The Champion 45 is a 40 size ARF pattern plane built by Thunder Tiger. It has a fully symetrical tapered wing and comes with a complete hardware package including engine mount and tank. All that is needed is a 40-50 size two stroke engine and radio gear.

Construction

Wing joining was the first task of this new project. The kit includes two ply dihedral braces which must be laminated together. Unfortunately, the parts supplied with this kit were severely warped. The ply itself was of a very poor quality. I decided to make these pieces from scrap wood. On joining the wings I found that the openings for this spar was set back from the leading edge by a different amount for each wing. One wing was more than 1/8" forward of the other. The wings look like they were from a different production run since the construction of the root was a little different. Supplied with the kit was a strip of plastic that was to be used to reinforce the wing joint. I felt this material was to narrow and not adequate for the job so I opted to use a strip of fiberglass cloth and Z-Poxy in its place. The ailerons were pre-assembled in the wing so no extra work is needed here.

After joining the wing the holes for the wing stay bolts must be drilled. The plans failed to mention than the wing stay mounting bracket must be installed into the fuselage. The stay is constructed by laminating two pieces of ply and gluing them across the underside of the fuselage. Like the dihedral braces these piece were made from inferior wood. The piece supplied my the kit were to short and would not reach across the width of the fuselage. I therefore had to make these pieces from scratch also.

Installing the horizontal stabilizer was the next step. On resting the stab on the fuselage I noticed that it was angled by at least 10 degrees. I had to remove quite a bit of material to get the stab to sit parallel with the wing. In doing this I also noticed that a good portion of the rear fuselage was not even glued. After repairing this I removed the covering material from the joining surfaces and glued the stab in place with epoxy. I similarly installed the ruder into position making sure it perpendicular to the stab. As with the ailerons, both the elevator and rudder were pre-installed. The kit also supplies a plastic cover which goes over the fuselage and around the rudder. This finishes off the tail section very nicely.

The kit came with a rubber mounted engine mount that was to be bolted to the crankcase end plate of the engine. I used an OS 46 FX engine on this kit and unfortunately this engine has a remote needle valve that interferes with this mounting. I had to construct an aluminum spacer that was 1/4" thick to leave enough room between the engine and the mount for the needle

valve. The mount itself allows for a easy adjustment of thrust angle weather it be up/down or left/right. The manual calls for 3 degree of right thrust and 1.5 degrees of down. Fitting the supplied cowl around the massive 46 was a challenge as with most enclosed engine installations.

Radio Installation

The kit comes with both a rudder and elevator push rods. These push rods are round wood dowels with #2 rods on each end. The rods were held on by a plastic material. When I installed the push rods this material pushed forward and the rods fell off the dowels. No where in the instructions does it state to glue these end piece on but it is a must. The elevator push rod is shaped like a Y with two rods on one end to go to each of the elevator halves. These rods were a little short and maximum up deflection of the elevator was not possible. I had to use extra long cleaveses to get the proper throw. The servos fit nicely into the supplied tray.

To install the aileron servo the wing roots must be cut to allow the servo to drop into place. A ply re-enforcement plate is then glued in place. The aileron control linkages are also supplied with the kit.

Test Flight

On the first taxi it was evident that the plane had a bad tendency to noes over. Full up aileron had to be applied to keep the tail on the ground and to have any rudder control during roll out. The takeoff required a lot of right rudder to keep the plane tracking straight down the runway. After lift off the rudder input had to be reduced. After the initial trim adjustments the Champion tracked beautifully. Rolls were a little slow for my liking and loops tended to roll off to one side. The landing was quite hot. The plane does not slow down very fast. Long approaches are necessary.

After the first flight I added more right thrust and increased the aileron throw. Substantial right rudder was still required for takeoffs but loops performed much better. Rolls were now quick and axial. Unfortunately the second landing was a disaster. I came it a little to fast and when I touched down the plane bounced back in the air. When it came down the second time I heard a big crunch and the plane settled on the runway at a strange angle. Upon inspection I found out that the right landing gear had folded. The landing was not very hard at all and this should not have happened. Upon further inspection I found that the landing gear mounting plate was only tacked into the wing. Most of the surface had no glue at all. This plate rotated in the wing and took out a 2" section of the leading edge. I decided to make a new foam core wing instead of repairing the original. I tore apart the old wing to use the leading edge. While dong this it was

apparent that most of the wings structure was not glued together. It was a go thing the landing gear broke because I am sure the wing would have folded under a high stress maneuver.

Conclusion

You may have noticed from the tone of this review that I was not too happy with this kit. There were many problems with both the material used and in its construction. I did put in a complaint to Thunder Tiger about this kit and to their credit they did send me a new set of wings free of charge. They also indicated that there was a problem with some kits regarding the main landing gear mounting. I guess I was one of the unlucky ones. With the new hand made wing this plane is still a good flyer and I will enjoy it in the years to come.