



RAPID BUILD SERIES

KING STICK

BUILD MANUAL

Build Difficulty Level
Flying Skill Level



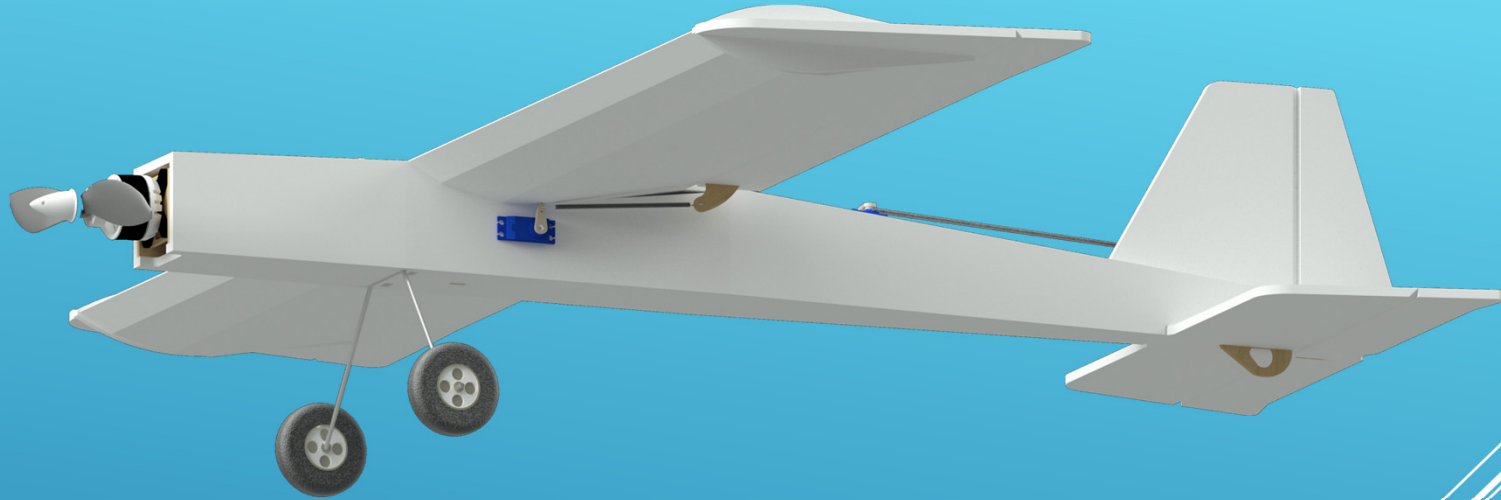
Specifications

Wingspan	967mm
Length	735mm
AUW	600g
DW	480g
W/L	31g/dm

James Roney
Roy Harvey

Built It, Fly It, Conquer the Sky!

INTRODUCTION



The Totem Models Rapid Build Series of planes are easy to build and are a great way to get younger people into the hobby due to the build process being exciting and quick.

The King Stick allows novice pilots an affordable, low-risk way into the hobby whilst more intermediate pilots can start exploring the aerobatic components in RC modelling without the risk of ruining expensive aeroplanes when maneuverers don't go according to plan.

This foam kit is precision laser cut and the construction uses proven build techniques. The King Stick builds light and has an all-up weight of 600 grams providing excellent flight characteristics with a wide speed envelope making landings easy.

▶ Warranty

- ▶ Totem Models guarantees the parts in this kit are free from defects in both materials and workmanship at the date of purchase. This warranty does not cover cosmetic damage or damage due to acts of god, accident, misuse, abuse, negligence, commercial use or modifications. The warranty does not cover damage due to improper installation, operation, maintenance or attempted repair. This warranty is subject to change without notice.

▶ Disclaimer

- ▶ Read this disclaimer carefully. Please follow the building procedure in this manual diligently. Totem Models has no control over the assembly and materials used to complete this model and so cannot be held liable for any loss, incident or damages including but not limited to personal injury, property loss or poor model performance. Assembly of this model means the user accepts all liability.

▶ Safety and Precautions

- ▶ This is not a toy and should not be operated by pilots under the age of 14.
- ▶ Check binding and signal strength.
- ▶ Follow fuel and battery safety processes and procedures.
- ▶ Be cautious of moving parts, especially the propeller.
- ▶ Maintain your plane and equipment.

▶ Building Notes

- ▶ Trial fit all parts before glueing!
- ▶ This kit has been made from natural and synthetic materials so each plane and part is unique and may require small adjustments during assembly. You should however find parts fit very well as they have been CNC laser cut.

▶ Flight Warnings

- ▶ Ensure that you operate your aircraft as per the requirements provided by your governing organization. (E.G. South Africa – SAMAA)

SUGGESTED TOOLS AND ITEMS REQUIRED TO COMPLETE THIS RAPID BUILD SERIES KIT:

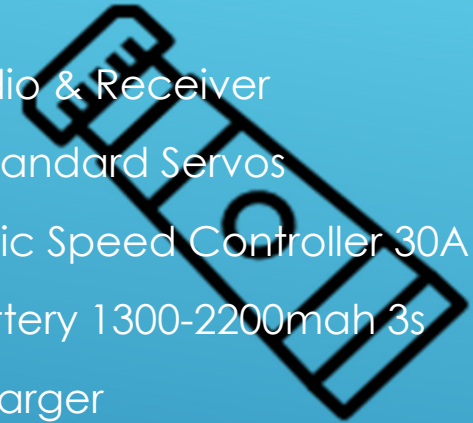
▶ Tools

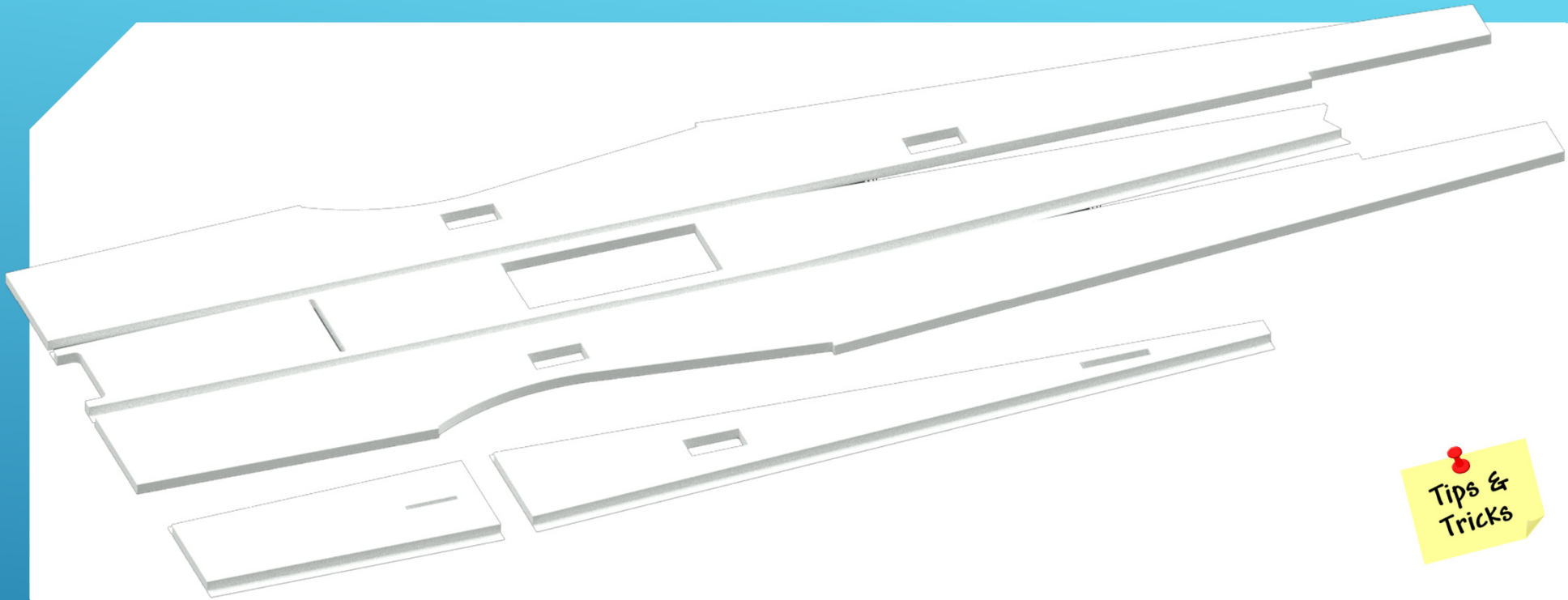
- ▶ Stanley Blade
- ▶ Ruler
- ▶ Pencil
- ▶ Screw Drivers
- ▶ Hot Melt Glue Gun
- ▶ +-3 Long Glue Sticks
- ▶ Thin CA
- ▶ Wood Glue
- ▶ Sand-Paper
- ▶ Clear Tape or Fibre Tape
- ▶ Spray Paint or Coloured Vinyl



▶ Equipment

- ▶ 6ch Radio & Receiver
- ▶ 4 x 9g Standard Servos
- ▶ Electronic Speed Controller 30A
- ▶ LiPO Battery 1300-2200mah 3s
- ▶ LiPO Charger
- ▶ Brushless Motor +- 800g Thrust and mounting screws.
- ▶ 9x6 Propeller





Test fit each part before glueing.

Take your time. The more care you spend assembling your model the better it will look and fly.

Applying excess glue does not make the model any stronger. All excess glue should be wiped away whilst hot using a scrap piece of foam board. The lighter your plane, the nicer it will fly! Excess glue can also stop parts from fitting flush in later steps.

Only use a new blade for cutting foam as a dull blade will quickly shred the foam board.

For durability, clear or coloured parcel tape can be used to line any of the model surfaces after assembly. Adding the tape will increase the model's weight but will also significantly increase the airframe's lifespan and durability.

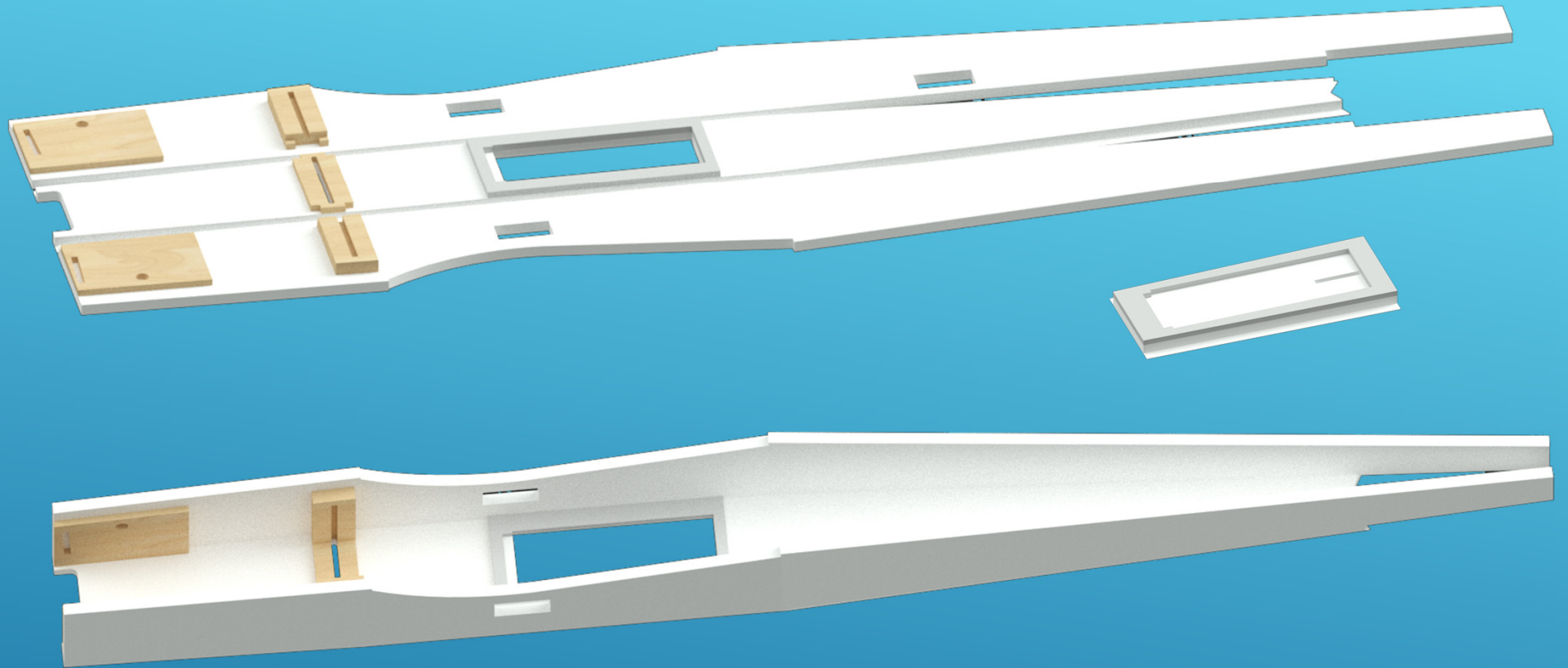
To avoid injury during the construction of this model, please consult the manual for your hot melt glue gun. Also, ensure you know how to safely cut the foam board using the Stanley blade.

Step 1

Parts are held in place using tiny tabs. Remove each part by cutting through the tabs. In rare cases, the laser may have not fully cut through the entire sheet but you can easily resolve this by cutting through the sheet with your blade.

Remove the foam strips from the fuselage parts leaving only the paper behind as shown in the diagram above.

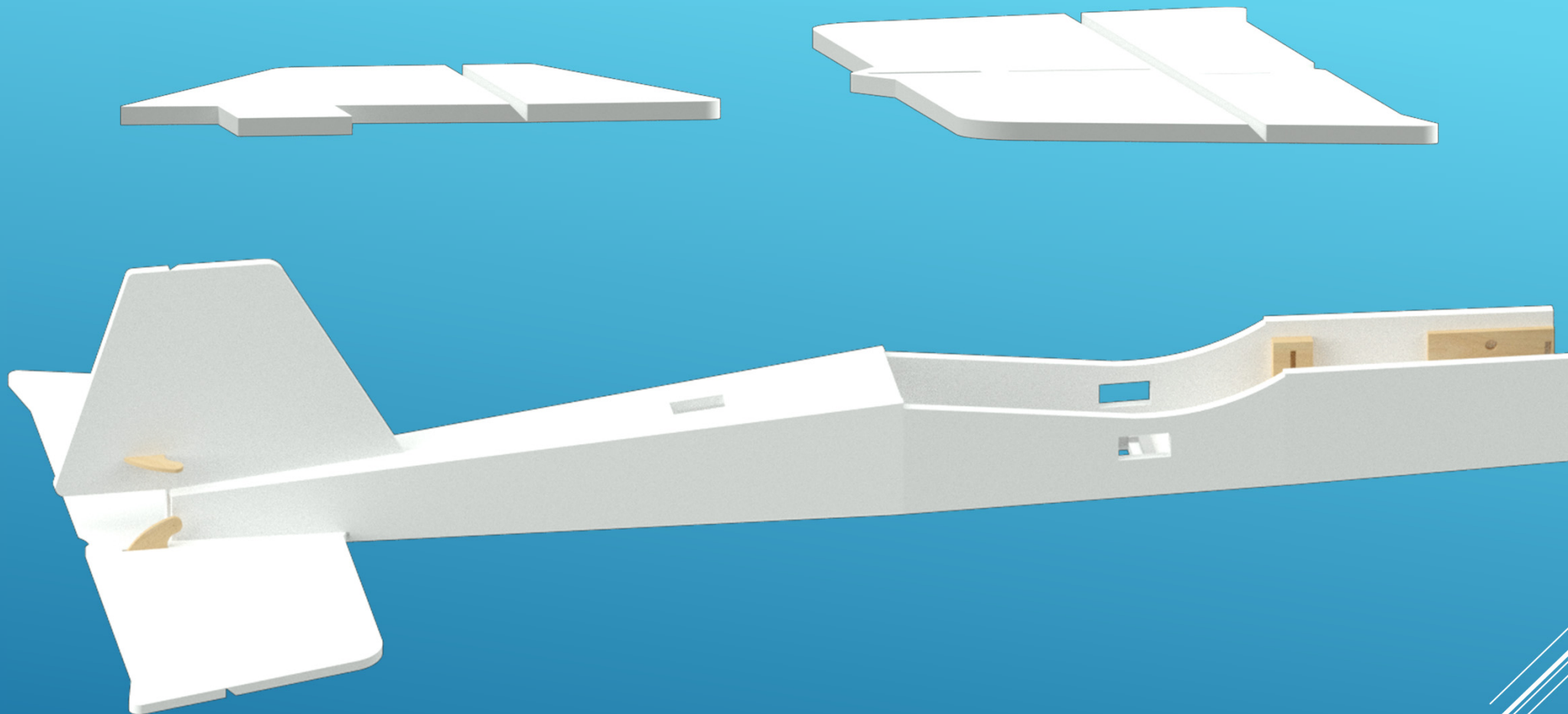
Tip: Use the back of a dull knife to follow the score lines down to the paper being careful not to cut the paper. When needed, fold the foam parts gently back on themselves to expose the foam you want to remove. Run a Stanley blade parallel to the paper and cut through the foam to remove it. Cut slowly and carefully, do not run off parallel as this may result in the remaining foam being too thick or the blade cutting through the paper.



Step 2

Glue the foam fuselage doublers in place followed by the ply fuselage doublers matching the provided helper lines. The motor mount doublers have a left and right side to ensure the motor, when mounted, has right and downward thrust. Do not get glue in the motor mount slot as this will prevent the motor mount from sitting flush. Using a B fold, test fit and glue the fuselage sides at 90 degrees to the fuselage bottom. Complete one side at a time and utilize the square provided in your kit to ensure the sides remain at 90 degrees. Reinforce the fuselage outside corners with clear tape.

Tip! Do not use excess glue as this could run into the open slots causing parts not to fit properly or glueing the door shut.

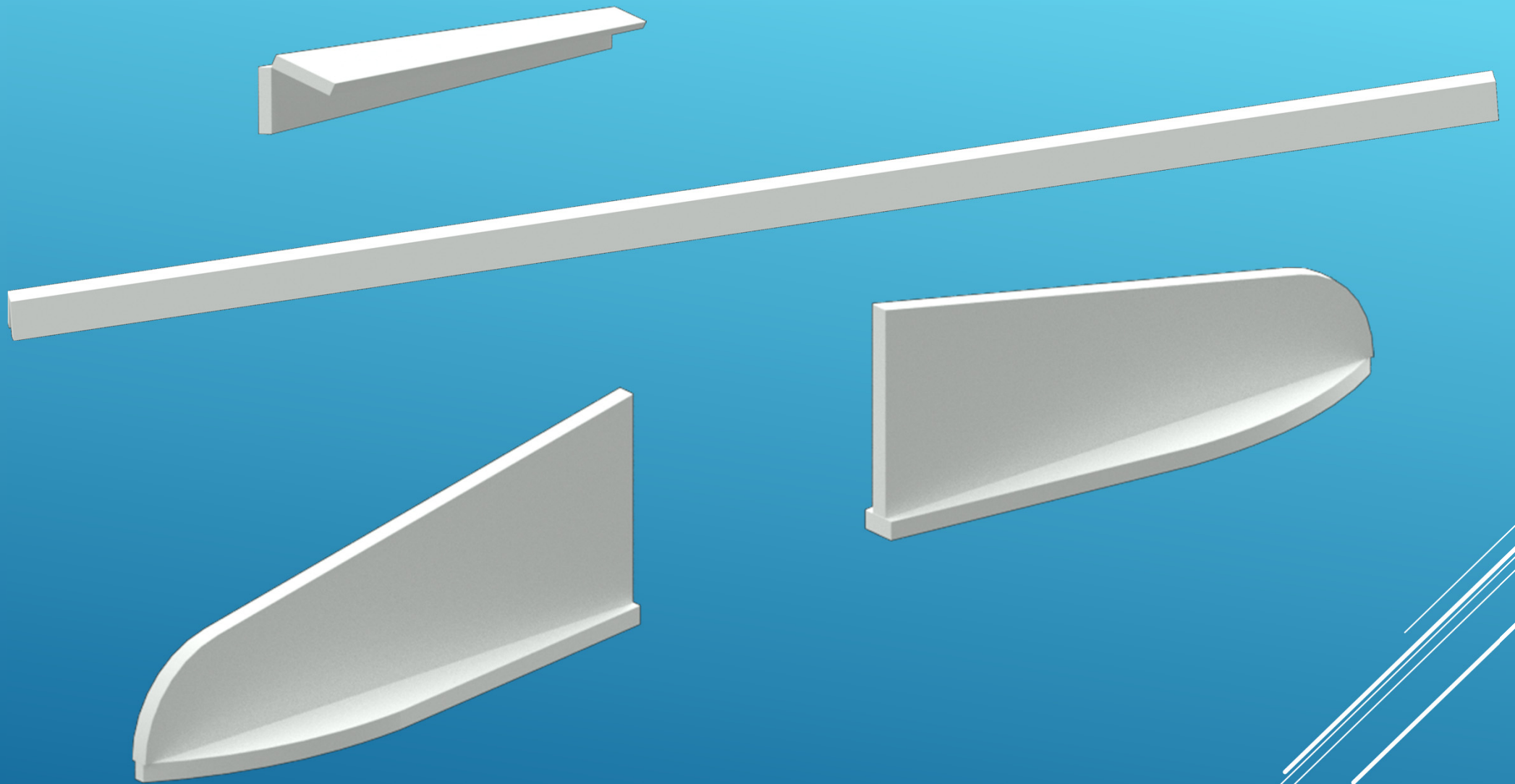


Step 3

Cut a 45-degree bevel into the Horizontal and Vertical stabilizers and reinforce both sides of each surface hinge with clear tape. After the tape is applied the hinged surfaces must move freely.

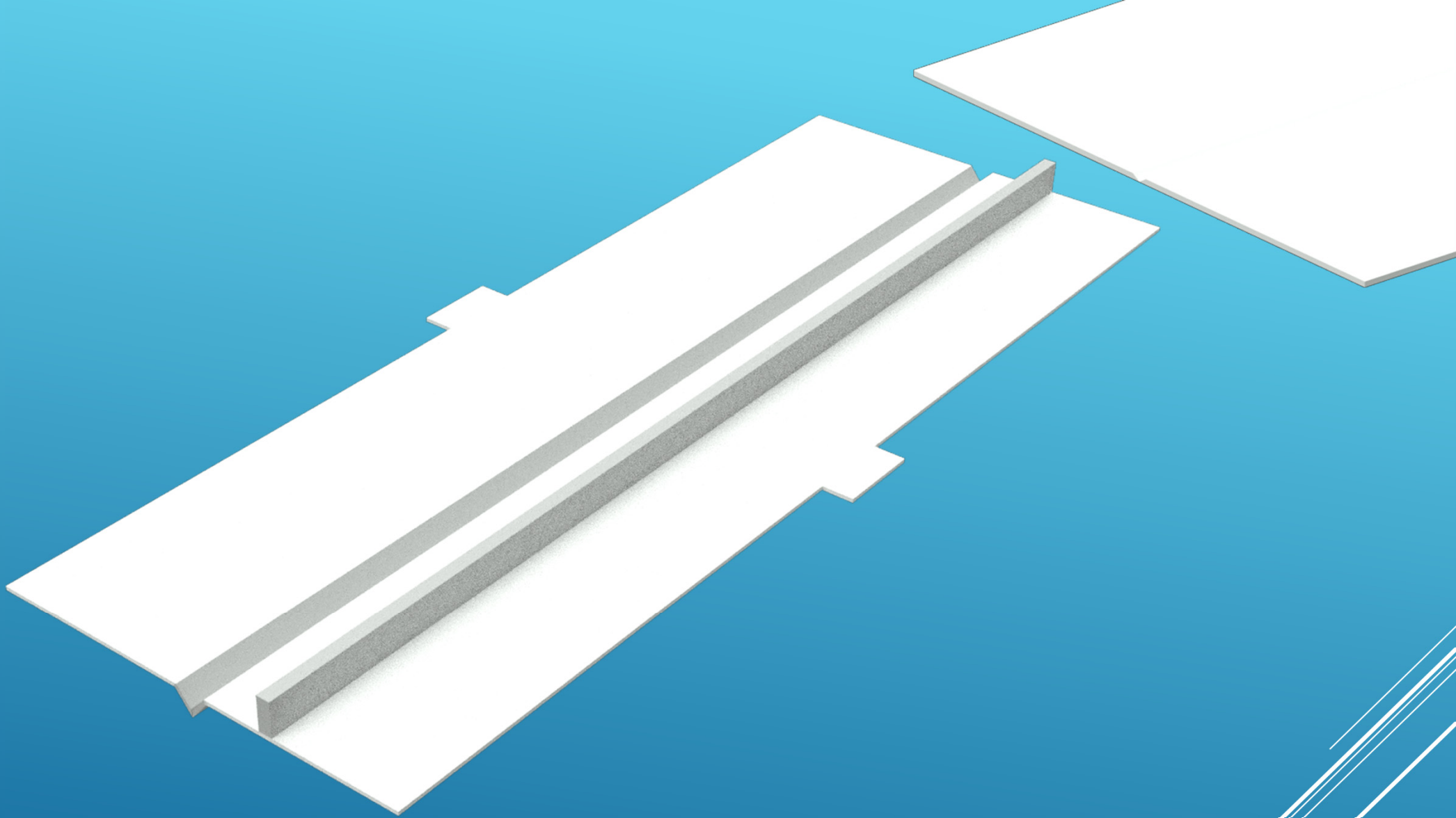
Line up and glue the horizontal stabilizer first followed by the fuselage rear top and the vertical stabilizer. Use the square provided to ensure all surfaces remain straight at 90 degrees. Glue the control horns into the rudder and elevator. The control horns are made of plywood and should be hardened with a drop of CA glue.

Tip! Use the side of a table to guide the blade at 45deg, this will produce a nice clean straight edge. When applying the clear tape to the hinge, first tape the uncut side. Then fold the surface 180 degrees over the taped hinge exposing the open hinge surface. Apply the tape to one side and then roll the part on a table to get the tape to go over the entire internal hinge and back onto the surface. The surfaces should be able to move freely.



Step 4

Fold the wing spar over itself along the center line. Apply glue to the inside area and then glue the two spar halves together. Glue the wing tips to the wing ends using the 90-degree square. Make a left and a right as the wing tip markings indicate the CG position.



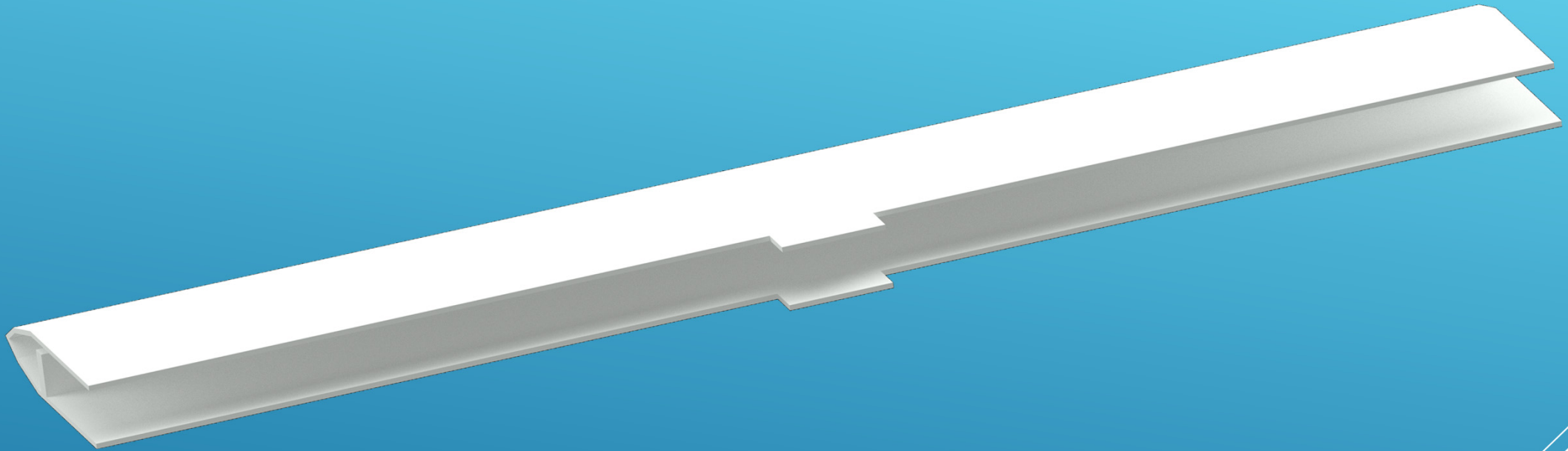
Step 5

Cut a bevel in the center of the wing sheet on both sides using the helper line as a guide. Reinforce the outer side with clear tape so that when the wing is bent the paper does not tear.

Run a pencil down each scoreline so that the wing can fold more easily.

Glue the spar in place. (The spar orientation is important. Ensure the spar is oriented so that the short sides are top and bottom and the long sides are front and back.)

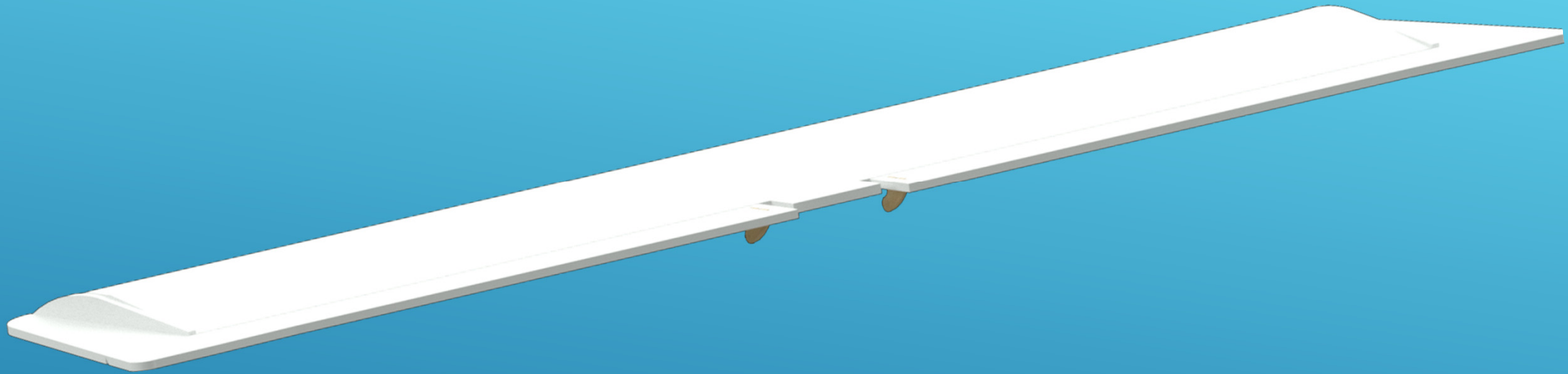
Fold the top wing half over the spar and form a natural wing shape. Do not force the wing during bending all in one go, but rather lightly fold the wing until a suitable form has been achieved. Open the top half again and place a bead of glue in the bevelled center along the full width of the wing then quickly fold the top wing half over the spar again and hold it in place until the glue dries. Open the wing half again and the center of the wing will retain its shape.



Step 6

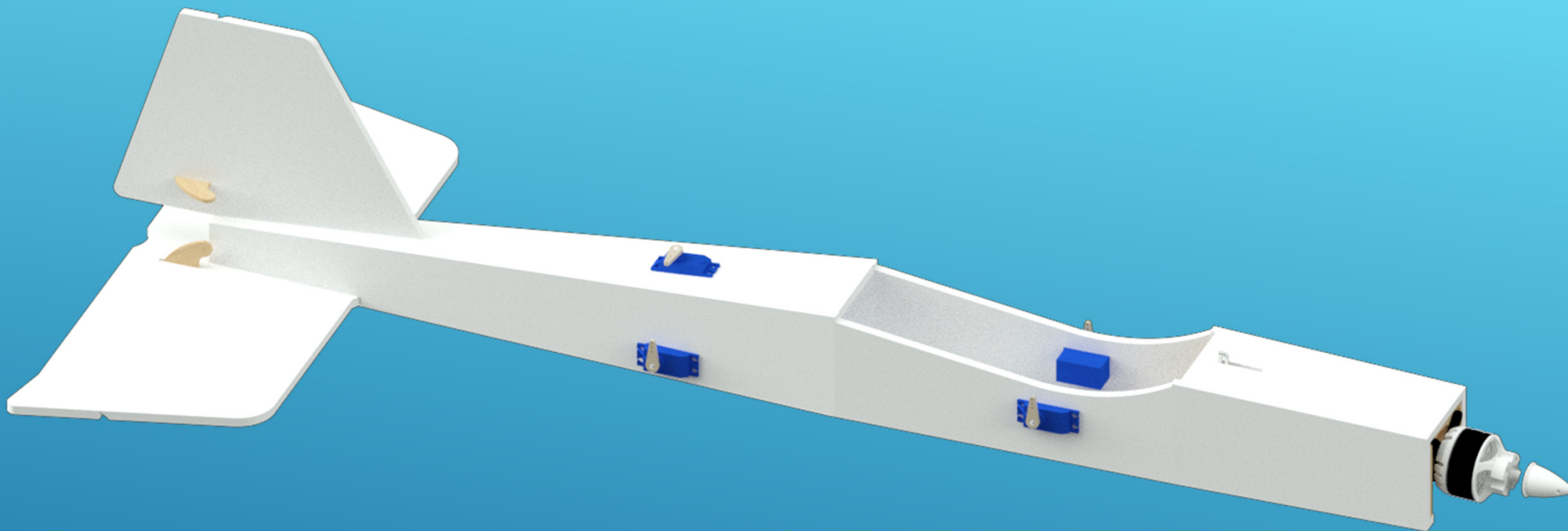
A lot of glue now needs to be placed so ensure you are committed and ready to work as there will be limited time before the glue sets. Place glue in all 4 score lines parallel to the center that was glued in the last step as well as the top of the box spar. Fold the wing over the top box spar and ensure the wing is held and remains symmetrical whilst the glue dries.

Tip! When a lot of hot melt glue is required ensure your glue gun is at its maximum temperature. Keep a spare glue stick handy in case you're your glue gun runs empty.



Step 7

Glue the trailing edge of the wing together. Make sure the trailing edge meets evenly at the back of the wing keeping the wing symmetrical. Glue the wing ends onto the left and right sides of the wing. The CG indicators should face downwards. Cut a 45-degree bevel in the ailerons and tape the ailerons to the wing trailing edge. Use the same method that was used for the rudder and elevator to allow free movement. Glue the control horns in place to complete the wing.



Step 8

Glue the servos in place. Servos can be glued to the outside as per the picture or glued from the inside to create a flush look.

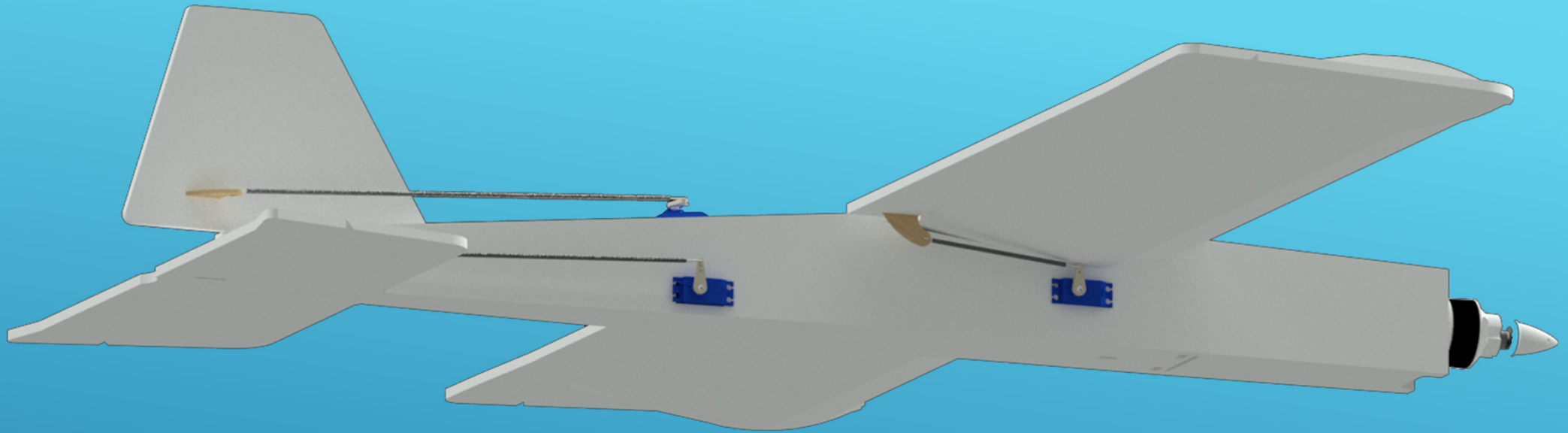
Open the cheeks of the fuselage and glue the motor mount in place.

Mount the motor and ESC.

Carefully push the provided latch into the foam in the top canopy hatch.

Glue the fuselage front, top in place.

Reinforce fuselage corners and the hatch with clear tape.

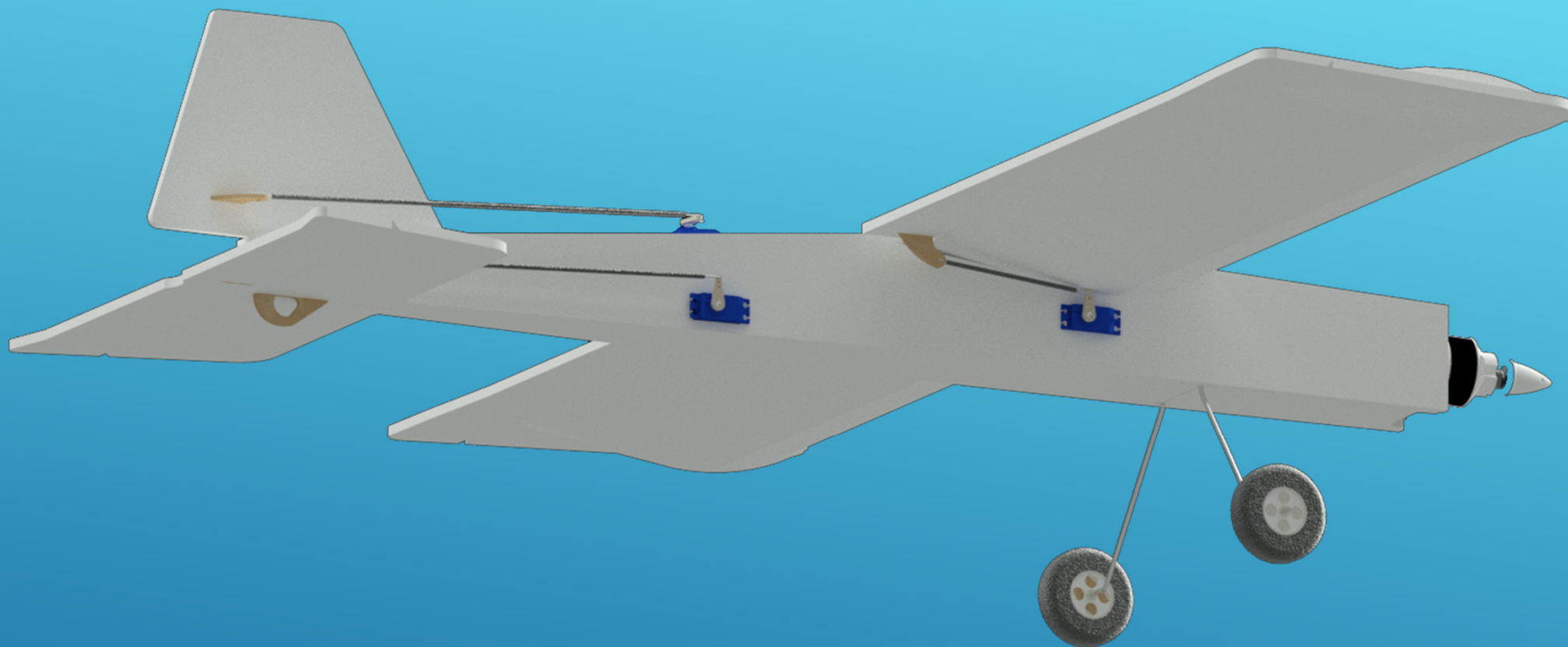


Step 9

Center the wing on the fuselage and check for alignment. Glue the wing to the fuselage.

Make up the pushrods for the elevator, rudder and ailerons by cutting the provided carbon tube to length.

Center the servo and the moving surface. Once the carbon tube is centered between the servo horn and the control horn use thin CA glue to wick into the carbon tube fixing the size of the pushrod permanently.



Step 10

Place the wheels on the landing gear axles ensuring that they run true and free. Use a small washer and glue or collars to hold the wheels onto the axles. Push the landing gear into the slot carefully until the landing gear is flush with the top of the ply landing gear doublers.

Glue the tail skid in place.

Check the CG and use the position of the battery in the battery bay to balance the plane correctly. Glue a Velcro strap to the fuselage floor to hold the battery for flight. Check that all the surfaces move in the correct direction. 15-20mm of movement in each direction is adequate for the maiden flight

Tip! Pratley metal epoxy works well in combination with a washer to make a wheel collar.