



RC REPORT

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E-flite Radian XL 2.6



Considerably more performance than expected.

To some people, power assisted soaring is boring. It's treated by many as simply going up and coming back down. This is really unfortunate, as soaring is an entire discipline unto itself. It takes more than a little effort to learn how to "read" wind currents, but once learned, going up and coming down takes on a whole new meaning.

To attract entry level soaring enthusiasts, Horizon Hobby's E-flite division has offered the Radian series of molded foam gliders in several different packages, from a basic glider requiring the purchaser to provide most of the components, to a Ready to Fly offering. Even though molded foam does have certain limitations when it comes to performance soaring, all of the Radian offerings have been popular with consumers.

Wanting to expand the line even further, E-flite is now offering the Radian XL 2.6, with 2.6 standing for the wingspan in meters. For the stateside market, this translates into a powered glider with a wing right around 8.5 feet in span.

Besides the wingspan, the fuselage is 4.75 feet long with a ready to fly weight of roughly five pounds. Manufactured from E-flite's durable Z-foam, the Bind-N-Fly package includes a BL10 brushless outrunner motor, matching 40 amp ESC, three 79.5 in. oz. metal gear servos, and the company's popular Spektrum AR636A full range 6-channel AS3X stabilizing receiver all factory installed. The purchaser will need to supply his own minimum of a five-channel DSM2/DSMX transmitter, flight battery and a charger for the flight battery.

To create a powered sailplane the size of the Radian XL requires a whole lot more engineering than simply placing a photo of a two meter Radian in a projector aimed at the wall, enlarging it to the size wanted then tracing the outline on a blank sheet of paper. Under close examination it really doesn't take much to realize the XL consists of a carbon fiber skeleton encased in a molded Z-foam body.

It's been mentioned that the Radian XL

can be assembled in 30 minutes. Maybe it is possible, but it took me more like a couple of hours—then again I'm never in a hurry anymore. Assembly is simple enough, but looking at the hardware packages there are a number of similar diameter, but different length screws. To avoid disappointment with the final product, this will require the purchaser to read and pay attention to the instruction manual.

The first order of business is to attach the rudder to the vertical stabilizer. Z-foam doesn't require specialized cyanoacrylate adhesives, in fact odorless is not recommended for the hinges, but that doesn't mean a bottle of cyano can be poured into the joint. A couple of drops of thin cyanoacrylate dribbled onto each of the three hinges will work perfectly. The instructions state to

adhere one side, and then add a couple of drops of adhesive to the other side of the hinges. There is mention of accelerator in the manual, but this is for repairs only and it is strongly discouraged on a hinge joint. Just let the adhesive wick and it will eventually set.

The next step is to attach both stabilator (full flying tail, not a separate horizontal stabilizer and elevator) halves to the fuse. This is about the most difficult part of assembly as—and this is said with extreme sarcasm—the stabilator halves are at the front of the box, and the carbon fiber rods used as spars are at the bottom of the box. These do attach with different length shouldered screws though, so do be careful.

The wing is a three piece unit, a center-section that contains the spoilers and two bolt on wing panels, which are secured in place using a combination of composite spars along with tabs through which machine screws are passed. The spar material is a laminated fiberglass product and on the review sample the front spars slid into the spar pockets perfectly, but one of the rear spars was tight and one was loose. The two were swapped, snug for loose, and these then fit perfectly. The slightest variation in manufacturing tolerance easily solved.

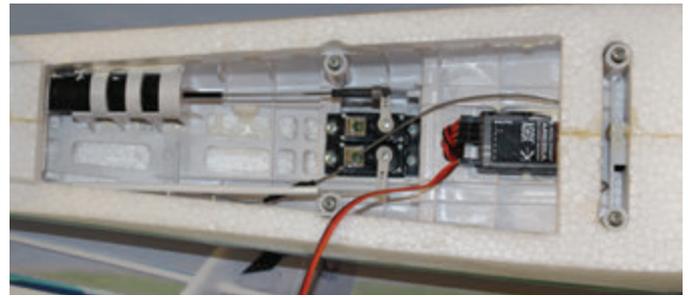
Included with the Radian XL is a sheet of



At 2.6 meters or 8.5 feet in span, the Radian XL is without a doubt a big aircraft, but it is engineered to be much more than simply an enlarged version of previous Radian offerings.



Located under the removable canopy is a huge battery compartment, which allows for plenty of fore/aft placement of the recommended 3S 3200mAh flight battery to help with any balance issues.



The equipment bay swallows the factory mounted Spektrum AR636A receiver and mini-size, but more than powerful enough servos—79.5 in. oz. of torque—needed to move the flight controls of the Radian XL.

black stripe trim, two wide and two narrow. The box shows the wider stripes on the wingtips with the narrower on the stabilator. The owner can do what he feels like with the stripes. On the review model all four stripes were placed on the right wing panel, but they could also be left off altogether. The last thing done was to pull the spinner cone and make certain the prop was snug to the motor shaft. Call it insurance, but I've seen more than a few electric airplanes throw the prop only because this simple task was ignored.

Once at the flying field a fully charged 3S 3200mAh LiPo (EFLB32003S30) was strapped in place. The control surfaces were checked for direction and throw, and with nothing left to do, the airplane was pointed into the wind, the motor was spooled to full power and with the gentlest toss, the Radian XL was allowed to fly.

Climb out is not like an F-15 fighter in full afterburner, but there is enough power on tap to climb to altitude. Once the XL was a couple of mistakes high, the trimming process was begun. It takes a bit of patience during the first flight to get everything trimmed correctly. This is due to the way the AR636A reacts to trim changes. After a trim input is made, the pilot needs to wait a few seconds to see how the airplane will respond. It didn't take a whole lot, maybe a beep or two of right rudder and several of down stabi-



The horizontal tail utilizes stabilator (stabilizer and elevator combined as one surface) control. The halves are secured to two carbon fiber spars by using same diameter, but different length machine screws. Instruction manuals are printed for a reason and to avoid disappointment the end user absolutely must read and follow the manual.

lator, but eventually the bird was trimmed exactly as wanted.

The goal the pilot of a powered glider wants to achieve is to climb under power, fly flat at roughly half throttle, and to gently descend when the power is cut completely. Once this was accomplished the Radian became a really fun airplane to fly. It does

Programming a Spektrum DX9 to the Radian XL

The instruction manual states that when using a Spektrum DX9 transmitter to fly the Radian XL 2.6 no setup is necessary. Simply bind the transmitter and receiver. This is true to a point. It does work and it will get the pilot started, but to enhance the flying experience there is a bit more that needs to be done.

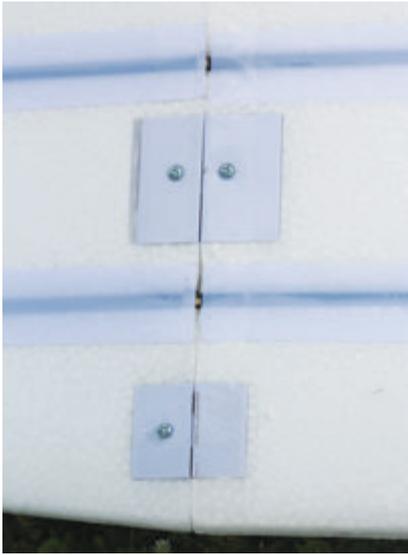
Every experienced RC pilot will tell you to begin every flight with all of the switches on the front of the transmitter facing down, and all of the switches on the top of the transmitter facing forward. The first thing done is to enter the servo reverse menu and reverse channel-6, the spoiler channel. This way the spoilers are retracted when switch-D is down. Then there are dual rates and exponential to be added. Using the throws listed in the manual as a guideline, high and low rates are set, but the DX9 has three rate options, so the high and low rates were split to provide a third rate. It worked out to 100-85-70 percent on both the rudder and stabilator. Added to this was expo of 20-15-10 percent respective to the throw and the programming is almost complete, but do set the timer. I suggest using the throttle stick to start the timer. This way the pilot will know exactly how long the motor has been running during the flight.

The absolute most important thing the pilot of **any** electric powered aircraft can do is to activate minus 110 percent throttle cut. In the case of the DX9 switch-H, the two-position switch located on the right top is always used. With the switch facing forward throttle cut is activated and preflight can be completed without the airplane suddenly energizing. Once ready, a conscious effort is required to move the switch to the rear position, thereby enabling throttle control.

This is especially important with a powered glider, as the airplane is usually readied for launch while the transmitter is dangling from a neckstrap. After the flight has ended activate throttle cut and feel free to again handle the glider without fear of a runaway motor due to an accidentally bumped throttle stick. **HM**



The included instruction manual suggests that all needed to fly the Radian XL using a DX9 is to bind the transmitter and receiver. This is true to a point and will get a pilot in the air, but there is much more that can be done to enhance the flying experience.



The wing's outer panels are secured to the center section by using two fiberglass composite spars and three machine screws, which pass through internal tabs.

indeed go up and come down, but of course so do all aircraft. Let's face it; takeoff is optional, but once committed to flight, the landing becomes mandatory. The difference is once a person understands air currents he can really become absorbed in soaring. It is not uncommon for flights of 30 minutes or more to occur using only a partial battery charge. Full power is used to gain altitude, the throttle is then reduced to hold altitude, and search out a thermal. And once a thermal is located, flying is almost bird-like.

In fact, if a person is looking for a thermal, look at where the birds are flying, especially hunting birds. They'll soar for hours in search of prey.

The first landing of the Radian XL was an experience unto itself. There was a giant "boomer" of a thermal right at the threshold of the club's runway. Every time it was setup on final the LX would cross into the path of the thermal, jump 20ft and from there begin to climb. I tried flat approaches and steep approaches, both with and without spoilers activated. Finally I flew around the ther-



Broken down into individual components, the Radian XL 2.6 will fit into almost any size vehicle, including a VW Beetle convertible (transported with the top up) or a Ford Escape SUV.



mal, and headed back to the field flying crosswind, eventually setting down in the grass that abuts the runway.

The Radian XL is proving to be a blast to fly. Trimmed in the manner such as the review model it would make a fantastic trainer, especially for someone with poor eyesight or slow reflexes. It is so large and moves so majestically through the air that any dealer could make the recommendation to a new pilot without hesitation. Like any radio control aircraft proper instruction is required, but the Radian XL is truly a multi-purpose platform.

Like all E-flite products, the Radian XL 2.6 is available through Horizon Hobby. **HM**

High Output Dual Charging System

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- "Charge Master" Software (version 2) for PC Interface
- Synchronous Mode for Setting Both Charge Channels thru Channel One
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