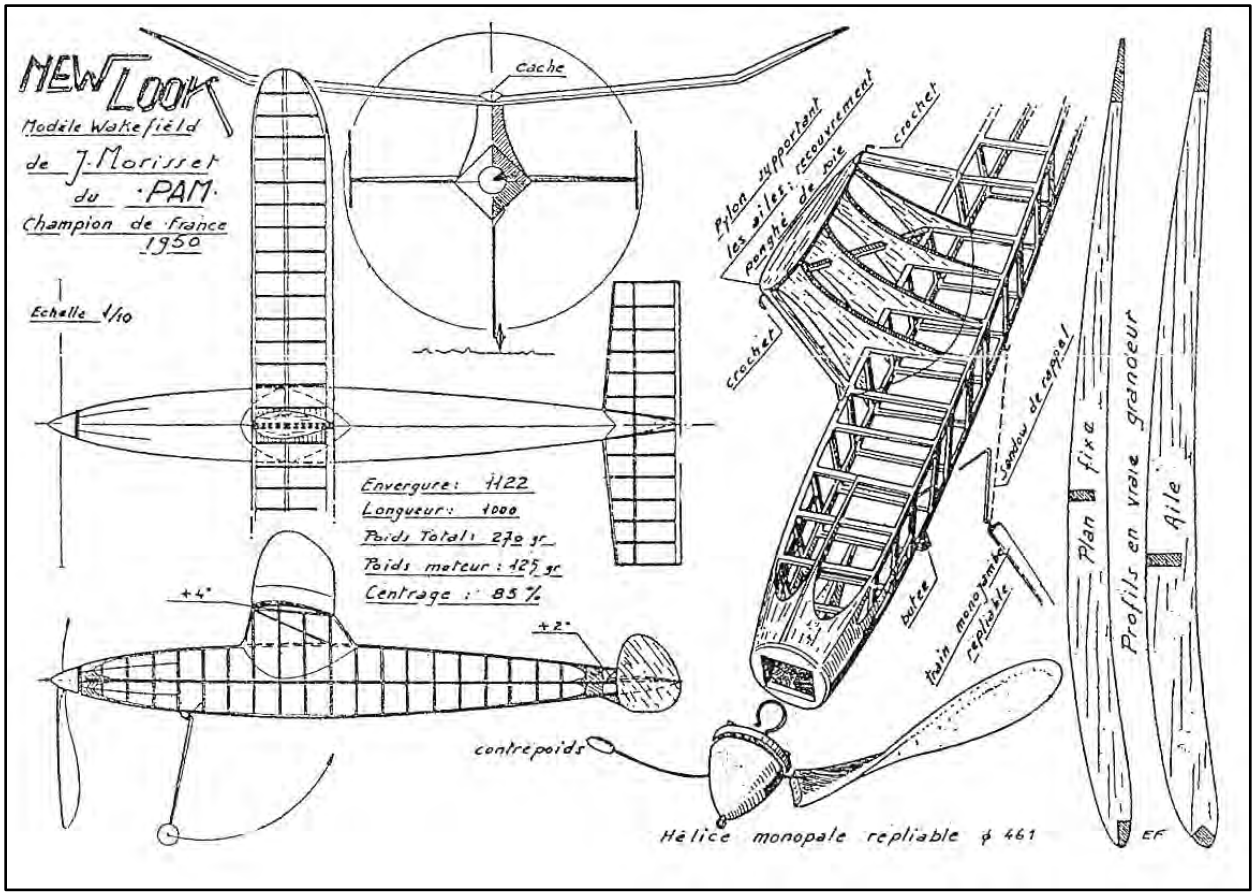
Jacques Morisset's "New Look I" - A Competition Model to the Wakefield Formula.



The drawings include some minor changes from the prototype. Fuselage cross section increased from 71 x 71 to 80 x 80 mm. Removal of wing centre cover. Slight shrinking of the wing to account for the non-covering of the wing centre by this cover (area: 13.48 sq dm).

Slight lengthening of fuselage nose (20 mm) to account for an easy lightening of the nose block (30 instead of 33 g). If you build a nose block of 33 to 35 g, shorten by 20 mm. If you make a nose block of 27 to 28 g, lengthen by 20 mm (mind the fuselage cross section!).

These precautions are due to the fixed position of the wing. The tailplane must weigh between 13.5 and 14.5 g (including fins). All this is true for a motor weight of 120 to 122 g.

Now onto the construction: The fuselage is built of medium 4 x 4 mm balsa. Hard 3 x 3 balsa is a bit weak unless you find like the British some 1/8 x 1/8 inch (3.2 x 3.2 mm). The rear motor peg of 5 mm external diameter aluminium tubing allows for a 3 mm piano wire to be inserted for

winding: it is very handy: the fuselage does not suffer. The aluminium peg must have a collar on one side to hold it in position and on the other side by a 0.8 mm removable wire pin. Of course the planking holding it is 1.5 mm plywood.

The round nose former is made of 3.0 mm ply. The nose and its plug of 1.5 mm plates are laminated with 2.0 mm balsa in between. The nose proper is 8 mm thick as is the plug for a total of 16 mm. It is just right for the job (but enough as the nose is practically not offset).

The prop shaft is of well tempered 2.0 mm piano wire. After the winding hook, the piano wire is the folding axis of the airscrew. Bend this wire to such an angle that the blade folds flat onto the fuselage. Of course, take account of this for drilling the blade and fitting the tube in it. Two small 1.5 mm plates are glued either side of the blade around the tube (do not omit). The counter-weight, 11 cm from the axis is fitted at the end of a 2.0 mm wire soldered to the shaft (1.5 mm is too small). This counter-weight, to reduce vibrations, must be 2 or 3 cm behind the rotation plane of the blade. When all is finished, it remains only to check the pitch and bend the wire until right.

The pylon is straightforward. However, we find that the landing gear folds but only once it has reached a certain position (rubber attached forward of the folding axis). The leg is of 5 x 2 mm bamboo, streamlined and thinned towards the lower end.

The wing is classic. Note that the spars, not very high are of hardwood (choose carefully). Struts are of thread and attached to the fuselage via 1.0 mm piano wire open hooks. In case of shock the thread breaks or slides off the hooks. A centre 2.0 mm piano wire peg and two bamboo pegs hold the two half-wings.

Two or three rubber bands, between bamboo pegs fitted at the front and rear of the pylon, hold the wing (another possibility in case of shock is for the wing to move forward and the rubber bands fly off). This mode of wing holding has been proven since 20 months, and perhaps 200 or 300 flights, the wing was only broken once (and this was on the occasion of an inverted landing). The wing tips have 2 to 3 deg washout.

The tailplane is quite classic also, but beware: its area will only be counted under 33% of the wing if you cover the centre with a triangular cover streamlining 55 mm wide at the front and 5 mm at the rear. The front of this cover is at 45 deg to the fuselage and is used to as a stop when the tailplane lifts to 45 deg as a dethermaliser.

In normal flight, it is held by 2 or 3 rubber bands at the front and 2 others at the rear. The fuse burns directly through them (do some trials first). As soon as your glide turn adjustment is completed, glue four small pieces of 3 x 3 mm balsa on the underside to make sure your tailplane retains its proper position (this is important).

Lastly the covering is done: Silk for the fuselage. Bamboo paper (to retain the airfoil) between the leading edge and the spar on the top side. Japanese tissue for the rest. Two coats of dope over the silk and bamboo paper and one good coat over the tissue. If you use nitrate dope (2 or 3 coats of which are fairly water resistant) give one more coat. If you use acetate dope, finish with a thinned varnish coat (water resistant) or of quite thinned “banana oil”, or alternatively spray a light coat of cellulose paint. Use Arabic gum to attach the covering (weight gain).

Speaking of weights, you must by the way reach: 48 g for the fuselage (including take-off leg and motor peg). 30 g for the nose block/propeller. 14 g for the tailplane. 33 g for the wing. A total of 125 g (245 g with 120 g of rubber).

I forgot the prop spinner! I made one, but lost it. Try to make one also and not lose it. Let’s end with future projects: At this time two more “New Look II” are under construction, designed to take, if necessary, 140 g of rubber for a total weight of 260 g approximately. We shall talk of those some other time. And good luck if you decide to build “New Look I”.

Jacques Morisset (translation from “Le Modele Reduit d’Avion” #135 Apr ’50 by J.M.Piednoir)

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