

NOTES ON CONVERTING THE EASY BUILT Fairchild PT-19 (kit FF-06) to R/C and ELECTRIC POWER

The 1/12 scale PT-19 is advertised as a kit for a rubber powered free flight scale model. Like other Easy Built Models designs I am familiar with, it is engineered to "minimalist" standards; that is, the structure is intended to be *just strong enough* for practical flying in order to help the builder create a *really light* model. There is nothing wrong with this approach *unless* you choose to build the model for radio control with electric power...to make such a conversion practical you will need to make obvious changes as the addition of working control surfaces. You will also need to add structural rigidity and strength to deal with greater thrust and flight loads and to provide for practical mounting of the power and control systems. I have done this with the PT-19 as well as with a number of other similar models by making what are essentially two types of changes. I *add structure* such as rudder and elevator leading edges to create the new features I want, and I *reinforce or redesign structure* to increase strength as necessary.

In my opinion the modeler intending to convert a classic *stick and tissue* rubber model *and fly it* has to choose one of two different rationales. You can add as little as possible to the original design, keeping weight to a minimum and permitting very low flight speeds, perhaps even practical indoor operation, or you can accept the higher flight speeds required by more weight and add features that increase the scale fidelity and/or esthetic appeal of the airplane, as well as making it easier to handle. I consider changes such as lightweight sheet balsa skins, aileron control, scale rib spacing, steerable nose/tail wheels and perhaps simple scale engine detail to fit in the second category. Needless to say the boundaries often overlap and it is always wise to keep weight down...as a modeler experienced enough to be doing conversion of kits, *you* have to choose just how far you want to go, and what you want the finished model to do.

This airplane was intended from the beginning to fit the latter of my categories. I chose to add a maximum of detail and structural modification to reproduce the appearance of the full scale subject as closely as possible. The wing, horizontal tail and vertical fin were all skinned with 1/32" balsa sheet, as were portions of the fuselage nose and upper rear deck. I reinforced the nose structure and added a

1/16" ply firewall to serve as a mount for my geared Astro 01 brushless motor, and built up a scale cowl from light balsa blocks and more 1/32" sheet. This cowl is attached at the rear by two small screws and slips off easily to the front when the propeller is removed.

There are extra ribs in the control surfaces to replicate scale spacing, and I made patterns for extra parts to cut the wing rib spacing in half (twice as many ribs for a stronger, more rigid wing). I added a bottom forward spar and included sheet balsa spar webs out past the landing gear mounting area, and changed the wing leading edge to a 1/4" x 1/2" balsa strip that was sanded to conform with the airfoil profile. The wing root fairings are built up from very soft scrap balsa chunks and finish formed using very light epoxy molding compound, sanded to final shape.

The covering is medium weight (GM) silkspan dyed with RIT fabric dye and applied wet...finish is *many* coats of thinned, non-tautening nitrate clear dope. All the markings were done using tissue cutouts doped in place. I gave the finished airplane a very light coat of matte clear Stits Polytone...the Stits product line is my preferred finishing material for all my larger scale models.

Flying weight is about 15 ounces using the small (350 mAh) LiPo battery, and about 17 with the "big" 1500 job that gives me nearly half hour duration outdoors. Takeoffs from grass and flying in moderate wind are NO PROBLEM.

I LIKE THIS AIRPLANE and my wife thinks it is *cute* beyond all reason. This is great except that she won't let me take it out to fly unless the weather is *really good*.

STAY TUNED FOR MORE GOOD STUFF...As of January, '05, I am preparing a series of articles on various aspects of building and flying rubber- to - electric R/C conversions for Flying Models magazine. One of these features the conversion of this model in full detail...watch FM so you don't miss any of them.

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EASY BUILT MODELS.COM