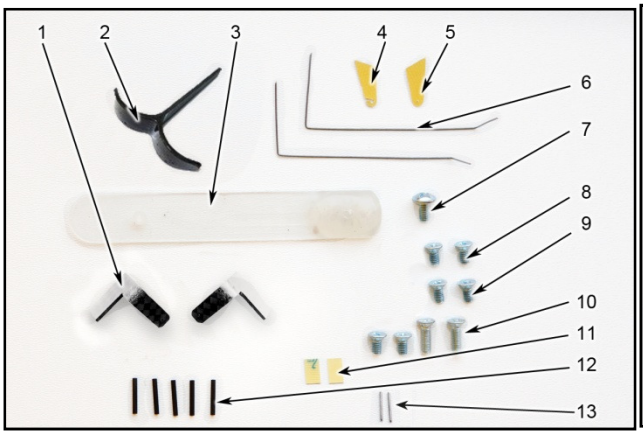
1. The list of parts and materials to build:

Accessory kit:



1 - Horns wing (2 pcs);

2 – Launch T peg;

3 – Ballast nose mount;

4 - Stabilizer control horn (with slot)

5 – Vertical tail control horn (with hole);

6 - Torsion spring rudder and elevator;

7 - Screw for ballast M3;

8 - Screws stabilizer (2 pieces);

9 - Spare screws stabilizer (2 pieces);

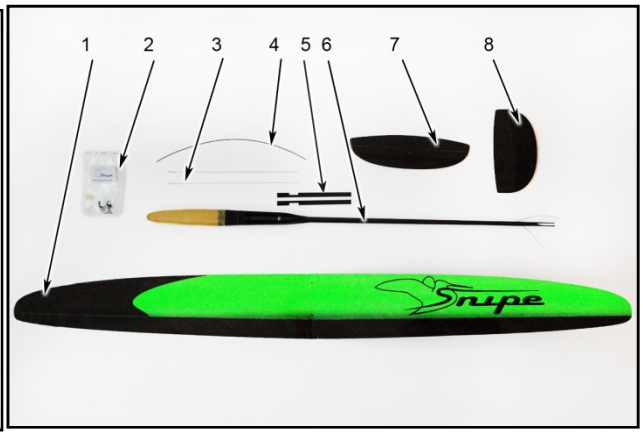
10 - Set of screws for attaching the wing and M3 h10 M3x6 (1 set of spare);

11 - Cover wing controls;

12 - Pipes for sealing control cables;

13 – Flaperon control horn pivot axes.

Parts set:



1 - Wing;

2 - Accessory Kit Snipe;

3 – Flaperon pushrod (2 pieces);

4 – Flaperon pushrod housing;

5 - Fuselage;

6 – Flaperon pushrod stiffener plate;

7 - Stabilizer;

8 – Vertical tail.

List of recommended hardware to run your model:

1) Ballast Snipe;

2) Battery Shread-RC Smart Li-Po 650mAh or Shread-RC Smart Li-Po 450 mAh

3) Servos: JR 285 MG, FutabaS3155, MKS-DS6100, HyperionDS09-SCD, DymondD60; DymondD47 (Only the rudder);

4) Receivers: Spectrum AR6255; Futaba 6008HS without the case; Futaba R6106HFC; Weatronic Clever 6 Receiver 2.4 Dual FHSS.

The list of materials needed to build the model:

1) Superglue and liquid medium, the accelerator
2) Cutter
3) Masking tape
4) Pen and ruler
5) Pliers
6) Sandpaper number 240-320

2. Assembling the model

2.1 Bonding of control horns in rudder and elevator.

With a knife cut the slots in the elevator and rudder in these locations. (Fig. 2.1 - 2.2).

Elevator horn isexactly in the center (along the axis of the stabilizer mounting holes) as the position must coincide with the slot in the pylon and tail boom. Horns must be glued full depth to elevator.

Liquid superglue Glue Horns in elevator and rudder..

Note:

- the maximum height of the elevator horn is 15 mm (Fig. 2.3)

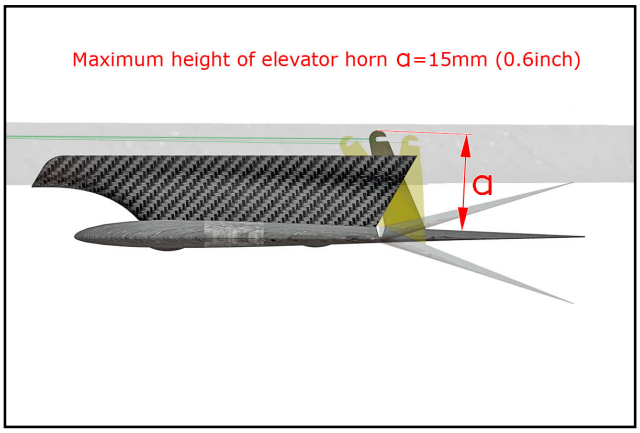


Figure 2.3 - Maximum elevator horn length

Figure 2.1 - Bonding elevator horn

Figure 2.2 – rudder horn installation location

2.2 Bonding of torsion bars in the control surfaces

Center torsion spring on the control surface. (Fig. 2.4)

Make holes for the torsion spring with a needle and install torsionspring with superglue. (Fig. 2.5, 2.6) Torsion spring should provide force to the opposite side of the control horn.

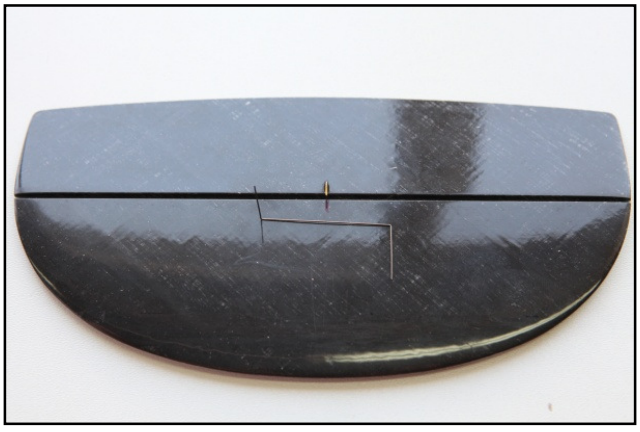


Figure 2.4-Torsion spring location

Figure 2.6 - Sizing torsion feathers

Figure 2.5 - Insert the torsion bar in the tail

2.3 Inset kylya in hvostovuyu beam

Fix the rudder at zero deflection with masking tape.

For the vertical tail, install it vertical relative to the stabilizer and wing (Fig. 2.8), and center it with respect to the boom. (JW note: I offset mine about 1 cm upwards compared to centered). Glue the fin into the groove of the fuselage with superglue. (Fig.2.9)

(JW – I put a small fiberglass patch over the fuselage onto the fin to increase the durability of the fin bond)

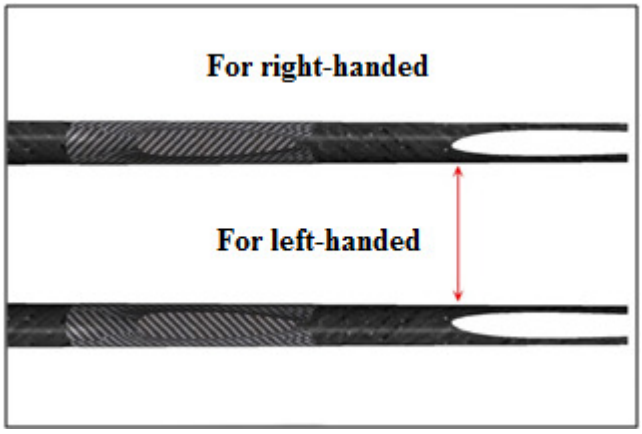


Figure 2.7 - Two versions of the fuselage (bottom view)

When bonding fin note:

- because airfoil is not symmetric, we make two versions of the fuselage keel with grooves right-handed and left-handed. Fig. 2.7 shows a view on the fuselage below

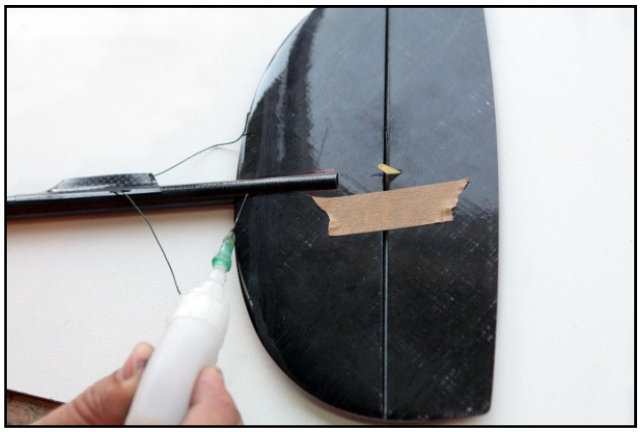


Figure 2.9 – Bonding fin

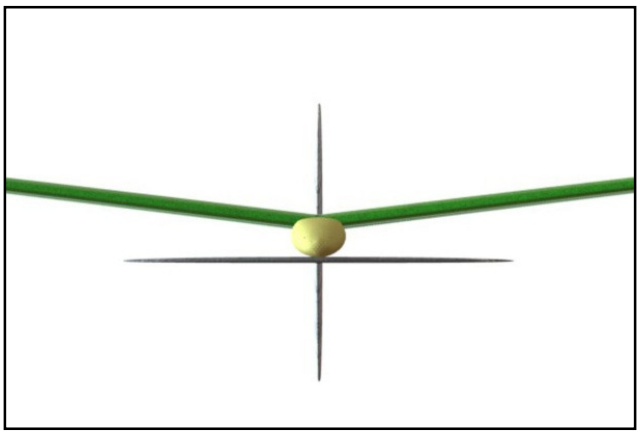


Figure 2.8 Set fin perpendicular to the axis of the fuselage

2.4 Incorporation of tail surface control cables

Insert the wire through the hole on the control horm. Using a tube for cables (which you'll find in the accessories kit) with a pair of pliers to crimp the cable as photo 2.10-2.11

To make a draft of the stabilizer of a cable loop and crimp its tube for fixing the rope. (Fig. 2.12, 2.13).

For assistance in assembly, attach a 100 mm thread to the elevator cable. You can lock the thread on the tail boom with tape and pull it out of the slot in the fuselage for assembly of the model. (Fig. 2.13)

Figure 2.10 - Cable on rudder

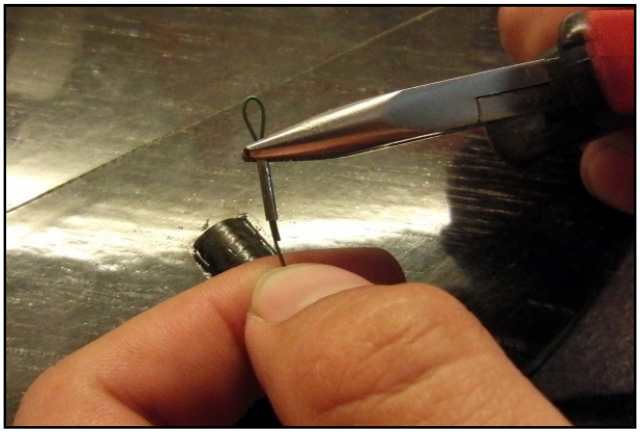


Figure 2.11 - Crimping tube cable

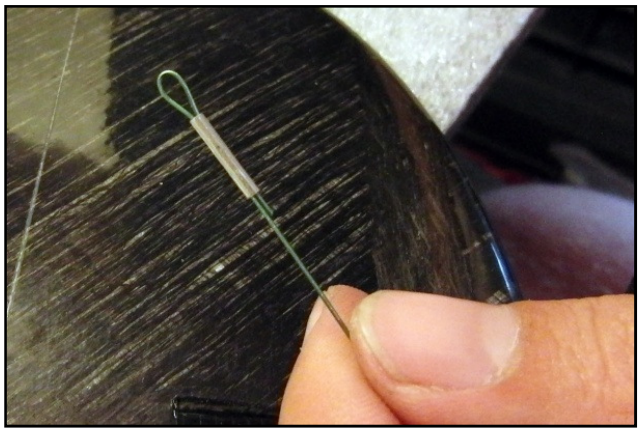


Figure 2.12 - Preparation for the cable stabilizer

Figure 2.13-The thread on the cable of the elevator

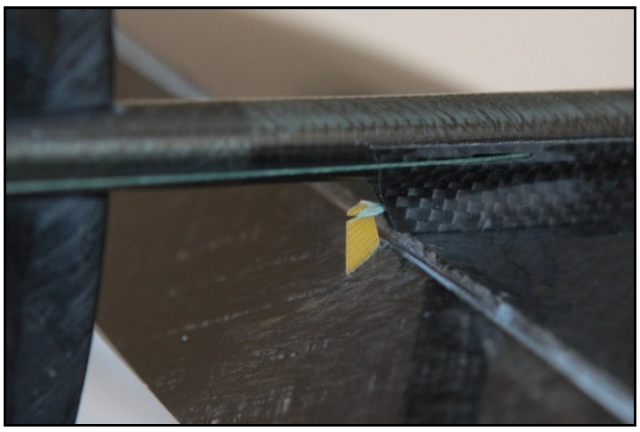


Fig. 2.14 - Cable stabilizer

2.5 Installing the aileron horns.

Attention: Snipe wing pylon has a complex kinematics. Installing the horn the wrong location in the depth and the chord of the wing there can be interference with the upper wing skin. Fig. 2.15

In order to provide clearance from the upper surface of the wing patch stick to the pylon . Attach the patch to the upper flat of the flaperon horn tab. Fig. 2.16

Drill a hole with a diameter of 2- 3mm in the lower surface of the wing in the control horn, to prepare horn installation with glue . Fig. 2.17

Clean the area around the flaperon pivot axis slot and sandpaper for better adhesion . Fig. 2.18

Insert the Horns in the slot of the flaperon , and insert the pivot shaft into the flaperon horn. Secure the axle in the wing slot with superglue . Fig. 2.19 Make sure that the horn separation matches Fig. 2.24

Set the pylon in the gap of 0.3-0.7 mm from the stop line. Set the plane parallel to the plane of the slot hog inside the aileron . Lock Horns with thick superglue through the hole. Use the accelerator , but do not let the foaming superglue . Fig. 2.20

Turn the aileron carefully seal the pylon inside the aileron . Be careful - do not pour glue joint elerona. Fig. 2.21 Kevlar - 2.22

Cut carbon tissue (80-120 g/m2) or two layers of Carboline. Glue the reinforcement , alternating impregnation CA and crimping finger through a polyethylene film. Be careful not to use too much CA and glue pylon axis . Fig. 2.25.

(JW note: I used good epoxy for these steps rather than CA)

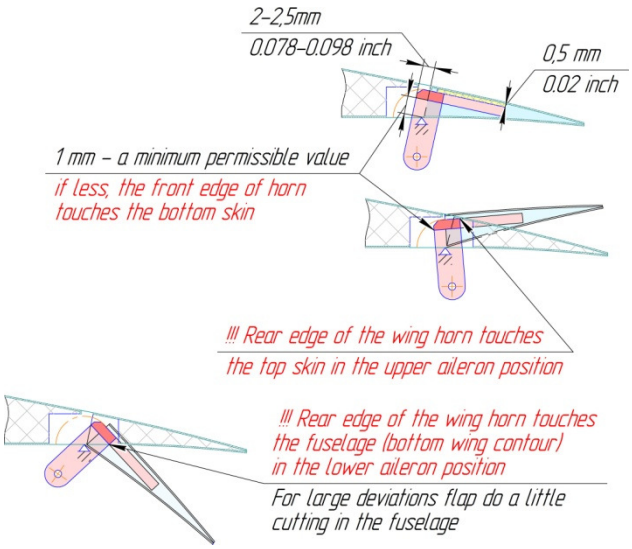


Fig. 2.15 - Kinematics aileron horn

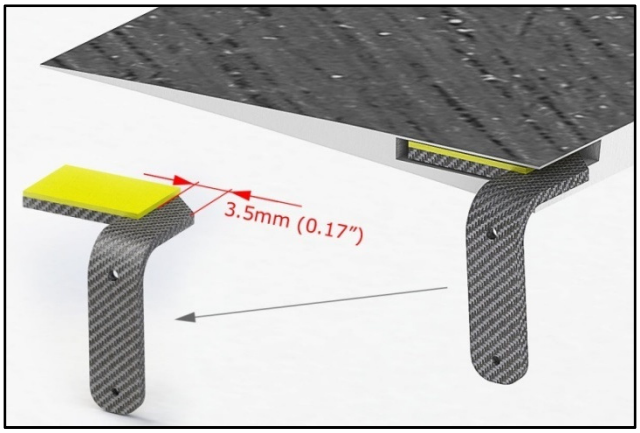


Figure 2.16 – Flaperon horn tab insert

Fig. 2.18 – preparing axle bond with sandpaper

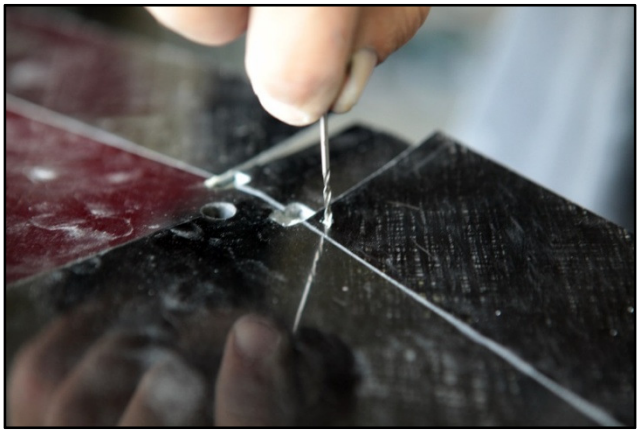


Figure 2.17 - Holes for gluing horn in flaperon

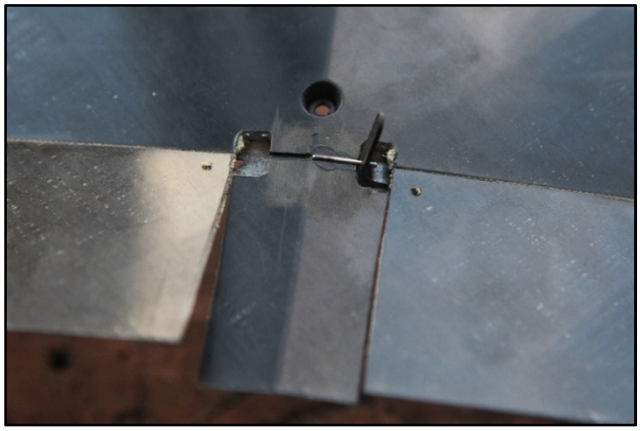


Figure 2.19 – Gluing the flaperon axles

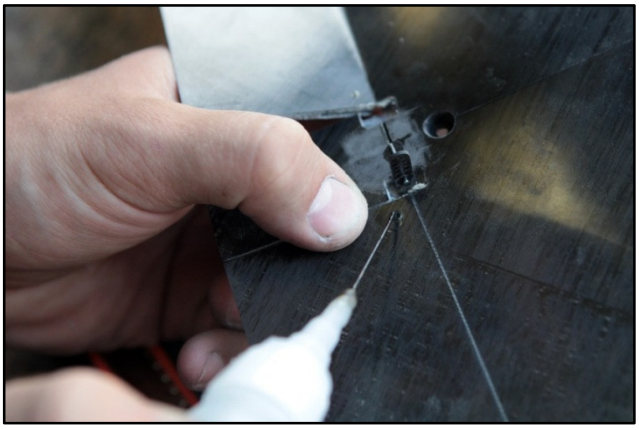


Figure 2.20 - Bonding horns thick CA through the hole in the aileron

Figure 2.21 - Bonding horn inside the aileron

Figure 2.22 - Bonding horn inside the aileron

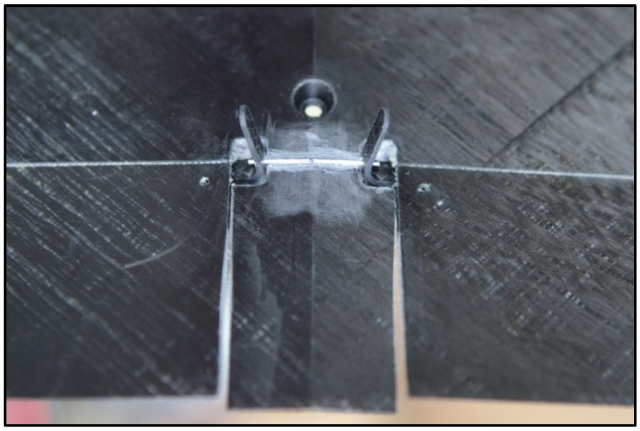
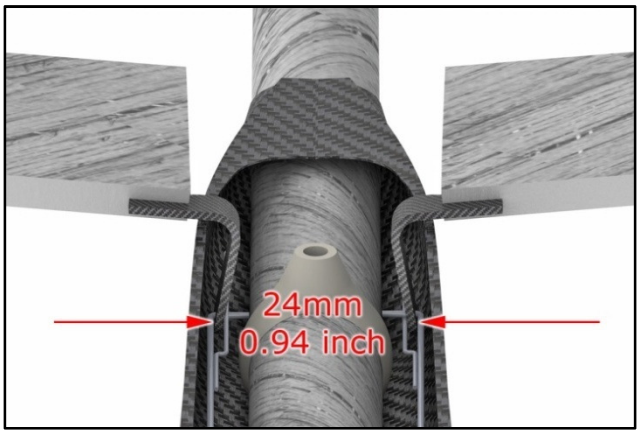


Figure 2.23 - Finished Horns wing with pivot axles



2.24 - The distance between the flaperon horns

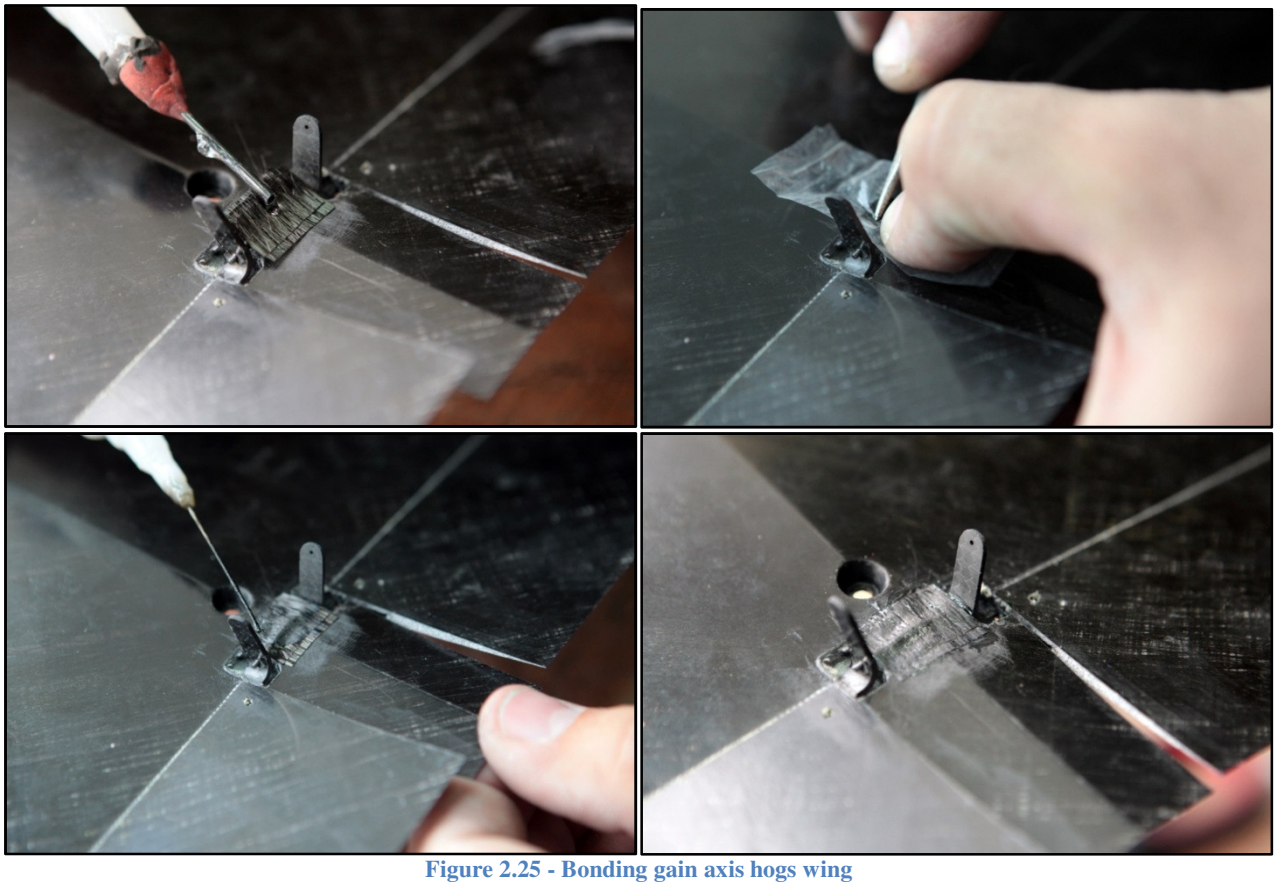


Figure 2.25 - Bonding gain axis hogs wing

2.6 Installing the servos, battery and receiver

Recommend placing the equipment in the manner as shown in Fig. 2.26 . Minimize nose weight by installing the gear as far forward as space will permit.

To save space, we recommend trimming the servo mount tabs so the servos can be pushed together. One can wrap the servos with masking tape to aid in replacement (JW note, I find it easier to not do this as the glue pops easily from the plastic servo case when one needs to replace a servo). Carefully wrap the servo case with strong thread (Kevlar or other CBM) (Fig. 2.27).

Prepare Horns Servo with arm lengths:

The ailerons - 9 -11mm (JW – I use 6-7 mm);

The elevator and rudder - 8 -9mm . (JW – I use 7 mm)

Screw the Horns to the servo.

Secure the battery in place in the nose with adhesive tape. Secure the receiver in place with double sided adhesive tape. Horns aileron servos should be further away from the fuselage body and tail servo horns closer (Fig. 2.26). Place the receiver at the front of the fuselage fairing (aft of the servos).

Attention: If you are using a servo thickness of 11 mm, pay attention to the location to ensure that there is no interference with the nose cone. (Fig. 2.28 -2.30).

Put the nose cone and check that it is worn and does not interfere with the installed radio gear.

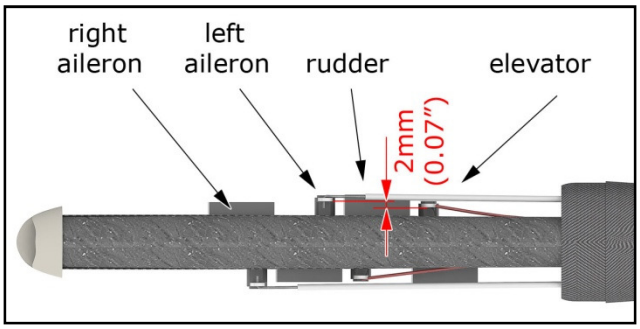


Figure 2.26 - Placement of equipment in the nose Snipe

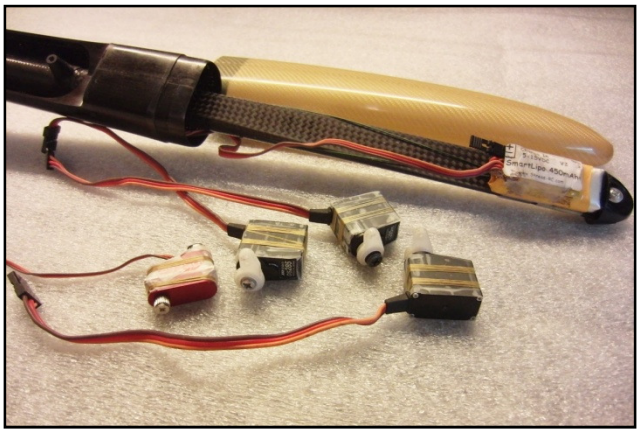


Fig. 2.27 - Preparation of the servo to the foldout

Screw the wing and check the resulting center of gravity of the model. (68mm from the leading edge [JW – start with 62 mm!]) Adjust it by moving the receiver and the battery forward or back. (JW –AKA, by adusting noseweight!!)

The gear can now be bonded to the fuselage, leave the battery removable. (Fig. 2.27)

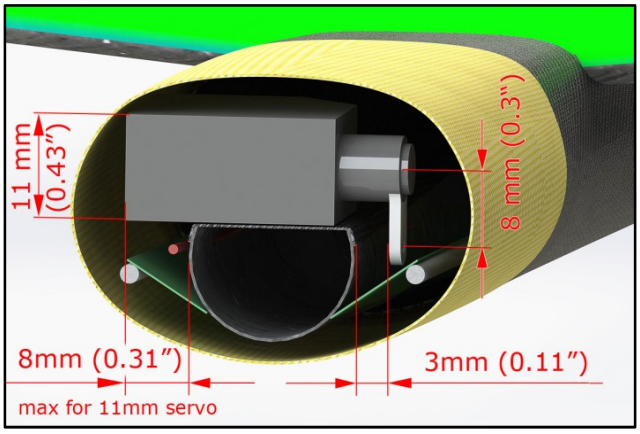


Figure 2.28 - Placement of the elevator servo

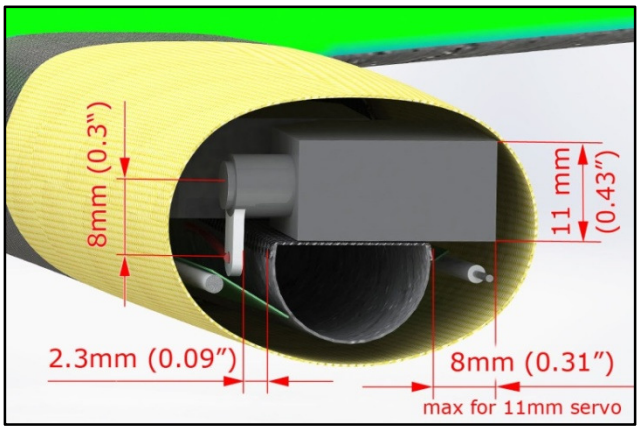


Figure 2.29 – Rudder servo installation

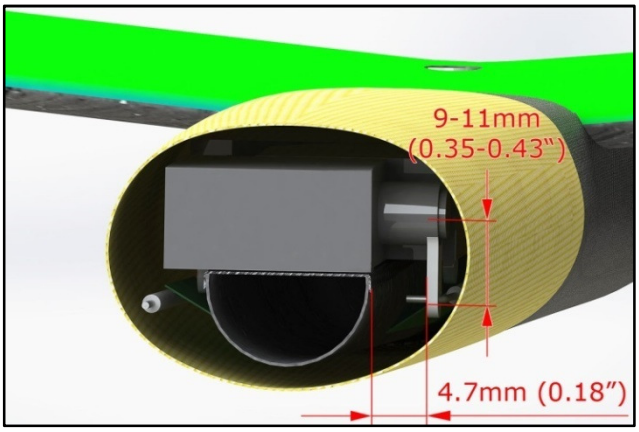


Figure 2.30 - Left aileron servo installation (right aileron servo is mirrored)

2.7 Attaching cables to the servo control.

Set the Horns machines upright handlebars and pull the rudder cable through the servo and back through the crimp tube. Tension cable to set neutral rudder. Crimp the tube with pliers. (Fig. 2.31-2.32)

Repeat cable tension and crimp for elevator.

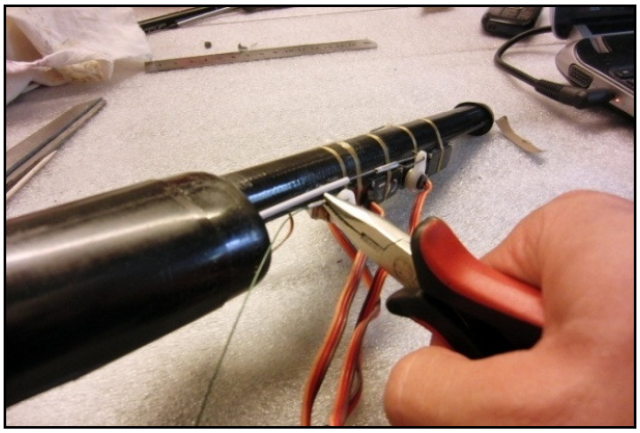


Figure 2.31 – Crimping of tube for tail control

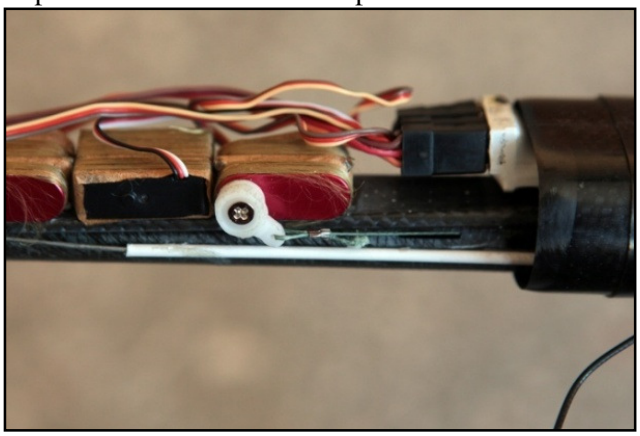


Figure 2.32 – Wire on the horn of servos

2.8 Installing the aileron pushrods

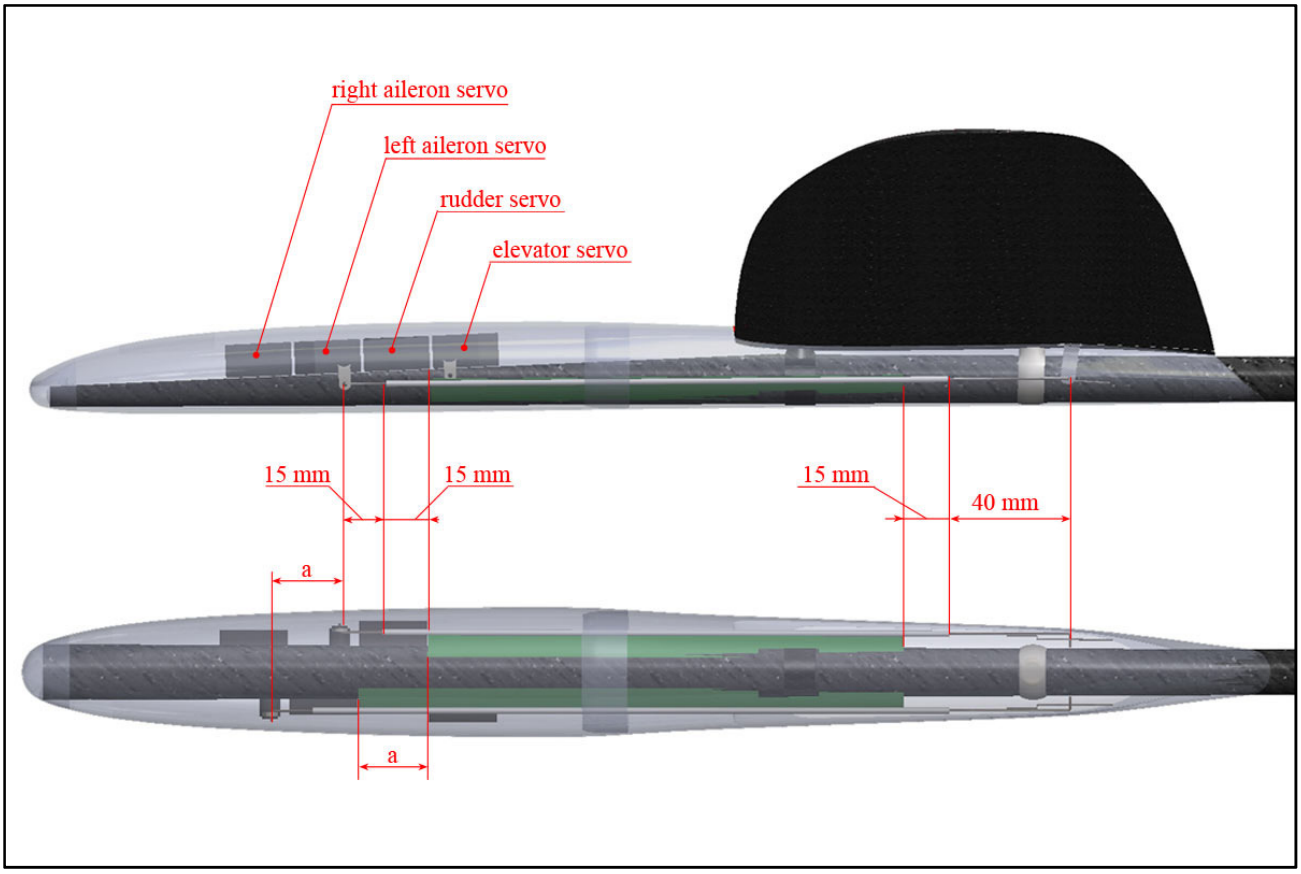


Figure 2.33 - Install the aileron linkage and the supporting carbon plates (green)

Cut the flaperon tube housinge and carbon fiber plates in length, as shown in (Fig. 2.33)

Glue the tube to the edge of the carbon plate with superglue . (Fig. 2.34)

Insert the flaperon control rod/tube assembly into the fuselage .

Connect the pushrod to the aileron horns . Pay attention to the correct direction of the linkage. (Fig. 2.35)

Screw the wing (use screw M3H10 for front fastening and M3x6 for the rear) .

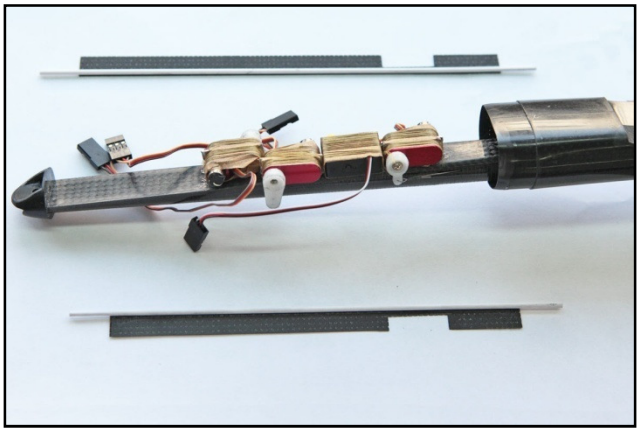


Figure 2.34 – Flaperon housing tubes with reinforcing plates

The pushrod should be straight to get a direct connection between the servo and the flaperon horn . Pay attention to the how the rod will be bent for the insertion in the servo . (Fig. 2.36)

(JW – I recommend that the flaperon servo horn be angled aft by about 15-20 deg when the flaperon is neutral, this provides sufficient movement for landing flap deflection)

Tape the control surface in a neutral position. Bend the rod 90 degrees to insert into the servo control horn. Trim excess rod length and insert rod into servo horn.

Turn carbon sheet to contact the fuselage tube and superglue it, as far as possible under the cowl. Ensure that

both ends have sufficient movement range for full control surface movement prior to bonding(Fig. 2.38)

(JW – after linkage mfg, I put a load on the control surface such that the rod is in tension prior to gluing the sheet to the fuselage tube, this ensures that the rod is straight)

Remove the wing and bond the remaining carbon sheet inside the fairing to the fuselage . (Fig. 2.39)

(JW – I put a small z-bend in the pushrod wire so the the wire is centered in the middle of the control horn. I do this for both ends of the wire)

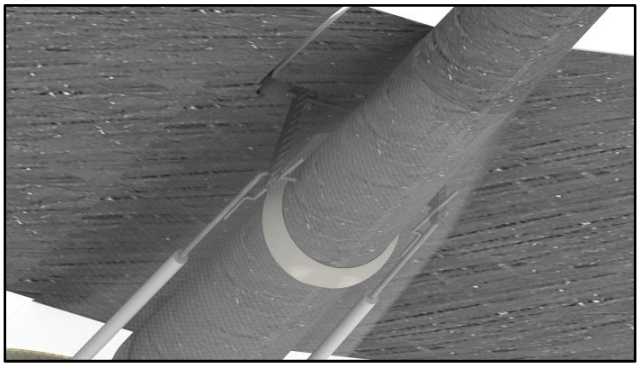


Figure 2.35 - Direction tip aileron linkage

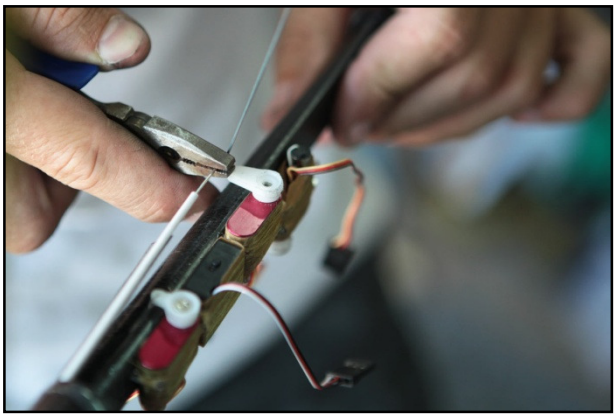


Figure 2.37 – Closing up of aileron pushrod tip on servo side

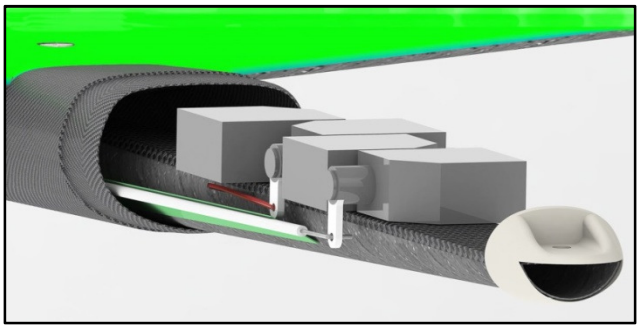


Figure 2.36 - Closing up of aileron pushrod tip on servo side

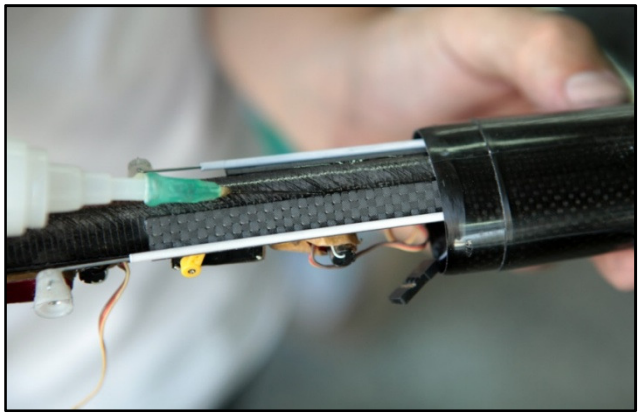


Figure 2.38 – Gluing flaperon stiffening carbon sheet

Figure 2.39 - Fixing the aileron linkage inside the fairing

2.9 Insert a pin to roll into the wing