

MODERN GAS AEROBAT

FLY RC MAGAZINE  
**FLIGHT REPORT**

AEROWORKS



30cc  
**Extra**  
**300** by David Mielke  
**QUICK BUILD**

*The perfect performance combination for everyday flying*



I don't know about you, but when I get out to an event and see all those giant aerobatic gassers—25, 30 and even 40-percent size—I get a serious case of the wants, until I snap back to my senses and think about the cost and hassles of transportation and storage of such a beast. The best solution for me is something smaller, though ideally an airplane that doesn't give up anything because of its size. Aeroworks must be hearing this from a lot of their customers, because many of their big aerobatic birds are also available in more modest sizes. Their new 30cc Extra 300 QB is a

perfect example, and one I couldn't wait to get together and fly.

The Aeroworks Extra 300 comes well packed in a single box. I found everything intact, along with two really nice features. The first was a CD-ROM containing the full color manual and the second is the CG Buddy, a tool that makes checking the model's center of gravity a breeze by suspending it from the wing tube.

**CONSTRUCTION**

After digging into the manual, I started by installing the servos,

servo extensions, control links and control horns for the wings, making sure to pre-drill the servo mount holes and harden them with CA before installing the servos. The ailerons are factory hinged, so I don't have to install them. The wings feature capped ribs with a full D-tube leading edge and a carbon fiber spar tube for optimum lightness and strength. The wing tube is a perfect fit, not too loose, but still easy to install. All in all, the wing is a strong and light design.

I do however have one nitpick with the design and it's my only one. The wings are held against the fuselage by a screw and two clipped aluminum anti-rotation pins. The screw is perfect but the clips are hard to insert and remove. I would like to see the clip spaced out further from the sidewall so the fuselage framing doesn't interfere with getting them in and out. The Extra comes with a complete hardware kit that includes the ball links and metal control horns

**SPECS**

**PLANE:** 30cc Extra 300 Quick Build

**MANUFACTURER & DISTRIBUTOR:** Aeroworks

**TYPE:** 3D Aerobat

**FOR:** Intermediate and advanced pilots

**WINGSPAN:** 74 in.

**WING AREA:** 990 sq. in.

**FLYING WEIGHT:** 9.275 lb.

**WING LOADING:** 21.5 oz./sq. ft.

**WING CUBE LOADING:** 8.2

**LENGTH:** 67 in.

**RADIO:** 6 channels required; flown with a Hitec Optic 6 Sport transmitter, Hitec Optima 6 receiver, Hitec HS-5645 servos

**ENGINE:** 1.6 to 1.8 glow or 30cc gas engine, 1800-2500watt electric; flown with DLE 30 and custom Bisson Pitts muffler

**PROPELLER/SPINNER:** Zinger 18x10, Custom cut Tru-Turn spinner

**TOP RPM:** 7,300

**FUEL:** Pump 91 octane w/ Penzoil Air cooled 2 stroke (not the Marine version) mixed to DL's spec.

**ONBOARD BATTERY:** Sanyo 5-cell 2100mAh NiMH, receiver; Sanyo 4-cell 600mAh NiCd, ignition.

**PRICE:** \$449.95

**COMPONENTS NEEDED TO COMPLETE:** 6-channel radio with high torque BB metal gear servos, suitable glow, gas or electric power system.

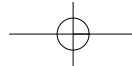
**SUMMARY**

Aeroworks continues their Quick Build series of aircraft with a new 30cc Extra 300 QB. True to its name, it can be constructed in a few evenings using basic tools. It features the latest techniques to keep the model light and strong and can be built for gas, glow or electric power. The Extra 300 has docile but high-energy performance that will please the most demanding of aerobatic RC pilots.



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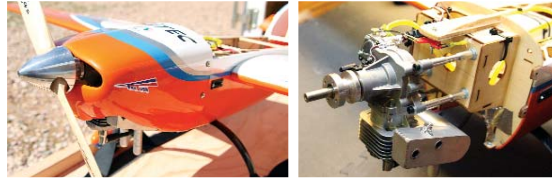


## AEROWORKS 30CC EXTRA 300 QUICK BUILD

required for a high performance model such as this and it even has extra covering of all three colors for any required repairs.

Moving on I installed the landing gear and wheels. The Extra comes from the factory with carbon fiber landing gear and fiberglass wheel pants. The installation procedure is bolting up (using locktite) the pants and axles then bolting the gear to the hard points on the fuselage. The Extra landing gear is also thoughtfully drilled so you can't install them backwards. The carbon gear appears to be very stout and has an aerodynamic profile for low drag.

Next up were the elevator servos and servo extensions. I found that I had to install the servos into their pre-cut slots simultaneously owing to the limited, but still adequate, clearance. The control rods and horns can then be installed on the elevator by putting the horizontal stab on the carbon joint tube and installing the capture screws. You will need to use your longest servo



Left: The Tru-Turn spinner and Bisson exhaust give a clean professional look to the installation. The Bisson exhaust also sounds great. Right: The DLE-30 mated with the Bisson custom exhaust is a compact powerhouse that installs perfectly in the Extra, and even comes with a fitting for a smoke system, if you chose to install one.

arms to get the appropriate control surface travel and extreme 3D'ers will probably want to purchase extra long arms to get the travel they desire. Once again the hardware provided by Aeroworks makes setting up the twin elevator servos quick and easy.

The rudder attaches with the supplied pin hinges using epoxy. Remember to coat the

hinge pin with machine oil to keep the epoxy out of the hinge. Here I deviated from the instructions and installed the tail wheel instead of the rudder pull-pulls, they came later. The tail wheel bracket screws into the fin and the steering bracket attaches to the rudder. I managed to break one of the factory springs but found suitable replacements at my local hardware store. After this I installed the pull-pull wires, which brought a pleasant surprise. Unlike many kits, which give you just barely enough wire, this kit included enough to do the job with length to spare. The kit also included the ferrules to clamp the wire. I also added a second set of ferrules on each end to make the connection double secure.

## AIRBORNE

At the field this new Extra 300 is ready for flights after quickly mounting the wings and filling with fuel. I found that the Extra 300 flies much "bigger" than it really is. Takeoffs are a breeze and can be easily accomplished at half throttle. I reserve full power for massive vertical runs and if you just want to putt around you could probably get 30 minutes or more out of a tank.

I found the Extra very stable at all speeds, yet it also responds very quickly and powerfully to control inputs and is just begging to be thrown around the sky. It also looks great in the air and has even won over my fashion diva teenage daughter with its color scheme.

After some initial trimming circuits of the field, I continued with a series of loops and rolls. Big, well-controlled loops are almost child's play while the rolls can be slow or fast, brutally fast at high rates. I found just a little coupling with the wings perpendicular to the ground but it was very minimal. This gives a very stable and easy-to-control knife-edge flight that seems like it can go forever. The low coupling level also helps make rolling circles look even better.

This plane performs equally well in the vertical portion of the envelope. Just a little bit of right rudder will keep 45 and 90 degree lines straight and true. When I threw some rolls into the vertical it responded with the same speed and precision that it did when horizontal. Stalls and spins feel controlled and easily recoverable. To execute a flat spin just give it a little elevator, aileron and throttle and boom—flat spin.

Leading with the elevator just a fraction of a second before kicking the rudder gives clean snaps that really made me look. Knife-edge snaps are better than I have ever flown before outside of a simulator, but still need some practice on my part.

The Extra really powers through 3D flight due to its thrust to weight ratio and ample control surfaces. I inverted and upright harriers are quite stable and fun to do. It readily floats down the runway at a high angle of attack and then powers away on command. Pop up from level flight to a wall and extended hover or punch into an extended vertical with ease. The Extra responds well when hovering, and more importantly predictably.

Overall this is one of the most capable and well rounded aircraft I have flown. Another RC pilot I know owns the bigger 150cc Extra 260 QB and after watching my 30cc fly he thought it flies very similarly and is just as capable as his bigger bird.



## FIREWALL FORWARD

Because the Aeroworks Extra can be powered in multiple ways, it comes with a blank firewall. I used the included DLE 30 template to drill and install blind nuts in the correct position. I created the required distance between the firewall and the prop mount using stand-offs and a set of washers and then mounted the engine making sure to use Loctite on every mounting bolt. I have the DLE 30 with a side draft carb, so I fabricated a bellcrank to change the direction of travel of the throttle control-rod 90 degrees.

The most time consuming piece of the construction for me was cutting out the cowl to fit around the motor and exhaust. I used a piece of cardstock to mark out the locations of the cylinder head and exhaust. I alternated between cutting out and checking the clearance until I had the required clearances from all of the parts of the engine. Then just to check, I installed the Bisson Pitts muffler and Tru-Turn spinner for a final clearance check. I should also mention that the cowl is pre drilled for mounting to the fuselage. This is a top-notch touch seen on very few kits.

Finishing off the fuel system I installed the supplied fuel tank in the nose hatch section on one side with the throttle servo fitting neatly on the other side. I built up the supplied tank using the included equipment and

AEROWORKS 30CC EXTRA 300 QUICK BUILD

plumbed the tank to the engine through the hole in the center of the firewall. I installed a Du-Bro inline fuel filler for easy fueling. The throttle servo is installed using the supplied bracket and must be epoxied in the correct location. This gives you the flexibility to install engines that require the throttle servo on either side of the firewall.

**FINAL SETUP**

Fully constructed I setup the control throws on my Hitec Optic 6 Sport transmitter and measured the CG. The control throws were



The Aeroworks Extra 300 should fit readily in any SUV, pickup truck or van, making it easy to get to the field. The two piece wing lets you have it ready to go in as little as 5 minutes.



The entire upper forward part of the fuselage lifts off for access that dwarfs my Hitec Optic 6 Sport radio, used for this review.

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easily achievable and the CG was right on the recommended point with the fuel tank empty after I moved the receiver battery slightly aft. Because the fuel tank is slightly in front of the CG point this setup ensures that no matter how far into a tank of fuel you go the flight characteristics will still be stable. The unique CG buddy makes it easy to confirm the proper balance point. Simply clip it to the main spar tube and anti-rotation pins, and then pick the model up using the handle.

The Aeroworks 30cc Extra 300 was one of the most pleasant building experiences I have had. The airframe couples perfectly with the DLE 30, Bisson exhaust, Tru-Turn spinner and Hitec radio gear. I would also like to thank the folks from Tru-Turn and Bisson for building custom pieces as part of their regular service. The Extra 300 also comes in light for its size and has plenty of room to install the most complex radio gear desired. It also benefits from documentation that is complete, full color and because it is a PDF document fully searchable.

**CONCLUSION**

I LOVE IT! The Aeroworks 30cc Extra 300 QB provides a quick path to getting in the air for hours of fun. This plane has been one solid performer in every aerobatic realm, and the combination of the DLE engine, Bisson muffler, Tru-Turn spinner, and Hitec radio gear has also given me absolute reliability. The Extra performs like a much larger plane with the portability and cost benefits of a smaller model. Aeroworks has produced a complete, quality kit that goes together in a fraction of the time needed for a typical ARF and will soon have you grinning from ear to ear. Give it a try. I am sure you won't be disappointed. ☺

- Links  
 AeroWorks, [www.aero-works.net](http://www.aero-works.net), (303) 371-4222  
 Bisson Custom Mufflers, [www.bissonmufflers.com](http://www.bissonmufflers.com), (705) 389-1156  
 Du-Bro, [www.dubro.com](http://www.dubro.com), (800) 848-9411  
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For more information, please see our source guide on page 121.