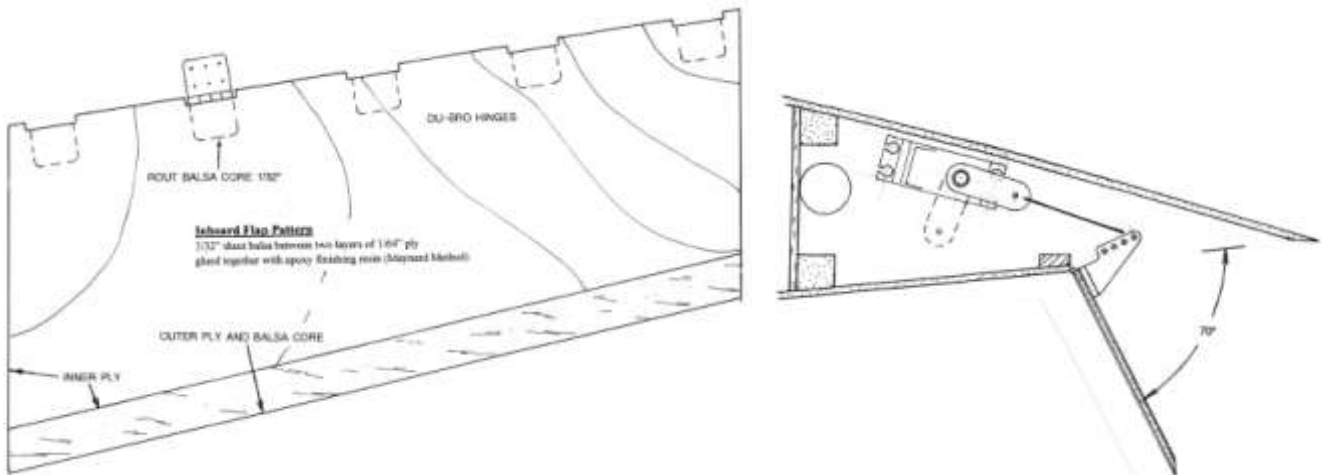
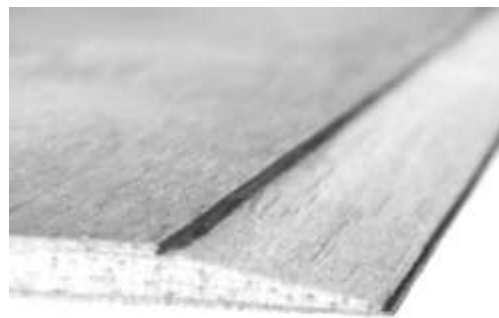


SPLIT-FLAP ASSEMBLY

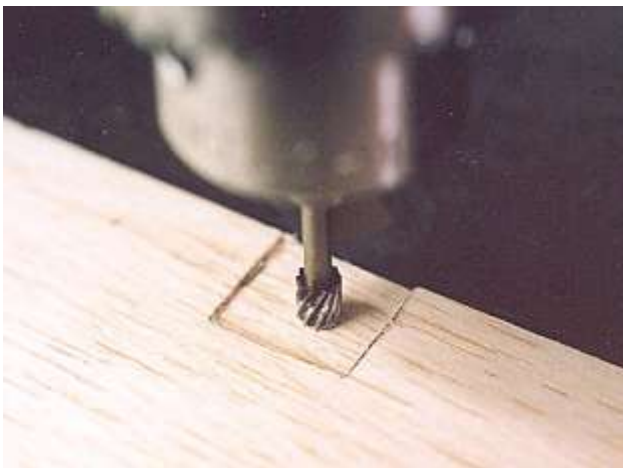
--David P. Andersen, www.mnbigbirds.com



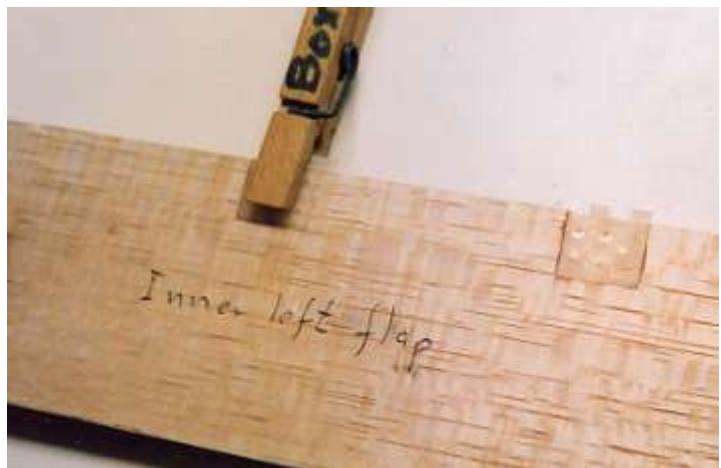
Split flaps on giant scale airplanes must be flat, stiff, light and strong. The method shown here achieves this by sandwiching a 3/32" balsa sheet core between two layers of 1/64" ply. These layers are glued together with finishing resin—a technique I learned from Roy Maynard. The result is light yet rigid.



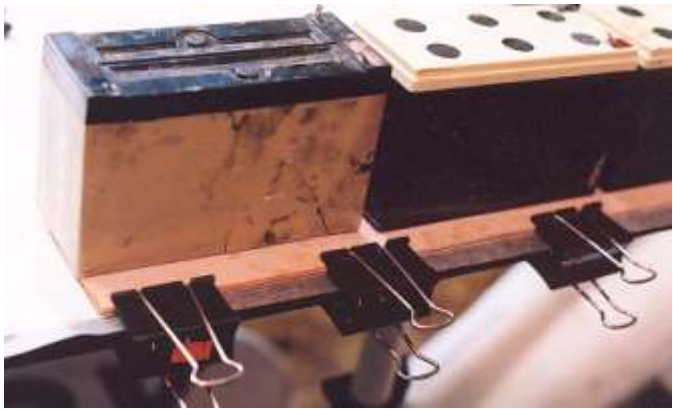
Start by cutting the layers of balsa and ply per the plans. Bevel the flap core trailing edge. Note that the upper ply layer is slightly shorter in chord. This allows the final result to have a tapered trailing edge.



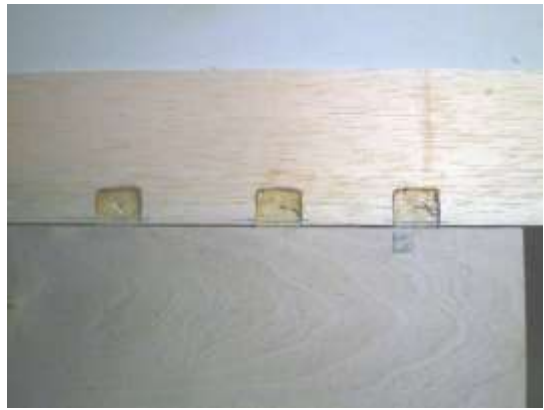
Rout out the balsa flap core 1/32" for hinges.



Remove and oil the brass hinge pins to prevent glue sticking to the pins. Glue the flap hinges to the balsa core.



Brush epoxy finishing resin onto the 1/64" ply flap skins. Stack the skins and core on a layer of wax paper. Weight and clamp while the resin sets. This also seals the hinges inside. Another option is to clamp the assembly to a glass pane. Glass panes are very flat.



Rout hinge slots in a strip of wing sheeting. Reinstall the hinges and pins. Glue the forward half of the flap hinges to this strip.



Install the flap strip on the wing. Pin the flap hinge to the spar with a lite-ply backing.



Cover the flap hinge's outer surface with 1/32" sheet balsa. Sand smooth.



Install and test the flap horn and servo before sheeting the upper wing surface. Place the horn over a hinge to minimize bending of the flap during movement. For large flaps, a bolt-on horn is recommended.

Air load on the flap increases as the flap is lowered. Therefore, the servo arm should be pointing at the flap horn when in the fully down position. This causes mechanical advantage to increase as the flap is lowered and lock in the fully down position.



The end result: Full-flap landing at a Twin Cities Radio Controllers' air show.



Jeff Quesenberry's La-7 on final approach in Muncie.