

Le COQUILLAJ

This small stunt-flying sailplanes is designed to fly from none to moderate wind, with the slope as with the flat field (hand launch, SAL or with a catapult). It is ready for launch as soon as the opportunity arises.

Very light, general-purpose, providing an almost symmetrical profile with 6%, it will enable you to fly the plane how you desire and to carry out aerobatics in low wind conditions where other models have difficulty remaining in the air.

Version luxe: The Coquillaj is delivered as a finished version. The ailerons, elevators of the stabilizer and rudder are fully functional. All the accessories that are necessary to assemble the plane are included.

Version Eco: Main parts are provided eg. Wing & fuselage.

The basic colours of The Coquillaj, can be yellow or white, the secondary colour can be chosen from the colours of the Aeromod range: orange, pink, red, purple(milka), dark purple, light blue, dark blue, green. Ideas colours are: white/red - white/pink - white/milka - white-orange yellow/dark blue – purple(milka)/dark purple – green/white. Other colours purple/purple, light green/dark green and light blue/dark blue, are also available.

Details

The wing is in one part, it is manufactured according to the “Traditional method” of Aeromod. The aileron makes up 30% of the wing cord; It is made up of a very dense polystyrene core and of carbon 80g/m² and of a taffeta glass 50g/m² apposed at 45°. It weighs 165g finished. The ailerons are reinforced with microballons and fixed with silicone. The profile makes 0.67% of curve, 6% of the relative thickness

The fuselage is manufactured in taffeta carbon 200g/m², it is light (75g with the canopy). Aluminium inserts are made in the moulding and are threaded to enable the wing to be fixed.

The stabilizer: The manufacture of the tail is an Aeromod innovation, painted with the colours of the model, then vacuum laminated between 2 Mylar sheets, with a taffeta glass 50g/m². The leading edges are reinforced with the microballons then sandpapered. The rudder weighs 9g and the elevator 14g.

The accessories provided with the luxe version: carbon fibre servo tray 160g/2mm 4,5g - 2 tubes carbon 3mm ultra light 5,5g for the aileron control - 1 threaded rod M2 20cm - 5 plastic clevises - 2 ball links with threaded rods for the ailerons - 1 ball link with sliding ball for elevator control - 2 inserts for stab in wood tapped M3 to sandpaper and stick on the fuselage - 2 plastic screws M4 for the wings - 2 plastic screws m3 for the stab – rudder horn made out of Plexiglas.

The ideal battery format 1/3 R 6 NiMh in 4 cells 350mA which gives an approximate flying time of 2 hours.0 to 10 grams of lead are needed in the nose with a such battery.

Radio gear: In order to keep The Coquillaj as light as possible you should use 4 servos of 6g each for the rudder/elevator and 8g to 10g for the ailerons. The receiver to be used (if the transmitters allow it): one 4 channel, weighing 4g to 9g.

Instructions

Coquillaj is a fibre glass sailplane intended for stunt-flying on the slope, hand launch or even with the catapult. It is necessary to pay particular to the instructions.

Its small model which makes it very handy and it performs very well. You should make it with meticulous care for tolerances. The paint used is of acrylic type and does not like solvents. It is necessary to avoid alcohol and other white spirit. It is best to use soapy water.

Coquillaj was made for an intensive use of the camber flaps with an aim of widening the flight envelope; it is imperative to employ 4 servos as well with a programmable transmitter allowing the use of the mixings necessary (ailerons utilising camber flap and snap flap), also air-brake using the elevator as height compensation.

The duration of assembly is from approximately 6 to 10 hours. Features are: wingspan - 1260 mm Cords - 190,100mm Surface - 18.3 dm² Profile - relative thickness 6%, curve 6.7% Length - 885 mm Flying weight - 370g with 380g Ballast - maximum 150gm, Wing load - 19.7 with 20.8g/m², maximum 29g/m² with ballast.

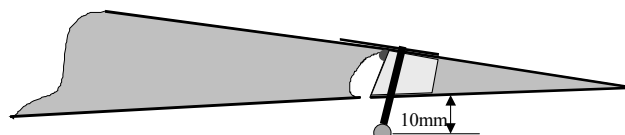
Accessories list Included in the version: 4 clevises in plastic, 2 ball links with threaded studs 2M fixed in the balls for the ailerons, 1 ball link with sliding ball for the elevator, 1 clevis with plastic jaw for the rudder, 1 Plexiglas horn for the rudder, 20cm of threaded rod 2M for the controls of ailerons and the rods for the stab 2 carbon tubes of 1m, diameter 3mm for the rods of stab and aileron, 2 screws Nylon of 4mm of diameter for the fixing of the wings, 2 plastic screws of 3mm of diameter for the fixing depth, 1 servo tray carbon/airex/carbon of 4.5g, 2 inserts in wood threaded for fixing elevator.

Hardware requirement for assembly (only luxe version): Cyno with accelerator, Mini drill with drill 1.5mm, 2mm, 3mm Cutters to cut the threaded rods, sandpaper and a File, Scotch tape and 10g lead for balancing.

Electronics to be used: 2 pico servos of 4 with 6g for the elevator and the rudder, 2 pico servos of 8 to 10g for the ailerons, 1 micro receiver of 4 to 10g and a battery of 30 to 40g (advised cells: 4 x 1/3 R 6 NiMh 350mA).

Eco version only: For completion of the wing cut out the ailerons. The ailerons make 30% of the cord, cut the marks that are printed in the mould. Start by sawing with the hacksaw the roots of the ailerons. After sawing you can use this cut edge to place the metal knife. Attention: finally, cut the under surface 2-3 mm before cutting the opposite face. It is necessary to make several light marks by taking guard not to slip with the knife. You can use masking tape the on the wing so that the knife does not slip.

Installation of the controls: make a hole with a drill diameter 2 mm (at 5mm from the root of the aileron) in order to receive the aileron control rod. Cut the piano wire to have the ball protruding 10mm from the under-surface.



Installation of the peg for SAL launch. The 2 wing tips are reinforced with the microballons around the positioning of the launching peg. Utilise a rod made of carbon for this purpose. The length recommended is of 4cm; sandpaper it lightly around the ends to avoid wounds with the fingers. Mark the wing for drilling with 1.5cm from the leading edge and 0.5cm from the tip. Drill the wing with a drill of 3mm, insert and stick the peg there with the cyano.

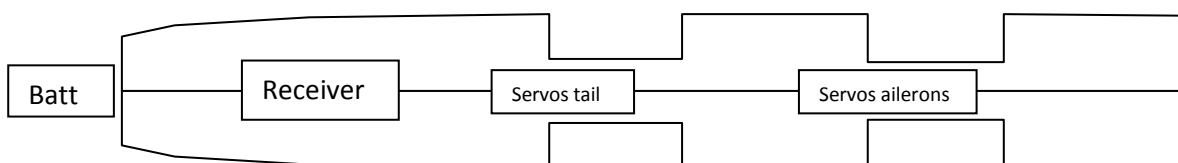
Completion of the tail: Sandpaper the top of the control horn of the rudder to make smooth around the clevis pin. Insert it in the rudder to 67mm of the bottom: insert the control horn there to 2mm of depth approximately. The distance between the rudder and the clamp hole must be 6 to 7mm to ensure a correct clearance. Glue the vertical stabiliser using cyano against the fuselage after having dulled the side of the fuselage with sandpaper.

Elevator: Drill to a depth of 3mm in the centre of the in microballon reinforcements; also if required widen the top of the holes for the embedding of the heads of screw. Sandpaper the inserts of the wooden supports by rounding the part before and by fraying the back part. Using a file "tail of rat" or by putting sandpaper on the fuselage sandpaper the base of the supports so that they marry the shape of the fuselage as well as possible. Attention not to sandpaper exaggeratedly more one than the other would result in to modify the incidence angle. Once formatted screw the inserts under the stab and to stick those on the fuselage to the cyano stab in place. The position of the stab on the fuselage will be back as far as possible (while checking the position of the rudder fixing).

The ball in the elevator control link must be free to move without any stiffness; with this intention it might prove to be necessary to polish the piano wire. Once made, position the end of the control rod 90° and trim to a length of 16mm approximately compared to the under-surface of the stab. Scratch the part of the rod which is embedded in the stab for a better joining Make a hole of 2.5mm wide 20mm long on the top of the fuselage just behind the wooden support. Glue the control arm of the elevator of stab on with white glue and fix the stab on the fuselage to check the good clearance of the elevator;

Servo tray: Attention the drawing which follows is not to scale.

In order to limit lead in the nose the battery will be as far forward as possible, followed by the receiver and the tail servos and the aileron servos. The aileron servos will be moved back to the limit to accommodate the external control arms. They will have nevertheless to remain easily accessible by the opening of the canopy (to position them so that they can be screwed easily).



The precise positioning of the servo tray in the fuselage is rather delicate; the constraints are the following ones: the 4 servos should not be forced on to the fuselage, in particular at the bottom - the longitudinal axis of the tray must be compatible with the axis of the movements of the ailerons and exit position of the servo arms of the ailerons must be 5mm lower than that of the edge of canopy in order to remain horizontal. The battery must be able to enter/leave easily.

Several trials will be certainly necessary before fixing of the servo tray using cyano.

The 4 rods are made out of carbon tube of 3mm of diameter (provided with the luxe version) with pieces of 2cm of threaded rods with each end stuck with cyano, in 1cm. the ball links and the plastic clevises are screwed on to the threaded ends. The elevator movement needed is smaller than that of rudder; the rudder needs a lot of movement. The servo arms of the ailerons should be sufficiently large to obtain sufficient clearance.

By screwing the stab on the fuselage it will be necessary to make return the CAPE which acts as puppet in the ball of the cover. It is necessary to force the pitch control to remain with the strong current top of the fuselage. With this intention to stick a fall of tube carbon which right through crosses the fuselage between the inserts of stab. The pitch control will then be sandwiched between the top of the fuselage and the piece of carbon.

CofG is to 63 mm from the leading edge. With a battery of 4x350mAh, it almost does not require lead in the nose. Clearances and mixings: clearances are measured at the root of the control surface in question. Positive value is down, negative value is up. The landing flaps (flapperons) correspond to the mode on the throttle stick.

Elevator	-6/+6mm, 30% expo
Rudder	30/30mm, 50% of expo
Ailerons	-25up/+15mm down, 30% expo
Flaps(camber change)	0/+4mm (using 2 way switch) -8/+8mm (using the throttle stick)
Air-brake	-25mm (for landing) compensation elevator in air-brake: -3mm
Snap flap	+4 mm elevator, -4mm flaps down.

Clearances suggested are to be used whatever the phase of flight or the program of flight (launching, stunt-flying, landing). The mixing Snap flap can be used permanently and does not jeopardise the behaviour of the sailplane appreciably. However, some pilots will find clearances too fierce and will be able to then use the "dual rate switch".

Catapult: The hook for catapult-launching is to be fixed a bit forward of the leading edge. The structure of the Coquillaj allows the use of a powerful bungee, the height reached will be able to exceed the 60m. Attention it is not possible to hold the sailplane in the front of under the rudder, the model would come to strike you the hand at the time of released. It is necessary to hold Coquillaj by simultaneously gripping the front end of the fuselage and under rudder. Attention to operate the controls well before such a practice.