

DC 3 „Fatty“



From the Fatty Season:



building instructions

The model of the DC3 as a "cartoon variant" is part of the Fatty Season, which is available here in the shop. The models are simple in construction and allow a quick construction progress. The wing for example, consists of only a few components. The selected "KF" profile thus facilitates the construction.

Technical specifications:

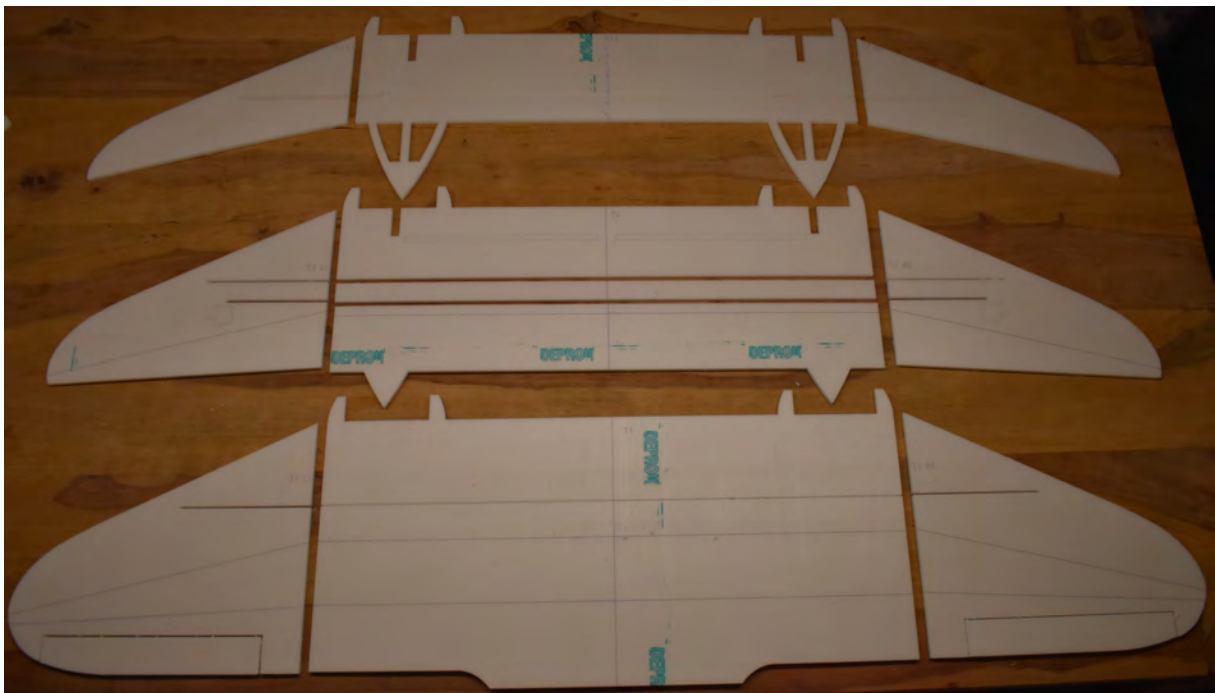
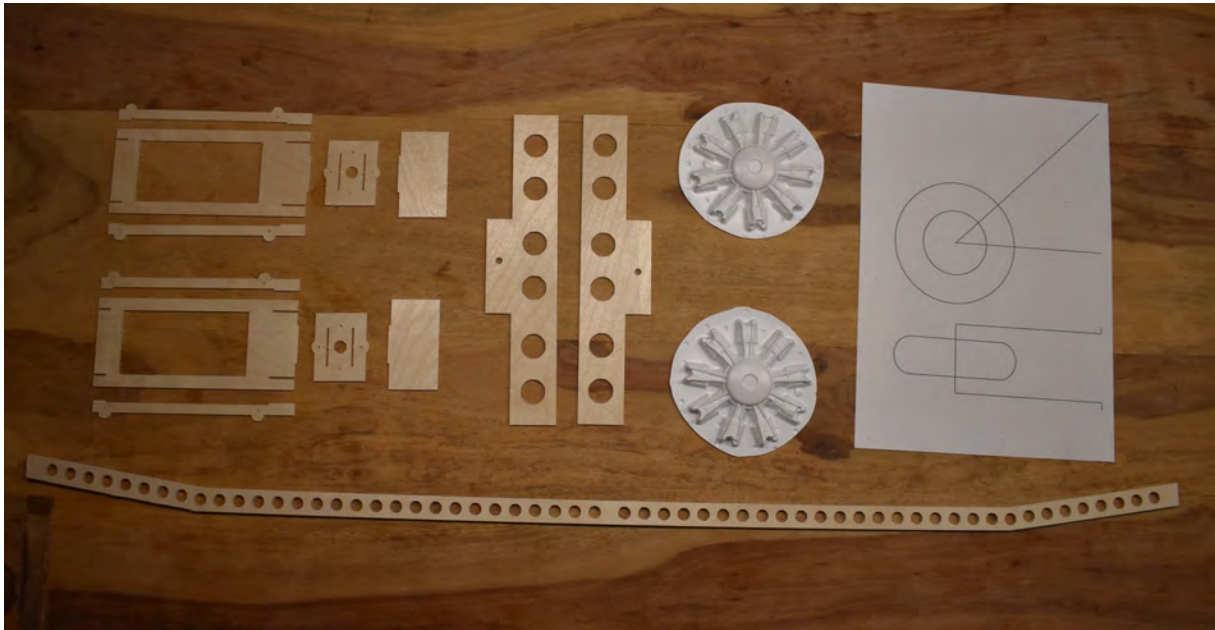
- ***Wingspan : 1240 mm***
- ***Fuselage lenght : 920 mm***
- ***Weight : 1400 Gr. (depending on engine, retract and battery selection)***
- ***Motorization: 2 X D Power AL 28-09 (980 U/min/V)***
- ***Controller: 2 X 25 A***
- ***Propeller : Master Aiscrew 9X7 left & right***
- ***Battery selection : 3S – 3500 mAh***
- ***RC-function : Elevator / Rudder / Aileron and Throttle***

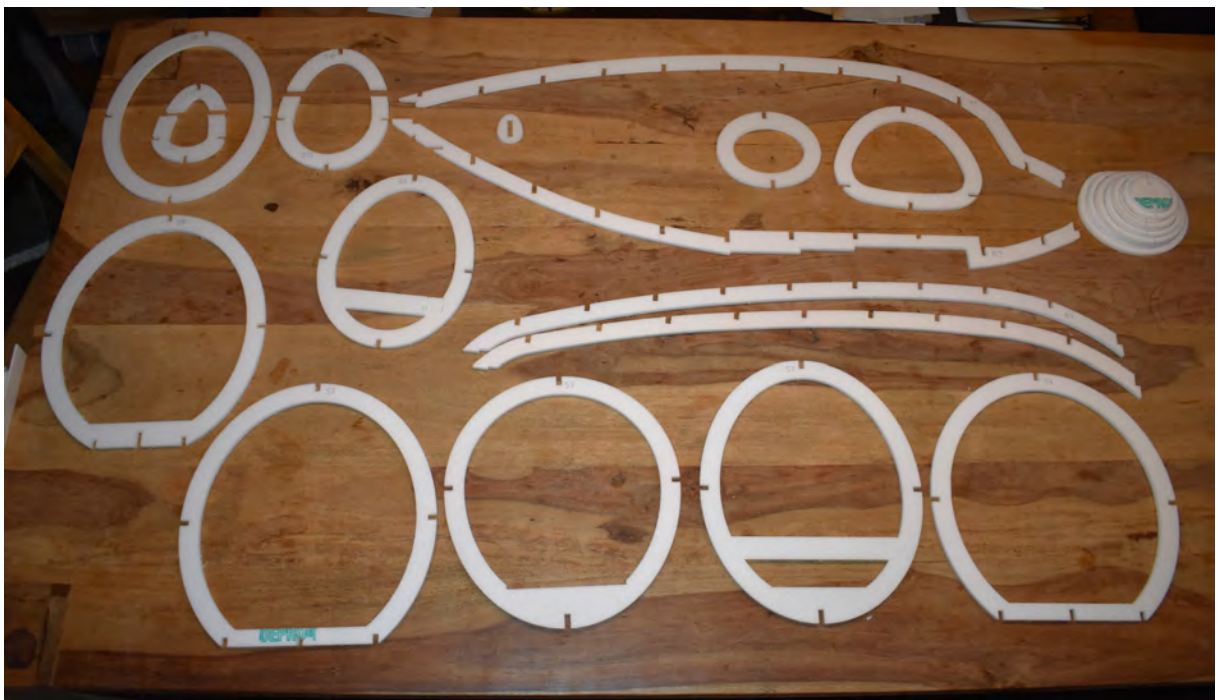
The Depron components are precisely adjusted using a CNC machine. Positions of all adjacent components were also CNC marked and labeled. This ensures that all adjacent components can be glued on with a perfect fit.

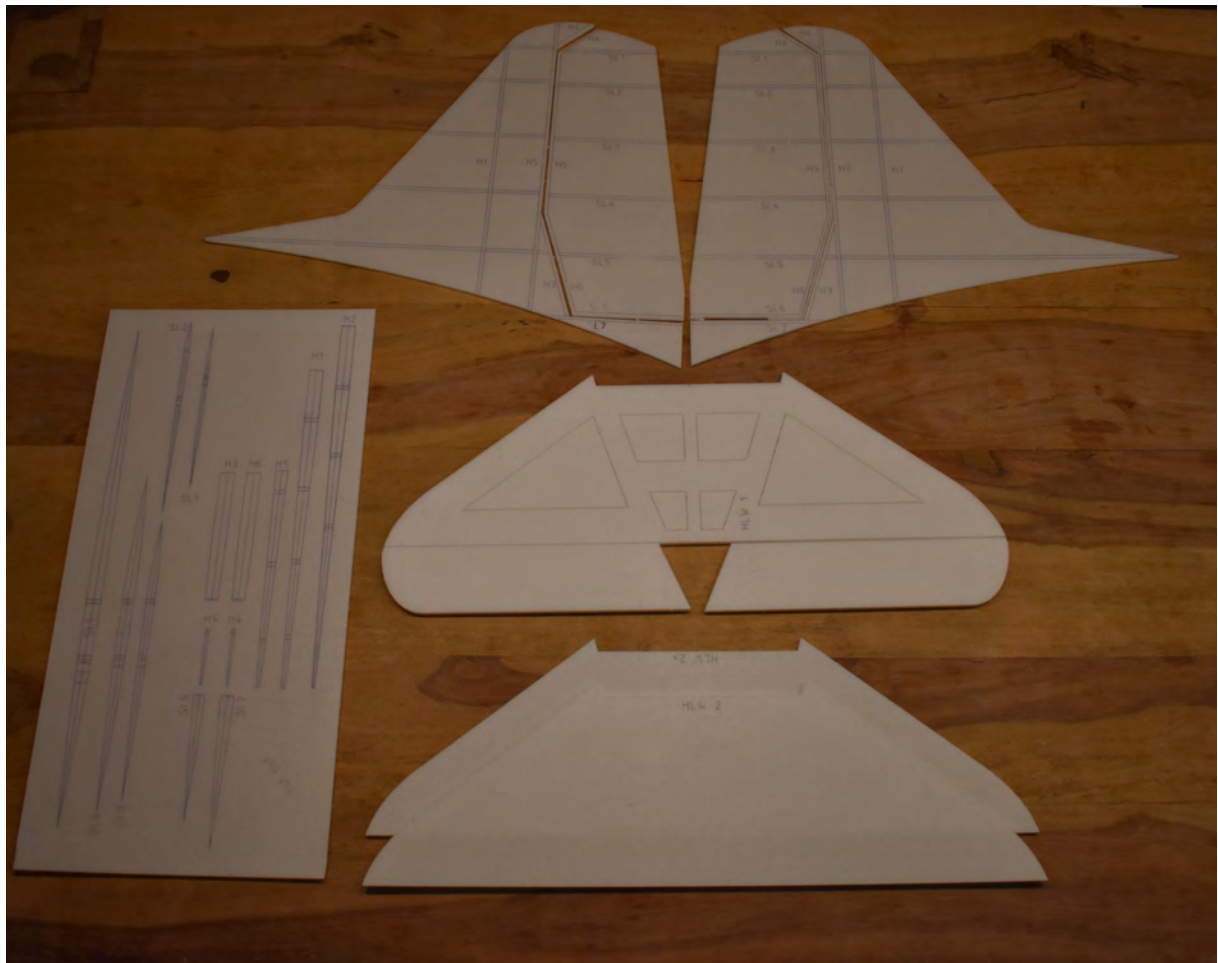
kit contents:

All necessary Depron components can be found in the Depron parts set. Furthermore, the main spar, the chassis carrier and engine mount made of plywood are included. A template for bending the landing gear wire and PVC molded radial engine dummies.

Adhesives or RC components are not included!







The production of all components and the completeness of the kits were carried out personally and conscientiously. If you notice any inaccuracies or missing components, please contact me in order to be able to offer you and subsequent customers a product that is as satisfactory as possible. info@scale-parkflyer.de

General:

The building material DEPRON is a very light building material that is normally used in house construction. In hardware stores you can find it in wallpaper departments under the name "under wallpaper" as an insulating layer under the wallpaper. Due to its low weight (e.g. 10X10 cm of 6 mm Depron weighs 2 grams) and its stability, it is ideal for building "slowflyers" up to weight classes of well over 3 kg. Depron has therefore had a justified place in the model flight sky for many years reached.

Depronverarbeitung:

Depron kann kalt über eine Tischkante mit dem Handballen verformt werden. Das beschleifen von Ecken und überstehenden
Depron processing:

Depron can be deformed cold over a table edge with the palm of your hand. Corners and protruding edges can be sanded down with fine emery paper. When cutting Depron, use a sharp, narrow-bladed box cutter. When bonding Depron-Depron, UHU-Por is very well suited, unless it is under tension during bonding, or in connection with other materials, or the bonding is subject to greater stress. You use the proven epoxy resin or water-based white glue. "Moldofil" modeling spatula from the hardware store is ideal for filling gaps and unevenness. The toothpaste-like paste can be filled into the Depron column very well and is hardly harder than Depron after it has hardened.

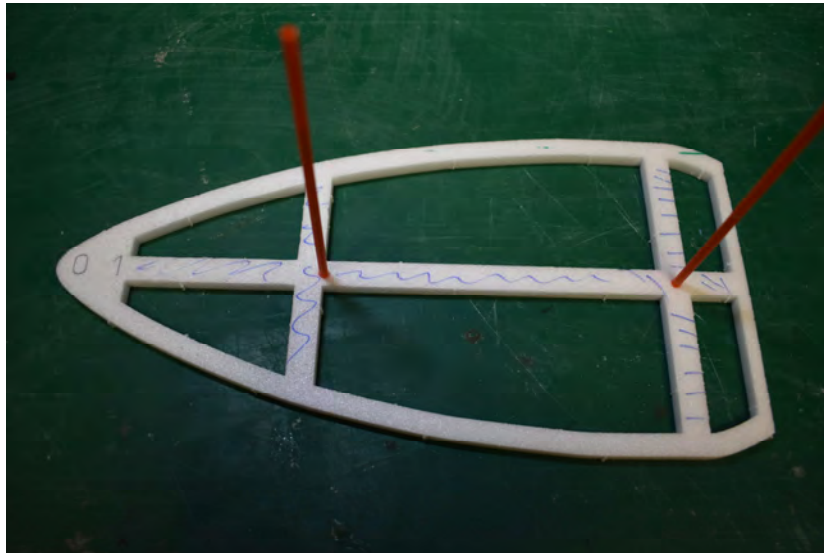
The BOM:

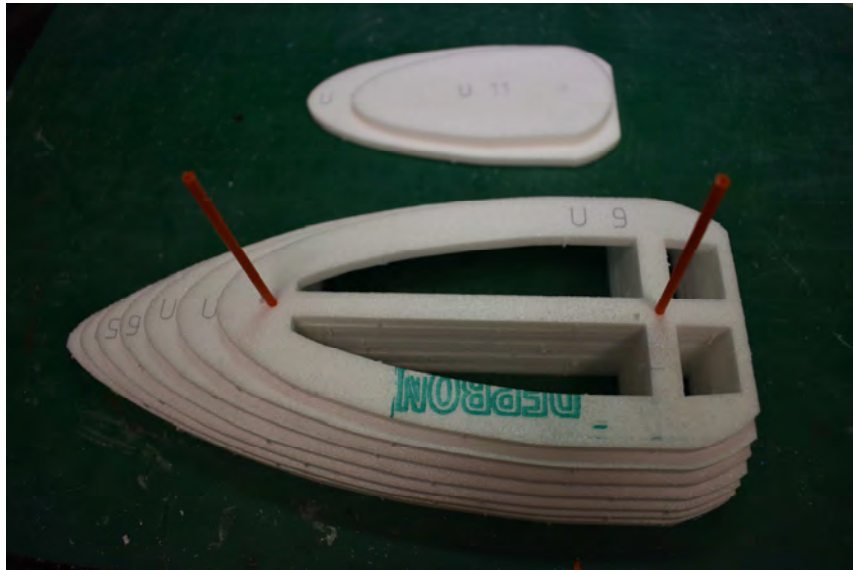
Part. Nr.	description	Number	material
R1	Fuselage stringer side up	1	6 mm Depron
R2	Fuselage stringer side down	1	6 mm Depron
R3	center torso stringer	2	6 mm Depron
S1 - S 12	Fuselage frames	each 1	6 mm Depron
HLW1	center tailplane	1	6 mm Depron
HLW 2	Tailplane down / up	2	3 mm Depron
A - G	Fuselage - Bow	each 1	6 mm Depron
SLW	Rudder	2	3 mm Depron
SL 1-7	rudder stringer	each 1	3 mm Depron
H1 - 6	rudder fins	div.	3 mm Depron
R4	auxiliary frame	1	6 mm Depron
R5	Planking wing below	1	3 mm Depron
R6	Stringer	1	6 mm Depron
R7	frame	2	6 mm Depron
R8	frame	1	6 mm Depron
R9	Flight Battery Pad	1	6 mm Depron
C7	Planking wing transition	4	3 mm Depron
C8	Frame wing transition	each 2	6 mm Depron
C9	Frame wing transition	each 2	6 mm Depron
C10	Frame wing transition	each 2	6 mm Depron
C11	Frame wing transition	each 2	6 mm Depron
T1	Bottom center wing	1	6 mm Depron
T1 re	wing bottom right	1	6 mm Depron
T1 li	wing bottom left	1	6 mm Depron
T2	wing center center	1	6 mm Depron
T2 re	Center right wing	1	6 mm Depron
T2 li	Center left wing	1	6 mm Depron
T3	wing top right	1	6 mm Depron
T3 re	wing top right	1	6 mm Depron
T3 li	wing top left	1	6 mm Depron
T4	Heling	4	6 mm Depron
T4A	Heling	2	6 mm Depron
T4B	Heling	3	6 mm Depron
U1 - U9	engine nacelles below	each 2	6 mm Depron
O1 - O9	Motor Nacelles Above	each 2	6 mm Depron
W1	wing spar	1	3 mm Plywood
W2	engine and landing gear mounts	2 sets	1,5 mm Plywood
W3	battery board	1	1,5 mm Plywood
W4	wing attachment	2	1,5 mm Plywood

Building instructions:

The engine nacelles:

- 1. The motor nacelles U1-U9 & O1 - O10 are manufactured in layers. There are a total of 4 assemblies, consisting of an upper and lower nacelle, which are located above or below the wing. For both sides. In order to center the individual layers, there is a hole in the layer plates in order to thread them onto it with a Bowden cable tube or similar.**
- 2. The area hatched with a ballpoint pen is not provided with glue, as later this cross will be broken out of the finished gondolas. "O" stands for nacelle up, "U" for nacelle down.**

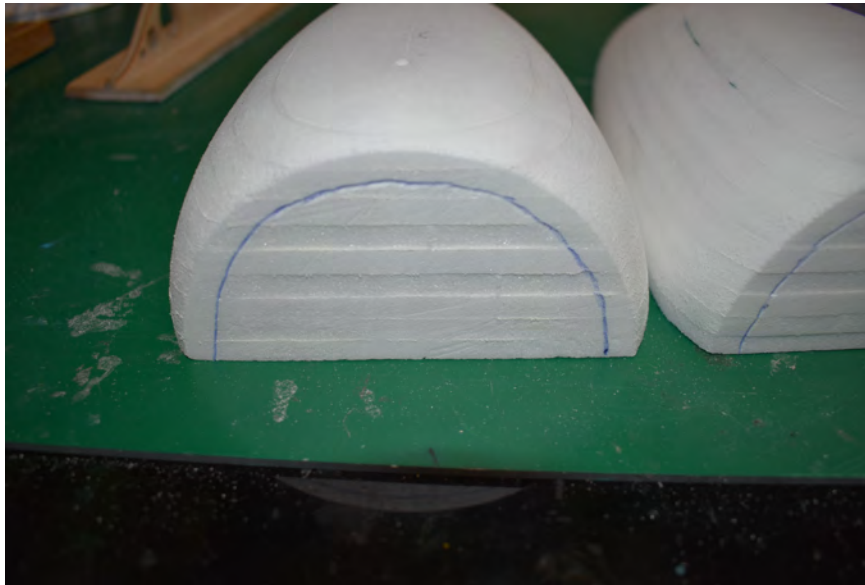




Then sand down all four gondola halves.

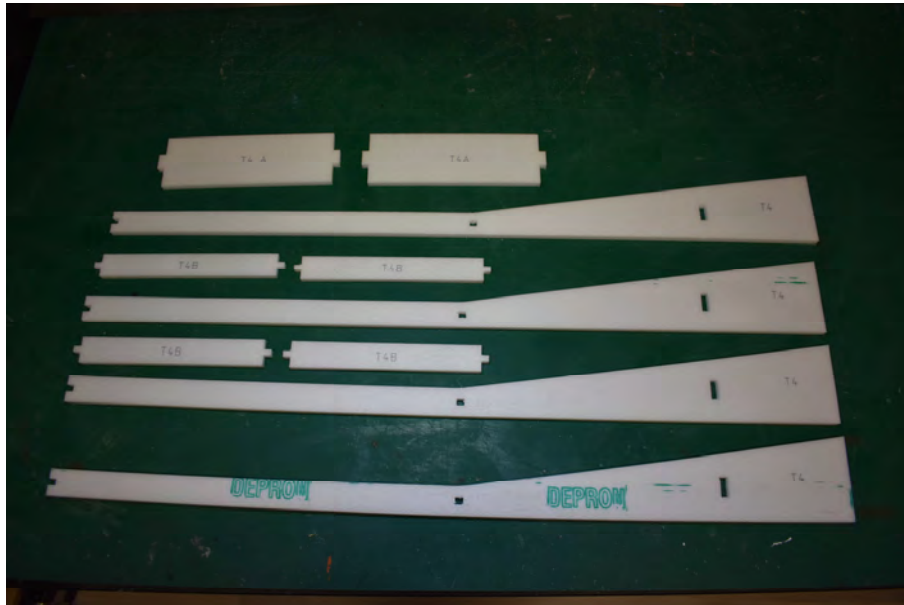


There should be a 10 mm bar at the front, and the bars on the inside can now be cut out.

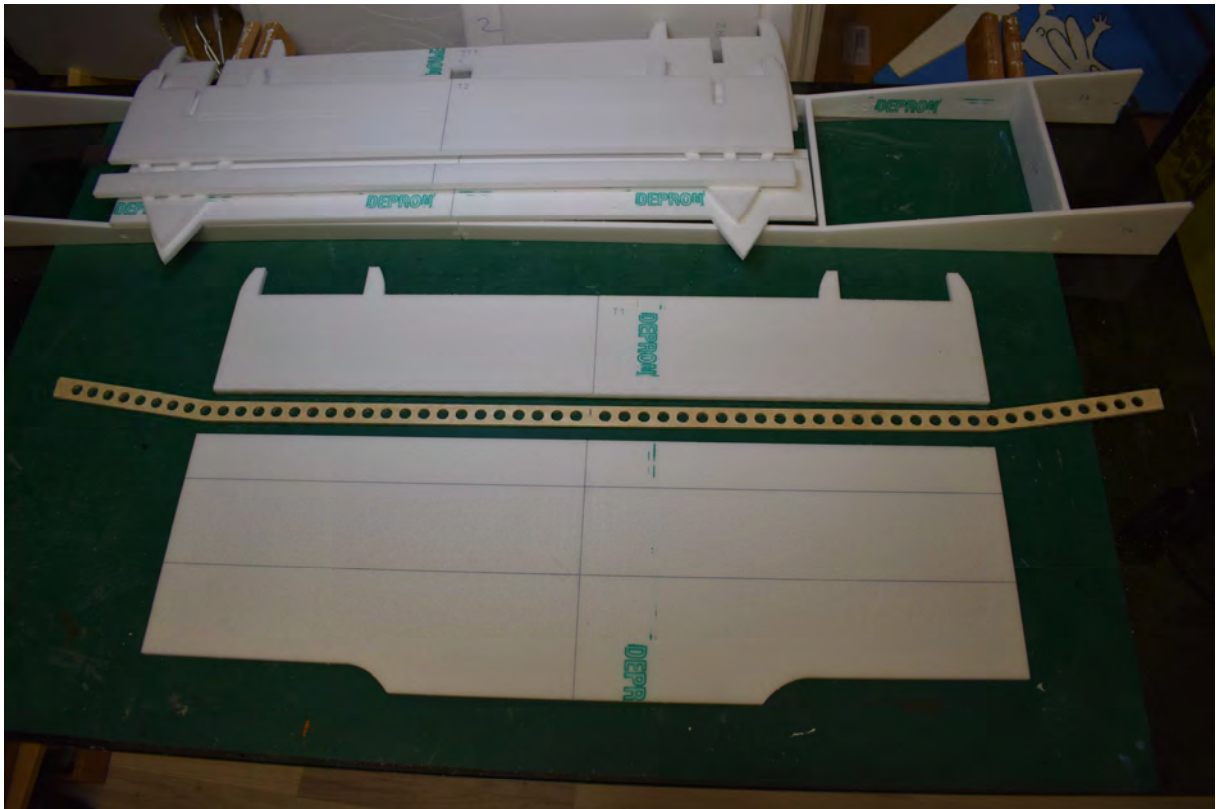


The wing:

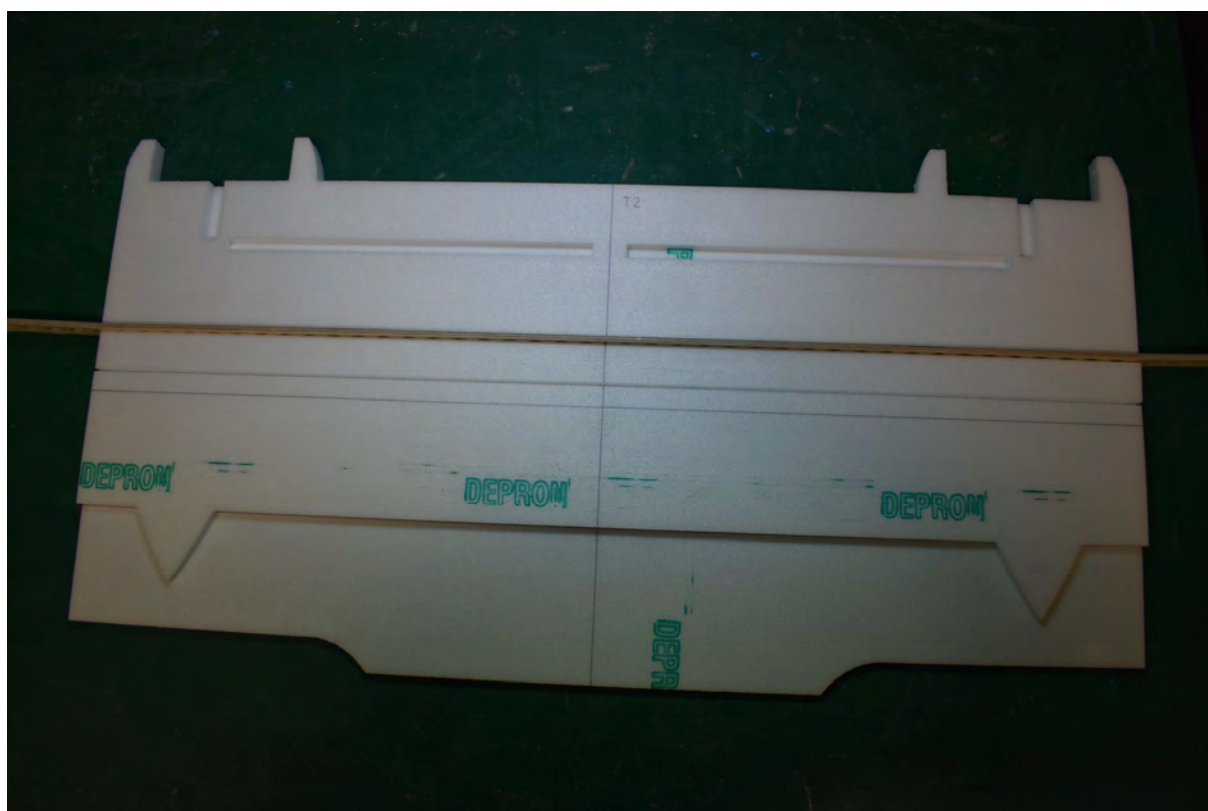
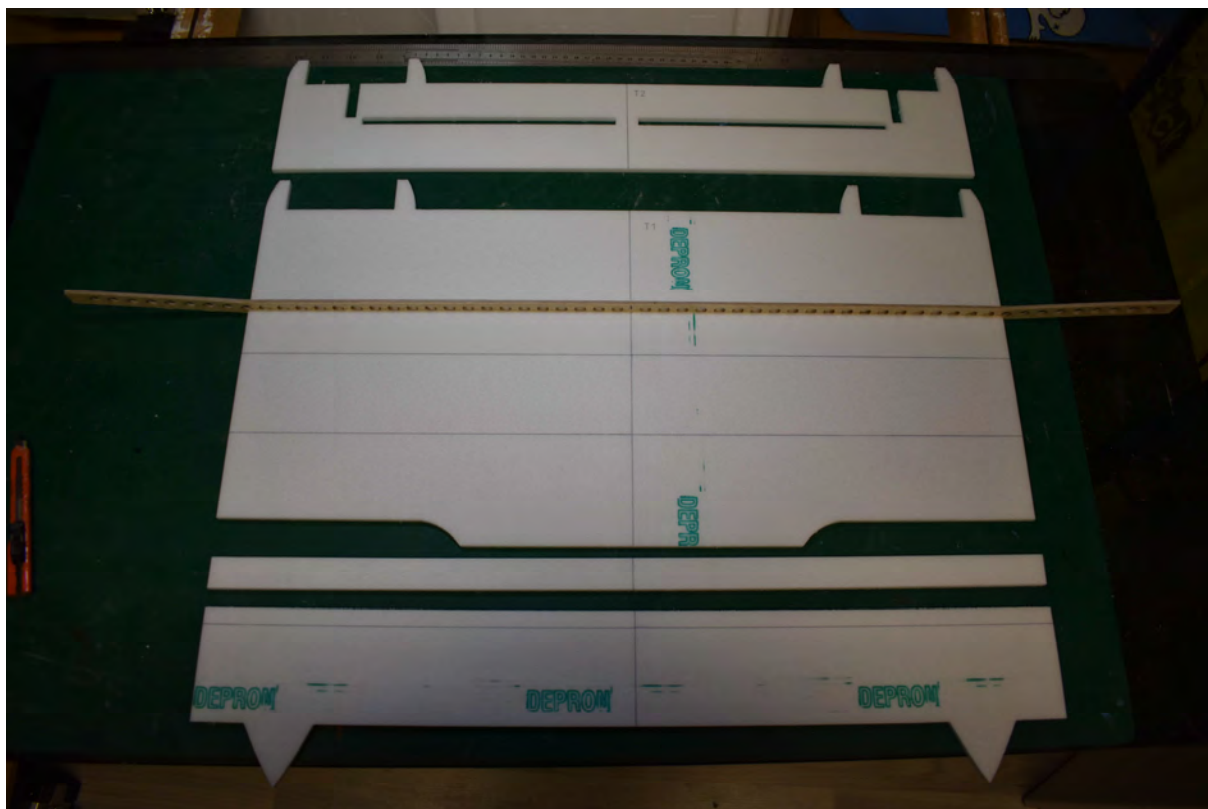
First, the heling is assembled from parts T4, T4A & T4B and glued.

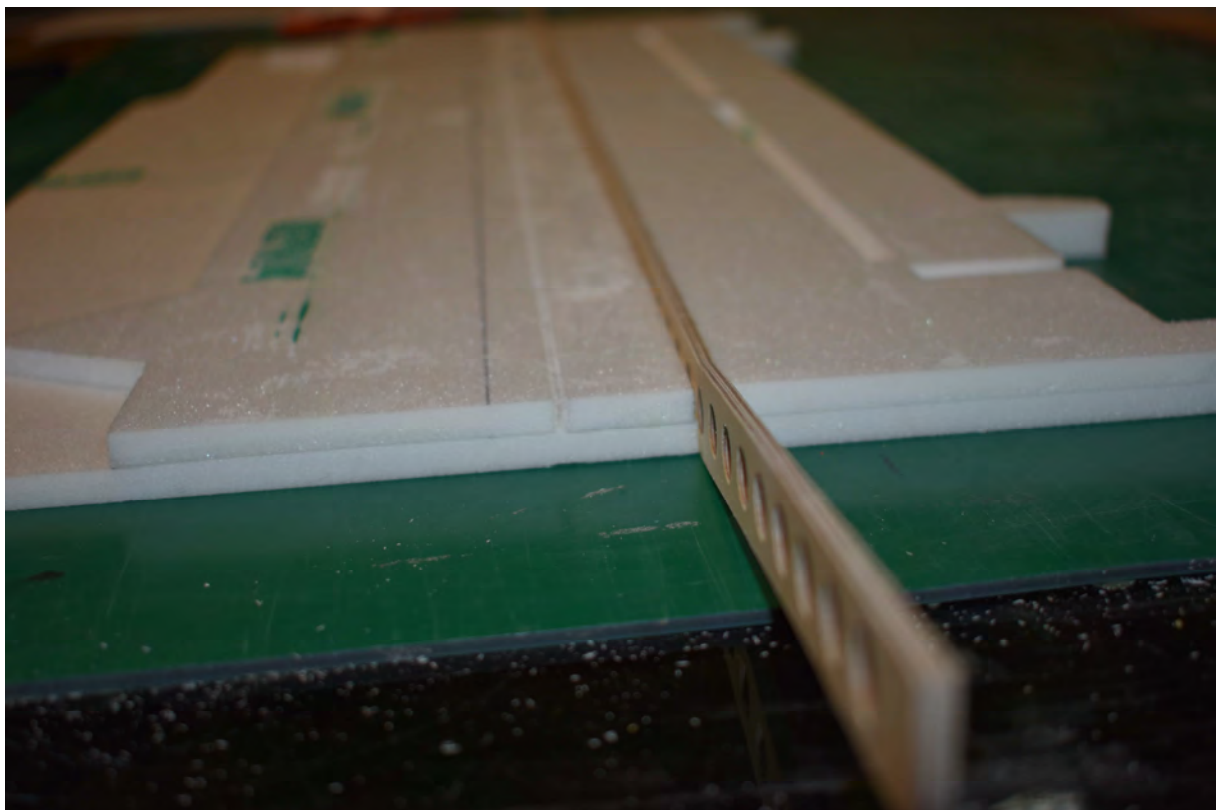
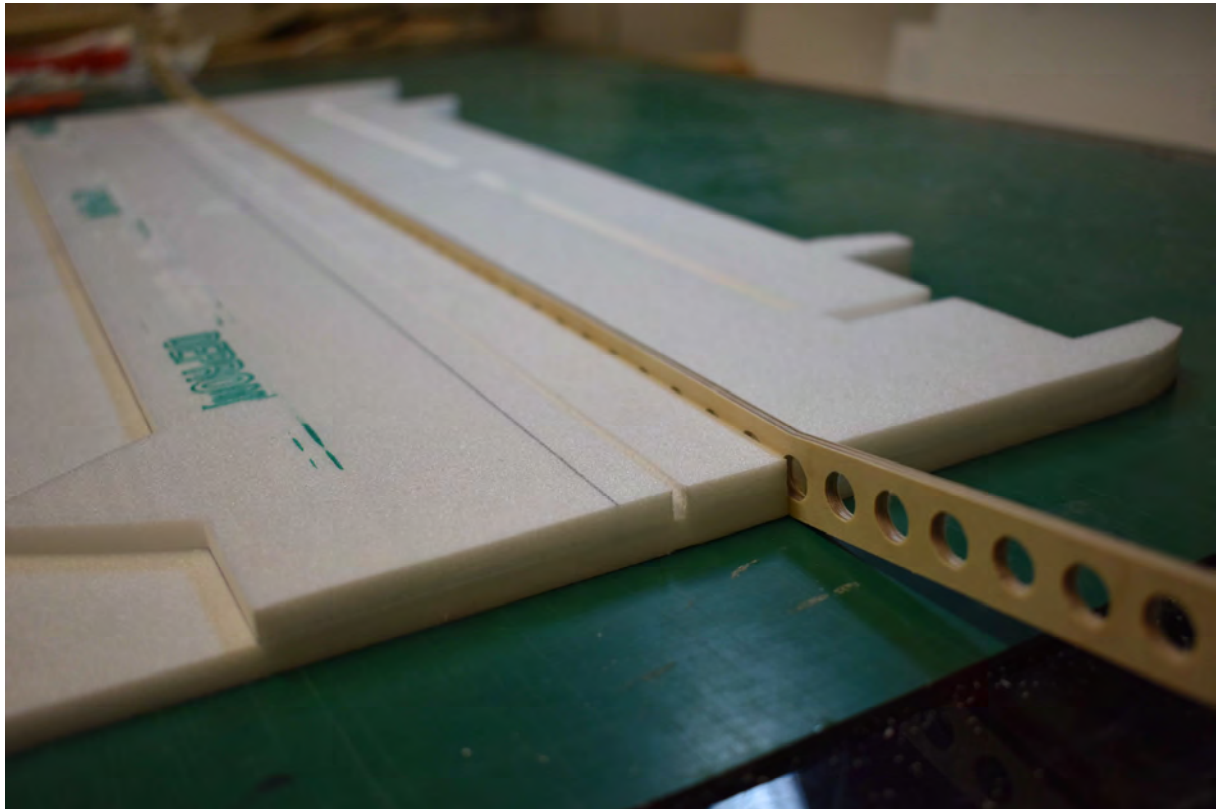


The plywood beam is centered in T1 and glued on a flat surface.

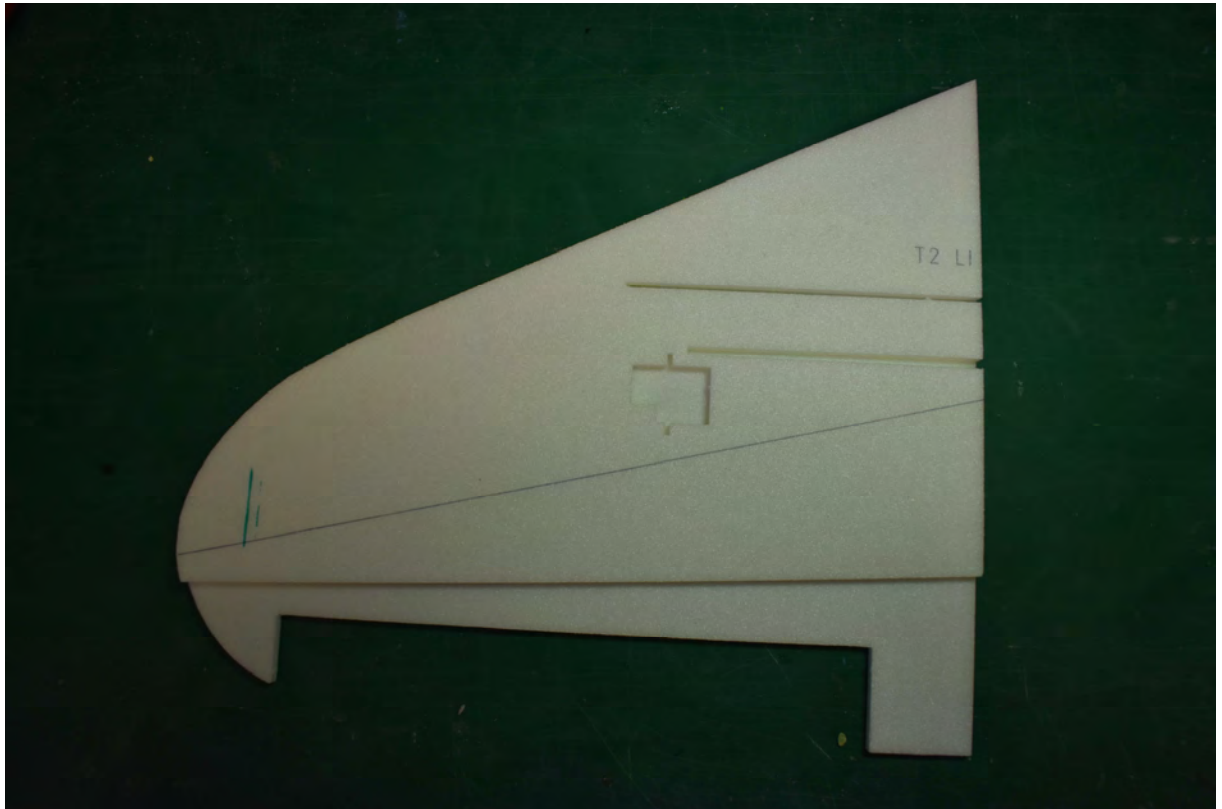


Glue on T2 (3 parts), paying attention to the markings on T1.

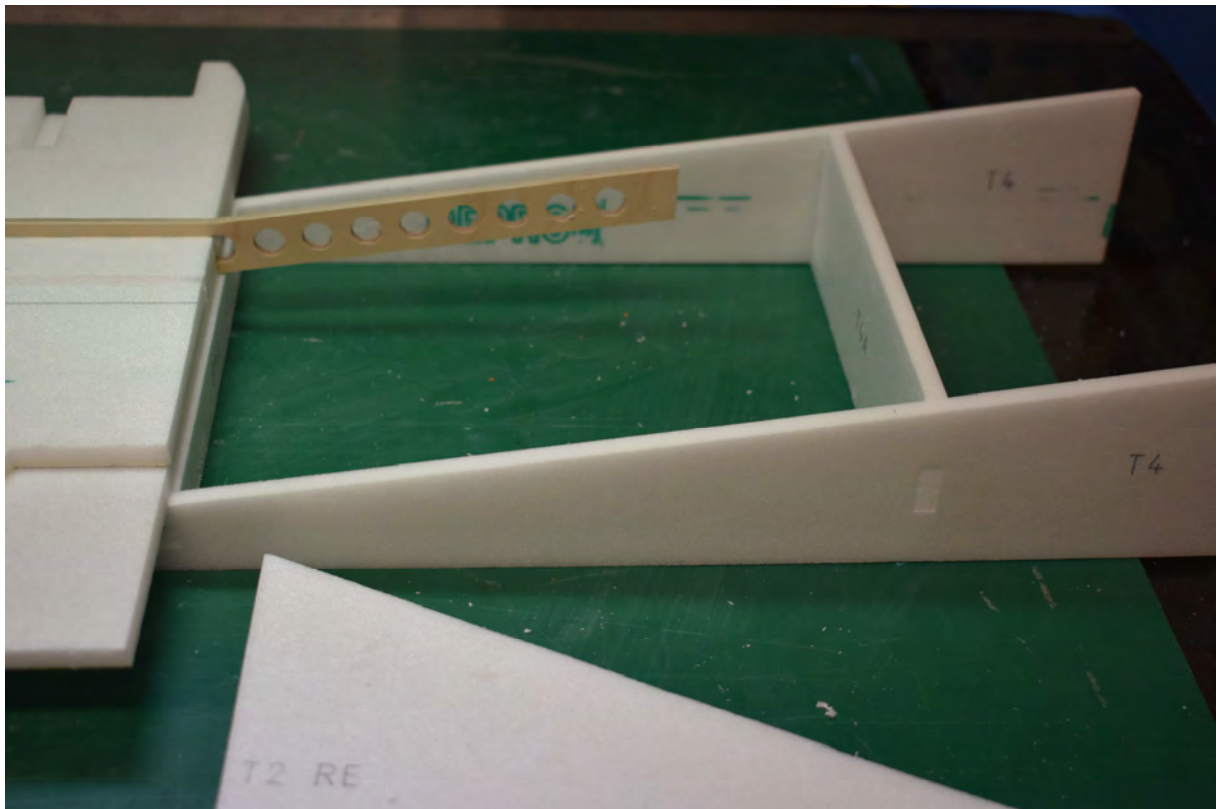




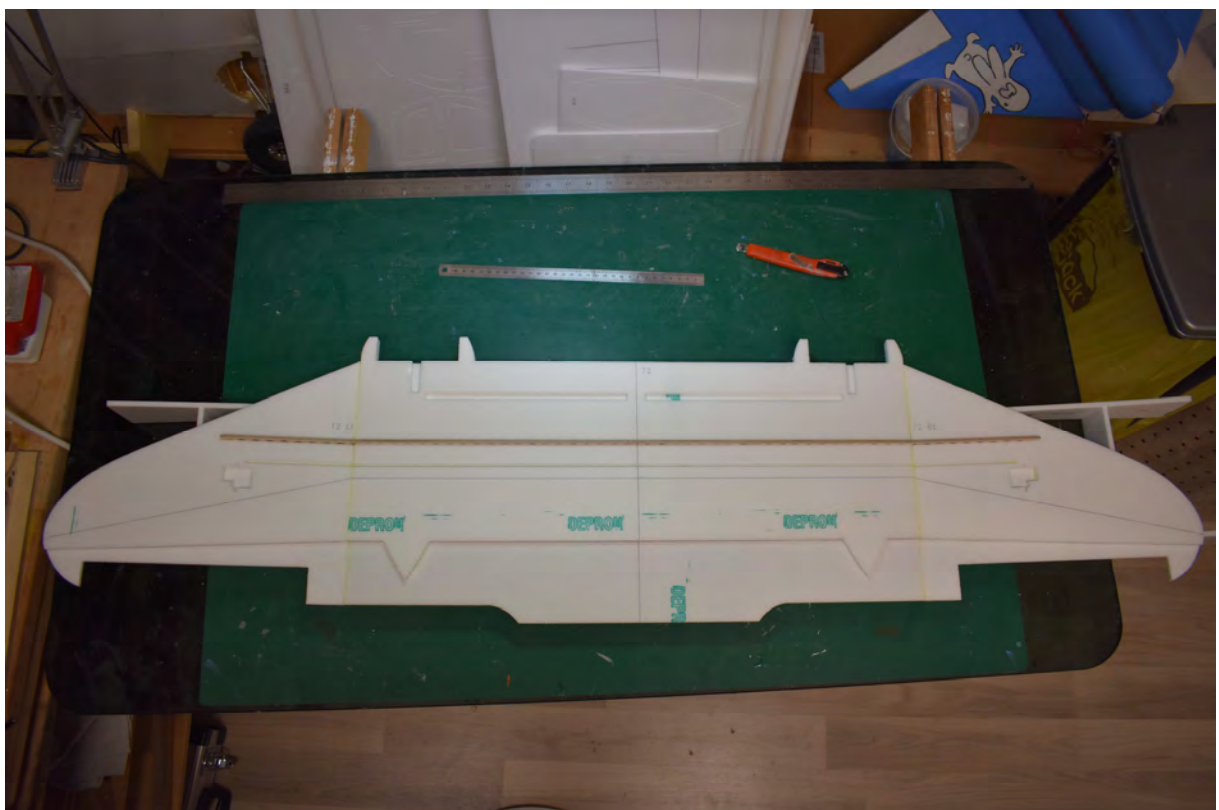
Glue T2 left and right to T1 as well, see photo.

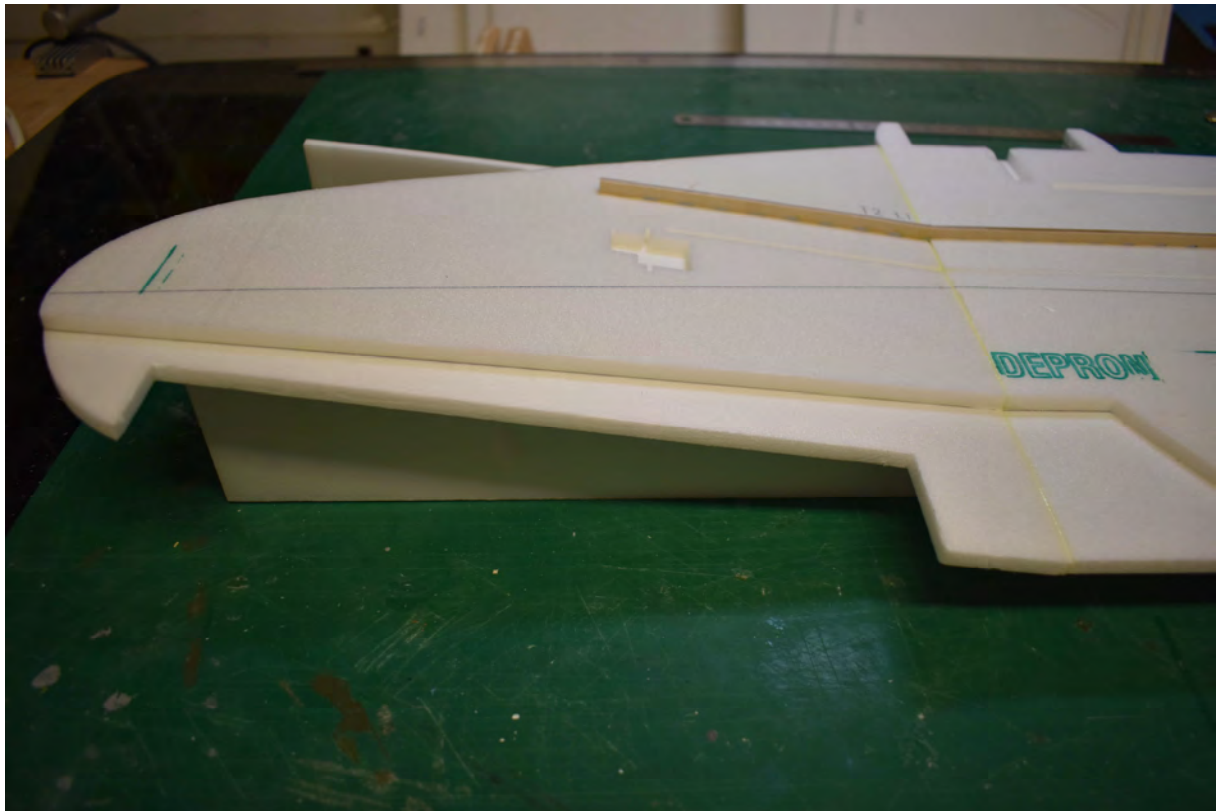


Sand the adhesive surfaces of the Depron components at an angle until they lie snugly against each other.



Now glue the wing ends to the heling.



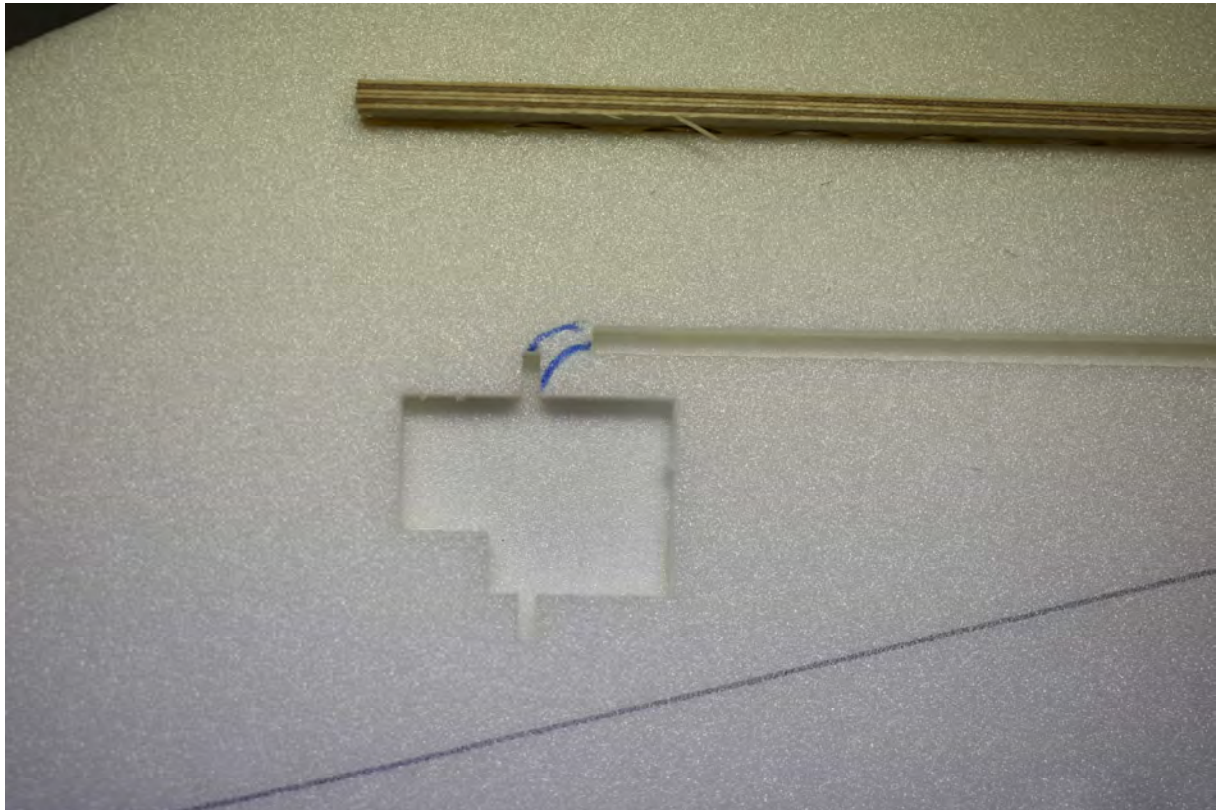


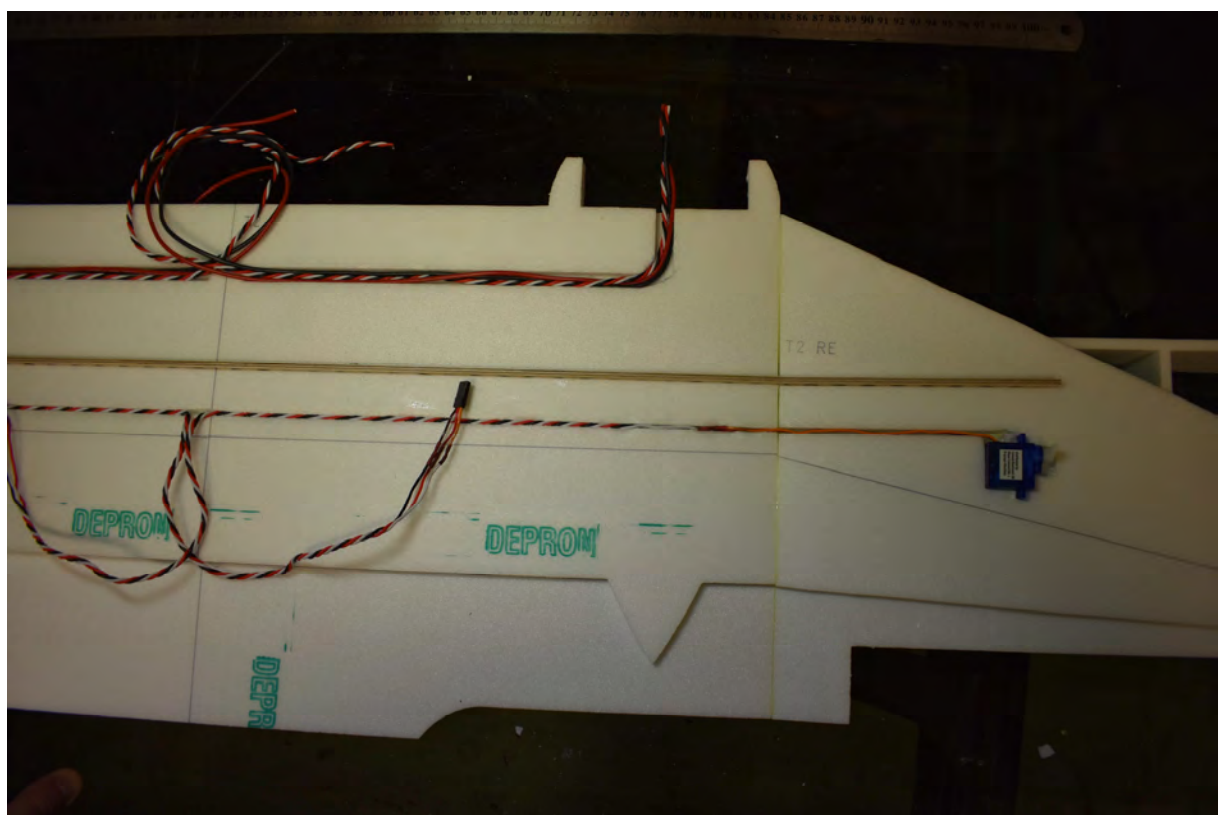
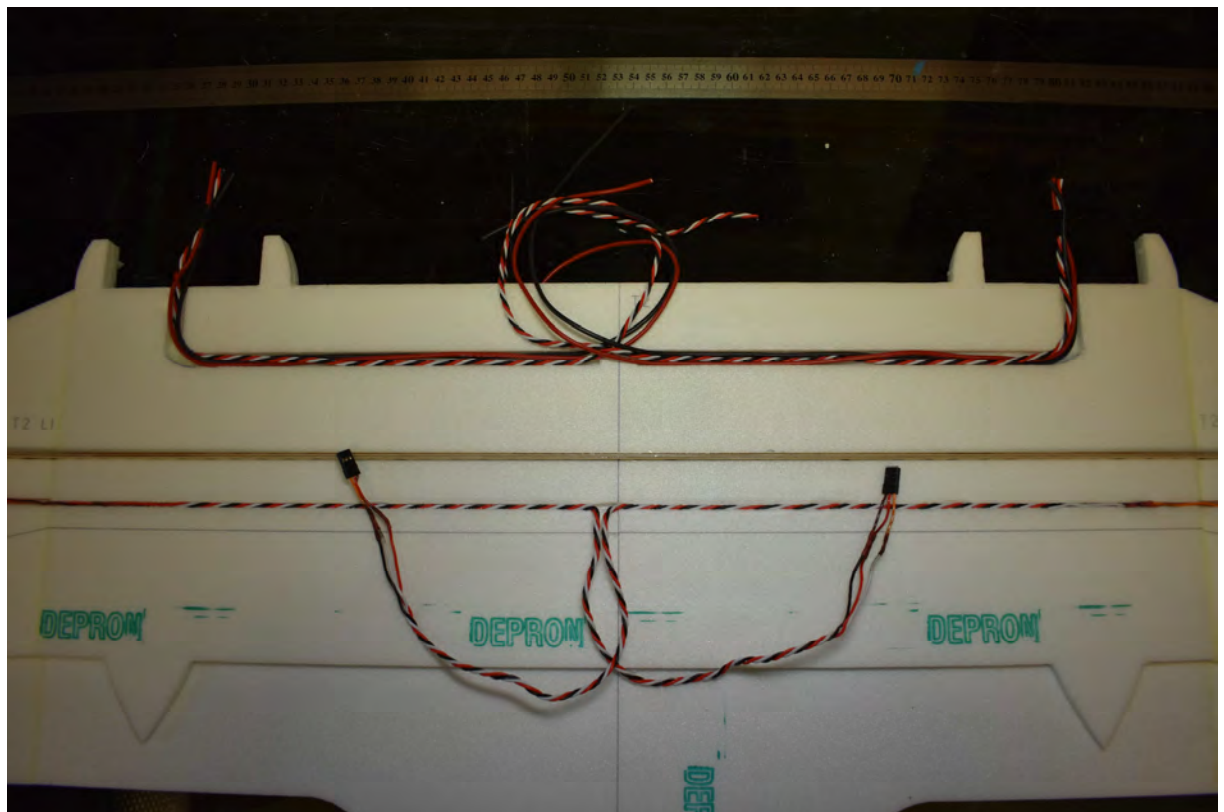
Now all the cables for the aileron servos, main power cable and controller servo cable can be placed in the cable ducts provided.

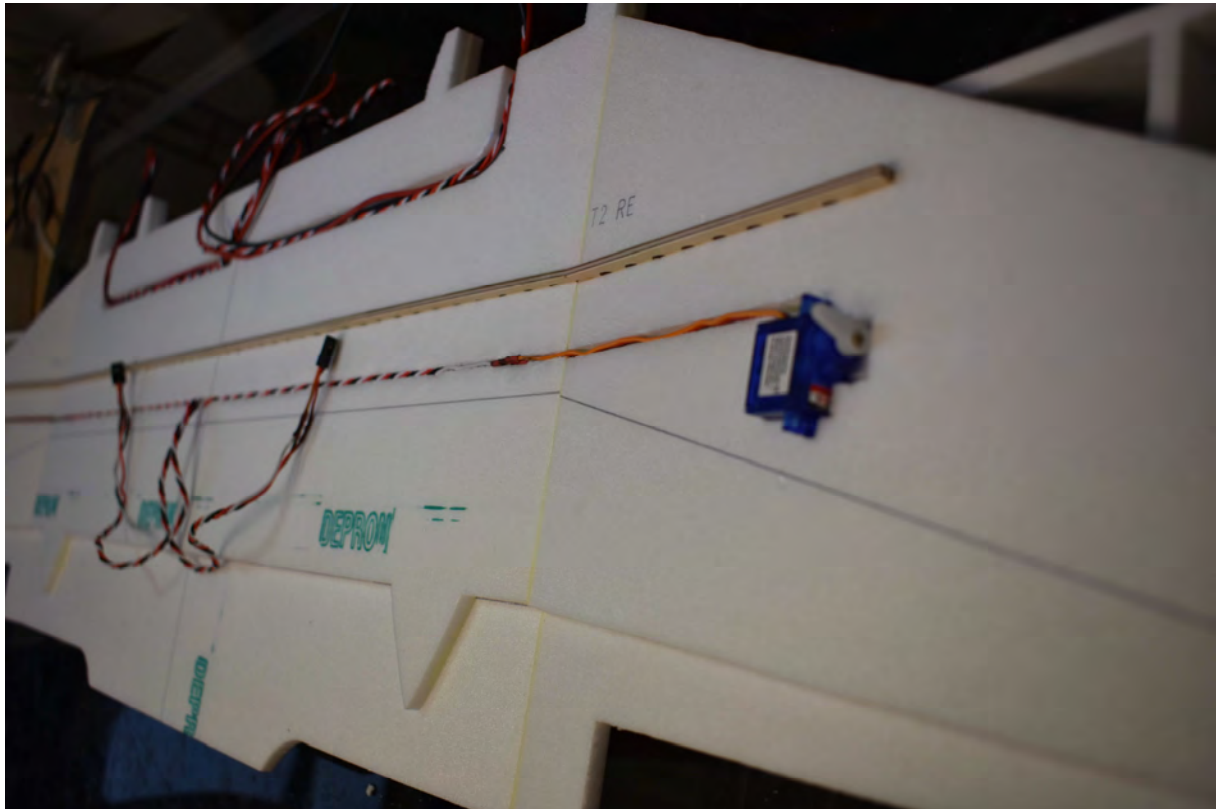
2. Make a small cut for the aileron servo wires as shown in the photo.

1.5 mm² silicone cables are sufficient for the power supply

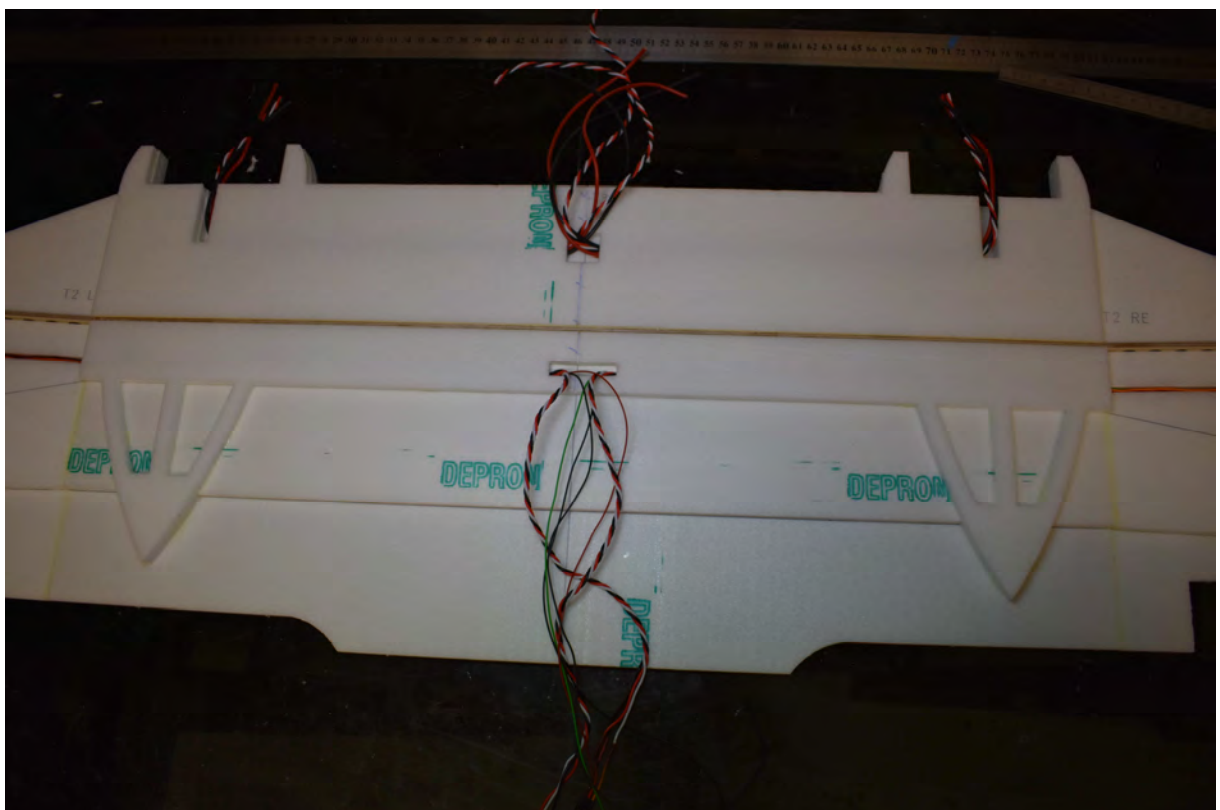
Laying the cables for the nacelles without glue can later be pulled through the wing as required for the necessary lengths.

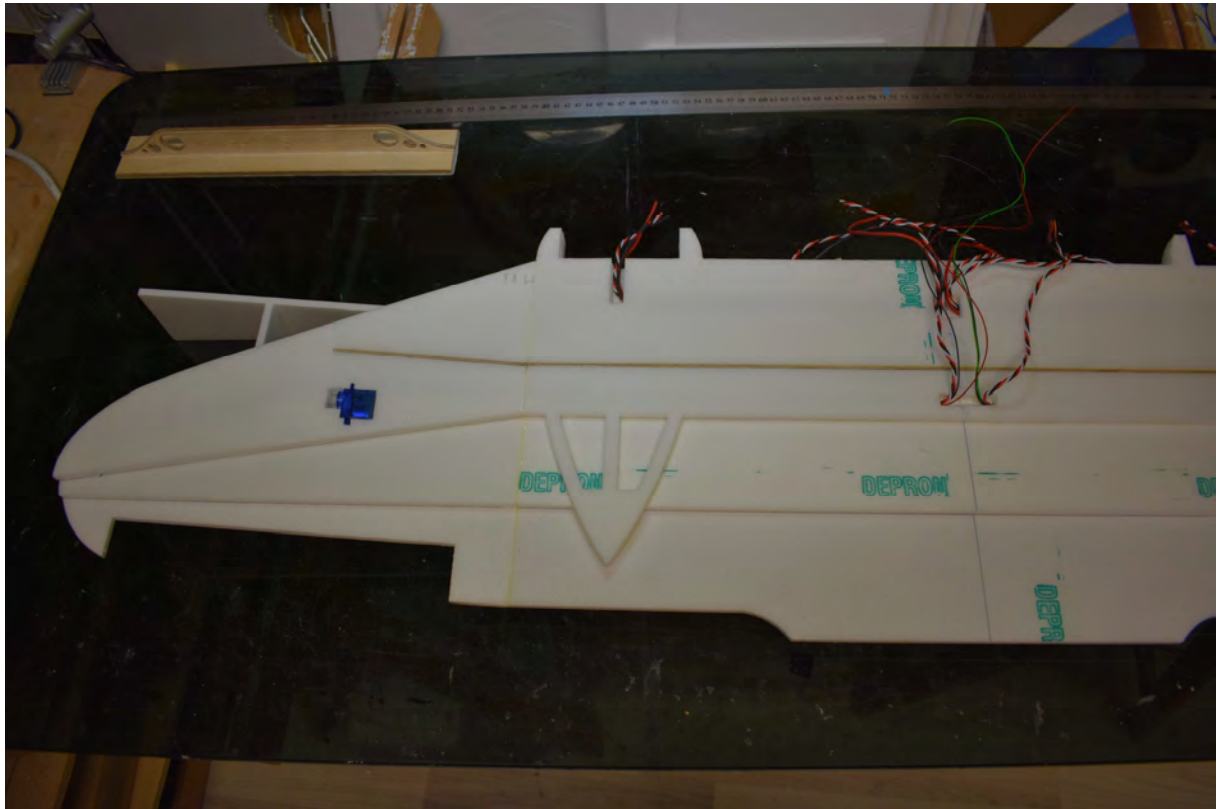






When all cables are inserted, close the wing with T3 left / right and middle.



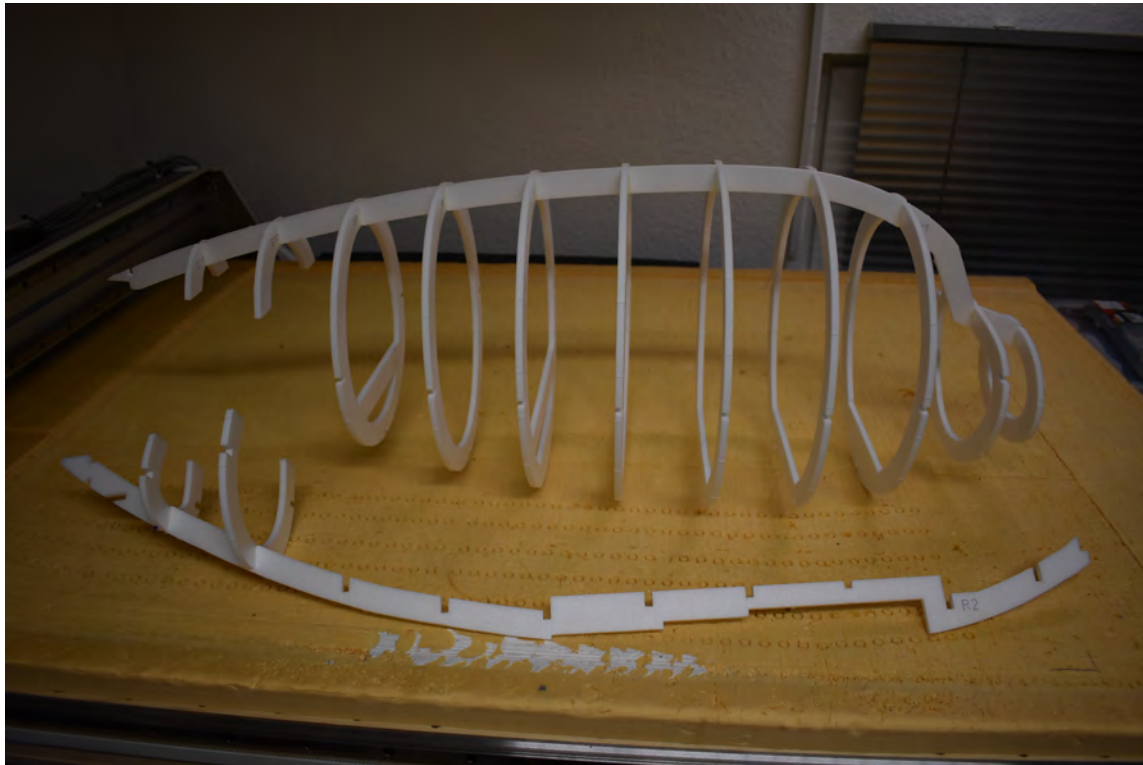


Mount the ailerons using three hinges.



Fuselage assembly:

Insert the frames S1 to S12 into the upper and lower stringers R1 & R2. Then plug in the side stringers S3.



Sand down all stringers and frames so that the subsequent planking lies flat.

Planking:

Important information about planking.

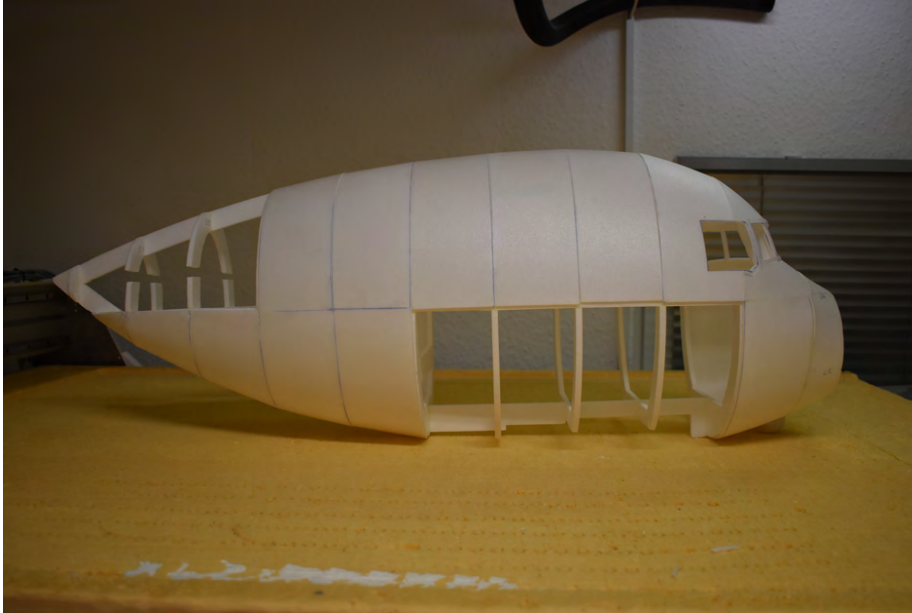
Templates are included for all areas of the planking, which greatly simplifies the necessary cutting. Of course, no 100% guarantee can be given that one or the other piece will deviate slightly from the shape and may have to be cut again. Sufficient 3 mm planking material is included for this.

The planking is above the longitudinal stringers or below. Each template has the indication of the adjacent areas as "above", i.e. fuselage top, center: longitudinal stringers in the middle of the fuselage or below, fuselage below. The frames e.g. S6 are indicated on the side.

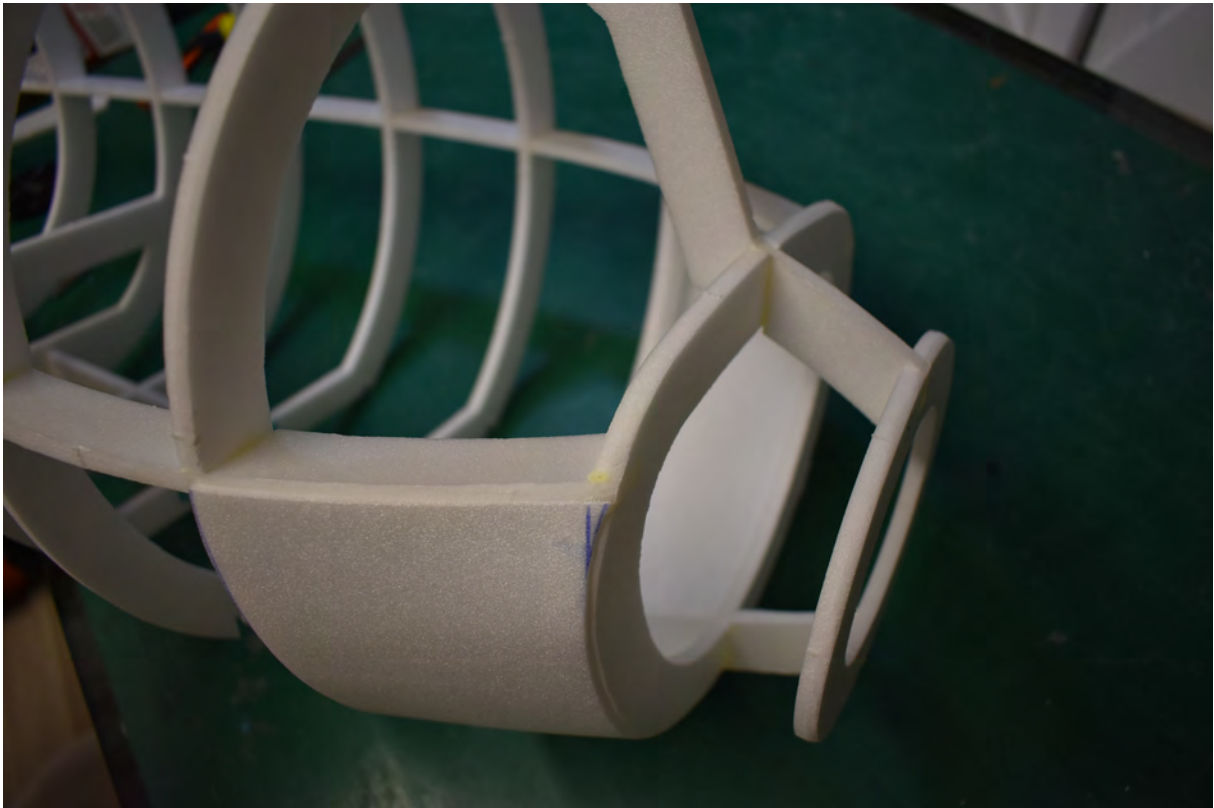
The Depron has a "softer" side which is easier to bend. This side must always be used upright to the hull. Please note this when cutting out the planking part. After cutting out according to the template, carefully roll the Depron piece softly over the edge of a table with the heel of your hand, also slightly on the stiffer side. This ensures that the paneling has a radius in all directions. Half of the planking rests on a frame or stringer. The recommendation is to apply the planking "wet" with UHU Por. To do this, apply UHU Por to the fuselage area and put on the planking immediately. This means that the component can still be pushed for a short time. Hold or fix the bond until the UHU Por tightens and sticks after a few minutes. If the planking protrudes a little, cut it off after gluing so that 3 mm of glueing surface is available for the next component.

**The following order is recommended:
See photo order:**

Please only plank these areas first:

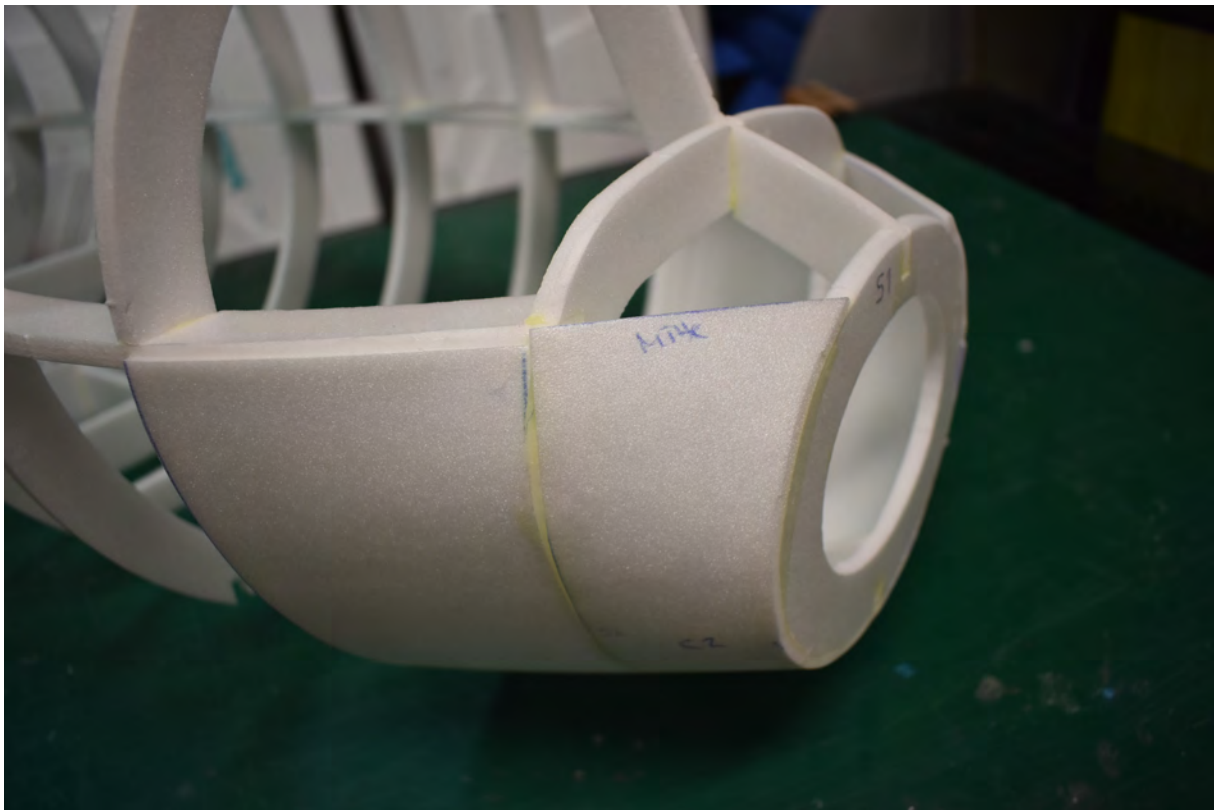


1.



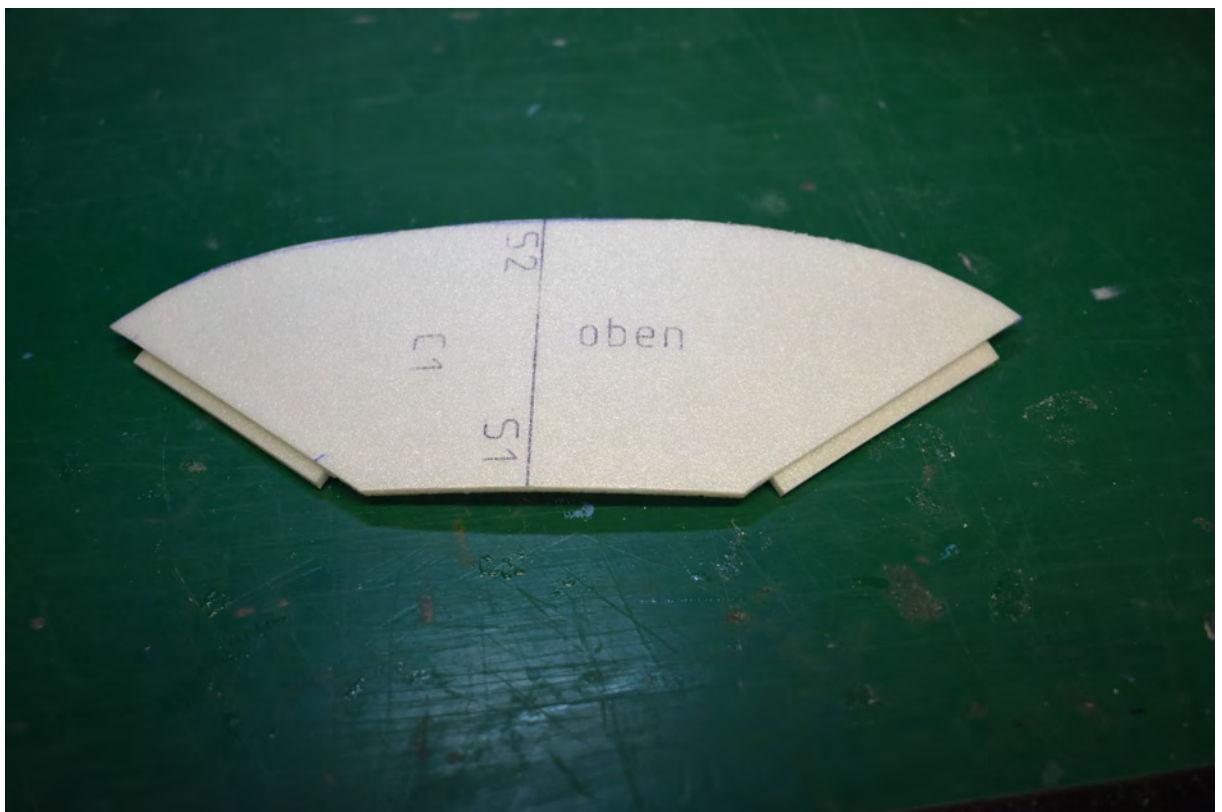


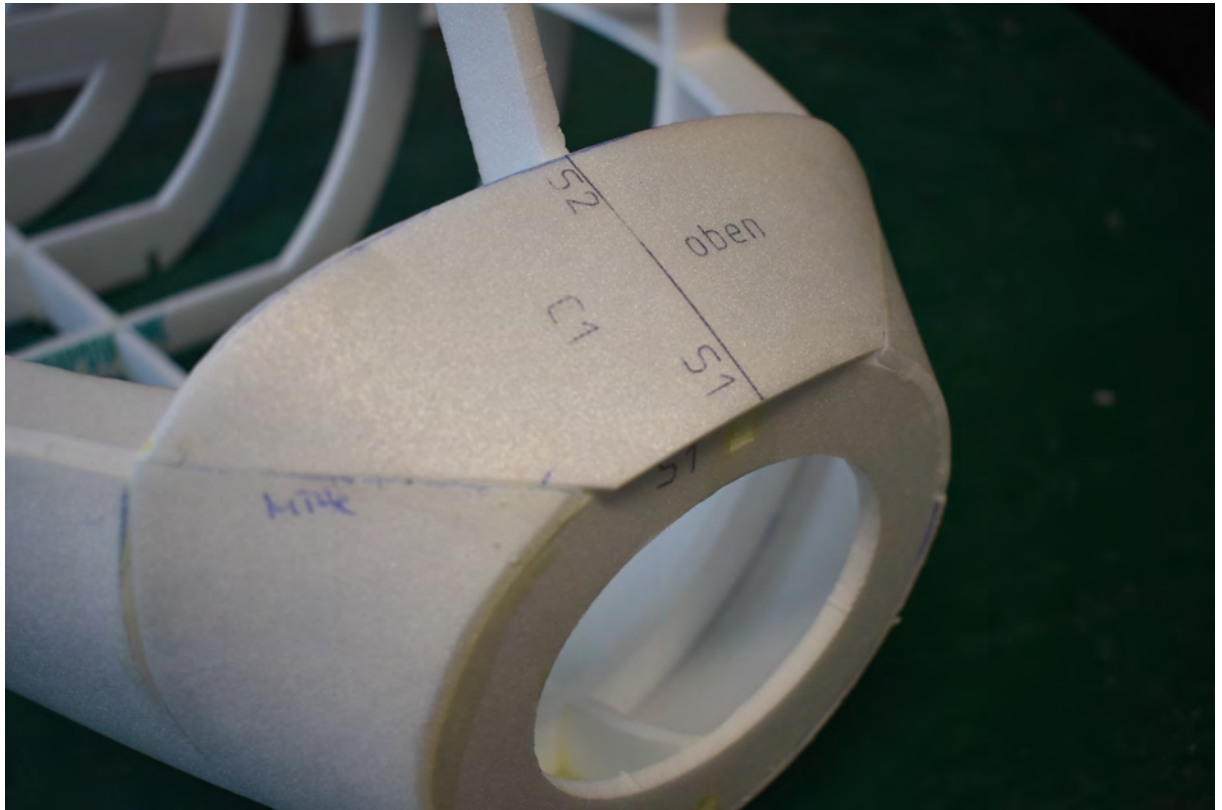
2.



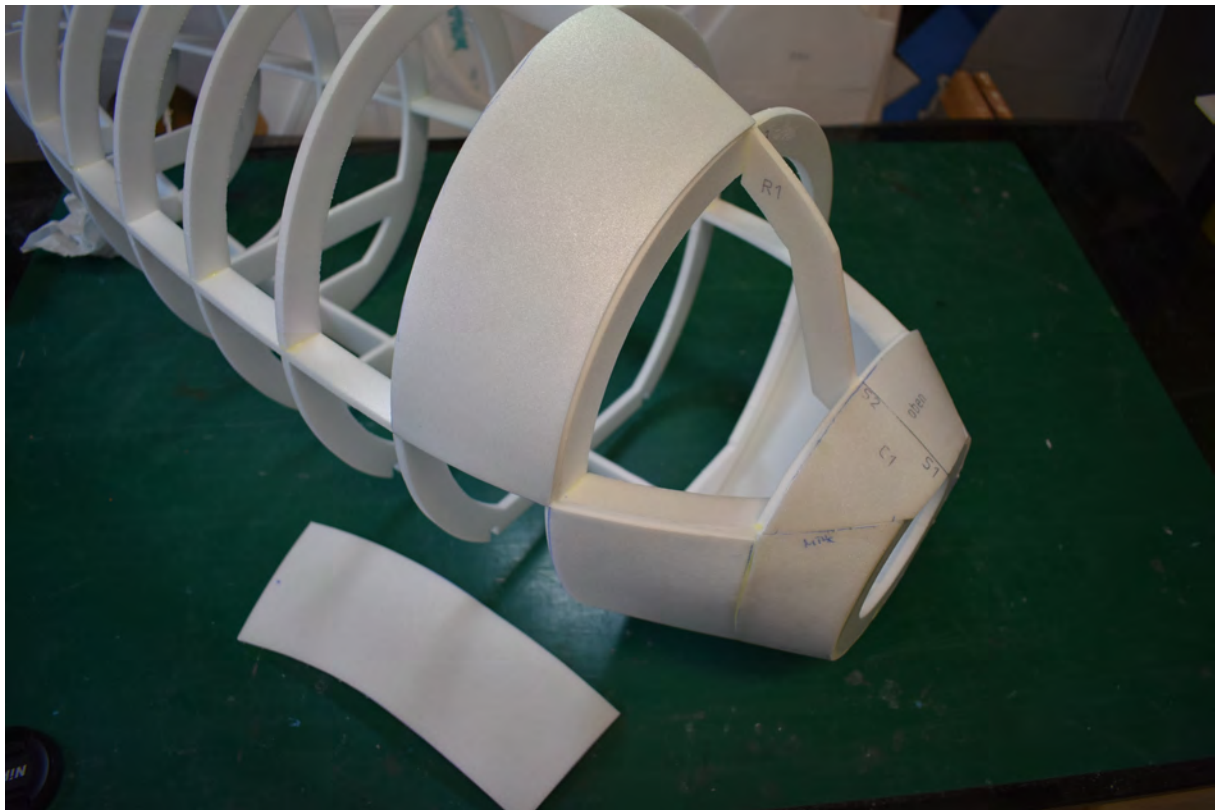


Attach 3mm adhesive strips from below.

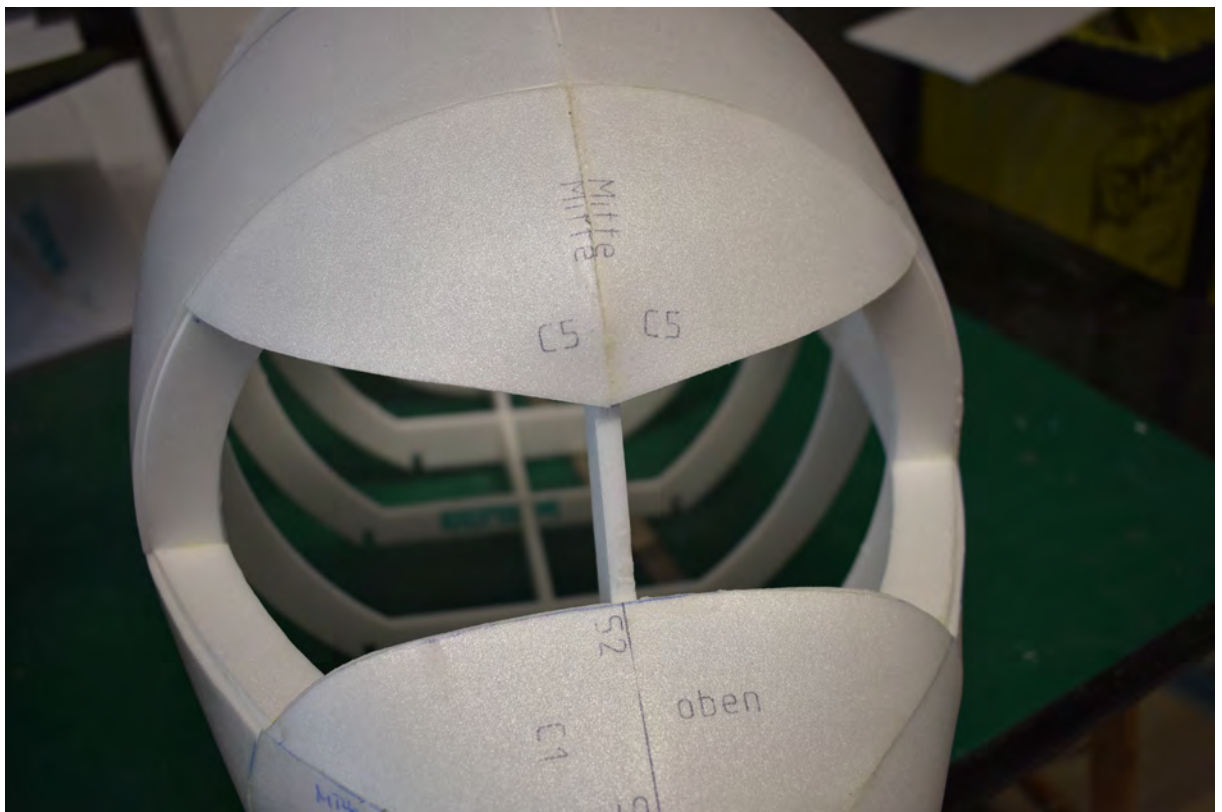
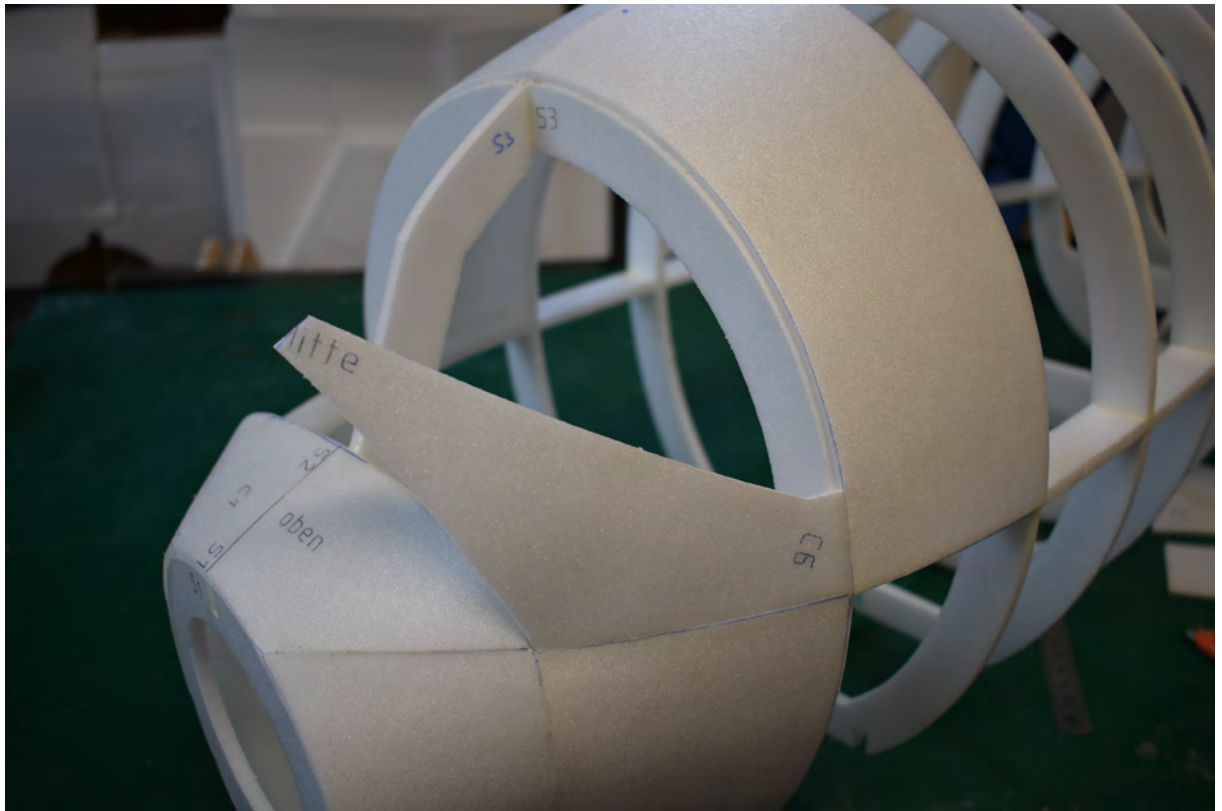


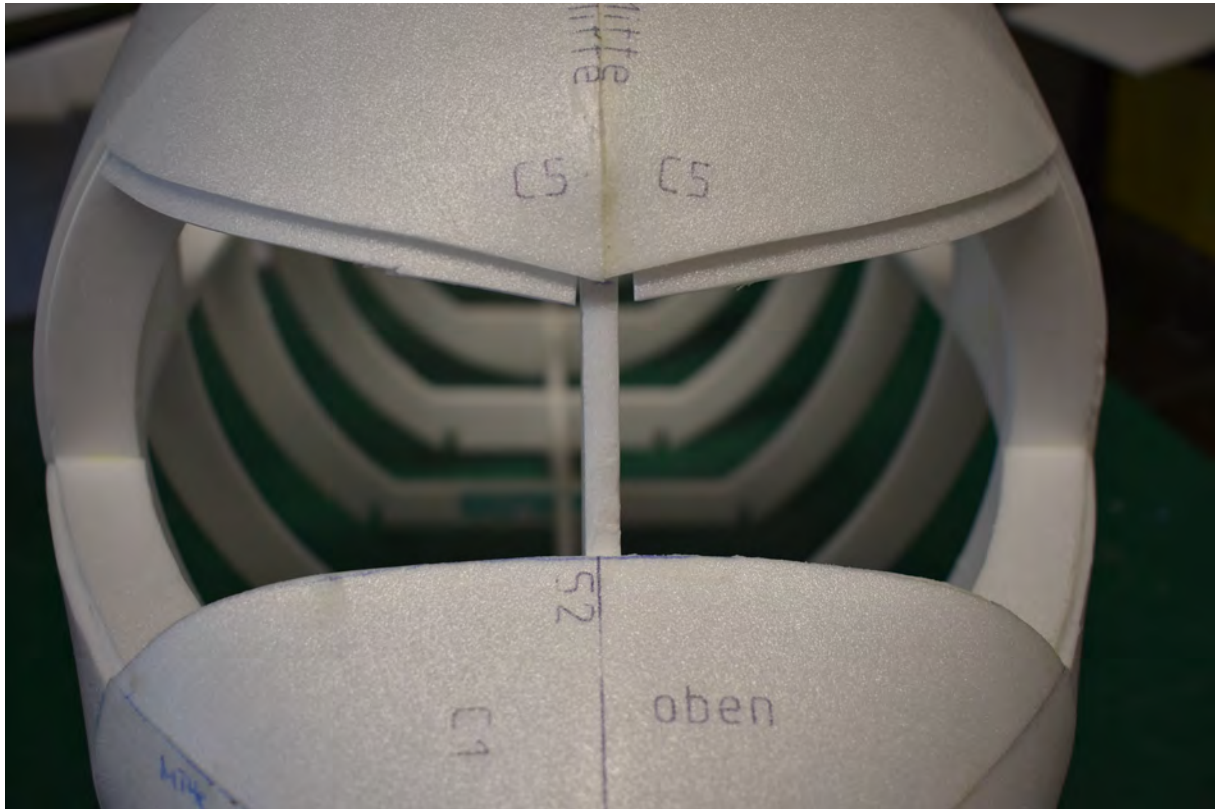


4.

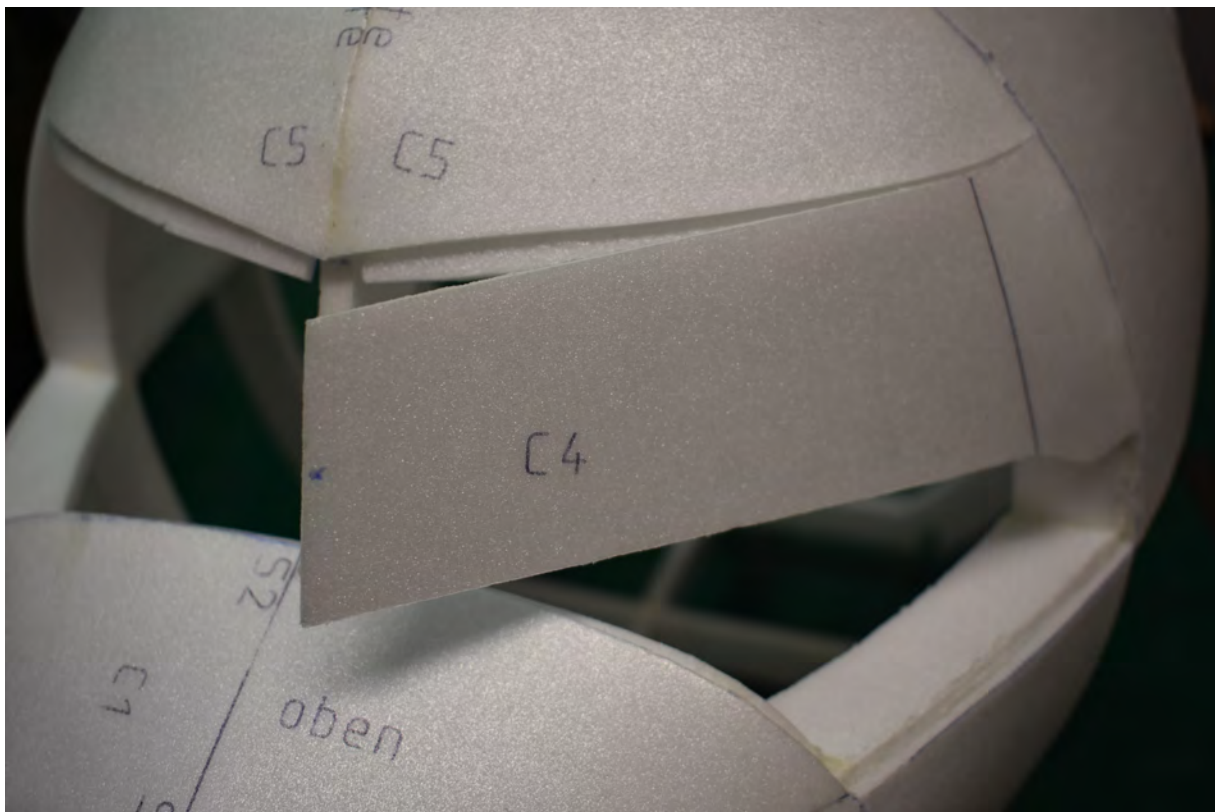


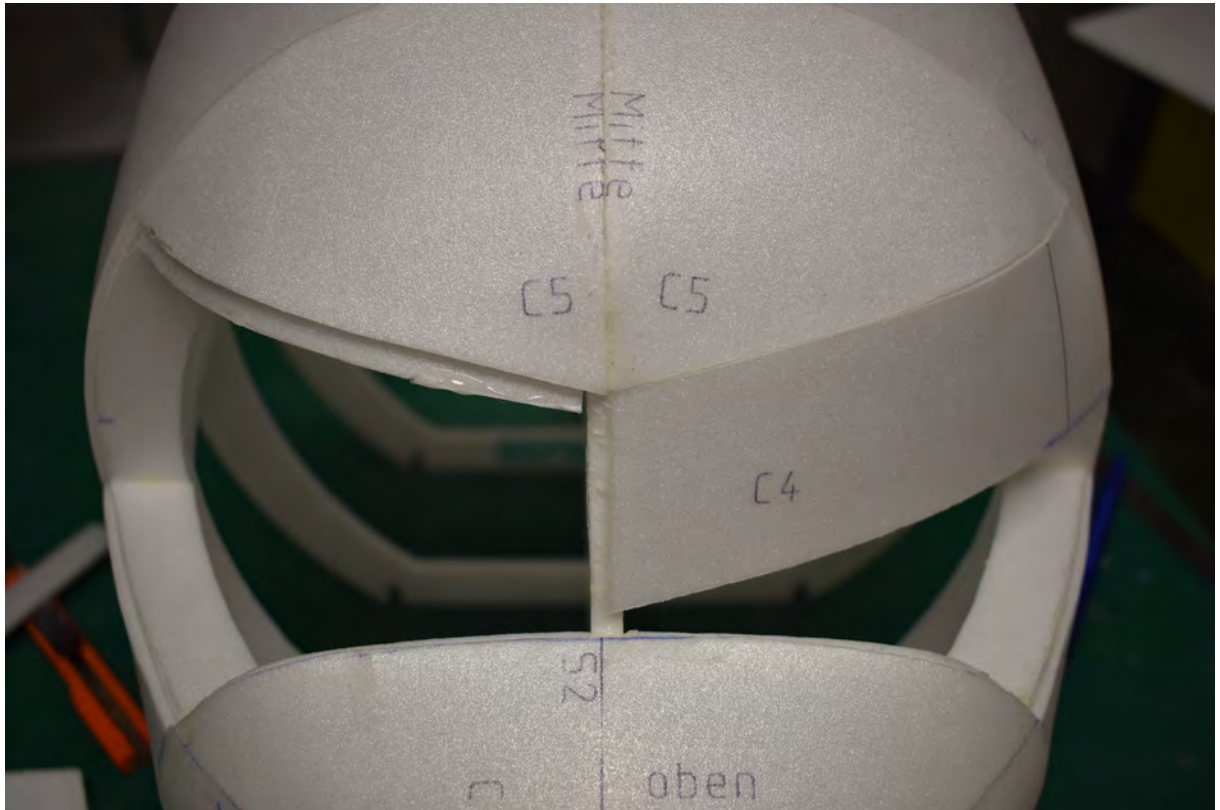
5.



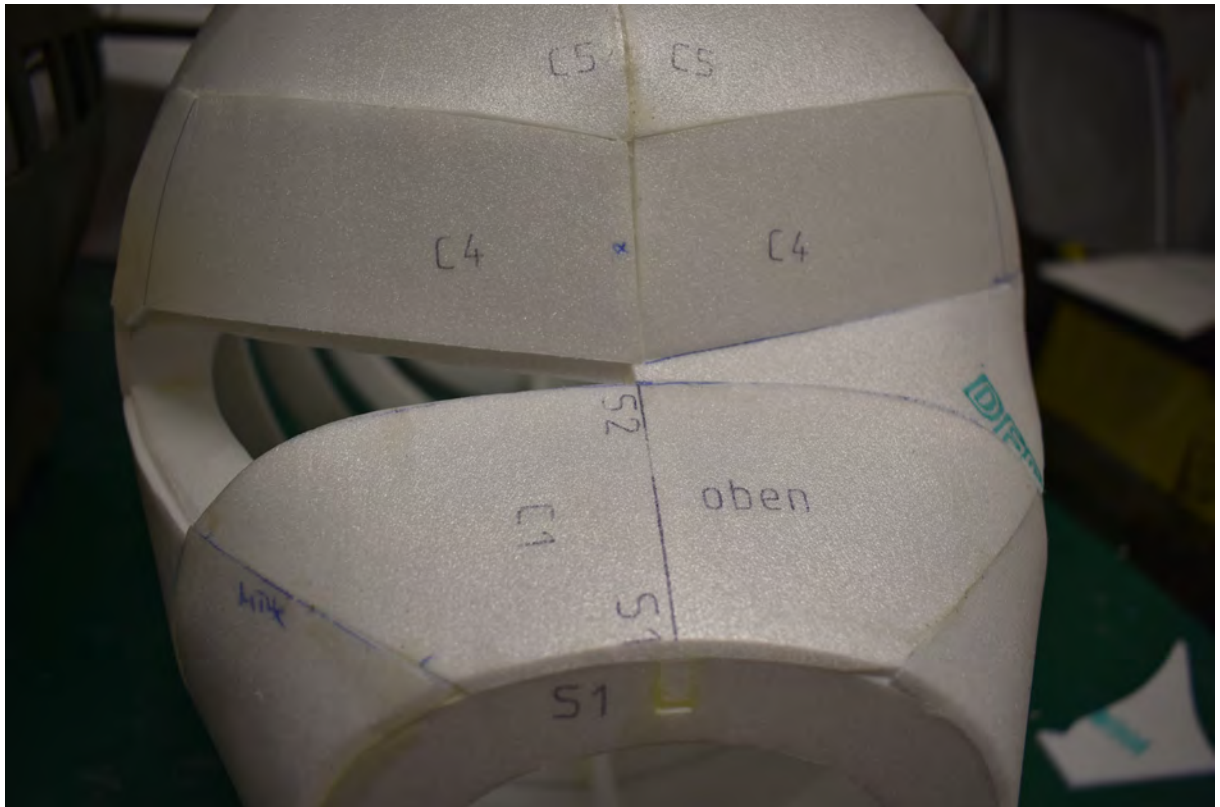


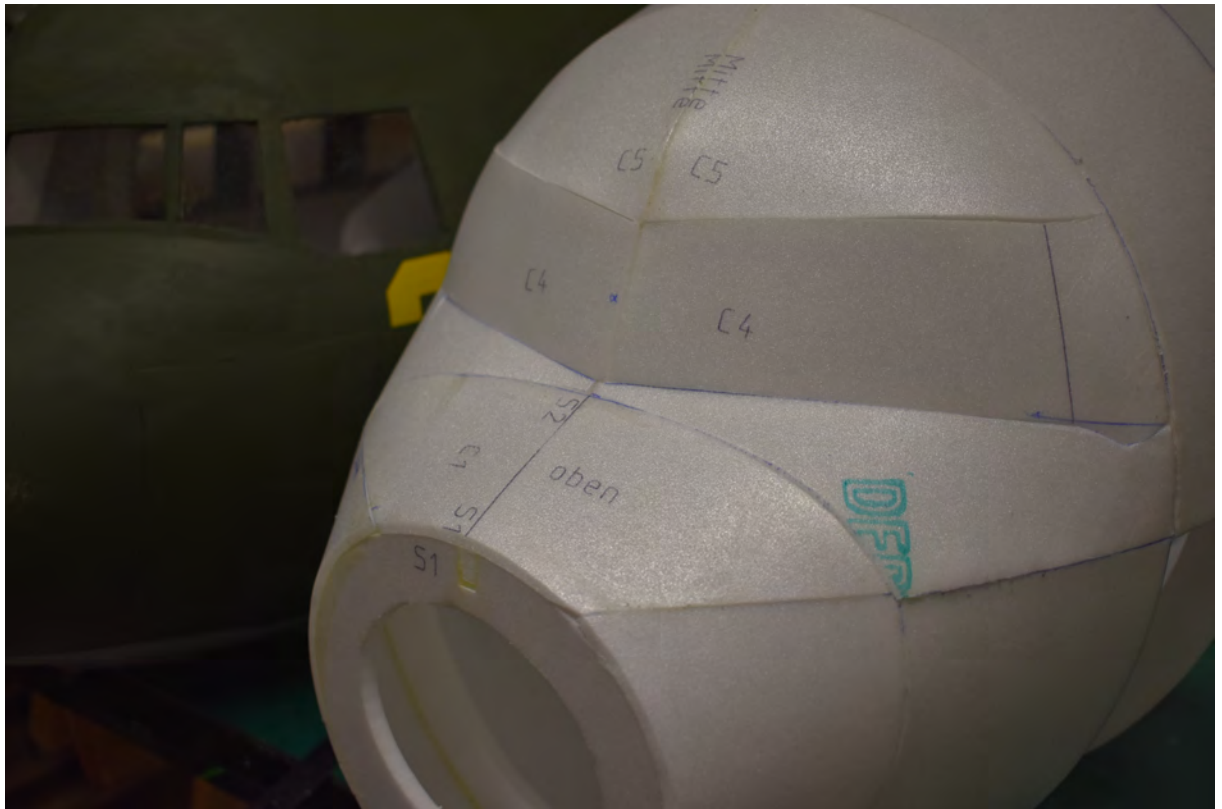
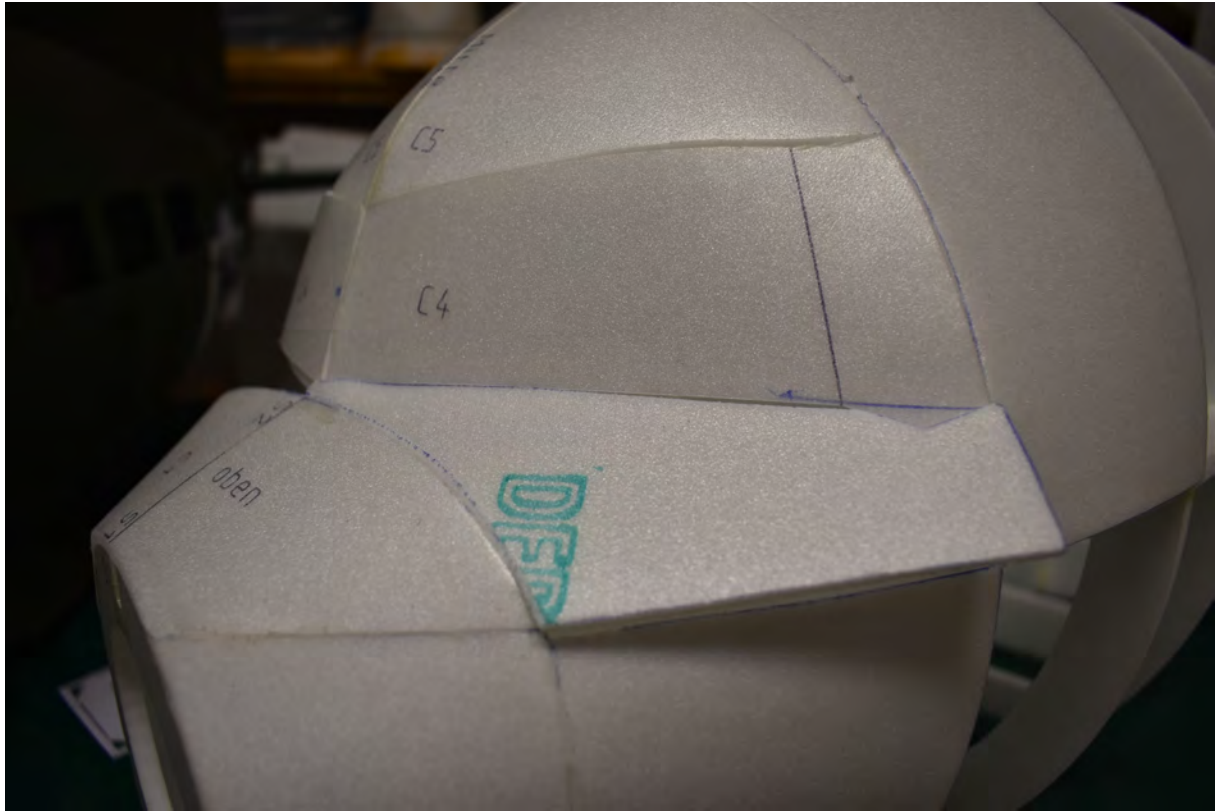
6 Use 3 mm Depron strips as an auxiliary adhesive surface.



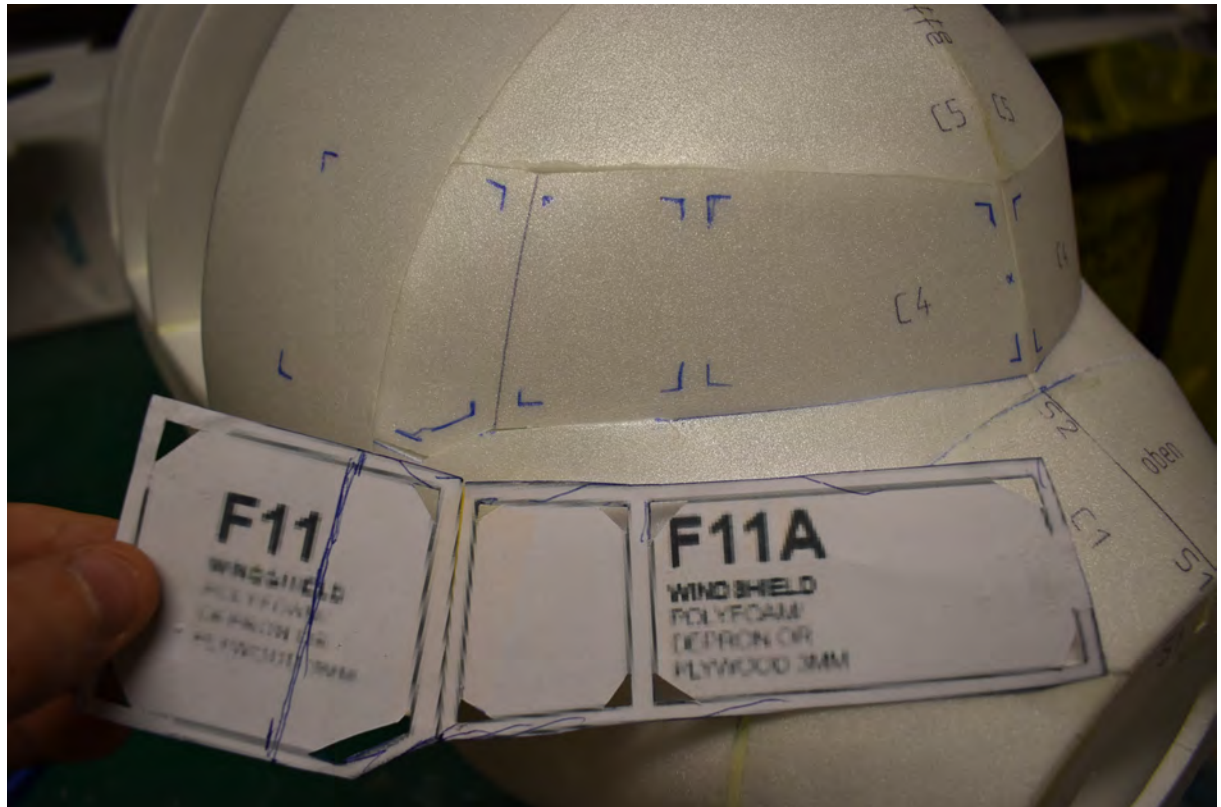


7.



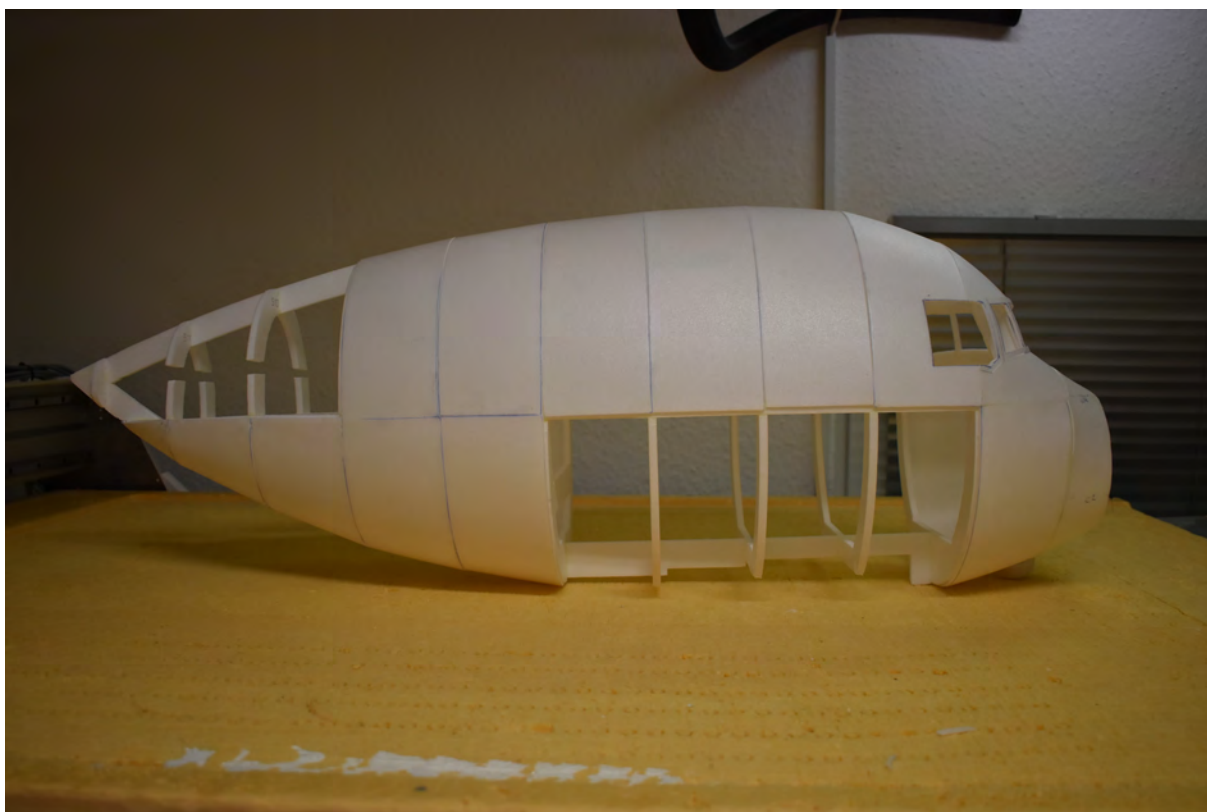


If the windows are to be fitted with clear film/PVC, use the template. The windows can later be closed with 0.3 mm clear PVC film

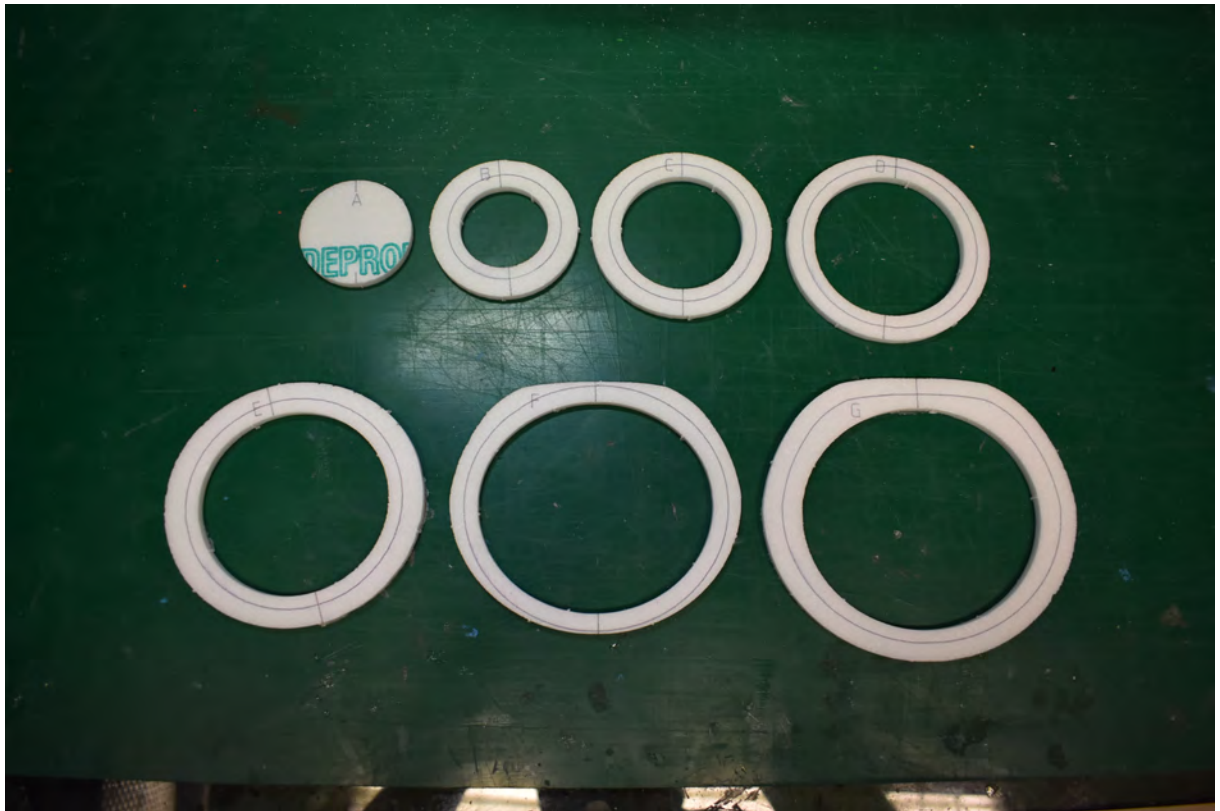




All other planking, if so, please just close it first.



Bow Tip: Components A -G



Glue the individual layers together according to the glue line.



Attach the tip of the fuselage using double-sided tape or a few drops of glue. Then grind.



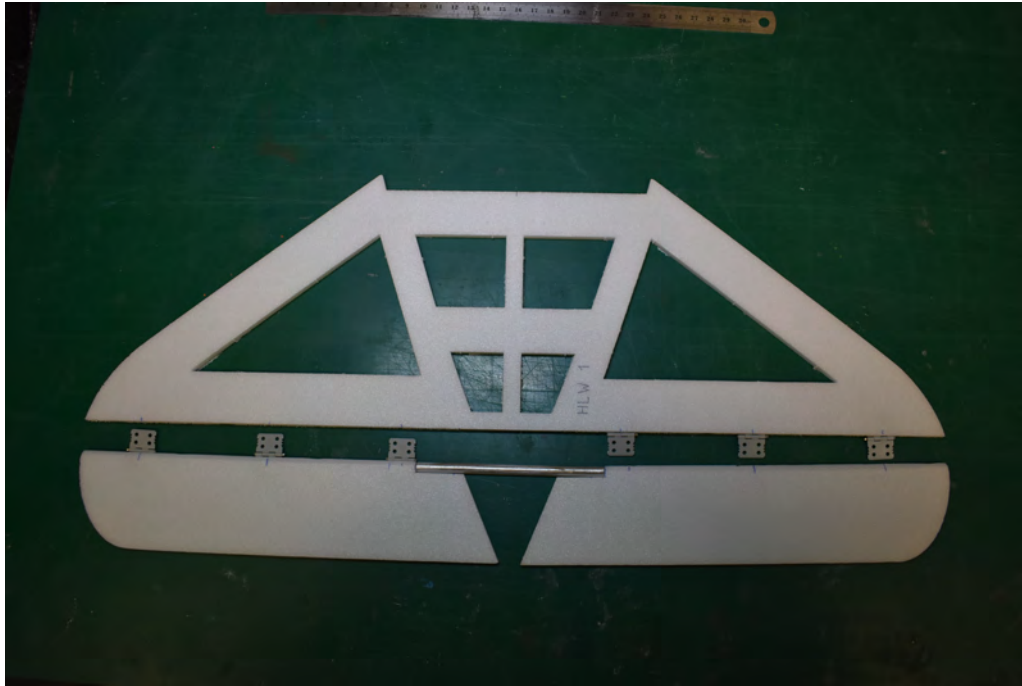
Then remove the tip of the fuselage again. This is used as battery access and can be mounted on the fuselage using magnets and pins.



The tail units:

tailplane:

**Insert hinges in HLW1 and the rudders.
So that only one servo can be used, use a 6 mm pine wood,
CFRP tube or aluminum tube to connect both rudders.**



Then put on the 3 mm planking on both sides.



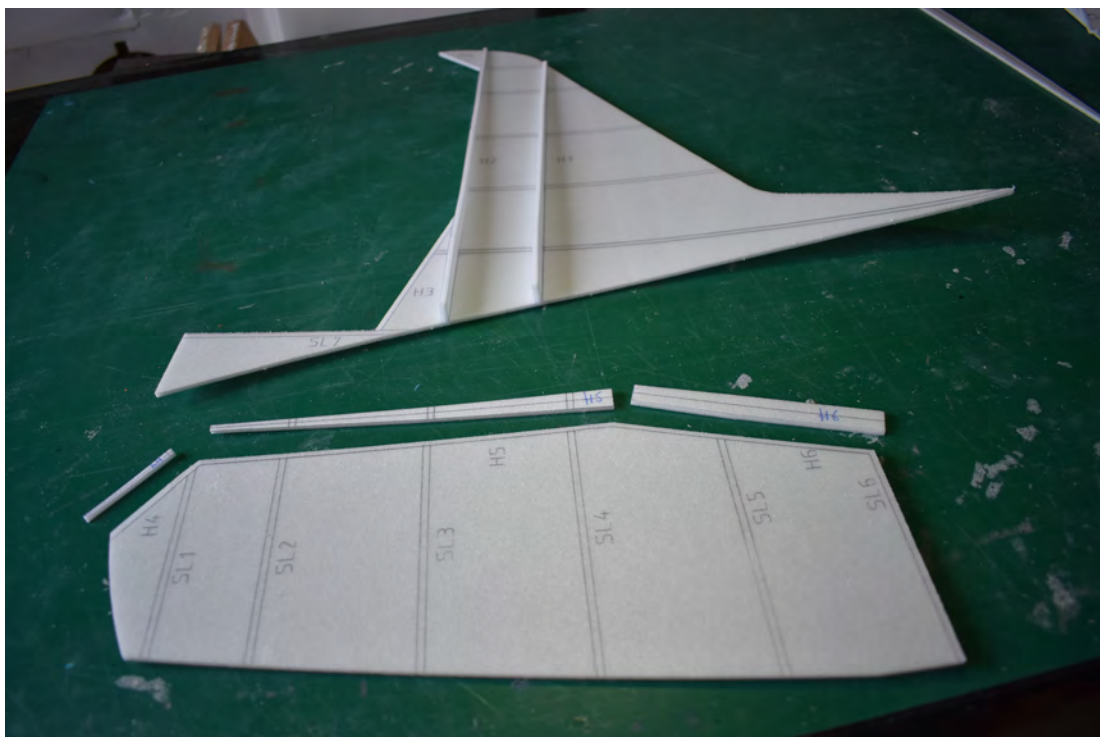
**Now sand the
tailplane:**

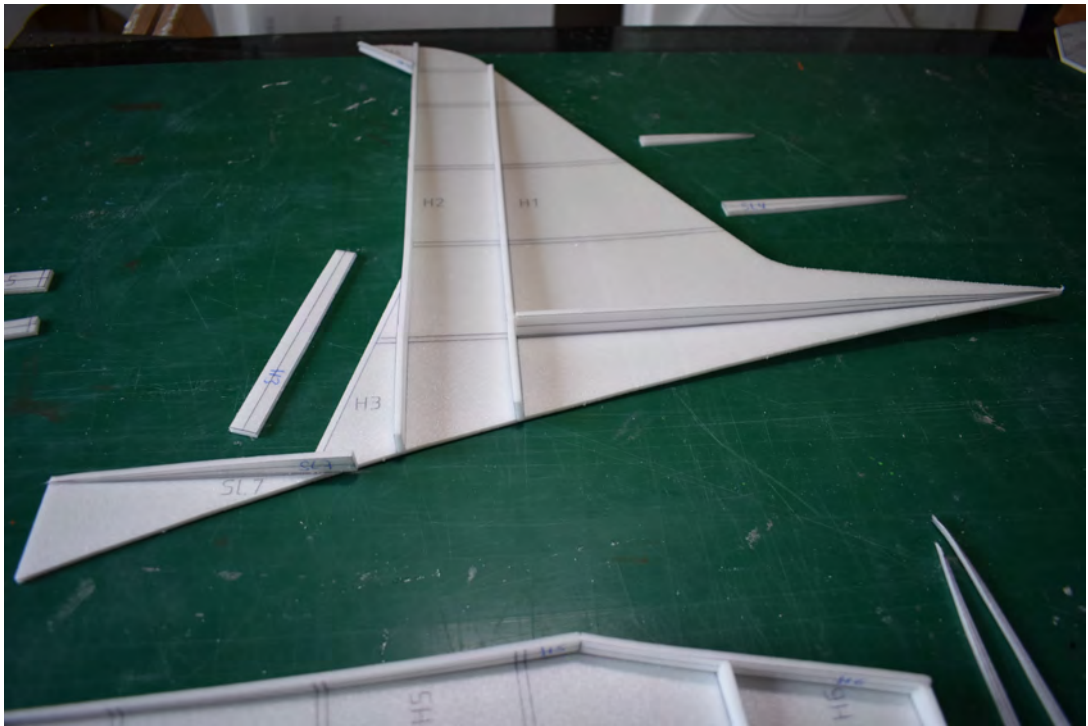
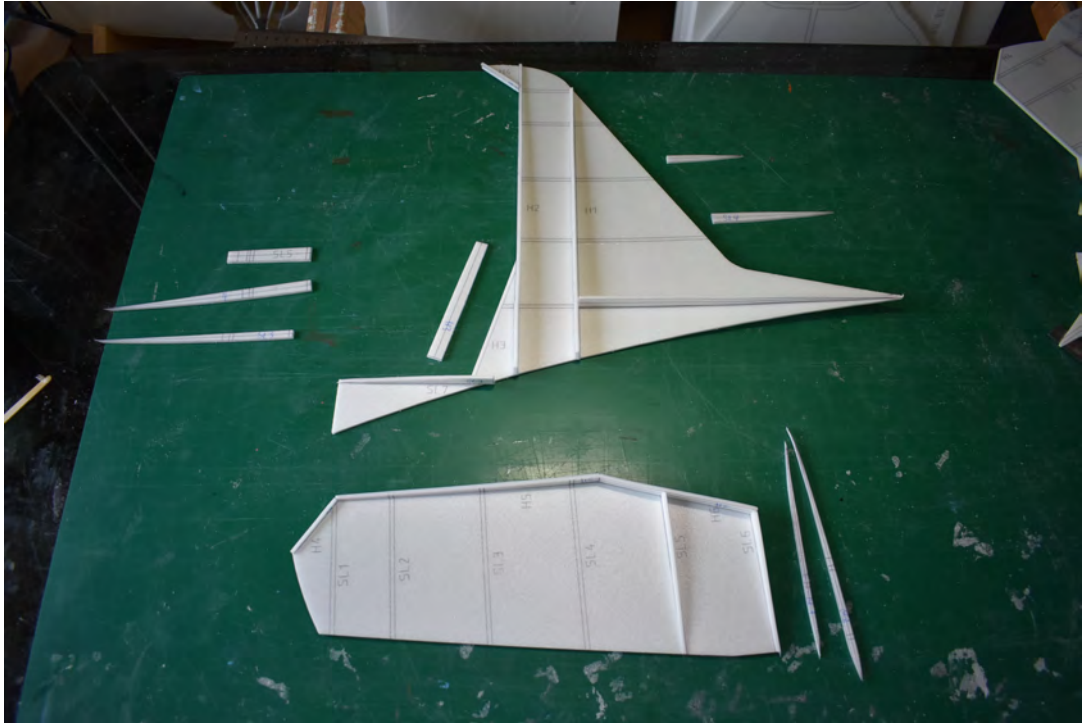


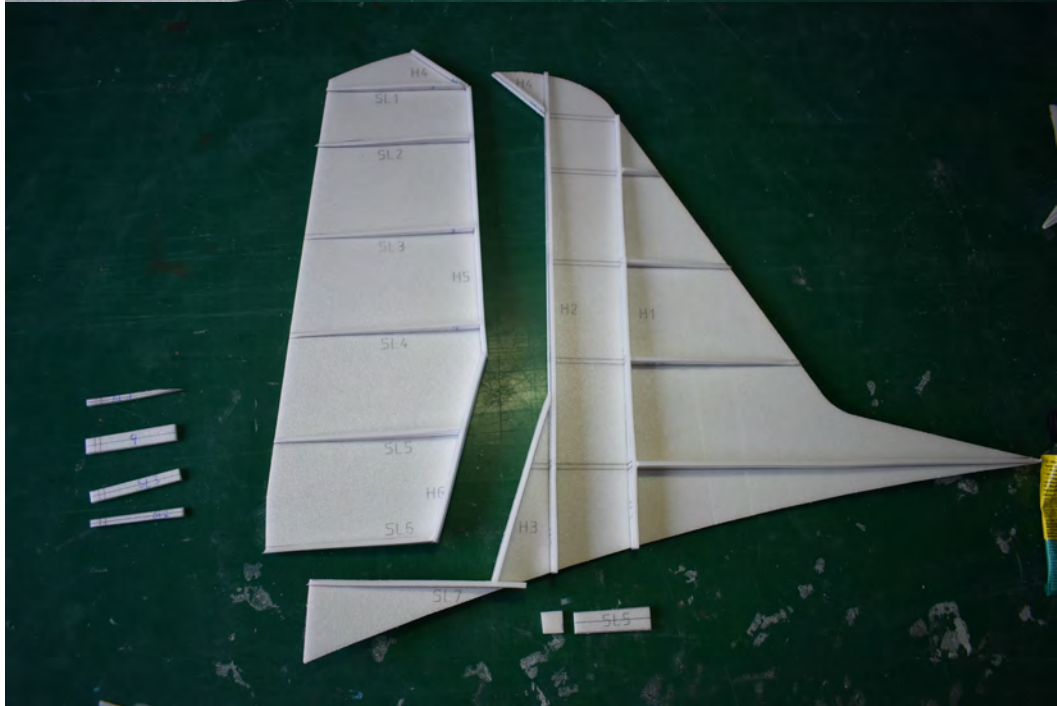
rudder:

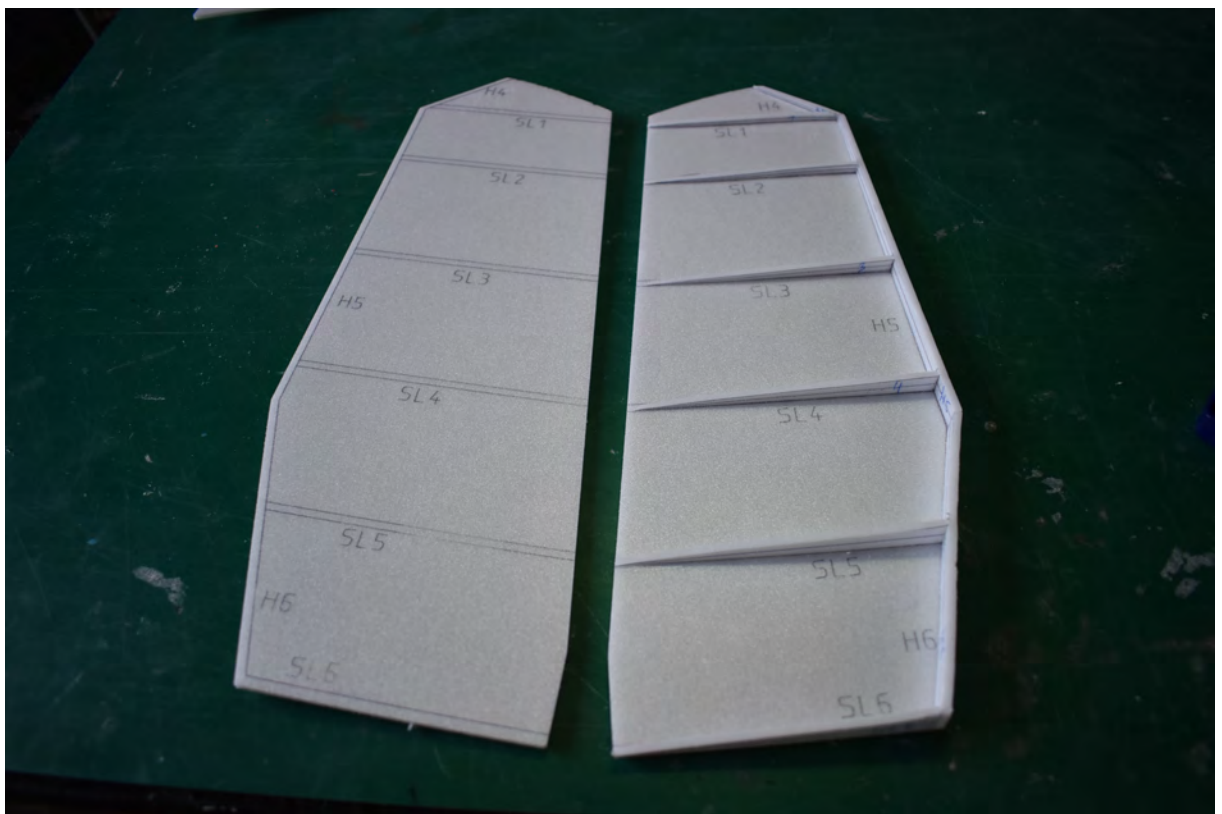
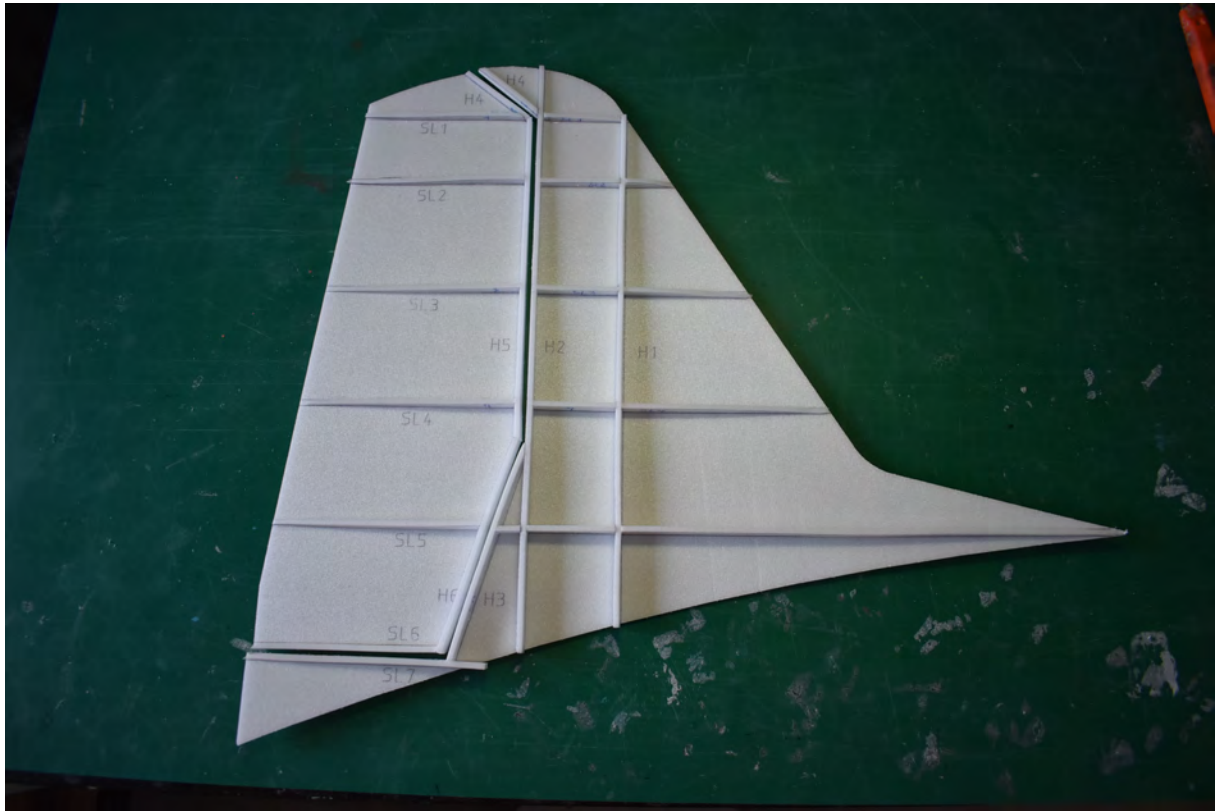
Cut out the stringers and spars from the pre-drawn Depron sheet.

Slightly convex shape the rudder planking. The markings should always be visible on the inside.

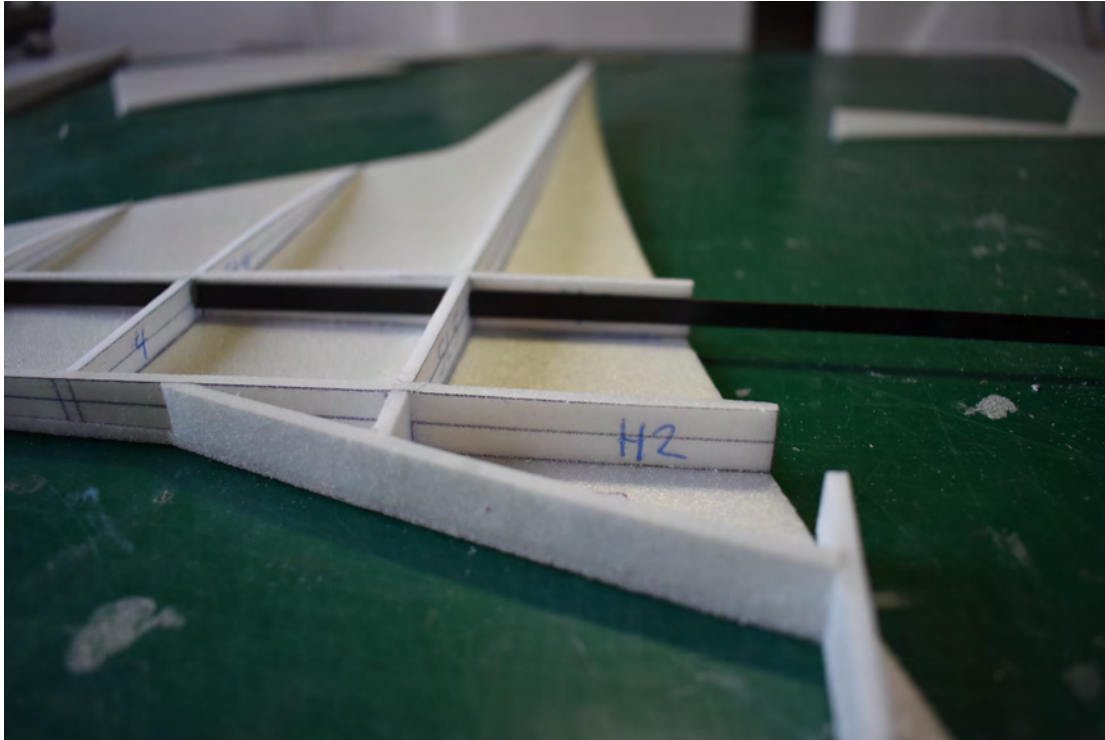




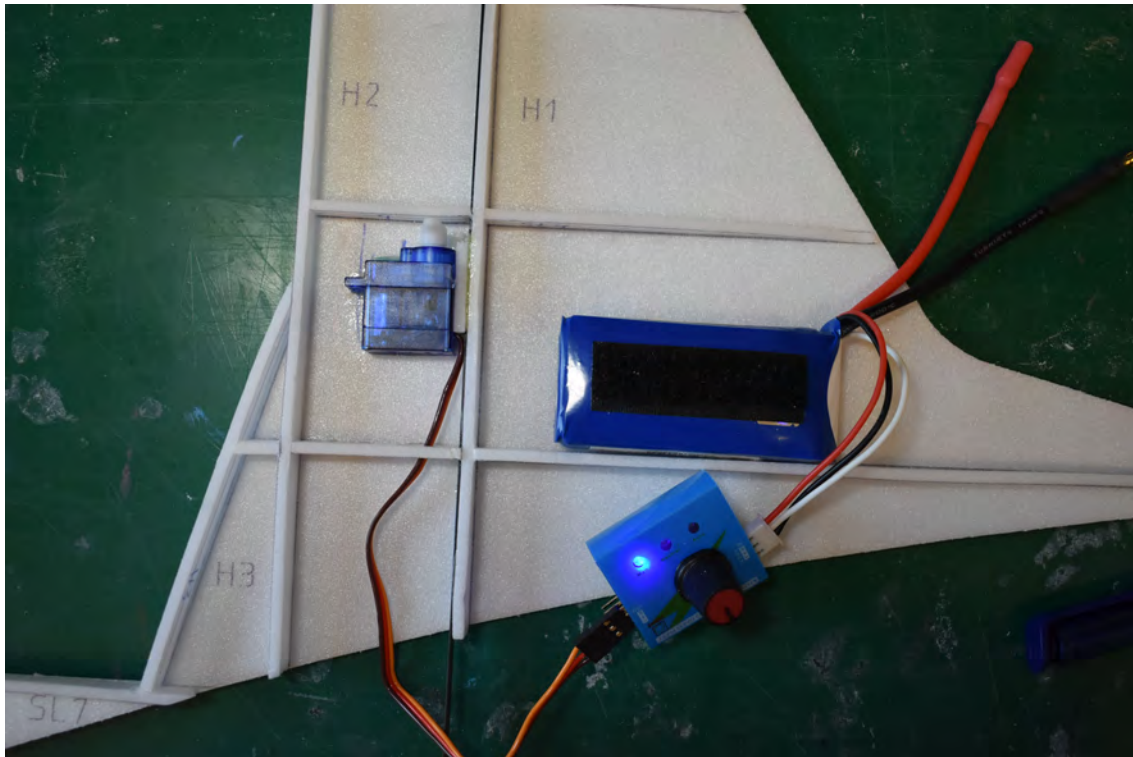




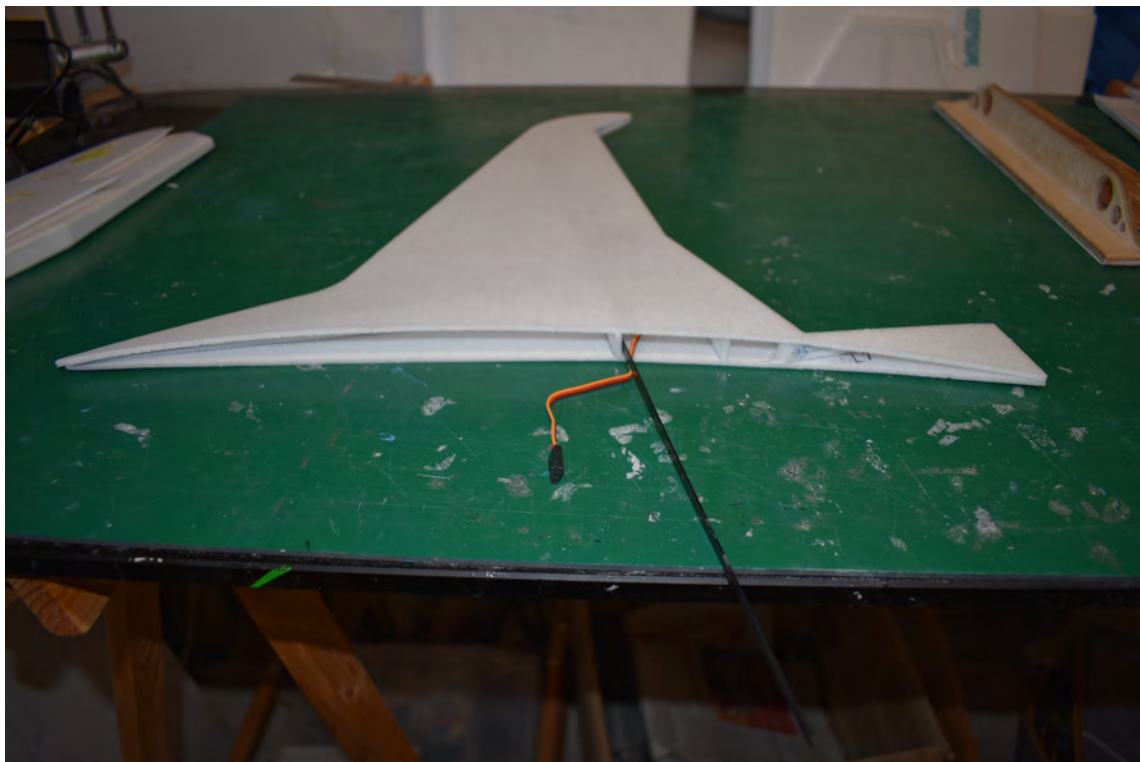
A 6X1 CFRP rod, length 430 mm, is now glued to the spar for reinforcement. The CFRP rod sits behind the H1 spar. To do this, pierce the ribs. Starting at rib SL2.



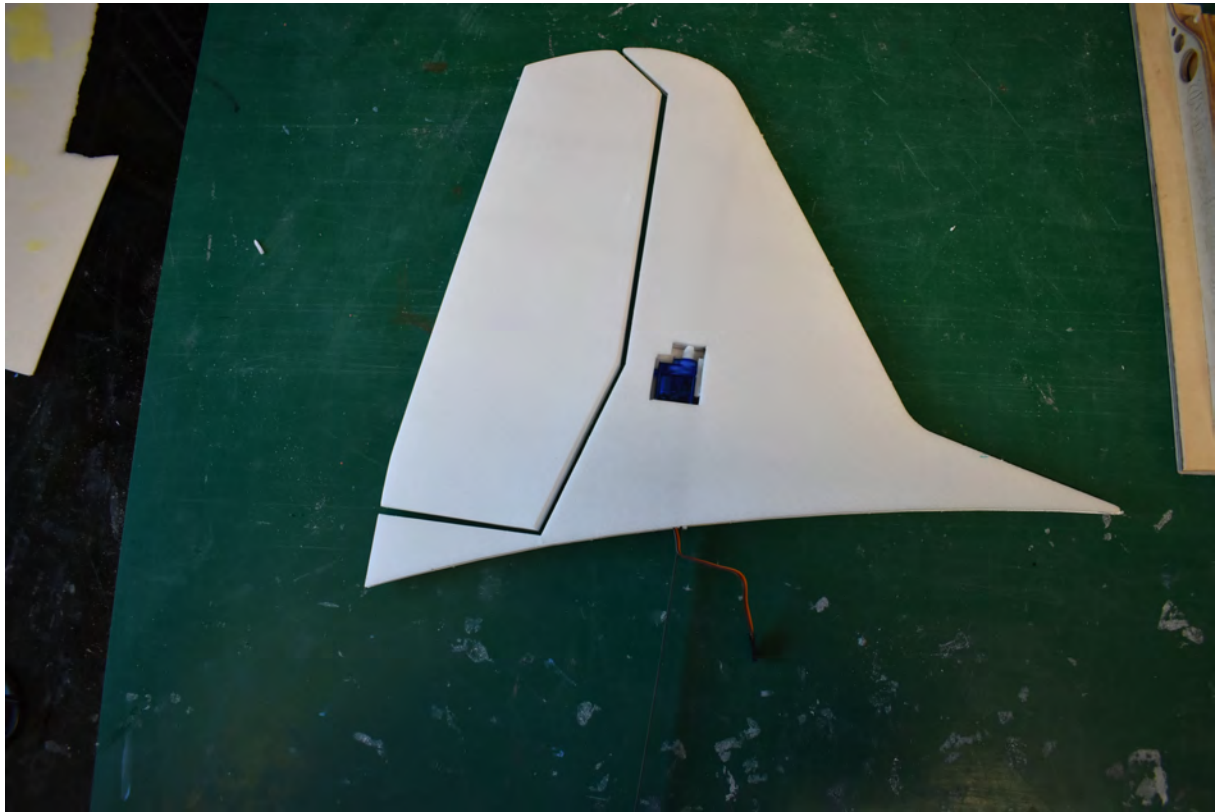
The rudder servo can be placed in the section shown.



Now the second tail unit side can be glued on. Pay attention to a straight flight so that there is no distortion in the tail unit.

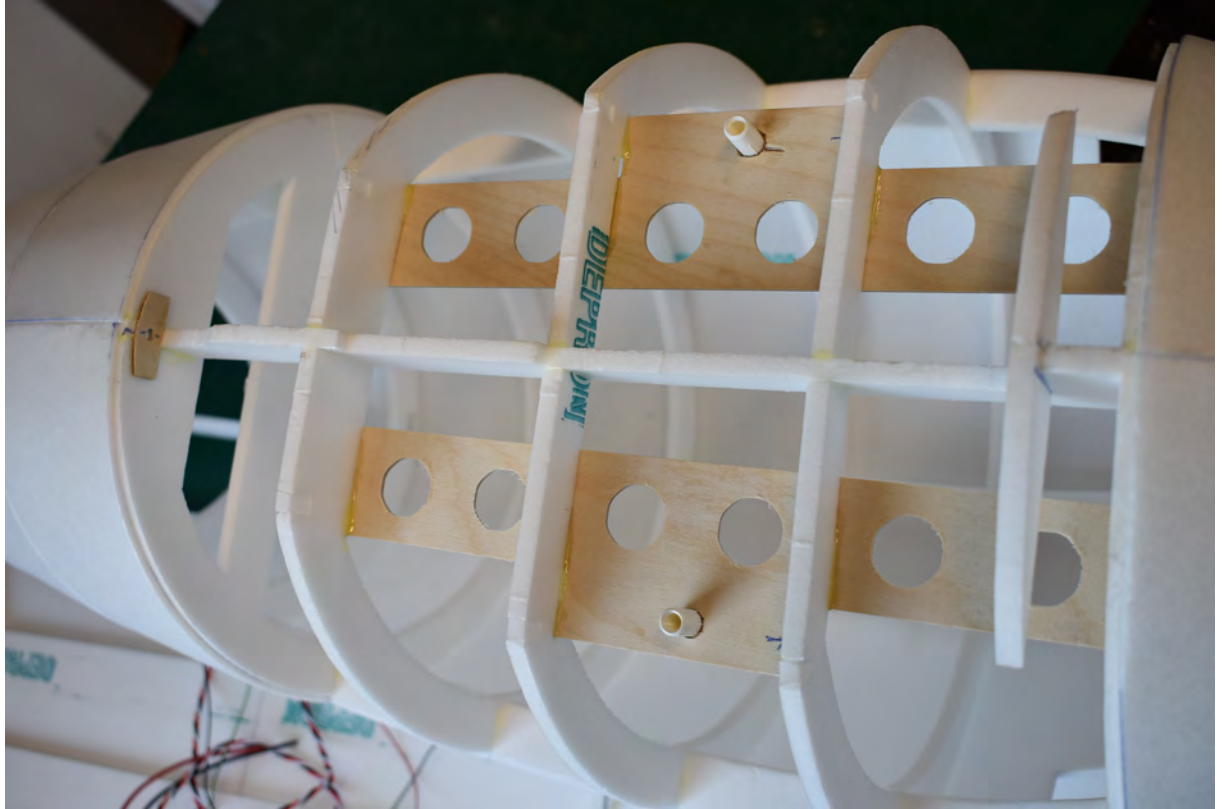


Cut out servo area. Close the rudder immediately and connect it with hinges.



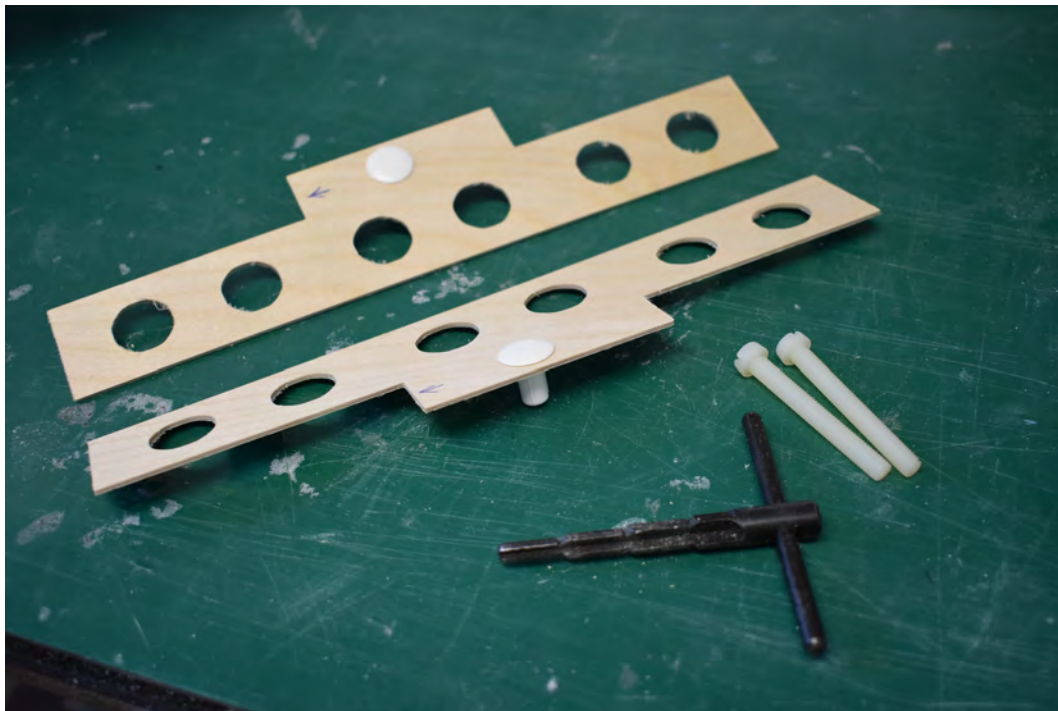
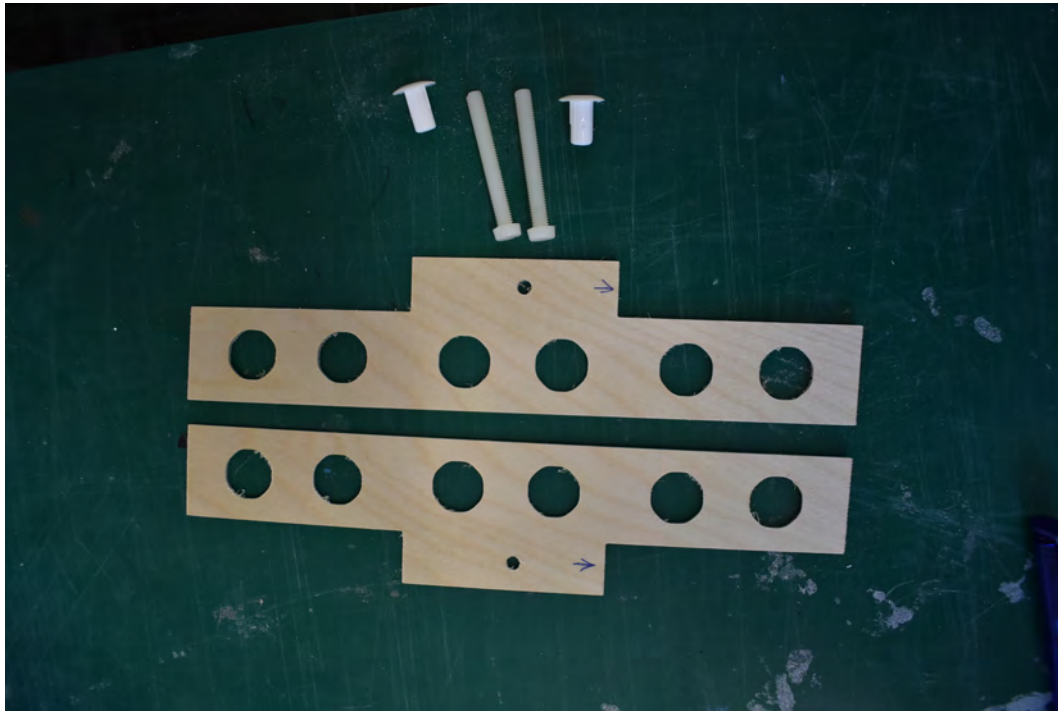
Wing Mount:

The plywood reinforcement is basically inserted into the hull, as shown in the photo. The plastic nuts are used to screw the wing with M6 plastic screws.



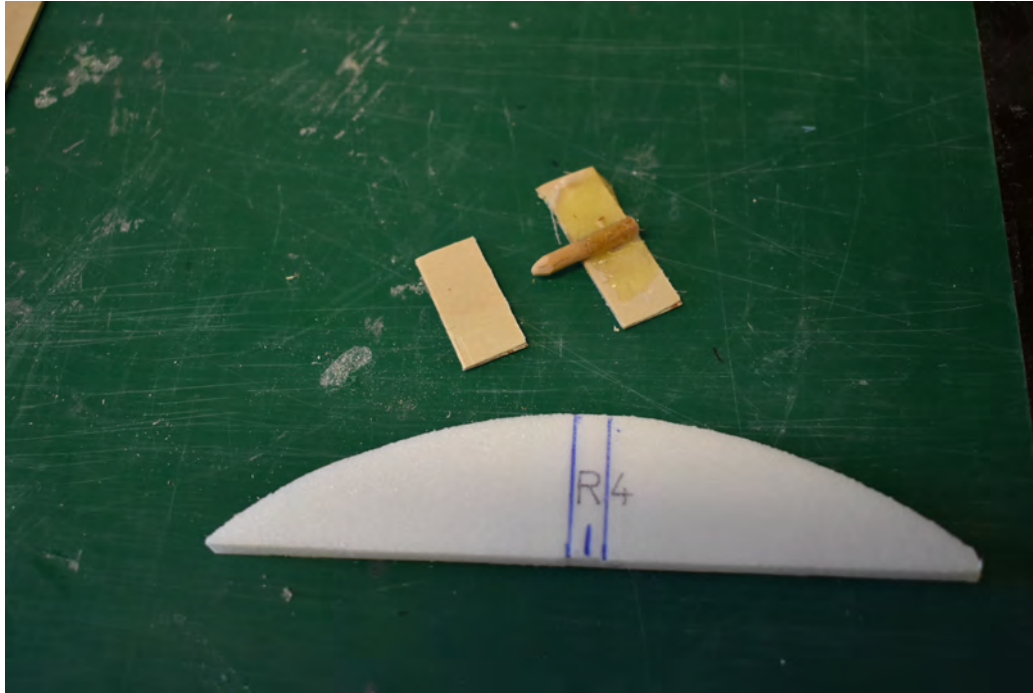
Depending on the screw connection used, drill out the pre-drilled holes until the sleeves fit.

Note: Try inserting the plywood parts, the screws should lie directly on the wing plywood spar for optimal power transmission. The milled slot points in the direction of the bow.



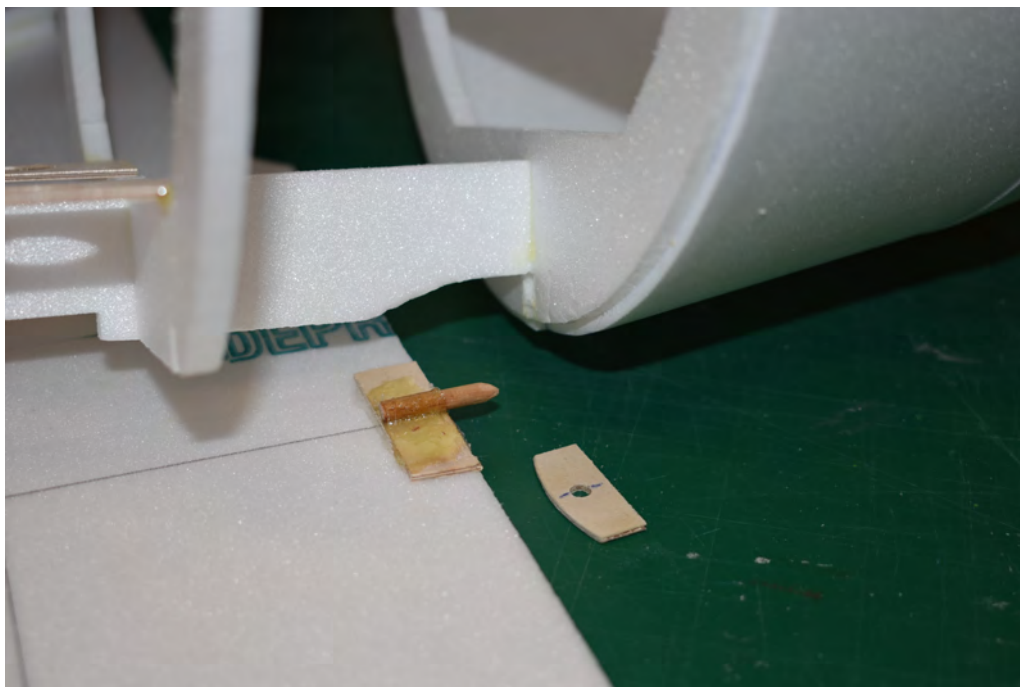
A detent at the rear of the wing centers the wing on the fuselage. A pinning as shown here can be used as an example.

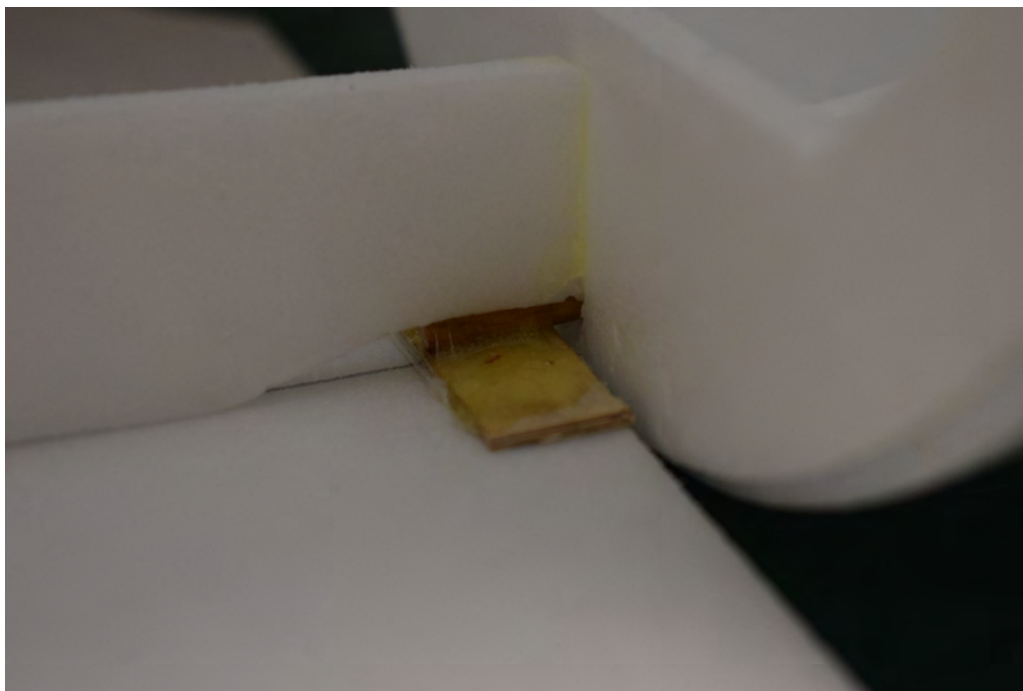
R4



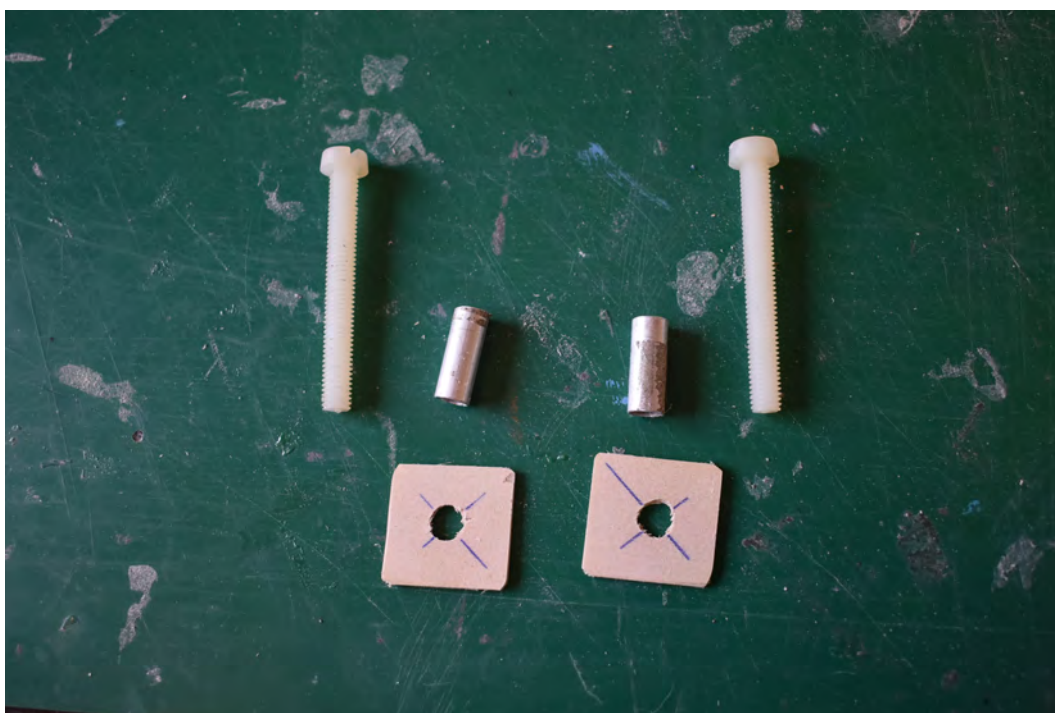
Insert the wing, center it.

Cut the stringer a little free so that the pin goes into the bulkhead without jamming. For reinforcement, glue a piece of plywood with the corresponding hole to the frame so that the hole doesn't tear out.





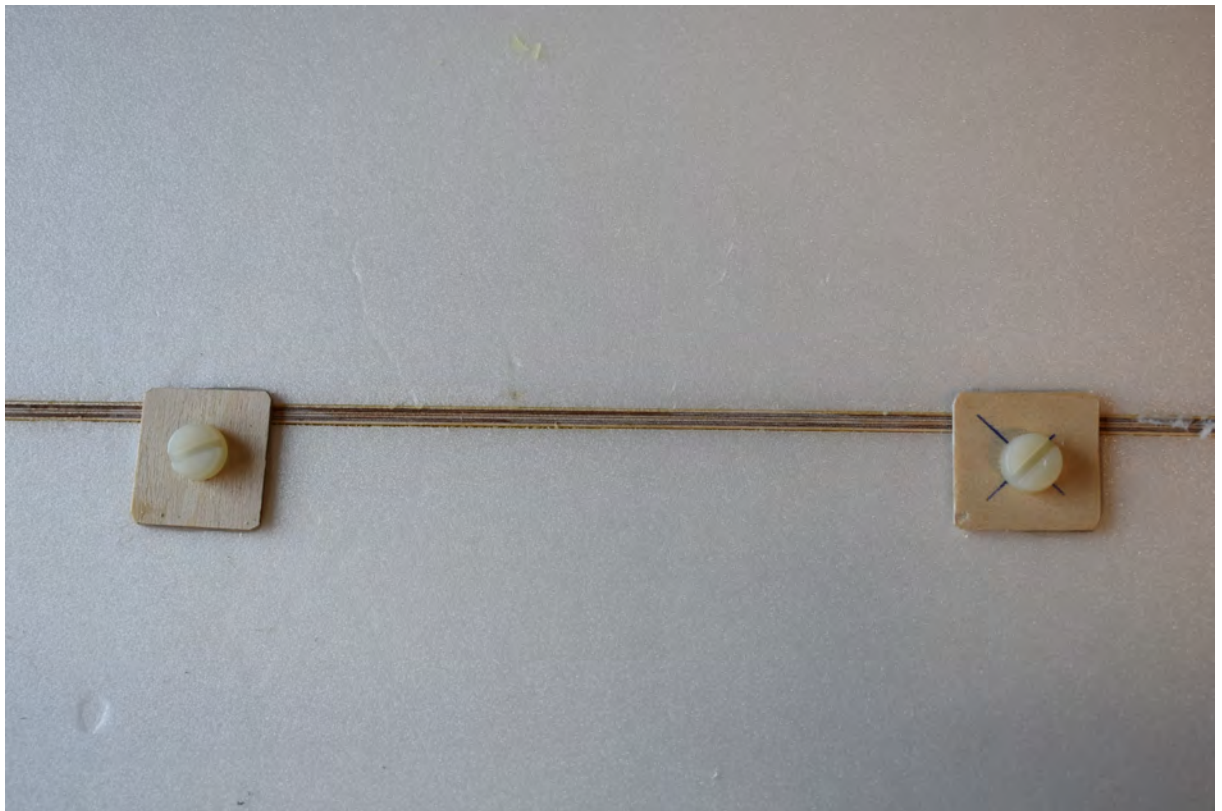
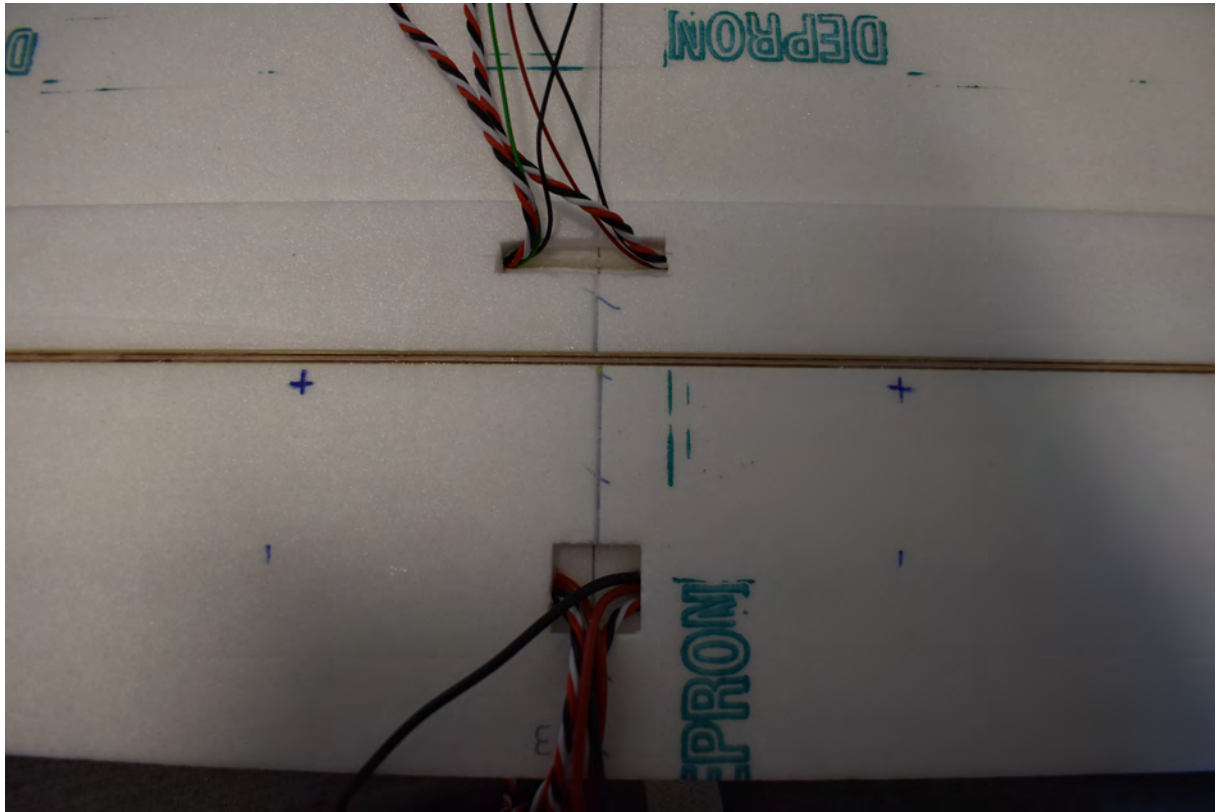
Guide tubes, here 7X6 mm and two reinforcement plates can be used through the wing for a wear-free screw connection.



**Insert and glue the plywood panels.
Make sure the battery tray fits snugly between them.**



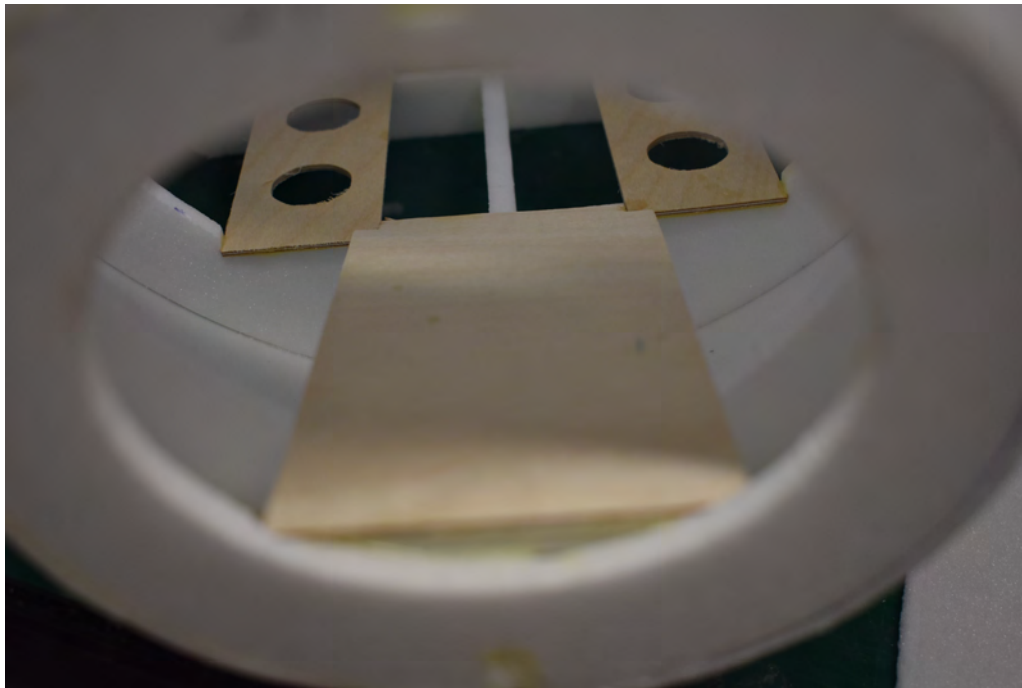
**Insert the wing and align it geometrically with the fuselage.
Then mark the holes for the two screws.**





**The plates rest on the frame.
The battery tray, consisting of 6 mm Depron R9 and the plywood W9, can be used at the same time. Glue both components together. This goes between the two wing mounts and the bow cutout, at the front.**

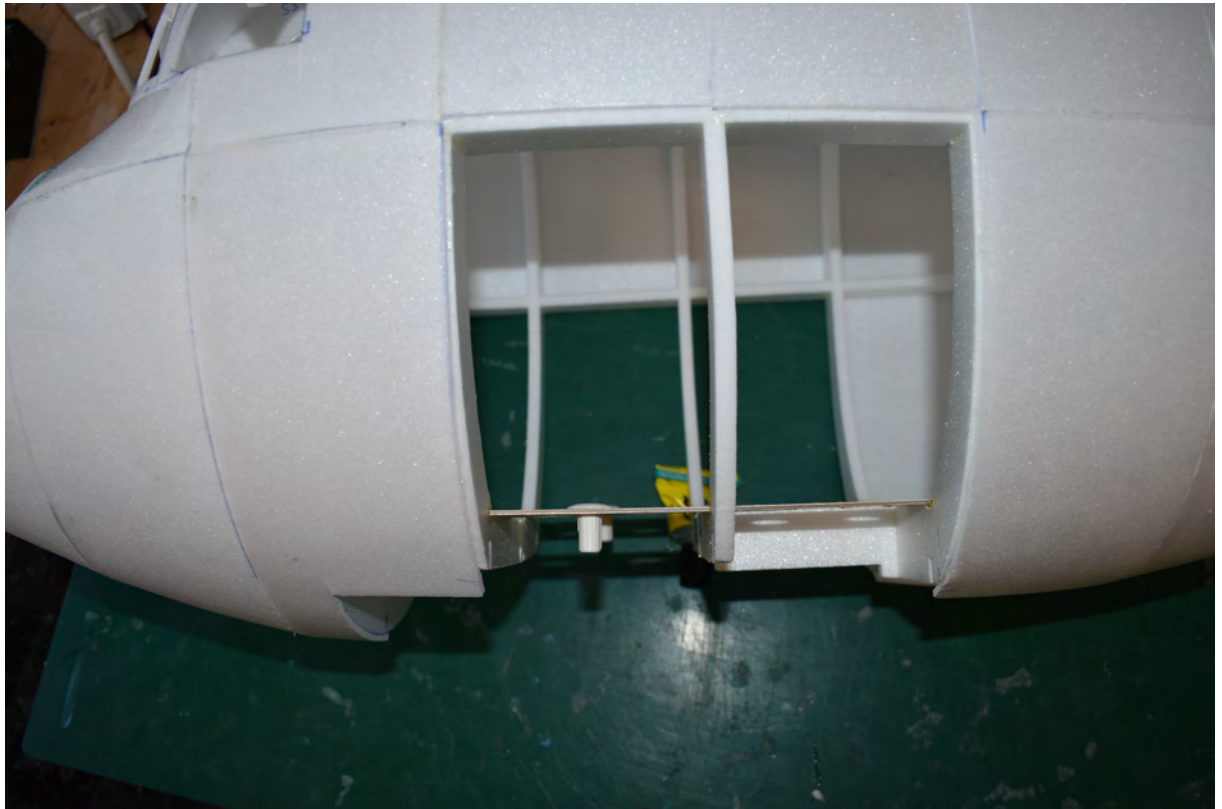
The battery can be easily mounted on the board using Velcro.



Glue the short frame R4 to the bottom of the fuselage opening.



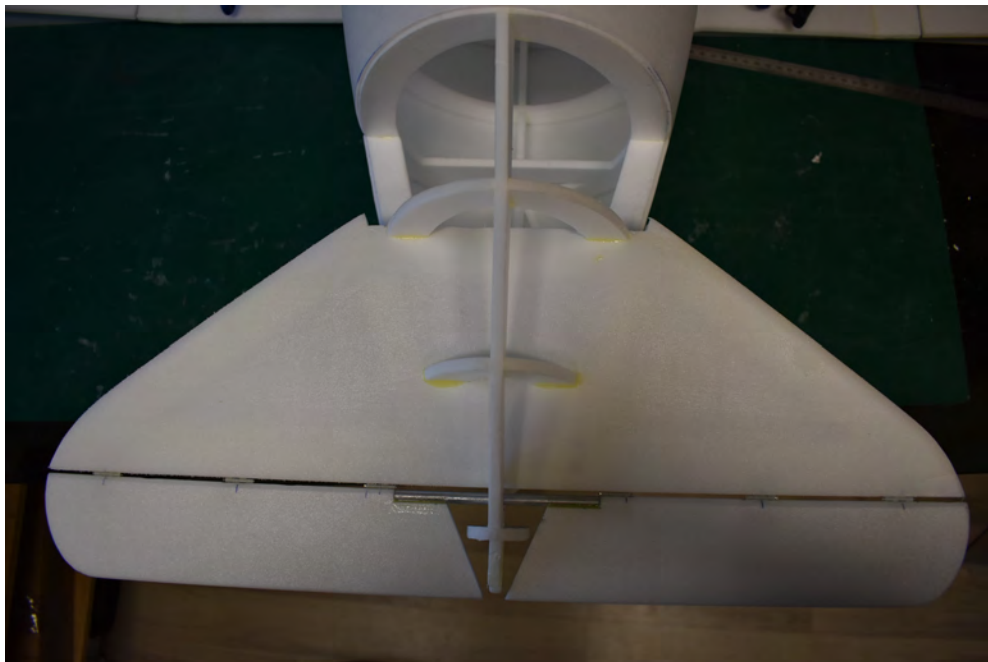
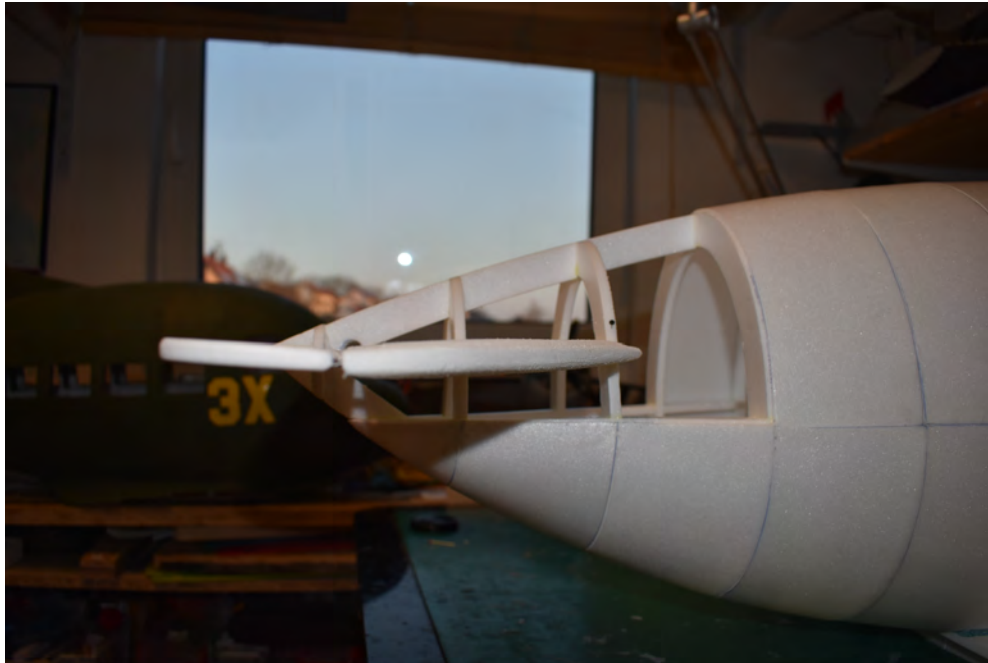
Now the three plankings can be glued on. The stencils have oversize below.

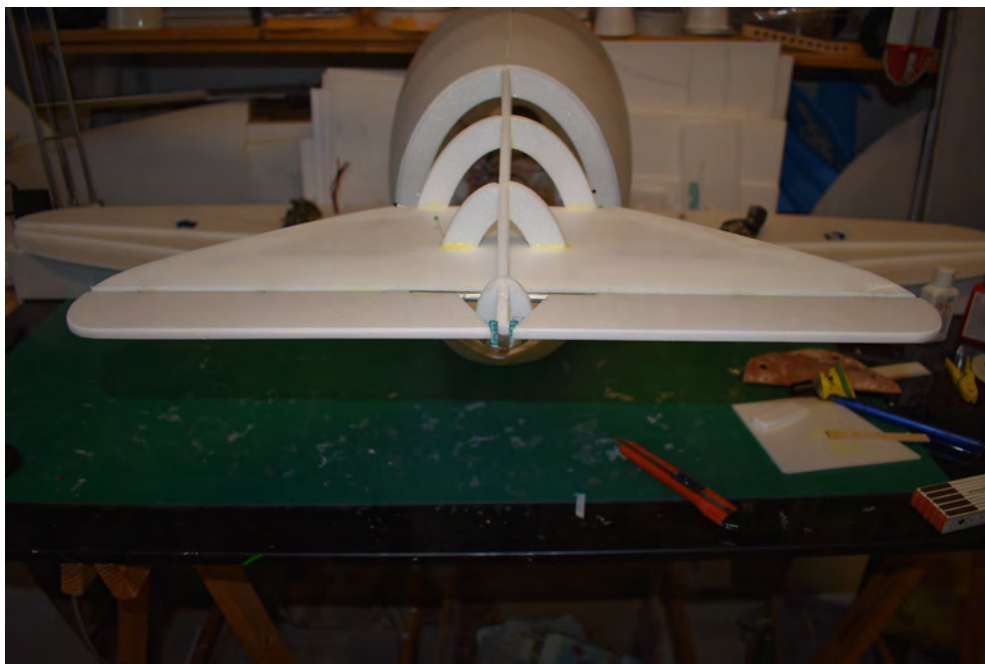


Then cut off the sheeting until the wing fits back on the fuselage with as few gaps as possible.

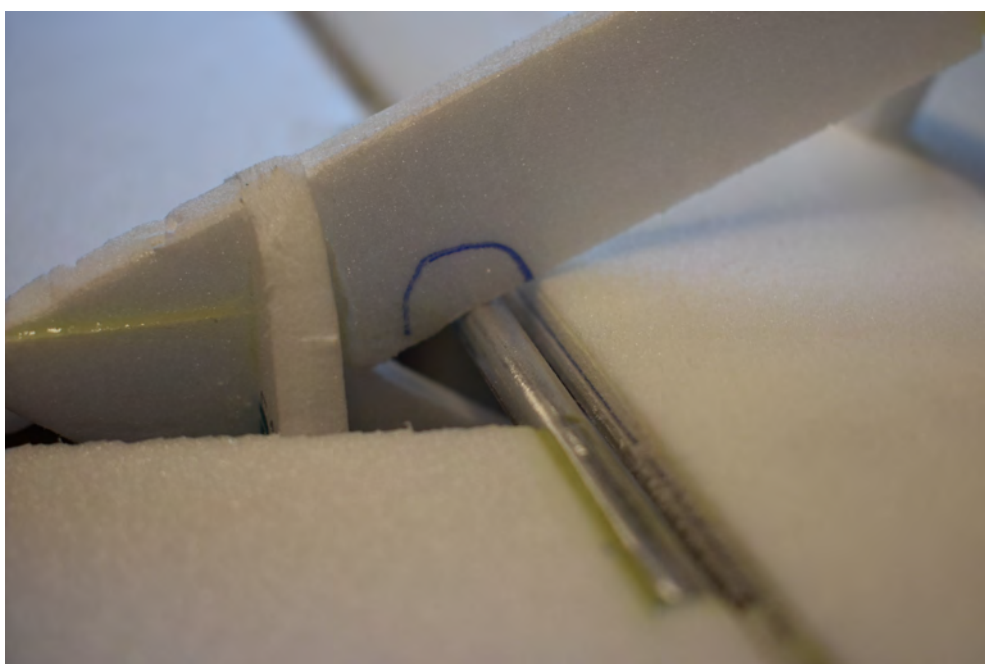
Elevator assembly:

Slide the tailplane between the frames. The elevator ends with the Spant S10.

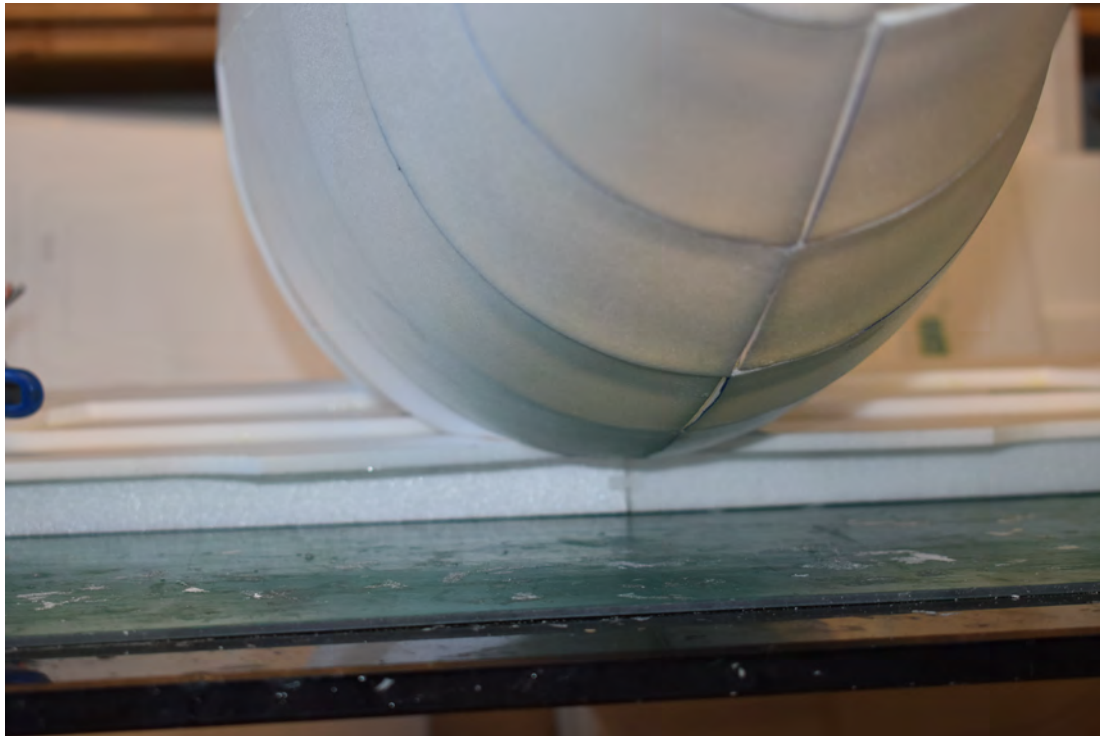




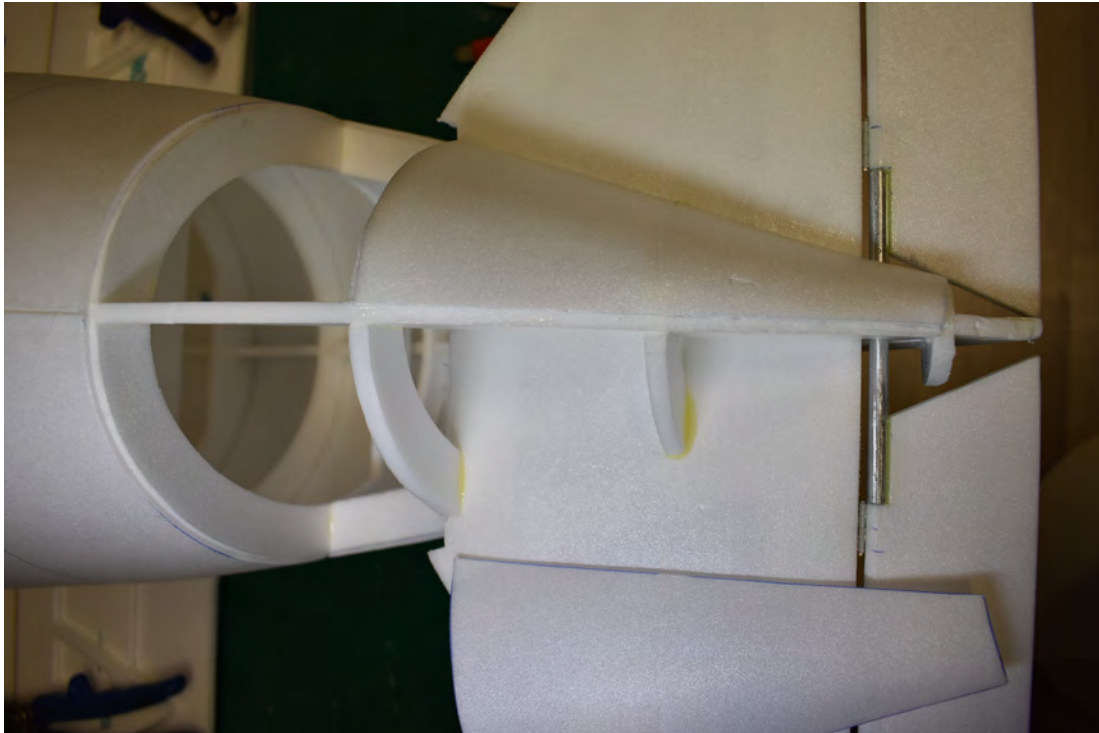
Cut the stringer a bit free so that the elevator can run freely in both directions.



**It is best to place the fuselage with the screwed wing on the heling so that it lies straight on the table.
Since the fuselage is certainly a little warped by the planking, adjust the position of the tailplane in the frames so that the tailplane sits parallel to the wing.**



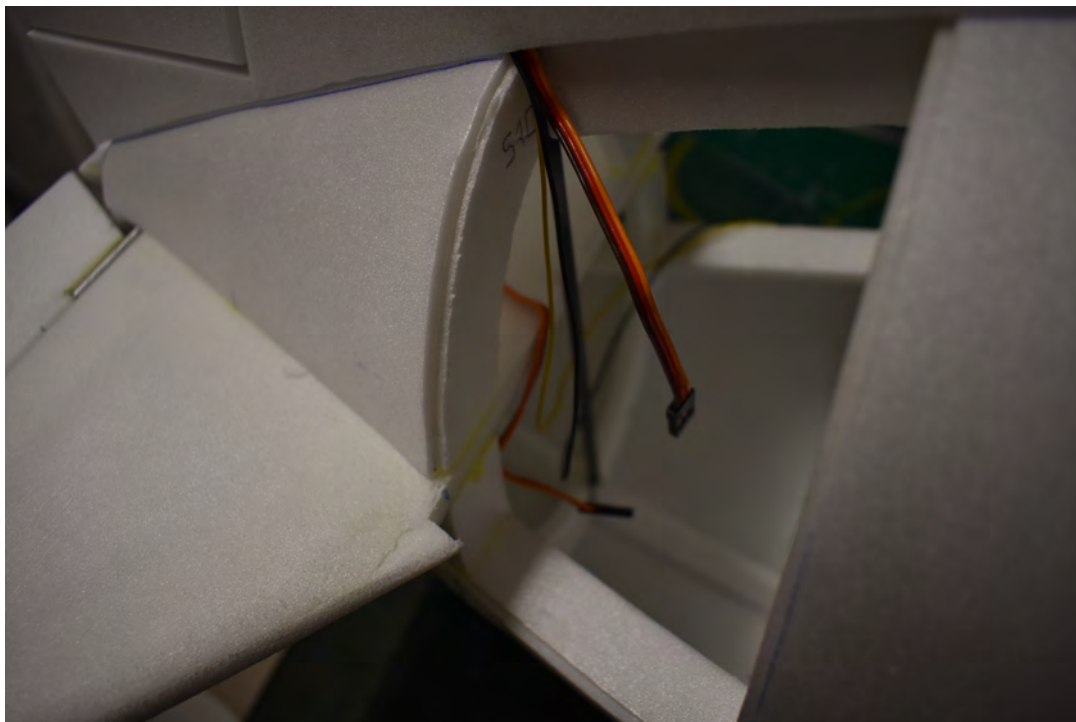
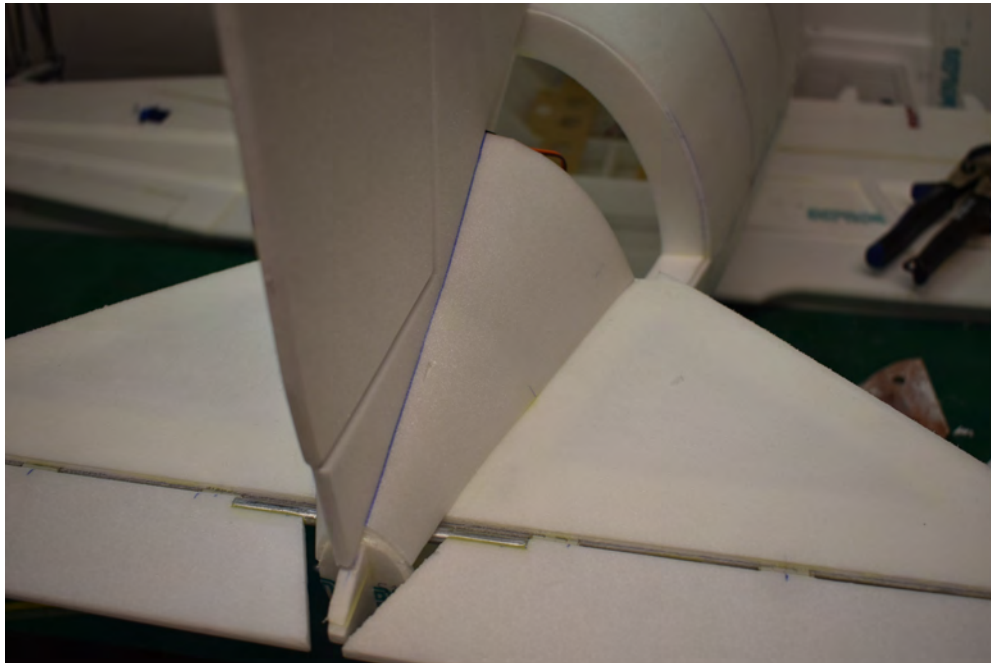
**When the tail unit is glued, the planking above the tail unit can be closed from S10 to S12.
Important: S9 to S10 remains open.**

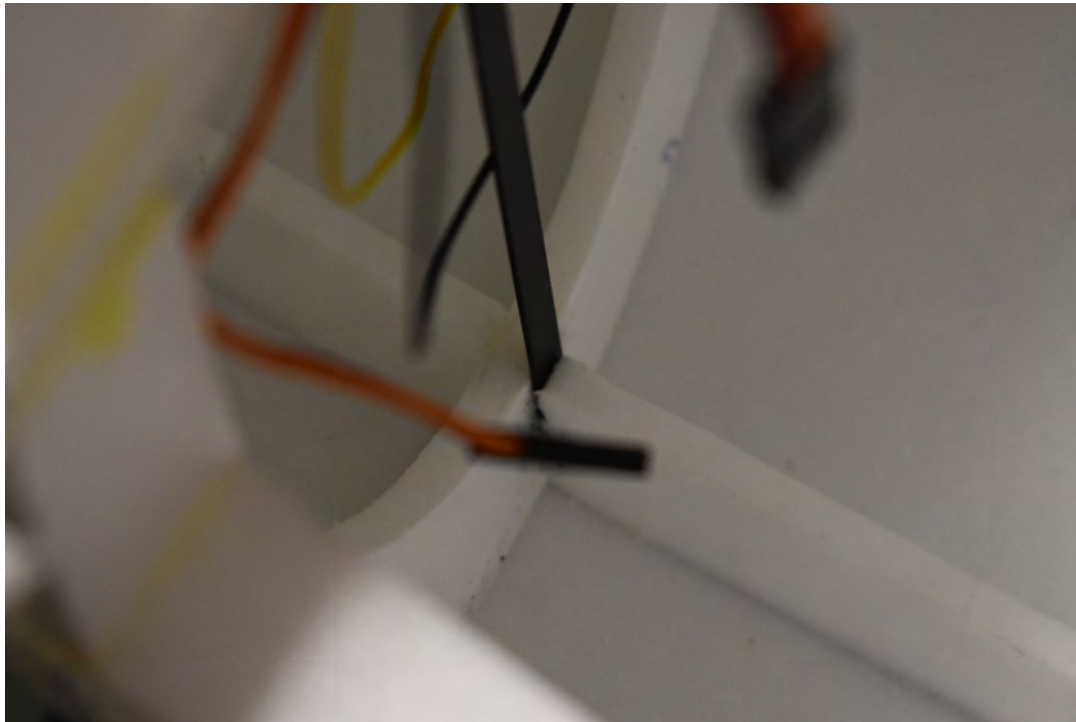


As an example, the servo for the elevator can be placed half open in the planking. So it's better to replace later.



Now the rudder can be put on. The CFRP rod runs "in front" of the S10 frame and the front edge of the Elevator along the lower stringer. Cut this in so that the CFRP rod gets enough hold in the fuselage.

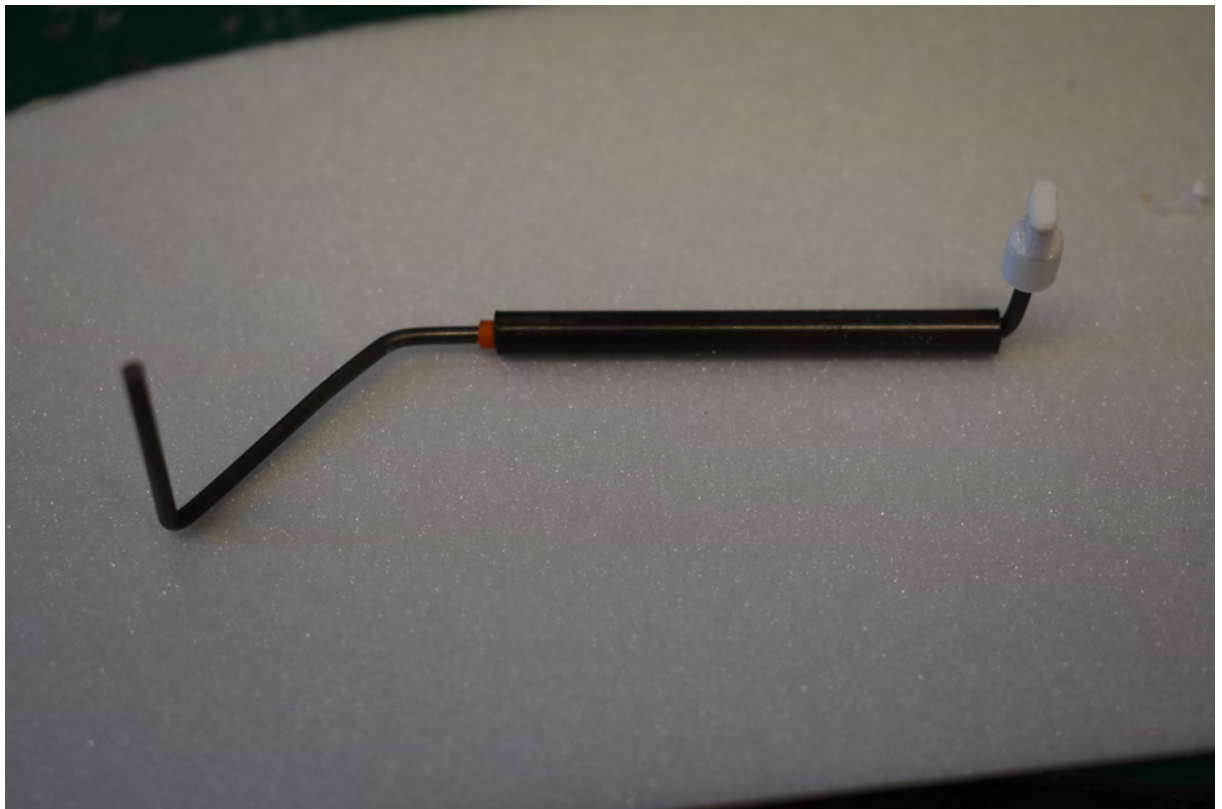
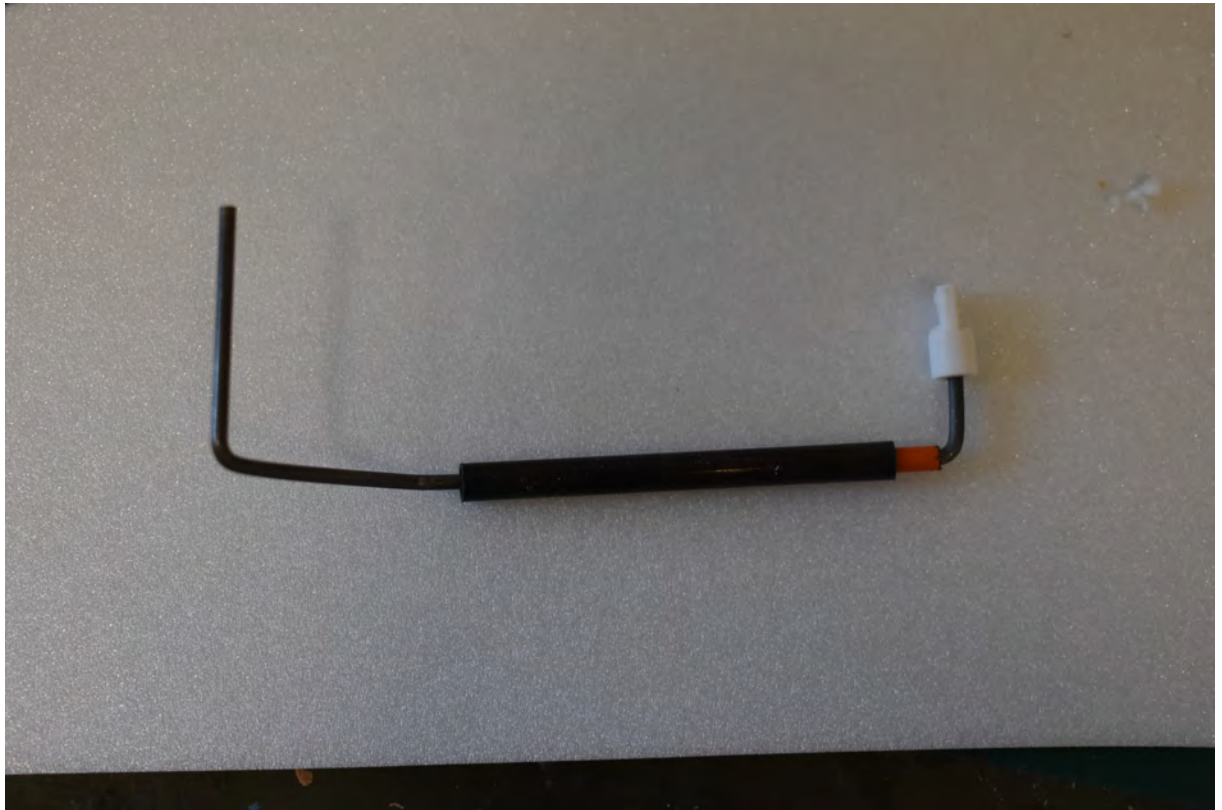




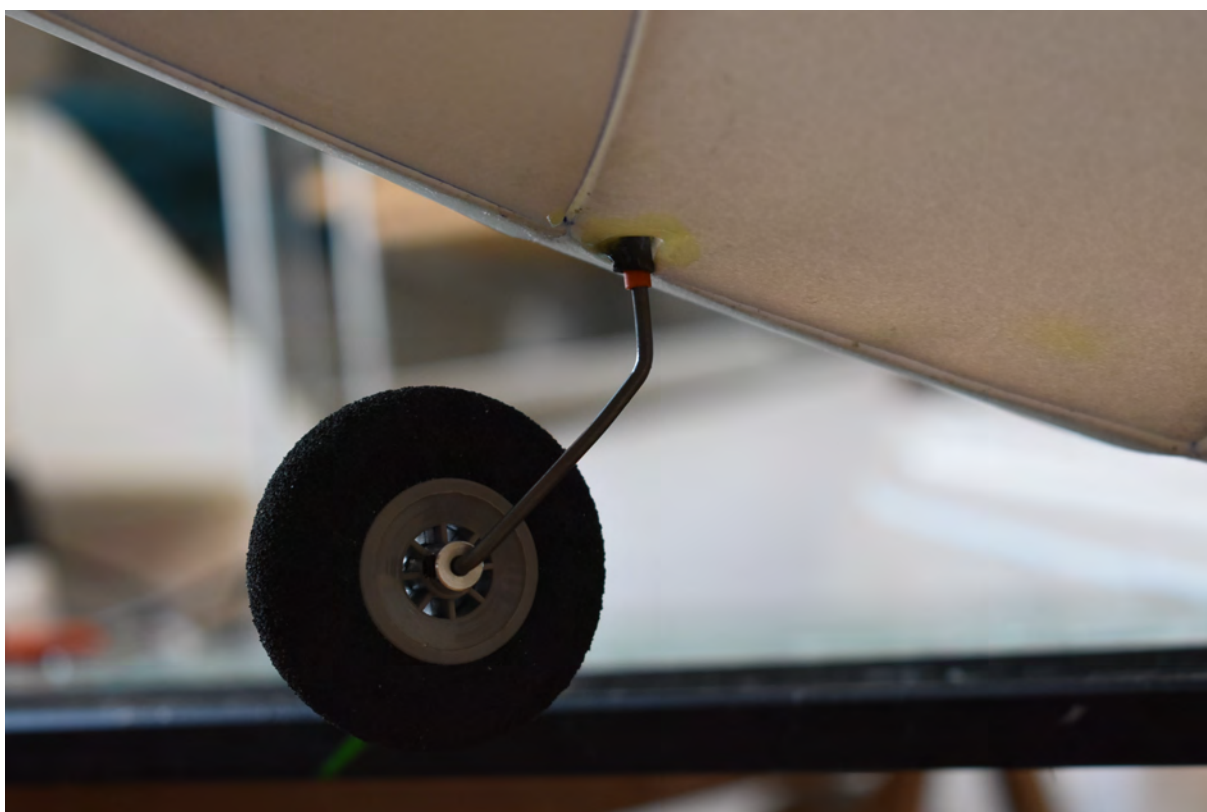
Align the rudder and glue it in the middle of the fuselage.

Now the servo cables should be extended to the area of the wing opening.

If a steerable tailwheel is to be installed, bend the wire according to the template and use a bearing sleeve. Mount a control horn on the end of the wire.



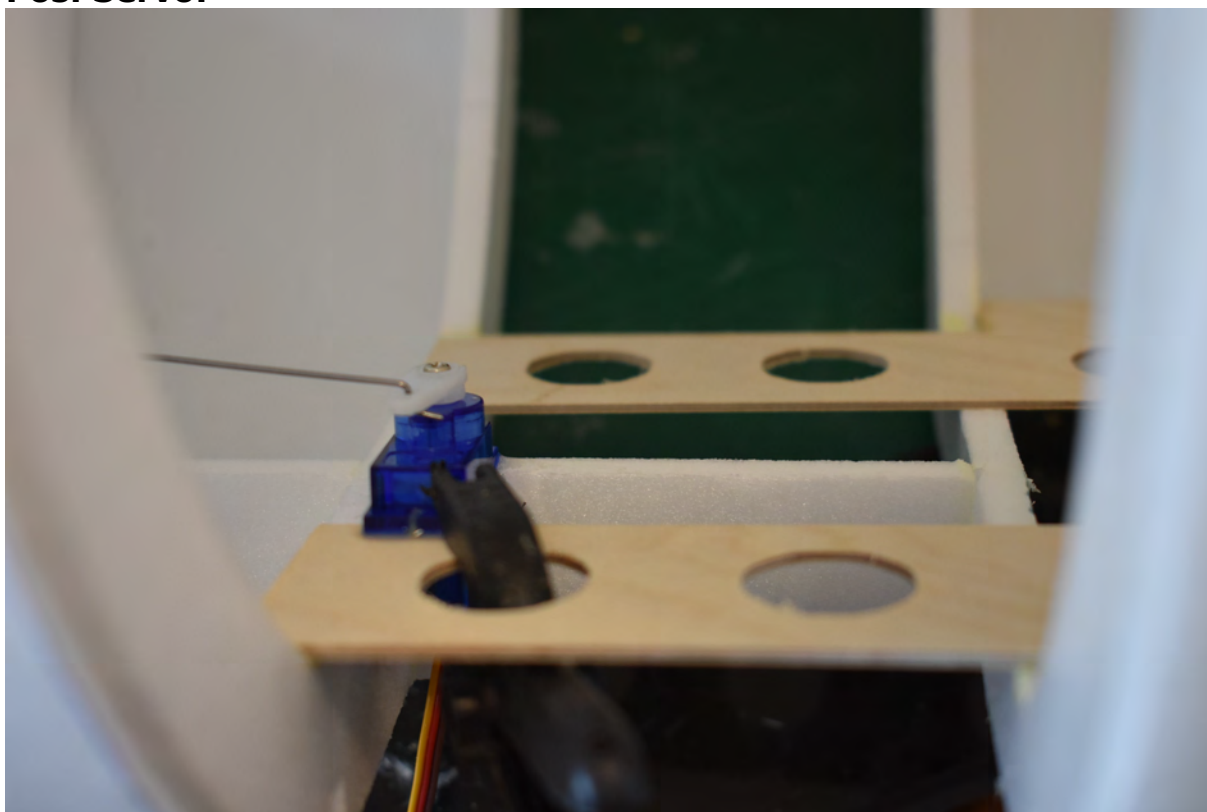
Push the wire through the fuselage directly along the CFRP rod, this is where the tailwheel is in the most stable position.



Lay the Bowden cable into the wing cutout where the servo is located. Fix the Bowden cable to the frames.



Pos. Servo:



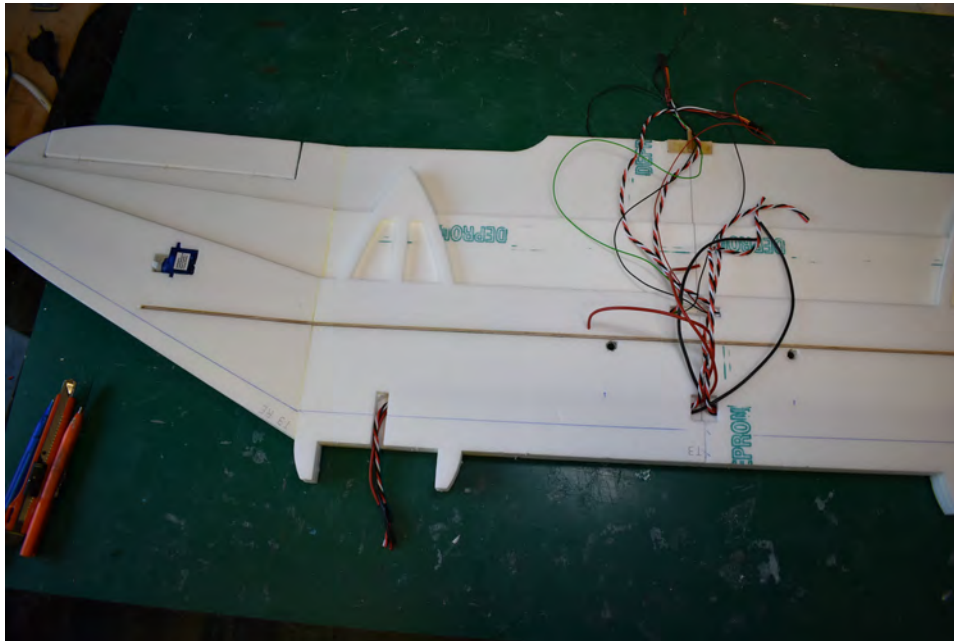
**Now the rear can be completely planked.
Wing final assembly:**

KF profile – sand leading edge.

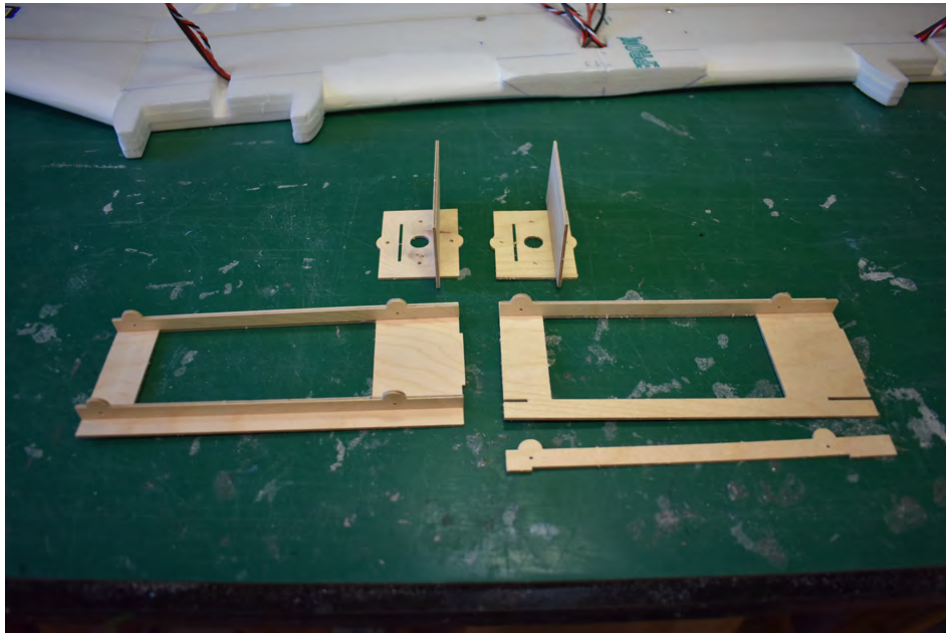
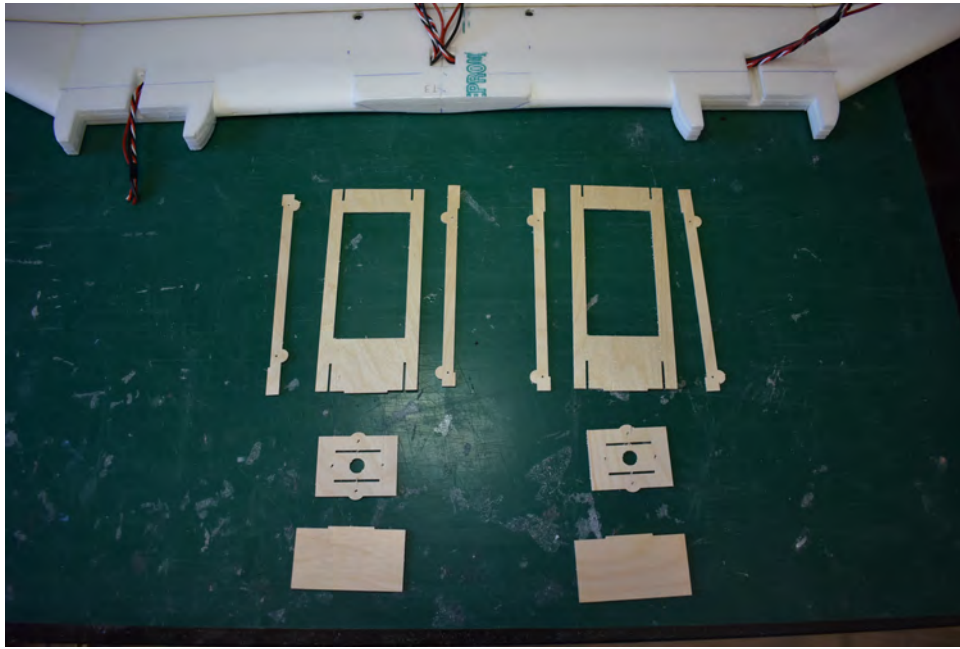
**Important: the KF steps must remain sharp-edged!
Only the leading edge and the wingtips are
sanded.**

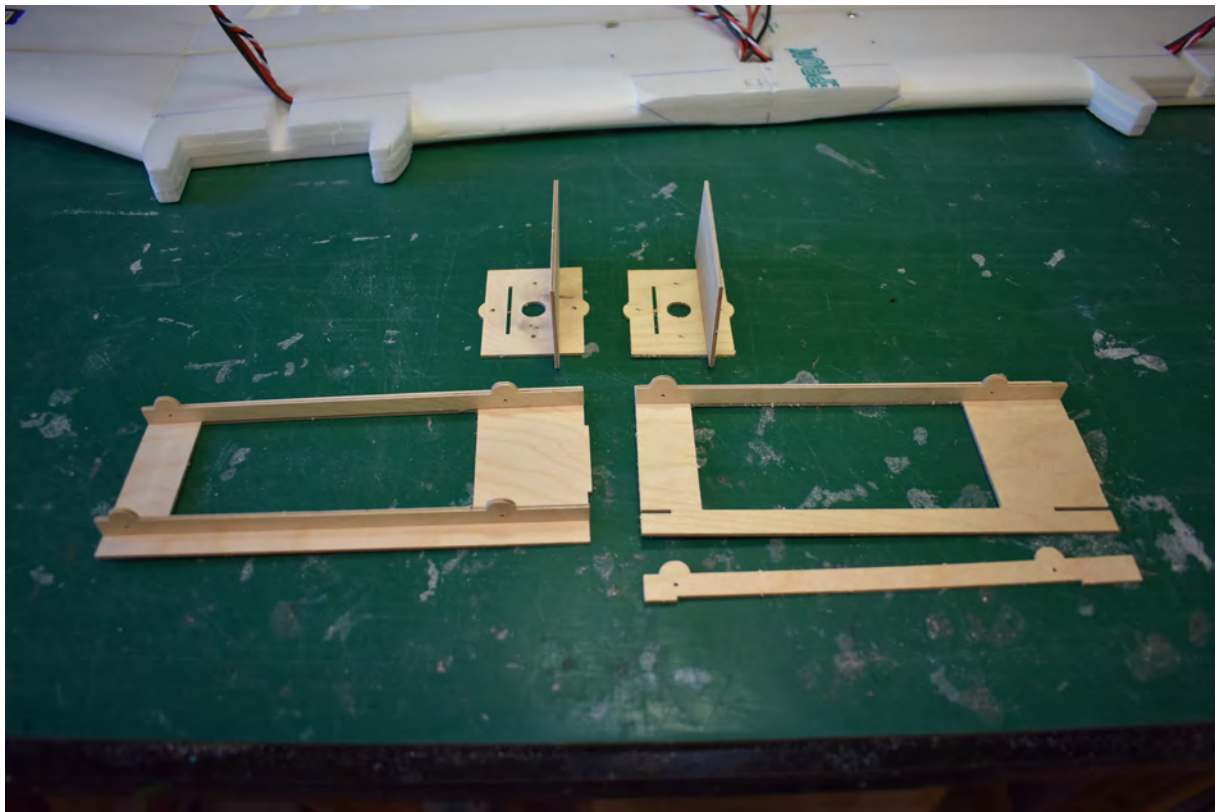
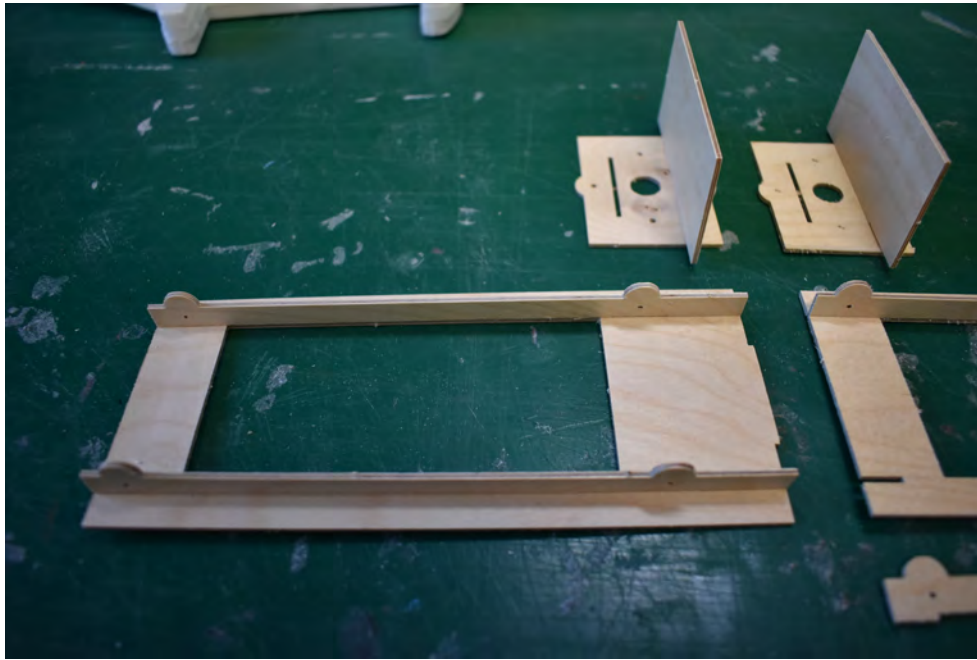


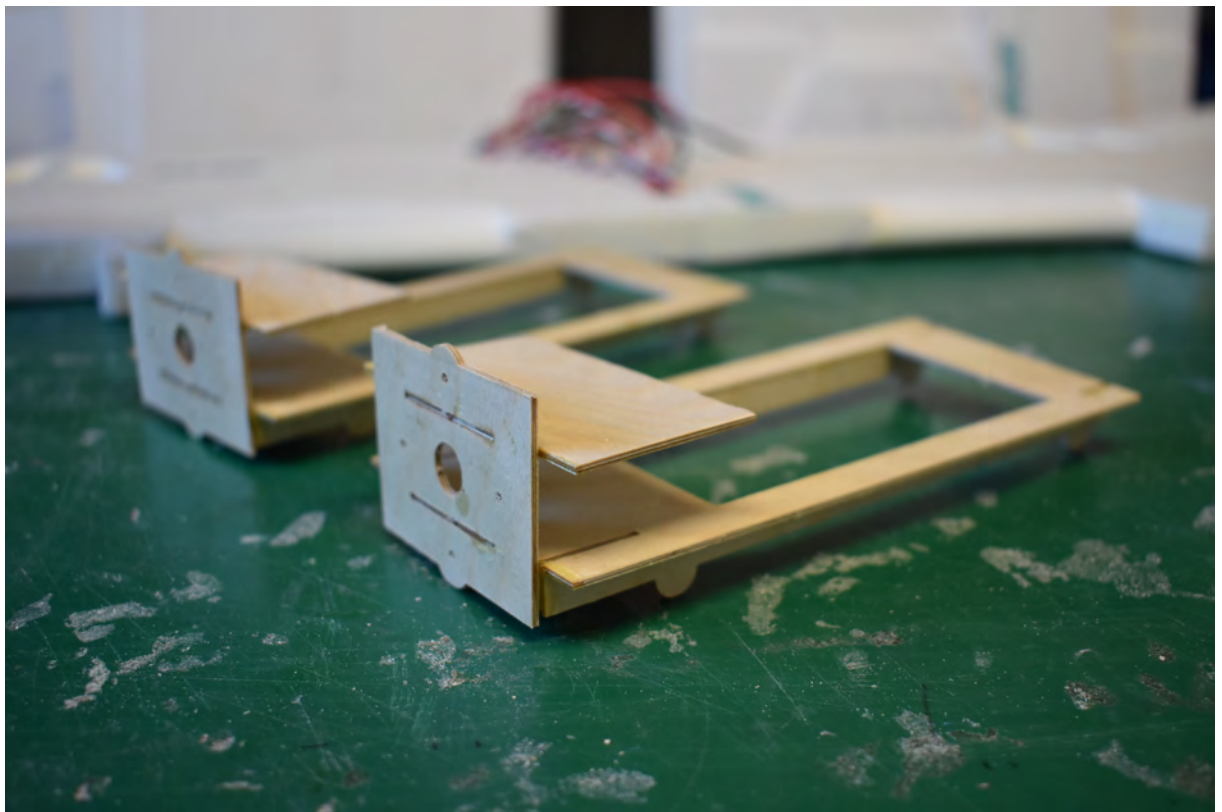
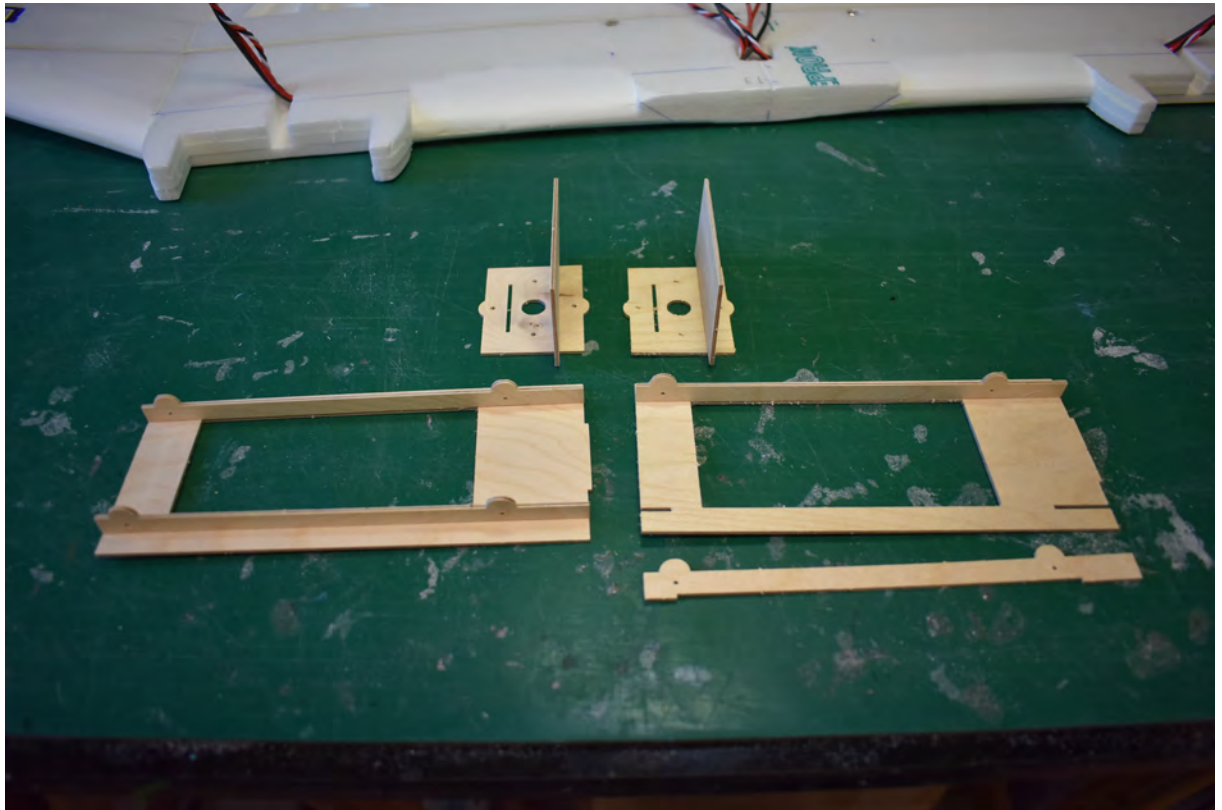
Mark the area to be sanded.



Now mount the motor and chassis carrier.

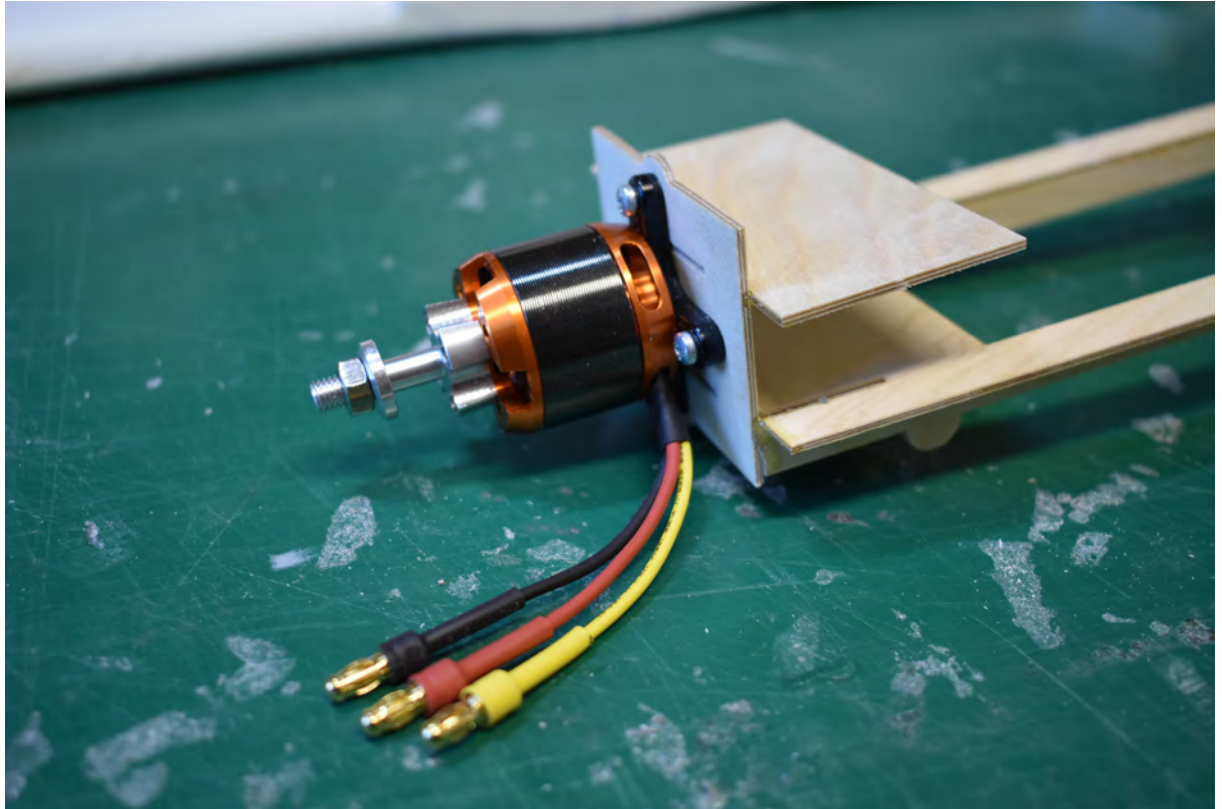




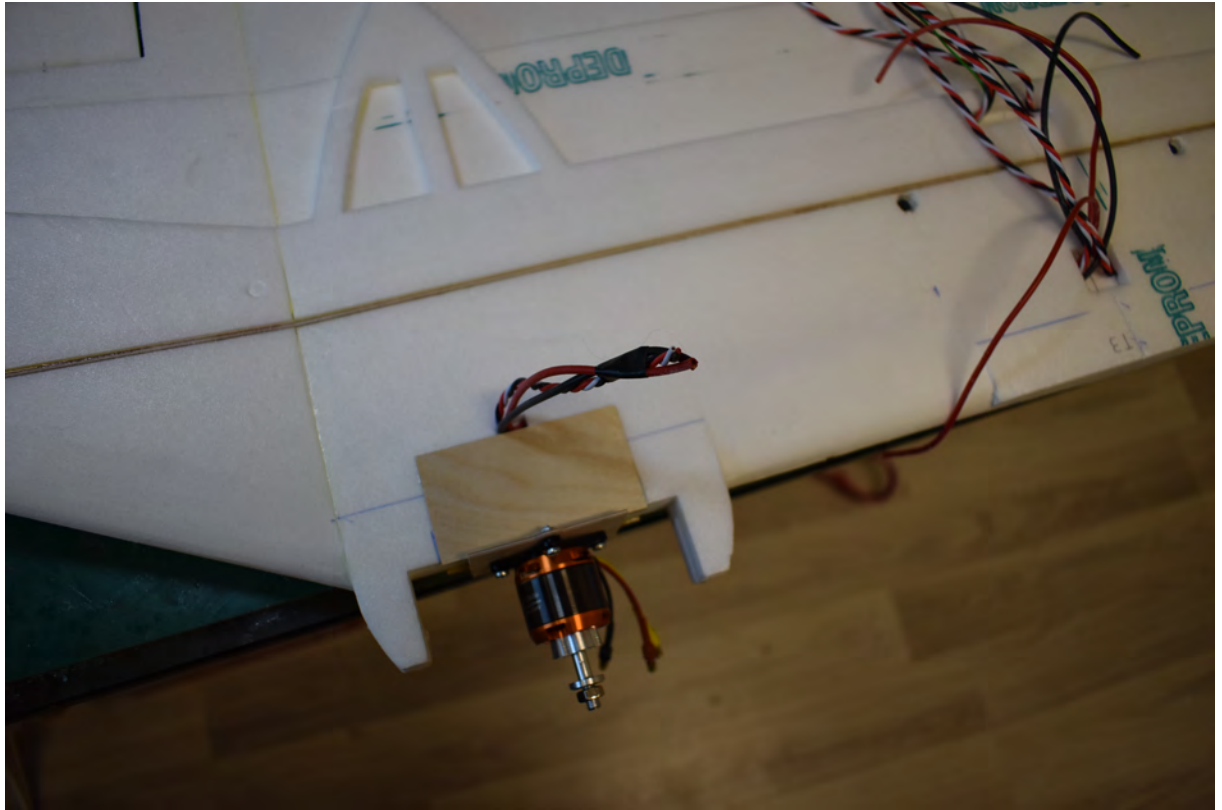


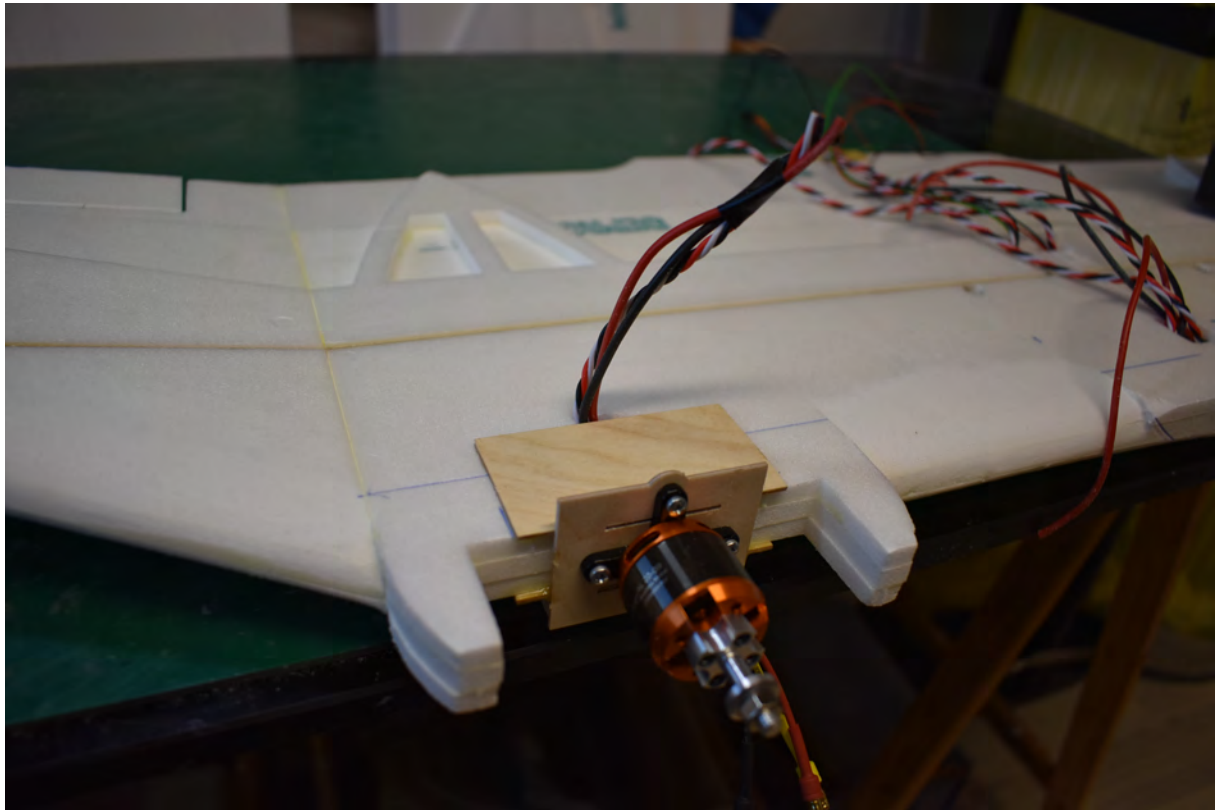
Assembly of the engines:

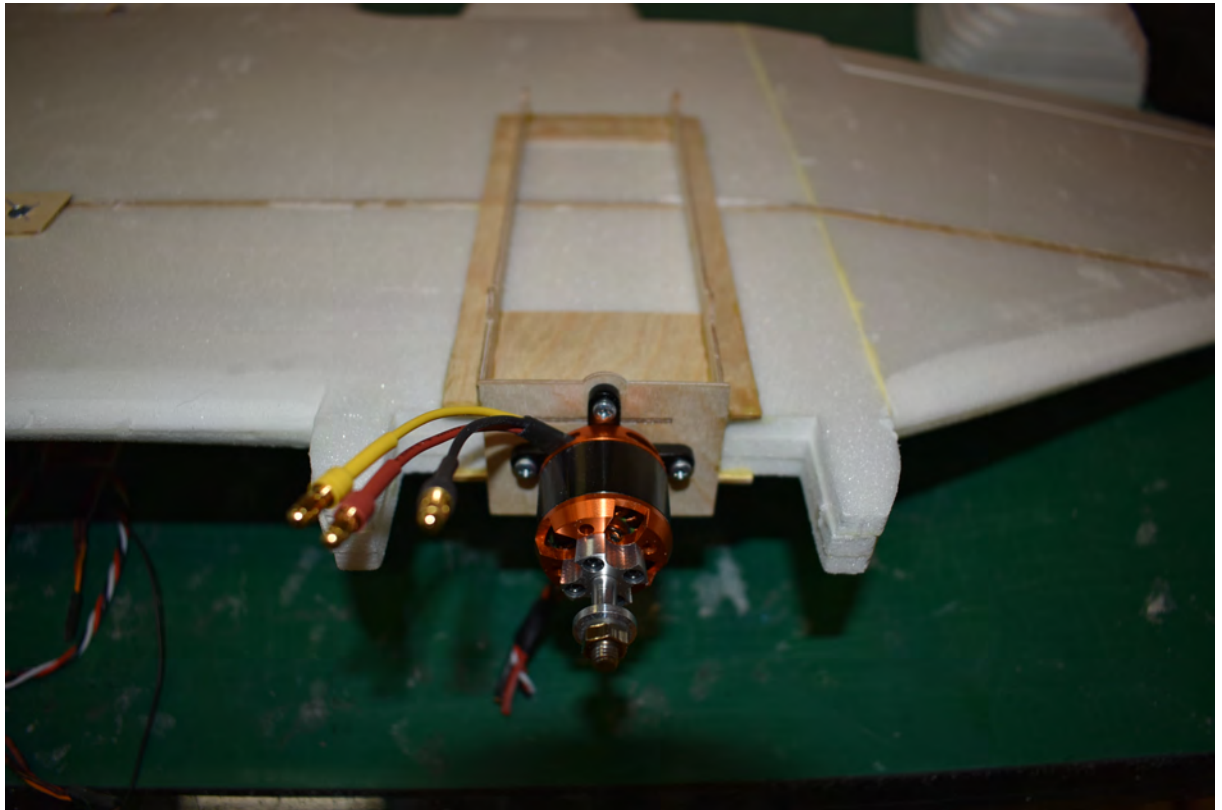
Installed here: *D Power AL 28-09*



Glue the carrier in the middle of the nacelle at the top and also at the bottom of the wing



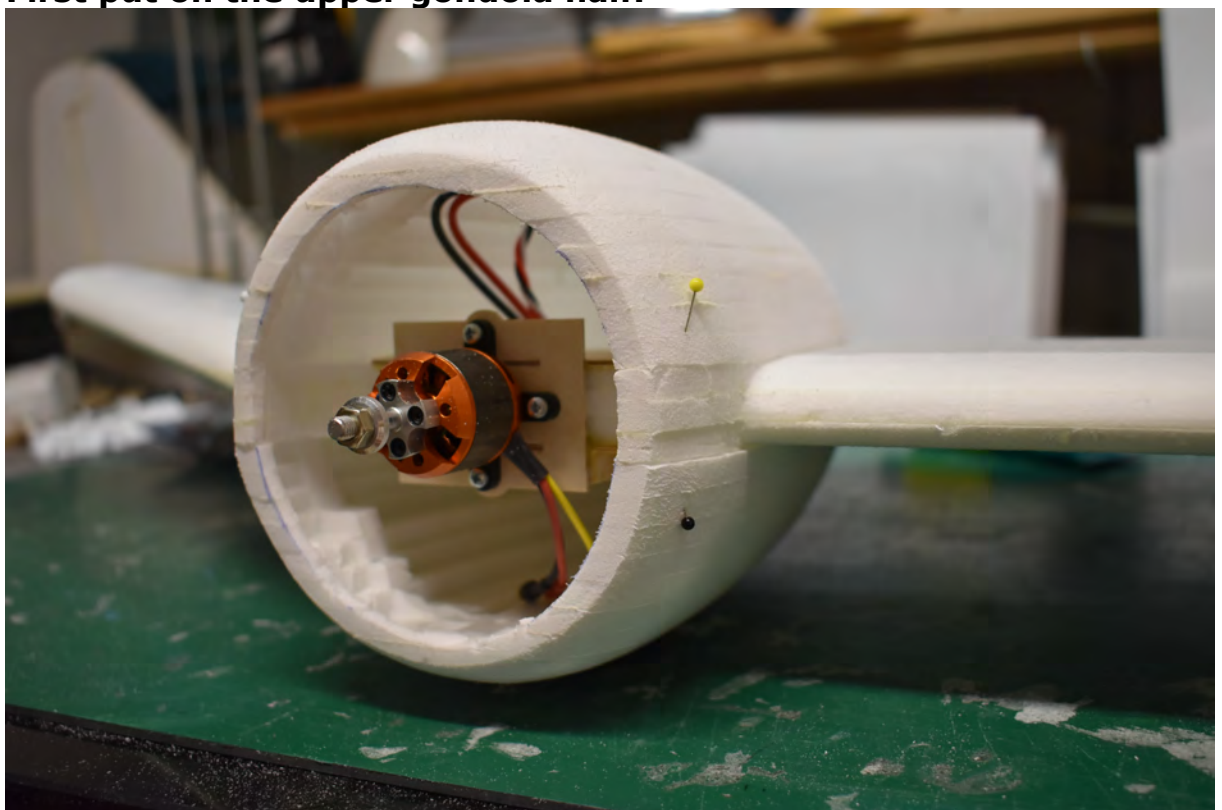




Finally, check the four holes that the 2 mm landing gear wire fits through, drill out if necessary.

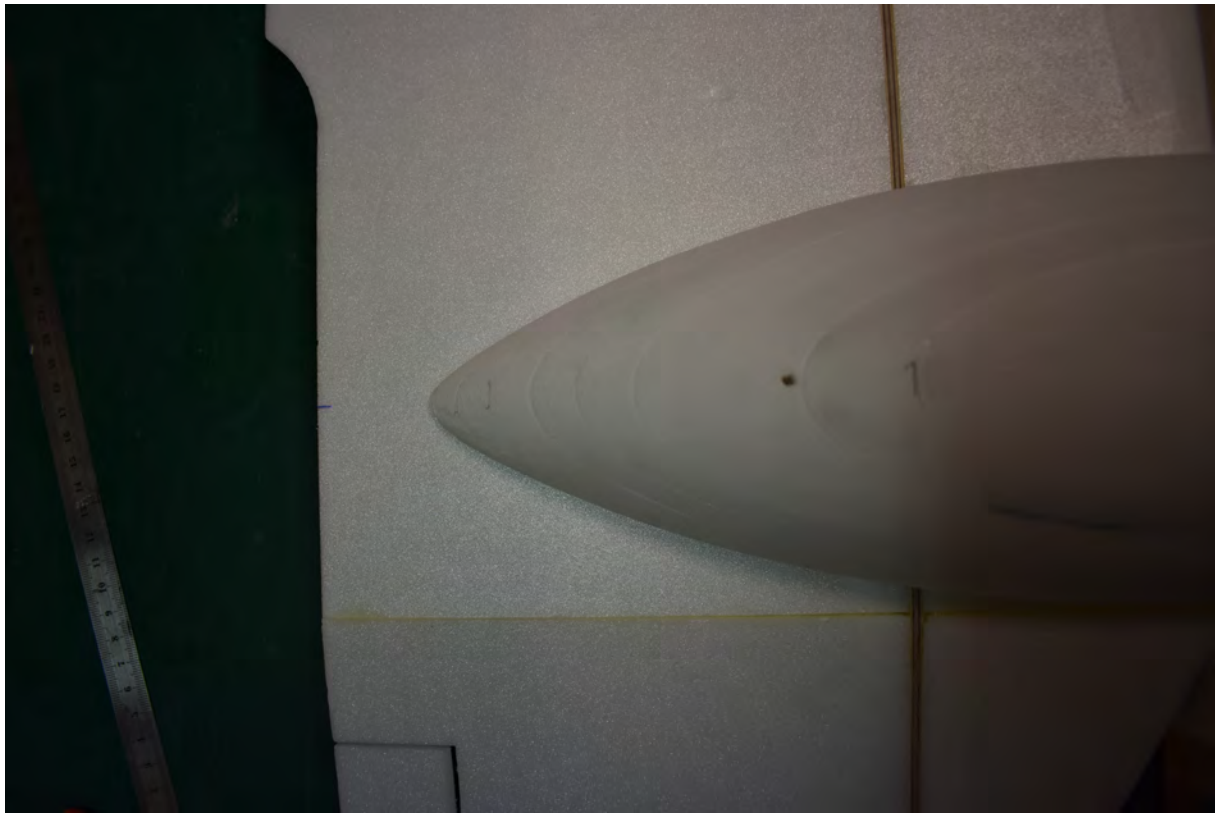
gondola assembly:

First put on the upper gondola half.



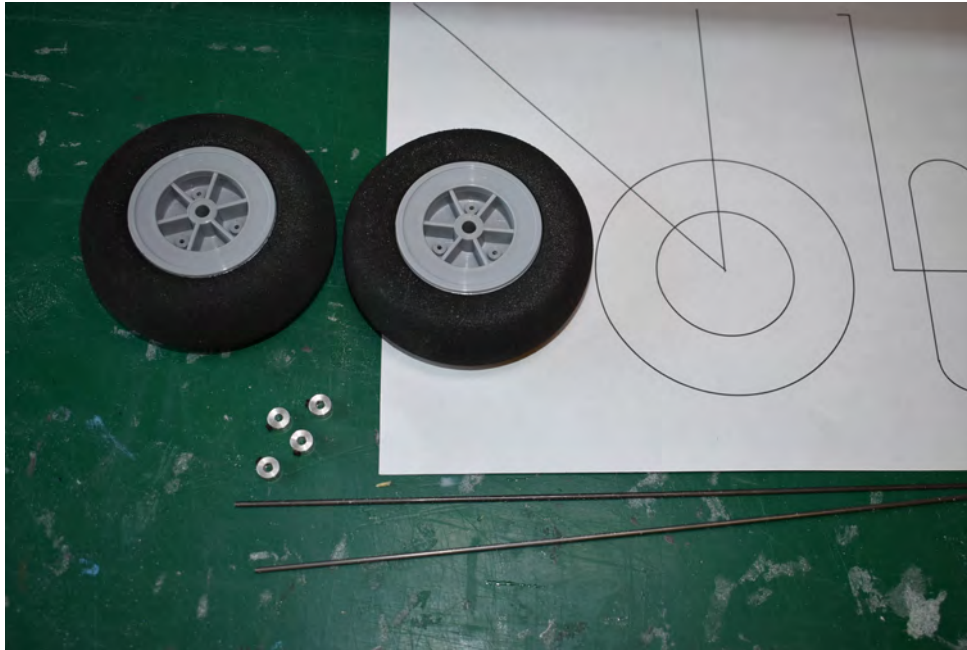


Then glue the lower half of the nacelle on, first transferring the center of the nacelle center from above to the lower wing. (pen mark)

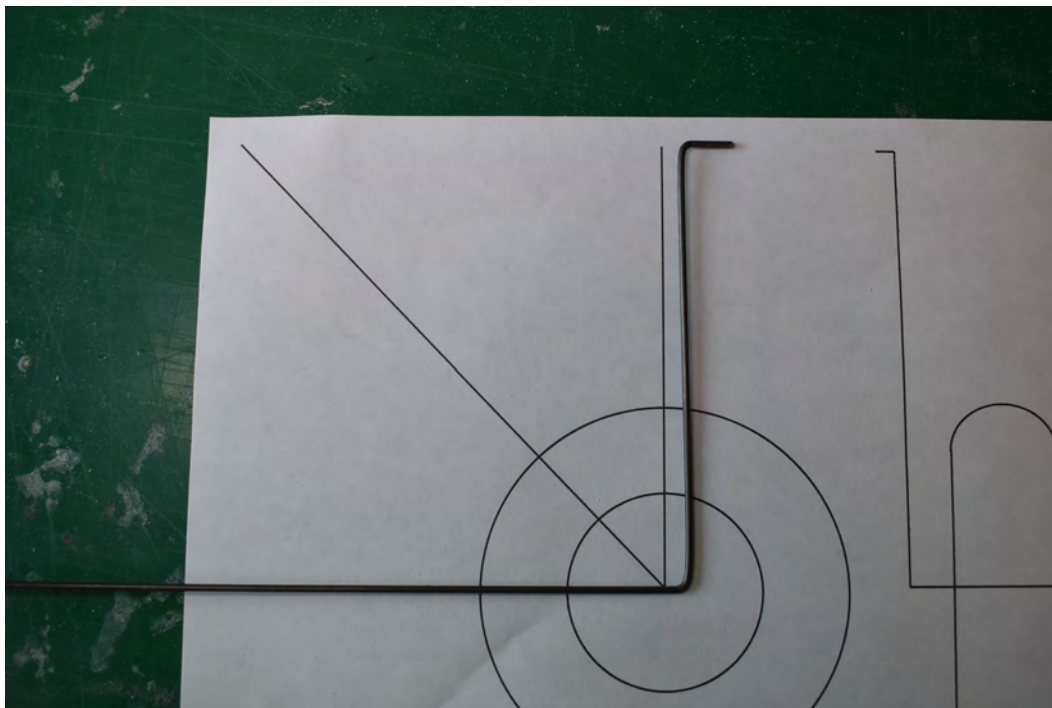


Landing gear:

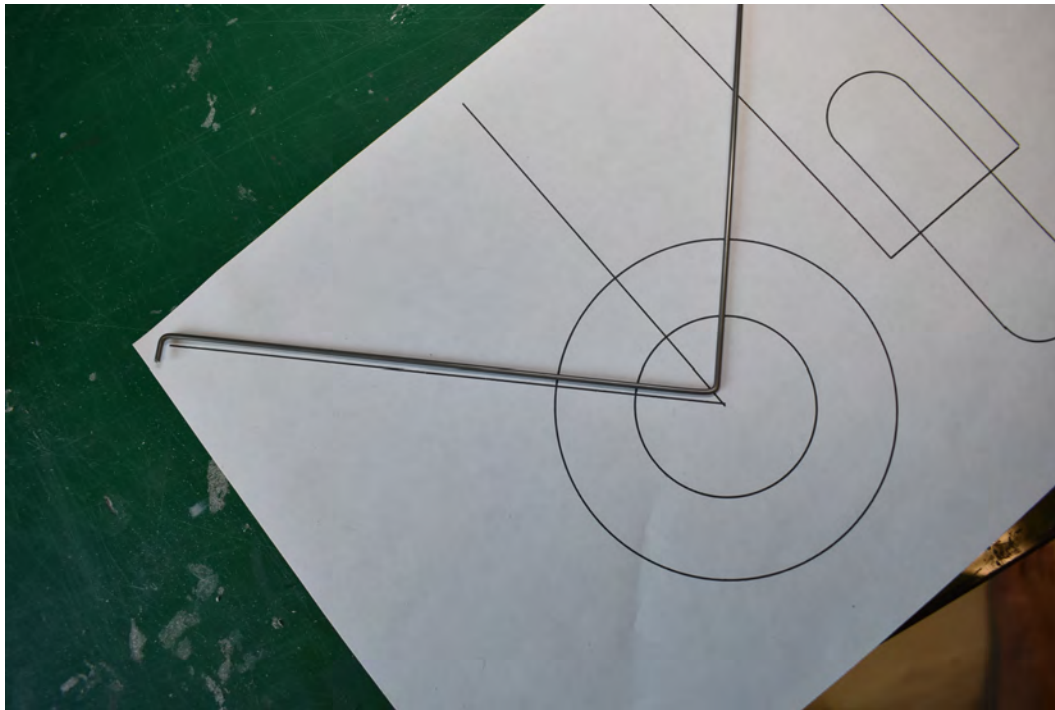
In addition to the wheels also two 2 mm landing gear wires and Prepare adjusting rings with an inner diameter of 4 mm.



Bend one side first, bend approx. 8 mm at the end.



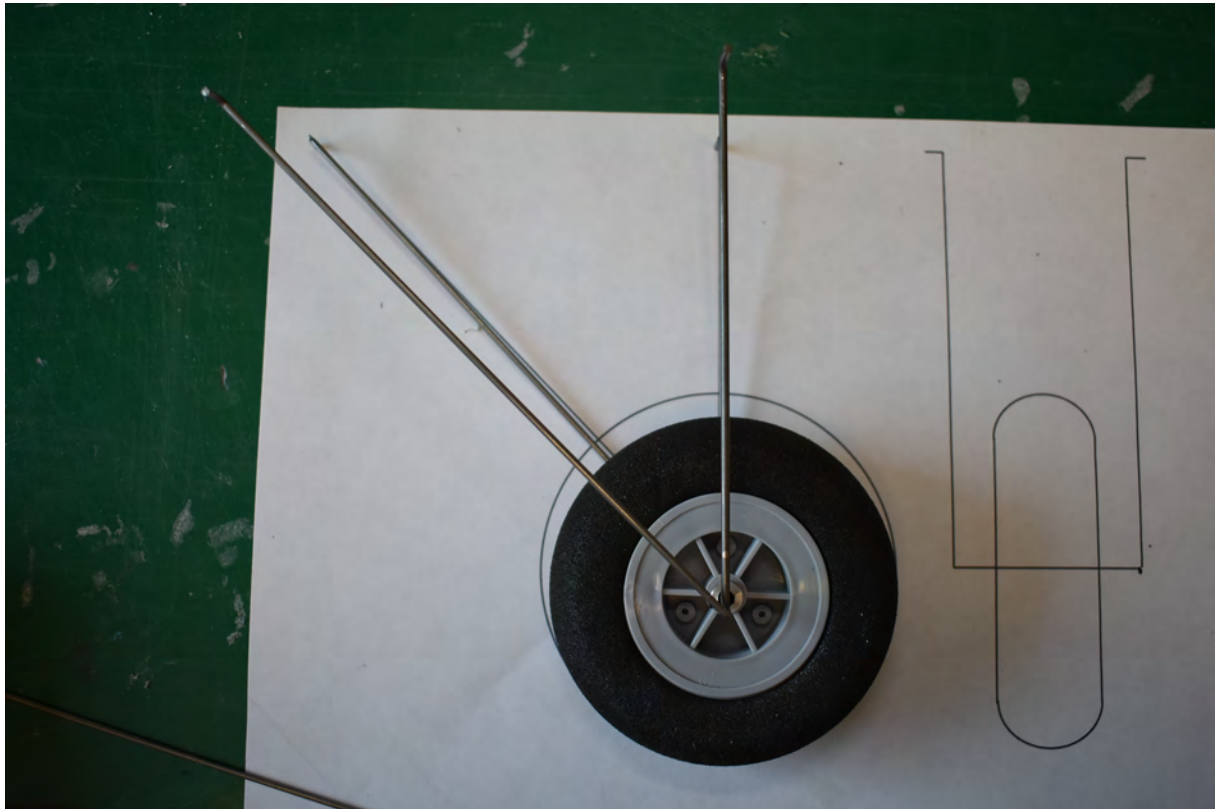
Bend another wire for the longer rear wires in the same way.



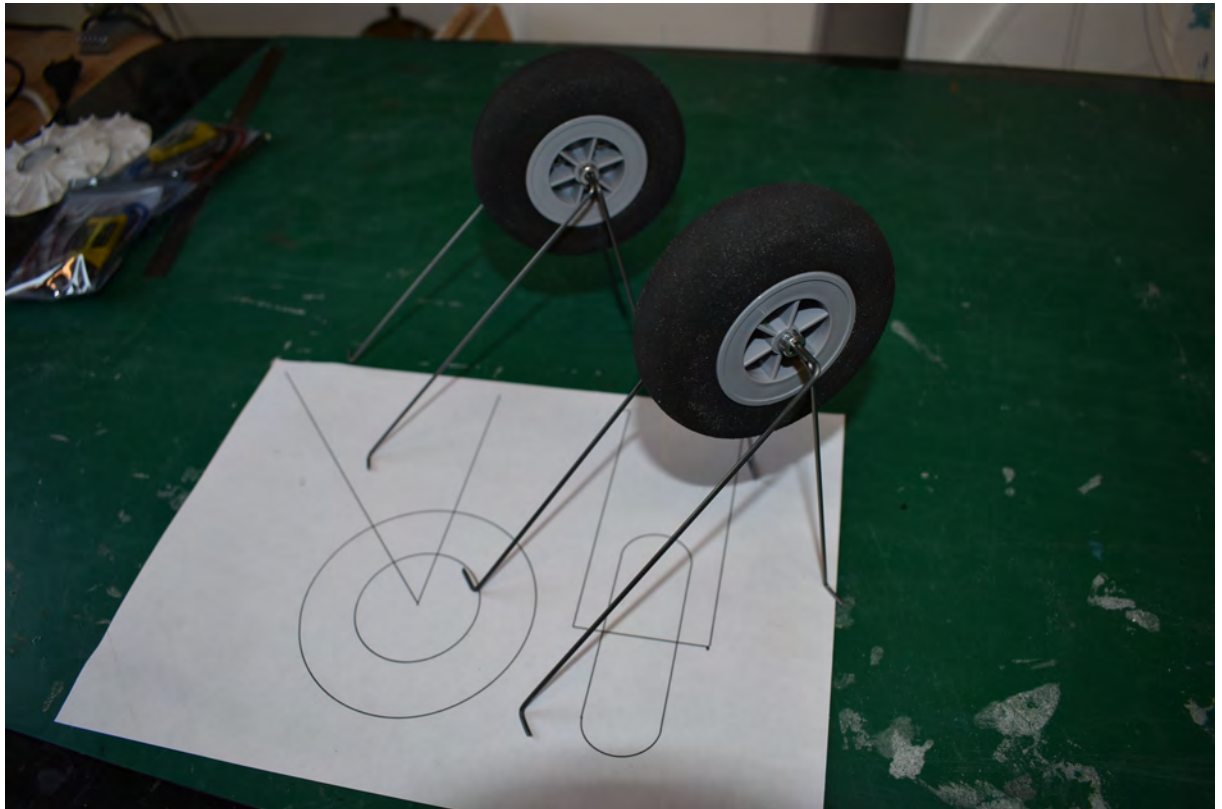
Now both wires (1 X long and 1 X short) have to be fed into the wheel. The adjusting rings also plug in on both sides.



Now bend the other side as closely as possible parallel to the first.



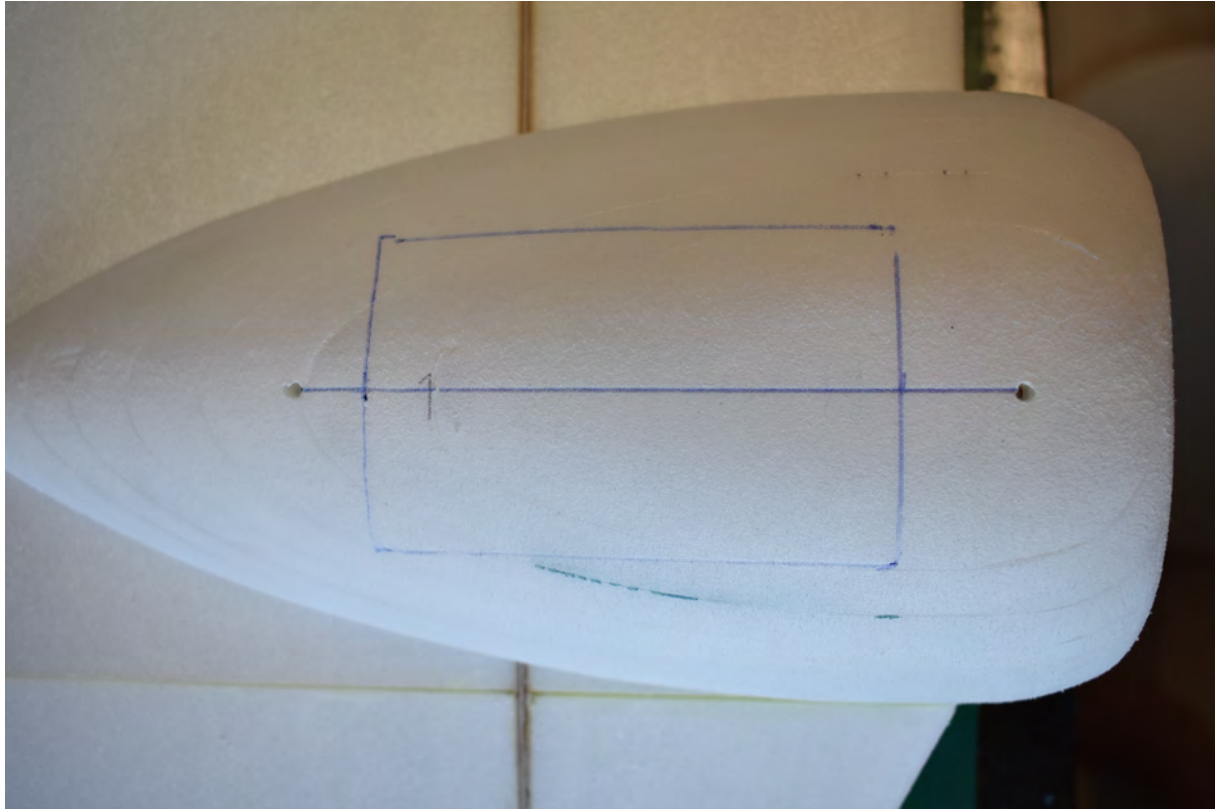
The adjusting rings convey that the wheel is in the middle of the wire.



Now the necessary area can be cut out on the lower gondola, which is necessary to insert the landing gear. Measure 50mm from the front edge. This is where the excerpt begins.

The width of the opening is: 60 mm

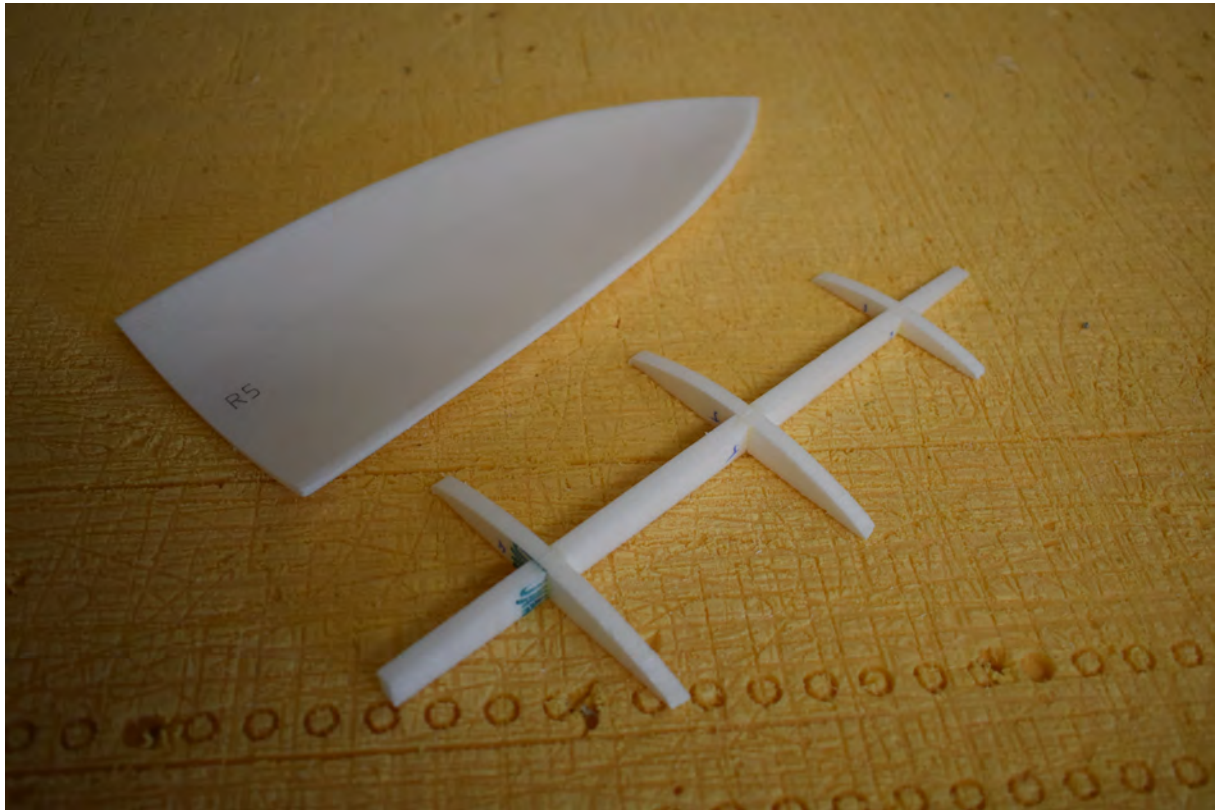
The length of the neckline is 143 mm



The landing gear is only inserted into the four holes. The internal tension of the wire prevents the wire from levering out. The landing gear can always be removed later for repairs or similar.

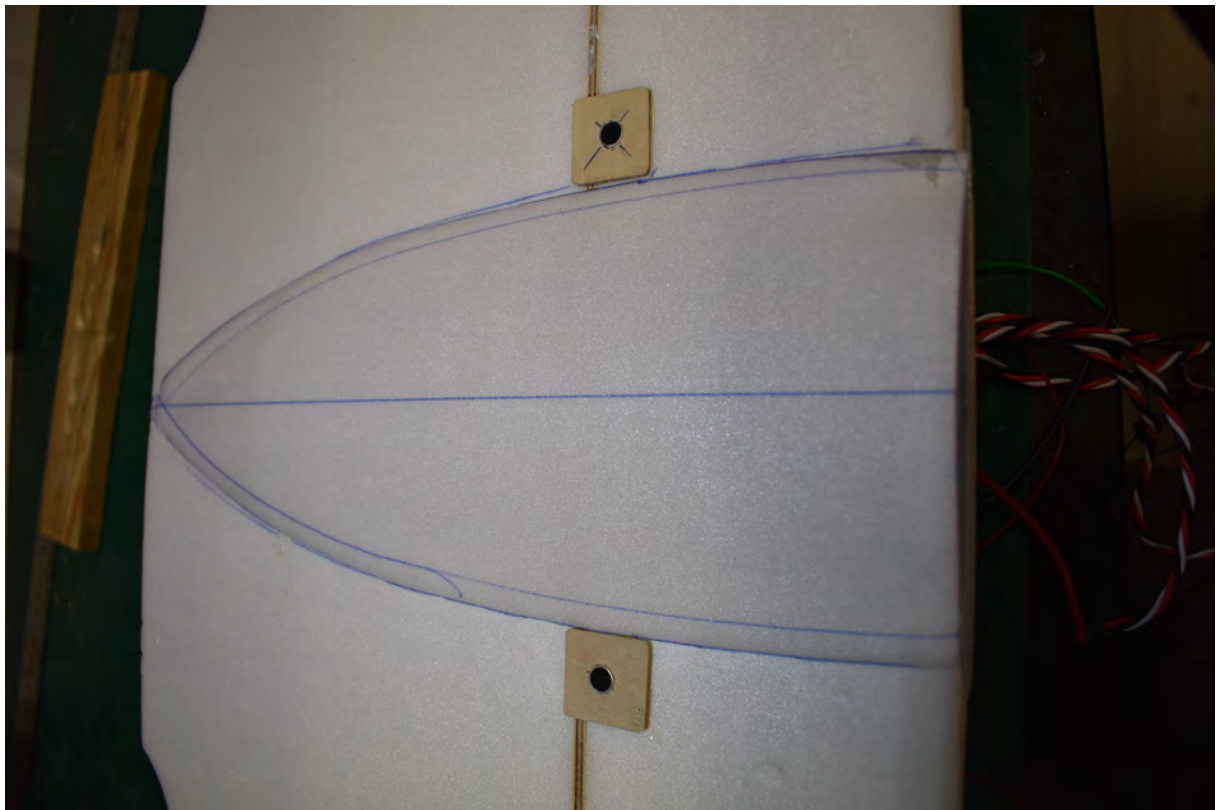
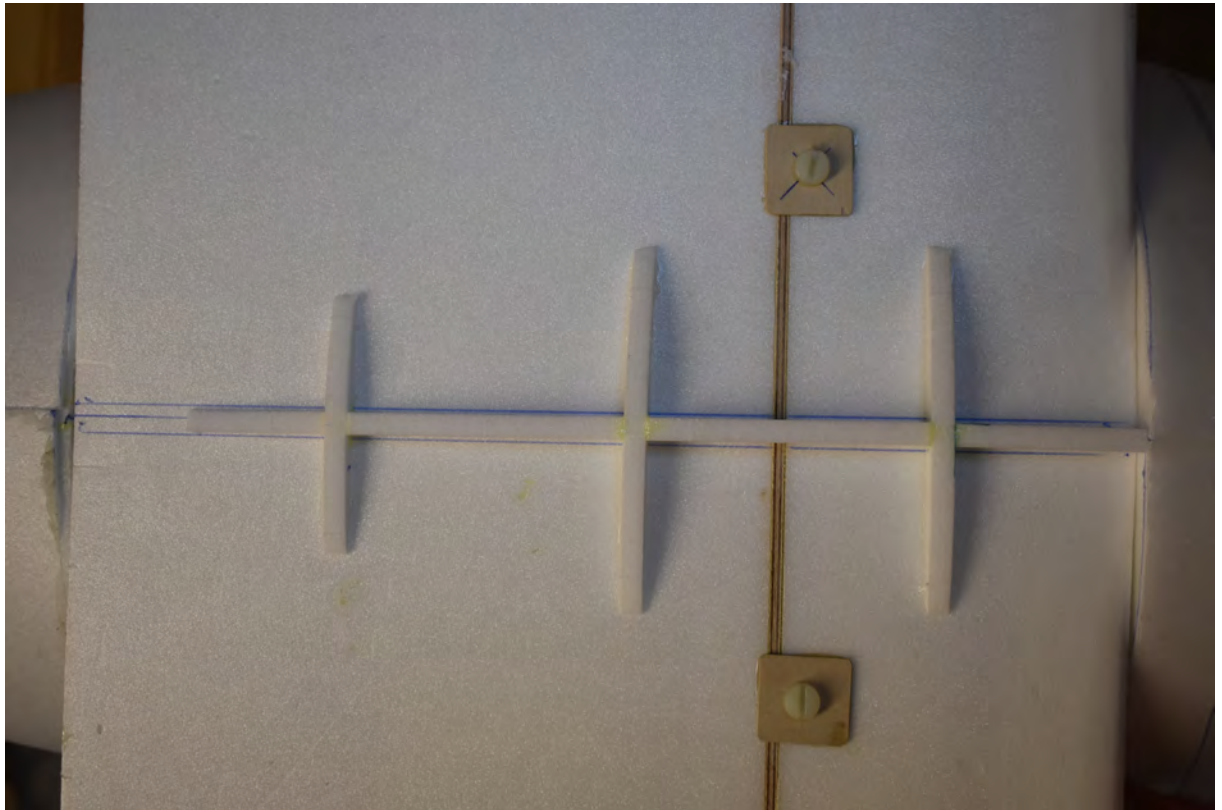


**The missing fuselage attachment below the wing can now be glued on.
Bend the R5 a little and sand the glued areas sharply so that the planking sits neatly on the wing.**



Insert and glue the three frames R7 and R8 into the stringer R6.

With the wing mounted, place the assembly in the middle, flush at the front.



**Finally comes the wing transition on the fuselage
Next turn, which is so typical of the DC3.**

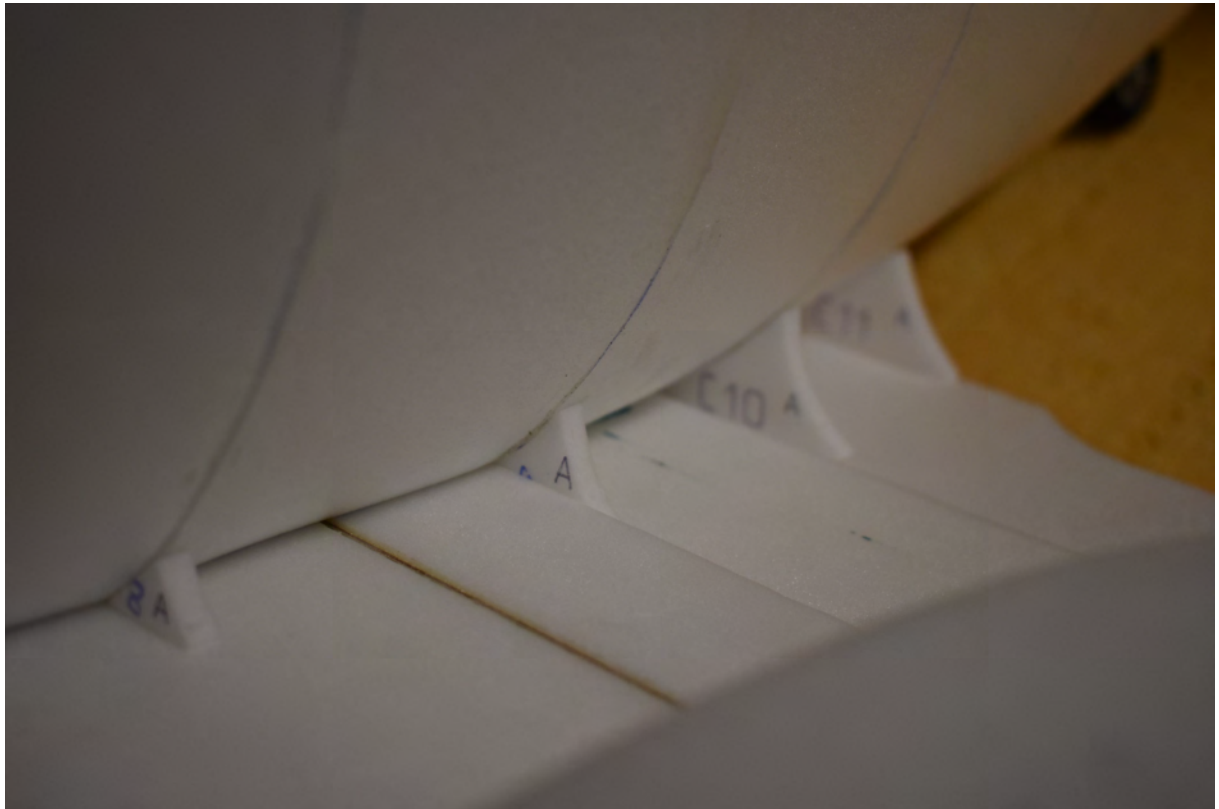
The frames C8 to C11 are marked with an "A". showing the outside edge.

C8 is located exactly on frame S4, which is only glued to the fuselage.

C9 is glued flush to the step after the first step,

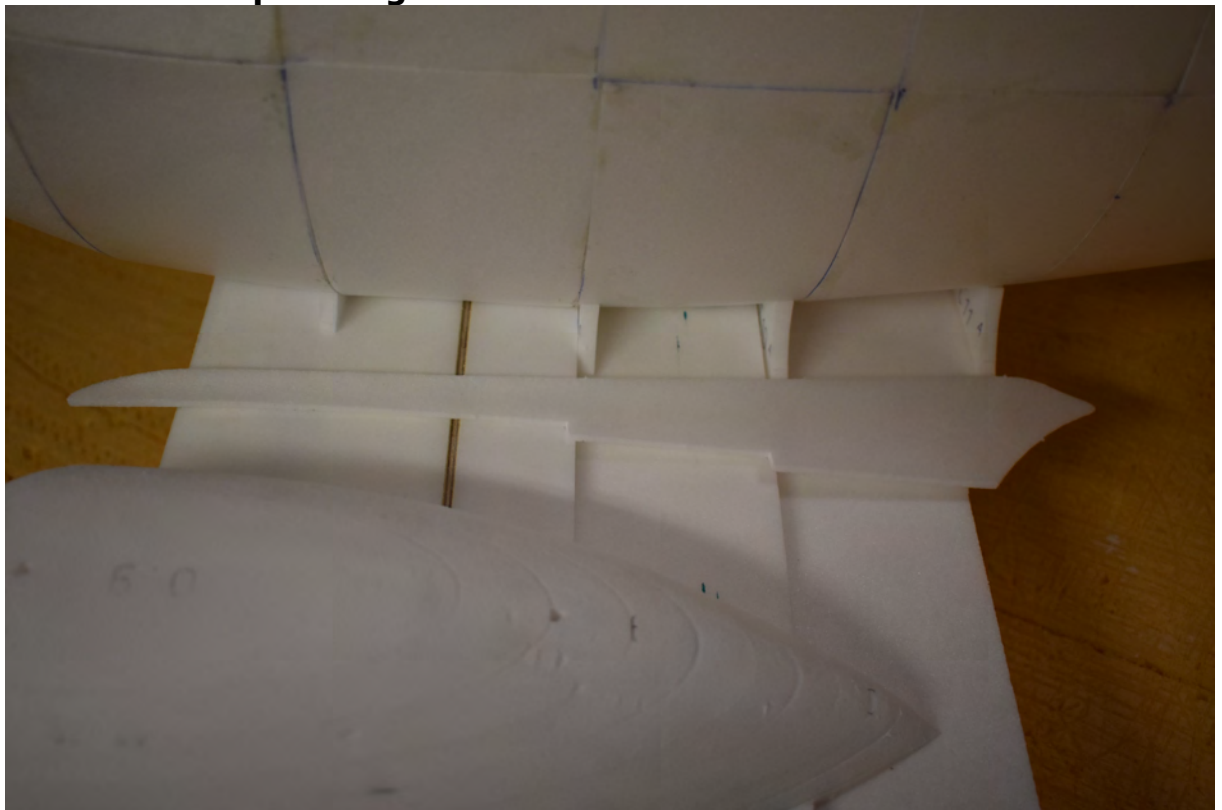
C10 to R6

And C11 at the end of the wing.



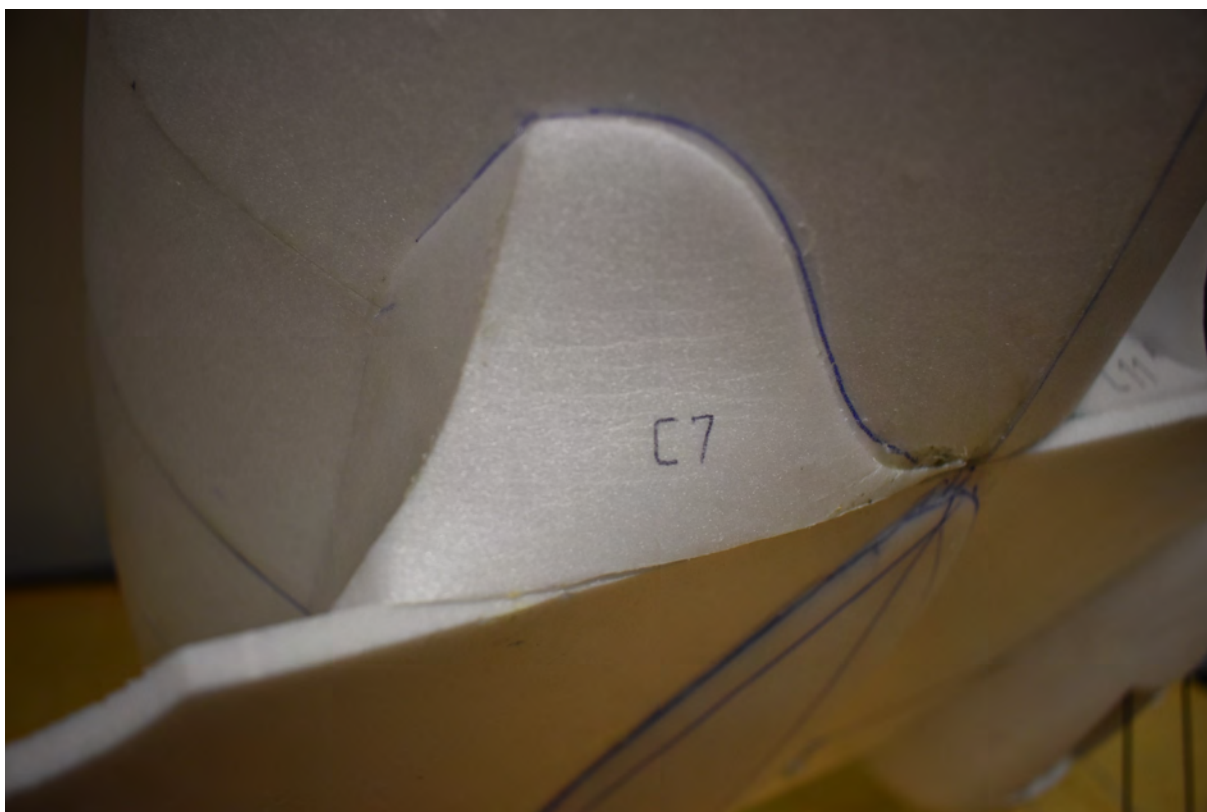


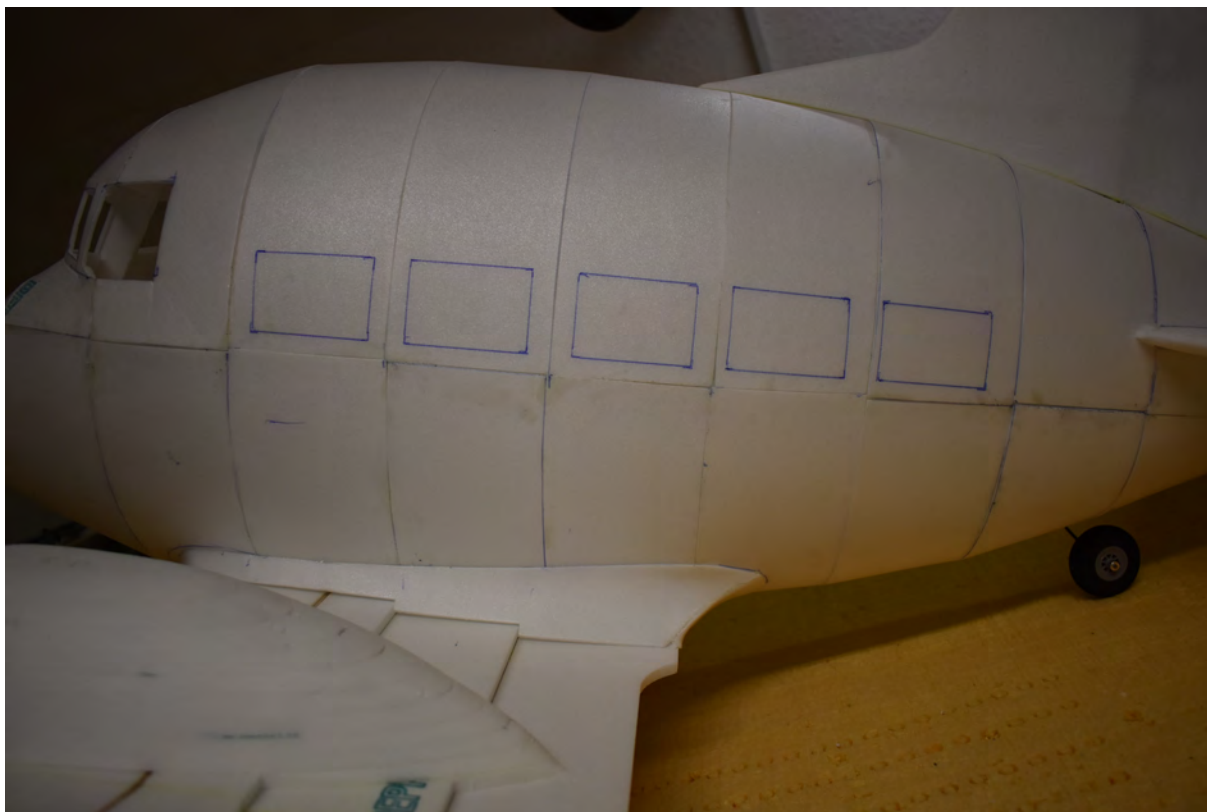
Bend the planking as tightly as possible and glue it to the fuselage and frames. Let it run out at the front according to the course of the planking.

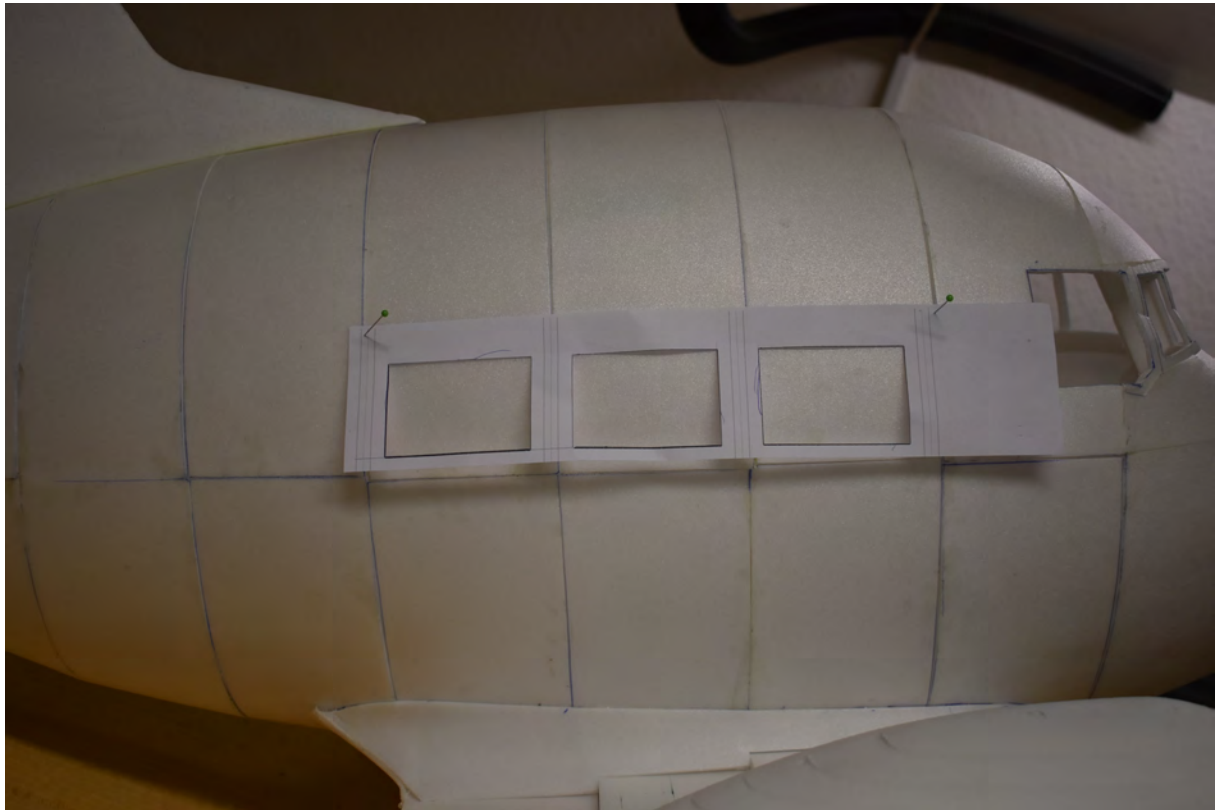




C7 completes the fairing. Bend them a bit and insert them.





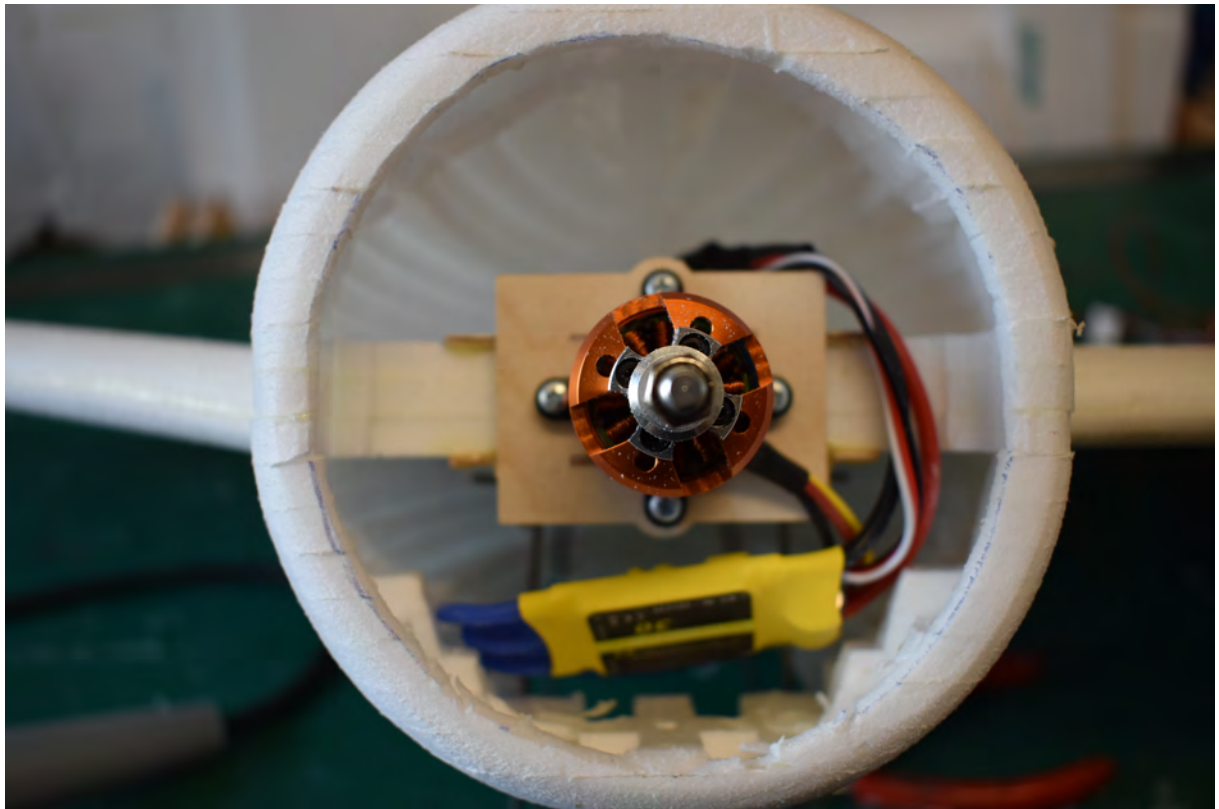


The template for the windows is used to mark the row of windows on the fuselage. In order to cut safely over the longitudinal stringer, place the template slightly higher than the planking joint. After marking the first three windows, the template is pulled back to extend the row of windows to 5. Make sure that the window cutout fits into the frames. The windows can be closed with 0.3 mm clear PVC film

RC system:

Since the cables in the channels in the wing still have to be pulled, pull them carefully into the nacelle until there is enough space to solder the controller.

The place for the controller is best below the wing, since the landing gear bay cools the controller well here and is also not visible. After soldering, check the direction of rotation of the motors. Pull the cable back into the fuselage until the controller is seated snugly in the nacelle.



Prepare all cables in the fuselage for the receiver and the flight battery.

Depending on how the battery is used (e.g. 3S 3500 mAh), it is at the top because the entire weight of the battery of this size is necessary to maintain the center of gravity.

After the functional test, the engine nacelles can be closed with the PVC engine dummies. Cut out the area of the motors enough so that the motors run freely and do not rub against the PCV. The outer diameter should be a few millimeters larger than the opening of the nacelle. So you can stick the dummies from the inside to the opening. Then mount the propellers.

details and paintwork.

Now the model can be sanded completely. "Modelier" "Moltofill", a kind of paste for repairing plaster, can be optimally used to fill the gaps for adhesive gaps. After curing, the material is hardly harder than Depron and you have a clean shell in your hands.



For the finish I recommend "Hobbyline" water-based paints. Depron, lightly sanded, can be rolled very smoothly with a soft paint roller. If you want to achieve a little more stability, you should apply parquet lacquer from "Aqua Clou" (water-based) and apply several coats with intermediate sanding. This makes Depron more firm and somewhat more stable.



1. RC system:

2. Rudder deflections: Height 25 mm, side 30 mm and aileron 25 mm to each side.

3. Center of gravity: The center of gravity is 84 mm from the leading edge of the wing.

4. Battery attachment: e.g. using Velcro in the bow on the battery board

Building inquiries, advice, feedback or suggestions:

I would be happy if I would receive a feedback from you via email about construction, impressions or photos for the customer gallery to be viewed in the shop.

Of course I help with construction problems by phone or email. I would be happy to call you back by email.

Always a good flight with your new model.



Frank Seuffert

info@scale-parkflyer.de

Warning!!

Before you fly the R/C model it is essential to read the operating and building instructions in full. This sheet is part of the operating instructions. Please keep it in a safe place for further reference. If you ever sell the model make sure to pass on this sheet to the new owner together with the model. A remote controlled model aircraft (model plane) is not a toy. It is not suitable for children under 14 years of age unless they fly under strict supervision of a knowledgeable adult. Since the manufacturer and his agents have no control over the proper assembly, operation and maintenance of their products, no responsibility or liability can be assumed for their use. Correct assembly, safe operation and proper maintenance are the responsibility of the builder and the flyer.

Attention: Any rotating components on model aircrafts (propeller, main and tail rotor blades) are an ever present danger of injury to operators and spectators. This radio-controlled model aircraft is a technically complex device, which must be built exactly in accordance to the building instructions and operated and maintained with care by a responsible person. Failure to do so may result in a model incapable of safe flight operation. All fasteners and attachments must be secured for safe operation. Do not make any alterations.

General Safety Rules for flying an R/C model aircraft

NEVER ignore the local and national regulations for operating model airplanes. Contact local authorities, hobby shops, R/C clubs or the Academy of Model Aeronautics.

NEVER fly without appropriate liability insurance.

NEVER get near the model airplane with the propeller or main rotor spinning. Keep a safe distance of at least 10 ft. Ask spectators to clear the scene and stay away at least 35 ft. Be aware that rotating propellers and rotor blades are very dangerous and can cause serious injury.

NEVER fly your R/C model near or over crowds, playgrounds, streets, rail roads, airports, power lines or hospitals/radiology practices.

NEVER start and fly with unsafe and questionable equipment.

NEVER fly if you don't feel confident with your equipment, your location or your capabilities.

ALWAYS fly at approved flying fields and obey field regulations.

ALWAYS follow frequency control procedures. Interference can be dangerous to all. Prior to turning on your R/C equipment at the flying site make absolutely sure that the frequency you are going to use is not being occupied by someone else. In such case make appropriate arrangements with the others flyer(s).

ALWAYS perform each time before your first flight a range check of your radio equipment. With the transmitter switched on and its antenna collapsed, the receiver need to receive full signal at least over a distance of 30 yards.

ALWAYS familiarize yourself with your radio equipment. Check all transmitter functions before each flight. Do not only make sure that the servos move, but that their movements are correctly coordinated and are moving in the proper direction as well.

ALWAYS keep a safe distance from the propeller or rotor while starting the motor.

ALWAYS stay behind your model airplane when the engine is running.

ALWAYS keep in mind: Safety First! Loosing your model airplane will cost you some money for replacement parts, but your and others health is not replaceable.

ALWAYS ask an experienced R/C pilot for assistance in trimming the model and in receiving flight training under his supervision.

ALWAYS follow all recommended maintenance procedures for model, radio and motor.

ALWAYS check your R/C model for any worn, broken, damaged or loose parts. You are ultimately responsible for the maintenance of your R/C model and its accessories.

ALWAYS follow carefully the instructions, which have been supplied with your batteries, in particular, when you are using Lithium-Ion or Lithium Polymer batteries.

ALWAYS use the motor/engine recommended for the aircraft and do not exceed the revolutions per minute (rpm) it is designed for. Otherwise the propeller or the main and tail rotor blades may exceed their maximum permissible rpm and may get torn apart. Fragments of the propeller/rotor may get ripped off, flying away at high speed.

ALWAYS make sure that your batteries have been fully charged, otherwise proper function of your equipment will not be guaranteed.

ALWAYS avoid abrupt movement of the control stick while the model is in flight

ALWAYS use only the specified number of battery cells. Otherwise the motor and/or speed controller may be overloaded, may get damaged and/or causes radio interference or fire hazard.

ALWAYS have an eye on the wind and weather conditions and changes.

ALWAYS look for a wide and open flying area, especially if you are a beginner. You will need the space.

ALWAYS keep an eye on your co-flyers.

ALWAYS be considerate of the environment you are guest in.