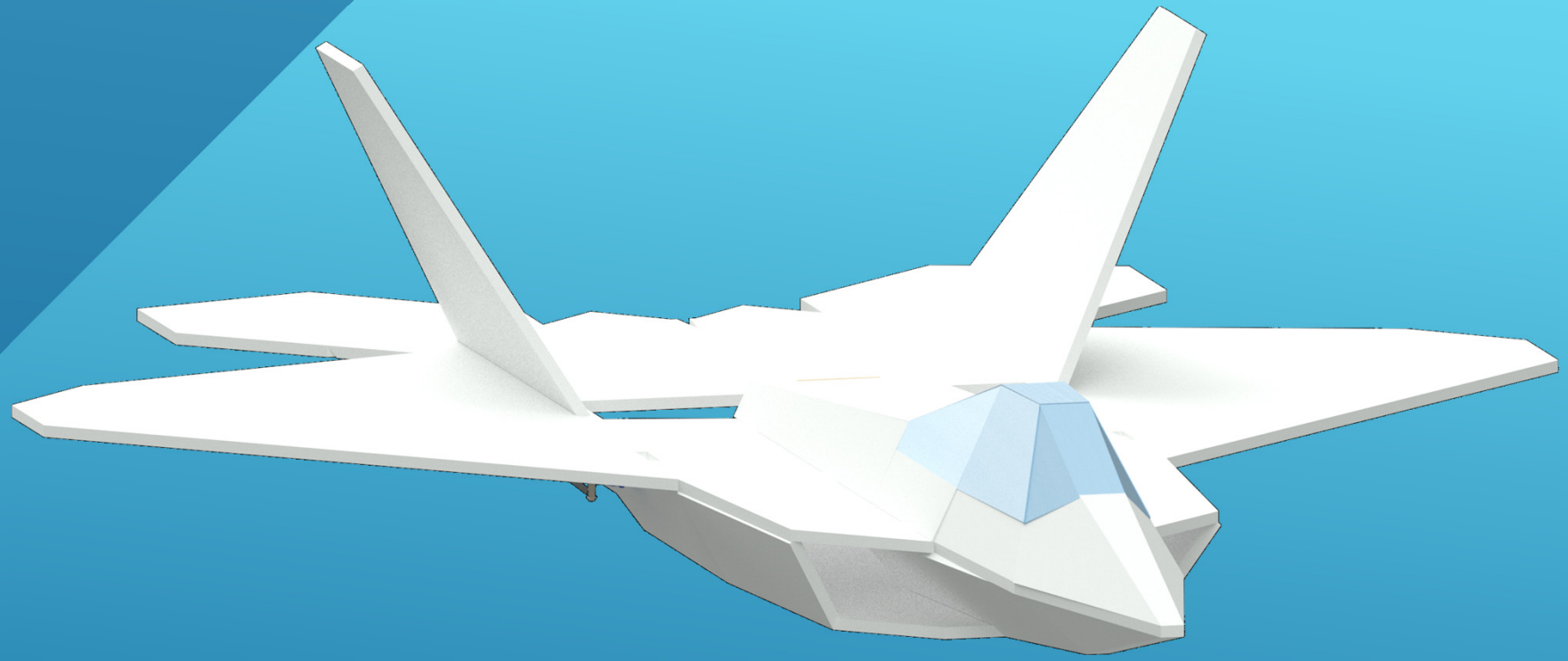


TOTEM
Models
RAPID BUILD SERIES

F22 RAPTOR
DOMINATE THE SKY

Build Difficulty Level
Flying Skill Level

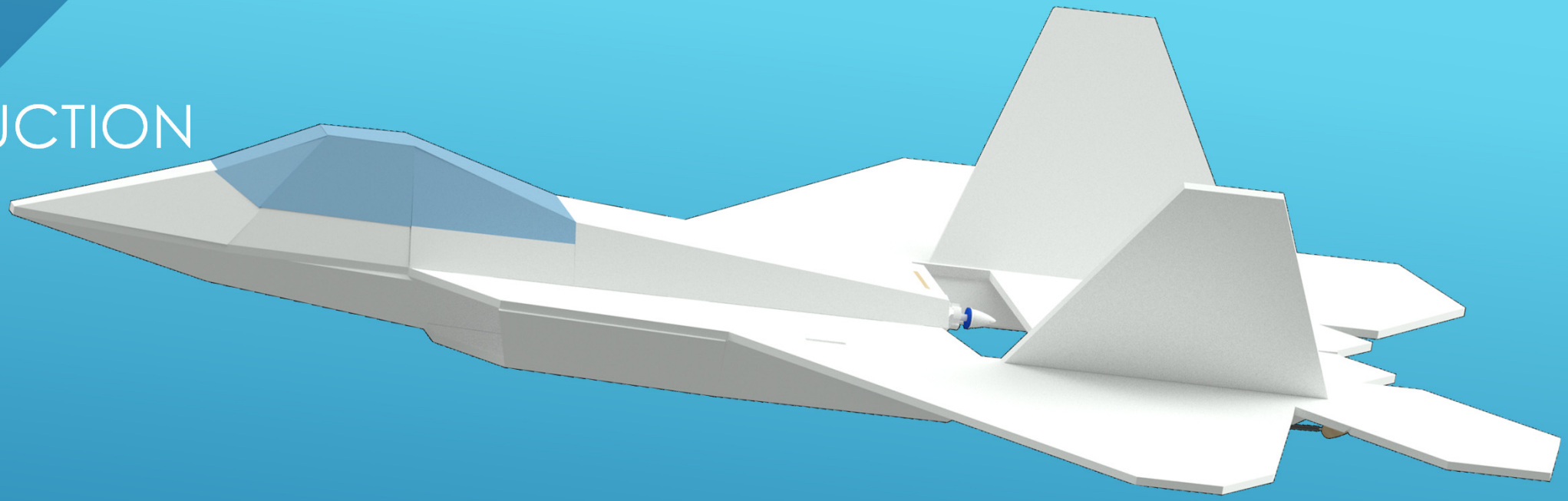
Specifications

Wingspan	660mm
Length	920mm
AUW	550g
DW	380g
W/L	22g/dm2

Build Manual

James Roney
Roy Harvey

INTRODUCTION



The Totem Legacy Rapid Build Series models are easy to build and are a great way to get aspiring pilots into the wonderful hobby of radio control flying.

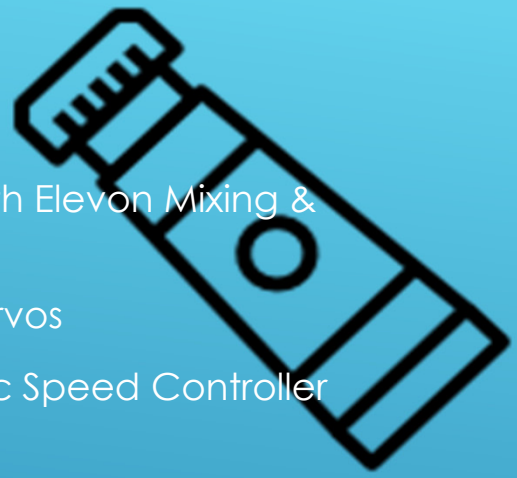
This F22 Raptor is one of our more challenging builds, however remains very manageable for the novice builder. The F22 Raptor has an amazing form factor and looks absolutely killer in the sky. Air from the propeller washes directly over the control surfaces ensuring excellent control authority even at lower speeds. High alpha flying is fun and also a great way to setup for landing.

This model is an excellent step in to the world of jets!

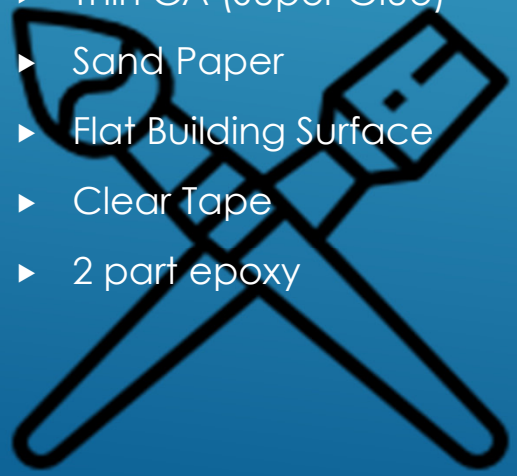
This foam kit is precision laser cut and the construction uses proven build techniques.

- Warranty
  - Totem Legacy 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 Legacy 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 gluing!
  - 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)

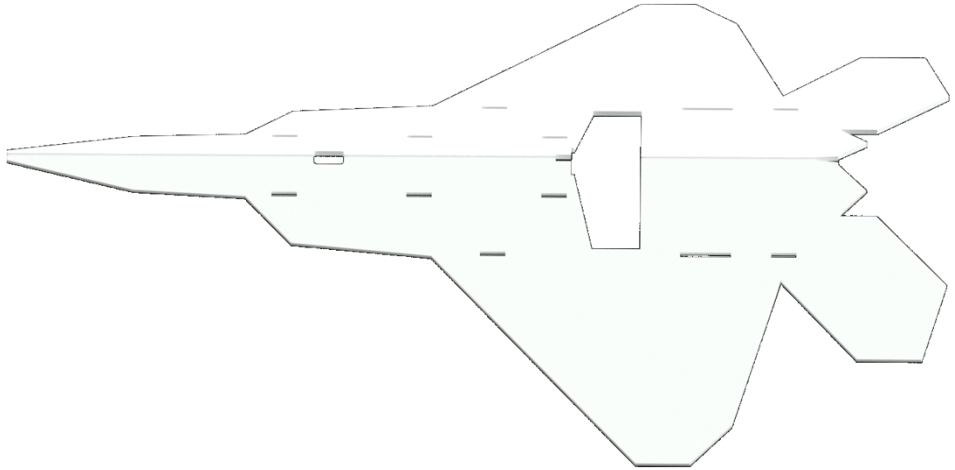
SUGGESTED TOOLS AND ITEMS REQUIRED TO COMPLETE THIS RAPID BUILD SERIES KIT:

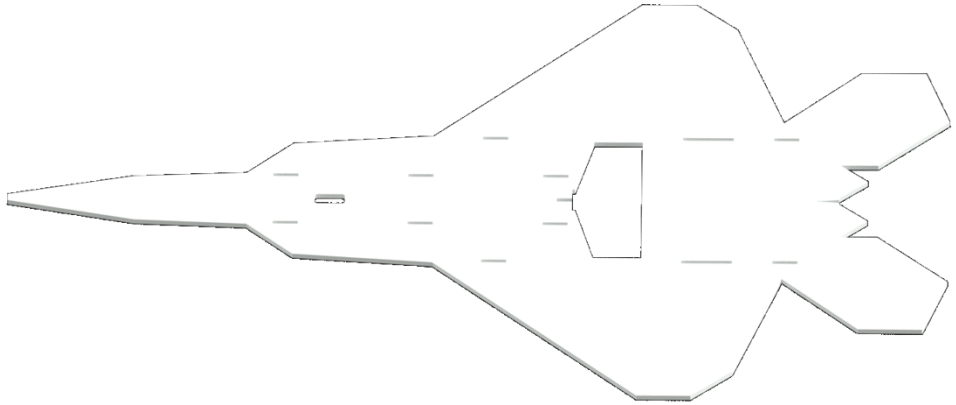


- Tools
  - Stanley Blade
  - Ruler
  - Pencil
  - Screw Drivers
  - Hot Melt Glue Gun
  - 3 long Glue Sticks
  - Thin CA (Super Glue)
  - Sand Paper
  - Flat Building Surface
  - Clear Tape
  - 2 part epoxy



- Equipment
  - Radio with Elevon Mixing & Receiver
  - 2 x 9g Servos
  - Electronic Speed Controller 30A
  - LiPO Battery 2200mah 3s
  - LiPO Charger
  - Brushless Motor +- 800g Thrust and mounting screws
  - Max Propeller Size 7 inch



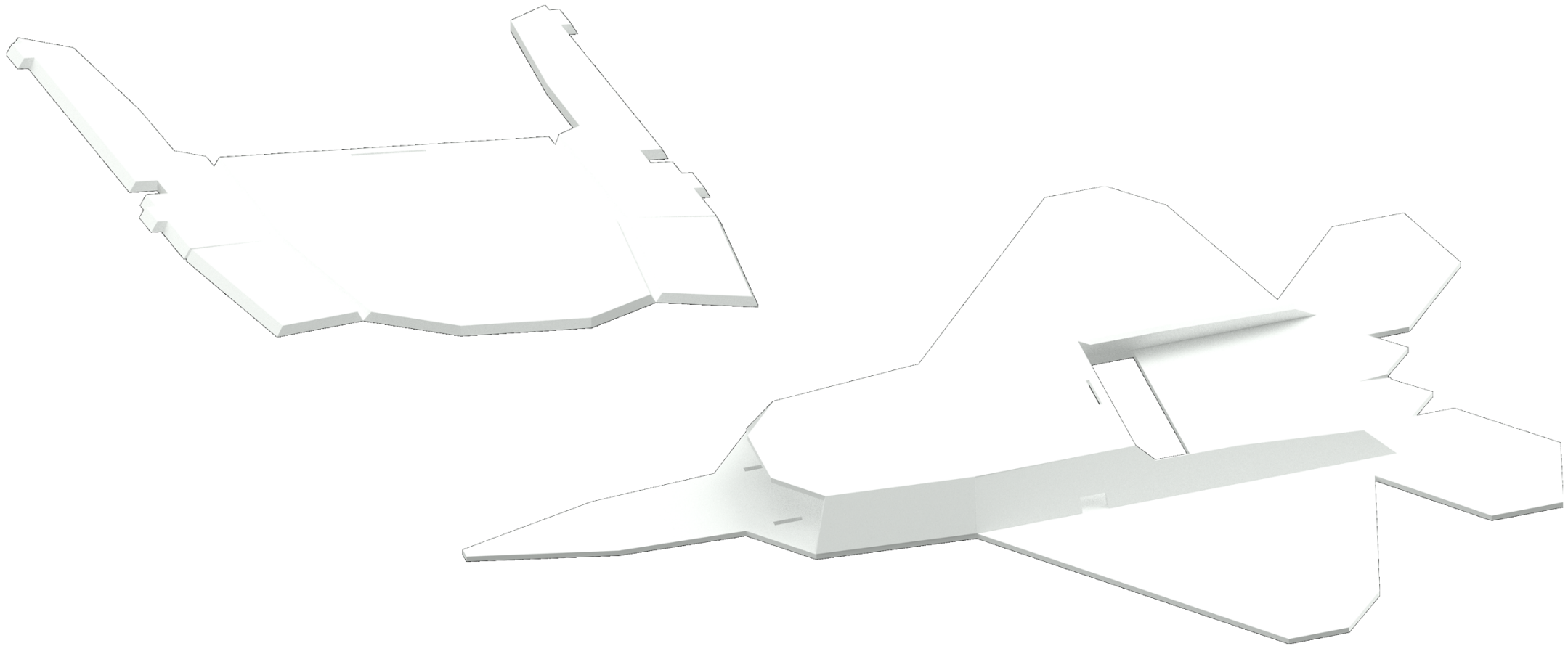


Tips & Tricks

Test fit each part before gluing.
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 stop parts from fitting flush.
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 airframes 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.

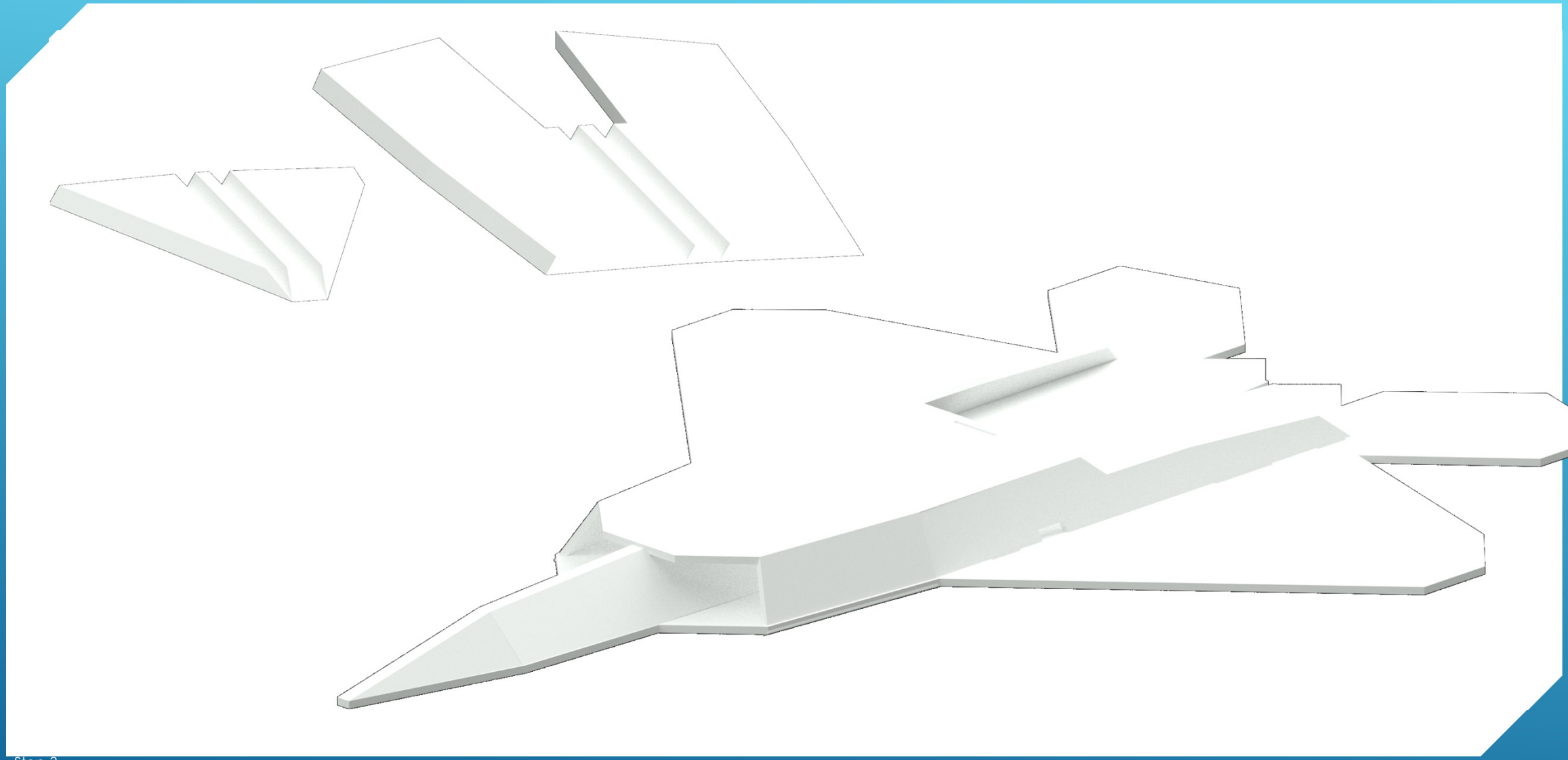
Step 1
Parts are held in place using tiny tabs. Remove each part by cutting through the tabs. In rare cases the laser may have not fully cut through the entire sheet but you can easily resolve this by cutting through the sheet with your blade.

Open the center score line slightly and then add a bead of glue into the center from the nose to the tail and then place the wing on a flat surface. Remove any excess glue that may squeeze out of the join. Add tape over the join to add additional strength.



Step 2
Using a sharp Stanley blade cut bevels into the lower fuselage section following the provided guidelines. Squeeze the alignment tabs slightly and slot the lower fuselage into place. If you find your part does not sit flush, trim any bevels a little more. Check the motor mount slots for center alignment.

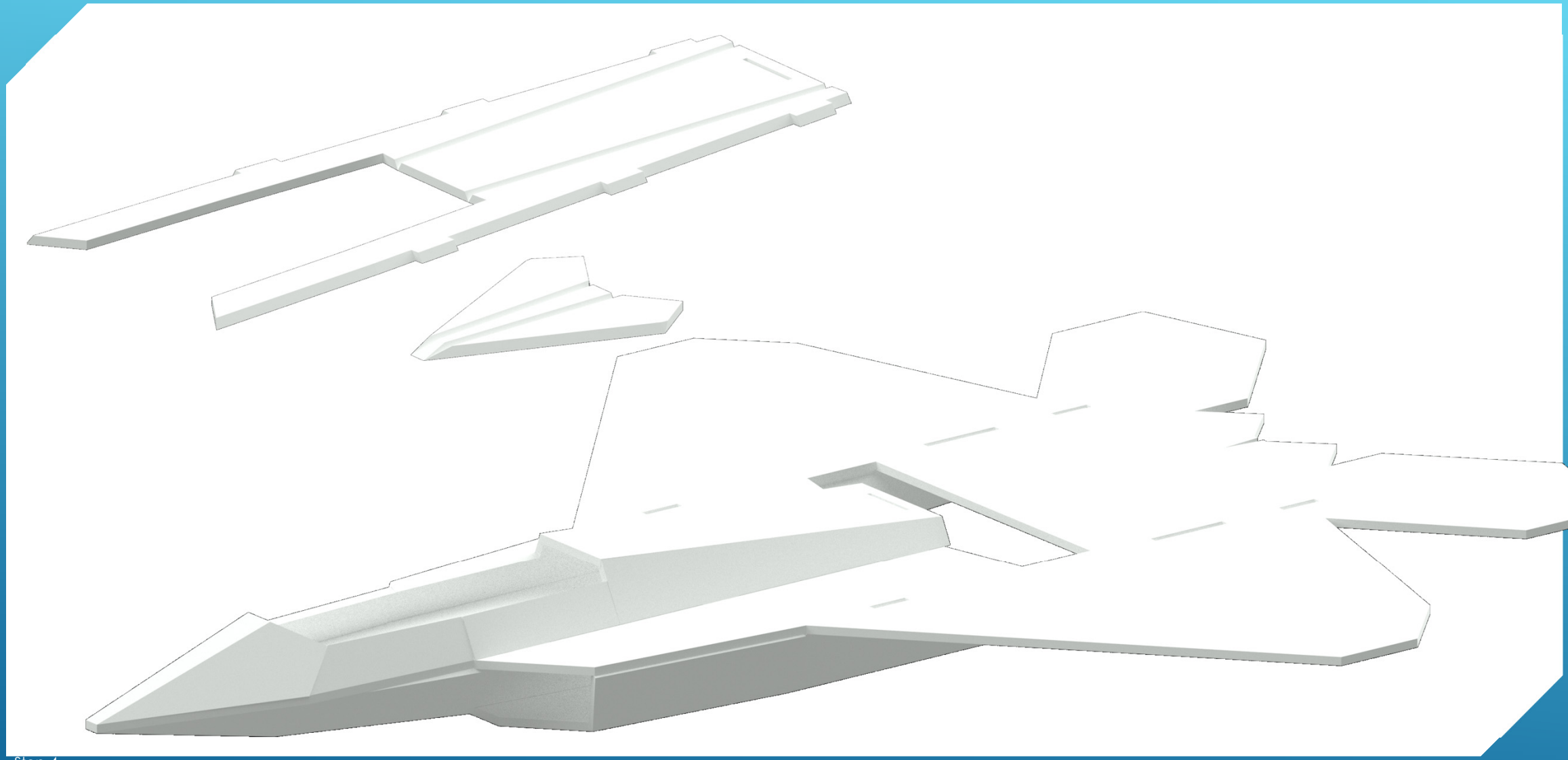
Working quickly, run a bead of glue into the bevel cuts. Run a bead of glue on the wing section where the lower fuselage meets the wing and glue in place. Run a bead of glue for the front section of the lower fuselage where the inlets are and glue in place one side at a time. Remember to remove any excess glue using a scrap piece of foam.



Step 3
Using a Stanley blade, cut the bevels for the bottom nose cone and lower cockpit.

Add a bead of glue to the bevel in the nose cone and shape the nose cone using the template provided. Once dry glue the nose cone in place.

Test fit the bottom cockpit section. Add a bead of glue to the bevels and glue the bottom cockpit section in place. Hold for a full 1.5 minutes to ensure the glue is set before letting go.

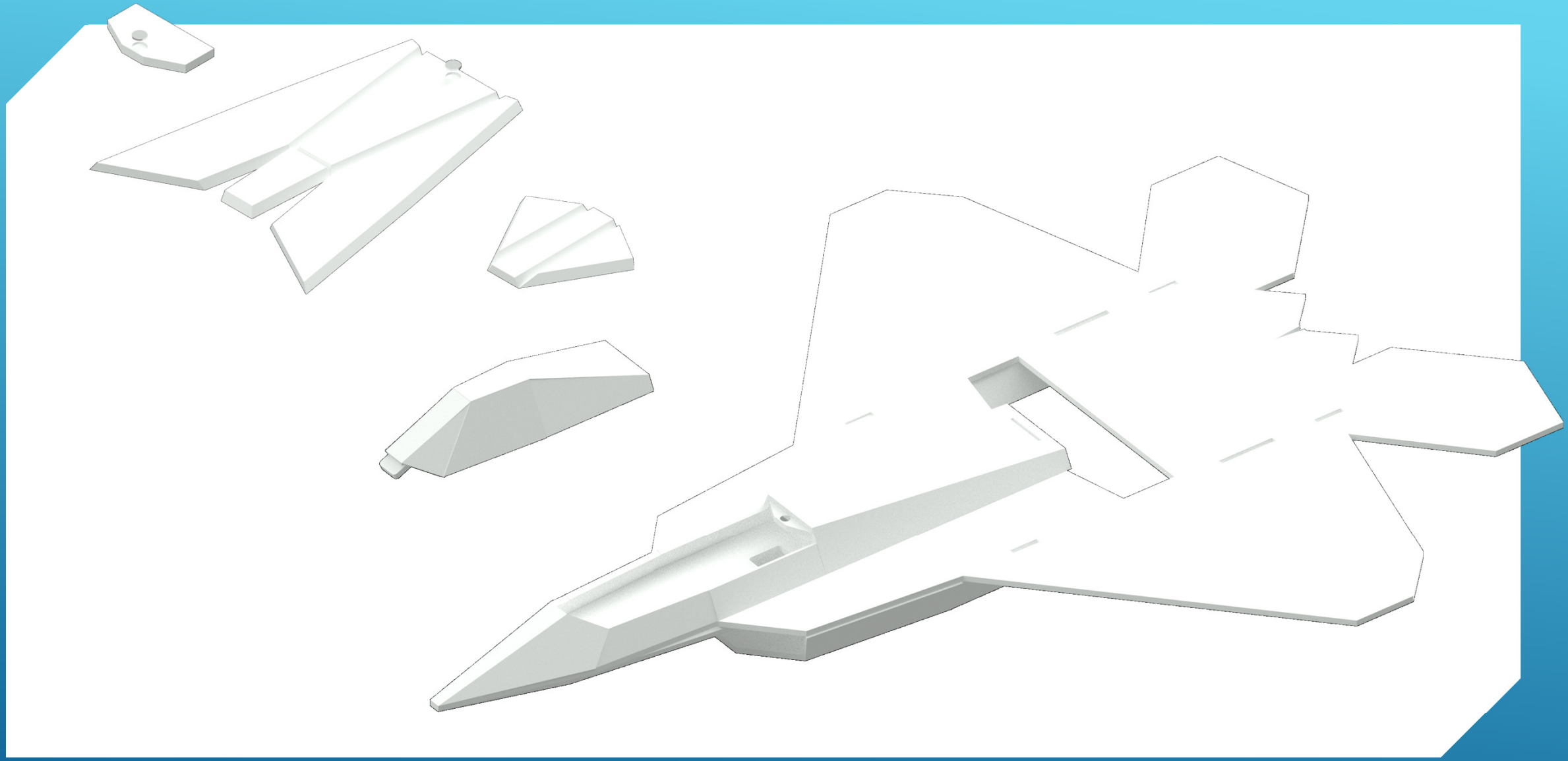


Step 4

Using a Stanley Blade cut the bevels in the upper fuselage. Test fit the upper fuselage parts and check the motor mount holes are centered. The nose cone should sit flush as it does in the picture above.

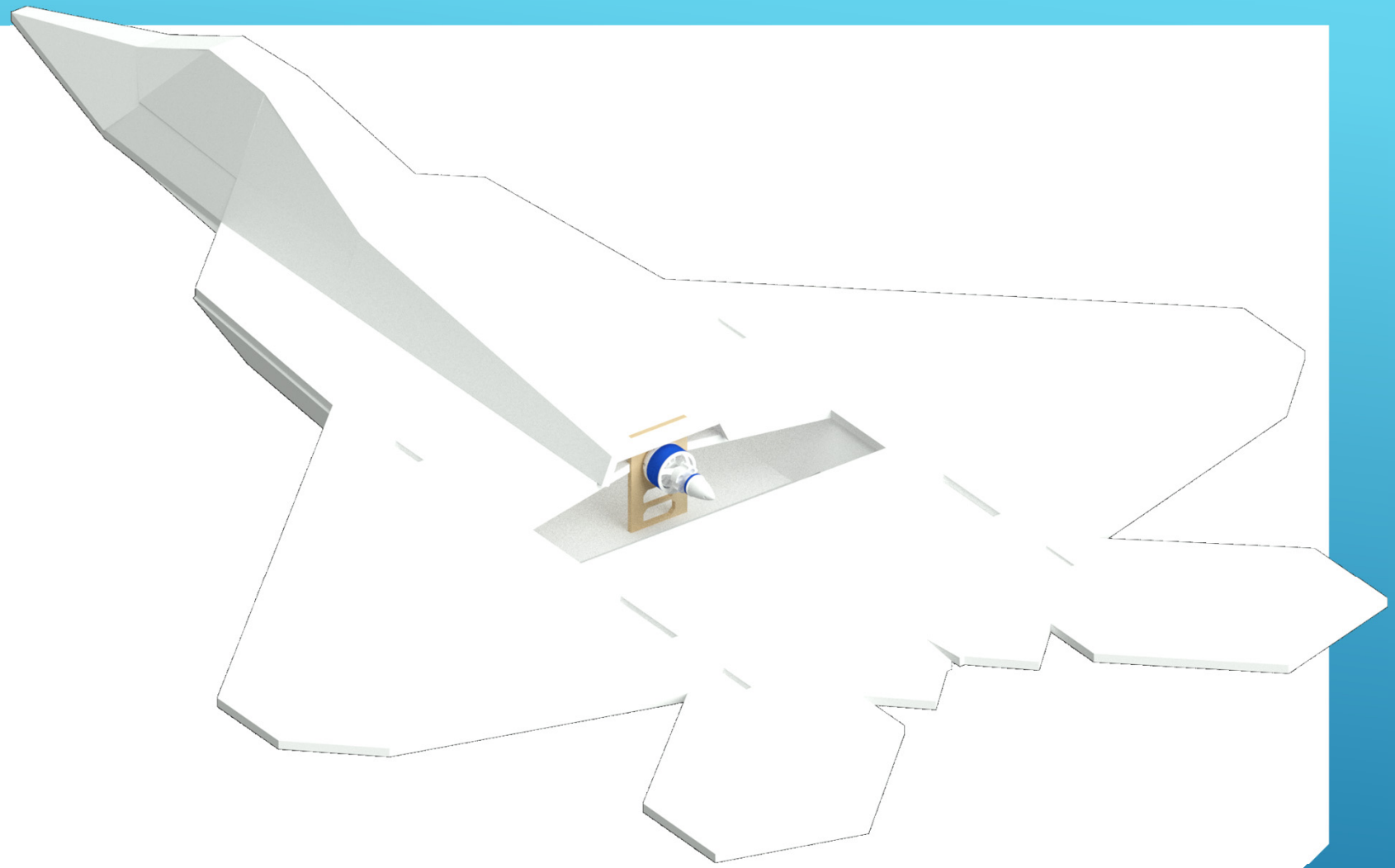
Add a bead of glue to the bevel cuts and along the edges of the upper fuselage and glue in place. Be careful as the paper is easy to tear in the mid cockpit area. This join can be reinforced with tape.

Add a bead of glue to the bevel cuts in the upper nose cone and use the template to provided to get the correct shape. Glue the upper nose cone in place.

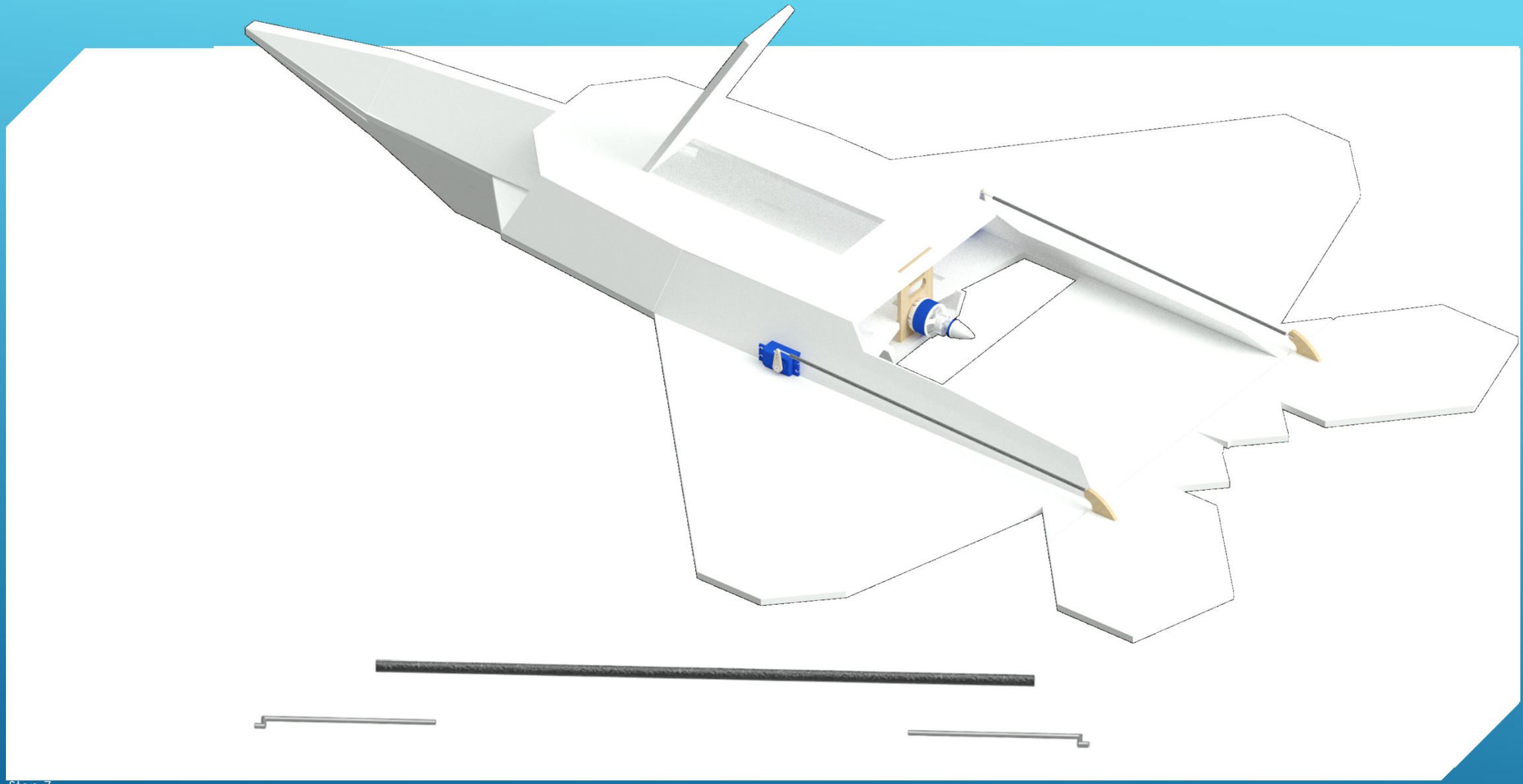


Step 5

Glue the two supplied magnets in the recesses provided using epoxy glue. Ensure the glue is fully cured before testing the magnets out.
Cut the bevels as indicated in the diagram above using the guidelines provided on the parts. Glue the rear cockpit magnet support in place using hot melt glue.
Using the windshield and cockpit templates, run a bead of glue in the bevels and hold the cockpit and windshield to shape.
Once the glue has dries, test fit the cockpit and windshield in place and then glue the windshield to the front of the cockpit.
Using scrap foam cut a custom tongue approx. 20x40mm for the front hatch and glue the tongue to the inside of the windshield. If done correctly, the cockpit hatch will lineup with the fuselage very well and fit snugly.



Step 6
Reinforce the motor plate by add thin CA glue to it. Let the CA glue dry fully.
Mount the motor to the motor plate.
Test fit the motor mount in place by slotting the motor mount into the bottom fuselage deck first, then slide the plate upwards until flush with upper fuselage deck.
Remove the mount and add a bead of hotmelt glue to the upper and lower slot as well as the middle wing and then slide the motor mount in place.



Step 7

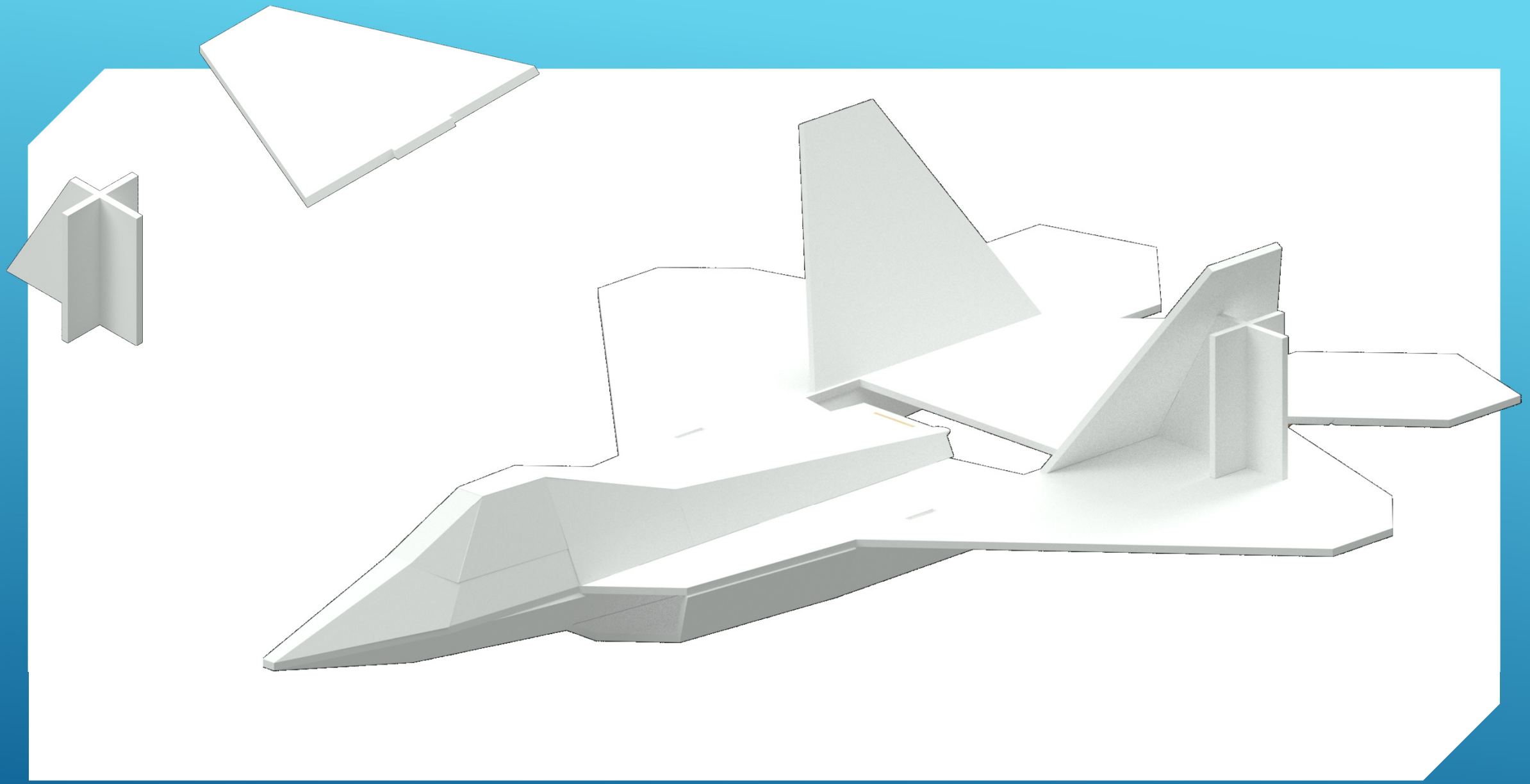
Run a pencil or similar item through the elevon hinge. Add tape to the top of the hinge for added strength. To reinforce the inner hinge, open up the elevon hinges completely and run a bead of glue along the hinge line. Remove all excess glue and only leave a paper-thin line of glue. Ensure the elevons remain fully open until the glue dry.

Test fit the control horns in place and then glue in place using a bead of hotmelt glue.

Remove the labels from one side of the servos and score the surface lightly. Add glue to the servo and glue the servo in place.

Ensure the servos are centered and the elevons are centered. Setup the pushrods so that there is an even space between the carbon rod, servo and control horns. Use thin CA to wick into the carbon tube permanently fixing the length of each pushrod.

Use the access hatch provided to install the ESC and Receiver. Tape the access hatch closed along all four edges.



Step 8
Build the Vertical Stabilizer angle gauge. Using a Stanley Blade, cut a bevel into the vertical stabilizers following the guide lines provided.
Using the Angle Gauge run a bead of glue along the fuselage where the vertical stabilizer meets the fuselage. Hold the vertical stabilizer in place against the gauge until the glue fully dries. Run an additional bead of glue along both bottom sides of the vertical stabilizer to reinforce the join but remove any excess glue using a scrap piece of foam. You should be able to pickup the entire aircraft from the vertical stabilizer if glued correctly. Repeat the process with the second Vertical Stabilizer.
Check the CG according to the markers provided on the wing and move the battery forward or backwards to achieve the ideal CG. Glue the Velcro strap in place.
20mm to 30mm of control surface travel should be sufficient elevon movement to perform a maiden.