

PRECISION AEROBATICS XR-61

Float like a butterfly and throw down 3D

BY MIKE GANTT PHOTOS BY JOHN REID

Perhaps combining the feel of a large aircraft in a smaller package is what Precision Aerobatics is all about, and its new XR-61 is an ARF that has been produced to fill the void so many have been asking for. While Precision Aerobatics has plenty of experience with large-scale models, it seems to focus on airplanes in the 4- to 5-foot size. The saying “do one thing and do it well” rings a bell, and if you’ve ever seen one of Precision Aerobatics’ aircraft, then you know just how well they are crafted. Construction consists of select balsa and plywood, which has been engineered with carbon-fiber additions in all the right areas, allowing for the lightest possible airframe. Bigger airframe feel-check. Lighter-weight airframe-check. But what about power? We 3D fans like to have air blowing over the airplane’s huge control surfaces for immediate and exaggerated flight responses. The designer not only delivered an incredibly large empennage and wing area but also allowed for a perfect powerplant to complement this plane. An efficient system, which the company calls “iPAs” (integrated performance airframe-drive system), is available and can be added on directly with no guesswork. (If you’d rather source your own equipment, the model is available as an ARF alone.) The XR-61 flies with extreme stability, like a giant-scale plane, yet fits easily in most vehicles. Intermediate and advanced pilots will thoroughly appreciate how awesome it can be learning to fly low and slow 3D and tearing up the air.





SPECIFICATIONS

MODEL: XR-61

MANUFACTURER: Precision Aerobatics
(precisionaerobatics.com)

TYPE: Aerobatic monoplane

LENGTH: 57 in.

WINGSPAN: 61 in.

WING AREA: 807 sq. in.

WEIGHT: 70.5 oz.

WING LOADING: 12.59 oz./sq. ft.

MOTOR REQ'D: Thrust 50

RADIO REQ'D: 4+ channel

PRICE: \$300

GEAR USED

RADIO: Spektrum DX18G2 w/ AR8000 receiver
(spektrumrc.com); four Hitec HS-5245 servos
(hitecrfd.com)

MOTOR: Thrust 50 w/ Quantum 70 Pro

BATTERIES: Two Hobby People 3S 2200mAh in
series for 6S (hobbypeople.net) and one Thunder
Power 6S 2200mAh (thunderpowerrc.com)

PROPELLERS: Vox 15x8 and 16x6

HIGHLIGHTS

- Well engineered and constructed
- Extremely lightweight
- Outstanding slow-flight characteristics
- Battery options work well

UNIQUE FEATURES

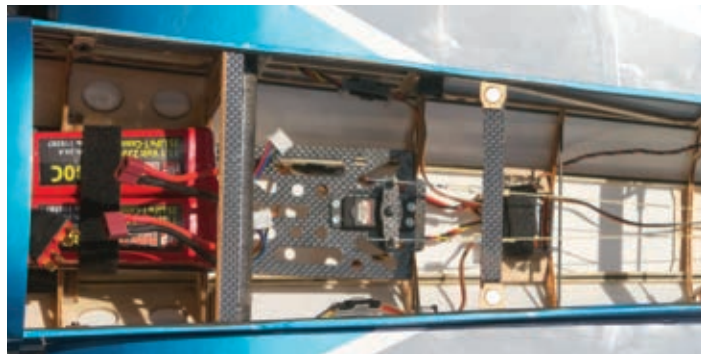
If this is your first plane from Precision Aerobatics, you will smile when you feast your eyes on the model's interior. There is a lot of carbon fiber in there, and it is easy to see how much thought went into where and how each piece was implemented. Everywhere else inside the fuselage looks like Swiss cheese, with lots and lots of huge lightening holes. The covering combination employs an aggressive color scheme with a solid top and transparent wing bottom, which show off even more of the company's smart build methods. Pocket hinges for the ailerons are factory fare and create gapless hinge lines on the wings. CA hinges are used to hold the elevator and rudder in place, and using a pipette tip on my thin CA glue bottle really helped with the application of the adhesive. After installing the empennage,



Above: Ball links and Kevlar are included and allow the large control surfaces to come alive for aggressive flying. **Left:** The canopy locks in with magnets and a mechanical latch. There will be no unwanted departures. **Right:** The carbon-fiber spinner is of high quality and finishes the front end off perfectly. **Below left:** These clever devices help direct the flow of air over the wing for better control during high-alpha flight. **Below right:** The provided gear cuffs and look sweet against the carbon-fiber main gear.



you are instructed to seal the tail feathers' remaining two hinge gaps, and color-coordinated covering pieces are provided. A few minutes with a covering iron set to medium heat made the process painless and quick. When the air gaps of a hinge line are sealed, air can't blow through and create unwanted streams of turbulence, which can hinder performance, especially in high-alpha flight. Pulling around a 3D plane post-stall requires plenty of thrust, and the appropriately named Thrust 50 brushless outrunner is the perfect match for the airframe. At 487Kv, it was designed to run on a 22.2-volt (6S) electron source, and—here comes the cool part—you can run two 3S 2200mAh packs in series or use a single 6-cell battery. I wanted to try both, so I made and added a series adapter, allowing me to fly the XR-61 with either battery setup. Buying two 3S packs for about \$20 works well, as individually they can be used in quite a few different aircraft. A cooling design is integrated in the motor and decreases temps. A Quantum 70 Pro speed control features a switching BEC, so running 6S and four digital servos is not an



Lots of carbon fiber and a lightweight design is the nature of this airplane. Using two 3S 2200mAh packs is a nice option.

issue. Hitec servos are provided in addition to the above-mentioned motor/speed control, which are all part of the aforementioned package available separately. A gorgeous fiberglass cowl, air baffles, carbon-fiber landing gear, gear cuffs, fiberglass wheel pants, and Kevlar pull-pull string are all included and help finish the XR-61 quite nicely. The instructions are well written, and there are plenty of images included, making the final assembly easily doable and in minimal time.

IN THE AIR

The Thrust 50 motor spins the 15x8 or 16x6 prop with ease. After trying both, I have to say that Precision Aerobatics' pilots are on point; the 15-inch prop is perfect all-around, while the 16x6 excels at "low and slow" flying. Short runways are not a problem with the power on tap. As for rolling around, the instructions guide you either to raise or lower the wheel pants in relation to the main gear, depending on your flying-field surface. In short grass and on a dirt runway, I found the wheels and pants to be fine at the lowest position, but with longer grass and weeds, one might want to remove them. With a stall speed around 13mph, this plane lands very predictably. Large ailerons, lots of wing area, and a lightweight airframe tend to be helpful that way.

GENERAL FLIGHT PERFORMANCE

Stability: This model airplane is stable at all speeds. From full throttle to post-stall, it never feels unstable. Ground stability is also perfect; taxiing around on the tarmac is easy.



Tracking: Only minor trimming was needed; a few clicks were added and then the plane flew across the sky without unwanted deviation. Tracking through maneuvers is also a point-and-shoot affair. The XR-61 can also be turned to and from any direction immediately with its oversize control surfaces and 2:1 thrust-to-weight ratio.

Aerobatics: The company's name and this

aircraft type should give you a pretty good idea about the intentions and abilities of both. Any maneuver that you can dream up is doable. Being superlight decreases the inertia and some moves will feel different, but overall, it will do 3D with the best of them.

Glide and stall performance: Again, it is easy to reveal about the weight of the XR-61; my model is 4.4 pounds ready to fly, with an added pilot figure and the added side-force generators! This fact lends itself to lightly loaded landings, the kind where you can spot-land if you practice. So the stall speed is more than predictable and comfortable. If you use idle power (keep the prop turning), the airframe will glide for quite a while with positive control.

PILOT DEBRIEFING

A lightweight airplane plus incredible propeller power equals serious fun. Low-and-slow 3D flying is serious fun, and the XR-61 excels at it. Pushing the throttle forward really pulls the plane around with authority, allowing more fun in the flight envelope.

BOTTOM LINE

The Precision Aerobatics' XR-61 and the ARF provisions package are well thought out and use high-quality components, which are engineered to save the most weight and deliver the lightest and best-flying aircraft you can throw your thumbs at. Add in the company's iPAs combo and you'll pretty much have everything needed to get this aerobat airborne. Depending on your style, the assembly can take anywhere from a day up to a few evenings to complete. The only extra item added on my end was a small wire tie to keep the elevator servo's wire from rubbing on the pull-pull strings in flight. ✈

Roll It Up

As modelers, we work in some hard-to-reach areas at times, and getting things where they need to go can be challenging. One thing that I have found to help make life easier is rolling certain things to form radii or circles. This will aid when you need to clear obstacles, hold things in place, or get that pesky wire or strap in place.

HOOK AND LOOP. Rolling one end of a battery strap makes it much easier to fish it down through a battery tray on one side and back up the other. With the curved or curled end facing upward, I can typically guide it as it travels and guide it through the slot location intended for it. Try rolling your Velcro or similar fastener on one end, then see if it is any easier to get it where it needs to be.

WIRE TIE. As mentioned, I added a small tie in an area that almost seems impossible to install one. The trick was to use needle-nose pliers or a hemostat and wrap the tie around the tool a few times. When wrapped, I held it there for 20 seconds or so and then released it. The result was a corkscrew-looking wire-tie end that was easy to route around a tight corner, grab a wire, and then secure. I hope that these words make sense, but a picture is worth a few more. Just remember—patience is part of the hobby, so just breathe and take your time, or take a break if you get frustrated.

My trusty hemostat is great for this. Performing surgery on your aircraft shouldn't be difficult!

