1. Build the wing to plans.

2. Mark and cut the aileron from the wing.

3. Remove ½” of additional skin from the bottom skin and 1/8” from top skin to allow for aileron hinge thickness and aileron down travel.

4. Remove foam from the edges of the cutouts to allow spars to be bonded to the wing / aileron skins.

5. Measure and cut the bevel of the ¼”spars on a table saw or other appropriate tool using measurements or the drawings on the wing ribs. The spar in the wing will most likely have only the top edge beveled as the bottom edge is nearly 90 degrees to the bottom wing skin. The aileron spar will need to be beveled on both top and bottom as its angles to the wing skins are more pronounced. Drawing #71 on page 88 is not completely accurate as it does not show the half inch cut back on the bottom skin. Use the angles as actually measured on your ailerons.

6. The hinges can be attached to the spars on the work table as both hinge halves will be flush with the top edge of the spars. For each spar, lay the spar on the workbench with the top edge resting on the table allowing for any bevel. Lay the hinge, with correct orientation, against the spar and mark / drill attaching holes. All mounting holes in the hinges should be drilled before this step and only the spars will need to be marked / drilled in this step. Insure that the hinge is located on the aileron so that when the aileron is mounted to the wing the aileron has the correct end gap on both ends. This is accomplished by attaching the hinge to the wing and measuring the distance from the end of the hinge to the wing cutout. Then measure and mark the aileron hinge placement for proper alignment.

7. With the spar end to end location properly marked on the wing skins remove the hinges and bond the aileron wing spar to the wing skin. Insert the spar on a bed of resin rich flox and secure until cured. I would recommend to overlay the skin to spar attach point with two or three layers of “deck cloth” with the hinges removed for additional bonding strength.

8. Unless you have a method of inserting the proper twist to the aileron to match the wing “washout”, if any, I recommend the following to insure the aileron ends match the wing trailing edge on both ends.

When bonding in the aileron spar, bond only the bottom side and 6 inches or so of the top inboard end. Allow to cure. When cured, attach the aileron to the wing and clamp the inboard end to match the stub wing trail edge. Then twist the aileron and clamp the outboard end to match the wing. Insert some resin to bond the wing skin to the aileron spar full length. When cured, remove the hinge and finish bonding the skin to aileron spar with several wraps of deck cloth.

8. When fully cured assemble the two hinge halves with the hinge pin and mount the hinge to the wing aileron spar. If the hinge pin is not inserted at this point it may be difficult or impossible to install the pin on the wing as both ends will be blocked.

9. Place the aileron in place in a vertical (up) position to expose the hinge mounting holes and attach the hinge to the aileron.

With the aileron in the flight trail position you should have the hinge flush with the top surface of the wing, the correct end gaps, and the trail edge of the aileron aligned with the wing trail edge on both ends as well as the correct amount of down travel from neutral position.