HOBBY LOBBY Tiger Moth

1/7-scale electric barnstorming beauty

by Scott Stoops

First flown in 1931, the Tiger Moth was originally designed as a primary trainer for the British Royal Air Force. By the start of World War II, there were several thousand Tiger Moths worldwide, flown under the colors of the United Kingdom, Canada, Australia, and New Zealand. Oh to have been a pilot of that era! I can clearly imagine swooping down low over the rows of trees for a perfect wheel landing. Unfortunately, I was born about 50 years too late for that!

In the modeling world, the Tiger Moth is relatively common, but to be honest, very few Tiger Moth models really capture the essence and beauty of the full-scale aircraft. In most cases, the models omit the oversized fuel tank center section or the scale landing gear fairings. The Hobby Lobby Tiger Moth, however, has absolutely nailed the scale aspects of the big Tiger Moth. From the scale cockpits and RAF color scheme to the pre-cut cowling and flying wires, this Moth just looks right. Best yet, it is easy to assemble and flies great.

ASSEMBLY

You don't build this Tiger Moth—you assemble it. You'll need glue for exactly two parts: the CA rudder hinge and the motor mount. The rest of the model is pre-built and bolts or screws together. I think it's a remarkable level of pre-fabrication for such a complex model. One of the hardest aspects of setting up a biplane is the rigging, but with this one it's a piece of cake.

Opening the box, I found a nicely covered, pre-assembled set of airframe parts. I found the covering to be slightly loose, but it tightened right up with my heat gun. The covering is low temp, so start with a low setting and work up to higher heats. Included in the box is everything you'll need except a radio system, battery, power system, and scale pilot to finish it off (a model like this demands a scale pilot!). Digging a little further, I found the hardware kit containing a big bag of bolts, nuts, screws, and pull/pull wires. One aspect of assembly that I was dreading was rigging

PHOTOS BY DAVID MIELKE

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TIGER MOTH

all of those flying wires, but Hobby Lobby has made that easy by pre-rigging all of the hardware. All you have to do is set the tension and crimp!

As I got started, it became obvious that I would need to sort and organize the big bag of hardware. I stole…err…"borrowed" a couple of small Tupperware containers from the kitchen for that purpose. The Tiger Moth's manual included a very thorough parts list in addition to thorough assembly instructions, which helped to make quick work of the assembly. The Moth was originally designed for glow power, but Hobby Lobby included a helpful addendum outlining the changes made to the electric version.

Basic assembly is very simple. All components are pre-built, so you simply bolt the tail to the fuselage (check the Tips for Success), install your servos, rig your pull/pull control system, and attach the wings and joiner rods to the fuselage and center section with the included hardware. The most involved step is rigging the flying wires, but with the wires already built, all that's left to do is clip them in place, adjust the tension and crimp. The aileron servos are attached to their respective servo covers, and those are attached to the wing with four small screws. For all of this construction, you'll need a small set of pliers and a small Phillips head screwdriver.

The landing gear is probably my favorite part of the Tiger Moth. The kit comes with a very scale, pre-built assembly that incorporates the scale fairings and forward sweep of the radius links. The landing gear is attached to the fuselage with two sets of straps and self-tapping screws. In my opinion, the scale landing gear makes the model.

The motor is attached to the plywood motor mount using the optional AXI firewall adapter. I used four 1-inch 4-40 bolts and blind nuts. The whole motor assembly slots into and is glued to the fuselage, creating a very solid mount. The motor mount also appears to have both right and down thrust to counter spiral slipstream. What a nice touch! I zip-tied the Jeti ESC to the top of the battery box. The Kokam

Left: The elevator control has direct pull-pull rigging to the servo, while a pushrod comes forward to pick up the scale rudder bar that protrudes through the fuselage sides. Right: The electric motor installation has been thoroughly engineered and provides excellent results. The AXI/Kokam combo is a perfect match for this airframe.

SPECS

PLANE: Tiger Moth
MANUFACTURER: Green RC
DISTRIBUTOR: Hobby Lobby
TYPE: Scale electric sport airplane
FOR: Advanced beginner and intermediate pilots
WINGSPAN: 50 in.
WING AREA: 758 sq. in.
FLYING WEIGHT: 64.2 oz.
WING LOADING: 12.2 oz./sq. ft.
LENGTH: 40.5 in.
RADIO: 4 channels required; flown with a Hitec Eclipse 7 transmitter, Hitec Electron 6 receiver, 2 Hitec 322-BB servos, 2 Hitec HS-81 servos, Kool Flight Systems 6-volt Ultimate BEC
POWER SYSTEM: AXI 2820-10 brushless motor, Jeti Advance 40 Opto brushless ESC, FMA Kokam 3S 3200mAh Li-Poly battery, APC 11x5.5 Thin-E propeller
FULL THROTTLE POWER: 40.5 amps, 448 watts; 6.97 W/oz., 112 W/lb.
TOP RPM: 10,680
DURATION: 15-20 minutes mixed flying
MINIMAL FLYING AREA: club flying field
PRICE: $199.99
COMPONENTS NEEDED TO COMPLETE: 300+ watt power system, 4-channel radio system with 4 servos, Universal BEC

SUMMARY

The new electric ".25-size" Tiger Moth ARF from Hobby Lobby is an exceptionally scale rendition of the famous 1930s biplane, and it flies great! Designed specifically for the AXI 2820 series of brushless motors, the Tiger Moth isn't your typical glow conversion. All of the "conversion" work is done for you—simply bolt the components together and go fly. The Tiger Moth flies great on the stock power system, offering long flights of mixed barnstorming and basic aerobatics. This is what electric flight is all about. Let the dawn patrols begin!

AIRBORNE

One of my favorite full-scale aviation experiences is flying a J-3 Cub with the door open on a warm summer morning, lollygagging around the patch, relishing the wind in my face and feeling lucky to be a part of aviation history. Flying the Tiger Moth conjures a similar sense of wonder. Whether flying lazy figure 8s inches off the ground, shooting touch-and-goes in the grass, or barnstorming my way through loops and rolls, the Tiger Moth just feels right.

Like most taildraggers, the Tiger Moth prefers a touch of up elevator to keep the tail down during the initial takeoff roll until the rudder becomes effective. Stay light and quick on the rudder inputs and she'll fly off the ground very gracefully. While you can nail the throttle and jump off the ground in short order if necessary, I prefer a smooth application of throttle for a gentle and precise "scale" takeoff.

In flight, the Tiger Moth's ailerons and elevator feel very nicely balanced. The ailerons do cause some adverse yaw, so be ready to add rudder in the direction of the turn to keep the tail in line. The rudder is relatively sensitive due to its large size. I fly the rudder with 60 percent exponential to soften the feel around center stick slightly. You'll also find the rudder causes a large amount of roll in addition to yaw due to the Moth's dihedral and swept wing planform (just like the full-scale Tiger Moth). Be light on the rudder until you're comfortable with its response. The AXI brushless power system provides more power than she really needs, so be sure to throttle back when you can to extend your flying time. No need to rip around at full-throttle; Tiger Moths are meant to be savored.

When you do feel the need to tear the up the sky, the Moth is quite capable of most basic aerobatic maneuvers. I found both stalls and spins to be predictable and sedate. The rudder and elevator provide plenty of authority for most aerobatic maneuvers, and the airframe is plenty strong. She'll loop from level flight, but for realism, it's more fun to use only partial throttle and work your way through the loop gently. The rudder has plenty of authority for tight pivoting hammerheads, and if you really want to push it, she'll even fly outside loops and both inside and outside snap rolls!

Back in the pattern, the Tiger Moth loves gliding approaches. With two sets of wings and the accompanying flying wires, she's draggy enough for a relatively steep power off approach. With that in mind, plan your first few landings with power to help judge the descent. Both wheel and full-stall landings are a lot of fun! I prefer wheel landings with the Tiger Moth because they're so easy to turn into touch-and-goes. I find I've been finishing every flight with about a dozen of them, trying to outdo myself with each successive landing.

The recommended electric power system provides plenty of power and duration for the Tiger Moth. In fact, I think they are a perfect match. The Hobby Lobby Tiger Moth is gentle enough that it could be flown as a first aileron model with the help of an instructor, but I think it would be the perfect second aileron model.

3S 3200mAh Li-Poly pack fits perfectly in the supplied battery box. Battery box access is through a removable hatch on the bottom of the model near the landing gear. The hatch is relatively small, but the battery fits fine if you first insert it aft then pull it back forward into the battery box. I used two small pieces of Velcro to secure the battery in the battery box. With all of the components installed, the model balances perfectly. All said and done, I spent about four hours assembling the Tiger Moth.

TIPS FOR SUCCESS

The Tiger Moth uses a unique construction technique for attaching the horizontal and vertical stabilizers. Two bolts pass vertically through the fuselage from the bottom, through the horizontal stabilizer, and into two blind nuts located in the vertical stabilizer. On my model, I had a tough time getting the bolts to "start" in the threads of the vertical stabilizer, accidentally knocking one blind nut out of its hole during assembly. I ended up having to do a small surgery on the vertical stab to get the bolts to thread on the blind nuts.

To eliminate this problem, I'd recommend threading the bolts into the vertical stabilizer before the final assembly to make sure that you won't have problems later. Also, give the threaded bolt and blind nuts a good tug to ensure the blind nut is fully seated in its hole in the vertical stab so that during the final tail assembly you don't knock it loose. Finally, during that assembly, don't push hard on the bolt. Simply let it thread onto the blind nut and tighten on its own. To prevent cross threading during the final assembly, I gently turned the bolts backwards until I felt the threads click into alignment, and then started them forward.

CONCLUSION

Flying the Tiger Moth makes me yearn for that open-cockpit, seat-of-the-pants type of experience in my full-scale airplane. This is clearly the next best thing! I find I rarely fly my Tiger Moth above 15 feet, spending most of each flight cruising around the field, shooting touch-and-goes and generally having a blast. Easy to assemble, fun to fly, great performance, and stunning good looks—the Hobby Lobby Tiger Moth has it all. ✪

Links

Hobby Lobby International, Inc.,
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For more information, please see our source guide on pg. 169.