotted areas. While the glue is wet, join the wing to the struts.



Check for squareness. It should come out pretty square at this point, with little to no adjustment needed.



Locate the wooden motor mount and apply a medium coat of glue to the back side.



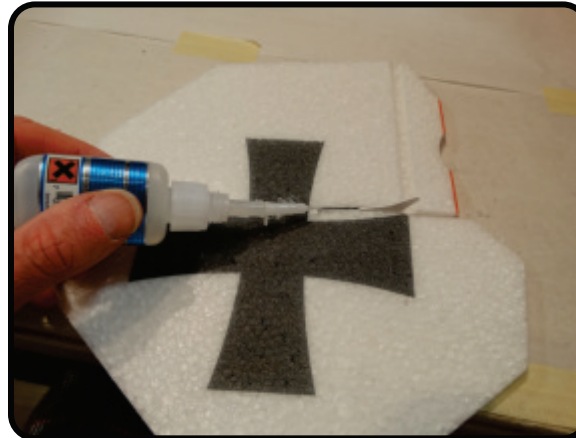
Attach to the fuselage as shown making sure that everything is nice and square.



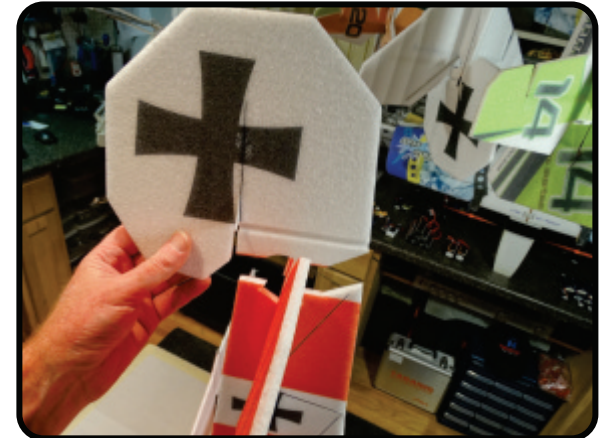
Wipe away any extra glue and let this dry for a little while.



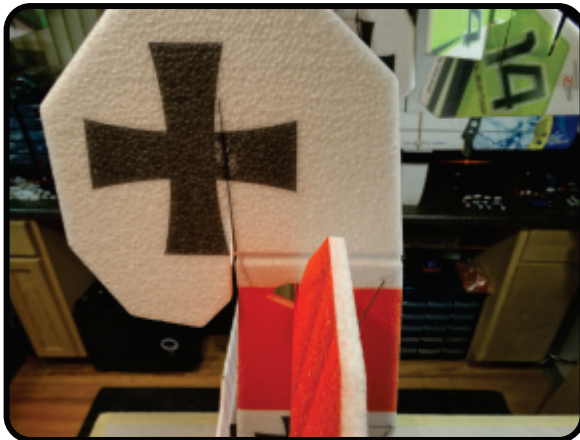
Locate the rudder control horn, should be the longer of the two remaining and the 3x0.5x100mm carbon spar.



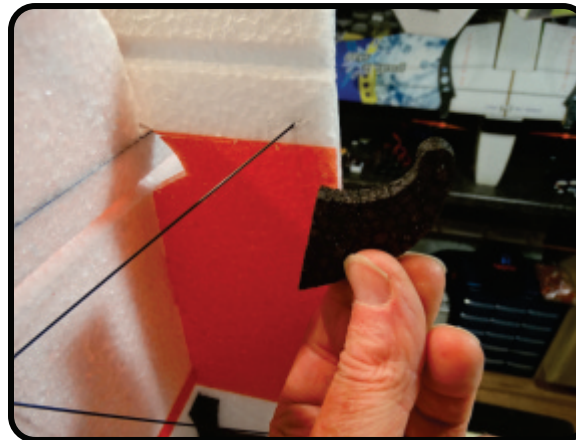
Install both the horn and the spar from the side shown above. Note that the hinge cut should be facing up. Secure with thin CA and kicker.



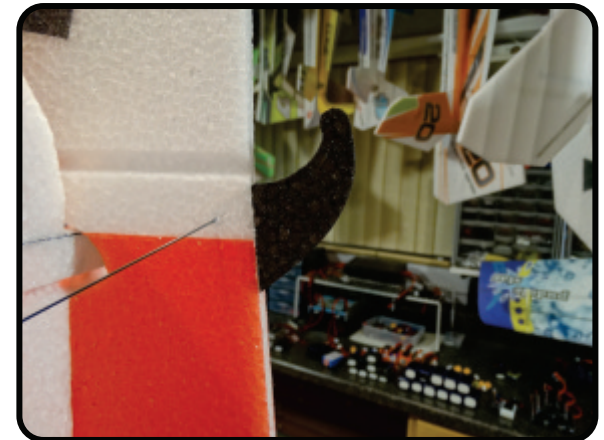
Use the tack up method to attach the rudder - apply skim coat to each mating surface, let sit for a minute or two.



Carefully align and join the two pieces as shown above.



Locate the tail skid and apply a skim coat of glue to the skid, and the mating area just forward of the rudder hinge cut.



Once the glue is tacked up, join the two pieces together, locating approx as shown above.



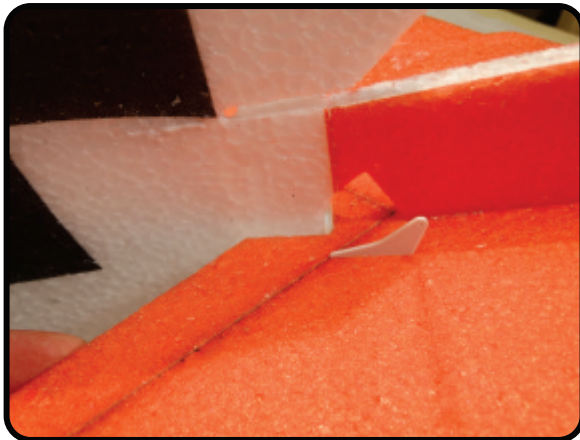
Locate the pilot. Apply a skim coat of glue to the mating surfaces. Note that the scarf does not get glued, it just bends off to one side or the other.



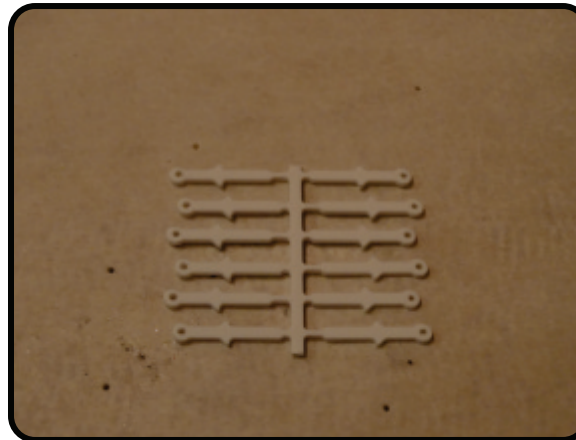
Once the glue has tacked up, join the pieces together.



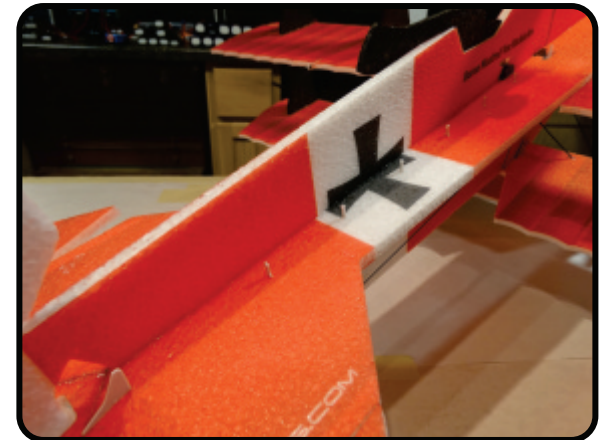
Locate the elevator control horn, should be the shortest and last remaining horn, squeeze a little glue into the slot and apply a thin coat to both sides of the tab.



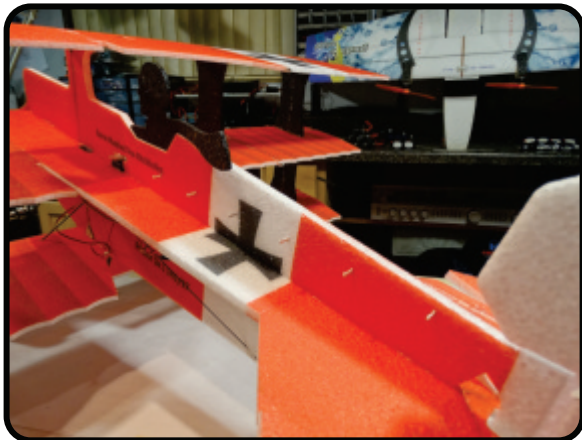
While the glue is still wet, install the horn into it's slot and wipe away any extra glue.



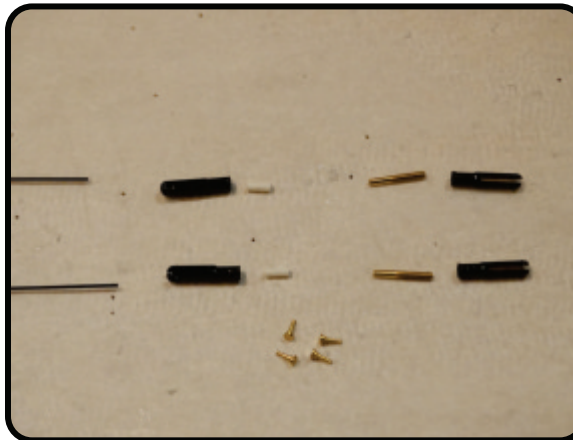
Locate the tree of push rod guides and cut them all free from their stem.



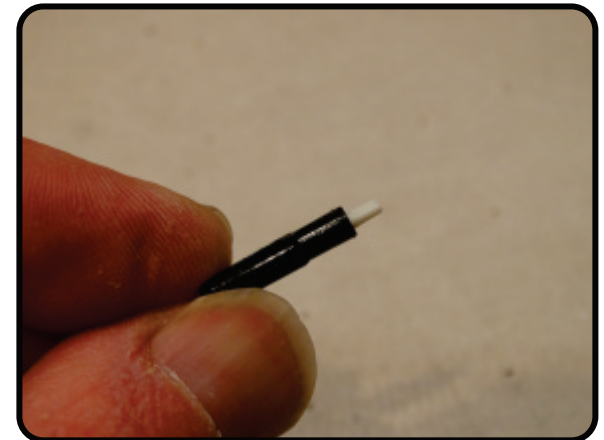
Install six of the guides into the pre-cut holes as shown for the elevator pushrod. Line them up straight and secure with a single drop of thin CA at their base, hit with kicker.



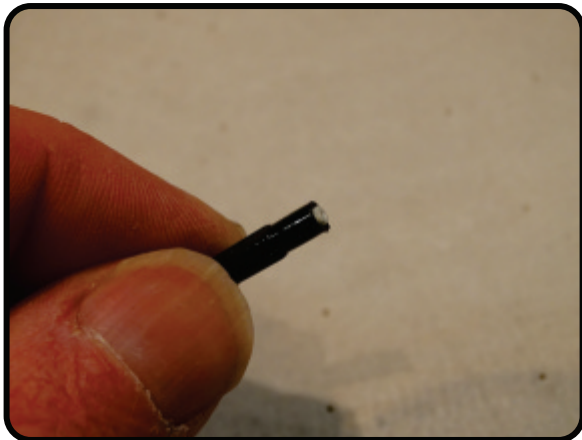
Repeat the previous step with the rudder control rod guides



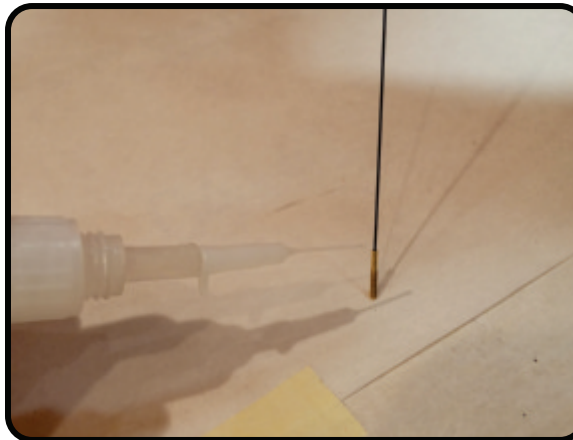
Locate the items above. These will be used in the construction of the push rod assemblies. Carbon rods used are the 0.8x500mm rounds



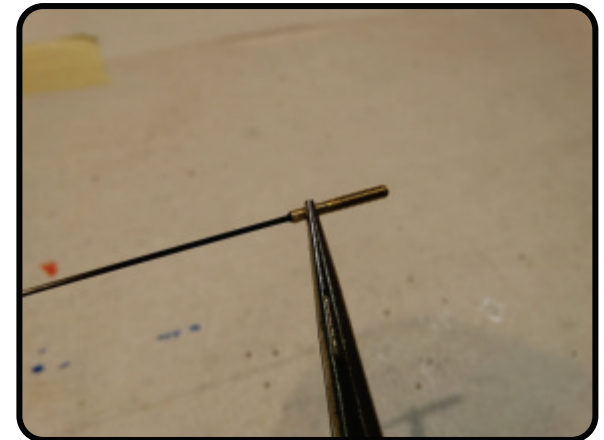
Take one of the clevis ends and one of the little white sleeves, and push it into the hole of the clevis. It will be a little stiff.



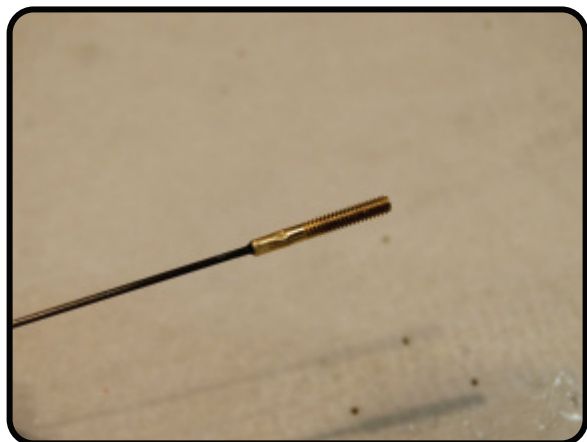
Press it in until it is nearly flush with the clevis end. Repeat the for another clevis and set them aside for now.



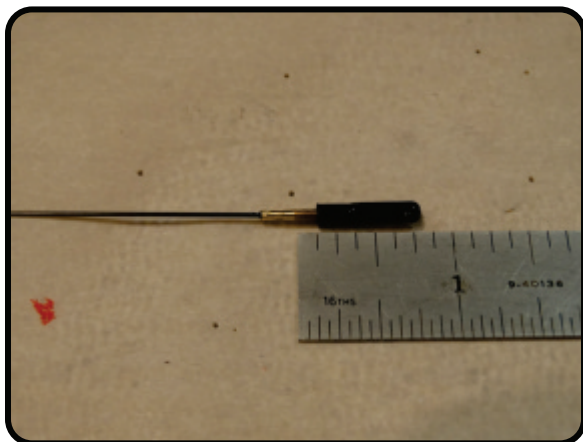
With thin CA and kicker, secure one of the brass ferules to the end



Pinch the end of the ferule for extra security.



It does not take much pressure to pinch these, but do be careful to avoid crushing the carbon rod. Check to make sure it is secure. Add another drop of CA if needed.



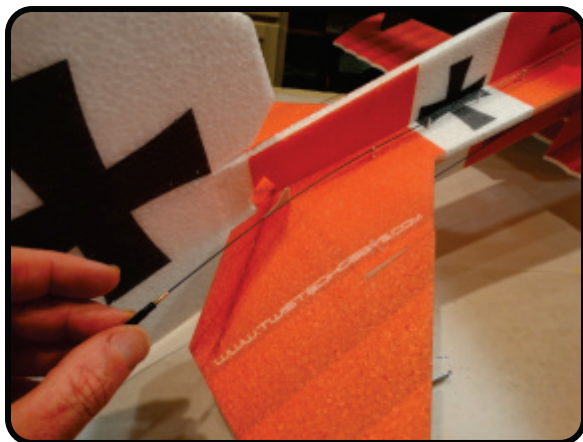
Thread the clevis on, leave about 1/8 of exposed threads. This will give you a little adjustment in either direction if needed. Repeat the steps with the other rod.



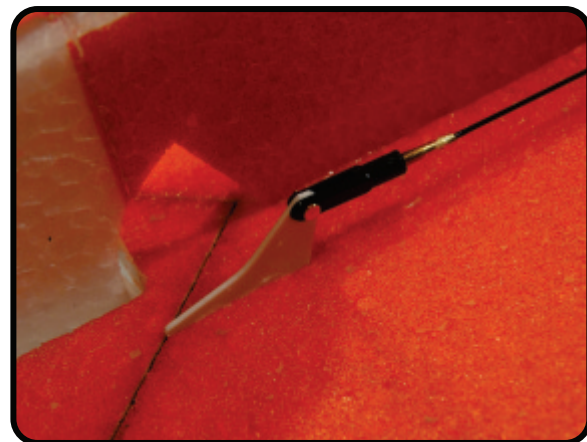
Attach one of the clevis's with the white tube install to the rudder servo. Note that the hole is a little bigger on one side, this is the side the brass pin installs from.



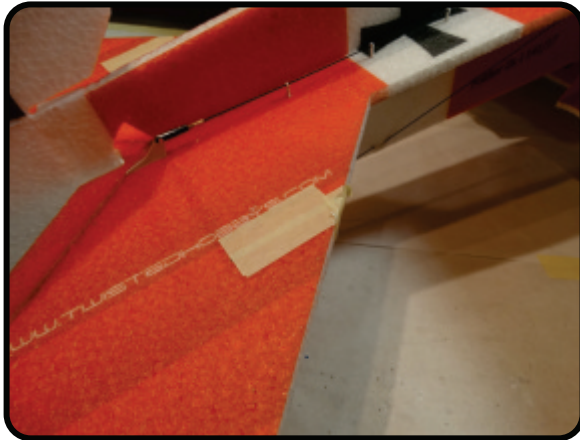
Repeat the previous step with the elevator servo.



Slide one of the control rod assemblies thru the guides as shown. Note - install as shown, this will put the threaded end on the control surface end, and will be easier to reach if needed to adjust.



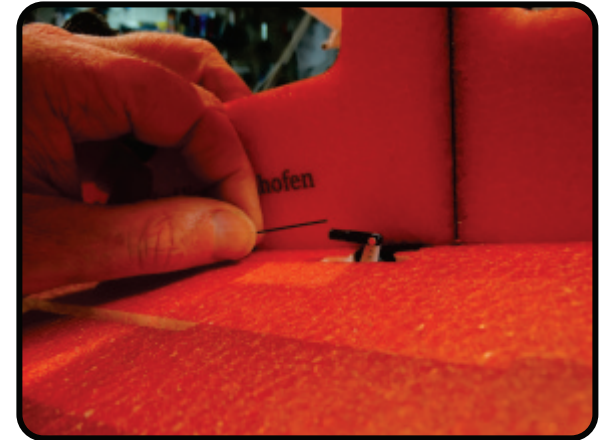
Attach the clevis to the elevator horn as shown. Remember to install the brass pin thru the larger clevis hole.



With some tape, lock the elevator control surface in it's neutral position.



Make sure the servo is centered. Hold the control rod next to the clevis and trim the rod so that reaches just to the end of the round solid part of the clevis. This is about 3/16" overlap.



Push the servo arm forward and slide the end of the rod into the end of the clevis. You may need to deburr the end of the rod a little to get it to go into the little white tube.



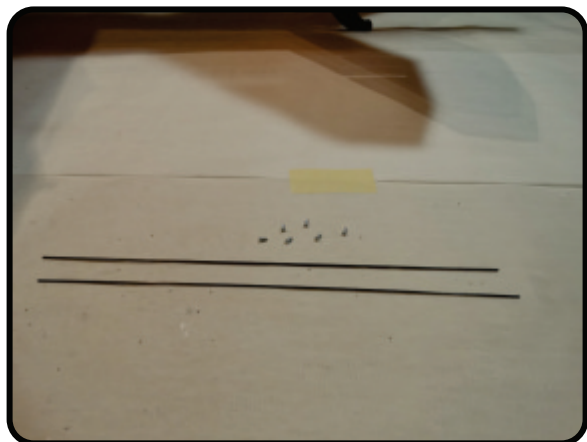
Return the servo horn to it's neutral position and double check that the elevator is still locked neutral.



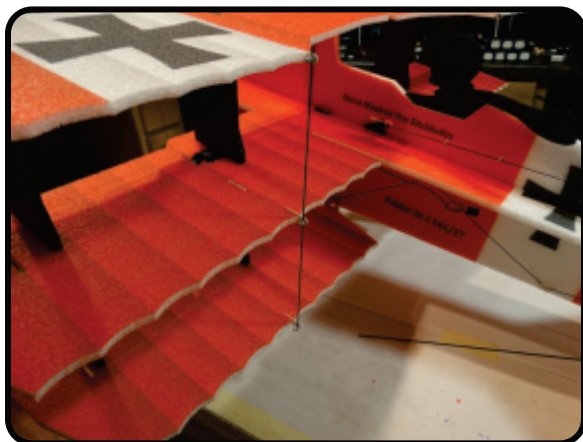
Add a single drop of thin CA to where the rod enters the white tube and hit with kicker.



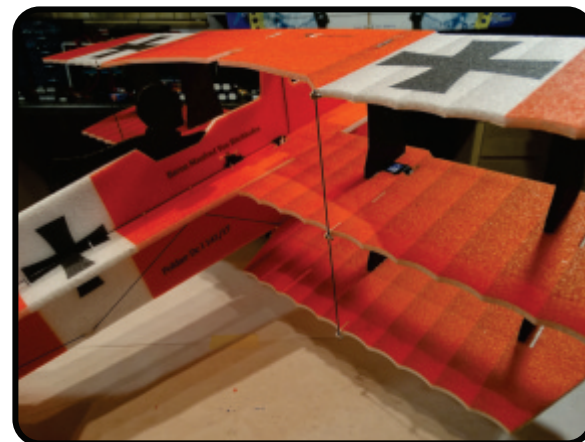
Repeat the entire process with the rudder control system. Remove the tape from the rudder and elevator control surfaces.



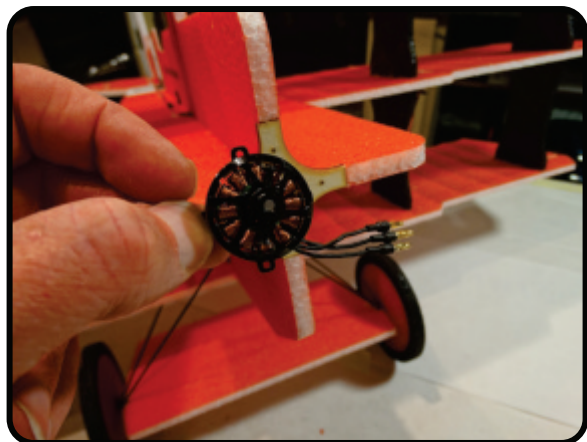
Locate the two carbon rounds that are 1.2x250mm long. Also find the six little screws that go with the Quik Links. When installing the screws, in the next step... just use light pressure.



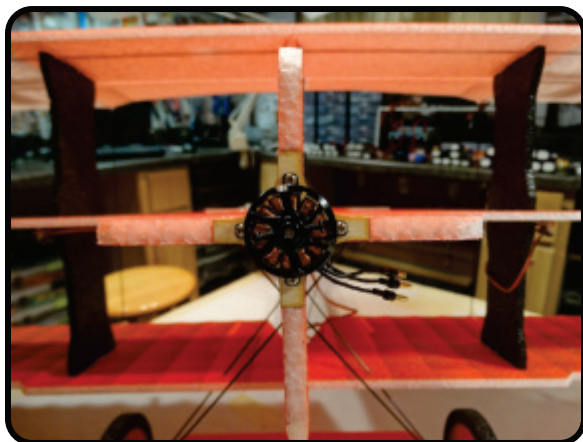
Center all three ailerons, slide the rod thru each Link, center the rod between the upper and lower ailerons, secure the center aileron with a screw and finally secure the other two ailerons.



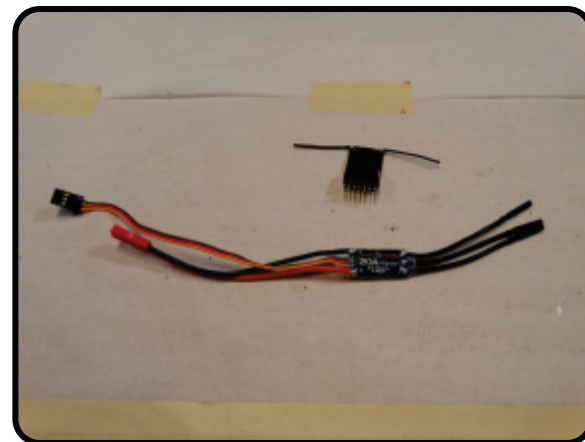
Repeat the process for the other set of wings. Again, do not over tighten the little screws, it will crush the carbon rod, light pressure is all that is needed.



Locate the motor that you will use. Decide where you want to install the ESC and point the motor wires in that direction.



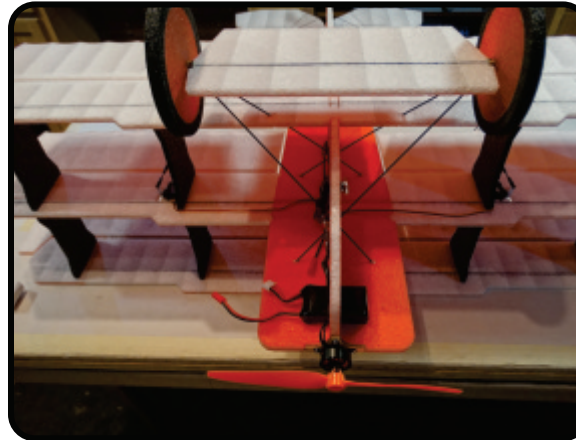
Install the motor. Either use the screws that came with your motor, or some screws from the servo hardware pack, either work equally as well.



Locate the ESC and Receiver that will be used. These two items will be attached with low temp hot glue. On this model, locate electronics as far forward as possible.



ESC and Receiver mounted. Locating the Receiver as shown will allow the aileron servo leads to reach without extensions (with power combo servos). Balance and mount a prop.



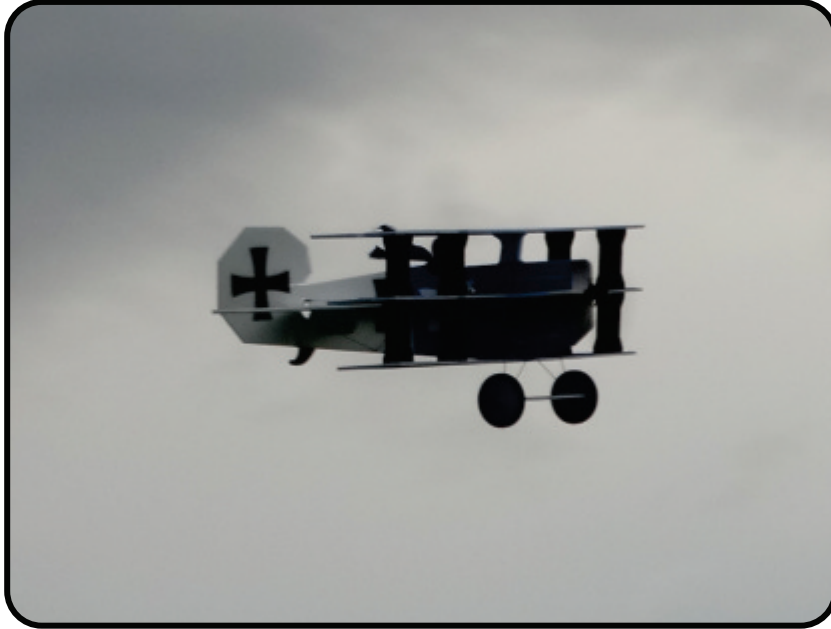
Locate the battery as needed to achieve the CG as indicated on page 37 and either locate the battery with velcro or by cutting a slot. If not sure about CG, use velcro to start with.



Check your radio program... adjust the radio program to your favorite settings. Some suggestions are on page 37 if you need a place to start. Charge some batteries... and go FLY...!!



There are three different schemes available. This manual was written using the center one above, but all of them build identically. Also visit R/C Groups for more comments and pictures from other customers and Twisted Hobbys' Team Members.



Dress your pilot up with a flying scart, charge up some batteries and head out to your favorite flying site for some fun...!!

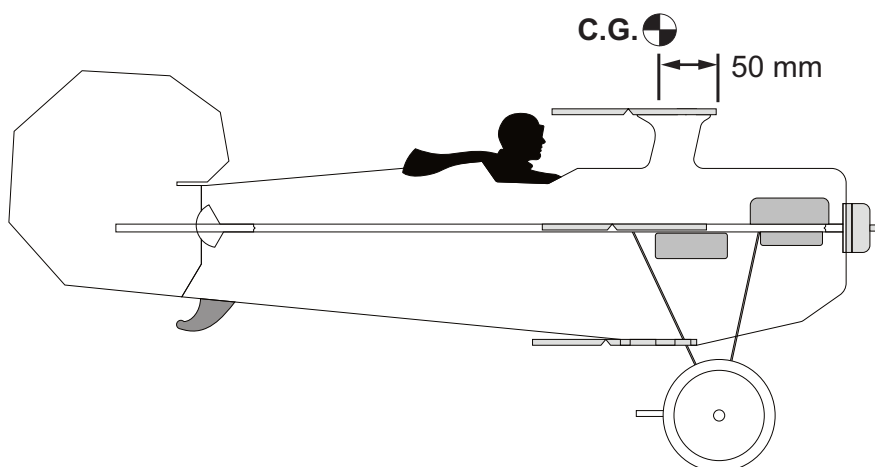
This completes the build, it's design and construction should give you many hours of flying enjoyment. This airplane will serve you well, whether you are relatively new to 3D flying or are a seasoned veteran.

Please visit www.TwistedHobbys.com for other accessories and aircraft.

There are several online resources and forums for this model as well. It is suggested that you visit the RC Groups Thread for this model for additional information, it is a great resource for questions and insight to this aircraft.

CENTER OF GRAVITY

C.G. - 50mm from LE of top wing



Locate all the electronic to achieve indicated CG point. Use Velcro for initial flights for battery mounting and experiment with it's position until you have determined the best spot for your flying style. For best 3D performance, balance for level flight upright and inverted with little to no elevator input.

Also power off down line should be straight down without any pull or tuck.

CONTROL THROWS

Extreme & 3D

Ailerons: +/- 40 deg

Rudder: +/- 45 deg

Elevator: +/- 50 deg

Expo to suit (40% to 60%)

Beginner & Sport

Ailerons: +/- 20 deg

Rudder: +/- 20 deg

Elevator: +/- 20 deg

Expo to suit (15% to 30%)

In order to achieve the control throws as described for "Extreme and 3D", it is imperative that the control surfaces, linkages, rod ends, etc, all move freely over the entire range, including range end points.

Failure to do so will result in damage to either the servos or mechanical components



PRE-FLIGHT & TESTING

PREFLIGHT Checks

Motor: Should run smoothly at all stick positions, and transition smoothly from low to high RPM. If the motor is turning backwards, reverse two of the three wires between the motor and ESC. Check that the screws holding the motor to the airframe are tight and secure.

Flight Controls: Set all to neutral or level positions with sticks in the neutral positions. Ensure that all controls and linkages move freely. Double check that all hinged areas are free from rips or tears. Verify proper control surface directions. Right Roll is – right aileron up, left aileron down, Left Roll is left aileron up and right aileron down.

Batteries: Should be fully charged prior to each flight. Watch transmitter battery level and follow manufactures recommendations. Motor battery should not be drained any further than recommended by the manufacture, use a timer to prevent an over discharged condition.

Radio: All trims should be set to neutral and throttle in the low position. Check that rate switches and mixes are set properly.

Range Check: With and without the motor running per radio manufactures instructions. If there is insufficient range or significant reduction with the motor running, resolve and re-test before flying.

PREFLIGHT Checks

The first flights should be done with the CG at the recommended position, and reduced control rates until comfortable with your handling of the aircraft. As your experience with the aircraft grows experiment with different CG points and control rates. After all flights, check the aircraft over for damage and/or other items that may adversely affect flight performance.

This WWI Semi Scale Plane is a full 3D performance aircraft and will provide hours of entertainment, including the occasional crash. If, as the result of a crash, the foam tears, simply glue with Welders, FoamTac or CA. Many pilots prefer Welders or FoamTac because they remain flexible after drying. CA however, is more suited for the “quick” repair.

This aircraft can be flown indoors or outdoors. It is however designed specifically for indoor flying and will be right at home in the local gymnasium or other similar sized venue.

STORAGE

This EPP plane should be stored resting it's landing gear or hung from the prop. Storing in other fashions that put stress on the airframe could cause the airframe to distort. Storage in a hot car could also cause damage.

Be safe and enjoy, thank you again for purchasing a Twisted Hobbys' Product!

NOTES AND S/U SHEET

Setup Sheet

Transmitter -

Receiver -

Model

Weight - g oz

CG Point - mm from wing leading edge

timer - min

Travels and Exponential

	low rate	high / 3D
right aileron up -		
right aileron down -		
left aileron up -		
left aileron down -		
aileron expo -		
rudder right -		
rudder left -		
rudder expo -		
elevator up -		
elevator down -		
elevator expo -		

Electronic Components

Aileron Servo -

Rudder Servo -

Elevator Servo -

Battery -

motor -

ESC -

Propeller -

TIPS AND TRICKS

A good building surface is “drop ceiling” panel from a local hardware store on a nice flat board

Use parchment paper between the areas being glued and your work surface

Heavy flat objects (like books, batteries, etc.) could be used to hold everything flat

When resetting your radio, start with all the ATV's or throw volumes at 100%.

Make sure you have set the direction of the servos correctly before attempting to trim for zero position.

If possible try the servo horns in different locations to determine which position will require the least amount of sub trim.

Installing the servo horns in their final location and attaching quick links to the servos may make servo installation much easier later.

On the Orange Rx, the negative pin is the one closest to the flat side of the circuit board.

Keep a good supply of sharp knife blades handy when building a foamie airplane.

Use low temp hot glue for gluing electronics, this will allow for easy removal later if necessary. The low temp hot glue can be “released” by painting” the glue bead with an alcohol soaked cotton swab a couple times.

A business card with the corners clipped off can be used as a small square.

Allowing the Welders glue to set for five minutes before assembly will shorten the tack up time, just be sure if doing it this way that you get the parts into position quickly, as the glue will start to bond on contact. Any joints that you feel are going to require adjustment, it is best to assembly the pieces while the glue is wet. The Green (high tack) masking tape works the best when used to clamp things together on an EPP foam airplane.

When gluing the rudder to the fuselage, stick pins could be used to hold in position if wanting to handle the airframe before it is completely dry

A rotary tool with a cutting wheel could be used to produce grooves in fiber glass parts instead of coarse sand paper. Use a hatch pattern. This creates more bonding area for the glue.