Cessna 195 Instructions

Scale: 1/10th - Wingspan: 106cm - Lenth : 82.5cm

Power: 360W motor with 3S 2,200mAh LiPo battery

Cessna 195 – Instructions

Thank you for supporting us by purchasing this model.

Warning

This is not a toy!

Radio control aircraft can be dangerous and have the potential to cause injury and damage to people and property.

It is your responsibility to ensure that the plane is constructed and operated safely and flown in accordance with all applicable regulations in your area.

You must ensure the plane is balanced at the recommended centre-of-gravity (CG) location. Flying an out of balance plane is very dangerous and will typically result in the destruction of the plane.

You must always use radio equipment in good condition and regularly check its operation.

Some steps involve cutting carbon-fibre (CF) tube, rods and plates. Take care not to inhale CF dust and always wear proper safety equipment including masks and goggles.

Liability

As My Model Plane has no control over the final assembly or material used for final assembly, no liability shall be assumed nor accepted for any damage resulting from the use of the final product. By the act of using the user-assembled product, the user accepts all resulting liability.

Licence

You **ARE** permitted to:

1) Print the parts to produce one model for your own **personal use**.
2) Print replacement parts as required to fix the original model.

You **ARE NOT** permitted to:

1) Print the parts for commercial purposes. This includes:
    a. Sell or make available to others, physical parts and/or the whole model.
    b. Sell or make available to others the digital files including the 3D files.

Basically, you are granted permission to print one copy of this model for your own personal enjoyment and make replacement parts as required. Each flying model must have its own licence. **You are not allowed to earn money or otherwise create economic value from this model.**

Designing a model like this requires hundreds of hours of work. Please respect this and support us by adhering to these conditions.

Printing notes

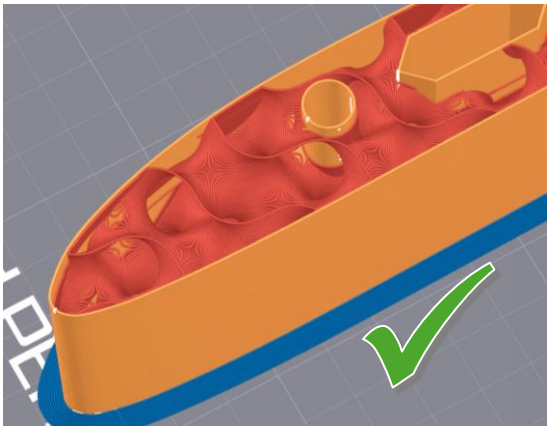
To save weight, most of the of the structure is printed using light-weight PLA (LW-PLA) with the following parameters:

- 0.4mm nozzle
- flow rate of approximately 0.5
- temperature to achieve a 0.5mm wall thickness
- 1 wall
- 0.25mm layer height
- 4% gyroid infill (see note below).

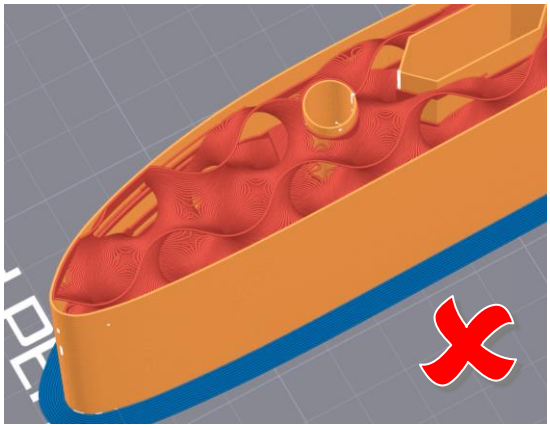
We have found this provides sufficient strength, lightness and ease of printing. Note that there will almost certainly be “stringing” of the LW-PLA inside the parts. This is unavoidable but does not affect the quality of the final product.

We recommend using a slow print speed to achieve good layer adhesion. Most parts benefit from printing with a large (5mm - 8mm) brim and an enclosure to reduce warping.

Note: Make sure the gyroid infill bridges the top and bottom surfaces of the wing and fuselage parts. You might need to rotate the part or the infill direction 45°.



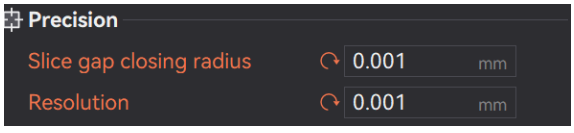
Correct – infill connects top and bottom surfaces on every layer



Incorrect – infill doesn’t connect top and bottom on every layer

Resolution:

Set the resolution and gap closing radius to very low values:



Print settings:

Print settings for each main section are in their own table. Rows are grouped by parts with the same settings. For all parts except those in LWPLA, the bodies grouped together can be printed together.

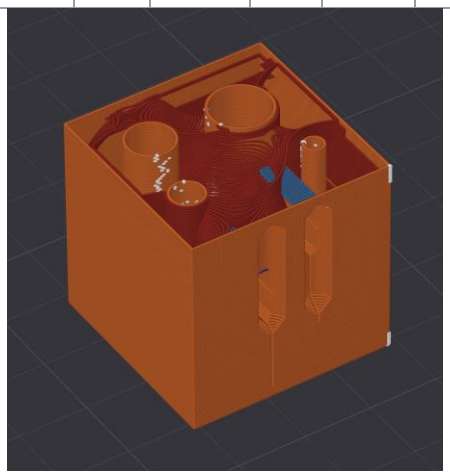
As a general rule, parts do not need supports (except as noted) but do benefit from using a brim.

Test block:

Included in the pack is a test block for LWPLA. Check the width of the walls to be 0.5mm and the weight to be 3g.

There are 2mm, 4mm, 6mm and 8mm holes plus a couple of slots for hinge halves. Check that the CF tubes fit smoothly into the holes noting that the holes may need to be cleaned out with a drill bit first.

Body	Recommended Material	Layer height	Walls	Infill type	Infill %	Bottom layers	Top layers	Seam	Notes
Test block2	LWPLA	0.25	1	Gyroid	4	1	0	Nearest	See orientation image 0.5mm line width



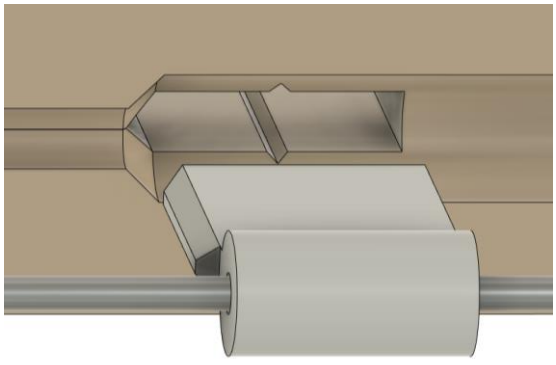
Orientation:

All parts are designed to be printed with the largest or widest flat area on the base then tapering to the top. For some parts, there are example screen shots of the orientation.

Hinges:

Hinges come as half-parts. There are 3 pairs (so 6 printed parts) per control surface. One half of each pair is glued to each side. Note that the halves have a taper on one side of the flat area. This matches with a taper in the notch in the surface. If the hinge half doesn't seem to want to go in, make sure it's around the right way.

In total, 30 hinge halves are required and can all be printed at the same time.



Finally - always check the fit of parts before you glue!

Required parts

- Radio equipment:
  - 4+ channel radio system. 5 channels required for recommended differential ailerons. Radio with aileron-rudder mixing ability also recommended.
  - 4 x 9-12g micro servos (digital recommended).
  - 2 or 4 servo extension leads for the ailerons (depending on the length of the cables).
  - 1.5mm wire pushrods and 3mm outer sleeves for fuselage (DuBro 0.062" micro pushrod set Part 941 used on prototype).
  - 2-56 (or similar) pushrods and clevises for ailerons (DuBro Part 184 used on prototype).
- Motor and Electronics:
  - 2316 brushless electric motor (Dualsky Eco 2316 1250kV 360W used on prototype but 900kV-1300kV is suitable).
  - Matching propeller (10x6 APC electric used on prototype).
  - 50mm spinner.
  - Electronic speed controller (ESC) (40A used on prototype).
  - 1,600mAh – 2,200mAh 3S LiPo battery (2,200mAh used on prototype).
  - Velcro and battery strap.
  - M3 bolts, washers and lock nuts to secure motor.
  - 2 x 150mm zip ties to hold ESC.
- Landing Gear and Wheels:
  - 2 x 55mm – 65mm main wheels (55mm is scale but 65mm recommended for rough surfaces like grass).
  - M3 or M4 bolts, washers and locknuts to secure main wheels. If using M3 bolts, use a 4mm outer, 3mm inner aluminium tube (K&S #1110) to function as a bearing surface.
  - 1 x 20mm-25mm tail wheel.
  - ~2mm soft steel rod – 20cm required (2-56 solid pushrods are also suitable) for tailwheel axle.
  - 2 x 2mm collets.
- Carbon Fibre:
  - 8mm outer, 6mm inner CF tube – 1 meter length required.
  - 6mm outer, 4mm inner CF tube - 1 meter length required.
  - 3mm outer, 2mm inner CF tube – 50mm length required.
  - 4mm CF solid rod - 1 meter length required.
  - 2mm CF solid rod - 1 meter length required.
  - 4mm x 4mm CF square section – 70mm length required.
  - 12mm x 2mm CF solid rectangle – 300mm length required.
- Filament:
  - LW-PLA (Bambu Aero used on prototype).
  - PLA (Bambu PLA Matte and eSun PLA+ used on prototype).
  - PETG (eSun PETG used on prototype).
  - Optional – PLA-CF (recommended for wheel mounts).
- Others
  - A selection of 2mm self-tapping screws (6mm, 10mm and 12mm lengths).
  - M3 x 15mm bolts for wing locks and motor mounts
  - "Medium" and "Slow" CA glues. Use medium unless noted.
  - 1mm diameter steel rod (K&S #3941) - 1 meter length required.
  - Lead weights for extra nose weight,

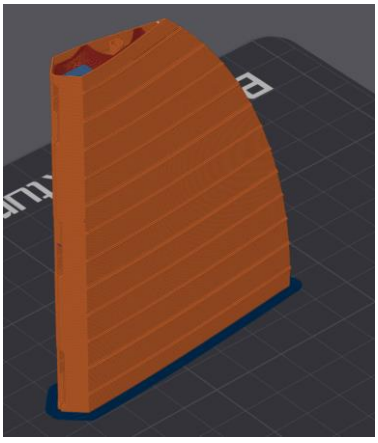
Required tools

- 3D printer with a 250mm x 250mm (plate) x 200mm (height) printing area. Bambu P1S used to print prototype.
- 1mm, 1.5mm, 2mm, 3mm, 4mm, 6mm & 8mm drill bits.
- Highly recommended – extra-long 4mm and 6mm bits.
- Highly recommended – a set of 1.0mm – 2.0mm drill bits in 0.1mm increments. Useful for clearing out drill holes and servo screw holes.
- Screwdrivers.
- Pliers.
- Highly recommended - wire bender for up to 2mm wire (Dubro Part 480 wire bender used).
- Saw to cut CF parts to length

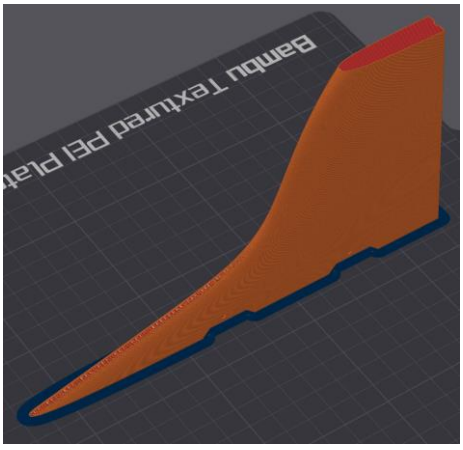
Vertical Stabiliser

Print settings

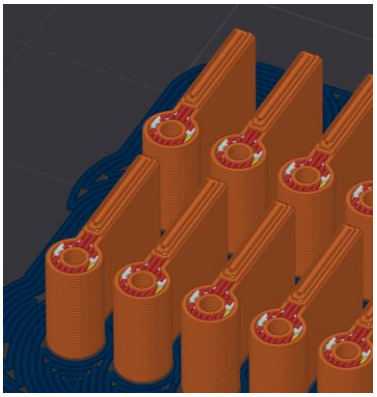
Body	Recommended Material	Layer height	Walls	Infill type	Infill %	Bottom layers	Top layers	Seam	Notes
rudder lower horn	PLA+	0.2	1	Grid	10	8	2	Back	Align back of part to back of plate. 45deg infill
hinge half	PLA+	0.2	2	any	100	1	1	Nearest	Print x6 See orientation image
rudder main	LWPLA	0.25	1	Gyroid	4	1	0	Nearest	See orientation image 0.5mm line width
rudder cap	LWPLA	0.25	1	Gyroid	4	1	1	Nearest	0.5mm line width
fin	LWPLA	0.25	1	Gyroid	4	1	2	Nearest	See orientation image 0.5mm line width



Rudder main



fin

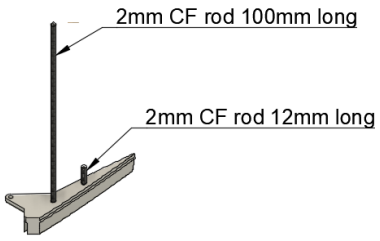


Hinge half – note the little taper at the top.

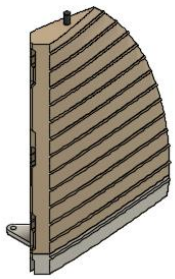
Assembly

- Print out the parts
- Using a 2mm and 4mm drill, clear out the holes of any debris.
- Use a 1mm drill to clear the holes in the Hinge halves. Make sure the 1mm steel rod can be inserted.

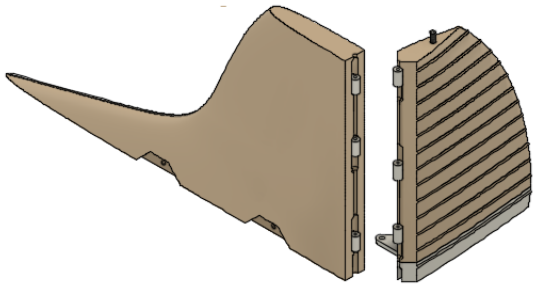
- Cut one 2mm rudder carbon rod to 100mm and another 2mm rod to 12mm.
- Glue the carbon rods into the rudder_lower_horn



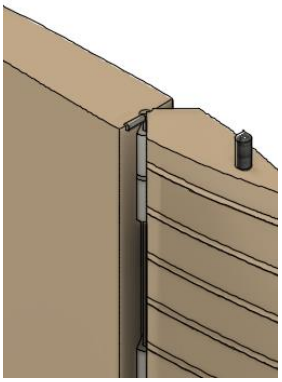
- Glue the rudder_main onto the rudder_lower_horn



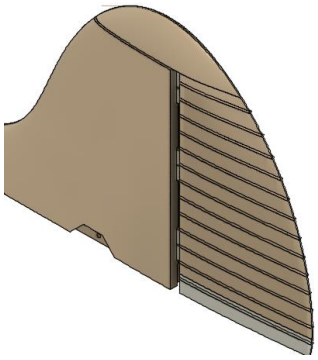
- Test fit and then glue 3 hinge halves into the slots in the rudder.
- Test fit and then glue 3 hinge halves into the slots in the fin.



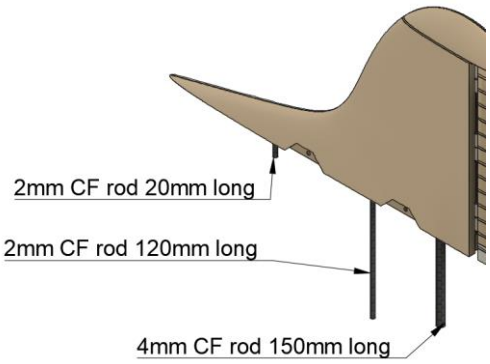
- Cut 1mm steel rod 100mm long to function as a hinge. Bend a short angle at the top to stop the rod from sliding out.
- Locate the rudder to the fin and insert the hinge rod. Check for free movement.



- Glue the rudder tip onto the end of the rudder.



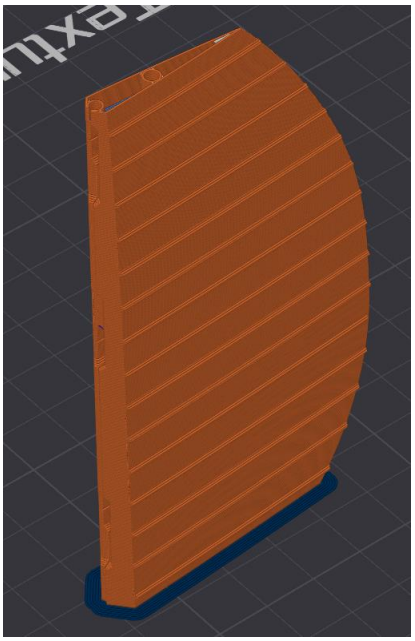
- Cut the 4mm carbon fibre fin post to 150mm
- Cut 2, 2mm carbon fibre fin post to 120mm and 20mm.
- Dry fit the fin posts to the fin but **DO NOT** glue. Glue these to the fuselage instead when ready for final assembly.



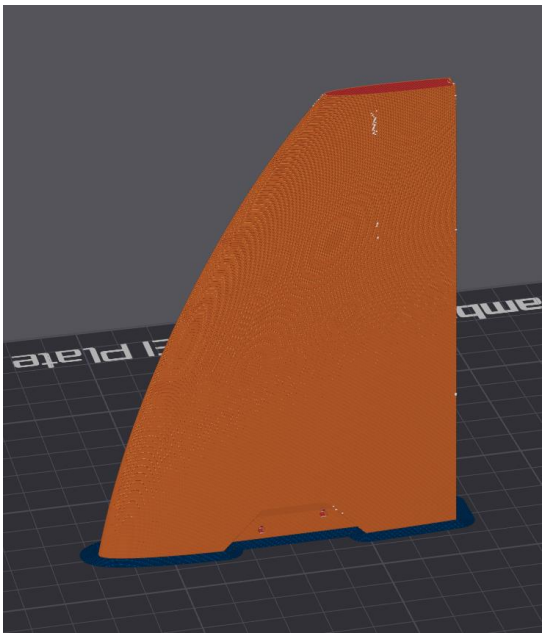
Horizontal Stabiliser

Print settings

Body	Recommended Material	Layer height	Walls	Infill type	Infill %	Bottom layers	Top layers	Seam	Notes
elevator inner horn	PLA+	0.2	1	Grid	10	8	2	Back	Align back of part to back of plate. 45deg infill. The “horn” is on the bottom.
elevator inner L	PLA+	0.2	1	Grid	10	1	2	Back	Align back of part to back of plate. 45deg infill
elevator inner R	PLA+	0.2	1	Grid	10	1	2	Back	Align back of part to back of plate. 45deg infill
hinge_half	PLA+	0.2	2	any	100	1	1	Nearest	Print x12
elevator outer L	LWPLA	0.25	1	Gyroid	4	1	0	Nearest	See orientation image 0.5mm line width
elevator outer R	LWPLA	0.25	1	Gyroid	4	1	0	Nearest	0.5mm line width
elevator tip L	LWPLA	0.25	1	Gyroid	4	1	0	Nearest	0.5mm line width
elevator tip R	LWPLA	0.25	1	Gyroid	4	1	0	Nearest	0.5mm line width
stab L	LWPLA	0.25	1	Gyroid	4	1	2	Nearest	See orientation image 0.5mm line width
stab R	LWPLA	0.25	1	Gyroid	4	1	2	Nearest	0.5mm line width



Elevator outer

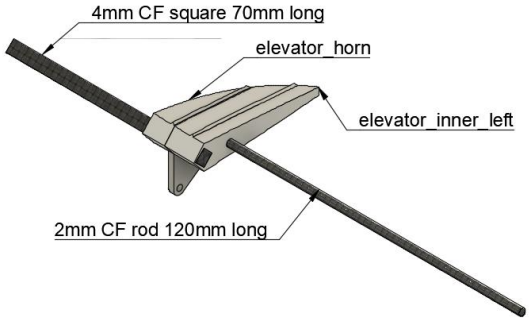


Stab

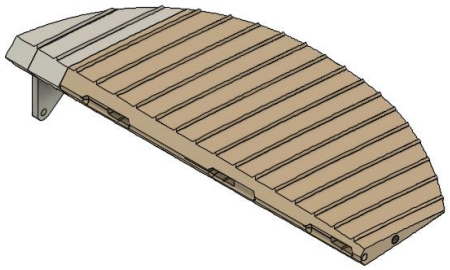
Assembly

- Using a 2mm and 4mm drill, clear out the holes of any debris.
- Use a 1mm drill to clear the holes in the Hinge halves. Make sure the 1mm steel rod can be inserted.

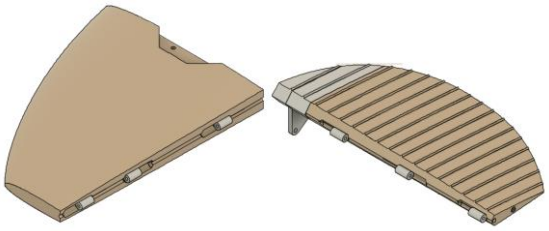
- Start with the left (when looking from behind) elevator.
- Cut the 4mm square CF tube to 70mm.
- Cut the 2mm elevator CF rod to 120mm.
- Use the 4mm square CF and 2mm CF rod to align and glue the elevator_horn and elevator_inner. Glue the 2mm CF rod but NOT the 4mm CF square. Try to keep the glue out of the square cutout.



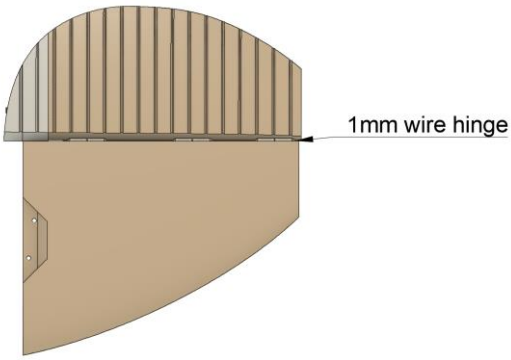
- Glue the elevator_outer to the assembly.



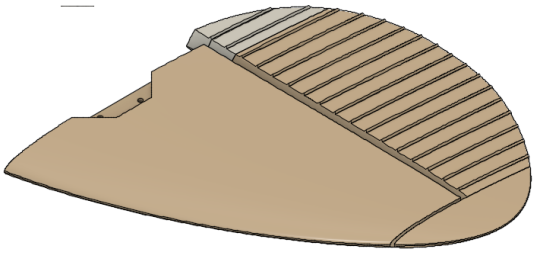
- Test fit and then glue 3 hinge halves into the slots in the elevator.
- Test fit and then glue 3 hinge halves into the slots in the stabiliser.



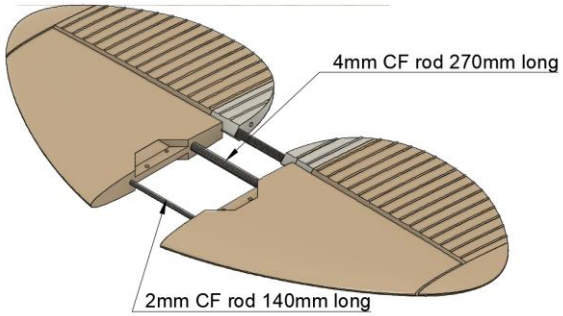
- Cut 1mm steel rod 110mm long to function as a hinge. Bend a short angle at the top to stop the rod from sliding out.
- Locate the elevator to the stabiliser and insert the hinge rod. Check for free movement.



- Glue the elevator tip onto the end of the elevator. Use a small cutoff of filament in the hole to help align the parts.



- Repeat for the right-hand side stabiliser and elevator.
- Cut the 4mm CF stabiliser rod to 270mm
- Cut the 2mm CF stabiliser rod to 140mm.
- Dry fit the rods to the stabilisers but **DO NOT** glue.

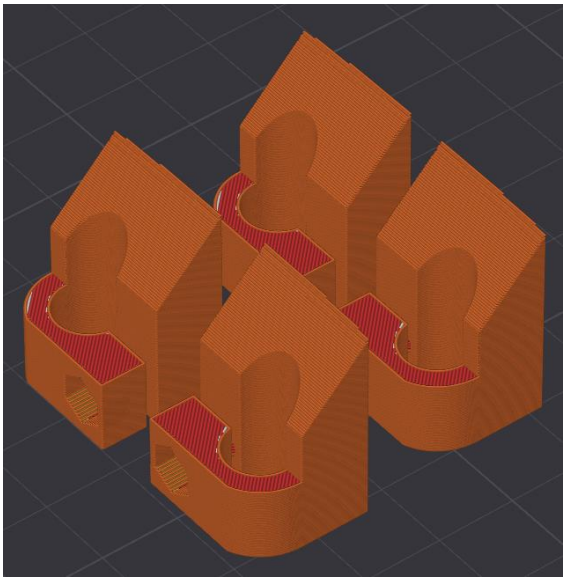


Wings

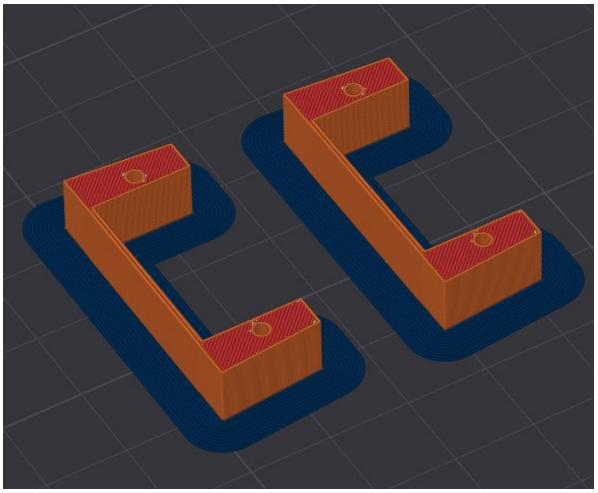
Print settings

Body	Recommended Material	Layer height	Walls	Infill type	Infill %	Bottom layers	Top layers	Seam	Notes
aileron inner L	PLA+	0.2	1	Gyroid	4	1	2	Back	
aileron inner R	PLA+	0.2	1	Gyroid	4	1	2	Back	
aileron outer L	PLA+	0.2	1	Gyroid	4	8	2	Back	
aileron outer R	PLA+	0.2	1	Gyroid	4	8	2	Back	
wing lock L[1]	PLA+	0.2	3	Grid	25	2	2	Nearest	See orientation image
wing lock R	PLA+	0.2	3	Grid	25	2	2	Nearest	See orientation image
wing servo hatch L	PLA+	0.12	3	Grid	20	2	2	Aligned	
wing servo hatch R	PLA+	0.12	3	Grid	20	2	2	Aligned	
wing servo mount	PLA+	0.2	3	Cubic	15	2	2	Aligned	Print x2 See orientation image
wing servo post	PLA+	0.2	2	any	100	1	1	Nearest	Print x8
hinge_half	PLA+	0.2	2	any	100	1	1	Nearest	Print x12
wing 1 L	LWPLA	0.25	1	Gyroid	4	1	0	Nearest	0.5mm line width
wing 2 L	LWPLA	0.25	1	Gyroid	4	1	0	Nearest	0.5mm line width
wing 3 L	LWPLA	0.25	1	Gyroid	4	1	0	Nearest	0.5mm line width
wing 4 L	LWPLA	0.25	1	Gyroid	4	1	0	Nearest	0.5mm line width
wing 1 R	LWPLA	0.25	1	Gyroid	4	1	0	Nearest	0.5mm line width
wing 2 R	LWPLA	0.25	1	Gyroid	4	1	0	Nearest	0.5mm line width
wing 3 R	LWPLA	0.25	1	Gyroid	4	1	0	Nearest	0.5mm line width
wing 4 R	LWPLA	0.25	1	Gyroid	4	1	0	Nearest	0.5mm line width
wingtip L	LWPLA	0.25	1	Gyroid	4	1	1	Nearest	0.5mm line width
wingtip R	LWPLA	0.25	1	Gyroid	4	1	1	Nearest	0.5mm line width

[1] Print both large and small and use the one that matches your hardware best



Wing locks

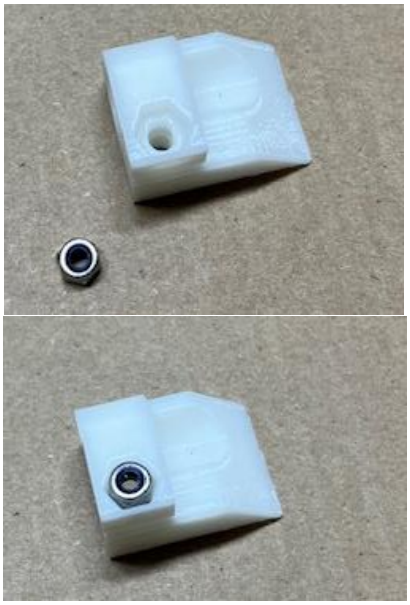


Servo mounts

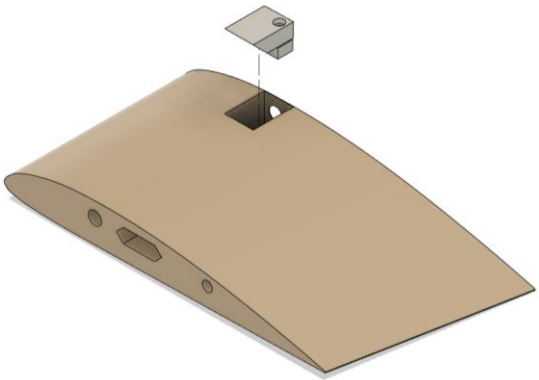
Assembly

- Print out the parts
- Use an 8mm drill and a long 6mm drill to clear the wing tube holes from the Wing1 – Wing4 parts of any debris

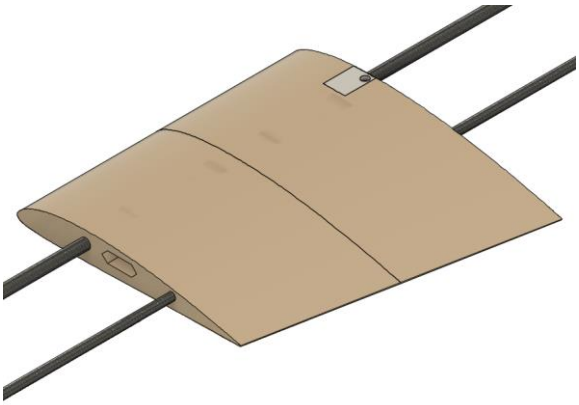
- Glue an M3 locknut into the cutout in the underside of the Wing lock. **There are 2 versions of the lock provided for different sized M3 locknuts**. Pick the one that's a snug fit for your hardware. Do **NOT** get glue into the threads.
- Install the M3 x 15mm long bolts from the top so they engage in the lock nut but do not tighten. The wing tube should be able to slide in easily at this point.



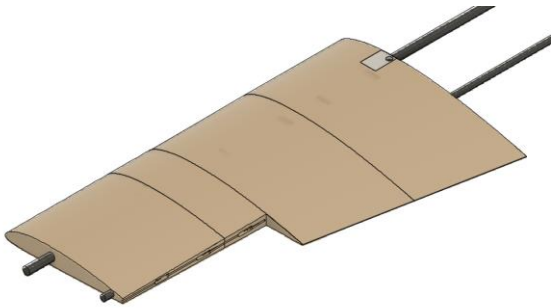
- Glue the Wing lock into Wing1 making sure not to get glue on the lower half that clamps on the 8mm carbon tube. Use the carbon tube as a guide but make sure not to get any glue on it too.



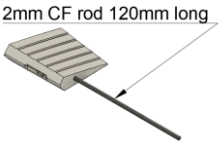
- Use medium CA to glue Wing2 to Wing1 together using the wing tubes as guides but **DO NOT** glue the tubes in!



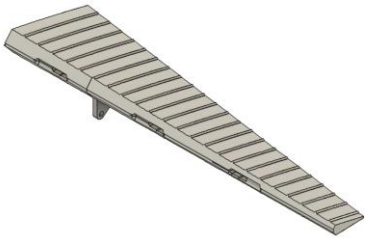
- Repeat for Wing3 and Wing4



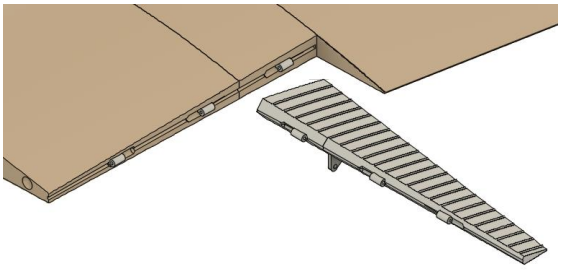
- Cut the 2mm aileron carbon rod to 120mm.
- Glue the carbon rod into the aileron_inner



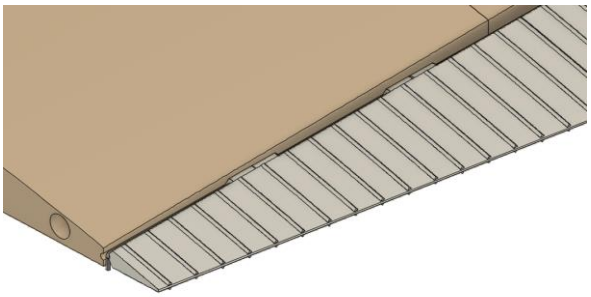
- Glue aileron_outer to aileron_inner



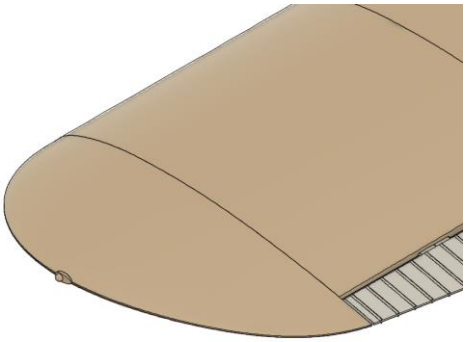
- Glue 3 hinge halves into the slots in the completed aileron
- Glue 3 hinge halves into the slots in Wing3 and Wing4.



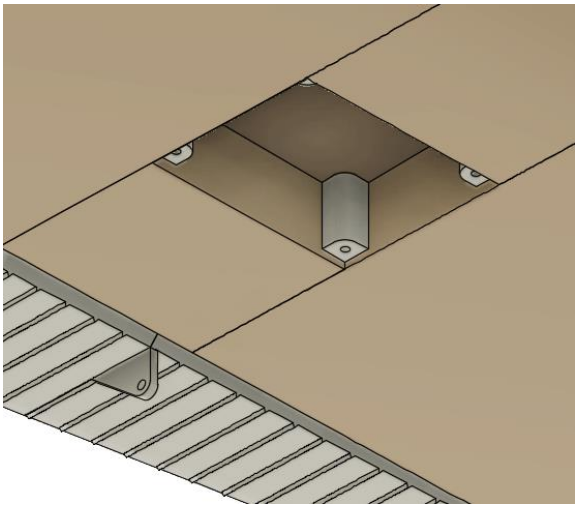
- Cut 1mm steel rod 160mm long to function as a hinge. Bend a short angle at the top to stop the rod from sliding out.
- Locate the aileron to the wing and insert the hinge rod. Check for free movement.



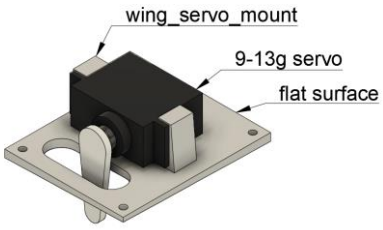
- Glue the wingtip on. Use the 8mm CF tube to aid alignment but do **NOT** glue the tube in.



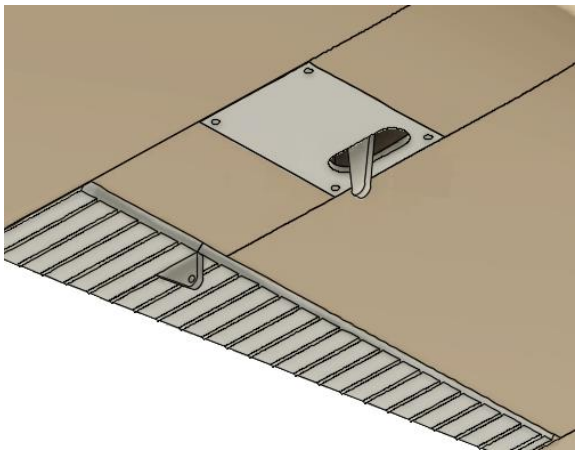
- Turn the wing over and glue in 4 wing_servo_posts into the corners of the servo space.



- Screw the aileron servo into the wing_servo_mount.
- The hatch has a flat side and a tapered side. Glue the mount onto the flat side so that the servo arm is in the middle of the cutout.



- If needed, use a servo extension lead to give around 30-50mm of servo cable out the root of the wing.
- Use 2mm self-tapping screws to attach the servo hatch to the posts.
- Make up pushrods to connect the servo to the aileron.
- Repeat all the steps for the other wing.



Fuselage

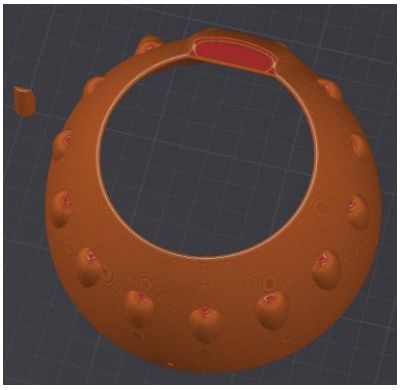
Print settings

Body	Recommended Material	Layer height	Walls	Infill type	Infill %	Bottom layers	Top layers	Seam	Notes
motor mount	PETG	0.2	3	Cubic	20	3	5	Back	
nose ring	PETG	0.2	2	Cubic	15	2	2	Back	
battery tray	PETG	0.2	1	Grid	15	1	2	Nearest	
battery tray rear support	PETG	0.2	2	Grid	15	2	0	Nearest	
batt tray servo mount	PETG	0.2	3	Grid	15	3	1	Nearest	Print x2
cowl bottom pin **cowl top pin** **cowl left pin** **cowl right pin**	PETG	0.2	3	Cubic	20	3	5	Back	
cowl	PLA+	0.2	1	Cubic	7	1	2	Back	
Exhaust stub	PLA+	0.2	1	Cubic	7	1	2	Back	
wing root L	PLA+	0.2	3	any	100	5	3	Aligned	
wing root R	PLA+	0.2	3	any	100	5	3	Aligned	
plate	PLA+	0.2	3	any	100	5	3	Aligned	Print x16
latch	PLA+	0.2	2	Grid	15	6	6	Aligned	
latch bottom	PLA+	0.2	2	Grid	15	6	6	Aligned	
latch top	PLA+	0.2	2	Grid	15	6	6	Aligned	
pushrod support L	PLA+	0.2	3	Grid	25	3	3	Nearest	
pushrod support R	PLA+	0.2	3	Grid	25	3	3	Nearest	
dummy motor	PLA+	0.2	2	Grid	15	1	2	Aligned	Use supports
hatch front	Matte PLA[2]	0.2	2	Gyroid	4	1	2	Nearest	
top hatch	Matte PLA	0.2	2	Gyroid	4	1	2	Nearest	

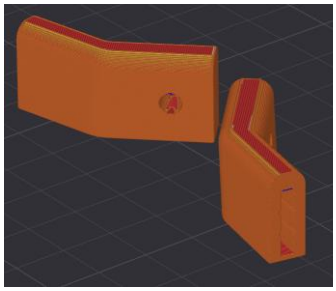
[2] Matte PLA recommended to match the LWPLA texture but PLA+ can be used.

fuse1	Matte PLA	0.2	2	Gyroid	4	2	0	Nearest	
fuse2	LWPLA	0.25	1	Gyroid	4	1	0	Nearest	infill direction 0 degrees
fuse3	LWPLA	0.25	1	Gyroid	4	1	0	Nearest	infill direction 0 degrees
fuse4	LWPLA	0.25	1	Gyroid	4	1	0	Nearest	infill direction 0 degrees
fuse5	LWPLA	0.25	1	Gyroid	4	1	0	Nearest	infill direction 0 degrees
fuse6	LWPLA	0.25	1	-	0	0	0	Nearest	vase mode
wheel mount L	PLA-CF	0.2	5	any	100	4	4	Aligned	PLA-CF recommended but PLA+ OK
wheel mount R	PLA-CF	0.2	5	any	100	4	4	Aligned	PLA-CF recommended but PLA+ OK
windows	PLA	0.12	3	any	100	1	1	Nearest	Optional

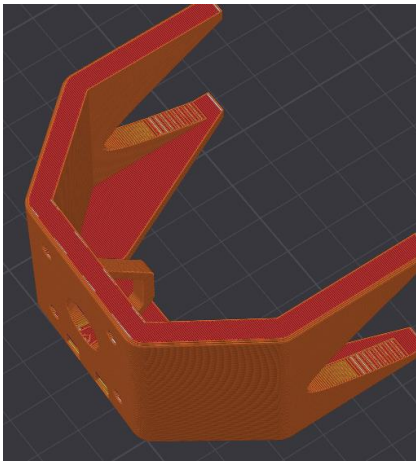
Batt tray servo mount



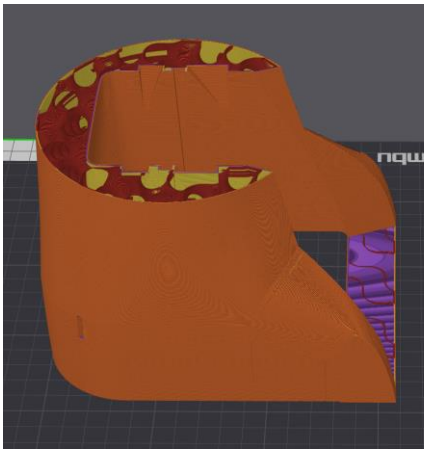
Cowl and exhaust stub



Wheel mount



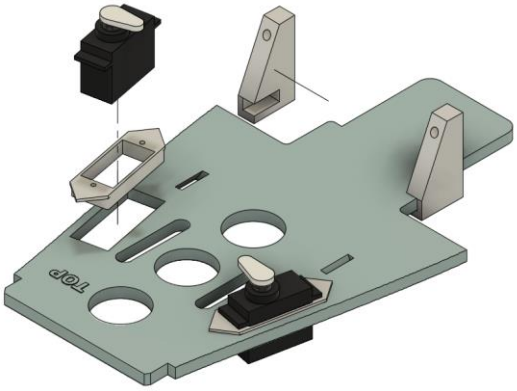
Motor mount



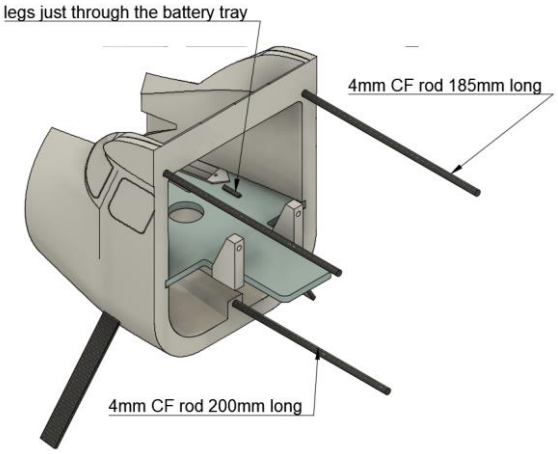
Fuse 1

Assembly

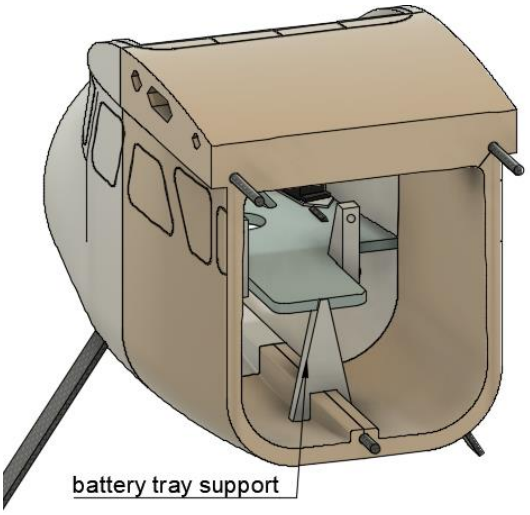
- Screw the elevator and rudder servos into the battery tray servo mounts and glue the mounts into the tray.
- Glue the pushrod supports to the tray as shown.
- If you like, fit a battery strap to the long cutouts in the tray now as it's easier than after it's installed in the fuselage



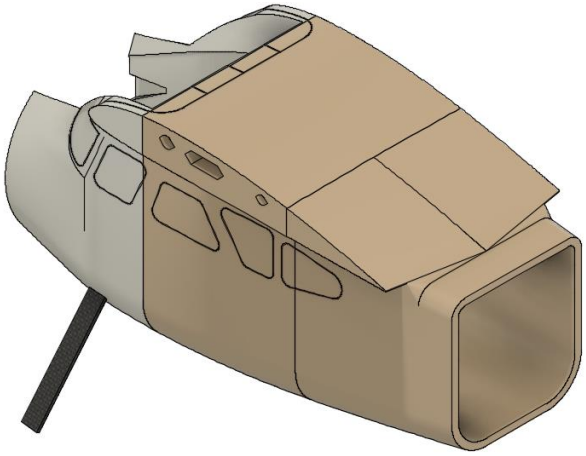
- Remove the servos for now.
- Cut the 12mm x 2mm CF landing gear legs to 135mm long each.
- Test fit the battery tray into Fuse1 and the legs into both Fuse1 and the tray. They should all lock together.
- Once happy, glue the battery tray into Fuse1.
- Use "slow" CA to glue the legs into both Fuse1 and the battery tray. Make sure they protrude the same amount on each side.
- Cut 2, 4mm CF rods to 185mm and another rod to 200mm.
- Test fit and then glue the shorter rods into the tunnels at the top and the single longer rod into the tunnel at the bottom of Fuse1
- Note: the rods at the top should extend no more than 140mm from the end of Fuse1. The rod at the bottom should extend no more than 125mm.



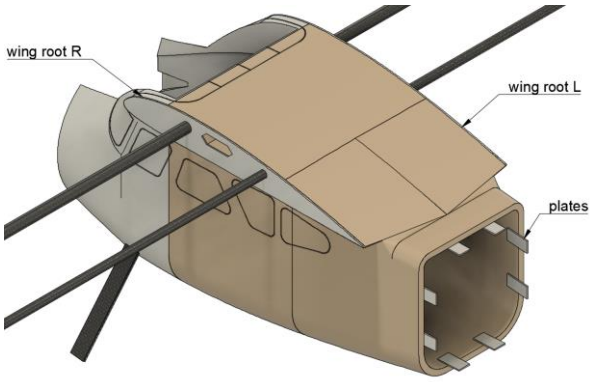
- Glue Fuse2 to Fuse1.
- Glue the battery tray support between Fuse2 and the battery tray.



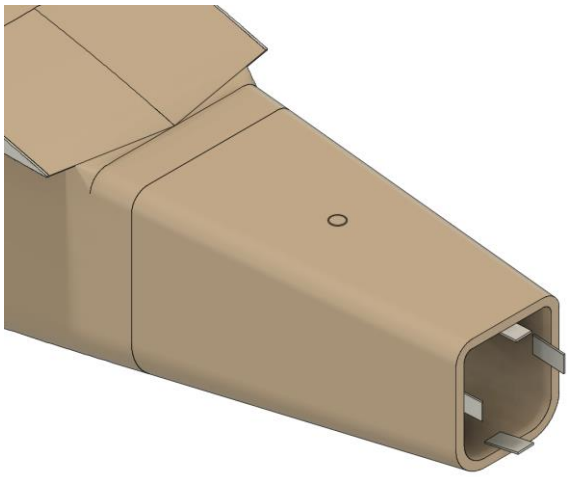
- Glue Fuse3 to Fuse2.



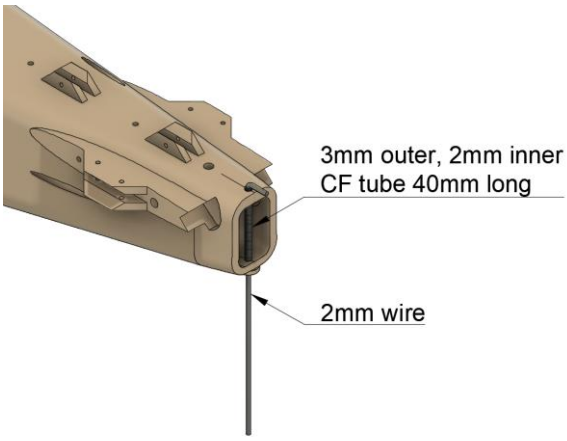
- Glue the wing root pieces across Fuse1, 2 & 3. Use the wing tubes as guides but do **NOT** glue the tubes in.
- Glue 8 plates around the end of Fuse3 so that they project about halfway out.



- Glue Fuse4 to the end of Fuse3 using the plates to help align the parts.
- Glue 4 plates around the end of Fuse4 so that they project about halfway out.

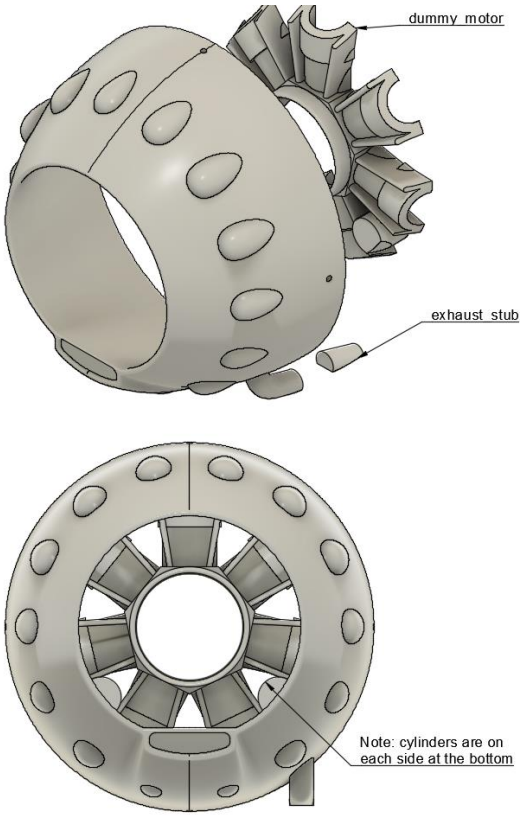


- Clear the holes in Fuse5 and check that the stabilisers and fin can be attached neatly.
- Cut the 3mm outer, 2mm inner carbon tube tailwheel support to size and glue it in.
- Bend a 90° angle on the 2mm tailwheel axle and insert into the tailwheel tube.

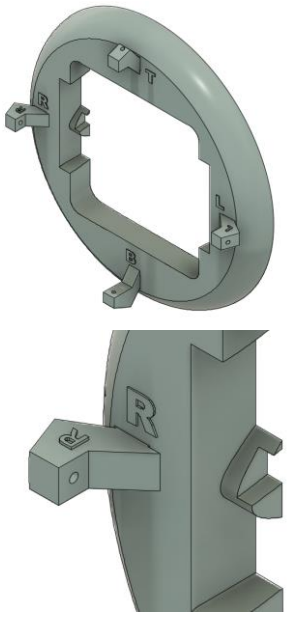


- Add a 2mm collet to the other (under) side.
- Bend the axle to the shape shown and add the tailwheel and another collet.
- Glue Fuse5 to Fuse4.
- Glue Fuse6 to Fuse5.

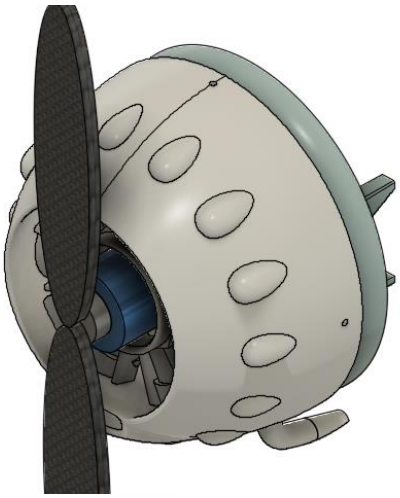
- Glue the dummy motor and the exhaust_stub onto the cowl. Note that the cylinders on the dummy motor are on each side at the bottom.

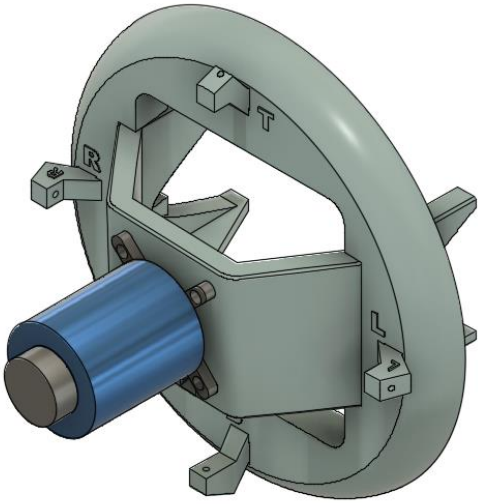


- Test fit the cowl pins to the nose ring. Take care to match up each pin to the correct location. There is a letter on each pin and a letter on each hole. Make sure each pin “leans” out.
- Test fit the cowl to the pins and temporarily screw in using 8mm long 2mm self-tapping screws.
- Once happy, glue the pins in.

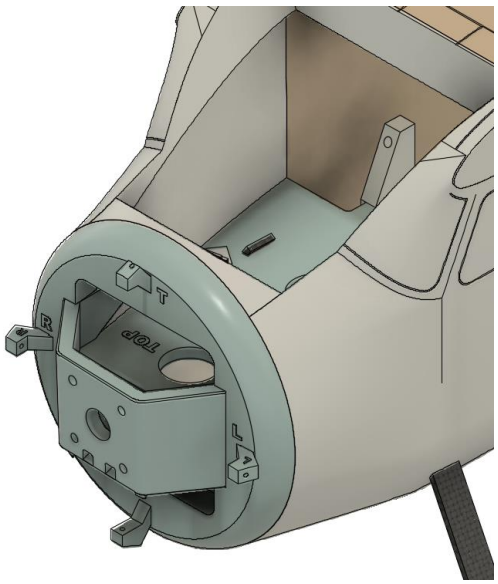


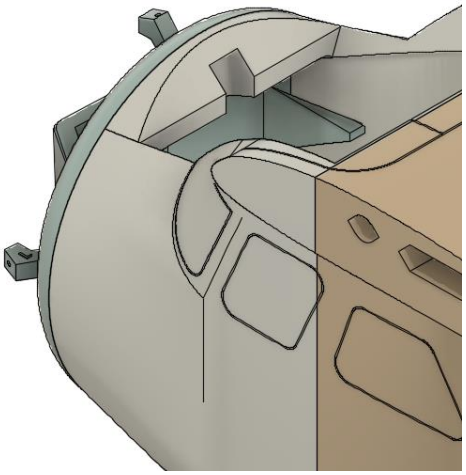
- Test fit the motor mount to the nose ring and test fit the cowl to the pins. Make any adjustments now if required.
- Once happy, remove motor and cowl.
- Use slow CA to glue the motor mount to the nose ring making sure it's pushed all the way in against the stops.



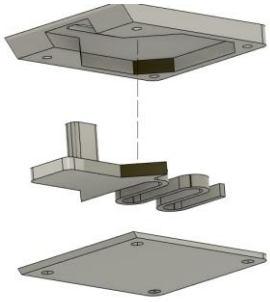


- Glue the nose ring and motor mount to the front of Fuse1 using slow CA.
- Glue the hatch front to the nose ring and Fuse1.

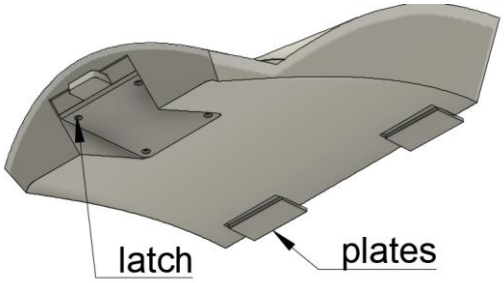




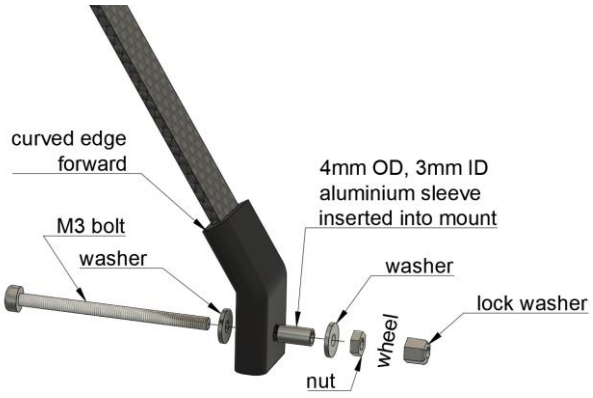
- Make up the latch. Use 6mm long 2mm self-tapping screws to hold the hatch parts together. The screws go up from underneath.



- Glue the top of the latch to the cutout in the hatch.
- Glue 2 plates to the cutouts on the rear of the hatch so that they overhang the end by about halfway.

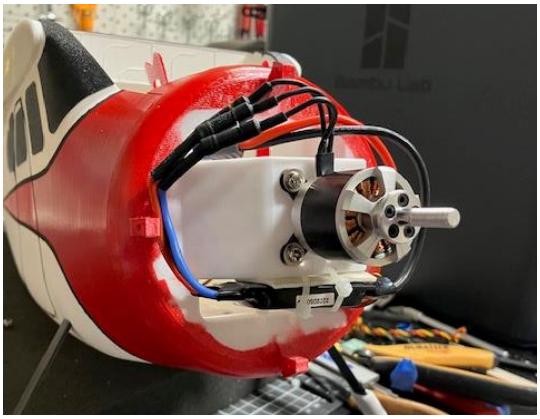


- Using slow CA, glue the wheel mounts to the end of the landing gear.
- Attached the main wheels using M4 or M3 bolts. For the prototype, I used long M3 bolts. As the wheel mount holes are 4mm, I cut 8mm sections of 4mm aluminium tube to fit inside. M3 bolts slide neatly through these. However, if using M4 bolts, this is not necessary.
- Use washers, regular nuts and lock nuts to secure bolt and wheel.

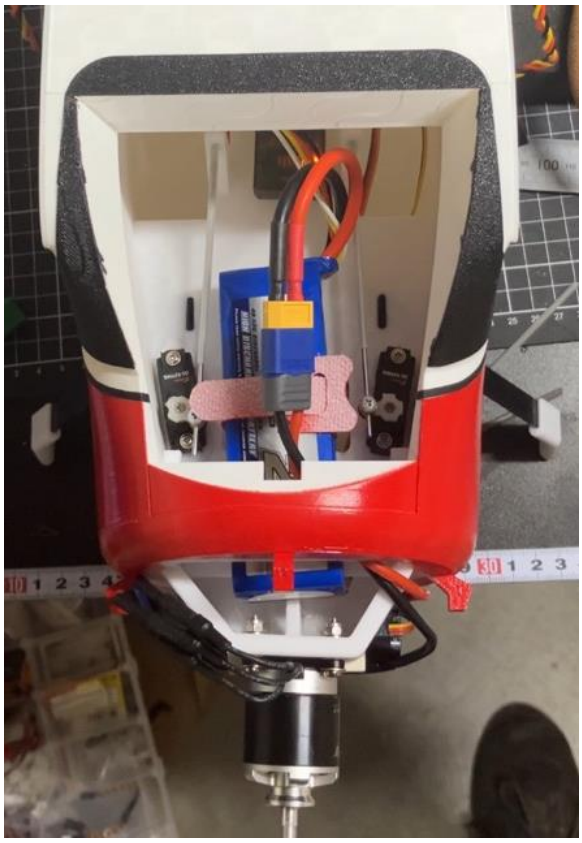


- Paint the fuselage to your chosen theme.
- If using the printed windows, glue these to the fuselage and hatch.

- Screw the motor to the motor mount using M3 bolts, washers and lock nuts.
- Attached the ESC to the bottom of the motor mount using double-sided foam tape and 150mm long zip ties.



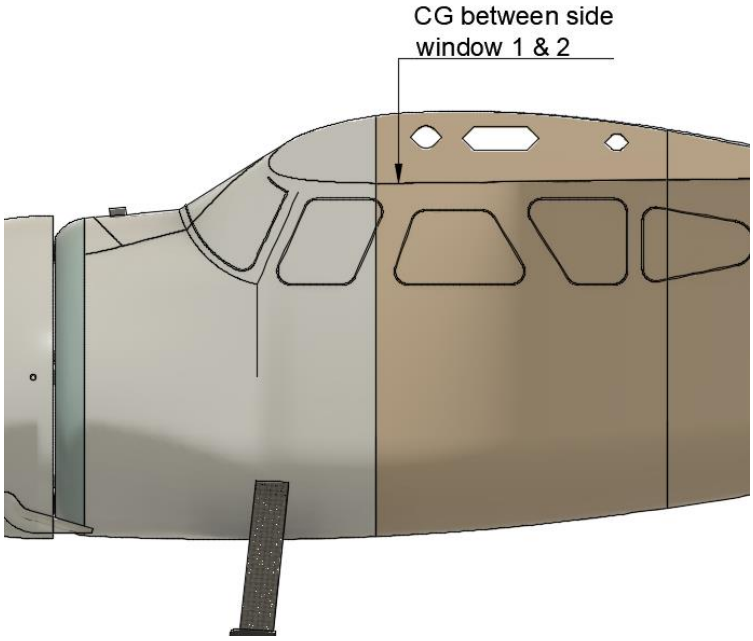
- Install pushrods outer tubes from the supports on the battery tray through the cutouts in Fuse5. Make sure the pushrods move smoothly with as little pressure as possible.
- Install the receiver using double-sided foam tape.
- Install the elevator and rudder servos. Use very short servo arms and make sure there is clearance between the servo arms and pushrods and the battery when it's installed.



Final assembly, balance and controls

1) Attach the stabilisers to the rear of the fuselage using 12mm long 2mm self-tapping screws. Make sure the elevators are aligned using the square section carbon tube.
2) Attached the fin to the rear of the fuselage using 10mm long, 2mm self-tapping screws. Make sure the tailwheel axle engages the slot in the rudder.
3) Insert the main wing 8mm and 6mm tubes into the fuselage, attached the wings and tighten the M3 x 15mm wing lock bolts.
4) Insert the battery as far forward as possible.
5) Balance the model at the location shown. If required, place lead weights in the motor mount and/or on the floor of Fuse1 under the battery tray. We recommend 5g and 10g self-adhesive car wheel balancing lead.

DO NOT FLY THE PLANE WITHOUT CHECKING AND CORRECTING THE BALANCE



6) Set the control throws as follows:

Ailerons	20mm up and down - measured at the inboard end of the aileron. **Recommended:** use differential programming to get 25mm up and 12mm down
Rudder	12mm left and right - measured at the rear-most base of the rudder.
Elevator	12mm up and down - measured at the rear-most part of the elevators. **Recommended:** set a small amount of up elevator trim. Around 2mm to start with given the CG at the recommended location.

Flying notes:

The plane is straightforward to fly. It isn't a trainer but should pose no problems so someone who has experience with a few other planes. It's not aerobatic but looks great just doing gentle wingovers and flybys. Like all 3D planes, it pays to be a bit gentle with them as the structure isn't as strong as wood or composite.

This plane flies in a scale-like manner and requires coordinated aileron and rudder to turn nicely. If you have a computer radio, create an aileron-rudder mix with rudder travel set to somewhere around 100% - 125% of aileron. We recommend you assign the mix to a switch so that it can be turned on and off if you need.

Take off and landing are typical scale taildragger. With the tall landing gear and narrow stance, it will ground loop if you let it or if you apply too much rudder at high speed. The best technique is to be gentle on the rudder when landing and wait for it to slow right down before taxiing. Adding exponential to the rudder is useful too.

Above all – have fun!

Questions / Comments:

Please contact us at info@mymodelplane.com.au