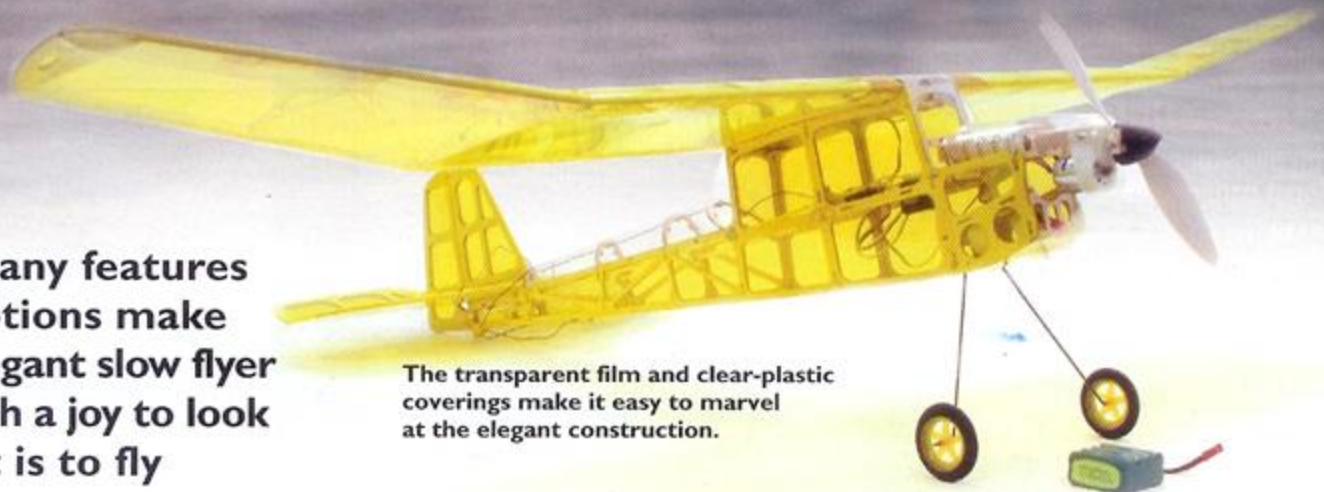


Park View: Green RC Models Colorful Butterfly ARF

MICHAEL RAMSEY



The Butterfly's seaplane configuration enhances the nostalgic look. There's no trick to flying it off water.



The transparent film and clear-plastic coverings make it easy to marvel at the elegant construction.

The many features and options make this elegant slow flyer as much a joy to look at as it is to fly

Green RC Models USA caught my attention at the iHobby Expo in Los Angeles, California, last fall. Most of the aircraft the company currently offers are those classified as "park flyer" types, meaning they're electric powered and have a ready-to-fly weight of less than 2 pounds. Being all wood, some might think they would have to be small models, but because the designs are so well thought out, the engineering practices have yielded larger aircraft.

Laser-cutting and high-quality manufacturing principles have been exploited to a new level. Such items as diagonal wing-rib construction, hollowed formers that are lightened to within 4mm of the outer edge, and zero-tolerance joinery are just a few features that dominate Green RC's models. If you consider yourself a fine craftsman, you'll appreciate looking these airplanes over.

At first glance the Colorful Butterfly Electric ARF seems like just another old-timer-looking cabin model. But this is "classic made modern" and it has the bells and whistles to go along with it.

This aircraft is not only a pleasure to fly, but it's one I'm proud to own. Just looking through the transparent covering and clear-plastic dressings to marvel at the construction is enough to make my leisure time with the model satisfying.

Raising a Caterpillar: The Butterfly is

available in one of five primary color transparent-covering finishes: red, green, yellow, purple, or blue. The basic model includes a brushed motor/gearbox power system, a 10-amp ESC, and an eight-cell 650 mAh battery pack. Two 9 x 6 slow-flyer propellers (one is a spare part) are standard equipment, as is all the hardware needed to assemble this tail-dragger.

A feature I hope never to fully appreciate is the complimentary patch kit. It is apparently a bonus included in all Green RC Models kits. The patch kit contains scrap pieces of wood and a generous sample of matching covering.

The Butterfly can be upgraded to include flashing lights built into the wing for an



The floats' open structure is sealed with film covering available to match the five color options. Clear-plastic gear legs play visually with the strong mounting system.

additional \$11. Also available are floats for \$44.99, in the same five color choices. My sample of the model included both of those options.

The Butterfly is a three-channel model that uses elevator, rudder, and throttle for control. A four-channel microreceiver weighing roughly 4-9 grams best fits the area provided. The cutouts in the servo tray will

Specifications

Type: Park flyer ARF
Pilot skill level: Beginner
Wingspan: 47 inches
Wing area: 309.5 square inches
Length: 30 inches
Weight: 17 ounces
Wing loading: 7.9 ounces per square foot
Motor (recommended): Speed 370 class with 5.3:1 gear reduction
Radio: Three channels (minimum), two miniservos
Construction: Laser-cut balsa and plywood with molded clear-plastic ornaments
Covering/finish: Lightweight transparent film covering, available in a choice of five colors
Price: \$134.99 (basic), \$190.98 (as tested with options)

accommodate almost any microservo that has at least a 10-ounce torque rating. If you don't use a four-channel receiver, you'll have to provide a Y harness to split one of the channels so power can be supplied to the wing lights.

The box includes the separately wrapped

Pluses and Minuses



- Beautiful construction and engineering.
- Modular components for easy assembly and storage.
- High-quality materials and excellent craftsmanship.
- Available in different colors with optional strobe lights and float kit.
- Simple to fly.
- Readily available replacement parts and upgrades (can be ordered on Web site).



- Connectors between battery and ESC are reversed. (Newer kits have been revised.)
- The included ESC may not last too long.

Test-Model Details

Motor: Speed 370 and 5.3:1 gearbox (included)

Battery: 9.6-volt, 650 mAh NiMH (included)

Propeller: 9 x 6 SF (included)

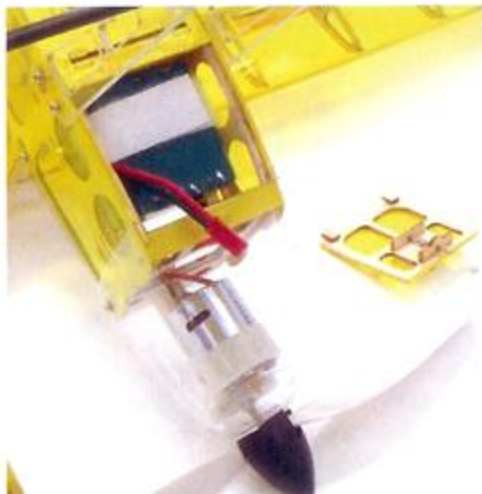
Motor draw: 6.5 amps

Power output: 55 watts @ 9.0 volts

Radio system: Hitec Eclipse 7 transmitter, GWS 4P receiver, two TowerPro SG-50 miniservos, 10A ESC (included)

Ready-to-fly weight: 15.9 ounces with landing gear, 18.5 ounces with floats

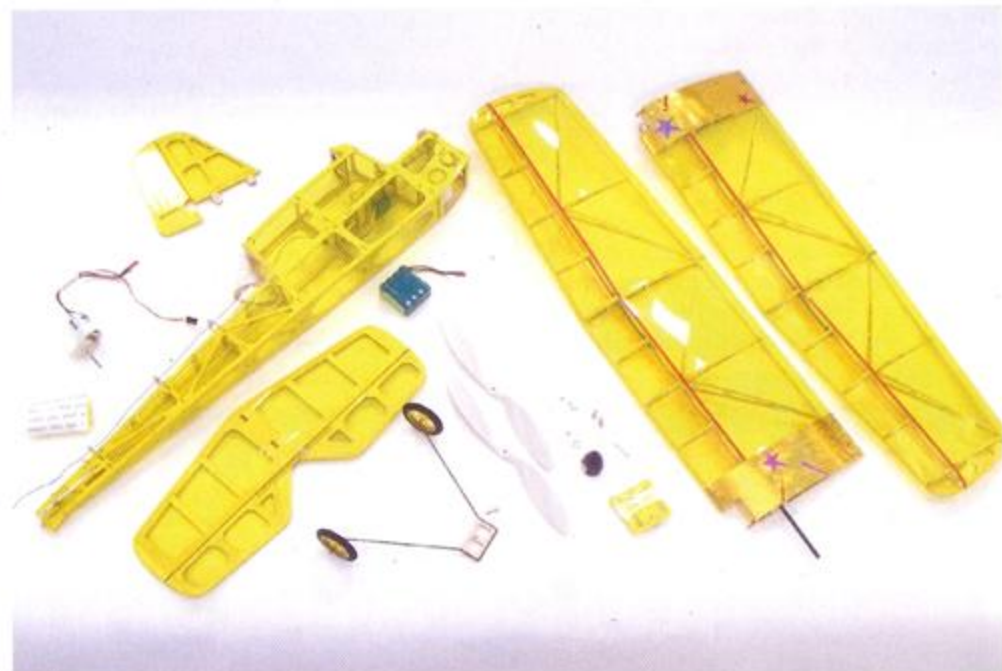
Flight duration: Five to 10 minutes



The battery hatch is held secure with a spring-loaded metal latch. Provided Velcro straps secure the included 9.6-volt battery in place.



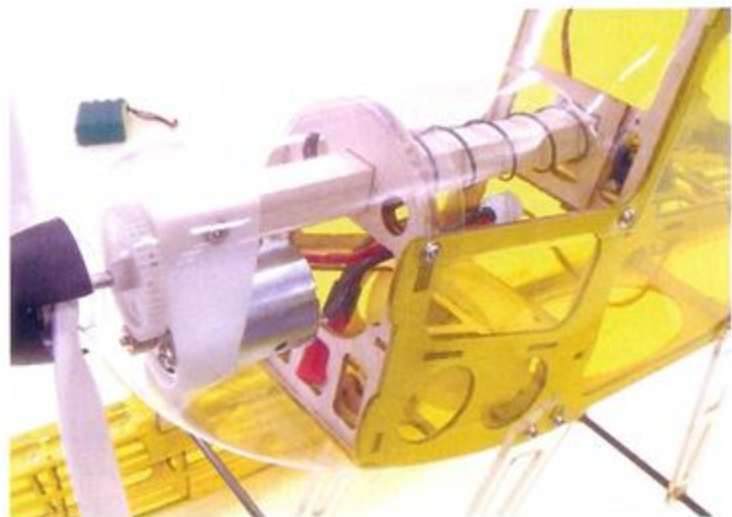
Two 5-gram servos fit in the laser-cut openings to control the rudder and elevator. The micro four-channel receiver is double-stick-taped in place.



No adhesive is required to assemble the Butterfly. The stock kit includes the motor/gearbox, ESC, and battery. Wings with a built-in lighting system are an option.



An excellent use of materials can be recognized throughout, including on the box where the five-step assembly instructions are found.



The included motor system is smartly mounted to a shock-absorbing motorstick. The molded clear-plastic parts are supplied pretrimmed to fit.

assemblies and zip-lock-sealed parts bags. The polyhedral wings are in two pieces that are joined with a carbon-fiber spar. The fuselage is in another bag, with the clear-plastic turtledeck and canopy temporarily taped in place.

The tail surfaces are packaged together and are supplied factory-finished with top hinging that is integral with the covering. The landing gear is 2mm hardened wire with spoke wheels dyed to match the covering.

The thing that struck me funny about the contents was the lack of paperwork. I thought, "Where are the instructions?"

Then I took a good look at the box and noticed the extensive amount of full-color information, including the short five-step instructions necessary to make the model ready for the field. If this doesn't prove the point of how easy this model is to assemble, I don't know what could.

The information is all accurate. If this is your first ARF I don't think you'll experience any trouble putting this airplane together, other than some big-hand fumbling I experience when securing some of the tiny screws.

There is no gluing involved with the Butterfly. In fact, it can be disassembled for shipping as easily as it can be readied for flight.

I was happy with the alignment of all the parts and didn't find any need to custom-fit or tweak. I won't bore you with the assembly process, but I will discuss the construction and

engineering features I found important.

The plywood-and-balsa fuselage is light and strong. The formers and sidepieces key together and are joined so tightly that only a small amount of adhesive is needed. This is another reason why Green RC Models airplanes are so light. In my inspection I found no instances of poor craftsmanship such as drips of glue or gaps between parts.

Likewise, the framework was free of warps and twists—faults that are often found in lightweight wooden structures. Only in the stabilizer/elevator did I find a minor twist that I could have caused when I was touching up some of the wrinkles in the covering. To make the surfaces true again, all I had to do was twist back the surfaces and take out the wrinkles in the covering with the heat gun.

The clear-plastic parts that enclose the aft turtledeck, forward canopy area, and cowling are lightweight and already trimmed to fit. They are mounted with 1mm screws provided using the pinpoint laser-cut holes as guides for their location.

The plastic is soft enough that no drilling is necessary; just press the screws through the plastic and drive them into the wood. There are only eight screws to secure because ingeniously the canopy and cowling share two of the mounting points.

I used all the hardware that came with the kit, right down to the nylon micro control horns that fit so neatly into the control surfaces' predrilled hard points. The pushrods are with threaded clevises, making the radio

setup operation and adjustment a snap.

The shock-absorbing stick motor mount is preset to the exact length needed to support the offset motor/gearbox included. Even the ESC is already hardwired to the motor.

I needed to change the plugs around on the connection between the ESC and the included eight-cell battery. Continuity in the connectors I use between aircraft is important to me, but the way the plug arrangement came would have worked fine. Typically the male Red JST connector is on the battery, but in this case it was wired with the female plug. I didn't want to modify my charge equipment, so instead I swapped the connectors between the two points.

The 10-amp ESC is a BEC type and has a cutoff suitable for Ni-Cd and NiMH batteries. If you choose the lighter Li-Poly batteries, keep the ESC limitations in mind and consider the extra ballast that will be needed in the nose for the airplane to balance at a safe CG location.

Although I used the included ESC for the initial flight testing, the motor system provided much less power than I would've expected. I didn't put a meter on the system, which I'm sure would have proven my layman findings. Instead I just swapped the ESC with a fresh one waiting for a rainy day in the spare-parts box.

Exchanging this component had the effect of waking up the motor system and made a significant flight-performance improvement. I trust that Green RC Models would have

replaced the unit if I had made the company aware of the problem.

Expect to spend at least an hour and a half putting the Butterfly together—a little longer if you install the floats at the same time.

Metamorphosis: What really sold me on this model was the optional floats. Their stick-and-former construction is so complementary it seemed only natural to have them for this aircraft. Even though the floats are a perfect match for the Butterfly, I'm sure they could be adapted to fit many other models in the same weight class.

The size, weight, and undercambered airfoil predictably contribute to well-mannered handling qualities. Because of this I jumped past the flight testing with the stock landing gear and went straight to the seaplane configuration. This was my second electric model on floats, and I was confident that it would do well.

On the water the Butterfly stands with a high waterline. Part of me wishes that the floats were perhaps an inch wider so the model could sit higher above the water. As it is, in windy conditions it's possible that the downwind float could sink just below the surface, which would surely present handling problems.

When I fly the Butterfly from the pond I pick a calm day and stand on the downwind side of the water. There's no water rudder, so sometimes I count on the breeze to aid in retrieval of the model.

All the same, because of the efficient float design the Butterfly isn't on the water surface long enough to worry about ground handling. To take off, just hold full up-elevator, apply full throttle smoothly, and watch the airplane jump up on the step of the float. Reduce the elevator input to a light pressure, ground (water) speed quickly increases, and the model flies effortlessly off the water.

As a three-channel airplane, aerobatic performance is limited but positive in that the model can be set up to be as gentle or agile as a pilot wants. I crank up the control throws because that's the way I like it. Where the model came to balance gives a slightly tail-heavy control feel, meaning it will drop a wing, but only if the stall is induced violently with too much control throw like I have it. When my 8-year-old son flies the model, I

turn the high rates off and the airplane's name takes on true form.

The Butterfly's high-lift airfoil allows the model to fly slowly (i.e., "float like a butterfly"). Landing it is a comfortable process that can be done inside tight spaces if necessary. This airplane has the ability to "float" but also turn in a tight circle. So if a straight-in approach isn't ideal, a circular, or similar shaped, landing-approach pattern can be done.

I swapped out the floats for the plug-in landing gear and enjoyed flying the model even more. With a 2.5-ounce lighter wing loading, the time-to-climb performance was excellent. Those brushless-motor users out there would have a hard time complaining about the model's power.

I keep the strobe lights plugged into the receiver for every flight. They don't seem to limit the flight duration to any significant level. The six LEDs flash in roughly half-second intervals. The right wing's lights are red and the left wing has green lights.

In a pitch-black sky I don't think flashing is the ideal program for the light system. I'd like to modify the lights so that they are steadily on at all times. Early morning or late-evening dusk conditions are ideal for this lighting system, so I'm flying while others are packing to go home because it's too dark for them.

The Green RC Models USA Colorful Butterfly Electric ARF is a sweet little model. I recommend it to beginners and to those who are looking for a high-quality, easy-to-fly RC airplane. *MA*

*Michael Ramsey
michaelr@modelaircraft.org*

Manufacturer/Distributor:

Green RC Models USA
13909 Artesia Blvd.
Cerritos CA 90703
(562) 802-0680
www.greenmodelusa.com

Products Used in Review:

Eclipse 7 radio:
www.hitecrd.com

GWS 4P receiver:
www.gws.com.tw