Building and Flying a Ziroli P40E Kittyhawk....

Instalment 2

Building the Fuselage:

The fuselage is built on a spruce crutch in the traditional way over a building jig, the ply formers are fitted over the crutch, positioned with reference to the plan and then stringers are run fore and aft in notches cut in the formers. The accuracy of laser cut formers is very much appreciated when doing this..

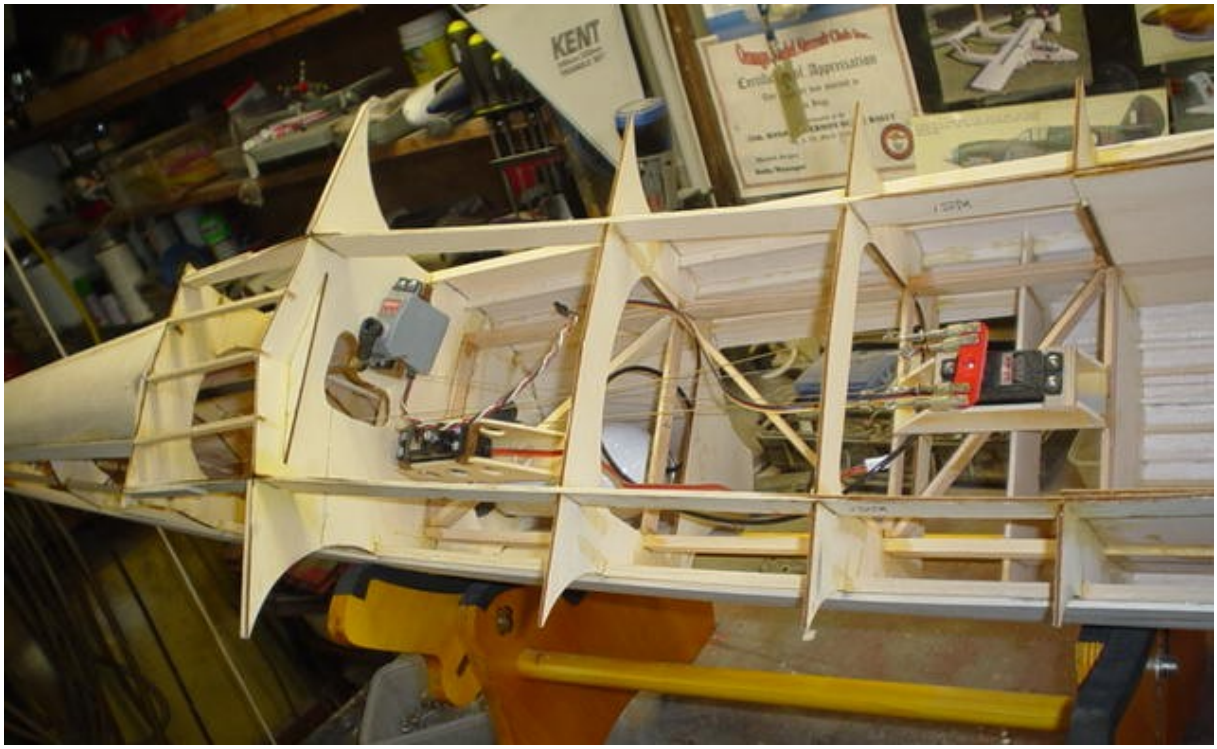
With the unfortunate experience of having to add a lot of lead weight to the nose of the Hurricane to get it to balance correctly I was extremely mindful of any weight aft of the C of G while I was building the Kittyhawk. All the stringers are balsa and the only real weight will be the spruce crutch, the carbon tube pushrods for the elevator and tail-wheel retract actuation and the tail wheel retract assembly itself.

Glues used were a combination of **Titebond III** (a high quality PVA but dries brown), **Aquadhere PVA** (dries clear) and **Zap** medium. **Zap** was only used to tack parts in place, the real gluing was with the established wood glues as I reckon they're better when sticking ply to spruce.

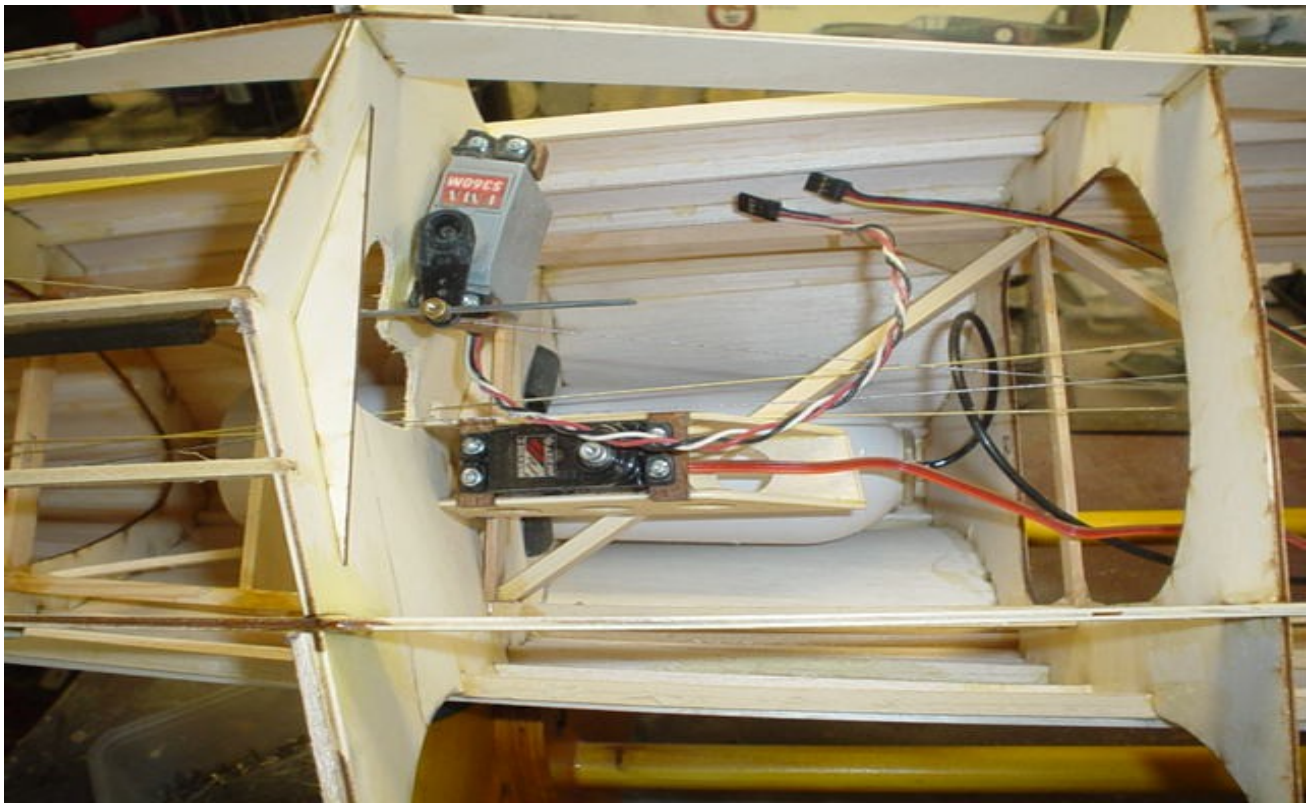
This picture is of the fuselage after removing it from the building jig. All the framing has been done and stringers glued in place. After some judicial sanding it is now ready for the 3mm thick planking. Planks are cut about 12mm wide and each is shaped for the taper and curve of the fuselage. I'll start planking from the top and work my way down past the side windows. The side windows are then sheeted in to the overlapping planking before continuing on down to the start of the wing fillets. The planks are pinned to each other and the fuselage frame with a gazillion T pins until the glue dries. I only use **Aquadhere PVA** glue for planking, it dries clear, excess can be wiped off with a wet rag, sands off reasonably easily when dry and because it is wet for some time it tends to swell the balsa slightly to produce a fine join line. I have tried to use **ZAP** in the past but it dries harder than the balsa and when you sand to shape you end up with ridges down the glue line

From these pictures you can see the partially planked fuselage and the side windows . The side windows are concave and a fair cow to get right. I would vac form them if I made another **Ziroli** P40 fuselage.

Planking for me is pretty slow as each plank has to be carefully shaped and the edges have to have an angle sanded to match the curve of the side. The planks must be fitted in pairs in the same position on the left and right side to avoid any distortion. The **Aquadhere** PVA I use takes a while to dry but at least you can sand it off when you are fairing up the planking to shape.



Its easier to fit some of the hardware while the plane is still a skeleton. In the pictures above and following you can see the air tank behind the head rest, the tail wheel retracting servo mounted on the angled former, the high torque elevator servo mounted in a box epoxied to the spruce frame and the angled former and the pull pull rudder and tail wheel steering servo mounted on the forward frame. The elevators and tail wheel retract will be actuated by a carbon fibre tube pushrods.



I've used a pretty eclectic bunch of servos in this plane as I've decided to give some of the Chinese servos a go. I've pulled them to bits first to check the wiring, potting and if they use surface mount technology and used them in some of my less important planes without any problems. The tail wheel retract servo is an old **FMA S360M**, the elevator is a **Blue-bird BMS620MG**, rudder is a **Hitec HS645MG**, throttle **Hextronik HX5010** and choke **Hextronic HX5010**. These are all heavy duty servos and will pull a fair bit of current but with modern battery technology it's no big deal to have 6000mah on board.

The picture above shows the planking is now complete down to the wing fillets. The fillets require the wing to be fitted and then the final planking can be done down to join up with the ply sheet in the wing cut outs. A good, no gap fit results, I hope!

From this photo you can see the 12mm stabiliser mounts are fitted and the rudder and tail wheel steering pull-pull cables have been threaded through the fuselage before the planking is closed up.

I now have to set the fuselage aside and get on with making the flying surfaces. I'll come back to the final planking after I can fit the wing.

Next instalment will cover making the wings, stabiliser, elevators, fin and rudder,

Cheers
Stan