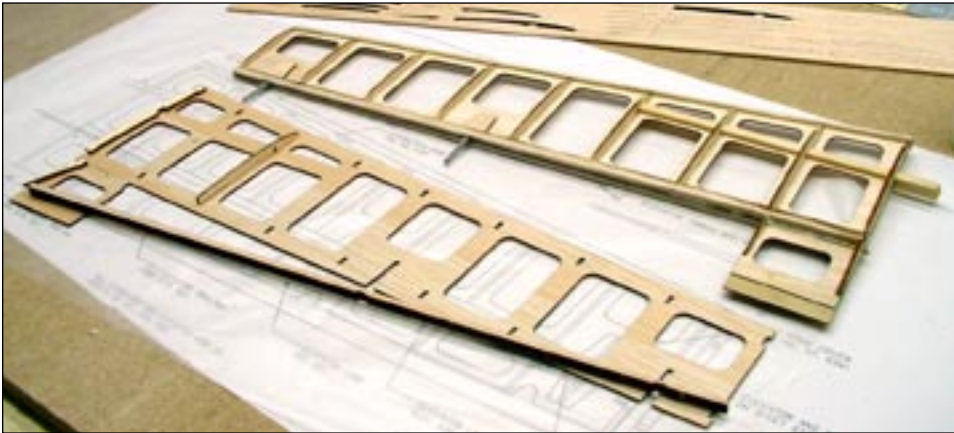


Some unique features of the Top Notch Lear Fan short kit. All wing and stabilizer incidences are automatically set to the correct position by the laser cut notch and tab construction. This is important because the Lear Fan fuselage has no flat areas that can be used as a reference to align components, think of it as a stretched football. Another Top Notch first is the inclusion of all hinge pockets in the construction. When the airframe is completed, just install the Robart hinge points indicated and you will have perfect hinge lines every time. These hinge pockets are designed right into the airframe for all moveable surfaces including the gear door covers.

LEAR FAN WING & EMPENNAGE

Photo 1



Construction begins with the stabilizers shown here. The top stab is ready for the laser cut skins, note that the hinge pockets are an integral part of the structure. The bottom stab shows the core sheet, trailing edges and several ribs ready to begin assembling the second stabilizer.

Photo 2



Stabilizer assembly with one skin attached, then the torque rod tube is installed and a weight is used to keep the assembly flat until the adhesive cures. Note the hard ply trailing edge section attached to the core sheet.

Photo 3



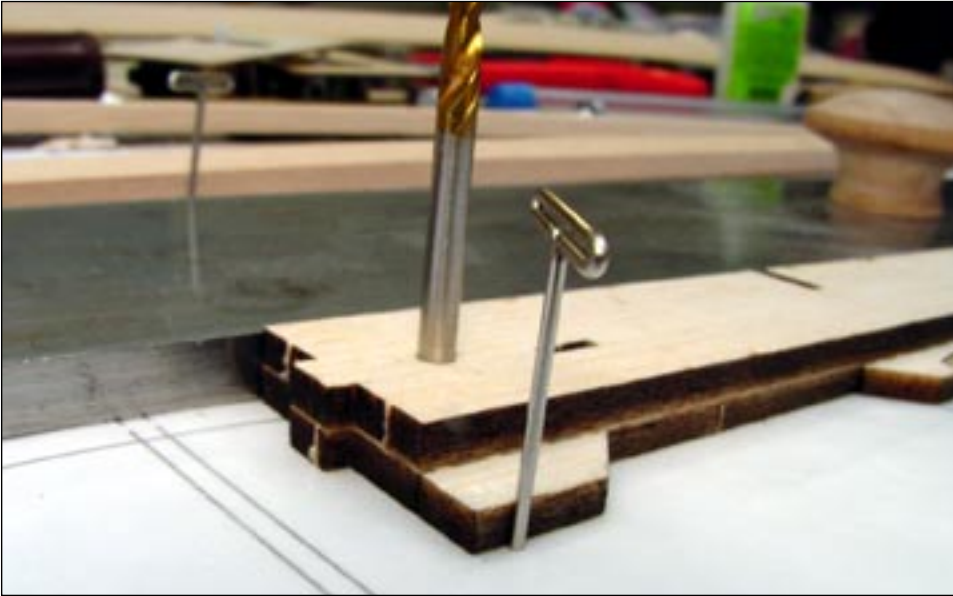
Stabilizer assemblies ready for final trimming and sanding. When installed on the fuselage, the correct incidence is set by the spar and a tab on the firewall that engages a slot in the core sheet (not visible here). This technique yields a light, strong and laser straight flying surface.

Photo 4



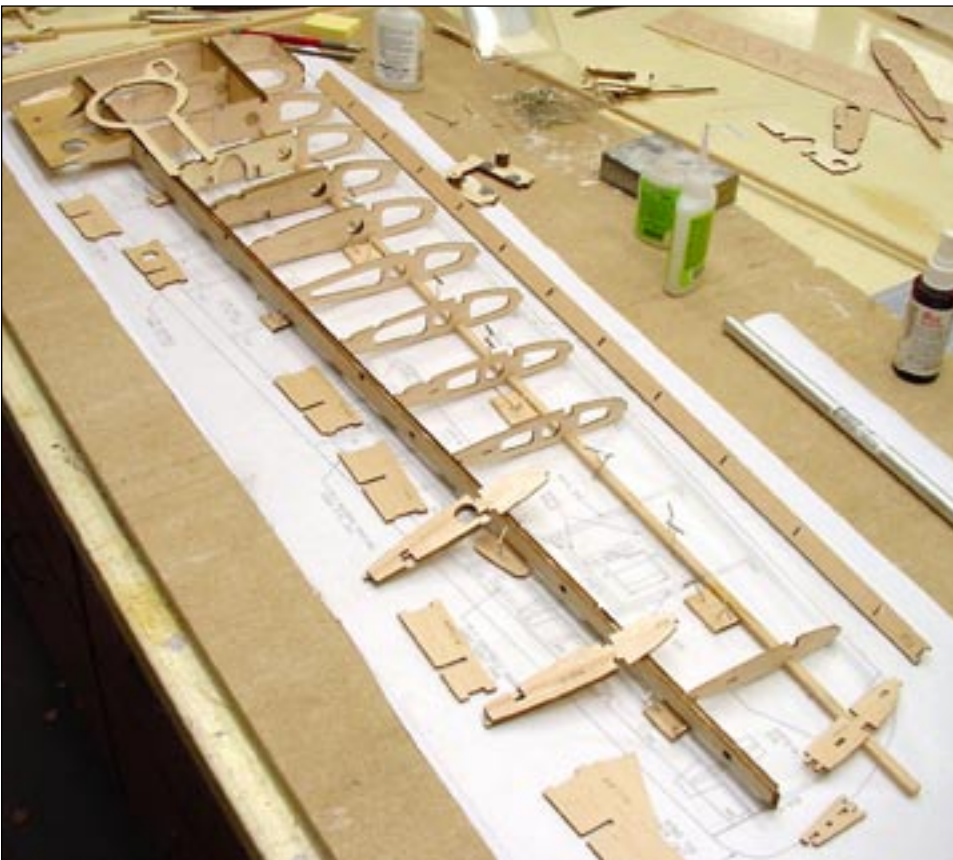
Elevators are assembled in the same manner as the stabilizers. Note the hard ply trailing edge. Next the laser cut skins will be installed, trimmed and sanded to final shape. The torque rod opening is cut into the core sheet for perfect centering with the hinge line.

Photo 5



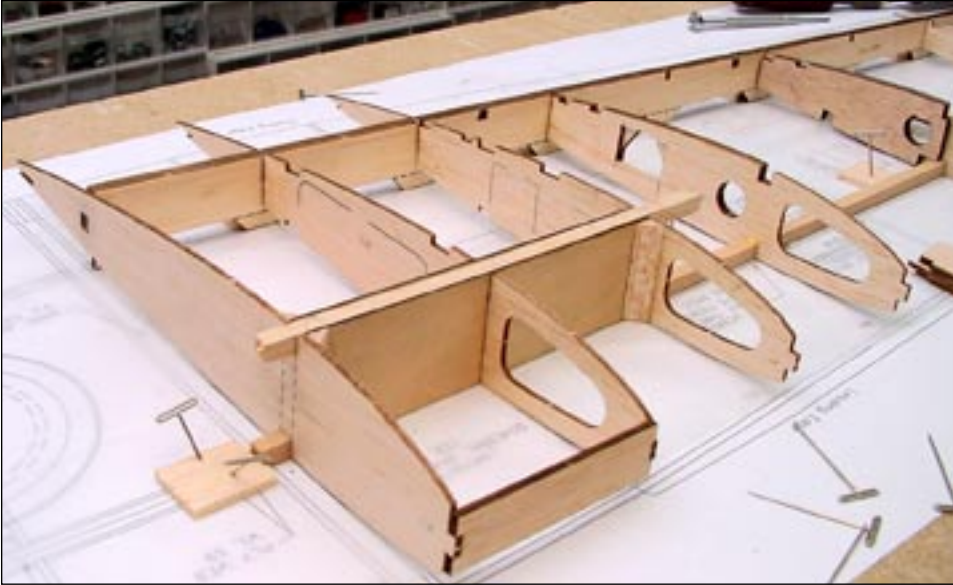
The rear wing spar is laminated from two 1/8" balsa parts. The shank of a 1/8" drill bit placed in the alignment holes at the root of each part assures perfect alignment. The parts are then snugged against a straight edge and glued in that position.

Photo 6



Balsa tabs are temporarily glued to both spars to keep the pins out of the way during the building process. Rib subassemblies are completed and the parts are laid out over the plan. Notches and tabs assure accurate positioning of all components. Since the aileron hinge plates tab into the ribs, they must be installed in sequence with the ribs.

Photo 7



A section of scrap 1/4 square acts as a surrogate top spar while the spar box is assembled. The incidence of R-1 is set by the ply web, trailing edge spar and the short leading edge section. Rib R-2 is in two pieces that tab into notches in the ply web.

Photo 8



Because of the unique shape of the Lear wing tip, the tip rib must make a jog. The tip rib sections and the aileron hinge plate are pre assembled before installing into the wing. The notches at back and front will engage tabs in the laminated wing tip.

Photo 9



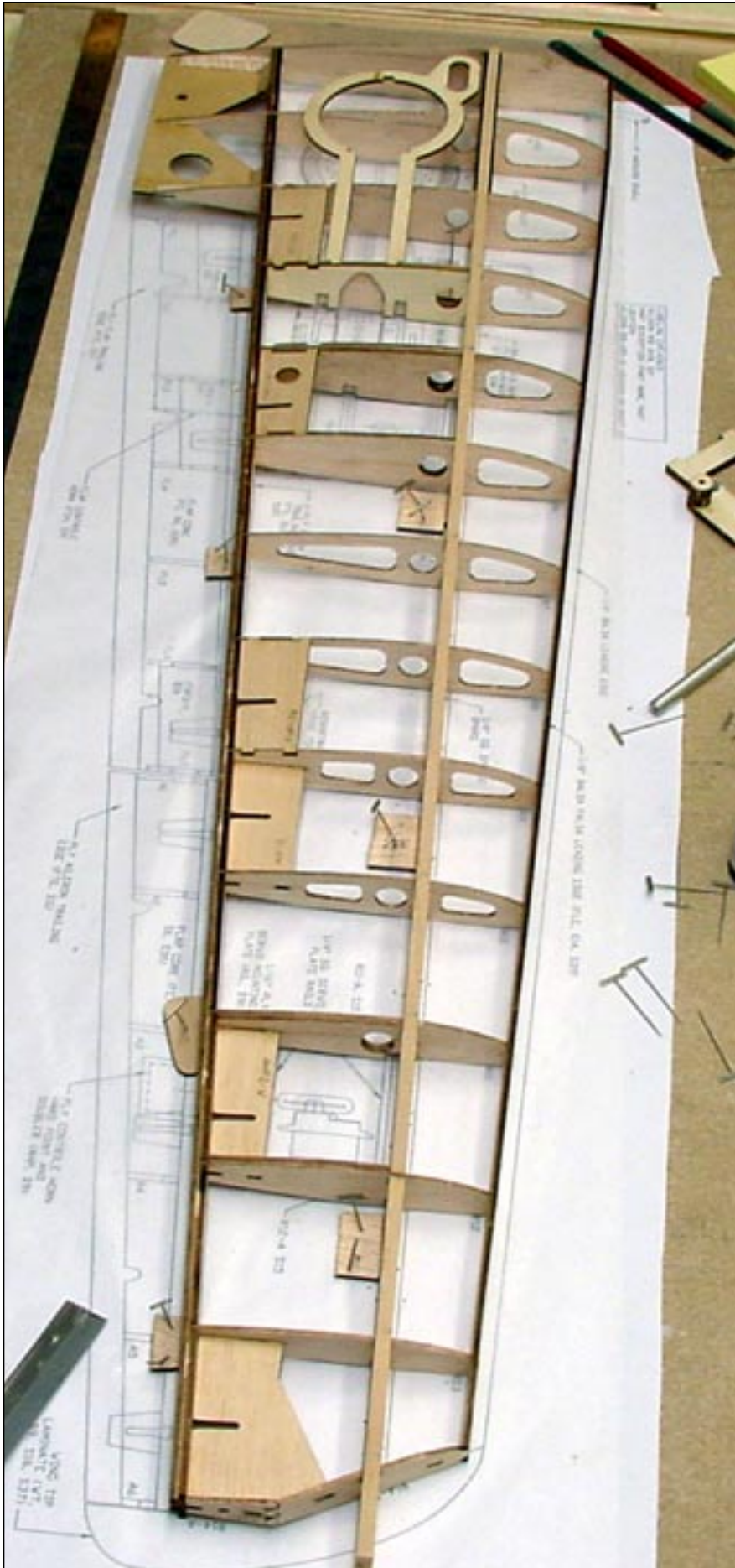
Like most components, the wing bolt plate is tabbed to engage notches in the trailing edge spar and slots in the ribs for easy accurate positioning. Extensive use of triangle stock and gussets is made throughout the model for a lite and strong structure. The race track opening in the top gear well former is in line with the cable tunnel and will define the opening for the gear pneumatic lines and servo lead opening.

Photo 22



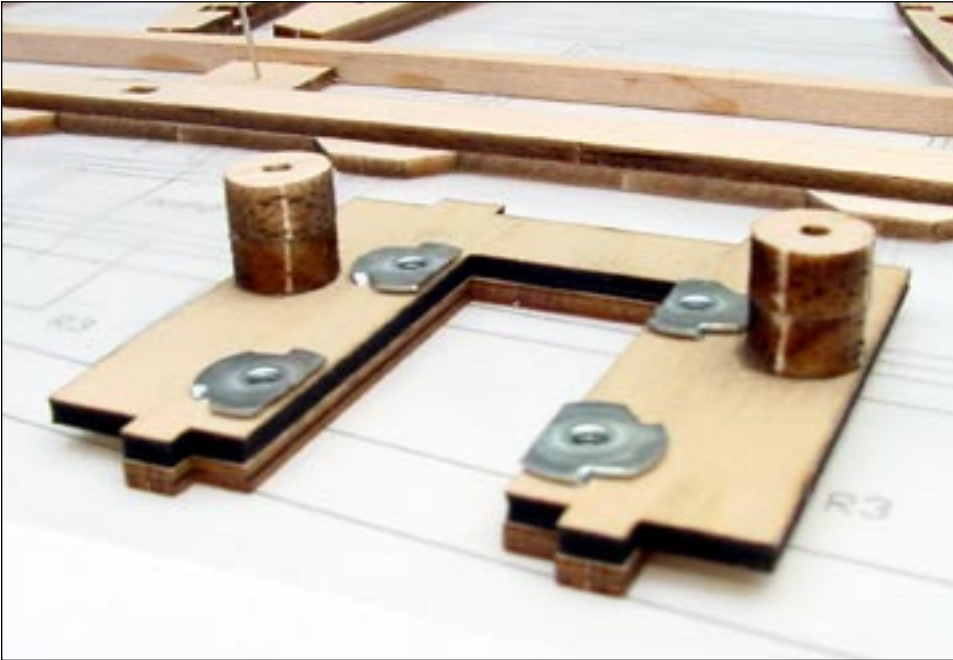
Another view of one of the flap assemblies revealing the flap hinge plate, and ply trailing edge. This core sheet construction is much like gluing parts directly to the plan. Lots of parts that assemble quickly with little or no trimming required.

Photo 10



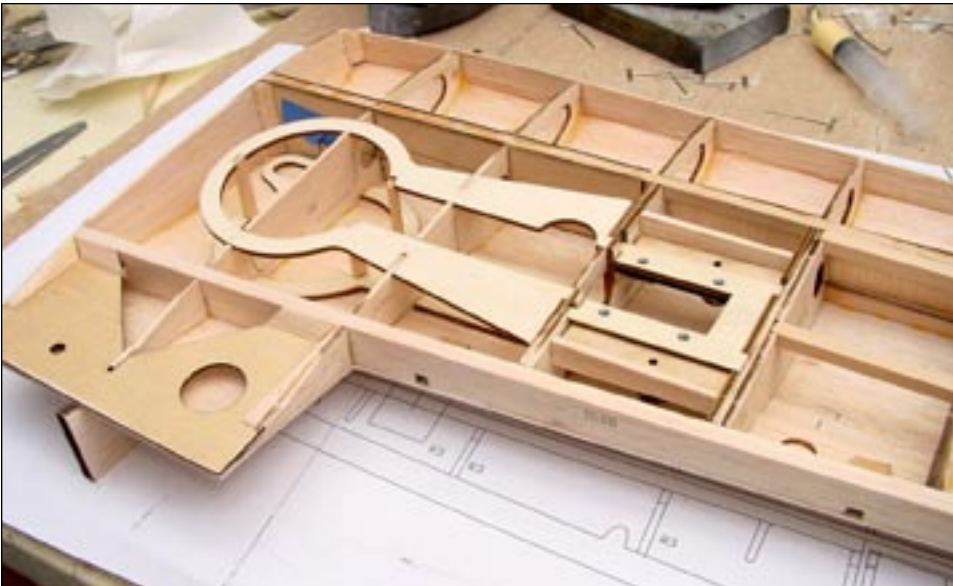
Top work almost done, the wing assembly is now ready for sheer webbing, hinge plate caps and top sheeting. The assembly is then removed from the plan, pin tabs removed and the bottom components installed.

Photo 11



Gear mounting plate subassembly. The T-nuts have been trimmed to accommodate the tight fitting Robart Retract. The balsa donuts provide a pocket for the Robart Hinge Points that will attach the gear doors.

Photo 12



Gear mounting plate installed with scrap fence fore and aft to support the wing skins. The bottom gear well former and support posts have also been installed. The 1/4" square hardwood servo mounting plate rails have been added and the wing is about ready for the bottom sheeting. The precut gear knockouts will be removed after sheeting the wing and cutting the gear opening.

Photo 13



Here the bottom skin is curing with lead shot bags applying pressure. The wing is supported on three balsa jigs that conform to the airfoil.

Photo 14



Here the gear opening has been cut, the gear and gear door temporarily installed. The gear door is used as a template to remove the wing sheeting for a snug fit. The gear well lining will be installed after the wing halves are joined and the belly pan constructed. The other gear door assembly is laying on the wing just above the well opening.

Photo 15



Photo 16



After joining the wing halves, a ten pound weight is used to keep the joint tight until cured.

Photo 17



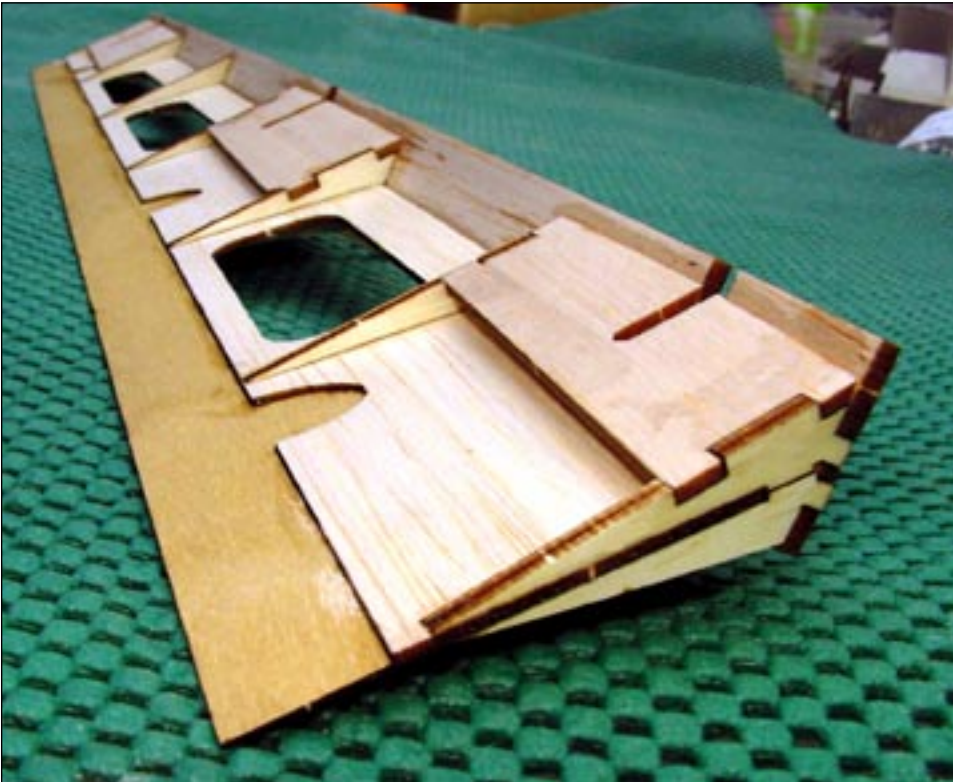
Belly pan formers and stringers installed onto the wing joiner. Laser cut belly pan skins are next.

Photo 18



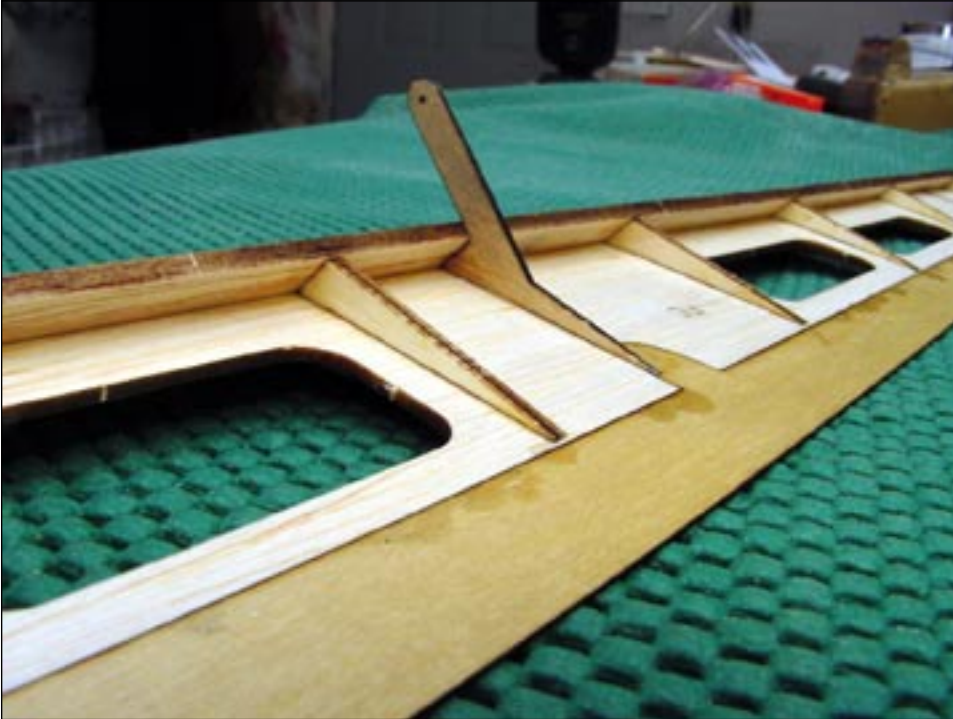
With the belly pan sheeting installed, the wheel well lining can now be installed. Note the components for the right wing gear well lining laying on the right wing.

Photo 19



Top view of the flap assembly showing the core sheet, split ribs, hinge pocket plates and hard ply trailing edge. The slanted leading edge will allow 35 degrees of flap when fully deployed. The leading edge will now be planed to shape and the skins added.

Photo 20



Bottom view of flap assembly showing the integral control horn, split ribs and hard ply trailing edge. The assembly is ready for the laser cut flap skins. The ply trailing edge not only hardens the trailing edge but also defines it.

Photo 21



Aileron assembly ready for trimming and sanding. If you think you see a slight twist in the structure, you do. It's the washout built into the structure.