

COX WINGS F4U CORSAIR MICRO WARBIRD

By John Likakis



This small model, with a small price, offers big fun!

While looking for some information on an old Cox 0.049 engine, I came across the Web site of Cox Hobbies (coxmodels.com). Staring back at me from the Cox homepage was a picture of a small F4U Corsair. Below it were pictures of a P-40 Warhawk, a P-51 Mustang, a P-47 Thunderbolt, and a Spitfire. A quick click on the picture brought up another page with the following description.

At last - here is a micro park flyer model with all the scale realism you want. Perfect for that lunchtime or after work flying session. Or, try a wild pylon race with a group where the whole race could take place on a football field with 50 yards to spare! The model is a highly detailed, pre-built, pre-painted foam ARF. It includes a 1 piece snap-on wing, 130 size electric motor, 2 propellers, scale spinner, water transfer decals, charge-on/off switch plate, charge plug and control linkage. Everything you need to complete the model is included except for electronics and glue. You will need a micro receiver, 2 micro servos, battery (6 cell 220 mAh NiMH) and charger. The fuselage comes in two halves that you glue together after radio installation. Wingspan: 20.25" Length: 16.25" Flying Weight: 5 oz. Required Motor: 130 electric

(Included) Required Radio: 3 Channels w/2 micro servos

The retail price for this was only \$19.99. How could I resist? With just a few clicks, I placed an order for a Corsair. The UPS truck arrived a few days later bearing the bent-wing bird and a pair of Cox's recommended 6-cell battery packs.

Easy Assembly

The Cox Micro Warbirds all use the same essential construction plan. If you built plastic display models as a kid, you have all of the skills needed to put one of these together. A quick tour of the kit contents shows just how simple and straightforward these models are.

The Corsair arrives securely packed in a custom foam insert inside the box. When you slide the insert out, you find a pair of fuselage halves, a one-piece foam wing, the tail surfaces, a hardware package, a motor, a pair of propellers, and a decal sheet. The 12-page instruction booklet is lavishly illustrated and clearly written, and it takes you through every step of the model's assembly.

It takes only a few steps to go from the freshly opened box to having a ready-to-fly

model. The whole process can be boiled down as follows:

- Assemble and hinge the tail surfaces
- Install the control horns
- Install your radio gear and pushrods
- Glue the fuselage halves together
- Hook up the controls
- Apply the decals and propeller
- Go fly the airplane.

In practice, it's only slightly more complicated. Based on the idea that you will be sealing the battery inside the fuselage, Cox provides a combination charge receptacle/on-off switch circuit board that you can solder into the circuit between the electronic speed controller (ESC) and the battery. A microswitch and a charging plug are also provided. Assembling this bit of the model is the most complex task, as it requires you to solder all of the components to the circuit board. However, I think most modelers will opt to do as I did and skip the board.

I wanted to be able to remove a depleted flight battery and slap in a fresh pack while the first one recharges. To accomplish this, I modified the model by slicing off the right-hand side of the nose with a new X-Acto®



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1. Each Cox Micro Warbird comes in a colorful box with a foam insert that cradles and protects the components from even the hardest knocks. All of the airframe parts are pre-painted, and the kit includes a motor, a hardware package, and a set of water-slide decals.



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2. The tail surfaces come already cut, with the hinge lines beveled. All you have to do is add the elevator joiner, apply the supplied hinge tape, and glue in the control horns.

blade. I glued some slices of scrap 1/8-in. balsa to the side of the motor, and epoxied a pair of balsa stubs to the rear inner edge of the cut-off nose portion. An old servo-mount screw runs through the side of the nose and into the balsa chunks glued to the motor, while the balsa stubs hold the rear of the now-removable nose section in place.

Beyond that simple modification, assembly goes quickly and by the book. My Corsair went together in the course of an evening.

First Flights

As with any model this size, keeping the airplane lightweight is the key to performance. Cox recommends an all-up flying weight of about 5 oz, but lighter is always better. In the case of my Corsair, I used a pair of GWS Naro Pico sub-micro servos (weighing about 6.1 g each), an Aveox A-5 controller, and a GWS 4-channel micro receiver. The finished model, with the Cox 6-cell, 220-mAh pack installed, weighs 5 g less than 5 oz. The center of gravity (CG) came out at a point about 1/16 in. ahead of the recommended balance point.

The Cox Micro Warbirds use only rudder and elevator for control. As such, they need flying speed to maintain control effectiveness. Get the model slow, and motor torque starts to take over. I thought about this as I readied for the initial launch on the first flight. To make sure the airplane had adequate flying speed from the start, the first launch was made with a quick, firm toss straight ahead. The Corsair sagged slightly toward the ground, but then began climbing gently.

Control authority in the climb was not great, and it was easy to turn left, but the model barely moved to the right. The answer to this problem was to level the nose of the Corsair and let it gain more airspeed. Once the little motor got the airplane up to cruising speed, it could climb nicely and have full control authority in both directions.

Once at "cruise altitude" of 50 ft or so, it was time to put the model through its paces. I soon found that the model would loop from a slight dive. With a longer dive, it could be forced around in a barrel roll. Snap rolls are a bit problematic—the Corsair required a long and fairly steep dive to build up speed before I could pull the control stick back into the corner and get

TIPS FOR SUCCESS

Getting the most out of your Cox Micro Warbird depends on keeping the model as light as possible. Use the smallest servos you can get. Although the Naro Pico-type servos will work, the Polk's Hobby 4.7-g X-Micro servos are ideal.

The motor draws less than 3 amps, so you can get away with using one of the tiny 5-amp electronic speed controllers (ESCs). Maxx Products sells an itsy-bitsy 5-amp ESC, the MX9104, that weighs just 0.07 oz.

Almost any of the small single-conversion receivers will work well in this model. Again, lighter is better. The GWS R4N is a workable choice, as is the Cirrus MRX-4. Save some additional weight by replacing the antenna with one of the tiny indoor units. E Cubed RC sells a bunch of little replacement antennas that work great and are easy to install.

The Cox battery pack works fine, but you can also upgrade to a Lithium-Polymer (Li-Poly) pack and either lose some more weight or extend your flight time. The small 2S, 200- to 400-mAh Li-Poly packs work well, but the FullyMax 2S, 600-mAh pack fits quite well, weighs the nearly the same as the Cox pack, and more than doubles the airplane's flight time.

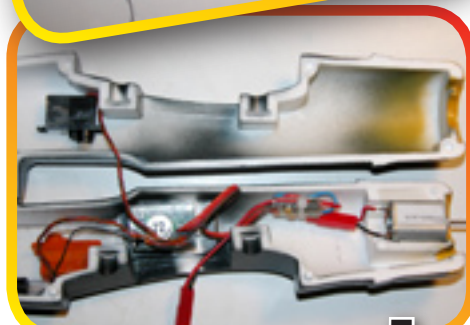
Finally, the importance of keeping the model moving fast cannot be overemphasized. Rudder control falls off as airspeed gets lower, even with the control throws set to maximum. A firm launch with a good initial flying speed will help your Micro Warbird to be controllable right from the start. If you find that the model is not responding quickly enough to a rudder input, drop the nose for a second or two—that's usually all it takes to get enough flying speed to regain control.



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4. The fuselage comes in two halves and is deceptively roomy. Although it might seem that fitting the radio gear in will be challenging, it is not.

5. The supplied motor glues into the nose. The rest of the radio gear is mounted with double-sided foam tape. Notice the receiver antenna coiled around a bit of plastic straw. Thinking I would someday want to replace the motor, I opted to not solder the ESC directly to the motor terminals.

6. Cox recommends (and sells) this 6-cell, 220-mAh NiMH battery pack, which fits perfectly in the nose of the Corsair. Average flight times with this pack are about three or four minutes.

7. In order to make the battery pack removable for recharging, I modified the Corsair's nose by slicing off a section. Two balsa tabs secure the rear edge, while a servo-mount screw holds the front.

8. The completed Cox Corsair is small, but gorgeous. It flies quite well with the stock setup, provided you keep the weight down to 5 oz or less.

it to snap around. It could not retain enough energy to get more than one snap before falling off into a spin though.

And spin it does! If you pull it up into a power-on stall and apply full rudder right at the stall break, the model whirls around at a pretty good clip. The Corsair looked particularly realistic spinning down from altitude. I found that it spins about equally well in either direction. Recovery consists of simply relaxing the stick inputs and recovering from the resulting dive.

So the Corsair is definitely not a full-house aerobatics bird in its stock configuration. However, it looks fabulous, especially when making high-speed passes a few feet off the ground. Mine even whistles lightly in a dive. It's also surprisingly quick, and it gets very small very fast.

It glides very well, too. With the throttle off and the nose pointed slightly down, the Corsair settles into a nice, stable glide. You can fly overhead 360-degree landing patterns with ease. However, make sure you

have the airplane's wings level before you start pulling back on the stick to flare out for touchdown—the rudder effectiveness drops off as the airspeed bleeds off, so it won't have the control authority to raise a wingtip before touchdown.

Ball Field Fun

If the Corsair is representative of the rest of the Micro Warbird line, Cox has a clear winner. For park-flying enthusiasts, the Micro Warbirds are an excellent value. You will need a space about the size of a football field in which to fly these warbirds, because these models are pretty fast. However, for yank-and-bank, high-speed strafing pass fun, I think the Micro Warbirds are hard to beat.

As for me, I ordered a P-47 Thunderbolt to go with the Corsair. I will probably end up buying the rest of the Cox warbirds as well because they are so darned cute. The P-47 will end up with an Astro Flight® Firefly coreless motor up front with a 2-cell Lithium Polymer (Li-Poly) battery pack. I can't wait! **QF**



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SPECIFICATIONS

Wingspan: 20.25 in.
Length: 16.25 in.
Flying Weight: 5 oz
Functions: Rudder, elevator, and throttle
Motor: 130-size electric (included)
Battery: 6-cell, 220-mAh NiMH pack or 2S 340-mAh Li-Poly

SOURCES

Cox Hobby Distributors
P.O. Box 274
Penrose, CO 81240-0274
Phone: 719-372-9876
Web Site: coxmodels.com

Polk's Hobby/Aristocraft
698 S. 21st St.
Irvington, NJ 07111
Phone: 973-351-9800
Web Site: polkshobby.com

Maxx Products
815 Oakwood Rd. Unit D
Lake Zurich, IL 60047
Phone: 847-438-2233
Web Site: maxxprod.com



This new line is called "Wings®" and COX will continue its reputation for exceptional value and the finest quality available. These micro models are 3 function, highly detailed, painted foam ARF models, featuring 1 piece snap on wings, 130 size motor, 2 propellers, scale spinner, water transfer decals, assembled charge - ON/OFF switch plate, charge plug and control linkage. Everything you need to complete this scale model is included except for 2 micro servos, micro receiver, 5 amp ESC, battery and glue. These little airplanes not only look good, but deliver on performance as well. You can have a ball racing at the local park or at the field...all this for only \$19.99! See these and other exciting Cox "Wings" products at your local hobby retailer.

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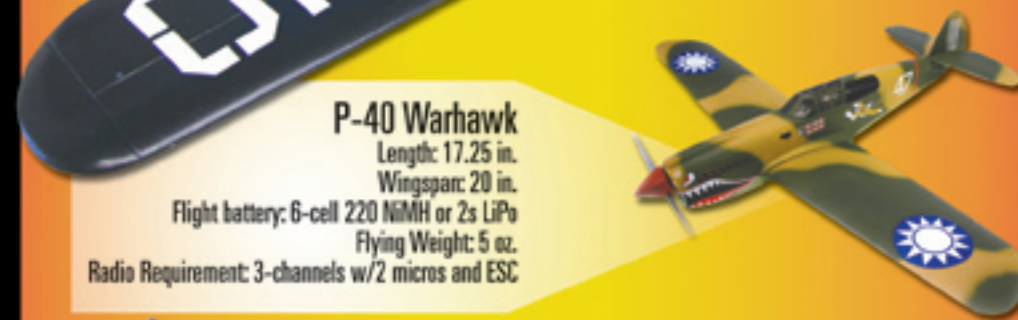
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\$19.99
STREET PRICE



F4U Corsair

Length: 16.25 in.
Wingspan: 20.25 in.
Flying Weight: 5 oz.
Flight battery: 6-cell 220 NiMH or 2s LiPo
Radio Requirement: 3-channels w/2 micros and ESC



P-40 Warhawk

Length: 17.25 in.
Wingspan: 20 in.
Flight battery: 6-cell 220 NiMH or 2s LiPo
Flying Weight: 5 oz.
Radio Requirement: 3-channels w/2 micros and ESC



P-51 Mustang

Length: 17.75 in.
Wingspan: 20 in.
Flight battery: 6-cell 220 NiMH or 2s LiPo
Flying Weight: 5 oz.
Radio Requirement: 3-channels w/2 micros and ESC



Supermarine Spitfire Mk XIV

Length: 18 in.
Wingspan: 20 in.
Flight battery: 6-cell 220 NiMH or 2s LiPo
Flying Weight: 5 oz.
Radio Requirement: 3-channels w/2 micros and ESC



P-47 Thunderbolt

Length: 17.75 in.
Wingspan: 20 in.
Flight battery: 6-cell 220 NiMH or 2s LiPo
Flying Weight: 5 oz.
Radio Requirement: 3-channels w/2 micros and ESC

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