



Dennis McFarlane

R/C Report

E-flite Clipped Wing Cub 250

Fun little flyer constructed from traditional materials.

Who doesn't love a Piper Cub? Without a doubt, next to the venerable Ugly Stick series of model aircraft, there have been more Cub kits produced than any other type of model. Piper Cubs are available in every conceivable size, from ultra-micro airframes to 60 percent scale monsters. I've owned a quarter scale Cub that was first released by Hanger 9 years ago. It was redone in a Civil Air Patrol scheme, and has been flown at classic and All-Cub events for close to a decade. They are fun to fly and if properly cared for, last forever.

Full-scale Cubs have been modified by their owners in more ways than seem imaginable. Everything from strengthening the landing gear for handling rough terrain, to removing the wings and attaching them to a fuselage of the owners own design. One of the more popular modifications came about right after World War II when the wings of many inexpensive military surplus Cubs were shortened by removing six feet from each inner wing panel. With a 12 foot shorter wingspan, yet retaining full length ailerons, the result is a somewhat aerobatic aircraft. The modification has been popular ever since and is known as the Clipped Wing Cub.

The E-flite version of this iconic aircraft is manufactured from traditional balsa and plastic film covering. The model is an ARF (Almost Ready to Fly) and will require substantial add-on sales. Used to complete the model was the recommended E-flite Power 250 brushless outrunner motor (#EFLM1130), 10Amp Pro Brushless ESC (#EFLA1010), four 3.5 gram DS35 Digital Super Micro servos (#EFLRDS35) and a AR635 AS3X, three axis stabilization receiver (#SPMAR6335), although any nano-size six-channel receiver will work exceptionally



well. Also needed are a 2S 450mAh lithium battery and a 7X4 electric propeller. An ASP (#7040E) was selected for use, along with a variety of ultra lightweight extensions all listed in the manual. By following the instructions, assembling the Cub is simple, but will require at least two—three is more realistic—evenings as components are set in place and adhesives are allowed to cure.

The first thing done is to secure the aileron servos to pre-cut covers. The servos use an extruded plastic mount, and the extrusion method of molding requires the use of a release agent, usually wax. Always tell your customers to wash any extruded plastic with regular household detergent prior to gluing. They will get a much better glue joint if any wax or oil is removed.

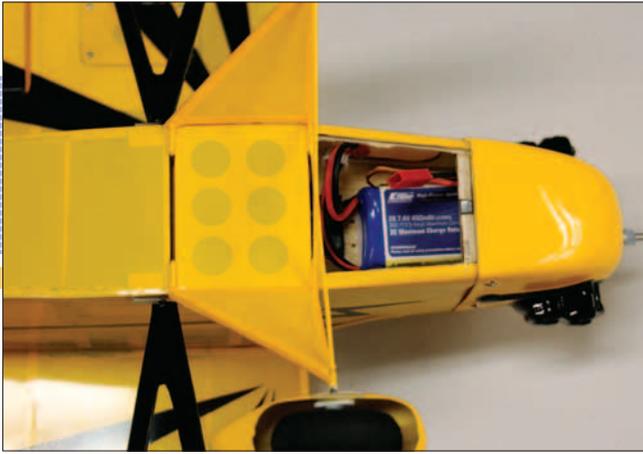


The manual dictates adhering the wings to the cabin structure, but they could be made removable if space is at a premium.

The manual also dictates the wing panels should be epoxied to the fuselage cabin structure and, although it was not tried, for those modelers with extremely limited storage space, there is every reason to believe that with the snap on struts and carbon fiber through-spar, the panels could be made to be removable. About the only area of confusion had to do with servo arm selection. As with most of today's products there

is a large assortment of arms included with the recommended servos, but none measured exactly to what the manual was calling for. Experience dictated this wasn't a serious issue, so the closest arms were chosen and from there installation proceeded without any further incidents.

As with many models that are produced overseas, there were a few wrinkles in the covering. The Cub's airframe is extremely lightweight, and the tail surfaces are pretty thin.



There is more than enough room in the battery compartment for the recommended 2S 7.4V 450mAh LiPo.

The last thing the end user wants to do is bring out a heat gun and start blasting the covering until warps are introduced. Not wanting to destroy a nice model, the covering was left as it came. However, and this next raised a smile, the finished model was placed on our household clothes drier to keep it out of harm's way until the weather calmed. After a couple of loads, the low-temperature activated covering had shrunk on its own and became nice and taught.

The assembled model can be described as rather cute. With its traditional construction of balsa and film, the results are a super lightweight rendition of the popular civilian aircraft, but as it is often said, it's not the looks of a model alone that count. It's how it flies.

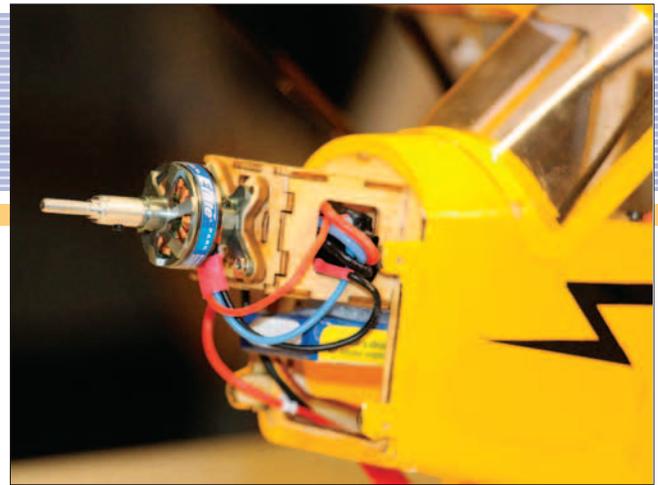
Initially the AS3X was left off and with the 450mAh battery installed, balance was right at the most rear position indicated as safe in the manual. Power was applied, the Cub accelerated forward, heeled up and snap rolled to the ground, not good at all. Balance was again checked against the manual, and was spot on, but the snap was indicative of a tail heavy condition.

Considering the C/G (Center of Gravity) information provided was possibly in error (it's been translated into four different languages) quarter ounce pieces of stick on lead were cut and added to the nose one at a time, each time improving the flight characteristics of the Cub. After 1.25 ounces (five pieces) of lead had been added — bingo! — the Clipped Wing Cub turned into a docile and fun-to-fly airplane. Putting the Cub back on the balancer, the added nose weight brought the C/G 3mm forward of the most forward location recommended in the manual.

Properly balancing an aircraft has been stressed in many past articles, and turned this aircraft from a non-flyable unit for the shelf into a great flying little airplane for any occasion. This is the perfect example of why you should explain to your customers the information in the manual,



Once properly balanced, the little Cub is a docile and delightfully fun airplane to fly, either with, or without, the AS3X activated.



Spinning the propeller is a miniscule 250 size outrunner, but it provides ample power for scale flight and basic maneuvers.

especially those which come about from a language translation, are at times only a guideline, a good place to start.

Turning on the AS3X is really simple. The manual dictates the windscreen and center section "glass" should only be taped in place, and there is a good reason. Removing these pieces allows access to the bind port on the receiver. Plugging a one inch JST adapter (#SPMAJAT1UL) into this port (it's tight, and will require tweezers or a similar tool) allows one of the two patch cords included with the receiver to be connected from the receiver to either a smart phone, tablet or personal computer.

Downloading the App is straightforward. The biggest thing to remember when activating AS3X is to always reset the transmitter's values to zero. Setup before AS3X required a bit of subtrim on each of the servos and throw adjustments to all the control surfaces. The same subtrim will be

needed when activating the AS3X, but this needs to be done in the receiver's program, not the transmitter's. When setup properly, the AS3X does exactly as it's designed to do, and it will enhance the flying experience, but it should be noted that once properly balanced, the little Cub is an absolute delight to fly with or without the use of AS3X.

Years ago, friends would ask my recommendation of an aircraft to fly IMAC (International Miniature Aerobatic Club) style maneuvers, and my response was always the same. "Build a Clipped Wing Cub and fly the thing until using rudder becomes so second nature you don't have to think about it, then we'll talk." And even though this Cub won't do much in the way of IMAC training, it's still a blast to fly.

The E-flite Clipped Wing Cub 250 is available only from Horizon Hobby. **HM**

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