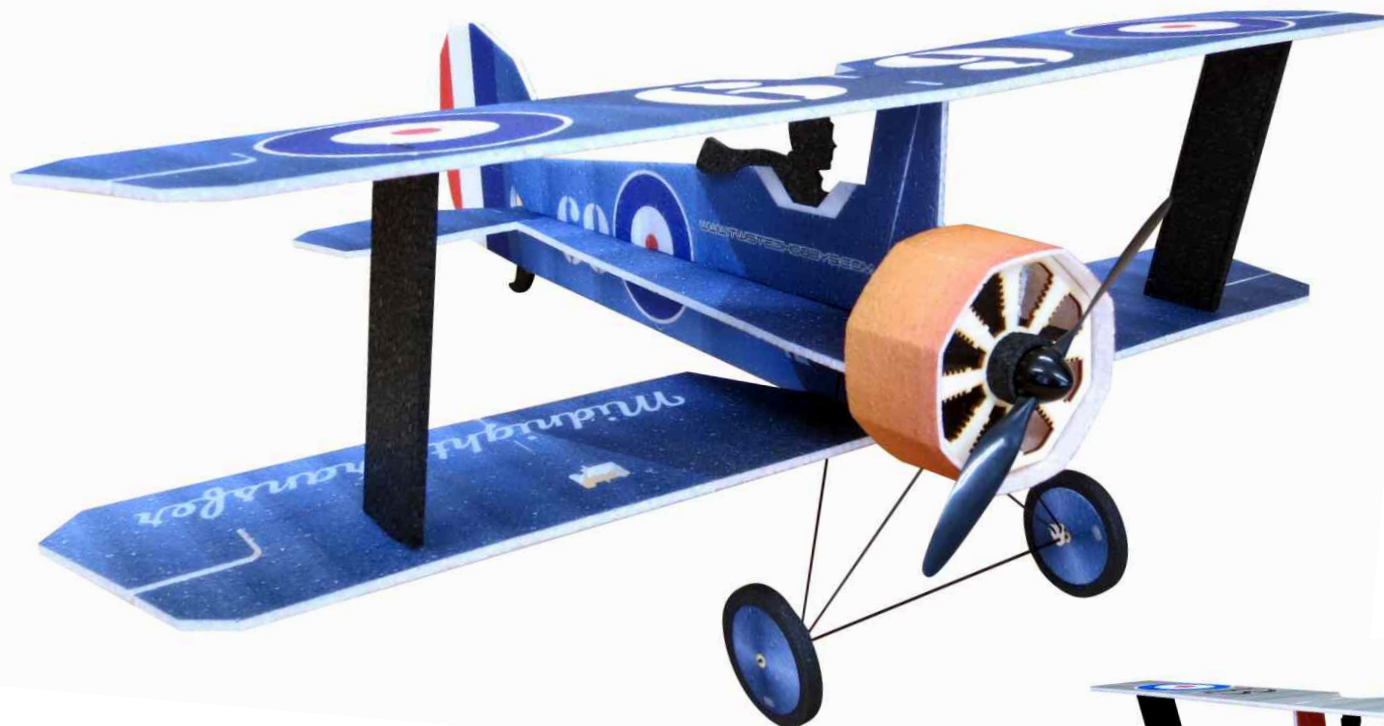
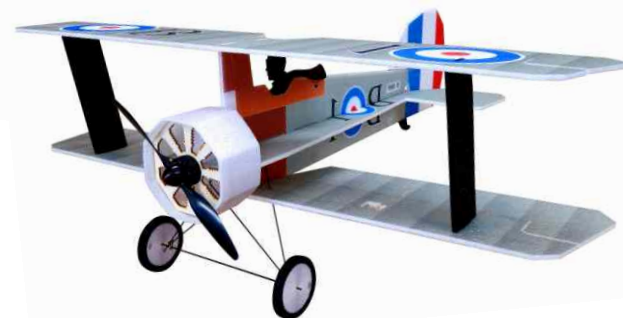


MANUFACTURED BY

RC FACTORY



CRACK CAMEL



MOTOR: 1x 25-30g / 1400-1500kv Outrunner
ESC: 1x 10-20 amp
SERVOS: 4x 7-9g
PROP: 1x 9 x 4.7 slow fly
BATTERY: 2s-600mAh

H
TWISTED
HOBBYS

RADIO: 5 channel
WINGSPAN: 35"
LENGTH: 28.5"
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

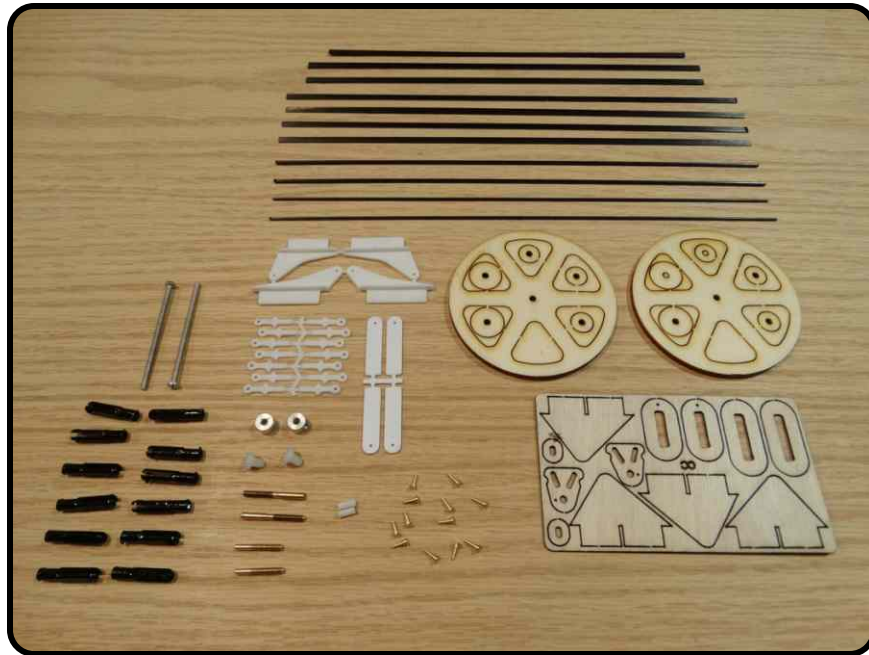


Fuselage Parts

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

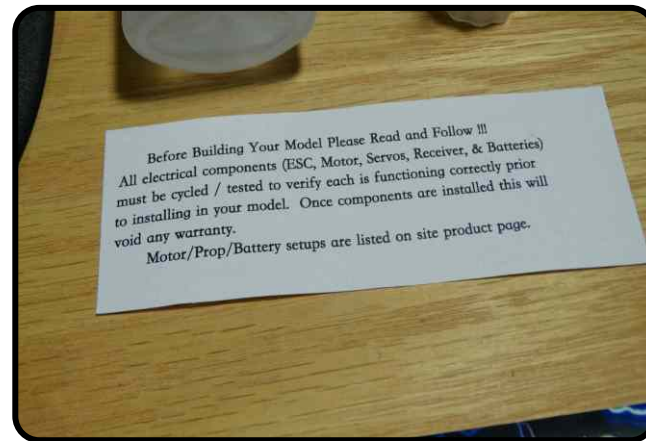
- **Lighter**
- **Small Drill Bits**
- **Tape Measure and Ruler**
- **Black Sewing Thread**
- **Welders or Foam Tac Glue**
- **Hobby Knife w/new Blade**
- **Needle Nose Pliers**
- **Wire Cutters**
- **Low Temp Hot Glue Gun**
- **Course Sand Paper**
- **Scissors**
- **Small Phillips Screw Driver**
- **Thin 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.
- ☐ Create a model on your transmitter
- ☐ Following your radio mfg. instructions, bind your radio to the power combo components
- ☐ Calibrate the ESC as per Mfg. Instructions
- ☐ Confirm all components work properly.



Build will start with the elevator and the carbon strip that is **3x0.5x300mm**. Identify the pre-cut slit in the bottom of the elevator and check the fit of the spar.

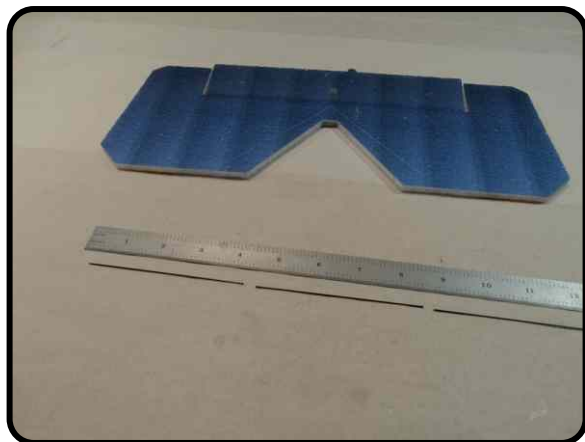


Secure the elevator flat with some weights or stick pins, install the spar into the slot and attach the two with some thin CA and Kicker.

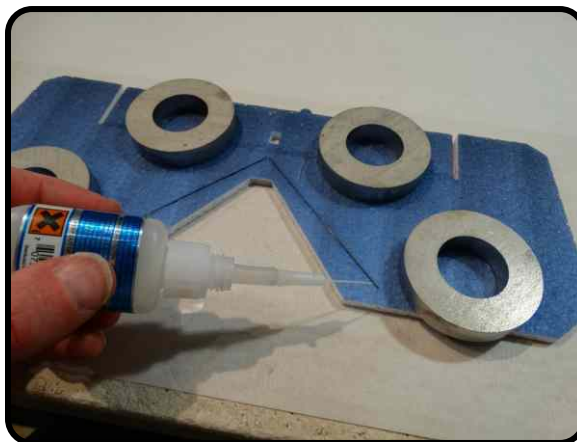


Flip the elevator over and locate the round carbon that is **0.8x500mm**.

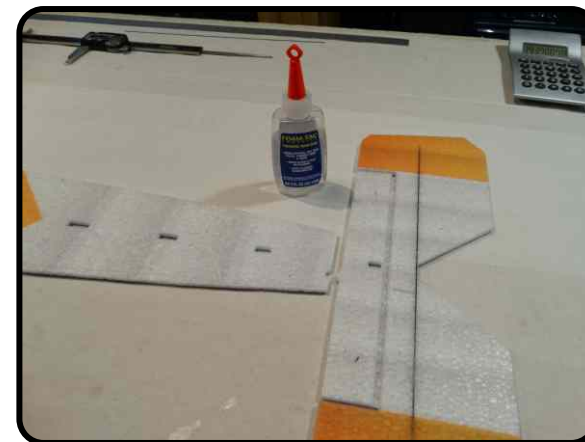
Note there are lots of long carbon rounds in this kit. Make sure and use the sizes specified per each step.



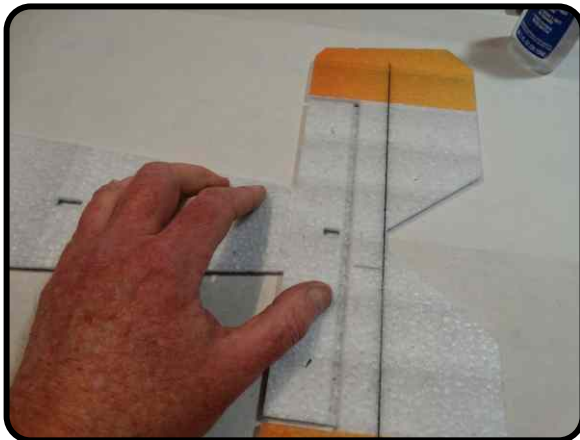
Cut **two pieces 100mm long**. The cut can be easily made by “rolling” a hobby knife where you want the cut, and then “snapping” the part free. Test fit in the pre-cut slot. Save the drop piece.



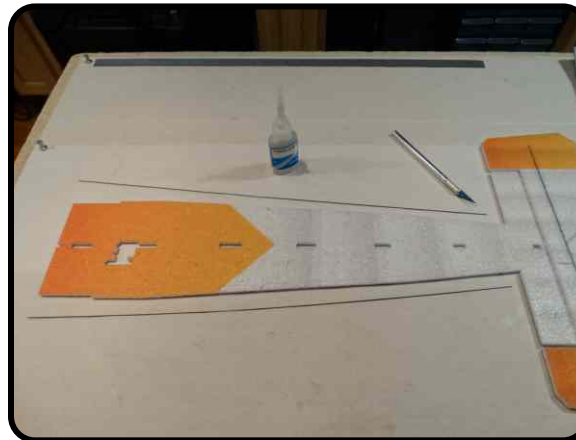
Secure the elevator flat as shown with some weights or stick pins, install the rounds into their respective slot and attach with some thin CA and Kicker.



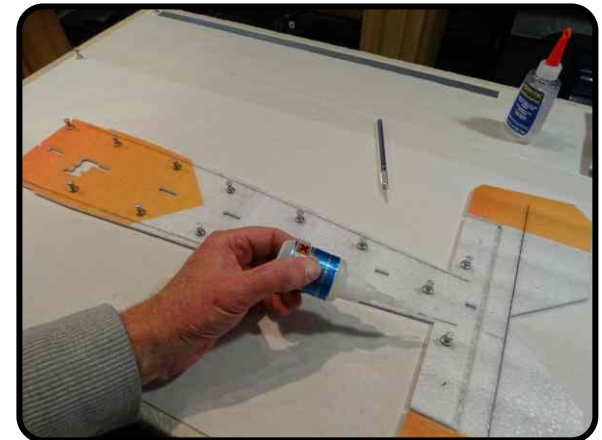
Locate the horizontal section of the fuselage, face the bottom side up and test fit to the elevator. Parts are notched for orientation.



FoamTac is a good choice of glue for this step. Apply a skim coat of glue to each surface, let sit for about one minute, then secure the parts to each other, this is called “tack up” method.



Locate **2 pieces** of the round carbon that is **0.8x500mm**. Test fit this as full lengths into the pre-cut slots of the horizontal fuselage piece.



Hold the foam flat with either weights or stick pins. Install the rounds into the slots and secure with medium CA and Kicker.



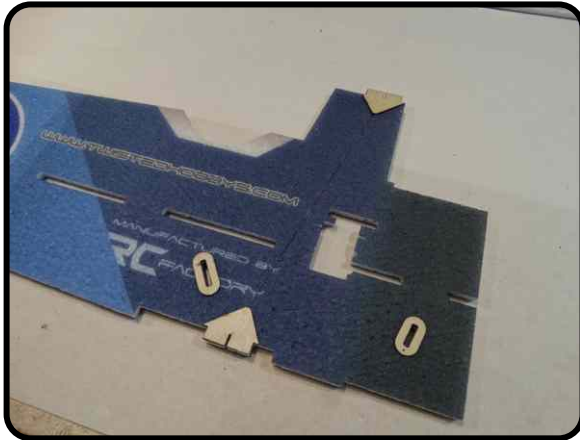
Move the horizontal fuselage assembly off to the side and locate the vertical Fuselage section and the wood kit pictured above.



Identify the four pieces pictured above and notice how they match up to the features in the foam. **Note orientation of the hole in the front oval doubler.**



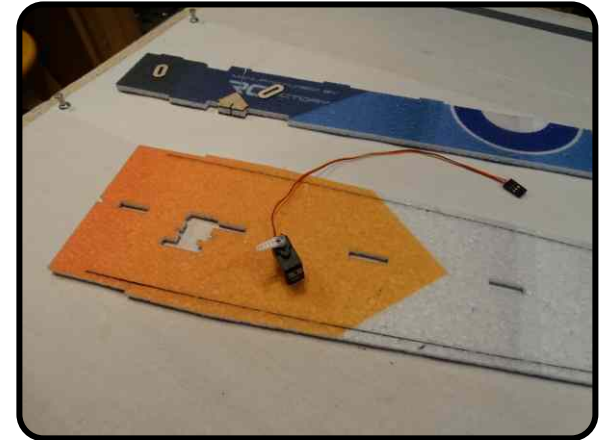
Using the tack up method, secure the pieces to the fuselage as pictured above. Make sure the slots in the wing doubler line up with the slots in the foam.



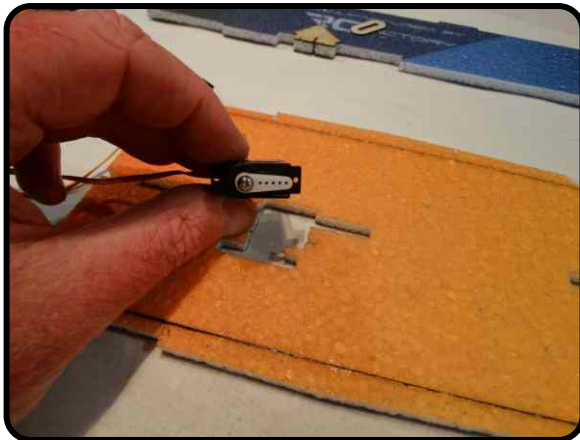
Flip the fuselage over and repeat the process with all the same wood piece on the other side, remember to locate the small hole in the forward piece at the bottom position as shown.



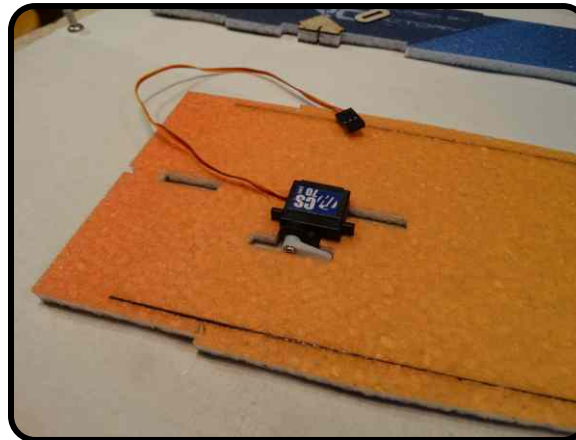
Next split the fuselage into upper and lower halves. Use the small triangle shaped tick marks as a guide for cutting down the center of the tab.



Locate the servo that you want to use as the elevator, make sure it is electronically centered and install the long single horn as shown.



If your servo allows, gently move the horn to the position shown, if your servo does not allow for this, you will need to remove the horn and re-install it later.



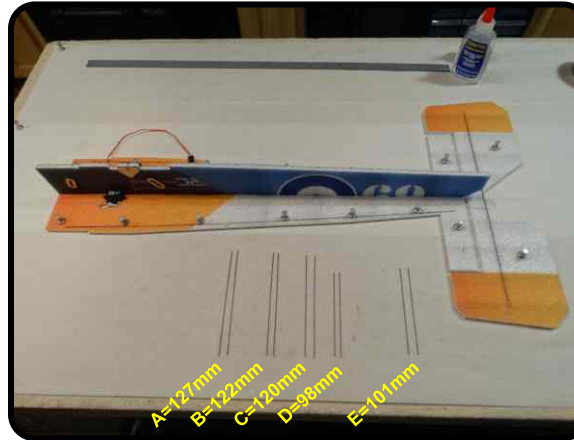
With the bottom side of the horizontal fuselage section facing UP install the servo as pictured.



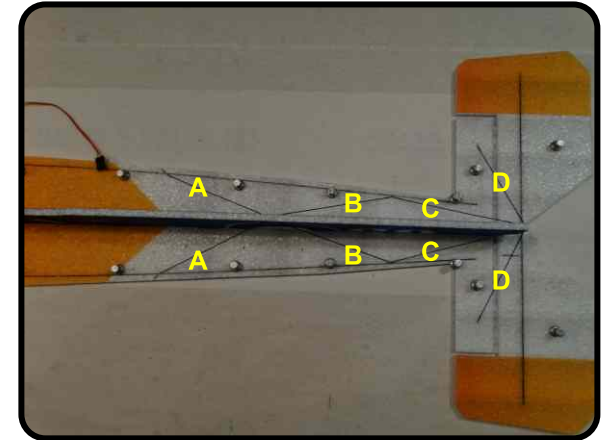
Using FoamTac, apply a medium bead of glue to all the mating surfaces and install WET. Adjust the vertical piece as needed so that it is square with the horizontal piece.



Secure the fuselage in a flat position with either stick pins or weights. Locate 2 pieces of **0.8x500mm** carbon rounds and the 1 piece **0.8x300mm** that was left over from the elevator.



From one 500mm piece cut **2x 127mm** and **2x 122mm** from the other 500mm piece cut **2x 120mm** and **2x 98mm**. From the 300mm piece cut **2x 101mm** pieces



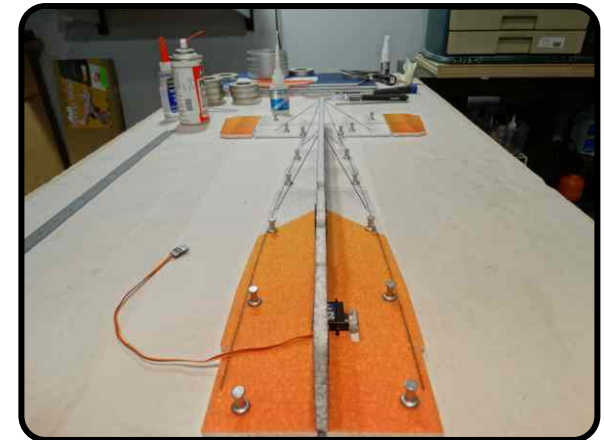
Using the letters above to match up with the lengths from the previous step, dry fit all the rods as shown, there will be small slots for all the ends to go into, if not double check the piece length.



Still **NO GLUE**, sight down the fuselage from above and make sure the vertical piece is straight and square, adjust as needed to achieve this conditions.



Once satisfied with the squareness, apply a drop of thin CA to the end of the rods and set with Kicker.



Do all the ends with CA and Kicker making sure that the vertical section of the fuselage is remaining square and straight as shown.



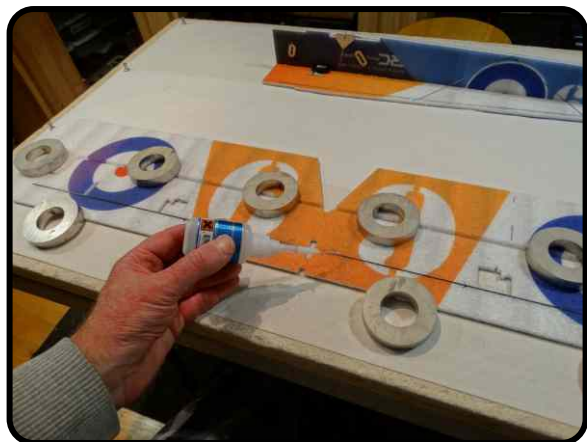
Locate the two bottom wing halves (they have the servo cutouts) and with the bottom facing up, check the fit of the center seam.



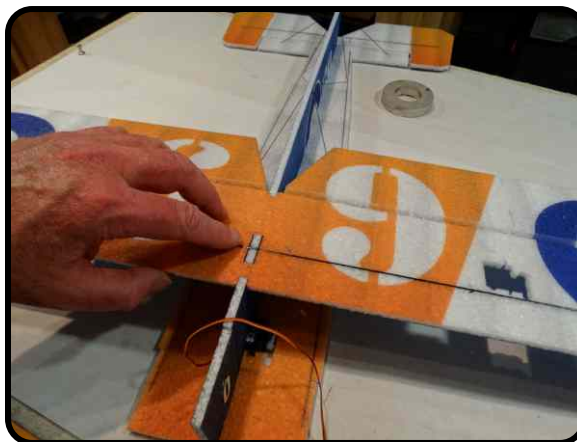
Using FoamTac and the tack up method, join the two wings halves together as shown.



Locate the **3x1x750mm** carbon rectangle and check it's fit into the pre-cut slot in the bottom of the wing.



Hold the wing flat with weights or stick pins and secure the spar flush to the bottom of the wing with CA and Kicker.



Apply a medium bead of FoamTac to all the mating surfaces if the lower wing and fuselage and install wet as shown. Make sure the center tab and spar are fully engaged.



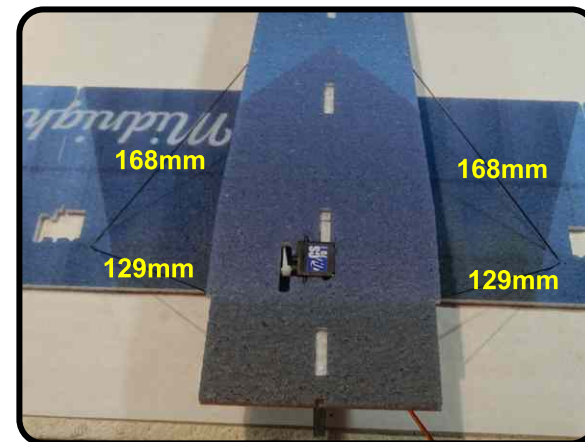
Flip the airframe over and level out as shown, you will need to put a spacer under the tail area in order to achieve this. Use a bubble level to verify everything is level.



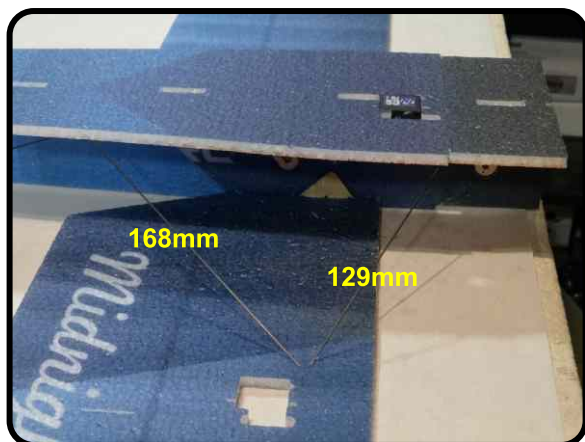
Locate the two round carbon pieces that are **1x300mm**. They will be cut to size in the next step and are the lower wing to fuselage struts.



From each of the **300mm** lengths, cut one each of **168mm** and **129mm** pieces.



Dry fit the struts as shown... the **129mm** length to the front and the **168mm** to the rear, the ends should sink into pre-cut slots.



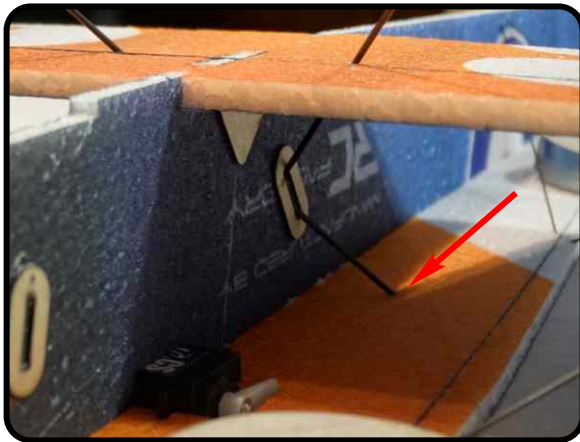
Check that everything is still square and level between the wing and fuselage, tweak as needed, then secure the ends with thin CA and Kicker.



Locate the two round carbon pieces that are **1.5x220mm**. These will be used as this length and will form the rearward landing gear brace/strut.



Insert them thru the holes in the bottom of the wing as shown and the cross them thru the rearward plywood fuselage doubler....



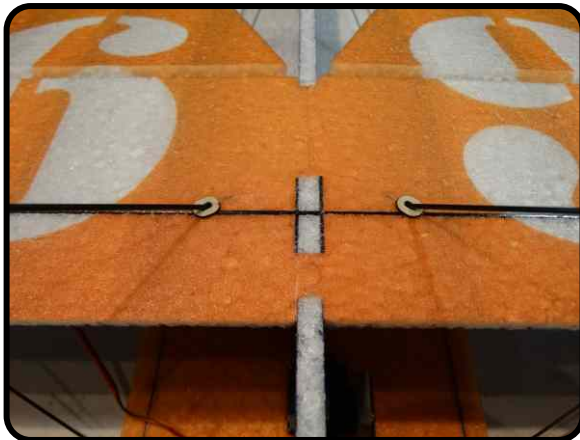
.... and into the pre-cut slots in the underside of the horizontal fuselage section.



Secure the four ends with thin CA and Kicker. In the middle where the rods cross, use either medium CA or FoamTac.



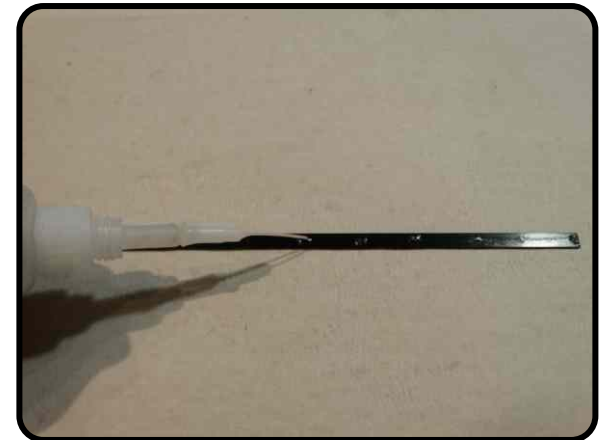
Locate the two little tiny oval wood piece that are pictured above.



Slide them over the round carbon struts and glue them in position as shown with some medium CA or FoamTac.



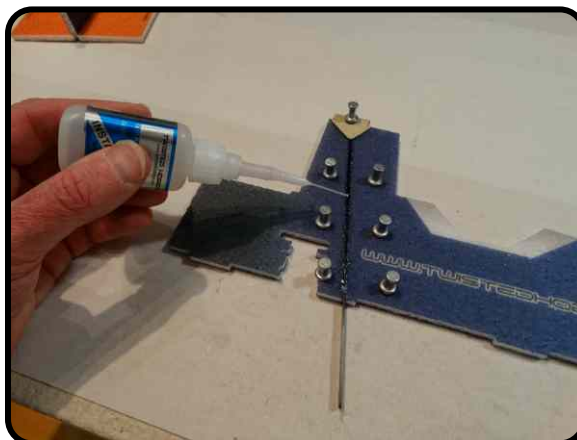
Locate the two rectangle carbon pieces that are **3x1x180mm** long. These will be used for the vertical rib between the upper and lower wings that runs thru the vertical part of the fuselage.



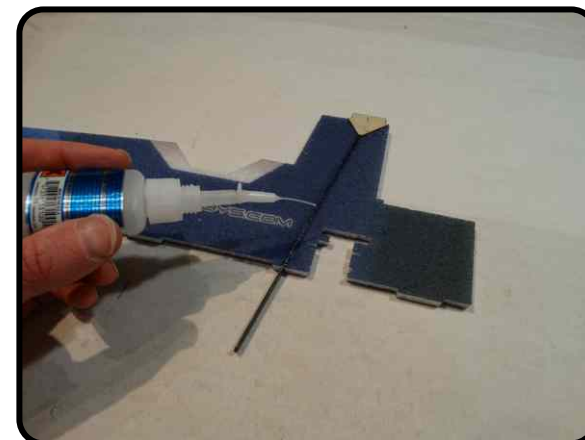
On a flat, glue safe surface, line up the ends of the two carbon rectangles and with some "dots" of thin CA, bond the two pieces together as one, resulting in a **6x1x180mm** spar/rib.



Take the spar you just made and test fit it into the upper vertical fuselage section. It should fit all the way up in between the wood doublers. Rounding the end will help if needed.



Once satisfied with the fit, secure the fuselage piece flat with weights or pins and apply thin CA and set with Kicker.



Flip the assembly over and add a little more thin CA to the other side if needed.



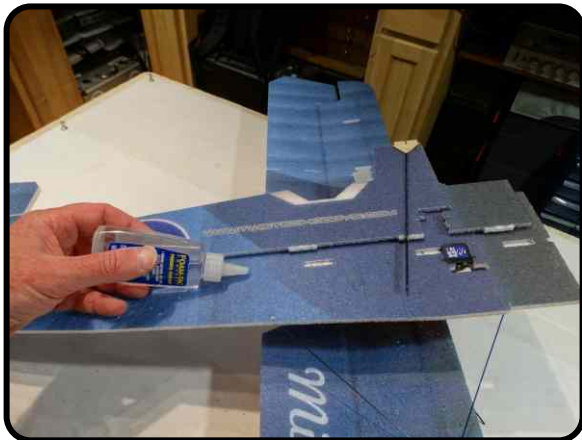
Now test fit the upper section to the lower section. The spar goes thru the horizontal piece, it may be necessary to clean glue out of the slot.



Guide it all the way the way thru the slot and watch for the foam tabs to engage and for the end of the spar at the bottom to sandwich between the lower wood doublers.



The upper piece should fully engage as pictured above. Both the foam tabs and the carbon spar, if not, remove whatever is obstructing the fit and test again.



Once happy with the fit, apply a medium bead of FoamTac to all the mating surface and assemble together while the glue is wet.



Check that the front nose surfaces are flush with one another.



Sight down the length of the fuselage and make sure that the upper piece is square to the horizontal section.



Let the whole thing sit for a bit to allow the glue to set up. Next, the rudder will be prepped for installation.



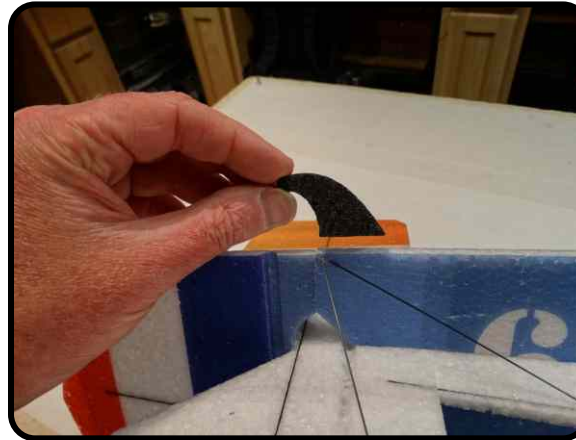
Once the upper part of the fuselage has dried enough to handle, secure the bottom part of the spar to the assembly with some thin CA to both sides and secure with Kicker.



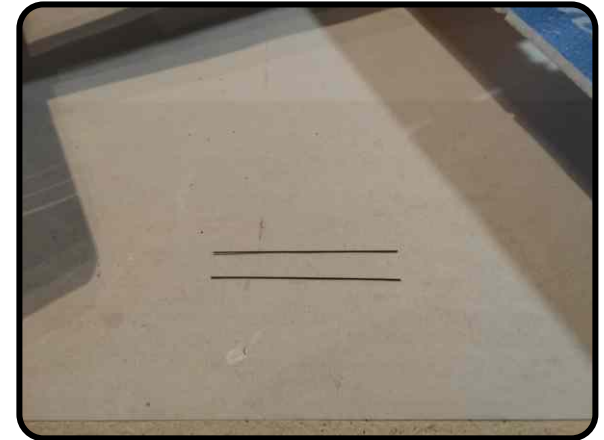
Locate the rudder and the carbon rectangle that is **3x0.5x166mm**, insert it into the slot and secure with thin CA and Kicker.



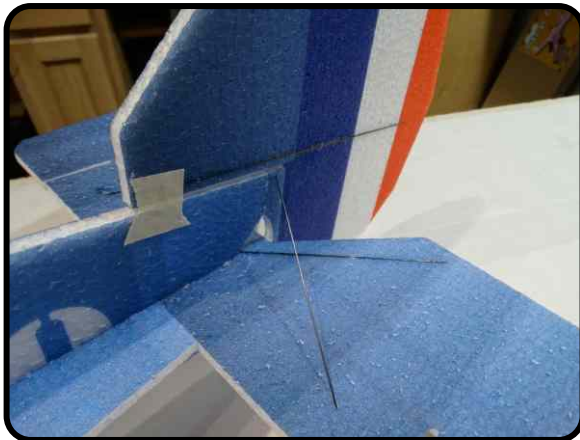
Once the fuselage is ready to work with, apply a skim coat of glue to the mating surfaces of the rudder and install using the “tack up” method as shown.



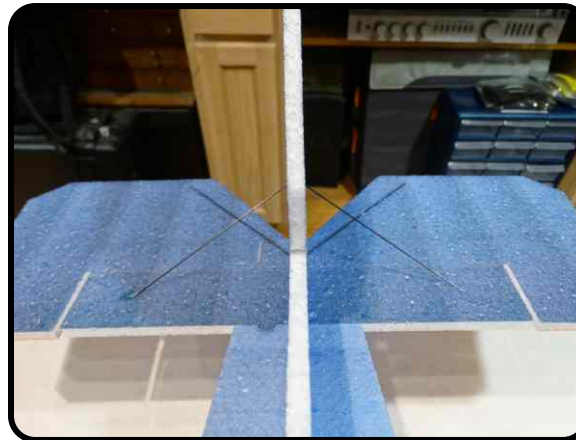
Locate the Tail Skid and install approx. where shown. Use FoamTac and the Tack Up method to attach.



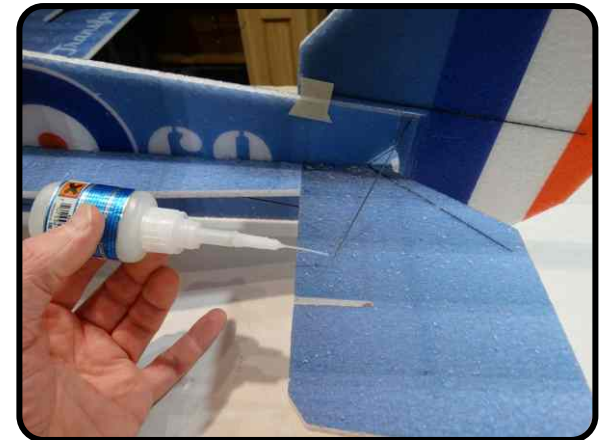
Next locate the two “E” rods that were cut earlier in the build. They should be **0.8x101mm** long. These are the upper elevator-rudder brace pieces.



Lock the elevator in it's neutral position with some masking tape on both sides in the area shown. Dry fit the “E” rods into their precut slots.



Sight down the top of the fuselage and confirm that the rudder is nice a perpendicular to the elevator and horizontal fuselage section.



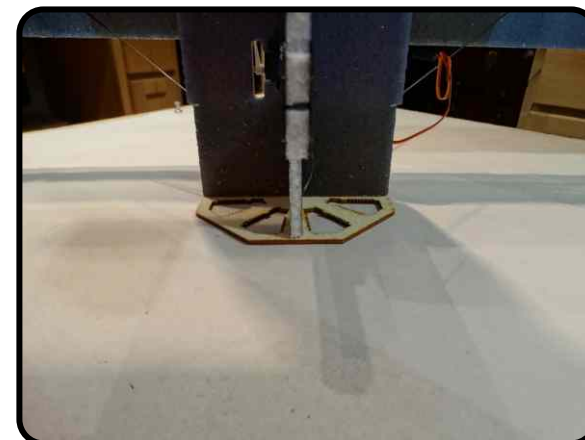
Secure the rod ends with some thin CA and Kicker.



Nose cowlings and mock up engine/firewall are next, locate the two pieces shown above. FoamTac will be used to install the firewall, and thin CA will be used to join the cowlings ends.



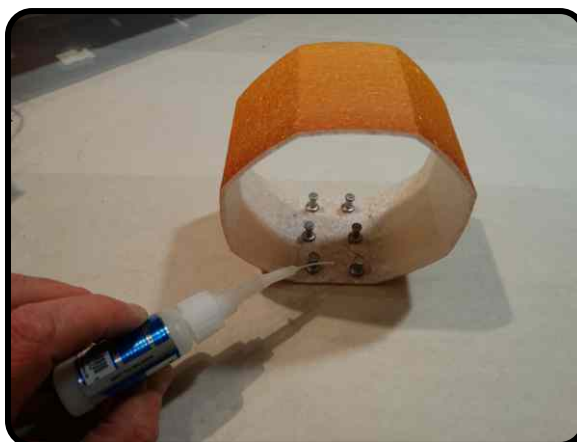
Apply a skim coat of FoamTac to the mating surface of the fuselage and firewall. Join the two together using the Tack Up method.



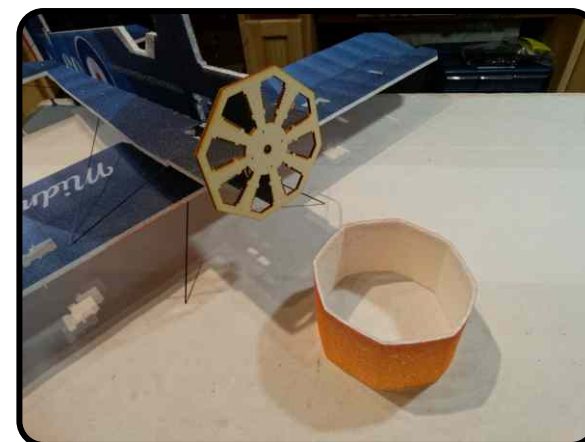
Carefully align the fuselage pieces to the exact center of the wood webbed areas of the firewall as shown above.



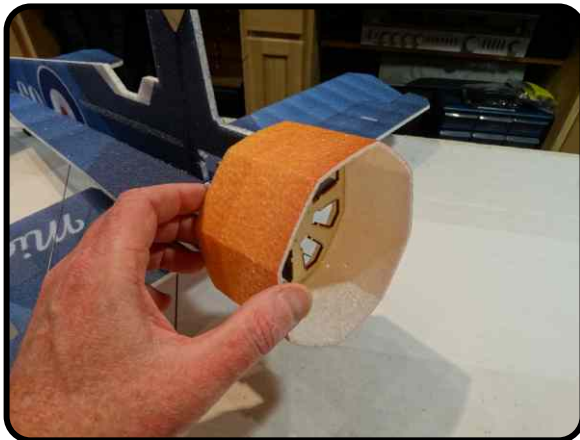
Cowling is next. Notice that **INSIDE** of the cowling is the side in which you can see the bevel cuts. This surface will **ROLL** to the **INSIDE**.



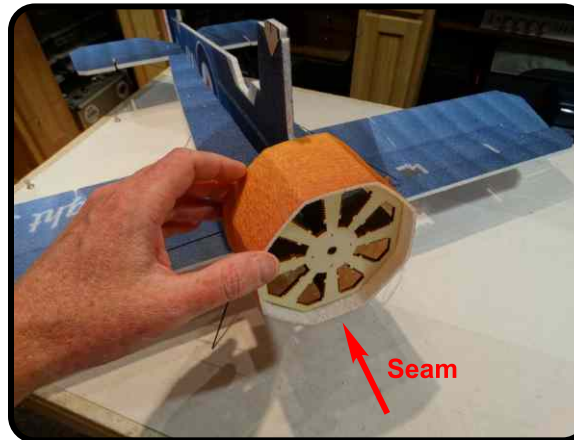
Roll the cowling as shown, match up the notched ends and hold in place with some pins. Apply thin CA and Kicker to the seam.



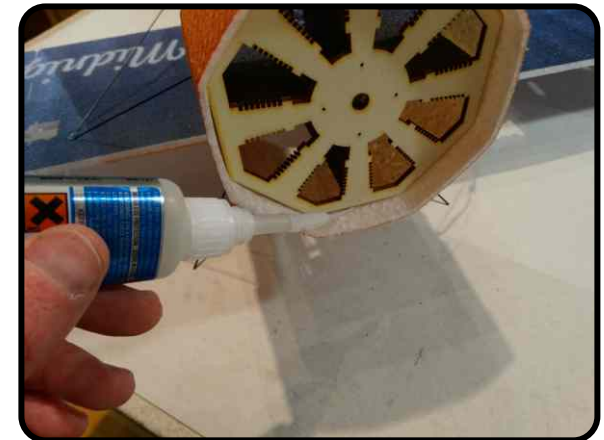
The cowling is now ready to install onto and around the firewall. **Note that the seam of the cowling must be installed so that it is at the bottom, in the 6 o'clock position.**



Gentle slide the cowling over the firewall as shown, check again that the seam is in the bottom location.



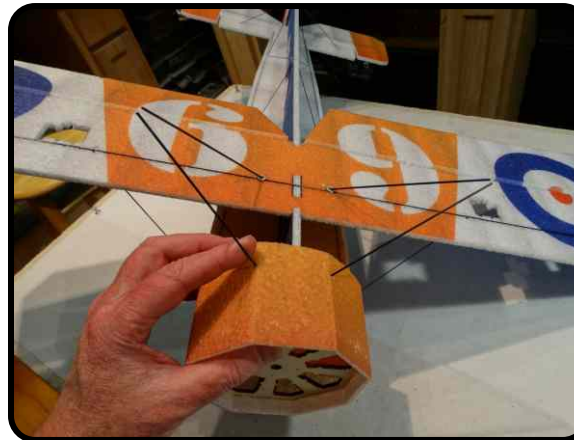
Slide the cowling all the way on until it meets up with the notches in the fuselage. Check one last time before gluing that the seam is located correctly.



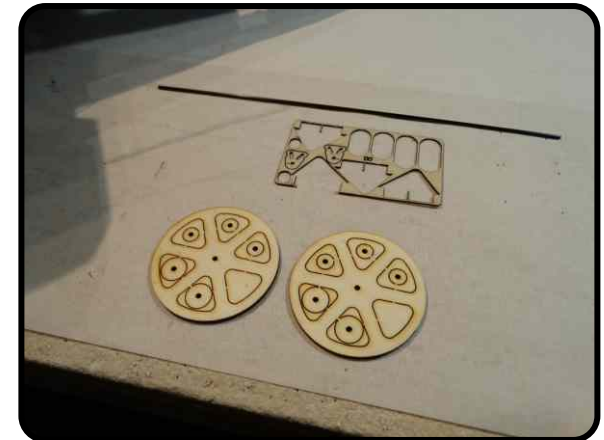
Glue all the mating surfaces with thin CA and Kicker. Reach into all the hard to get spots and glue as much as possible for the best strength.



Front landing gear struts are next. Locate the two round rods that are **1.5x200mm** long.



Fit rods into the precut holes cowl holes thru the wood doubler and into the precut slots of the horiz. fuselage. Exposed ends should approx. meet up. CA rods to the cowl and fuselage.



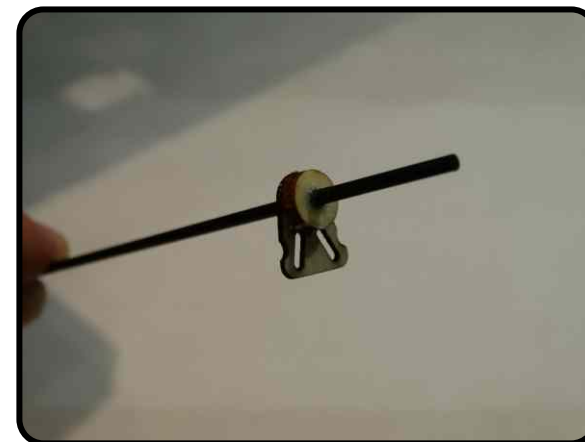
Landing gear axle will be built next. Locate the wood parts shown and the carbon round that is **2x250mm** long.



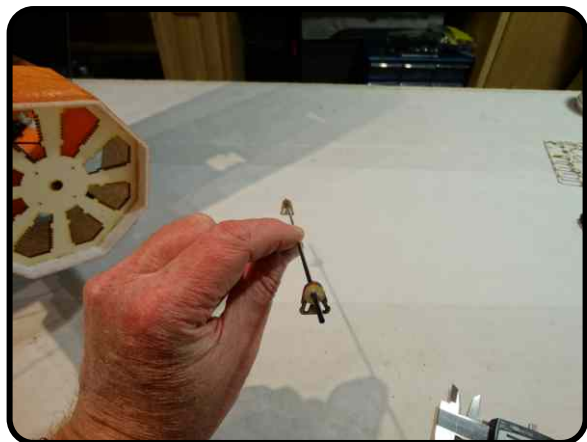
Locate the two wood pieces shown above. Note that the round washer is the smaller of the two sizes.



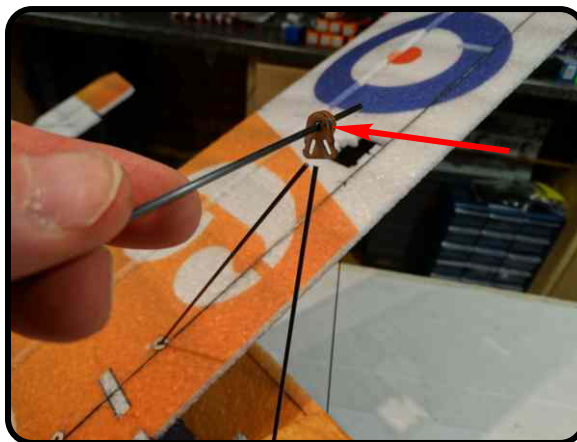
Slide the two pieces onto the axle as shown show that there is approx. **21mm** of exposed axle length.



Secure the two wood pieces and the axle together in the orientation shown with some thin CA and Kicker.



Repeat the last three steps with the other end of the axle. **Make sure to glue the thin wood piece with the slots on so that it matches the orientation of the other end.**



Dry Fit the ends of the struts into the slots of the wood piece. For orientation purposes, make sure the **small hole** in the wood pieces is **facing forward**.



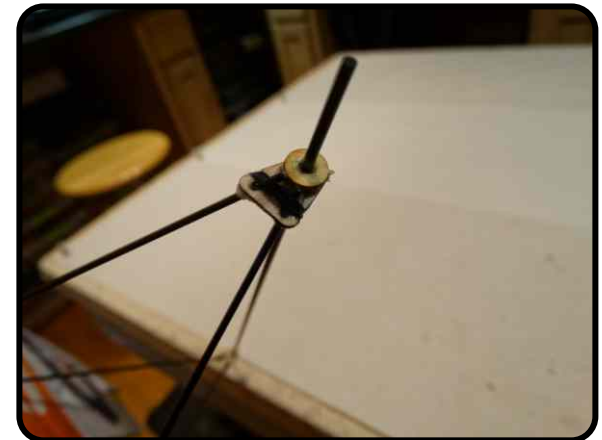
Slide the rods in on both sides and adjust as needed so that the axle is both level to the wing and perpendicular to the direction of flight.



Once happy with the axle position, CA the two struts and wood piece together. Just enough to hold in position at this time. Repeat for the other end of the axle.



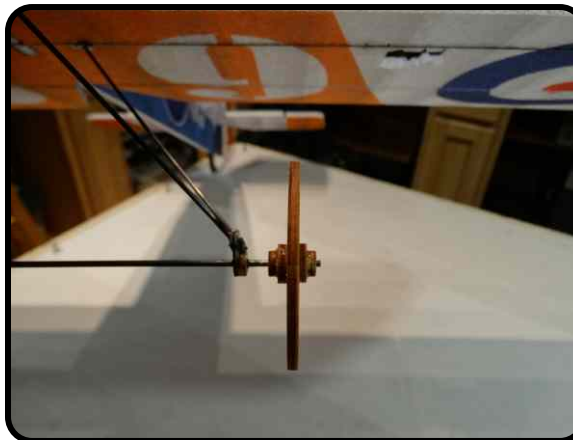
Take approx **200mm** of thread...



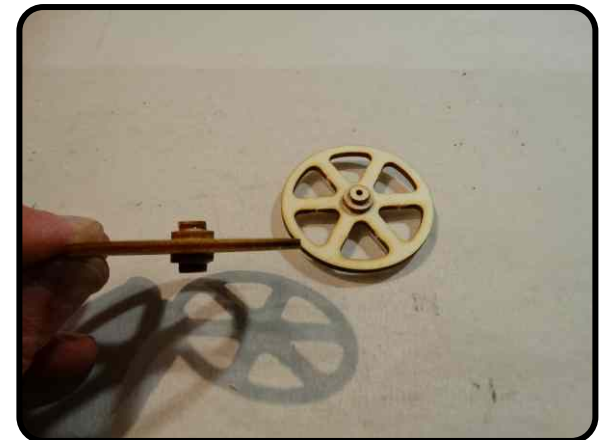
... and wrap it around the pieces of the axle assembly as shown above. Soak with thin CA and hit with Kicker. Repeat for the other side.



Locate the wheel hub parts pictured above. Note that each hub will have the large center rim, two large washers and two small washers. Install in the order pictured above.



With thin CA, glue all the wood pieces together. Make sure that all the center holes align, you can use the end of the axle for this, just make sure you **don't get glue on the axle.**



Repeat for the other side. Double check that you have the orientation of the parts as shown above.



Once the wheel rims/hubs are done, locate all the foam pieces that go to the completed wheel assembly.



We will use FoamTac and the Tack Up method to attach the blue center caps. Spread a skim coat of glue around the outer ring of the wood piece and around the perimeter of the center cap.



Once the glue has tacked up, joint the pieces together. Note that you may need to take a couple minutes to keep pressure on the glue joint to make sure it bonds solidly.



Repeat the previous two steps for the other wheel.



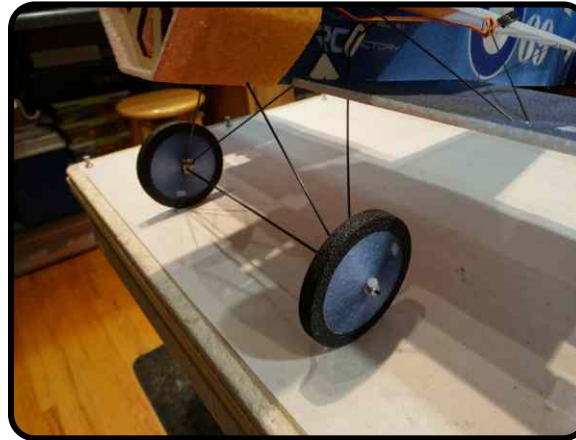
The black foam piece is attached next. For this step, apply a medium coat of FoamTac to the outside edge of the wood/blue parts, then slide the black part on while the glue is still wet.



Center up the black part with the rest of the wheel assembly, and repeat the process with the other wheel.



Slide the wheel onto the axle and with a small file, make a slight flat on the axle where the set screw of the wheel collar can lock onto. Do this to both axle ends.



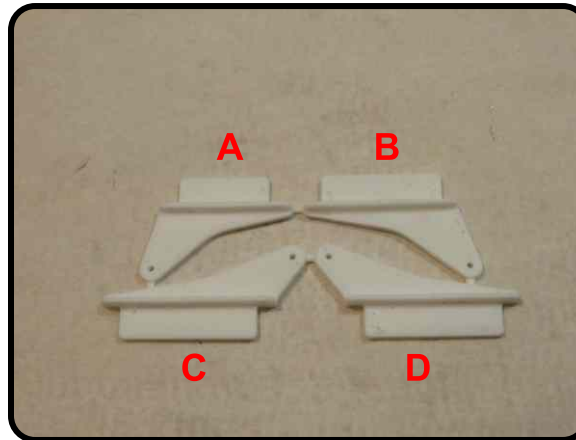
Install the wheels and collars. Tighten up the collars such that the screw are able to engage in the area that was filed flat.



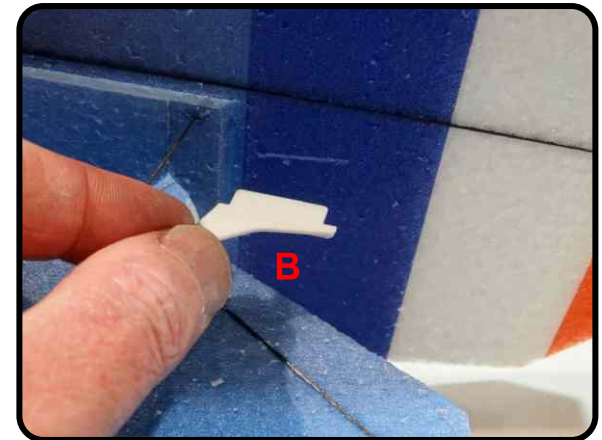
Locate the servo you are going to use for the rudder.



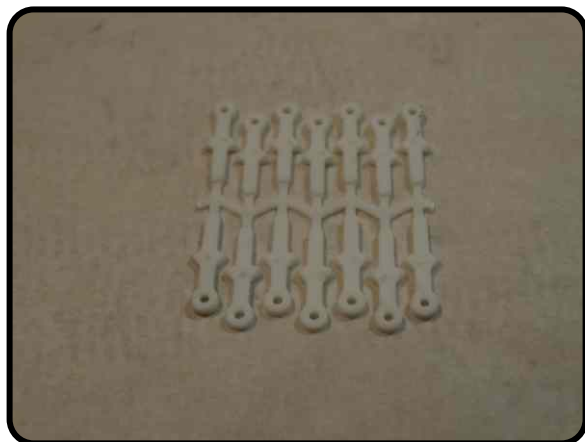
Slide the servo into the slot as shown, make sure the servo is electronically centered and that the arm is attached so that it faces you from the nearside as pictured above.



Locate the plastic horn set as shown above. Note that A is for the elevator, B is for the rudder, C and D are for the ailerons.



Install the rudder horn (B) into the slot as shown. Make sure that it is sticking out from the left side of the rudder so that it will match up with the rudder servo's horn.



Locate the “tree” of push rod guides as shown above and break them all free.



Take seven of the guides and install them into the holes on the left side of the aircraft as shown. Line them all up and secure with thin CA and kicker.



Locate the fitting with the smaller ends and a **1x500mm** round carbon rod. Note - do not use the fitting with the longer brass end, it is use for the ailerons and a thicker control rod.



Slide the rod into the open end of the brass fitting, apply a drop of thin CA, crimp the fitting with some narrow pliers and set with Kicker.



Grab one of the black clevis ends and it's matching tiny brass pin.



Thread the clevis on, leave approx **2.5mm to 3.0mm** of exposed threads. Feed this rod thru from the nose of the aircraft and attach to the outer most hole in the rudder servo's control horn.



Locate a black clevis and small white tube piece as pictured above. The small tube will be pressed into the clevis to make a better fit for the diameter of the control rods.



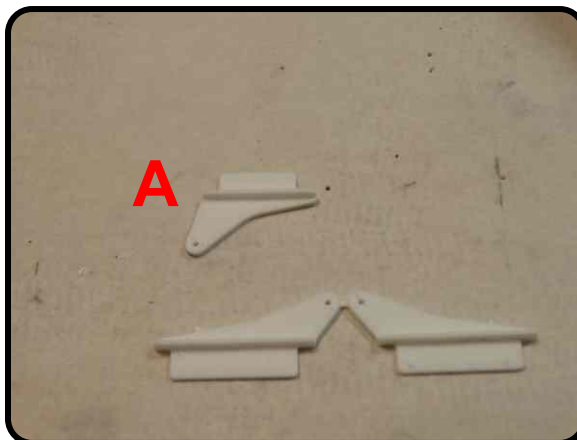
Press the white tube into the end of the clevis. It may help to bevel the hole in the clevis a little to allow the tube to get started into the hole. Lightly tap the tube in, leaving a small amount exposed.



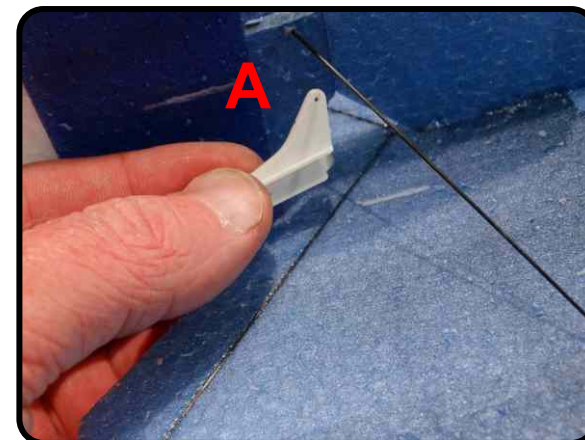
Temporarily attach the clevis to the rudder horn, position the rudder and servo in their neutral positions, and trim the control rod to length right at the spot where the clevis gets thicker.



Secure the clevis and rod together with a small drop of thin CA, and attach to the horn with its mating brass pin. Make sure to not get CA near the horn or pin.



Locate the remaining three horns and break the "A" horn free from the tree.



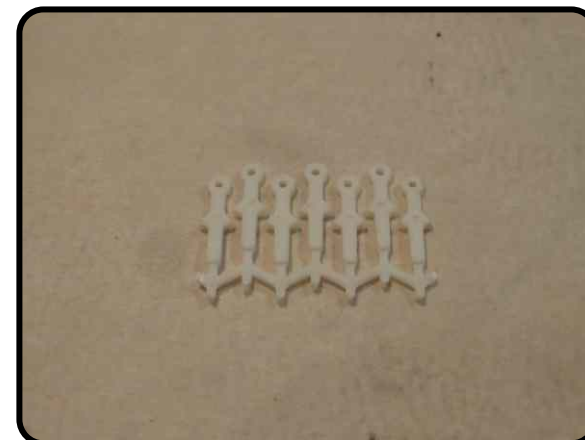
Install the horn from the top side of the elevator....



... and secure with thin CA and Kicker.



Build the elevator control rod in the exact same manner as was done with the rudder control rod. Note - don't install the clevis with the white tube just yet.



Locate the remaining 7 push rod guides and break them free from the tree.



Install them into the precut slots, line them up and secure with CA and Kicker.



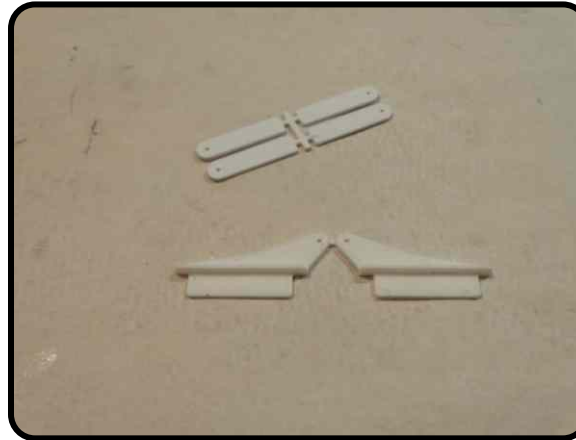
Center the servo, center the elevator. Slide the rod thru the guides from the front of the air craft. Trim the rod and attach the clevis as was done with the rudder.



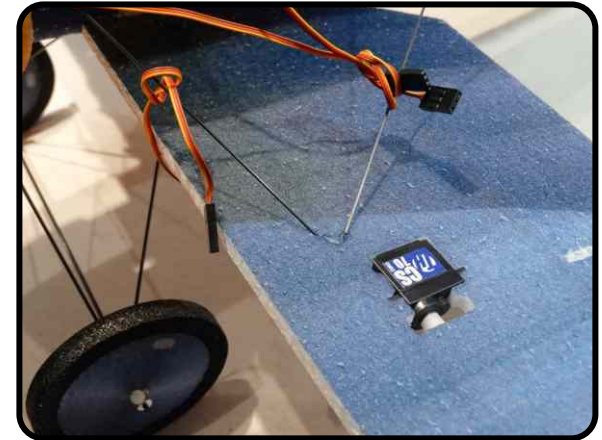
Picture of completed control rod assembly.



Locate the two servos that will be used for the ailerons, electronically center them and attach the long single control horns so that you have a left and right configuration.



Grab the two remaining control surface horns and the 4 gang horns as pictured above.



Press the servo in from the top side of the bottom wing so that the horn is sticking out below and the near side surface of the servo is flush with the top surface of the wing.



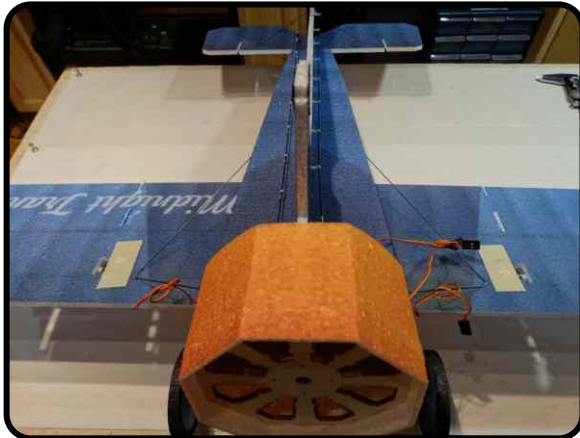
Install the aileron control horn and gang horn as shown with some thin CA and Kicker. Servo will be secured in a later step with low temp hot glue.



Gather up four black clevises, the matching pins and the two really long screws.



Cut off the head side of the screws so that there is a piece of threaded screw only left that is **30mm** long.



Place a piece of masking tape over the servos from the top side of the wing. This will hold them in perfect position for the next step.



With some low temp hot glue, run a bead all around the servo where it intersects with the foam cut out.



Thread the clevises onto the cut off screw. Adjust the length so that the aileron and servo are both in their neutral positions, then install the brass pins.



Repeat for the other side.



Locate the 2 foam wing struts and the four carbon rectangles that are **3x0.5x200mm** long.



Fit the carbon rectangles into their respective slots in the foam struts and secure with thin CA and Kicker.



Clip off the extra length of carbon rectangle. Make them flush with the foam where they protrude.



Install the struts into the wing slots as shown. Make sure the strut is leaning forward as pictured. Secure with thin CA and Kicker.



Repeat for the other side.



Locate the two upper wing halves and the carbon rectangle that is **3x1x750mm** long. Glue the two wings have together with FoamTac and the Tack Up method.



Install the spar into it's precut slot, and secure with thin CA and Kicker.



Locate the two remaining gang horns.



Install them into the slots on the trailing edge and the aileron. Secure with thin CA and Kicker.



Flip the wing over and double check that the slots in the center of the wing are free of glue and debris.



Install the upper wing. Make sure the tabs from the two outside struts and the center fuselage strut are all fully engaged.



Using thin CA and Kicker, attach the center part of the upper wing to the fuselage strut.



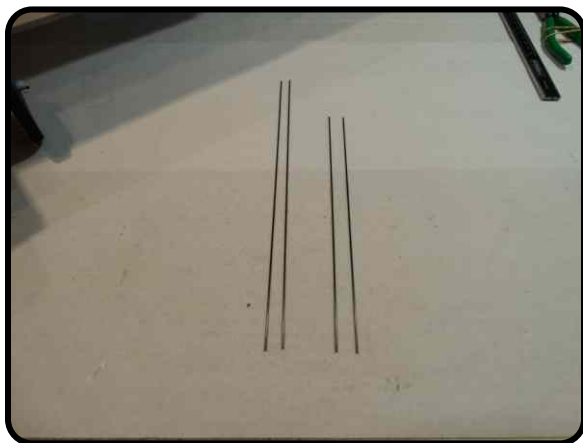
Using thin CA and Kicker, attach the outer strut to the wing as shown.



Repeat for the remaining strut and verify that everything is parallel and square.



Locate 2 pieces of carbon round that are **1.2x500mm** long.



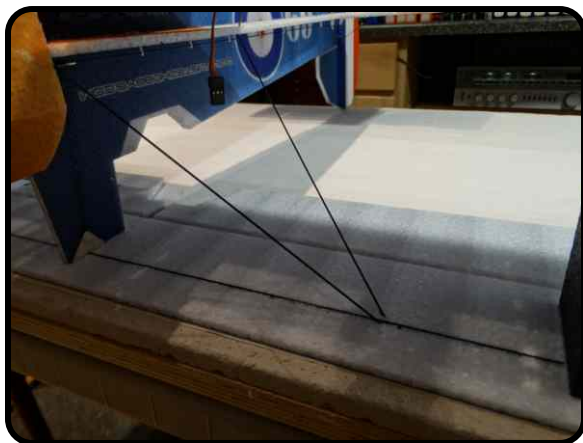
Cut them into 2 pieces that are **265mm** long and 2 pieces that **210mm** long.



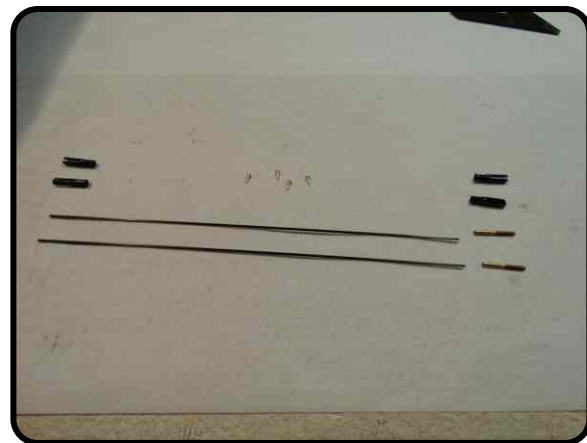
Install the struts as shown above... with the shorter struts being the ones in the forward position. Match up the ends of the rods with the precut slots, no glue at this time.



Install the struts on the other wing in the same manner.



Flip the airframe over on a flat surface, with the wing and rudder as the resting surfaces. Once everything is flat and true, secure all the ends with CA and Kicker.



Next is the aileron gang rods. Locate the two **1.2x200mm** rounds, four clevises, their matching pins and the two brass ferrules with the long barrel.



Attach the brass ends in the same fashion as was done with the tail push rods, ie. thin CA, Kicker and crimp.



Thread the clevises on. Leave approx **2.5mm** to **3.0mm** of the thread showing



Attach the end of the control rod just built to the **bottom** gang horn as shown.



Attach the loose clevis to the upper gang horn. With both the upper and lower ailerons in their neutral position, trim the rod to length right where the clevis get wide.



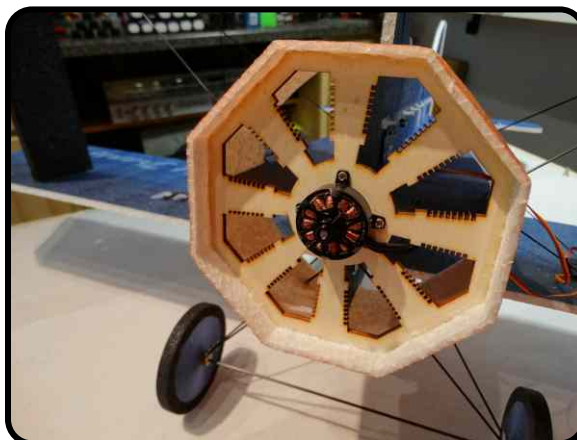
After the rod is trimmed, insert it into the end of the clevis. **No Glue** at this time.



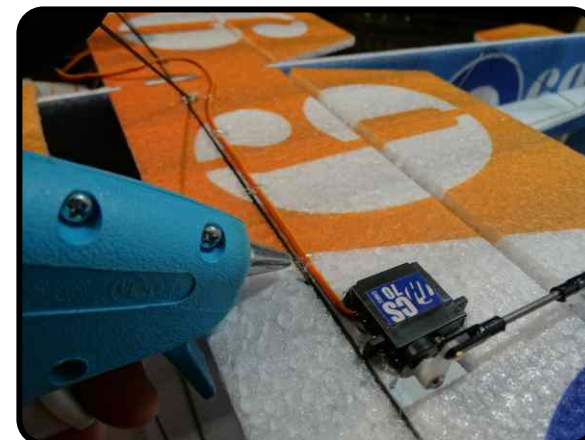
Flip the airframe over onto a flat surface so that the upper wing and rudder are supporting it. Make sure the aileron with the servo connected is neutral, then CA the upper clevis.



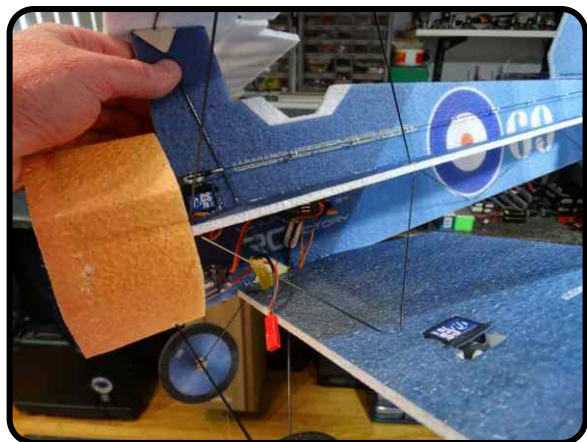
Locate the motor, ESC and receiver that you will use for this model. It is recommended that you install them **as far forward as possible** for good Center of Gravity



Mount the motor with the included screws and run the wires back on the side where the ESC will be installed.



Clean up any wiring. In the photo above the aileron servo wires are being tacked down to the bottom of the wing with dabs of low temp hot glue.



Completed electronics install. Zip tie the wire bundle together so that they are not flopping around.



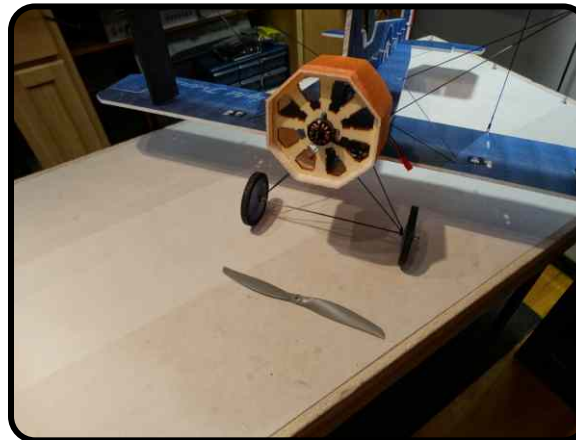
Underside view of the wiring coming from the wing servos.



Don't forget the Pilot..! Attach him with FoamTac and the Tack Up method.



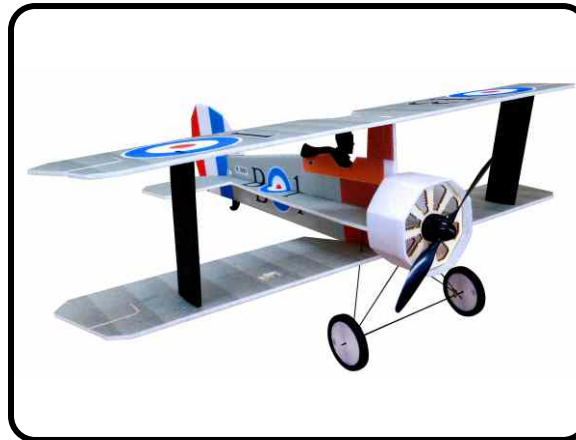
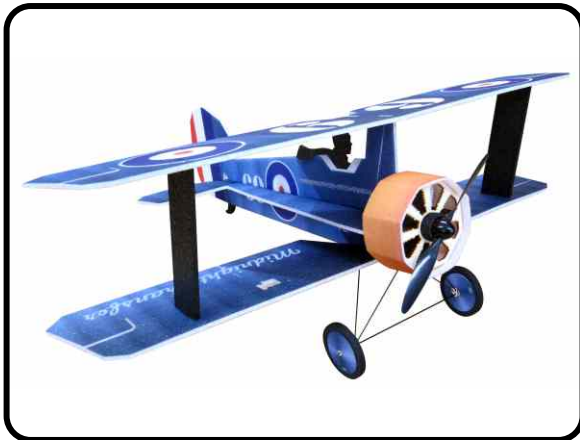
Pilot onboard and ready to go. Do a double check on motor direction and for all the control surfaces. Add in any mixes that you may want. Flaps is a fun one to play with.



Balance a prop of the correct size for the battery size you will run. For 3s use a 8in prop for 2s use a 9in prop.



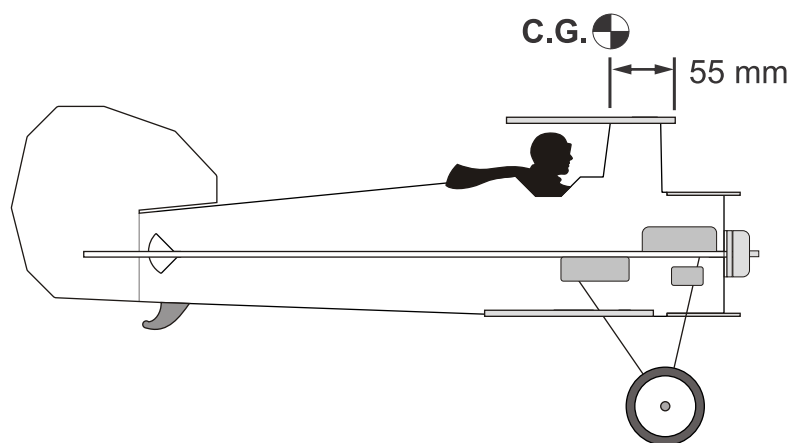
Charge up some batteries, 450mAh to 600mAh sizes are a good place to start with this model (2s or 3s). Note that the battery will likely need to be placed very far forward in the airframe for CG.



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

CENTER OF GRAVITY

C.G. - 55mm 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



PRIE-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.