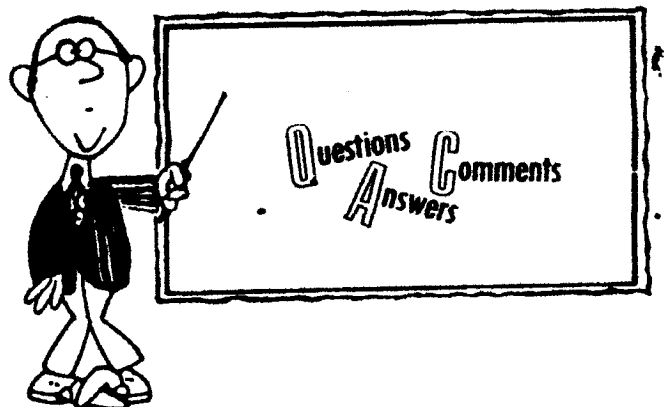


May 81

Vol 2 #4



NEWSLETTER



FELLOW OSPREY BUILDERS:

Ken and Lynn Zillmer, our Osprey Newsletter editors, have sent me a list of questions from builders that perhaps I can shed some light on.

Question: Is there an easier way to make the engine mount?

Derrick Industries will now build your mount to fit your Osprey. They will provide the material or use your material. You have to send them a simple jig and the model of your Lycoming engine. Jig instructions and prices are available from Derrick Industries. If you need help in building your own call me from 8 to 9 PM and I will try to give you some ideas to help. (916-483-3004)

Question: Folding Wings?

The Osprey 2 has a 9' center section. This is 1' over the legal towing limit for most states. A 9' center section is necessary to get the gear retracted between the pivot point and the side of the hull. The only advantage for folding would be hanger storage. The wing fitting is a very high stress point that requires a ream fit for the bolt hardware. Designing a swivel device, taper pins, fairings and attach points for wing tips add considerable weight and construction time. I personally think it's a bad trade off. It will be done by someone perhaps. Sure hope it's done right!

Question: How to get more rudder travel?

The distance between the hinge line and the fin spar is as follows. Top hinge 1 1/8", center hinge 1 3/4", bottom hinge 2 1/2". Check your plans. If different make a change. If your hinges are made and are under sized you can shim block them out to the correct distance. Use a spruce or fir block 1" high and as wide as the fitting. Its thickness will be just enough to align the holes to the dimensions given above. The top fitting will have to be remade.

Now that the fin spar and rudder spar are the correct distance apart you install the elevator. As the elevator is deflected up the elevator spar tends to restrict the rudder travel as the rudder is deflected. It is permissible to bevel or radius the bottom side of the elevator spar in this area to give the rudder more travel. You should get as much rudder travel as possible for slow speed water taxi with the water rudder down. Air work requires very little rudder travel. While we are talking about control travel, I recommend the following for all movable surfaces. Ailerons: Up 23 degrees (+ or - 2 degrees). Elevator: Up 27 degrees, Down 23 degrees (+ or - 2 degrees). Note: Aileron down travel is taken care of in the differential geometry.

Question: Main wing spar is 7 1/4" high however the rib pattern is less than this?

The spar has the extra thickness so that the rib curvature can be maintained after attaching the nose rib and aft rib. You plane or sand the top and bottom of the spar until a fair curve is obtained.

Question: Why not change the airfoil to one with a less abrupt stall?

The 230 series airfoil was selected because it has no center of pressure travel. The Osprey has all of the engine weight about 36" above the center of life. As the nose is raised the C.G. will move aft very fast so the airfoil must have a long envelope. The 230 series was originally developed for the Douglas DC 2 requiring a lot of weight shifting. I believe it was used right on up through the DC 6 aircraft. Beechcraft uses it on most models including the latest King Air models. It has a very low drag coefficient. Please don't change it!

I will try to answer more questions in the next issue.

George

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