Production of hand launch 1200mm

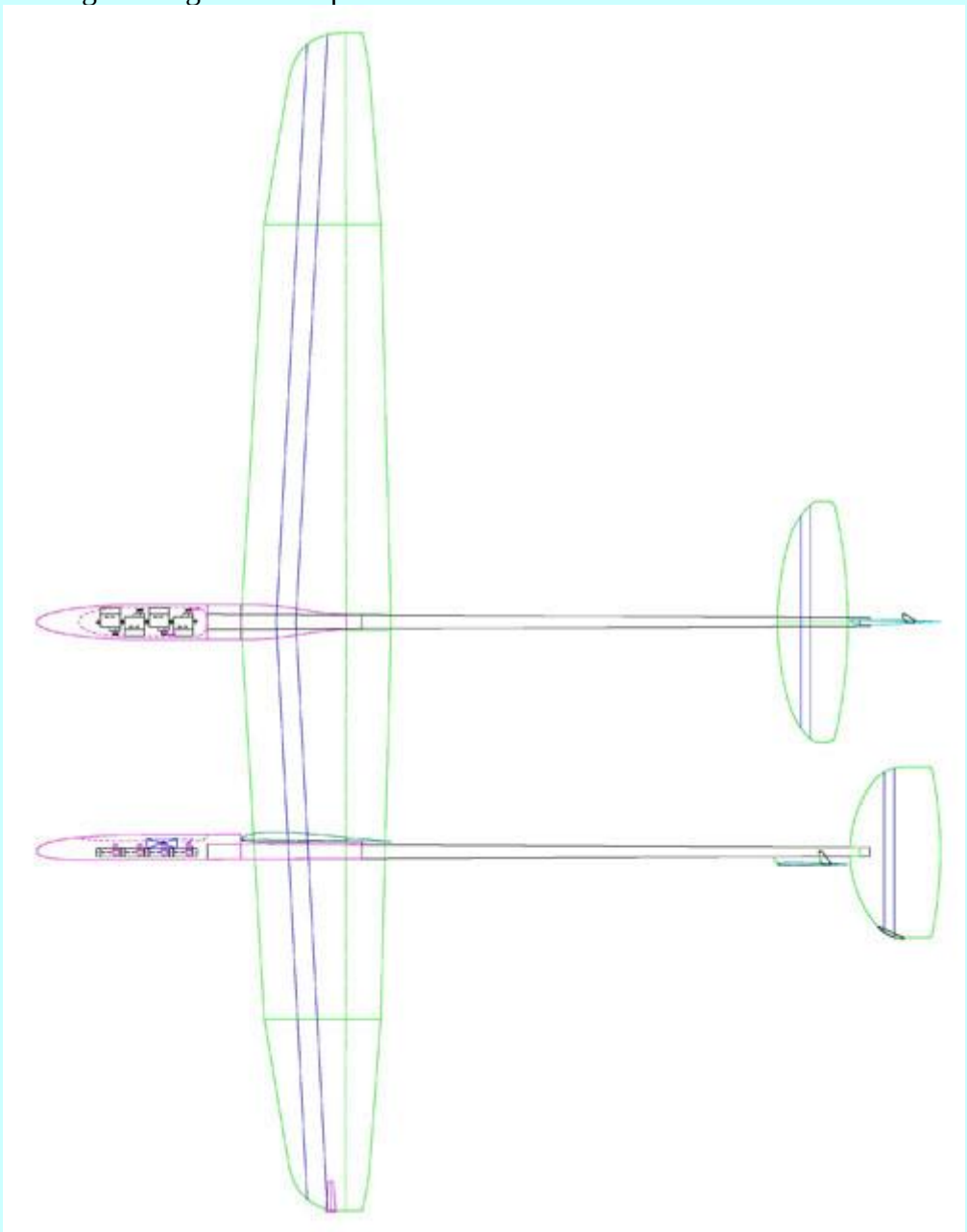
http://home.t07.itscom.net/kajie/DLG-1200-3.htm

Although the fuselage with 1200mm main wings remodeled to ailerons shows reasonable performance, it is just that, so I would like to renew from the fuselage this time. I would like to make the aircraft with as little resistance as possible. The main specifications are as follows.

Main wing: Wingspan 1200mm, aileron system, wing type AG45, 46, 47

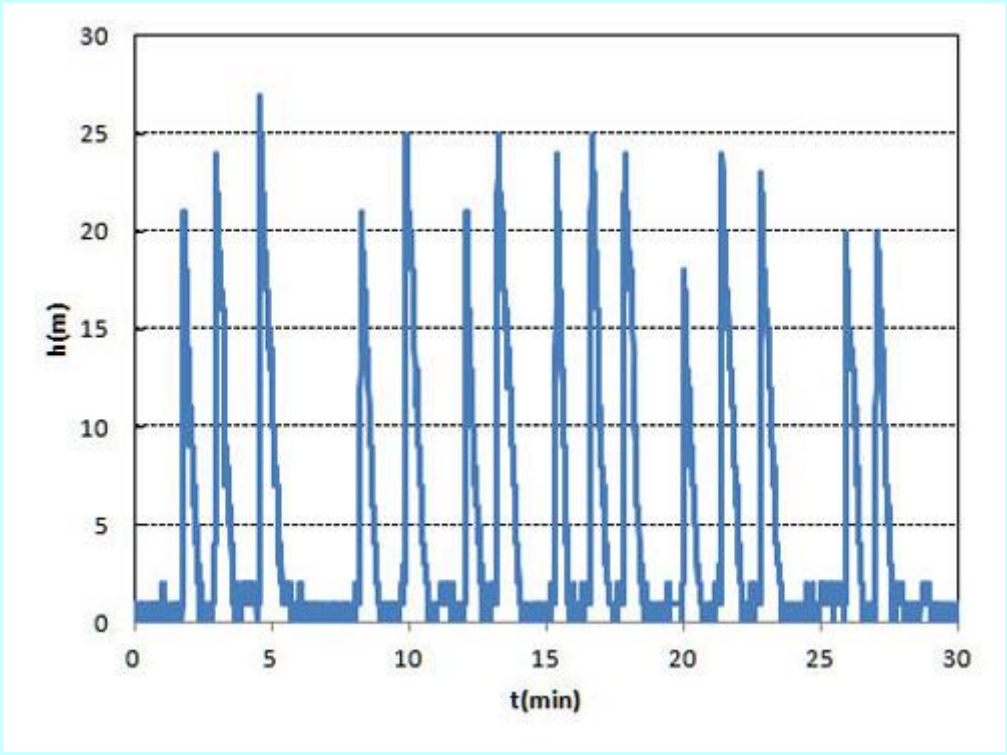
Tail: Horizontal tail wing type HT22, vertical tail wing type HT23

Fuselage: Using Clair competition boom



Although the work is progressing little by little in between, the cold weather and other factors make it difficult to proceed. (18/01/27)

After replacing the receiver, I was finally able to make a test flight. The impression of flying is that it flies straighter than the 1200-2. However, the gain altitude and flight time do not change much. I will try to adjust it little by little. (18/05/12)


30
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h(m)
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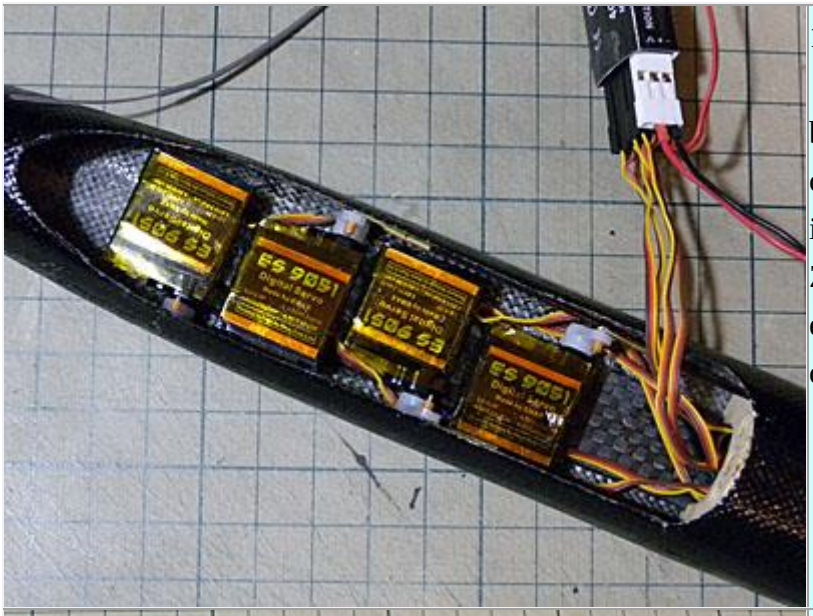
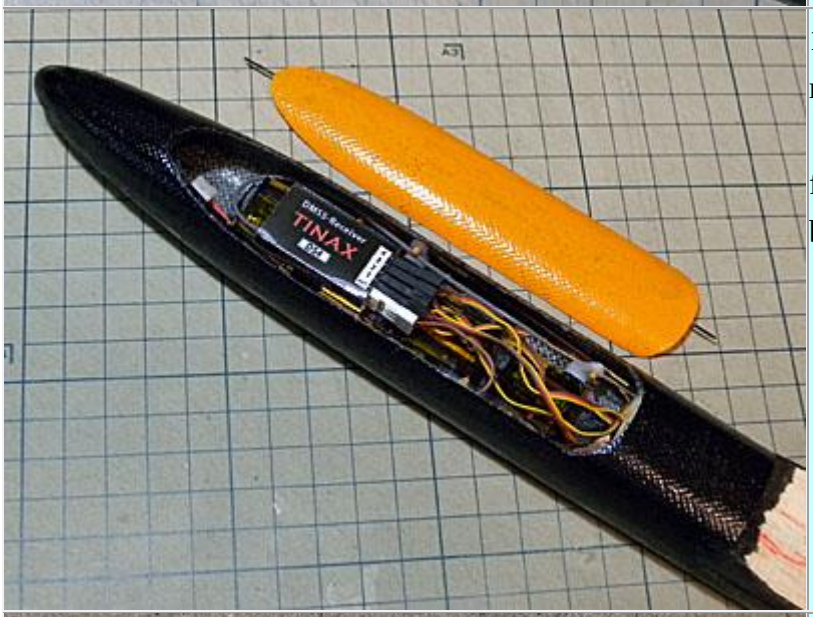
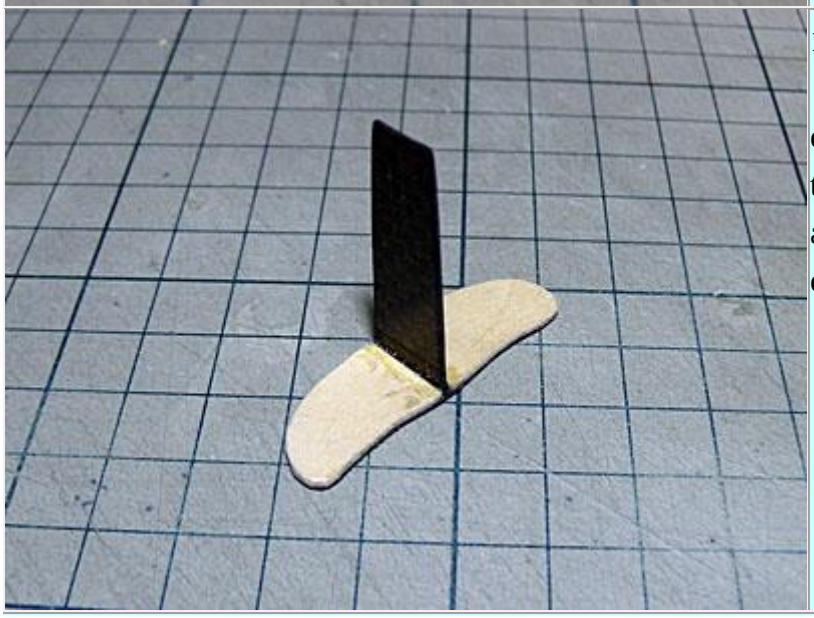
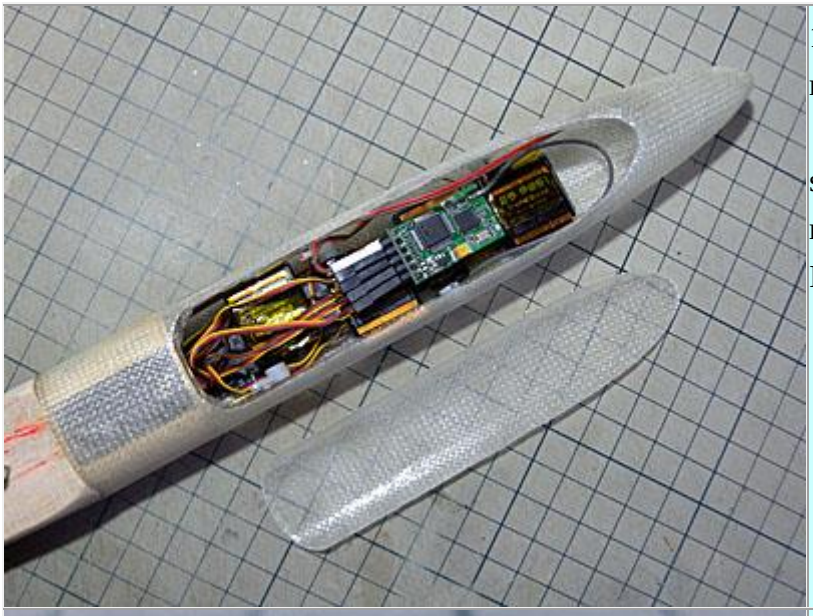
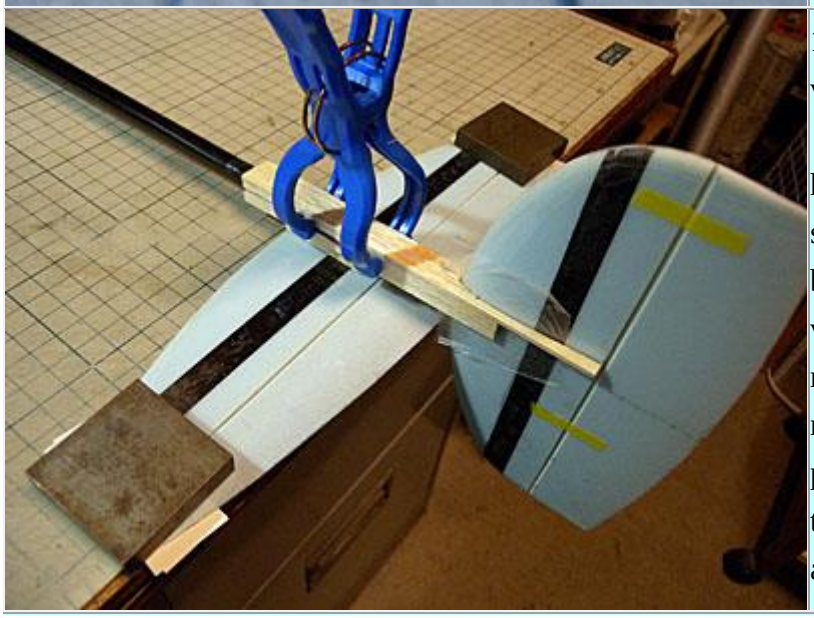
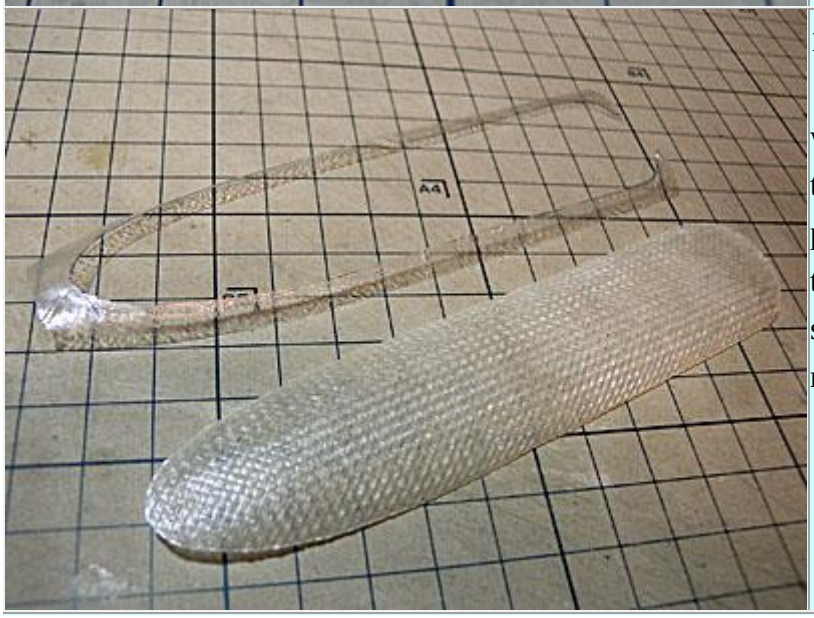
30
t(min)

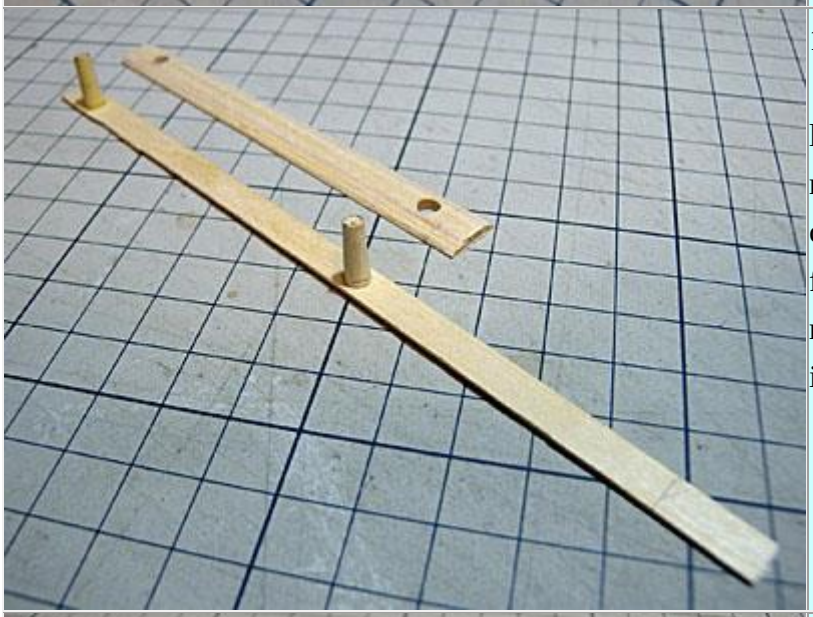
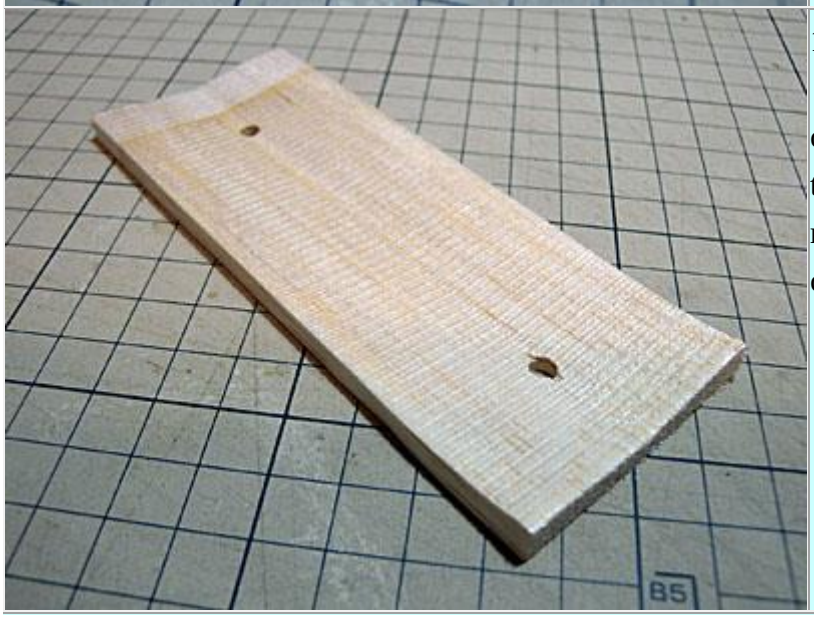
	18/05/26: Servo transshipment The servo bed, which had been glued together, peeled off from the pod in an instant. Paste again with ZAPGOO. Also cut off the ears of the servo and put them on the front side.
	18/05/06: Receiver replacement Replace receiver. Works fine. I have no idea why it broke.
	18/05/05: Completed for now 140g without batteries. 150g with 1S330mAh battery and balance weight. I tried to bring it to the airport and adjust it, but it didn't say no. Sounds like the receiver is faulty. Defer test flight until next time.

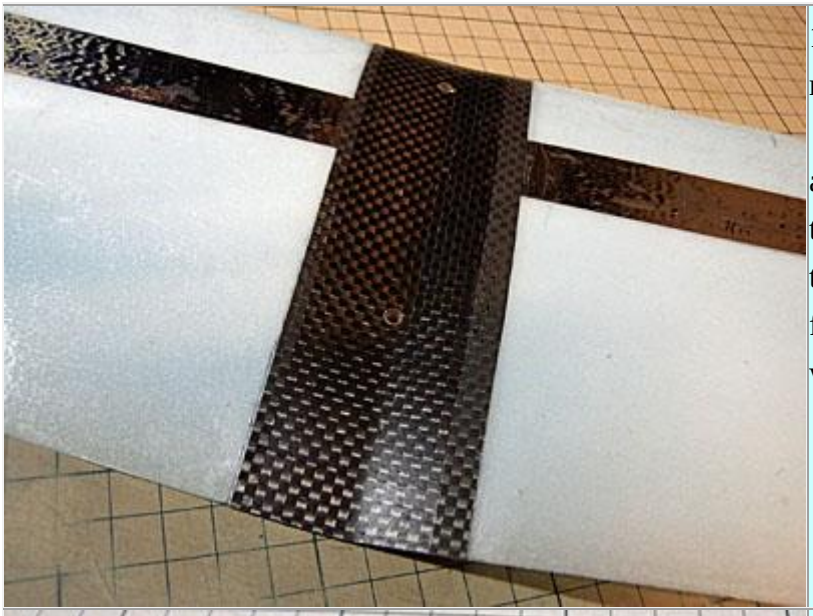
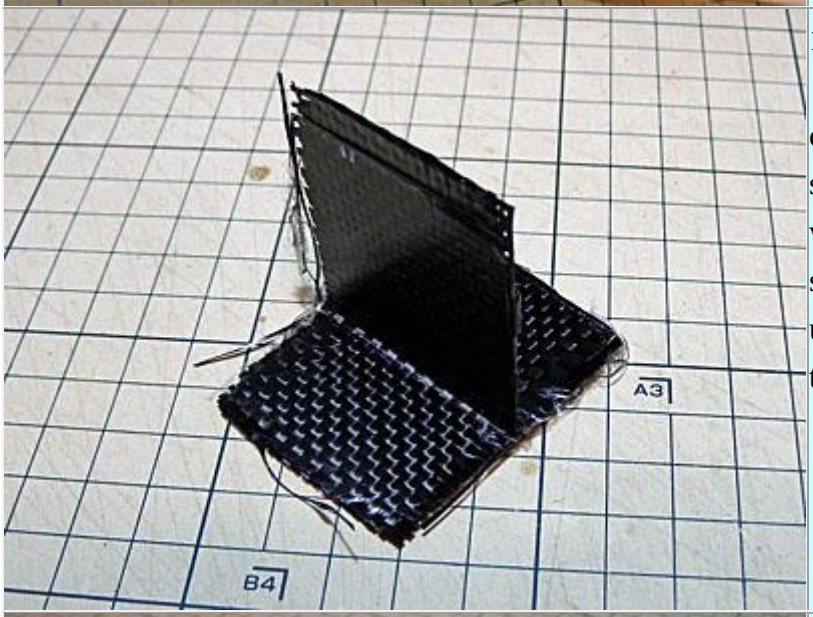
	18/05/04: Painting The lid of the glass is Tamiya color orange, and the other parts are painted black.
	18/05/02: Rod ends for ailerons A φ0.8 stainless steel wire was soldered to a brass pipe with an outer diameter of 1.2 and an inner diameter of 0.8. Pass the carbon rod through the pipe and bond it instantly. A cut was made in the middle of the pipe with a jigsaw so that the adhesive could be circulated.
	18/05/02: Machining pegs Reshape what you made earlier. Since the part that touches the finger is thin, I attached 1mm veneer with epoxy.

	18/05/01: Loading servos, receivers, etc. I used EMAX9051 for the servo and DS4 for the receiver. I got it somehow, but I can't afford it.
	18/04/29: Rod ends The rod is a carbon rod of φ0.8. A brass pipe with an outer diameter of 1.2 and an inner diameter of 0.8 is flattened and φ1.0 piano wire is soldered to it.
	18/04/25: Installation of the vertical stabilizer Install perpendicular to the horizontal stabilizer. Also, since the mounting angle between the axis and the vertical stabilizer is delicate, I made a mounting jig. It was necessary to install it perpendicular to the axis of the boom, but I didn't think about it and tilted it a little.

	18/04/22: Installation of horizontal stabilizer Set so that the main wing and horizontal stabilizer are horizontal. Since the room is small, it is quite troublesome work such as moving the surface plate.
	18/04/18: horizontal stabilizer Made of balsa.
	18/04/18: Pod lid clamp Fasten the lid to the pod with masking tape so that there are no steps as much as possible, wrap it, apply epoxy to a thin cloth and harden it. I should have made it when the mold of the pod was made.

	18/04/15: horizontal stabilizer A 25 g/m2 glass cloth was used. The spar is a 20mm wide UD tape cut in half. Weight 4.70g.
	18/04/14: Servo bed A combination of 0.2mm carbon cure sheet and φ2 carbon pipe.
	18/04/14: Pod Glue Epoxy the boom and pod for 30 minutes. The red line on the wing base is the scar from when I glued the wing base to the boom and couldn't remove it, so I forced it off...

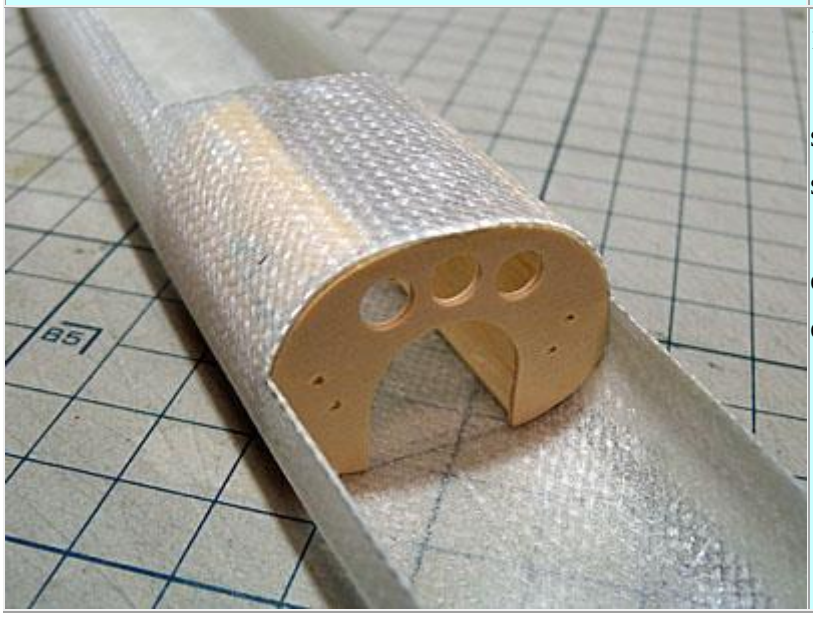
	18/04/04: Pylon Set The pylon penetrates the boom. The protruding part was cut with a saw.
	18/03/28: Pylon platform Glue in the boom to fix the lower part of the pylon. The material is two layers of 1mm cinnavenia. The front is a tool for gluing. I used epoxy for 30 minutes, but it was hard to get it to stick in place.
	18/03/28: wings Made of balsa. Cut with a cnc milling machine. Since the length is not enough, the remaining pieces are connected with tight bond.

	18/03/24: Main wing joint reinforcement Use Spread Carbon-61. I applied 3M stick-and-peel tape, cut it on the tape, and treated it with epoxy to keep it from falling apart. It may have worked by chance.
	18/03/24: Original peg Four sheets of 0.25mm carbon were stacked, so it should be about 1mm, but it was actually 0.8mm. It's strong enough that I think I'll use it as is. I think I can get two.
	18/03/21: Making pegs Use carbon cloth 3K. Each sheet is about 0.25mm, so stack them so that the thickness is about 1mm and glue them with 5052. The mold uses a 0.4mm aluminum plate with a transparent wide tape attached. Fingertips are covered with adhesive.

	18/03/17: Main wing retainer The main wing joint uses 30min epoxy. The pieces are made of 10×10 cypress wood. The joint went well, but it took a long time to process the piece that jumped out of the wing surface. It would be good to prepare a piece that matches the shape of the wing and open the retaining holes after reinforcing the main wing.
	18/03/17: Main wing retainer notch The bagging of the right main wing was also a series of small failures. Adhesion of UD tape used for spar is a demon. Wrong cutting angle of main wing joint. Hurry up and connect with wasabi glue. The notch is the part where the main wing retainer piece enters.

18/03/14: Left wing bagging

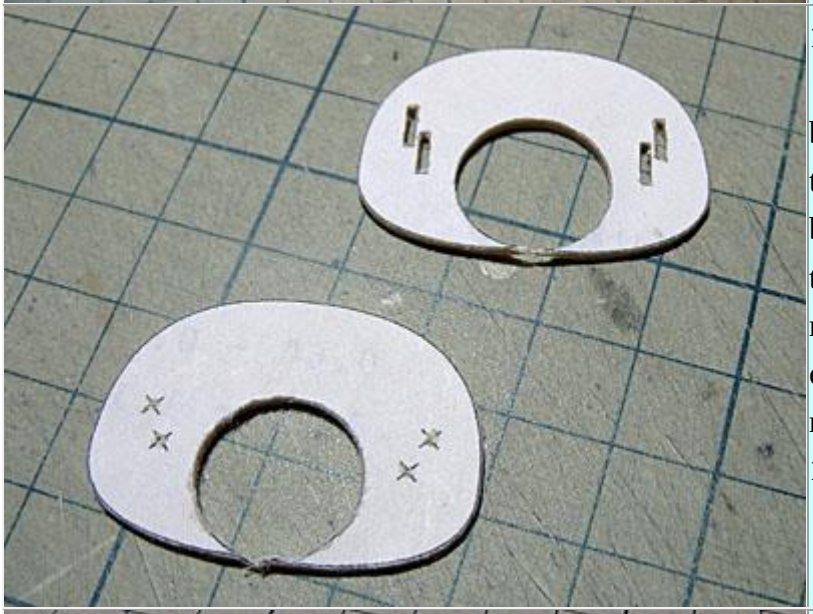
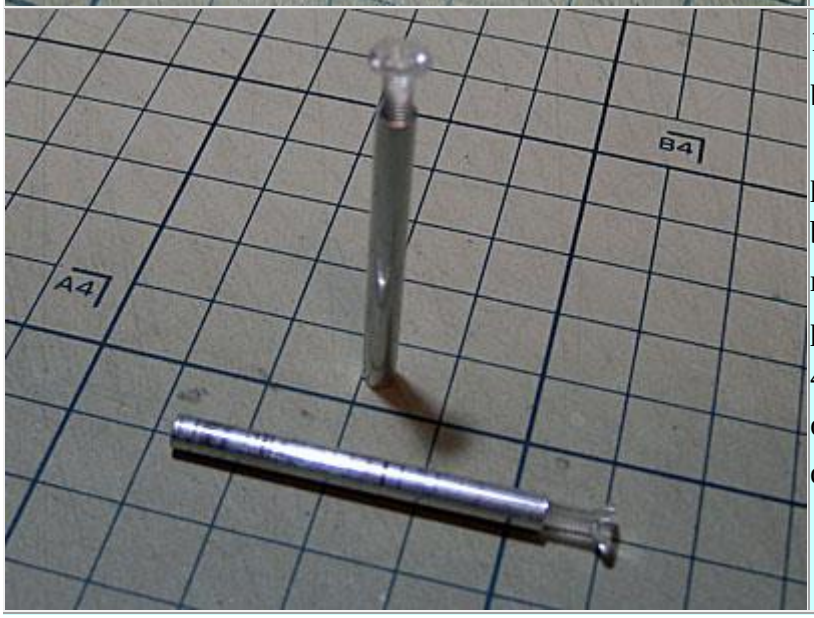
This time, try changing the glass to 30g/m2. Epoxy is 5052. I often forget the procedure and get confused. Spar uses 20mm wide UD tape, but this is a difficult one. One of the things I prepared rolled up and became unusable, and I ran out of glue. The photo shows the part where the glass on the back is floating. Relatively stiffer than the 1200-2 main wing.



18/03/14: Re-cut torso frame

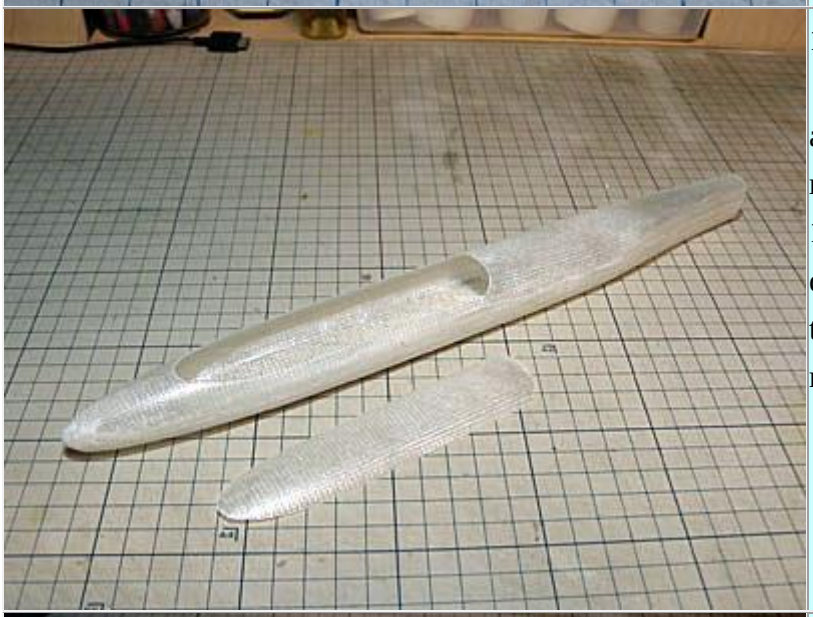
The CNC milling machine somehow managed to work, so I cut it again as a test.

The main wing has not been completed, so the boom cannot be fixed yet.

	18/03/04: Temporary assembly of boom and pod The pod feels stiffer and stiffer than it originally was.
	18/03/04: Body frame A frame that secures the boom to the pod. The top is the tip of the boom, and the bottom is the leading edge of the main wing. The CNC milling machine was out of order, so it had to be done manually. The material is 1mm syna veneer.
	18/02/24: tapping aluminum pylon I would like to use a carbon pipe for the pylon if possible, but since there is no suitable material, I use an aluminum pipe with an outer diameter of 4 mm and an inner diameter of 2 mm. Expand the inner diameter to 2.5mm and tap it.

18/02/24: Pylon drilling jig

Since the boom is tapered, I made a jig to drill a hole perpendicular to the axis. The material is 1mm veneer.



18/02/18: Bagging complete

The mold was dissolved in acetone, removed, and roughly sanded. Weight is 11.4g. Unfortunately, it doesn't seem to withstand twisting. Reinforcement required.

18/02/17: State 5 hours after bagging

In order to cut off the hatch part, it was temporarily taken out of the bag in about 5 hours, a cut was made in the hatch part, and bagging was continued.

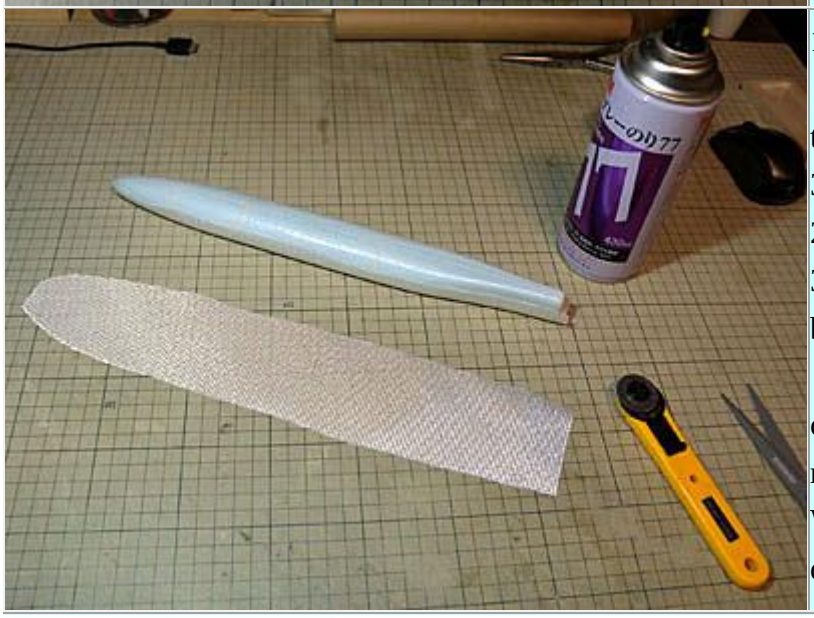
18/02/17: Bagging

For the bagging bag, I used an A3 vertical zippered bag that I bought at Hyakuyen. Wrinkles are less visible than I expected.

18/02/17: Ready for bagging

Apply epoxy 5052 evenly to the cloth pasted mold. A Great Plain disposable epoxy brush was used.

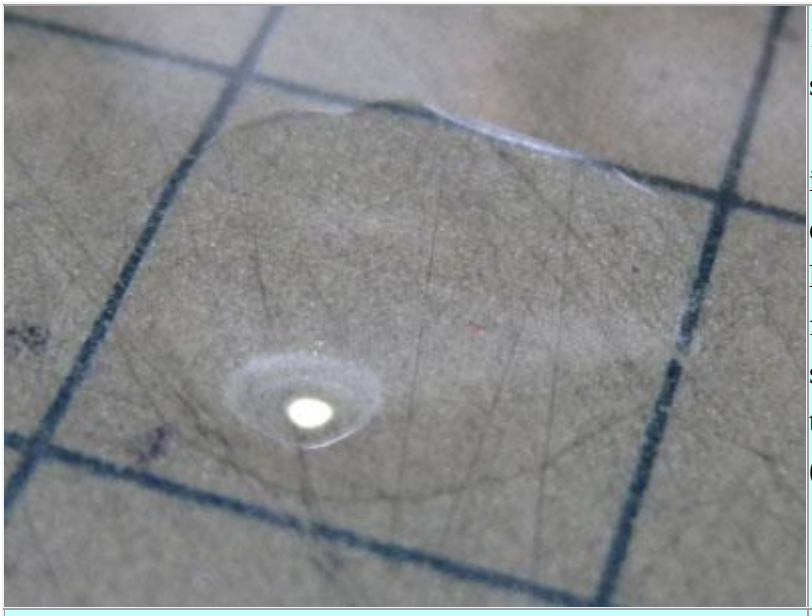
The release material is cut out from a polyethylene garbage bag and sandwiched from above and below. Put it in a bagging bag with cooking paper to remove air from above.



18/02/17: Podbagging

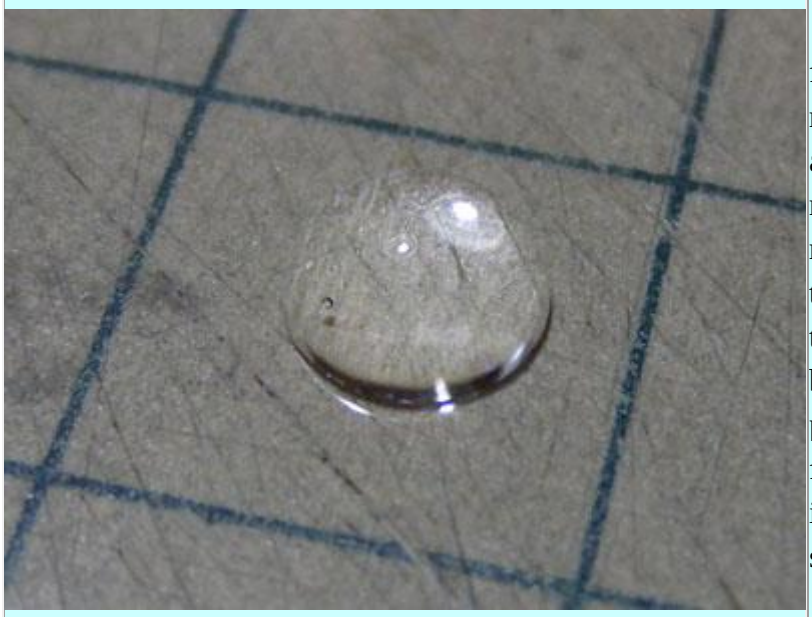
Paste a thin saran wrap on the pod type with 3M55. Cloth uses 200g/m2. Paste this with 3M77. I used two, top and bottom.

Using 3M77 to attach the cloth was a mistake. When removing the mold, Saran Wrap sticks to the cloth and is difficult to remove.



18/02/07: Behind the flower shop film (processed)

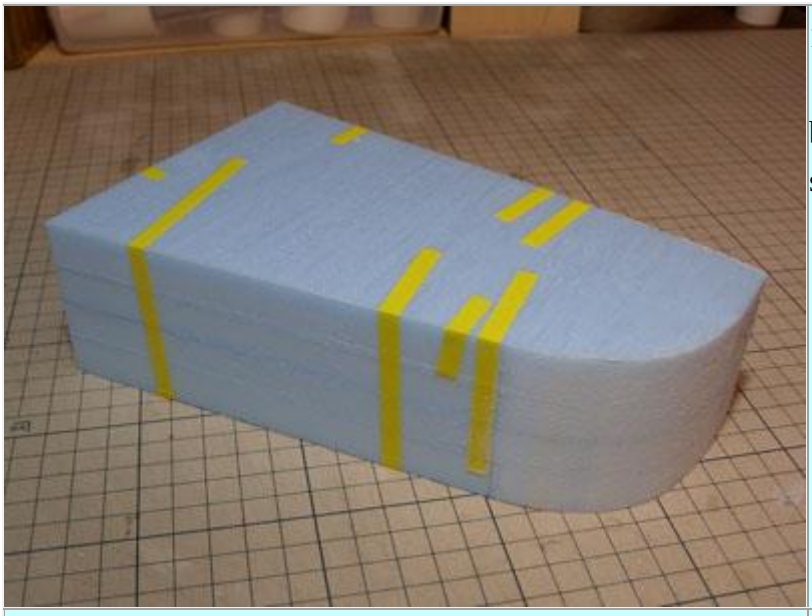
As a way of distinguishing it, drop a drop of water with a dropper, etc., and if it rolls up like the photo below, it's the front (unprocessed), and if it spreads out like the photo on the left, it's the back (processed).

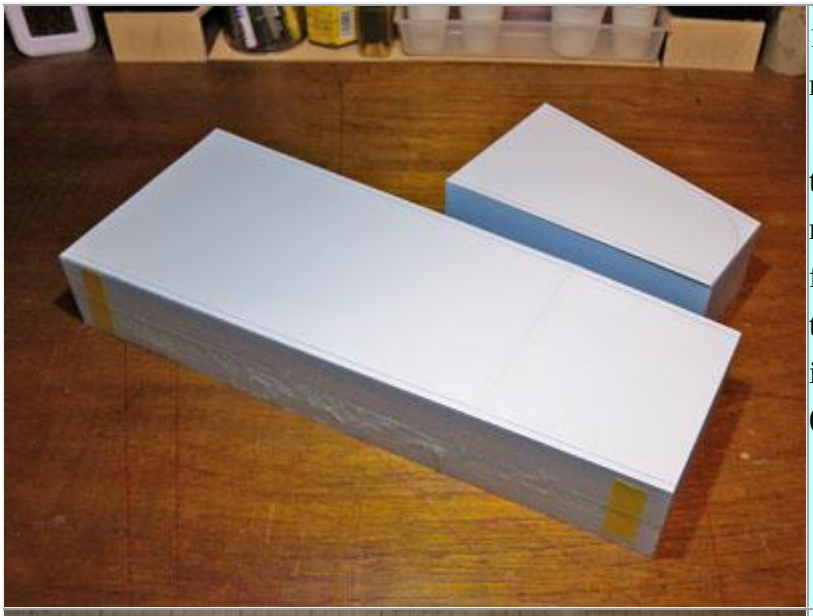
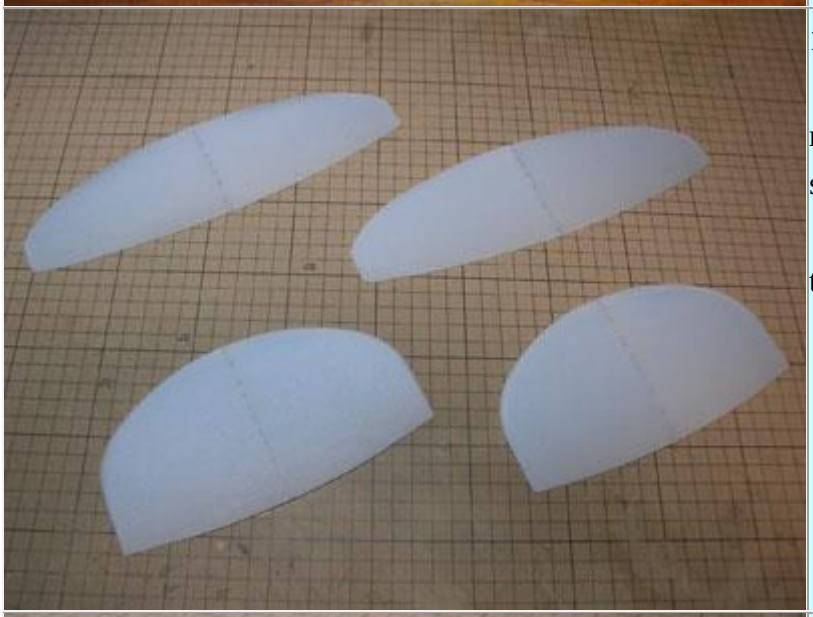
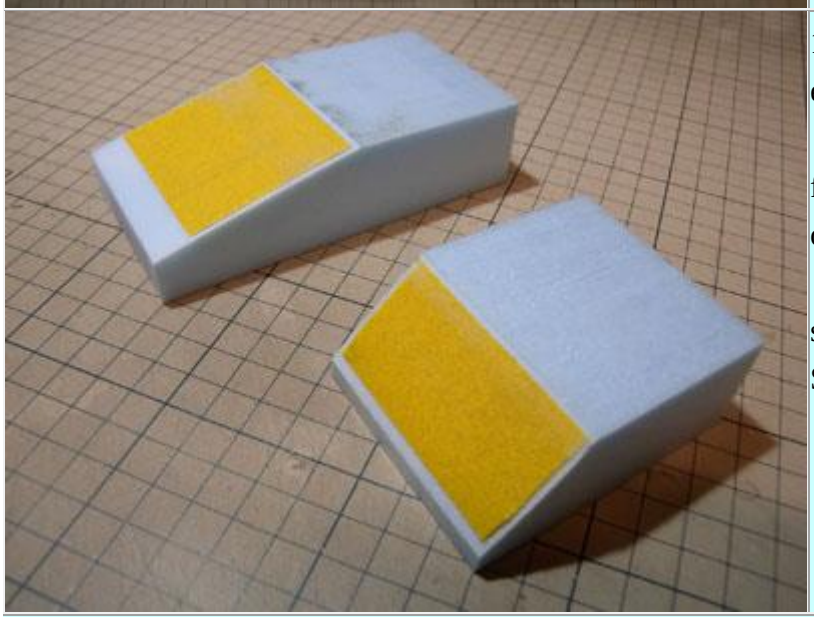


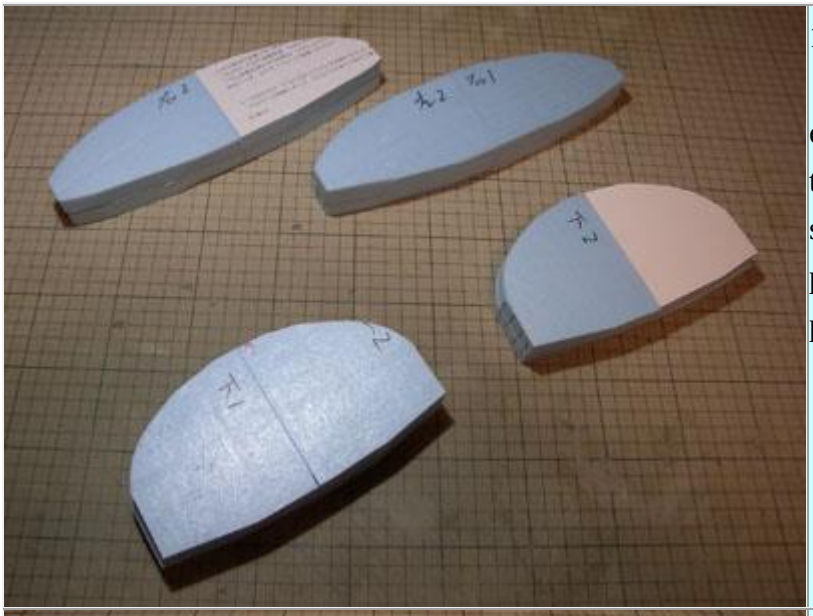
18/02/07: Florist film front (unprocessed)

When bagging, flower shop film is essential as a release material. This film has a front and a back, so if you make a mistake, it will not work as a release material. It sticks to the cross. The film used seems to have been processed on the back side, so it is necessary to put a "mark" on it so that the front and back can be identified when the film is separated from the roll.

If you don't have a mark, you won't be able to tell which side is the front side.

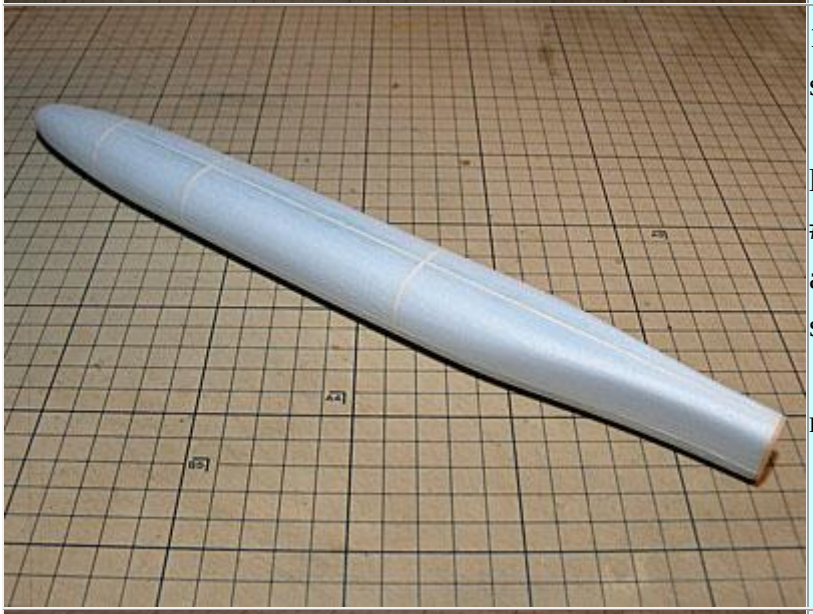
	18/01/20: Wing tip shaping Stack the left and right blocks, cut with hot wire, and shape with sandpaper.
	18/01/20: Failed immediately During semi-automatic cutting, there was a part where the movement was stiff, and there was a deep dig. This is the underside of the wing. On the upper surface of the wing, too, I forgot to remove the load retainer, and the same kind of deep pitting occurred. Since it is close to the front edge, it would be better to cut it again, but I decided to deceive it with lightweight putty.

	18/01/08: Cutting out the main wing block The front is the center, and the back is the wing tip. A margin of 5 mm is provided for both the leading edge and the trailing edge. The margin in the wingspan direction is 0mm.
	18/01/03: Tail after sanding After joining the left and right using 3M wasabi glue, sand using the lower block. Horizontal tail 1.6g, vertical tail 2.7g.
	18/01/03: Block for leading edge sanding I cut off the excess blue foam and put #80 sandpaper on it. Source: Accurate tip sanding from Mark Drela's SuperGee DLG.



18/01/03: Tail cut

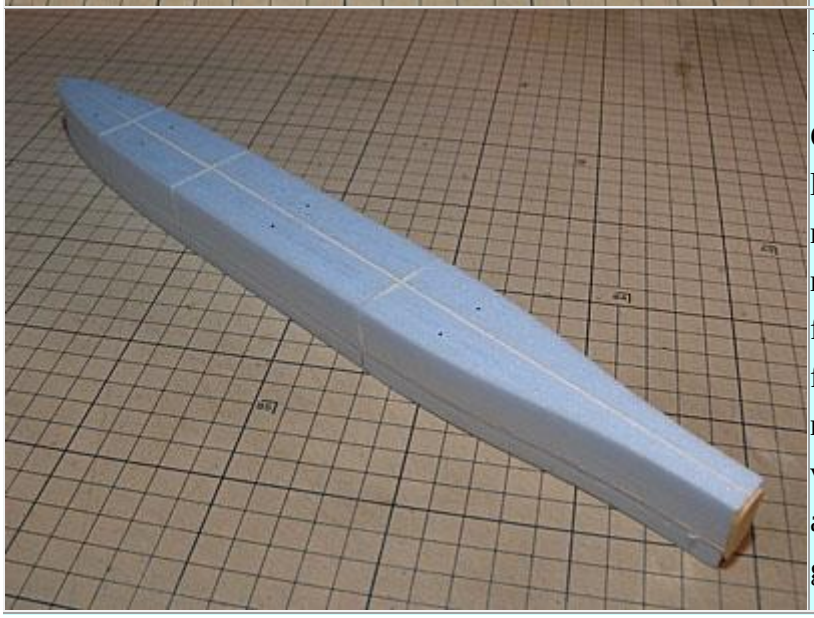
I prepared two sets just in case. Although they are cut in the same way, the height is slightly different. The white part is the part pasted with paper for height adjustment.



17/10/29: new pod mold sanding

Is it a torso frame for the lower block with #80? Remove while paying attention to Finish with 3M sponge sand.

Thinking about what to do next...



17/10/29: New pod type

At first, I thought of using a CNC machine, but it took too long, so I decided to do it manually. Is the material the main material blue foam, body frame? Styrene sheet is used for the part that hits. Only the rear end was 1mm veneer. CNC cut and assembled with 3M wasabi glue.