Make A Value For Money DLG

Foam Wing DLG - Not Foamboard.

So, you don't want to mess around with Foamboard or don't have it available locally ?

Can you find XPS Foan sheet or boards at your DIY Store or Supplier ?

As a second best, perhaps your local flat pack furniture or other goods supplier gets loads of EPS in protected product. The just dump the stuff as it is unwanted waste.

So, we want a wing? A wing good for DLG. Perhaps not a high launching DLG, but a fun glider that is very quick, cheap and easy to make.

Perhaps we don't want to be carbon fibre or glass fibre laminating or laborious balsa plank planning and sanding ?

Useful facts :- XPS foam is 1/3 the weight of contest grade balsa. EPS is between ¼ and 1/5 the weight of contest grade balsa.

So, using a foam core base material leaves plenty of room for strengthening and still comes out light. Also the creation process is readily repeatable and quick once you make your first one.

So lets select an airfoil that will work well on a DLG.

AG03 (flat aft bottom)

http://airfoiltools.com/airfoil/details?airfoil=ag03-il

MH 32 8.7% - Martin Hepperle MH 32

http://airfoiltools.com/airfoil/details?airfoil=mh32-il

AG24 Bubble Dancer DLG by Mark Drela

http://airfoiltools.com/airfoil/details?airfoil=ag24-il

AG45c -03f - Drela AG45c -03f airfoil

http://airfoiltools.com/airfoil/details?airfoil=ag45c03-il

Strengthening the wing:-

It is little known that Bamboo is close to carbon fibre for strength. So good for wing spars, Leading Edges and trailing edge stiffening.

You may want to use carbon fibre as shown in the images.

Carbon Arrow shafts are also very strong and may be very reasonable to obtain.

Some builders use a wooden dowel where availability is an issue.

Our Facebook Group features ALL these matters in our postings.

Generating the Airfoil: -

How I Make Airfoil Wings| For Beginners

https://youtu.be/aJain3h7sC8

Airfoil foam cutting

https://youtu.be/SFPbkV-84uc

How to make a F3k DLG glider . Foam Wing Core Cuts /Join

https://youtu.be/Do-54JbIIJE

Hotwire demonstration

https://youtu.be/R0ZCnR_g6ZU

Scratch build DLG glider -How to make foam wing cores-

https://youtu.be/9Tv_y47E8zc?list=PL8X9pdN8AB3aLtYVxM_yYcCUrjuvPSuU_

Easy to build and very successful :-

Translated:-

Part 2: Parts and Materials
https://youtu.be/DpkeIf2xd3Q

Part 3: Attaching the Screw Holders
https://youtu.be/5v2-gIbO444

Part 4: Gluing in the Nuts
https://youtu.be/K0u5HjT_dJo

Part 5: Gluing in the Mounting Plate
https://youtu.be/c9w3acpbNq0

Part 6: Cutting the Cable Channel
https://youtu.be/O5_QqabKCYQ

Part 7: Gluing the Side Panels
https://youtu.be/jBe0LeUDcgk

Part 8: Inserting the Tail Boom and Rounding the Edges
https://youtu.be/ldooJRiU2c0

Part 9: Fitting the Electronics
https://youtu.be/RpiwCn0aN6g

Part 10: Covering the Nose Block
https://youtu.be/C4BbJiLRCH8

Part 11: Introduction to the Pull-Spring System
https://youtu.be/7H3Rd2GWiqY

Part 12: Preparing the Tail Surfaces
https://youtu.be/21pcUKL1sqU

Part 13: Creating the Hinge Line
https://youtu.be/7VZcYecHHrI

Part 14: Hinging the Control Surfaces
https://youtu.be/QB6MywMqlIs

Part 15: Gluing in the Control Horns
https://youtu.be/WvLlgsuBTW4

Part 16: Torsion Spring
https://youtu.be/Z8ivu9w7Wj8

Part 17: Gluing the Tail Surfaces
https://youtu.be/XdMVId-5SrA

Part 18: Sanding the Foam Core
https://youtu.be/IP-yytAvbdw

Part 19: Preparing the Carbon Plate Slots
https://youtu.be/euZwH1i_Xqs

Part 20: Shaping the Launch Peg Support Disc
https://youtu.be/EqA9r5pdOG8

Part 21: Gluing in the Carbon Plates
https://youtu.be/1oGf6e-rNz8

Part 22: Shaping the Screw Supports
https://youtu.be/j0PvZrTp_1s

Part 23: Joining the Wing Halves
https://youtu.be/vqYAc4Ao4tA

Part 24: Wing Root Reinforcement and Gluing in the Launch Peg Support
https://youtu.be/aqhbr76f7O0

Part 25: Applying the Fiberglass Cloth
https://youtu.be/pEX2n6SKo3E

Part 26: Cutting the Screws to Length and Drilling the Launch Peg Hole
https://youtu.be/CRaaZlOdAPI

Part 27: Preparing for Covering
https://youtu.be/1NLryIp7CWk

Part 28: Covering the Wing
https://youtu.be/1WPYZ_-omss

Part 29: Gluing the Tail Boom into the Nose Block
https://youtu.be/x1vBYyko2M8

Part 30: Basics of Radio Control
https://youtu.be/L_mJjVTOhwY

Part 31: Setting Up the Radio Transmitter
https://youtu.be/qTgK9E04dxw

Part 32: Installing the Electronics in the Fuselage
https://youtu.be/NtZcWdZUW6o

Part 33: Gluing the Launch Peg into the Wing
https://youtu.be/kNmV_Wcp0Ok

Part 34: Balancing the Wing
https://youtu.be/Z35EKhmdtLU

Part 35: Setting the Center of Gravity
https://youtu.be/JZiy54wNbDk

Part 36: Test Flying the Model
https://youtu.be/RHNDvIuOl_c

Original:-

Part 2: Alkatrészek kellékek

https://youtu.be/DpkeIf2xd3Q

Part 3: Csavartartók felragasztása

https://youtu.be/5v2-gIbO444

Part 4: Anyák beragasztása

https://youtu.be/K0u5HjT_dJo

Part 5: Felfekvőlap beragasztása

https://youtu.be/c9w3acpbNq0

Part 6: Kábelcsatorna kivágása

https://youtu.be/O5_QqabKCYQ

Part 7: Az oldallapok felragasztása

https://youtu.be/jBe0LeUDcgk

Part 8: Farokcső behelyezése és az élek lekerekítése

https://youtu.be/IdooJRiU2c0

Part 9: Elektronika befaragása

https://youtu.be/RpiwCn0aN6g

Part 10: Orrtőke bevonása

https://youtu.be/C4BbJiLRCH8

Part 11: Pull-Spring ismertetése

https://youtu.be/7H3Rd2GWiqY

Part 12: A vezérsíkok előkészítése

https://youtu.be/21pcUKL1sqU

Part 13: Zsanérvonal kialakítása

https://youtu.be/7VZcYecHHrI

Part 14: Kormányfelületek zsanérozása

https://youtu.be/QB6MywMqlIs

Part 15: Kormányemelők beragasztása

https://youtu.be/WvLlgsuBTW4

Part 16:Torziós rugó

https://youtu.be/Z8ivu9w7Wj8

Part 17: Vezérsíkok felragasztása

https://youtu.be/XdMVId-5SrA

Part 18: Habmag csiszolás

https://youtu.be/IP-yytAvbdw

Part 19: Szénlapok helyének a kialakítása

https://youtu.be/euZwH1i_Xqs

Part 20: Dobótüske támasztókorong befaragása

https://youtu.be/EqA9r5pdOG8

Part 21: Szénlapok beragasztása

https://youtu.be/1oGf6e-rNz8

Part 22: Csavartámaszok befaragása

https://youtu.be/j0PvZrTp_1s

Part 23: Szárnyfelek összeragasztása

https://youtu.be/vqYAc4Ao4tA

Part 24: Szárnytőmerevítés és a dobótüske támasz beragasztása

https://youtu.be/aqhbr76f7O0

Part 25: Üvegszövet felragasztása

https://youtu.be/pEX2n6SKo3E

Part 26: Csavarok méretre vágása és dobótüske furat

https://youtu.be/CRaaZlOdAPI

Part 27: Előkészületek a bevonáshoz

https://youtu.be/1NLryIp7CWk

Part 28: Szárny bevonása

https://youtu.be/1WPYZ_-omss

Part 29:Farokcső beragasztása az orrtőkébe

https://youtu.be/x1vBYyko2M8

Part 30: Rádióirányítás alapismeretei

https://youtu.be/L_mJjVTOhwY

Part 31: Rádiótávirányító beüzemelése

https://youtu.be/qTgK9E04dxw

Part 32: Elektronika beszerelése a törzsbe

https://youtu.be/NtZcWdZUW6o

Part 33: Dobótüske beragasztása a szárnyba

https://youtu.be/kNmV_Wcp0Ok

Part 34: A szárny kiegyensúlyozása

https://youtu.be/Z35EKhmdtLU

Part 35: Súlypont beállítása

https://youtu.be/JZiy54wNbDk

Part 36: A modell berepülése

https://youtu.be/RHNDvIuOl_c

More Detail:-

How to cover the wings

https://youtu.be/P4VcvqFFbkc

Big ViCK build up

https://youtu.be/fueiq5gKiR4

ViCK dlg final assembly

https://youtu.be/-oVpfUHN3Ok

VICK DLG'S! NEW BigViCK's guide link in description! Wing cover

https://youtu.be/BJef13Ghr5I

VICK DLG'S! NEW BigViCK's guide link in description! wing build

https://youtu.be/H1pthY_RvF8

VICK DLG'S! NEW BigViCK's guide link in description! tail build

https://youtu.be/rkbZPs7A-oU

VICK DLG'S! NEW BigViCK's guide link in description! pod build

https://youtu.be/Xc-n9n4lZ7s

ViCK Orrtőke erősítés

https://youtu.be/1sZkLyPRuJM

Big ViCK 1meter DLG

https://www.youtube.com/watch?v=jSvDM9fAmK8

Images :-

Big ViCK

Wing span: 1.00m
Length: 75cm
Flying weight from: 115g
Airfoil: mh32
Controls: Rudder, elevator
CG.:60-65mm from leading edge

Recommended electronics:
Servos: 2x 2.2-3.7g
Small receiver, max size: 45x25x19mm
Battery: 1s 300mah lipo

Kit contents:
lasercutted wood parts, cnc cutted wings and nose, carbon parts and ect.

Required:
- Adhesives see below
- Packing tape for wing covering
- sanding block, tesa film, ruler, clear tape, x-acto knife, scissors.

Befor you started to build please read the guide.

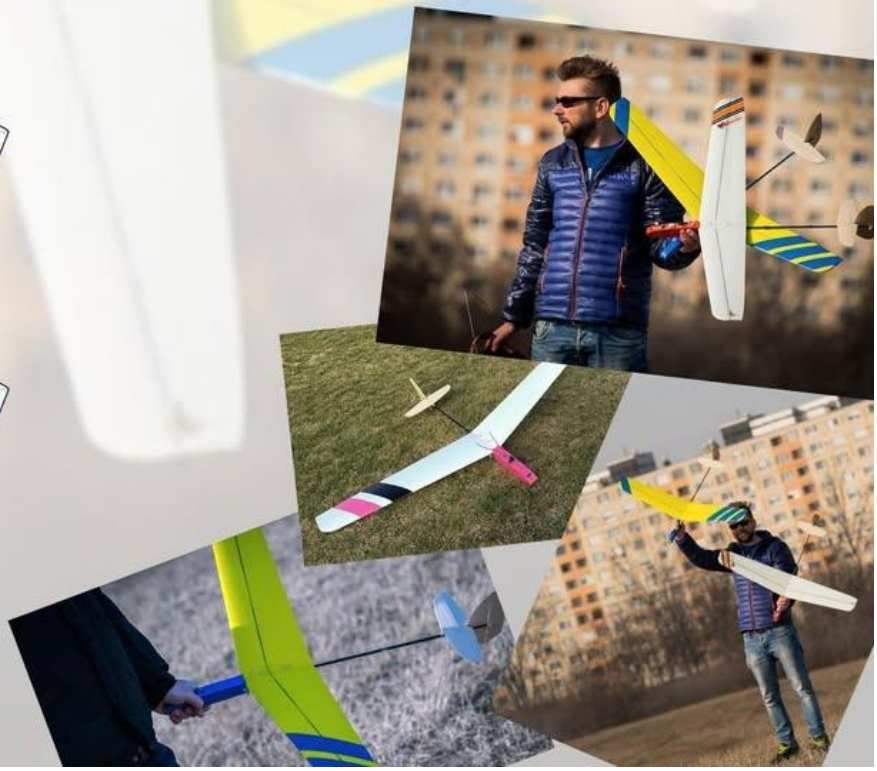
Glue mark:

Wooden glue

Epoxy

Normal CA.

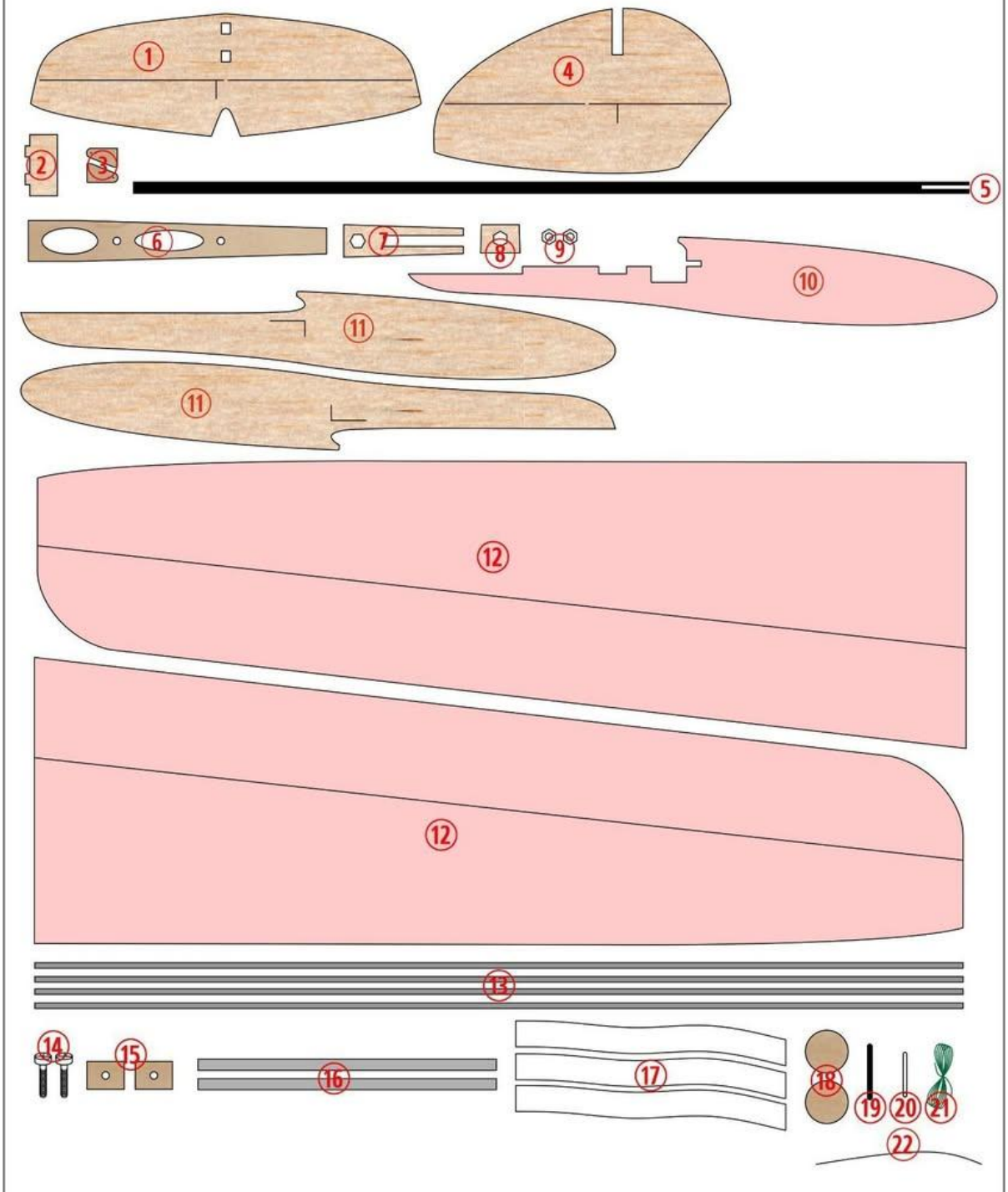
Foamsafe CA.

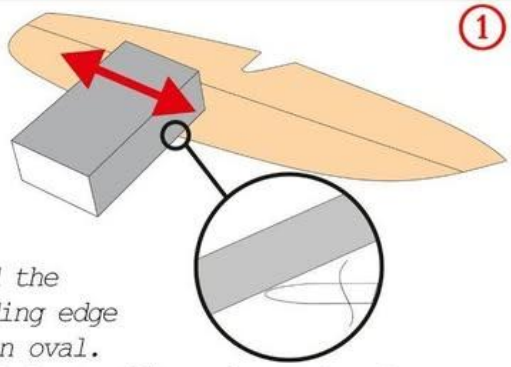



Big ViCK
Wing span: 1.00m
Length: 75cm
Flying weight from: 115g
Airfoil: mh32
Controls: Rudder, elevator
Ideal for beginners,
easy to build construction.
Kit contents:
lasercutted wood parts, cnc
cutted wings and nose,
carbon parts and ect.
in plastic bag.

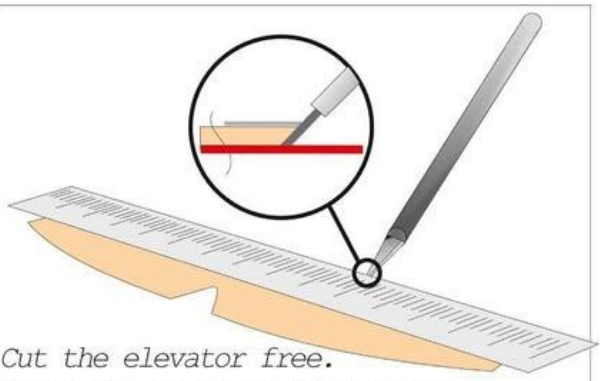
Big ViCK

parts list:

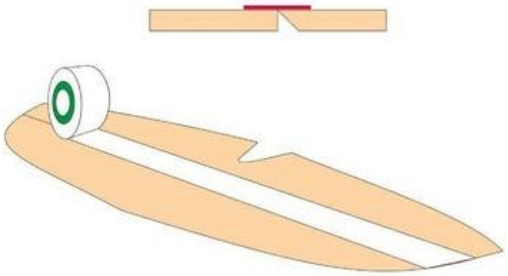




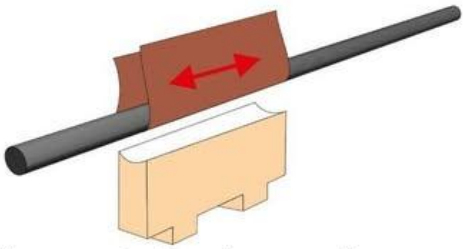
Sand the
leading edge
to an oval.
Sand the trailing edge to be sharp.



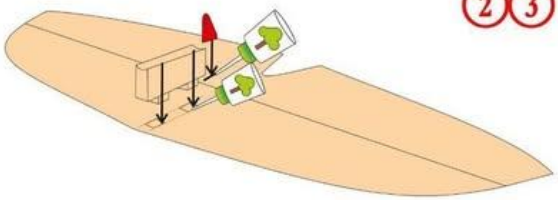
Cut the elevator free.
Bevel the front to 45 degrees.



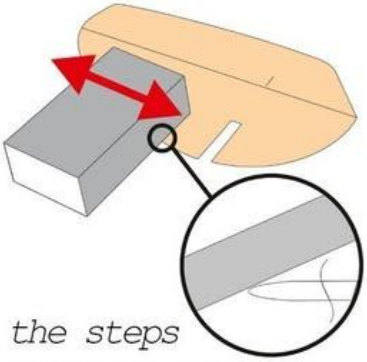
Use clear tape for hinge.
Easy and light.



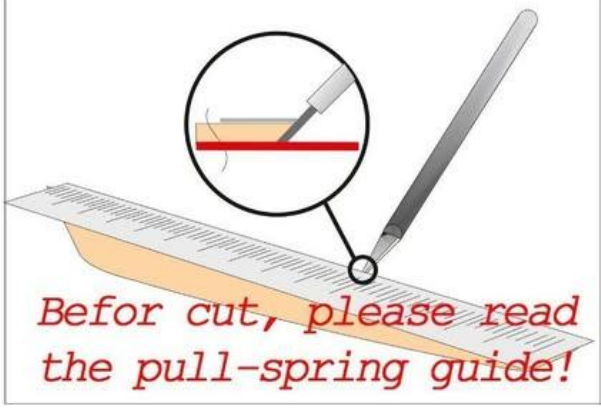
Sanding out the boom place.
Important: The block lower
and upper edges are parallel
after the sanding!



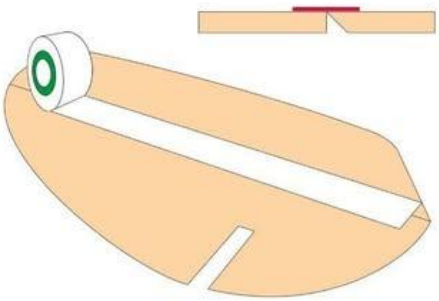
Glue the control horn and
the stab. holder.



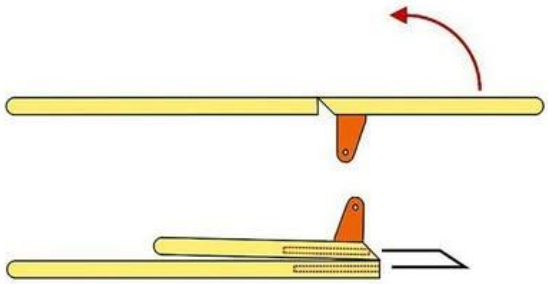
Repeat the steps
on the vertical stab.

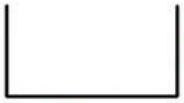


Befor cut, please read
the pull-spring guide!

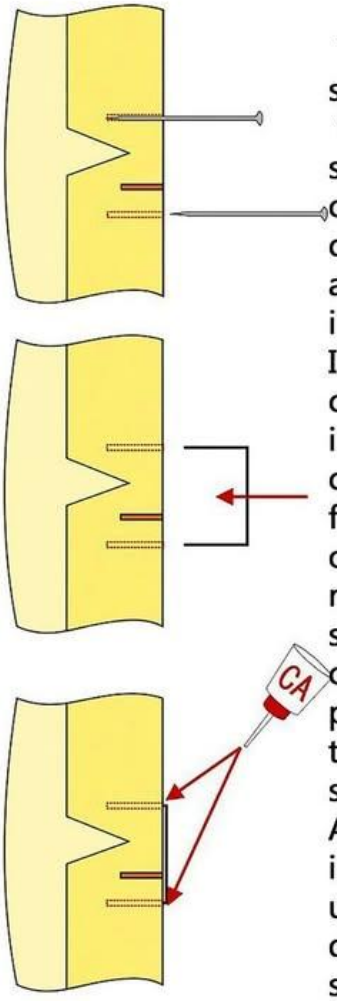


Pull-Spring Guide

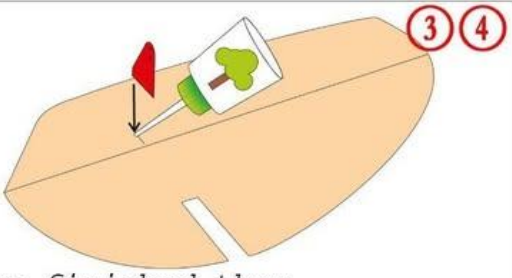




Bend it the 0.3mm spring wire

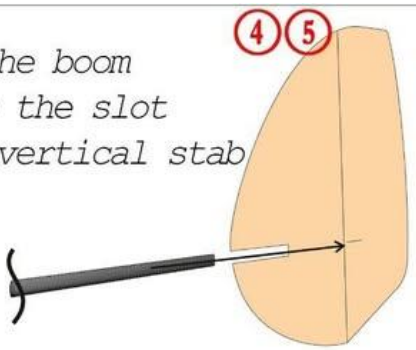


The rudder horn is placed on the opposite side of the launch peg. If you're a right hander, the rudder horn is installed on the right side of the rudder. The spring will deflect opposite the horn. Opposite the launch peg, cut a small amount of material at a 45° angle for the hinge. The springs are installed after sanding both the tail sections. Install the tape hinge and cut the excess off, c as well as around where the horn will be installed. Installed one side of the spring close to the horn as this will have extra glue for holding. Next measure where the other side of the spring will be and using pin, make a mark. Uninstall the first side. Install the second side where your mark is until it bottoms out as well. As you initially install the springs, pinching either side of the fin to make sure the wire does not poke through. You want the spring installed in the center of the material. After both holes have been made, insert both into their respective holes at the same time until they bottom out. Add some ca, and you're done!. The servos will pull opposite the springs when installed and strings installed.



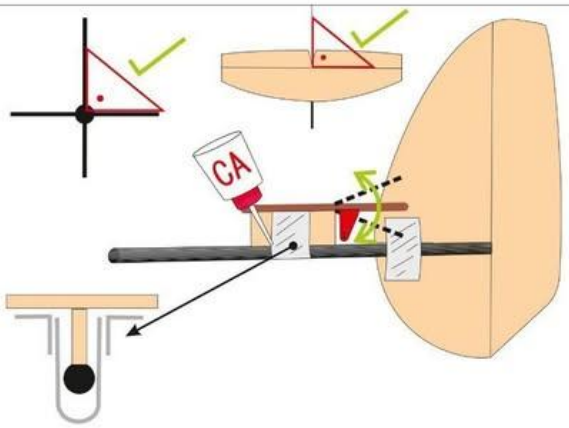
When finished them, install the springs. Please follow the pull-spring guide!

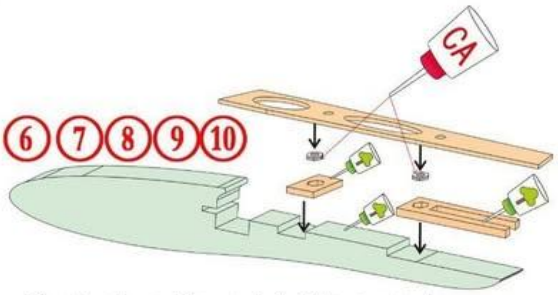
Slide the boom into to the slot in the vertical stab



Use CA sparingly!

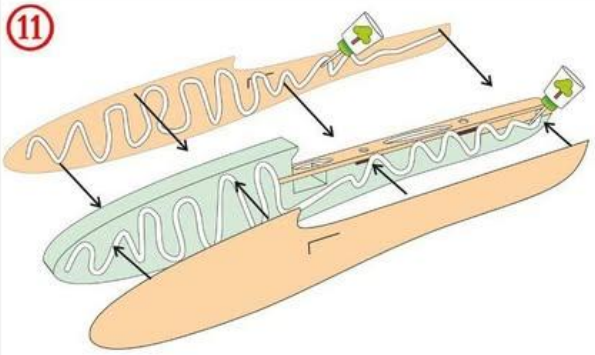
Any weight you add at the rear will need 3X more in the nose.



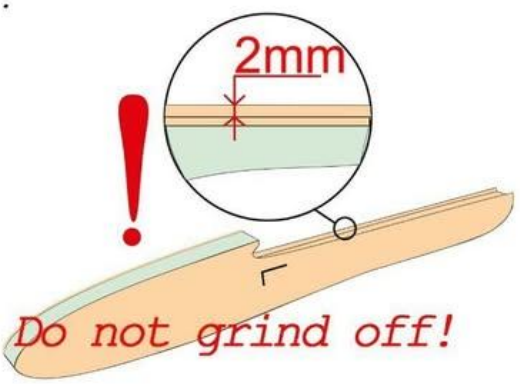


First glue the nut holders on to the plywood wing holder plate.
Then CA the nuts in place.
Slide complete wing holder plate into place the glue in with wood glue

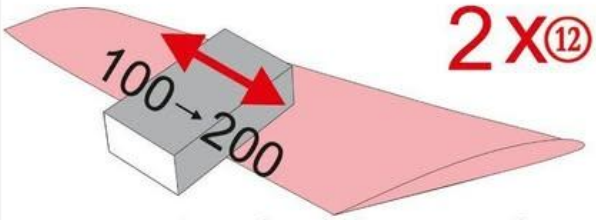
.



Glue the balsa sides in place with wood glue

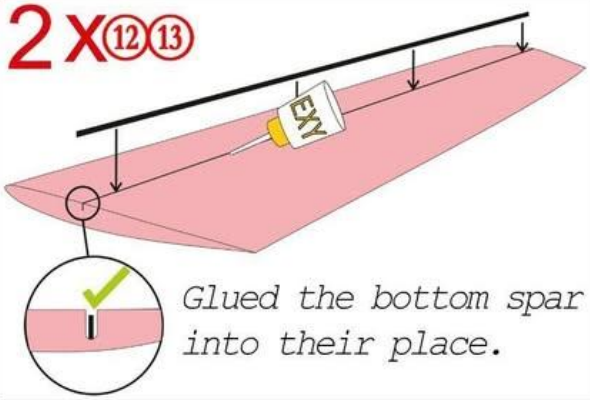


Do not grind off!

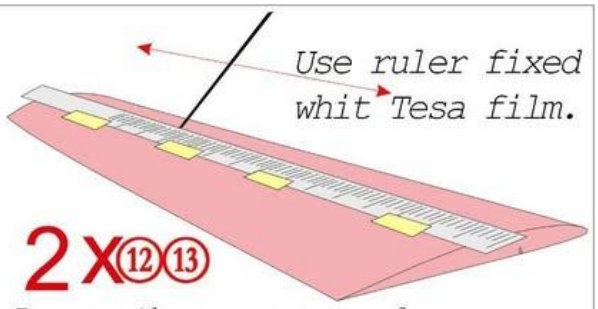


Prepare the wings for covering. Sand all surfaces with a fine sanding block. Please be careful at the trailing edge.

2 X (12)(13)



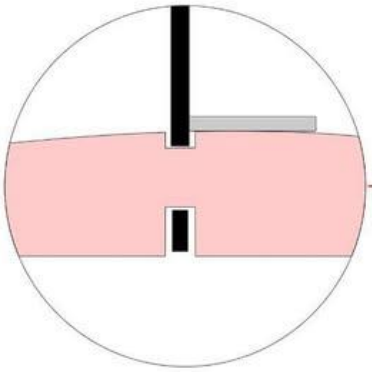
Glued the bottom spar into their place.

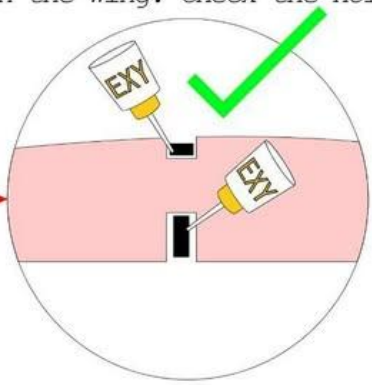


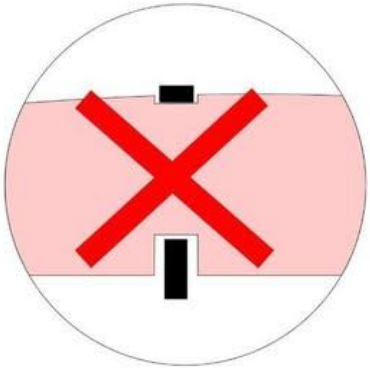
Use ruler fixed whit Tesa film.

2 X (12)(13)

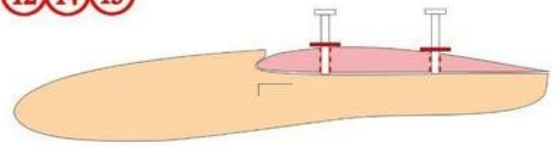
Prepare the upper spare place.
The location same at bottom spar.
Pull it out sometimes the end of the spar on the wing. Check the hole deep.





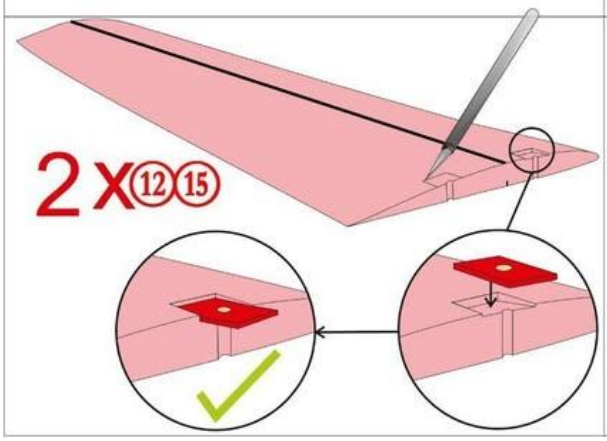


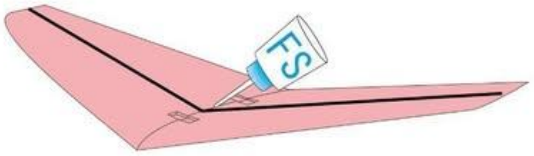
(12)(14)(15)



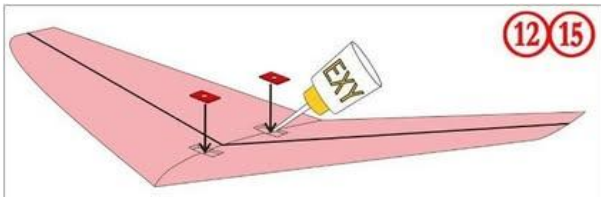
Locate one wing half correctly on the pod.
Mark the screw locations using a pen.
Use a round file to remove foam for the screws.
Similarly mark up the location of the plywood wing reinforcements. Cut rebates in the foam to locate the plywood pieces. Repeat this for the other wing, checking the second against the first.

2 X (12)(15)

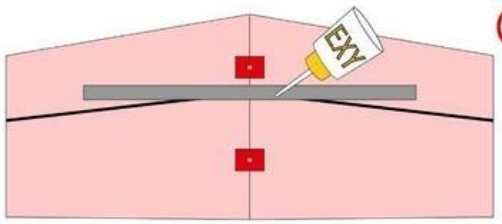




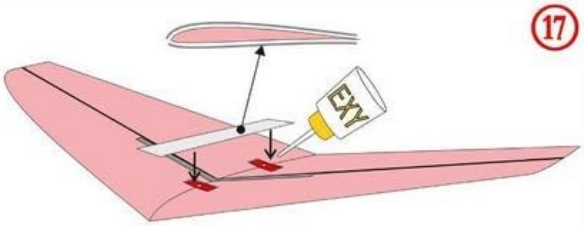
Joint the wings.
Use foamsafe Ca.



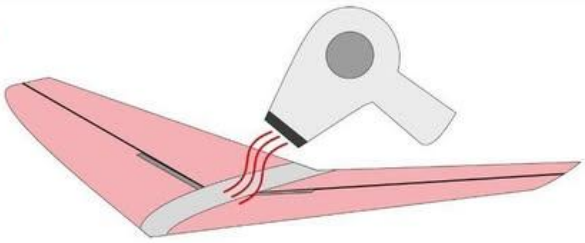
Install the plywood wing reinforcements.



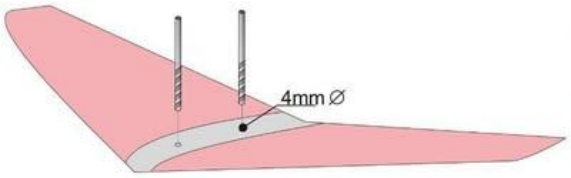
Install the UD. carbon strips in to the top and bottom side.



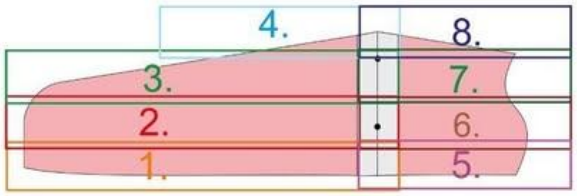
Install the fiberglass strips on to the top and bottom side.



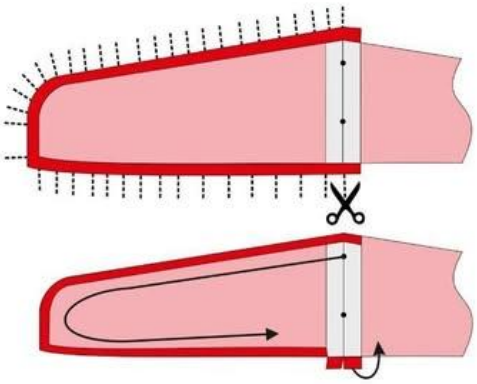
Heat them with hair dryer.

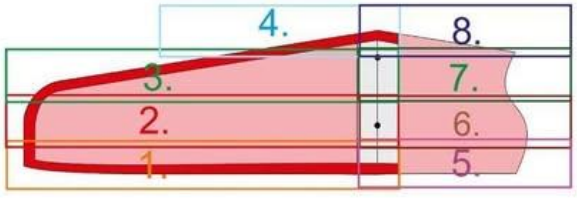


Drill holes for the wing mounting screws.

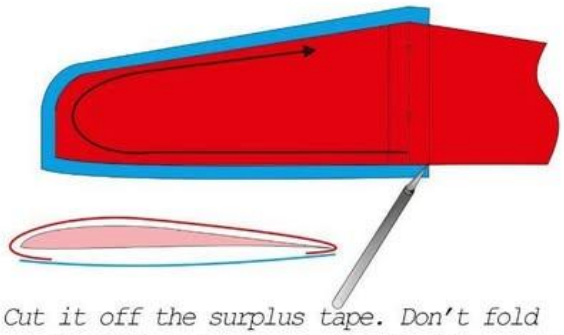


Wing covering: Use plain or colored packing tape. Start on the upper side. Follow the numbers.



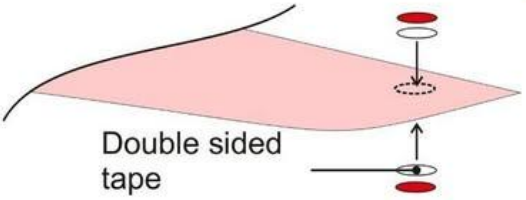


Next step covering the bottom side. Follow the numbers.

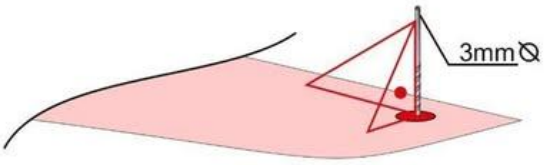


Cut it off the surplus tape. Don't fold up the bottom tape over the leading edge!

18

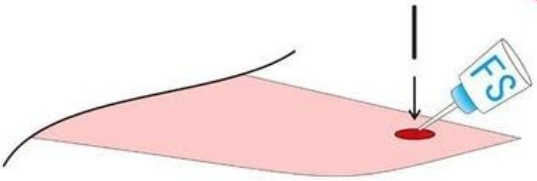


Glue up the two pieces plywood disks on your launch arm side.

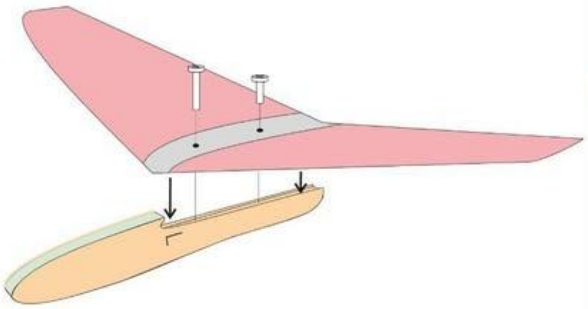


Drill a 3mm hold for the launch peg.

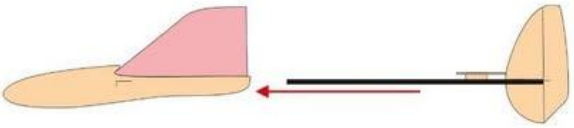
19



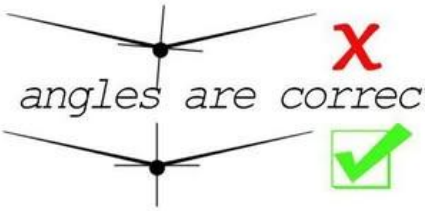
Glue in to the 3mm carbon rod peg with foamsafe CA.



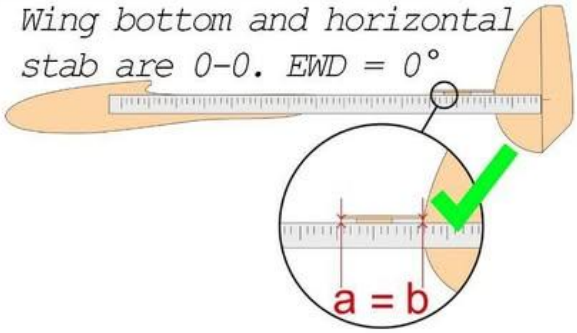
Place the wing on to the nose

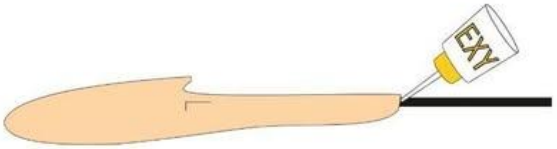


Assemble model and check

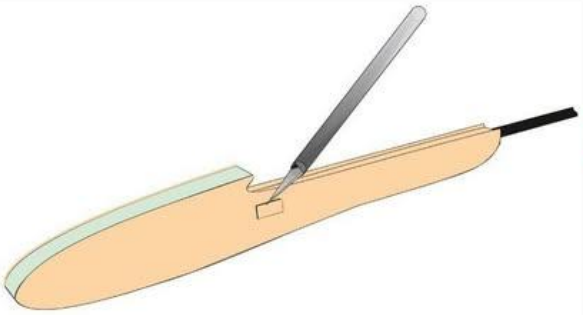


all angles are correct.

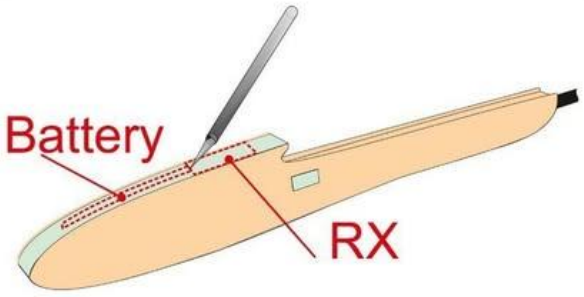


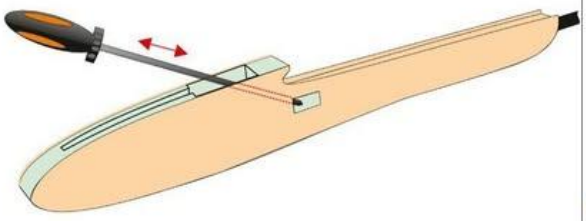


If all correct fix them with epoxy.

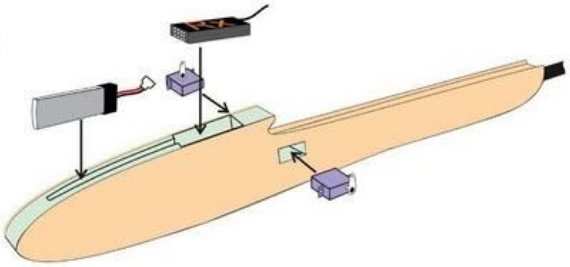


Cut out pockets for the servos, battery and receiver.

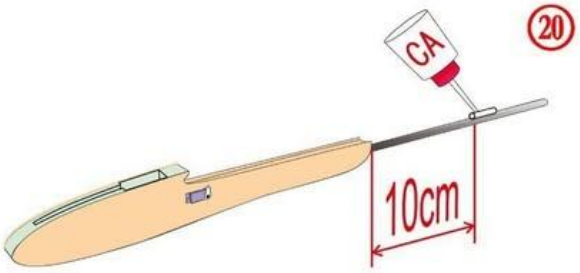




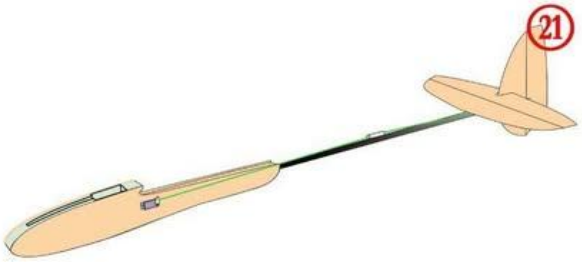
Carve out channels
for the cables.



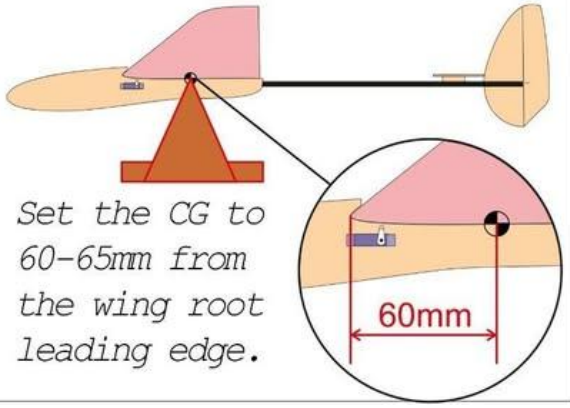
Install the electronics.



Glue the nylon tube(cut the lenght 10mm) 10cm behind the pod.

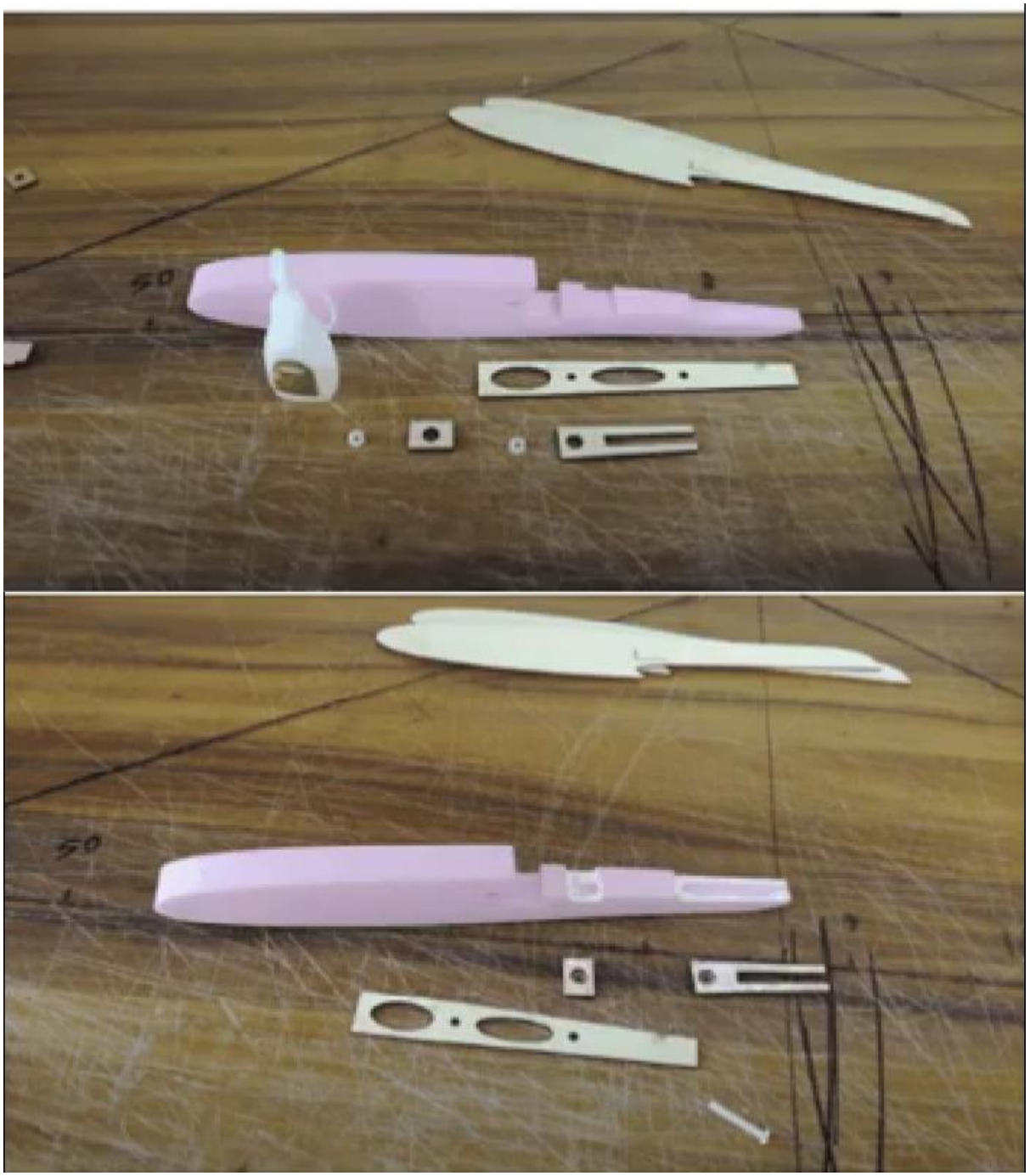


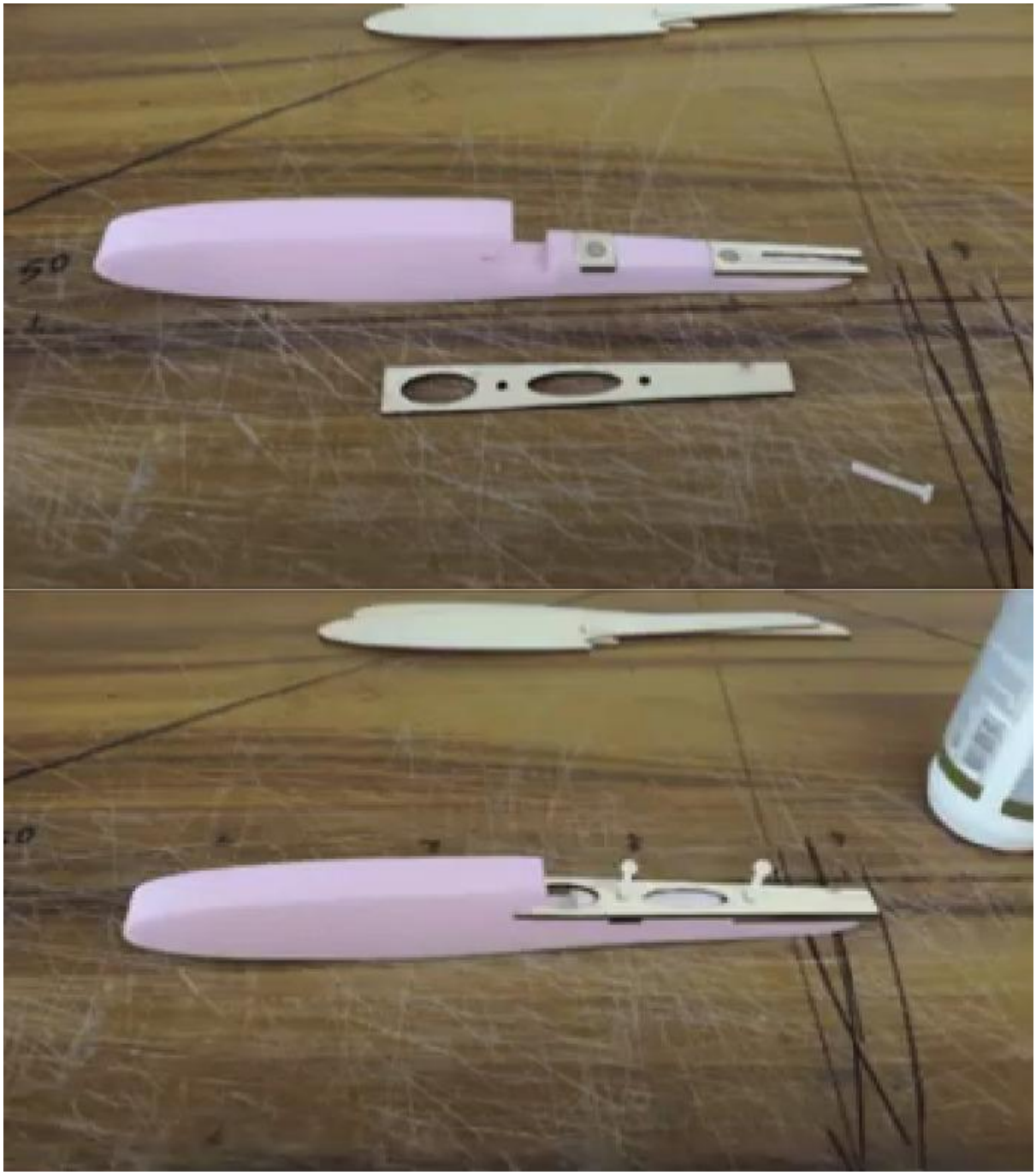
Install the control lines in to the servos and control horns between.

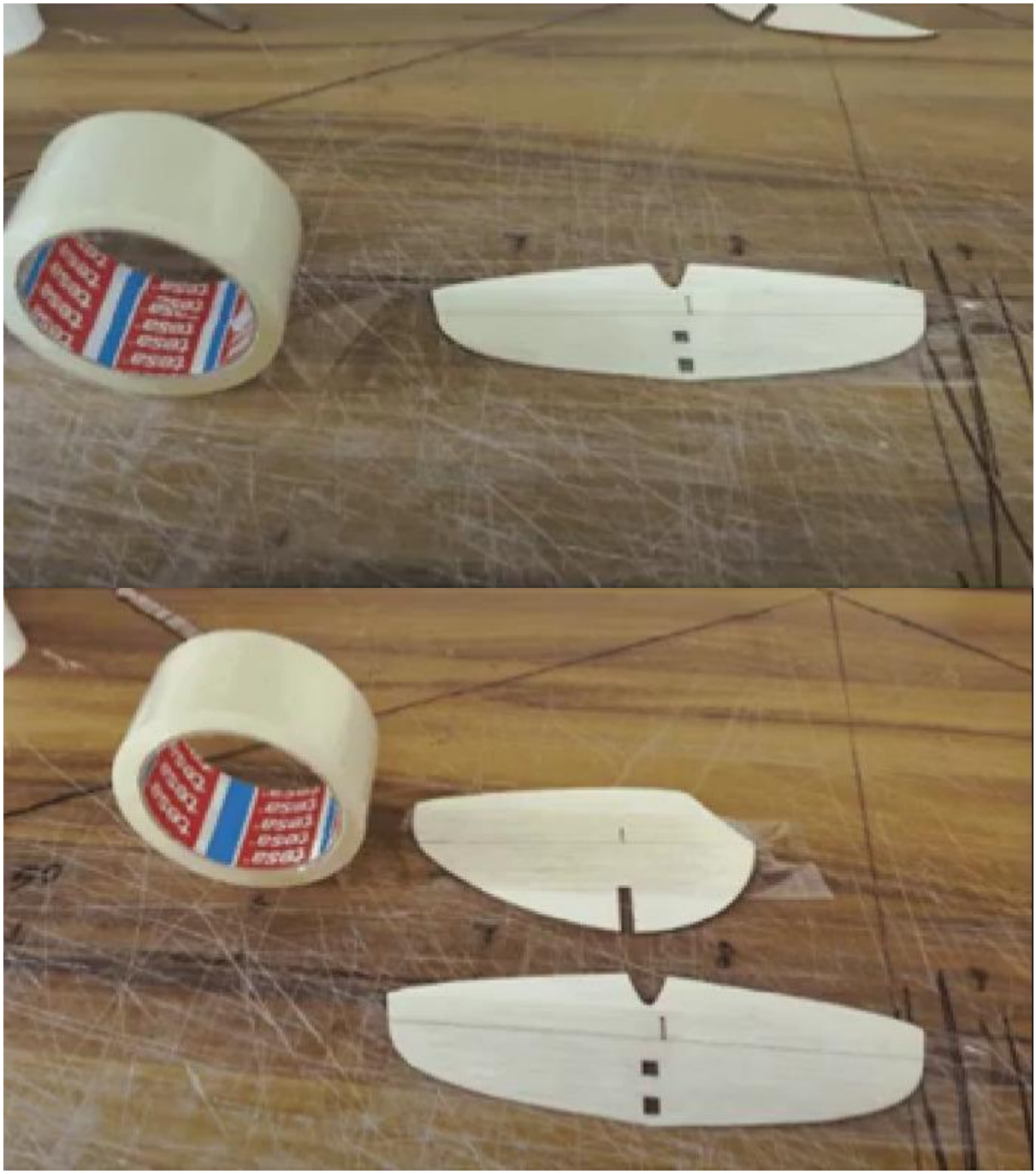


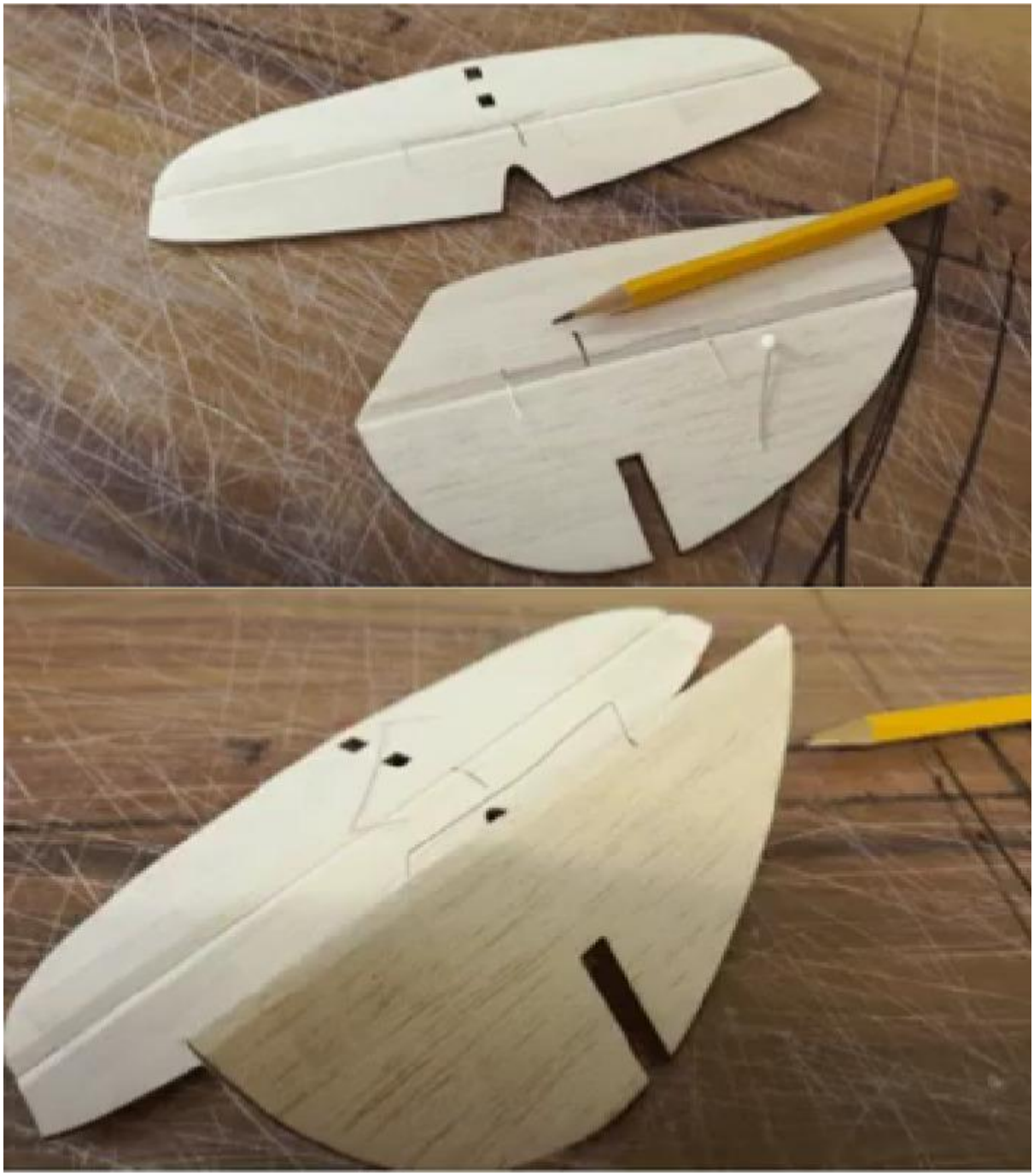
Set the CG to 60-65mm from the wing root leading edge.

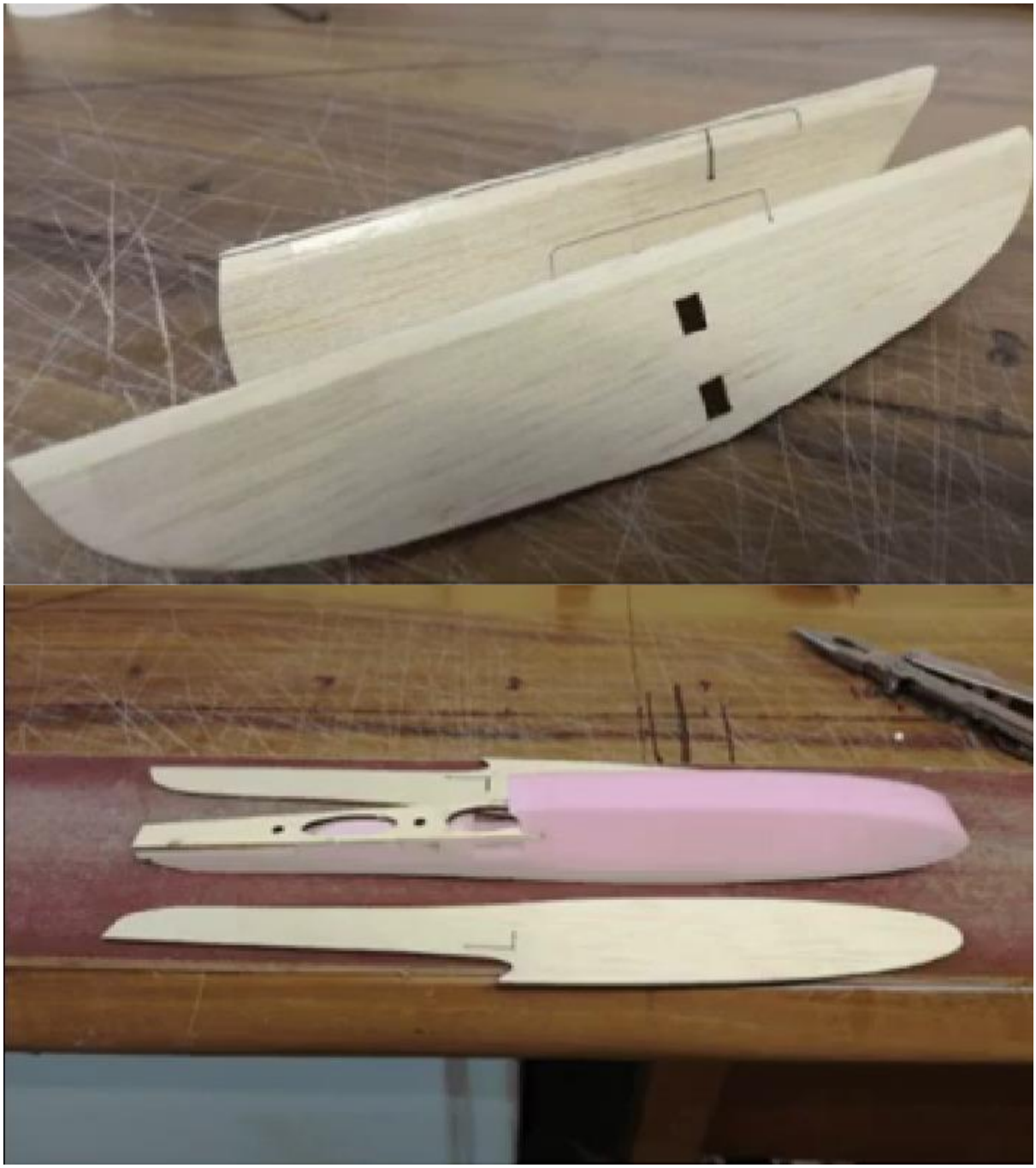
Go to fly!



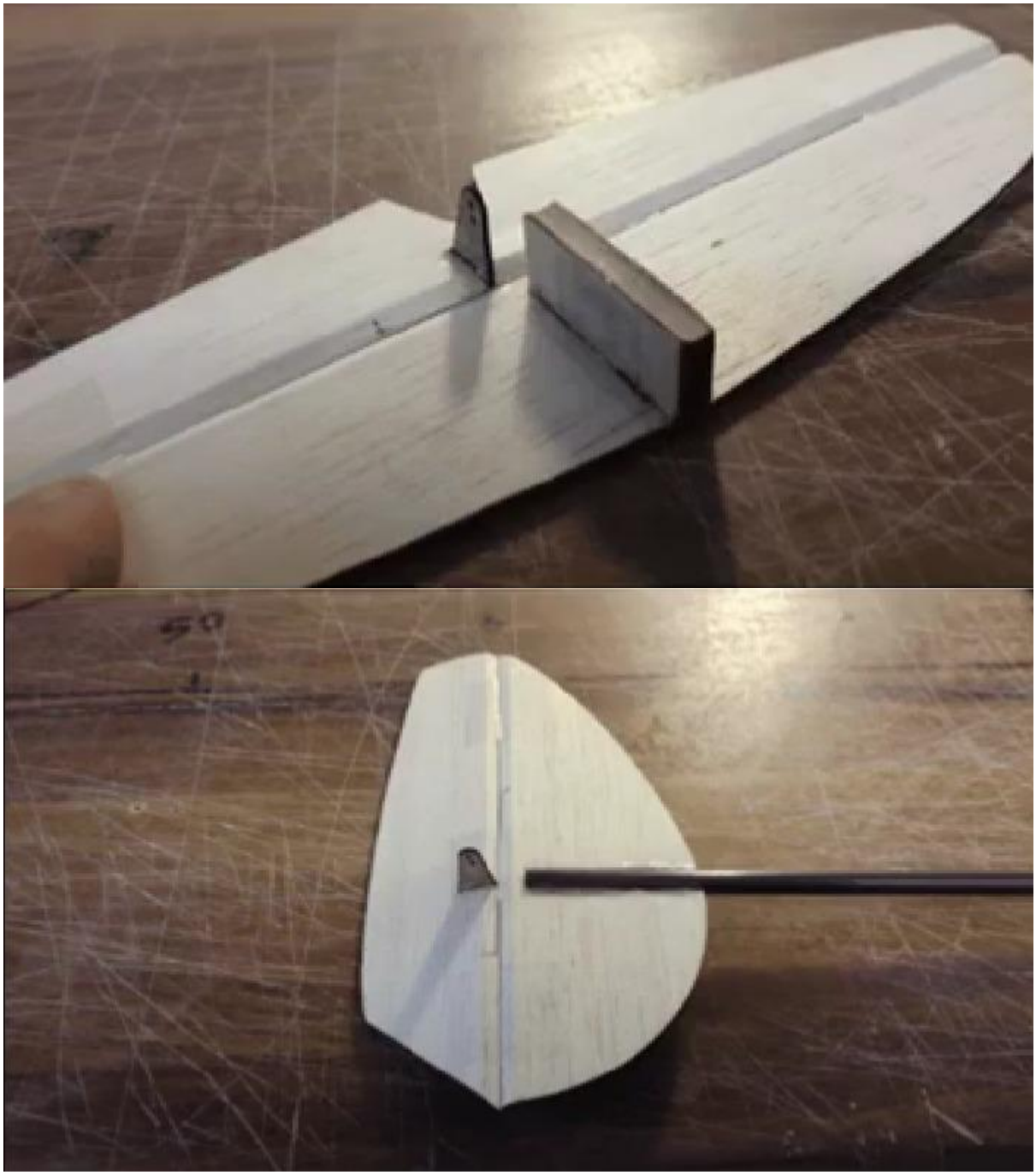


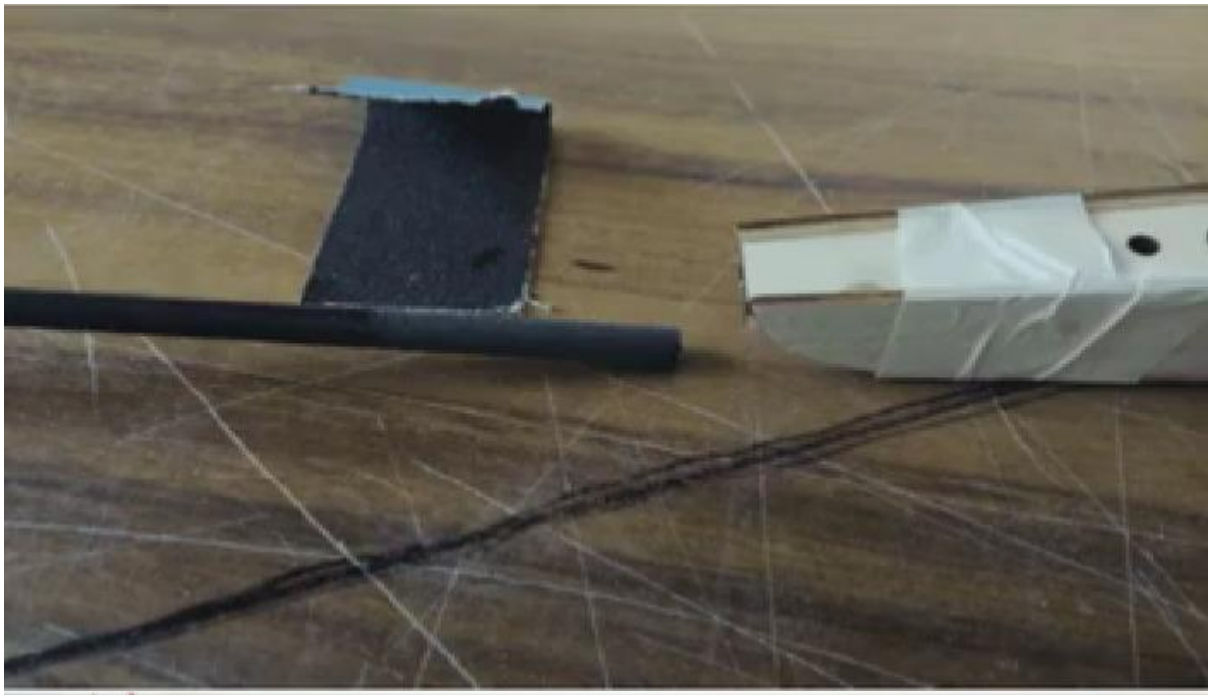


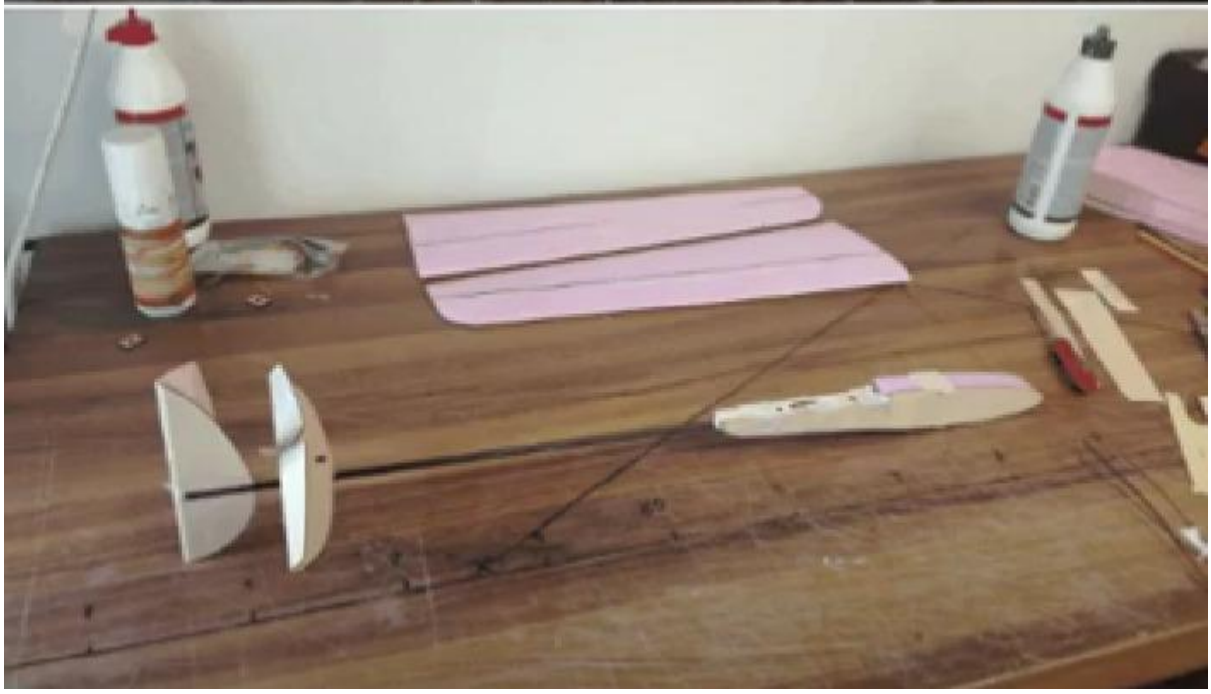


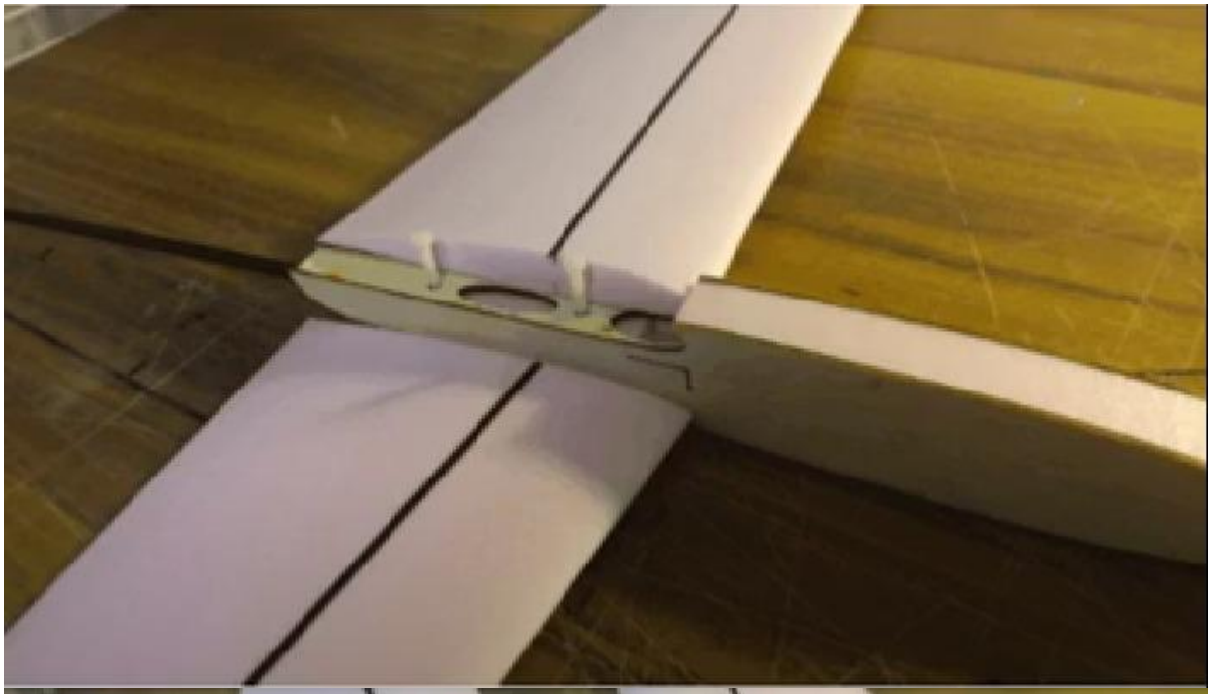


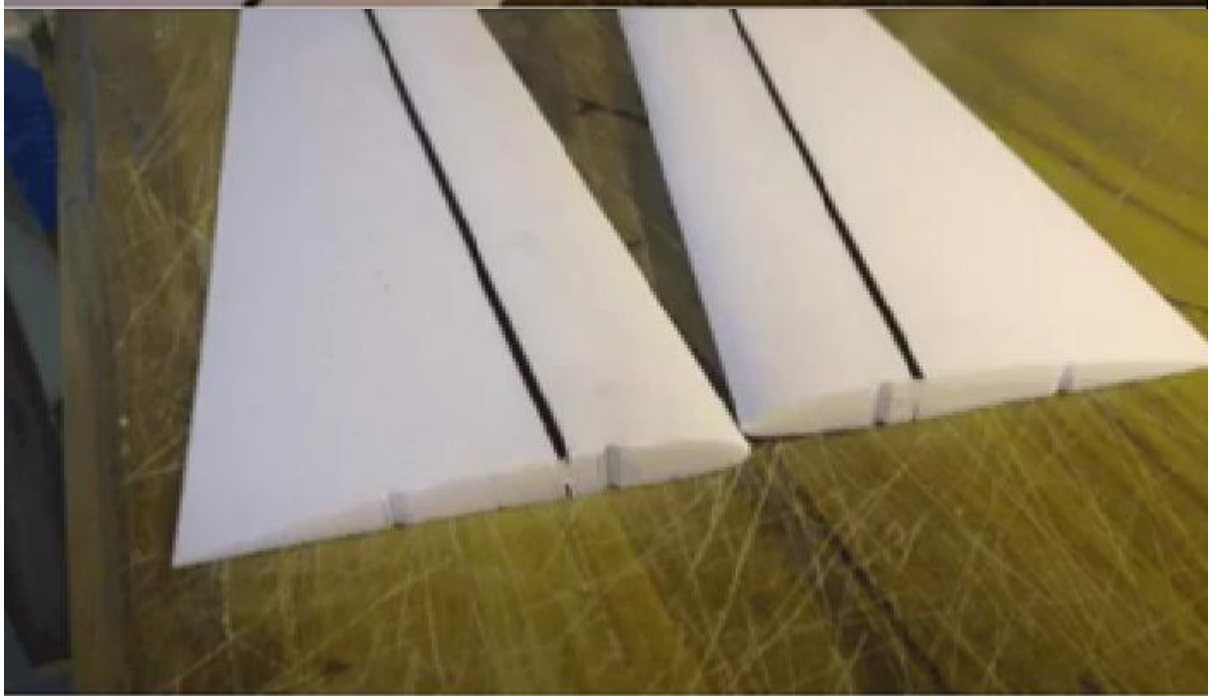

50

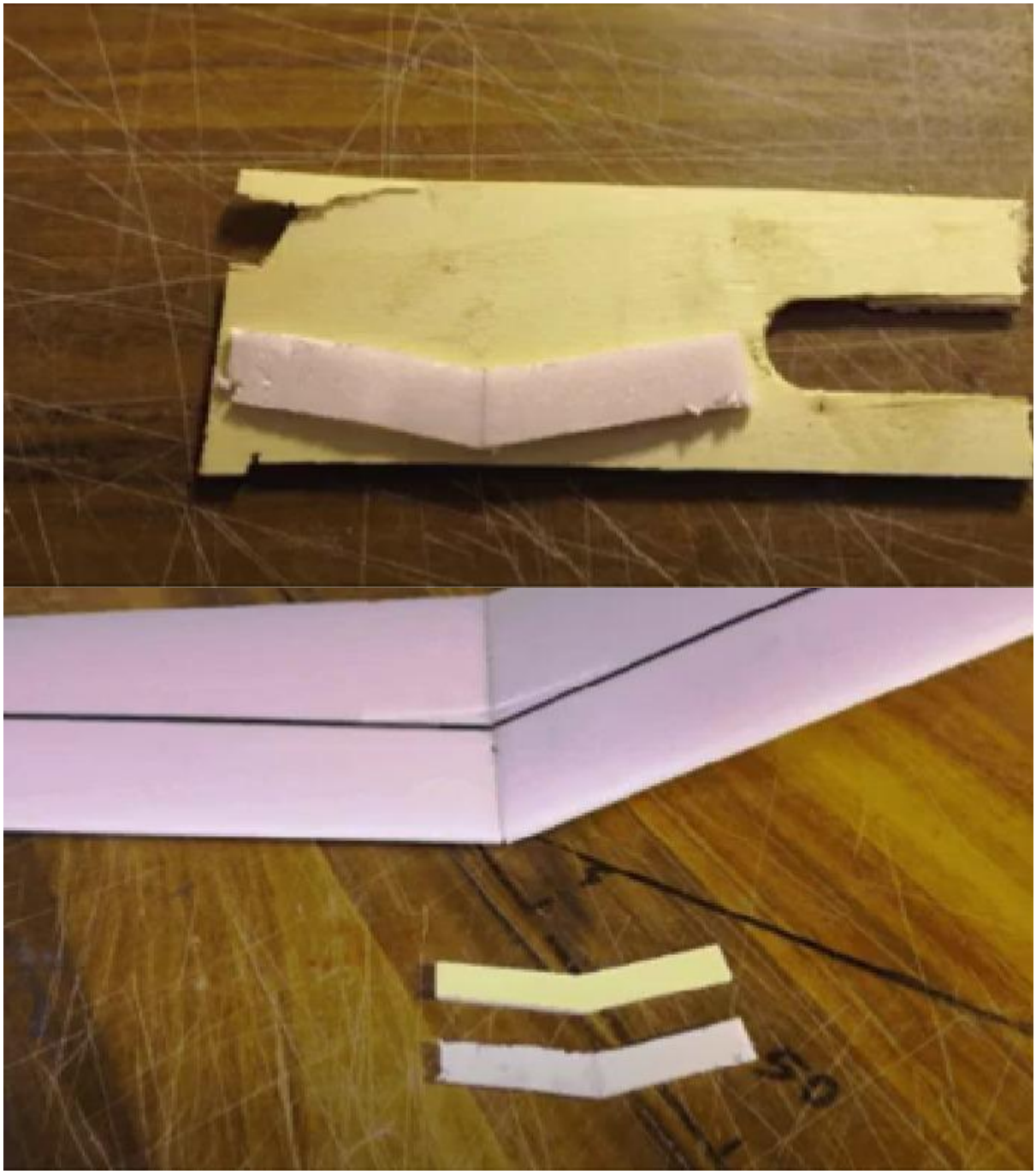


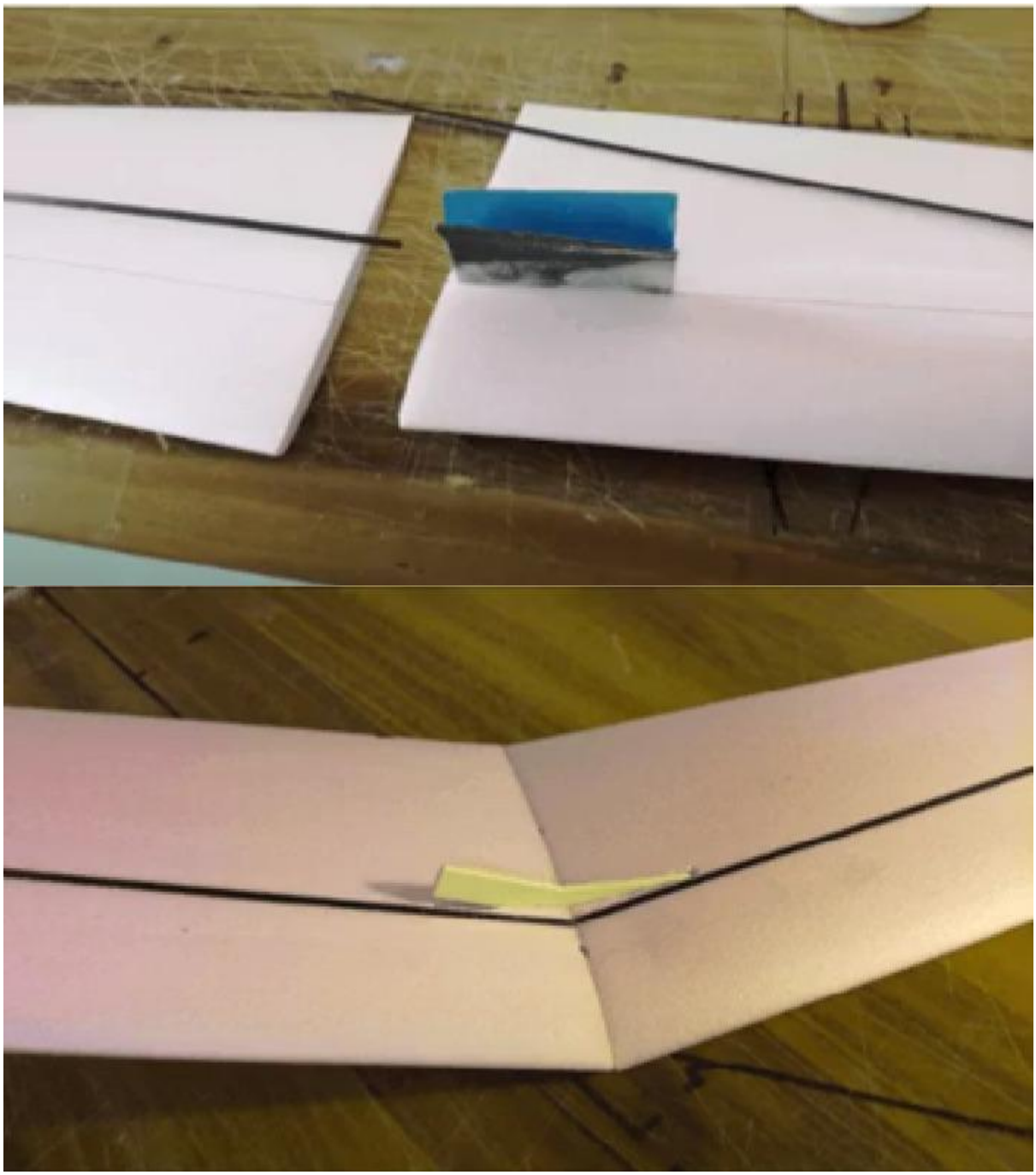


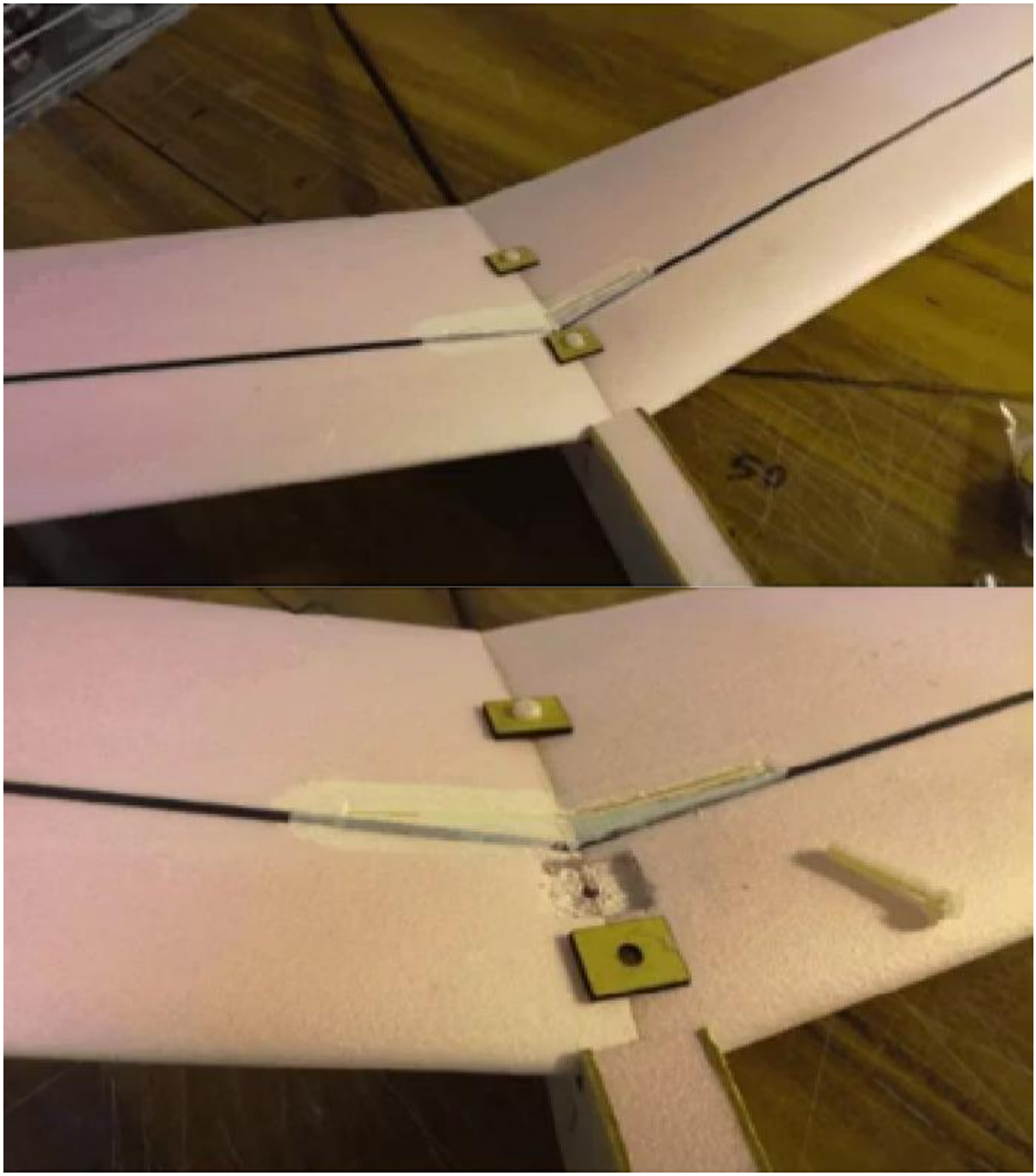


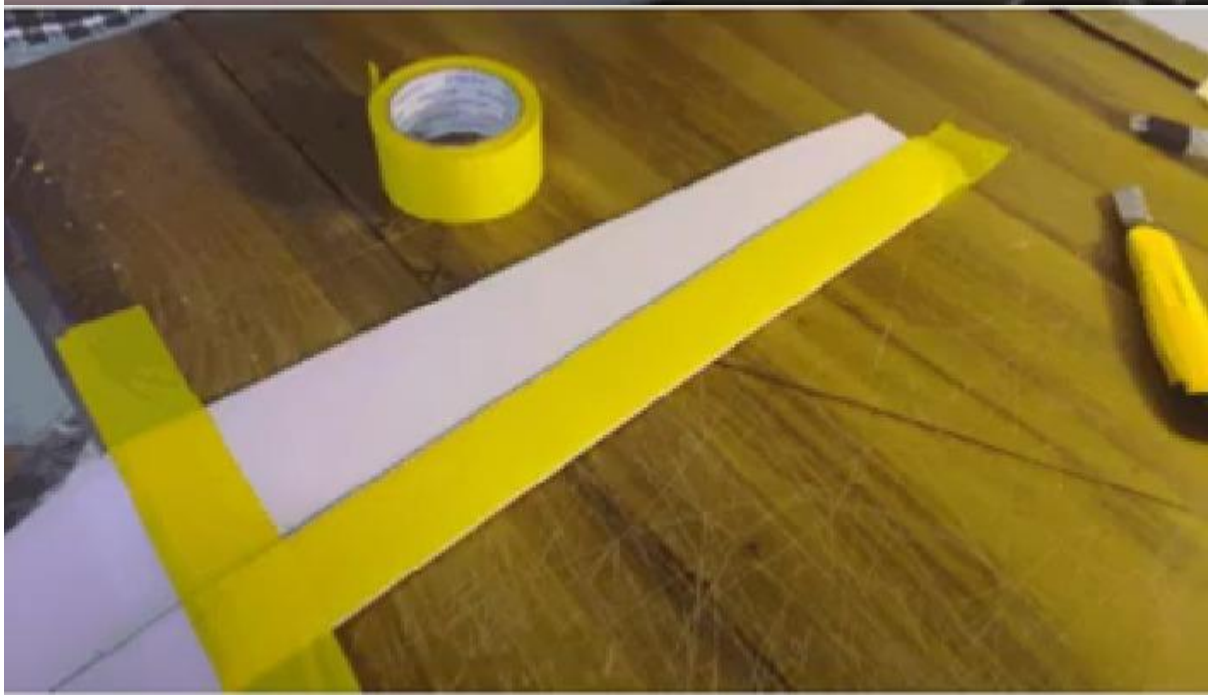


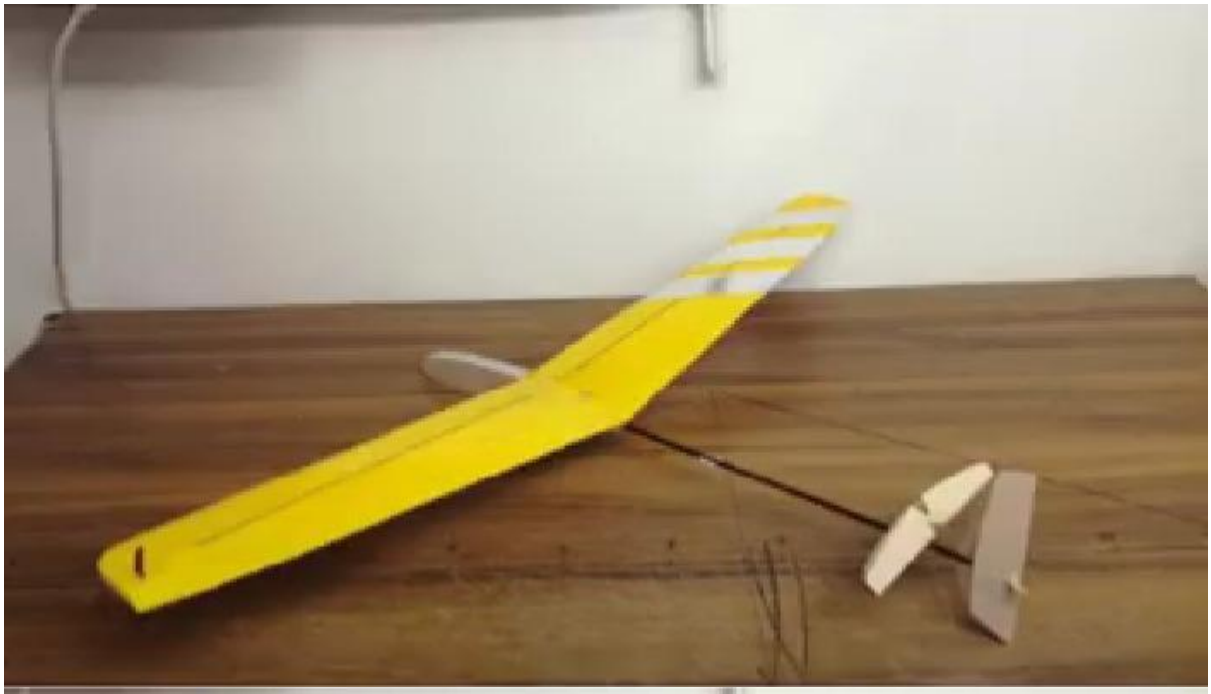


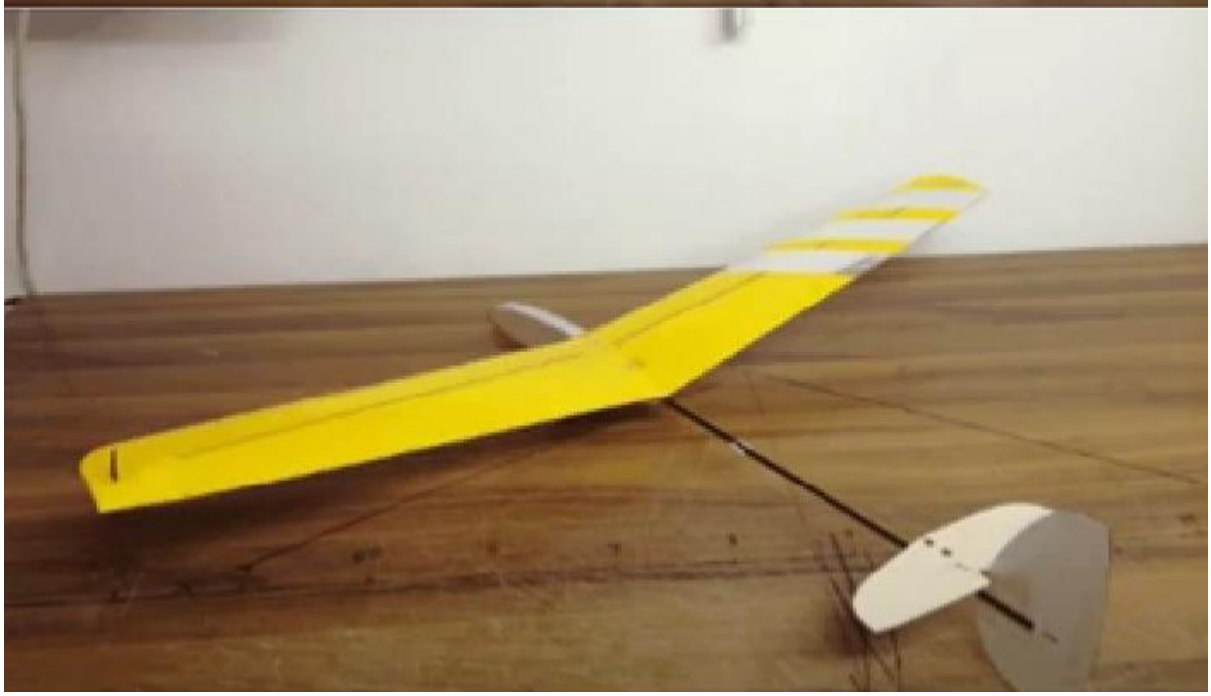


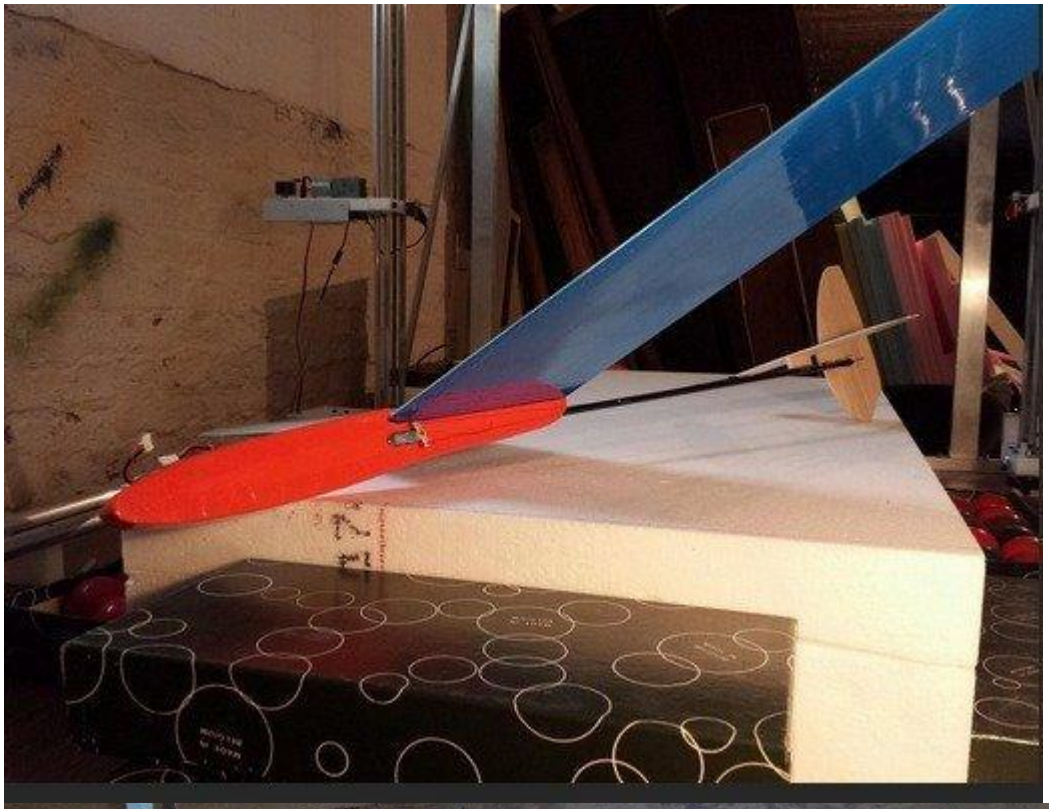


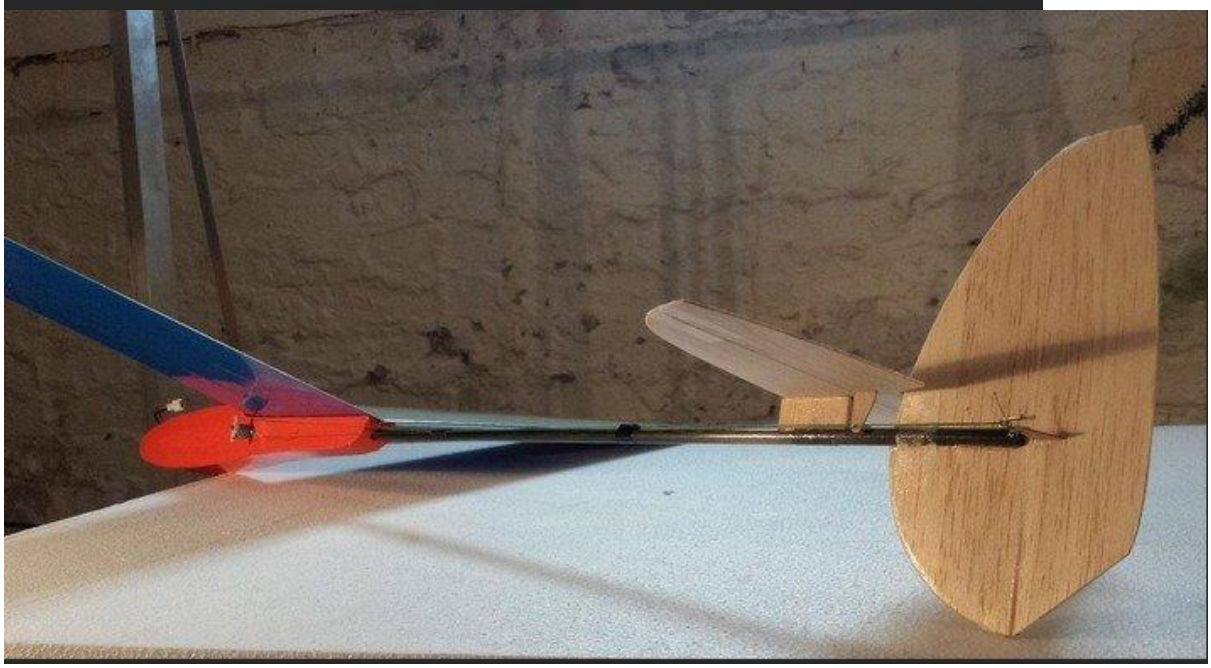












Airfoil Tools

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- Generated airfoil shapes

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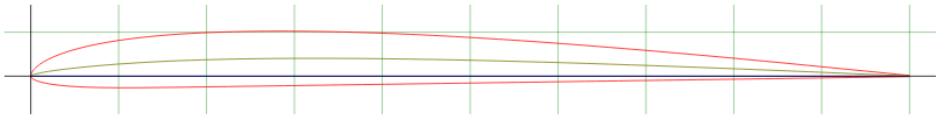
- A a18 to avistar (88)
- B b29root to bw3 (22)
- C c141a to curtisc72 (40)
- D dae11 to du861372 (28)
- E e1098 to esa40 (209)
- F falcon to fxs21158 (121)
- G geminism to gu255118 (419)
- H hh02 to ht23 (63)
- I isa571 to isa962 (4)
- J j5012 to joukowsk0021 (7)
- K k1 to kenmar (11)
- L l1003 to lwk80150k25 (24)
- M m1 to mue139 (95)
- N n0009sm to nplx (174)
- O oa206 to oaf139 (9)
- P p51droot to pw98mod (16)
- R r1046 to rhodesg36 (63)
- S s1010 to supermarine371ii (176)

AG03 (flat aft bottom) (ag03-il)

AG03 (flat aft bottom) - Drela AG03 (flat aft bottom) airfoil



Details

(ag03-il) AG03 (flat aft bottom)
Drela AG03 (flat aft bottom) airfoil
Max thickness 6.2% at 25.7% chord.
Max camber 2% at 33.1% chord
Source UIUC Airfoil Coordinates Database
Source dat file
The dat file is in Selig format

Dat file

```
AG03 (flat aft bottom)
     1.000000     0.000662
     0.994875     0.001210
     0.984975     0.002247
     0.973308     0.003426
     0.960939     0.004647
```

Parser

No parser warnings

Send to airfoil plotter
Add to comparison
Lednicer format dat file
Selig format dat file

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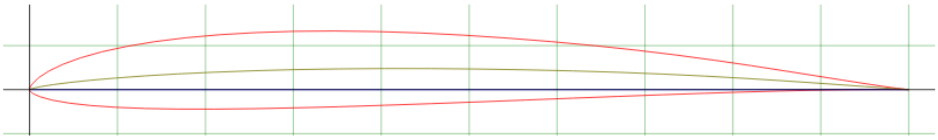
- F falcon to fxs21158 (121)
- G geminism to gu255118 (419)
- H hh02 to ht23 (63)

MH 32 8.7% (mh32-il)

MH 32 8.7% - Martin Hepperle MH 32 for F3E and F3B



Details

(mh32-il) MH 32 8.7%
Martin Hepperle MH 32 for F3E and F3B
Max thickness 8.7% at 30.2% chord.
Max camber 2.3% at 45.7% chord
Source UIUC Airfoil Coordinates Database
Source dat file
The dat file is in Selig format

Dat file

```
MH 32  8.7%
  1.00000000  0.00000000
  0.99671850  0.00034782
  0.98706463  0.00149967
  0.97145561  0.00363339
  0.95035123  0.00677805
```

Parser

No parser warnings

Send to airfoil plotter
Add to comparison
Lednicer format dat file
Selig format dat file

Airfoil Tools
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NACA 4 digit generator
NACA 5 digit generator
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NACA 5 digit airfoils
NACA 6 series airfoils
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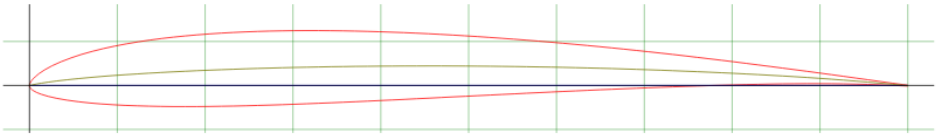
D dae11 to du861372 (28)
E e1098 to esa40 (209)
F falcon to fxs21158 (121)
G geminism to gu255118 (419)
H hh02 to ht23 (63)
I isa571 to isa962 (4)

AG24 Bubble Dancer DLG by Mark Drela (ag24-il)

AG24 Bubble Dancer DLG by Mark Drela - Drela AG24 airfoil used on the Bubble Dancer R/C DLG



Details

(ag24-il) AG24 Bubble Dancer DLG by Mark Drela
Drela AG24 airfoil used on the Bubble Dancer R/C DLG
Max thickness 8.4% at 26% chord.
Max camber 2.2% at 46.9% chord
Source UIUC Airfoil Coordinates Database
Source dat file
The dat file is in Selig format

Dat file

```
AG24 Bubble Dancer DLG by Mark
     1.000000     0.000312
     0.994048     0.001043
     0.982038     0.002630
     0.968488     0.004486
     0.954647     0.006421
```

Parser

Dat file parser warnings

- Line 162 - Invalid characters : The AG2x airfoils are intended to be used on composite versions of the
- Line 163 - Invalid characters : Bubble Dancer and the Allegro-Lite.

Send to airfoil plotter
Add to comparison
Lednicer format dat file
Selig format dat file

Airfoil Tools

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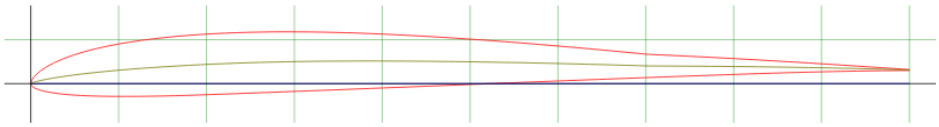
- E e1098 to esa40 (209)
- F falcon to fxs21158 (121)
- G geminism to gu255118 (419)

AG45c -03f (ag45c03-il)

AG45c -03f - Drela AG45c -03f airfoil



Details

(ag45c03-il) AG45c -03f
Drela AG45c -03f airfoil
Max thickness 6.9% at 23.5% chord.
Max camber 2% at 31.7% chord
Source UIUC Airfoil Coordinates Database
Source dat file
The dat file is in Selig format

Dat file

```
AG45c -03f
     1.000086     0.015922
     0.994138     0.016317
     0.982099     0.017150
     0.968507     0.018092
     0.954615     0.019018
```

Parser

Dat file parser warnings

- Line 2 - X value too large but included: 1.000086 0.015922
- Line 170 - X value too large but included: 1.000152 0.015029

Send to airfoil plotter
Add to comparison
Lednicer format dat file
Selig format dat file