



The Addiction XL flies much slower than many 3-D electric models. Because of this, it is an ideal airplane to learn and perfect extreme 3-D maneuvers.

Photos by Tom Sullivan

The popular aerobat gets supersized

The original 39.5-inch Precision Aerobatics Addiction caught my attention when it was released, thanks to its thoughtful design and attractive color scheme, combined with its capable flight characteristics. Add to that the fact that it was available in green, my favorite color, sealed the deal and I became the happy owner of a PA aircraft.

Last year, Jim and Cheryl Widner from PA USA attend the National Electric Fly-In in Muncie, Indiana, and unveiled the Precision Aerobatics Addiction XL. The aircraft was complemented by Daniel Dominguez's skill as a pilot and together they garnered a lot of attention.

Being a fan of the Addiction line of aircraft, I was eager to fly a supersized version with an additional 19.5 inches of wingspan and 570 square inches more wing area.

First Impressions

The Addiction XL comes double boxed. All of the pieces are protected in plastic bags and held in place with

packing tape. Because of the care in packing, there was no damage or scuff marks on any of the parts.

Even more surprising was the quality of the iron-on covering. Typically you need to spend some quality time dealing with wrinkles in ARF kits, but not so with the Addiction XL. There was not a single wrinkle or problem area!

Taking time to examine the airframe, you can't help but notice the unique building system that Precision Aerobatics has developed. The company refers to it as FiberFusion. The airframe is built from laser-cut balsa and plywood parts. Every opportunity was taken to remove weight, giving most of the parts a Swiss cheese look. However, with the infusion of carbon fiber, the airframe is lightweight, but also rigid.

Carbon fiber is also used in the main gear, the control horns, pushrods, and the wing tube. Our review kit came with the optional carbon-fiber Vortex Generators and carbon-fiber servo-arm extensions.

To add to the variety of construction materials are the fiberglass cowl



With its low parts count, the Addition XL can go from the box to ready to fly in just a few evenings.

hardware for adjustments, so make sure to get them right the first time.

The horizontal stabilizer is tackled by attaching the elevator using the same techniques as the ailerons. Gap seal covering is included for the elevator hinge gap. Once in place, the stabilizer is trial fitted on the fuselage, then epoxied into place.

Attach the rudder and tail wheel to finish the tail section. After the gap is sealed, the control hardware for the elevator and rudder is attached.

and wheel pants. The cowl is pre-painted red to match the fuselage's color scheme, while the wheel pants have the pre-applied flame stickers.

The rudder is controlled via pull-pull system featuring Kevlar cables and high-quality metal components. Rounding out the kit are a few sticker sheets, a throw gauge, covering to seal the hinge gaps, and a 28-page, photo-illustrated manual.

Construction

The Addition XL's assembly starts with the wing halves. The ailerons are first attached using the included CA hinges. Although the slots were pre-cut, I found that I had to run a #11 knife through them to open them up slightly. After the CA has cured, the hinge gap is sealed with the included strip of matching, transparent green covering.

Install the aileron servos and control hardware to finish the wings. Take care when measuring the pushrod length. The aileron and elevator pushrods are carbon fiber, which must be trimmed to length. However, there are no provisions in the

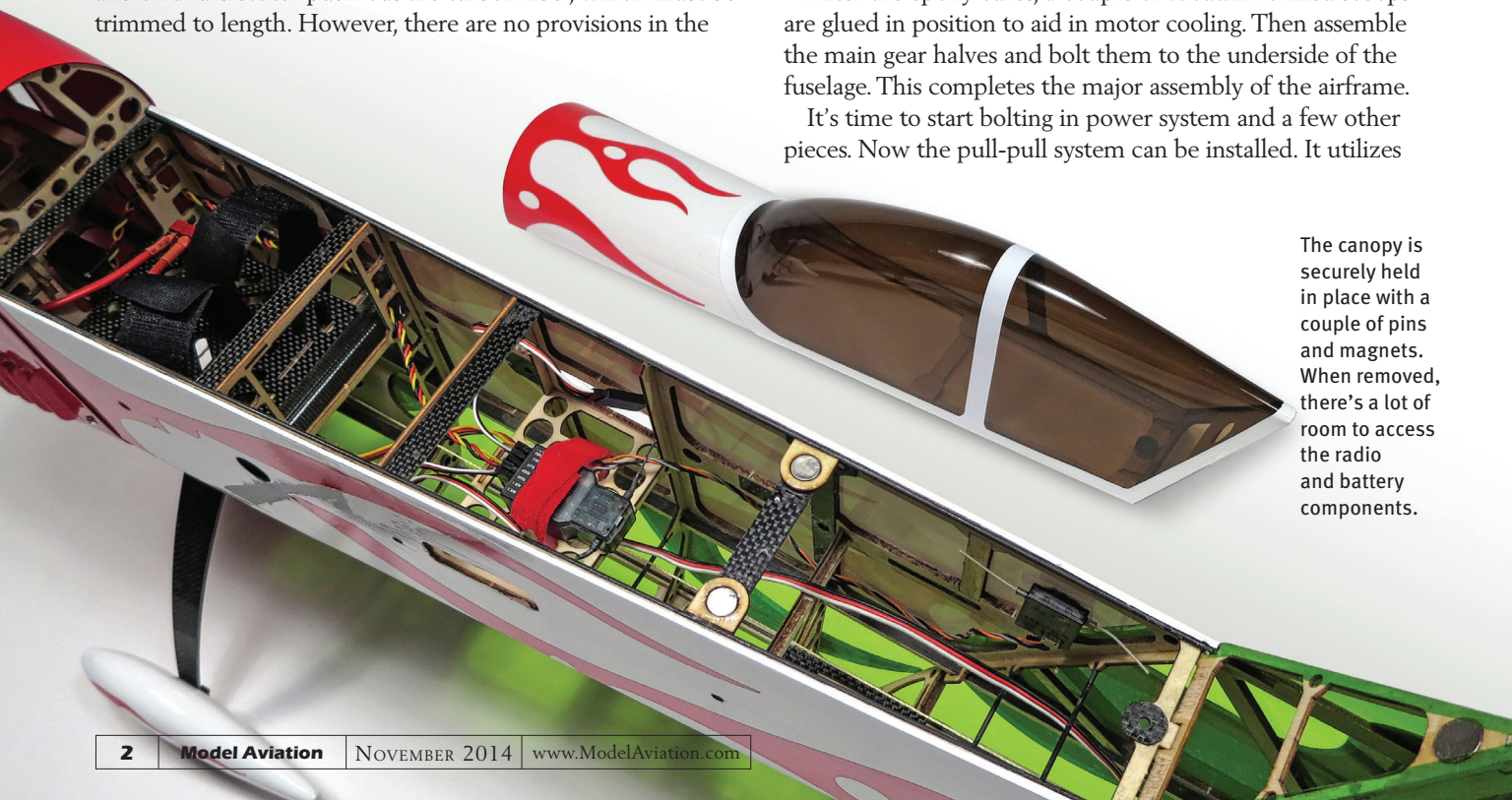
Controlling the elevator is a rear-mounted servo with a direct connection via a carbon-fiber pushrod. A 20-inch servo extension is needed to reach the receiver position.

The rudder is controlled via a pull-pull system. The manual goes through the servo-mounting steps a bit prematurely. It recommends that the rudder servo be mounted in the motor box, but the motor box needs to be installed first, so skip ahead to that step first.

I took my time mounting the motor box. It's not hard to do, but it has to be correctly mounted and there are several carbon-fiber pins that need to be installed to hold it in position. There's a large rod that runs across the width of the fuselage and four smaller pins that are pushed in position from the back of the firewall, going through holes in the tabs of the motor box. It requires some force, but after it's in position, the motor box is perfectly aligned. All that's left to do is glue everything in place with some 15- or 30-minute epoxy.

After the epoxy cures, a couple of vacuum-formed scoops are glued in position to aid in motor cooling. Then assemble the main gear halves and bolt them to the underside of the fuselage. This completes the major assembly of the airframe.

It's time to start bolting in power system and a few other pieces. Now the pull-pull system can be installed. It utilizes



The canopy is securely held in place with a couple of pins and magnets. When removed, there's a lot of room to access the radio and battery components.



Powering the Addiction XL is a pair of inexpensive 3S 2,200 mAh LiPo batteries. Many of us have these packs from other projects, so it's a less expensive alternative to a dedicated 6S pack.

place for the battery connections, the cowl is fitted. You might have to do some filing to give clearance for the main gear struts. Locate and drill the positions for the four mounting screws and bolt the cowl in position.

To finish the Addiction, attach the VOX propeller and carbon-fiber spinner, and then the receiver is installed. Although you can use a four-channel system, I chose to separate the left and right ailerons into their own channels, mixing them in the transmitter and using five channels. This offers independent trims for each aileron, as well as the option to later program in spoilers.

An optional Vortex Generator kit was also included with the review Addiction XL. These specially cut carbon-fiber pieces attach to the wing, fitting in pre-cut holes. Simply slit the covering in these spots and epoxy the pieces into place on the upper and lower side of each wing half.

The completed, ready-to-fly Addiction XL came in at 4.75 pounds with the two 3S 2,200 mAh batteries in place. It's slightly heavier than the 4.5 pounds stated in the manual, but it balanced in the middle of the CG range.

The Addiction XL is designed around a Precision Aerobatics Thrust 50 motor and a matching Quantum 70 Pro ESC. They fit perfectly and have plenty of power for extreme high-alpha 3-D flight.

Flying

I programmed my radio using the recommended throws, rates, and exponential as suggested in the manual. Precision Aerobatics recommends three flight modes: low rates, high rates, and extreme rates.



Kevlar cables, which won't stretch over time. Once run through the fuselage, each cable is adjusted to length and the included hardware makes for a quick and easy hookup.

The power comes from a Precision Aerobatics Thrust 50 brushless motor. The Addiction XL is designed around this motor and using a different one would likely require some modifications. It quickly bolts in position because the holes are predrilled in the mount.

Controlling the motor is a Precision Aerobatics Quantum 70 Pro ESC. It's held in place on the side of the motor box. After it is connected to the motor and the Deans connectors are soldered in

AT A GLANCE ...

SPECIFICATIONS

Model type:	3-D trainer ARF
Skill level:	Intermediate builder; intermediate pilot
Wingspan:	59 inches
Wing area:	1,055 square inches
Airfoil:	Symmetrical
Wing loading:	10 ounces per square foot
Length:	62.4 inches
Recommended power system:	PA Thrust 50 brushless outrunner motor; Quantum 70-amp ESC; 6S 2,200 mAh LiPo battery
Radio:	Minimum four-channel with four mini servos
Price:	\$325

TEST-MODEL DETAILS

Power system:	PA Thrust 50 brushless outrunner motor; Quantum 70-amp ESC; two PA 3S 2,200 mAh LiPo battery packs; Vox 15 x 8 wooden propeller
Radio:	Spektrum DX18; Spektrum AR7000 receiver; four Hitec HS-5245MG mini servos
All-up weight:	4.75 pounds
Flight duration:	8-10 minutes

PLUSES

- Lightweight airframe is constructed from laser-cut balsa and plywood and reinforced with carbon fiber.
- Plug-in wing halves supported by a carbon-fiber wing tube.
- Pre-painted fiberglass cowl and wheel pants match the color scheme.
- Quality hardware includes a Kevlar pull-pull system and carbon-fiber control horns.
- Power system is a good match for the aircraft and is fully 3-D capable.

MINUSES

- Position of the wing bolts inside the fuselage can be difficult to access.

Using the recommended power system, the Addiction XL can easily hover at half throttle, with more than enough power in reserve to pull out when needed.



When I was ready for the maiden flight, I had a helper hold the Addiction XL similar to the way you would vertically hand launch an airplane. I wanted to get a feel for how much throttle was needed to hover, and it turned out to be half throttle.

I clicked into low rates, throttled up, and took off on the maiden flight. I needed some trim, but only a few clicks here and there. I was instantly surprised at how slowly the Addiction XL likes to be flown. This is not an overpowered 3-D machine that eats up tons of sky. It is a large model that can be flown precisely at a wide range of throttle positions. Even going to full throttle, it's not a rocket ship.

After I had made a few passes, I felt that the low rates were way too timid, so I clicked up a notch to the high rates. This was great for tighter maneuvers, and even International Miniature Aerobatic Club-type flying. By working the throttle, the airplane can be coaxed into beautiful, constant speed loops, rolls, Cuban 8s, hammerheads, and more.

Not wanting to test the flight time limits on the maiden flight, I landed and put in a fresh set of batteries. I also decreased the exponential from the 70% called out in the manual, to 45% in both high and extreme rates. The amount of exponential a pilot is comfortable with can vary, but it is always good to start with the manufacturer's recommendations.

Now it was time to see what kind of 3-D stuff I could accomplish. I'm certainly not a 3-D master, but I'm learning. I switched to extreme rates, throttled up, and found myself instantly hovering—not perfectly, but pretty good considering my skill level.

I had plenty of power to pull out of the hover when I needed to. I tried some slow, high-alpha passes in both upright and inverted flight. No problems whatsoever!

I wanted to try my luck at something that I've seen others do with the Addiction XL: a knife-edge loop. You might remember that this review model includes the optional Vortex

Generator package which is specifically noted to making knife-edge flight easier. Not only do they help with average knife edge passes, my videographer caught one of my knife-edge loops in a video that you can see in the digital edition and on www.ModelAviation.com.

Conclusion

It doesn't take long to become comfortable with the Addiction. Flight times of 8-10 minutes and its use of two commonly available 3S 2,200 mAh batteries should provide plenty of flying opportunities.

It is a larger airplane that doesn't need a large field to fly. With its stable, high-alpha and slow-flight performance, I've flown it easily at soccer fields, ball diamonds, and other parks where I normally fly smaller models. Just be sure to give yourself plenty of space until you learn its flight characteristics.

The Precision Aerobatics Addiction XL is a beautifully constructed, extremely lightweight design. Like the smaller Addictions that have come before it, the Addiction XL is quite capable and an ideal platform for 3-D pilots of all skill levels.

A wide flight envelope and triple rate settings can transform this model from slow, precise flight to quick and snappy at the flick of the rate switch. Which will you prefer? 🚁

—Jay Smith

jays@modelaircraft.org

—Tom Sullivan

tmsullivan@roadrunner.com

MANUFACTURER/DISTRIBUTOR

Precision Aerobatics
(770) 292-9122
www.precisionaerobatics.com

SOURCES

Hitec RCD USA
(858) 748-6948
www.hitecrcd.com

Spektrum
(800) 338-4639
www.spektrumrc.com