

# Precision Aerobatics Extra 260

Review by  
Clarence Boudville

## SPECIFICATIONS

<b>Wingspan:</b>	1219 mm
<b>Length:</b>	1094 mm
<b>Wing Area:</b>	490 sq.in
<b>Wing Loading:</b>	9.9 oz/sqft (approx)
<b>All Up Weight:</b>	33.7oz (964gr)
<b>Power Plant:</b>	PA Thrust 30, 905KV outrunner (Front mounted)
<b>Battery:</b>	PA 3S LiPo 2200mAh 18C-30C
<b>Electronic Speed Control:</b>	PA Quantum 40 Programmable ESC (on factory defaults)
<b>Prop:</b>	12X6E and APC 13X6.5E with PA CF Lightweight Spinner
<b>Type of Construction:</b>	PA FiberFusion® Laser Cut Balsa with carbon fibre reinforcements
<b>Type of Aircraft:</b>	Advanced Freestyle/IMAC (CG Selectable)
<b>Skill Level:</b>	Intermediate to Expert Freestyle/IMAC



## — EXTRA! EXTRA! READ ALL ABOUT IT! —

The Extra is probably one of the most popular scale aerobatic aeroplane's a majority of people immediately associates with high performance aerobatics. This is also true in the modelling world evidenced by the sheer number of Extra variants produced by a majority of model manufacturers ranging from true scale, semi scale to downright abominations resembling a genetic experiment gone haywire. Being an avid freestyle aerobatics modeller, the Extra has always remained very close to my heart and I have been considering getting one for a very long time.

With almost 100 flight hours now logged on the PA Katana MD, I have grown to become very accustomed to its agile and predictable handling characteristics and more so it's extremely wide performance capabilities offered by its design. To be completely honest, for that entire duration, it impressed upon me that neither anyone nor PA themselves could ever up the ante for a mid-sized class model in the foreseeable future. That was about to change with PA's late breaking news that

they have just released their new PA Extra 260.

I immediately jumped to the PA website to verify the "headlines". I began to read the published description of the Extra 260 and I was quick to realize, beyond all expectations, that Precision Aerobatics has raised the bar once again. This mid-sized ship sports full airfoil tail feathers, slightly larger but weighs the same as the PA Katana MD and specifically designed

for unlimited high performance aerobatics with competition class precision. Needless to say the Extra, like all recent Precision Aerobatics models is built using their unique FiberFusion® technology which impresses modellers around the world. Luckily, it was a very short wait before my review Extra arrived at my doorstep.

## The Build:- Pimp My Flight

With so much of the "challenging" work already done in the factory, the build was painless and quick. What is really impressive about the model is the fact that the manufacturer had gone the extra mile to eliminate usual "builder-associated-errors" to a high degree. That is, by taking away the laborious work from the modeller to a point where it's no longer a build but rather an assembly. Time and labour saving goodies include pre-cut rudder hinge slots, pre-built motor mount, pre-installed anti-rotation pins, pre-fabricated pull-pull Kevlar cables (pre-cripped and glued to exact length), pre-hinged elevator, pre-installed



Horizontal Stab in place and a spot-on alignment.



aileron, pre-built canopy, pre-assembled vertical stab and pre-cut and painted cowl. So much work has already been done for the modeller that even novices reading the instruction manual could virtually build a respectable model right off the bat without much aggravation.

I spent a good part of the first evening digesting the 20 page pictorial installation manual which I found to be clear and comprehensive. The manual had a section showing a comprehensive list of replacement parts available for the Extra to help address the occasional mishaps (or rather, the eventual in my case) along with a brief catalogue on optional accessories and other available PA aircraft. I had spent the remaining part of the evening ogling at what optional "blings" to really pimp my flight out. Now that's my kind of centrefold!

The assembly process kicked off by ironing down the covering to remove wrinkles, sealing areas where cut-outs were to be made and to correct any possible twist or warps mentioned in the instruction manual. Once completed, the necessary openings were made with a sharp X-acto blade. The undercut covering was then folded back and resealed to prevent future peeling. A cut-out was then made at the rear of the fuselage to allow the horizontal stab to slip in. The off-cut was retained aside for reassembly and did not require the use of the supplied balsa block saving more time.

To pave the way for dry fitting, the horizontal stab was slipped in all the way and checked for fit. No glue was added at this time. The horizontal stab self-aligned and the fit was perfect and did not require any unnecessary sanding. To set up for alignment checks, the carbon fibre landing gear and wheels were next installed to act as a sturdy work base. With the landing gear securely bolted in, alignment checks were done and then reconfirmed with the wing installed. It was spot on and was time to commit to glue. Speak now or it will forever be in one piece! PVA (carpenter's glue) was used to secure the horizontal stab to the fuselage and left overnight to cure. The cut-out at the rear of the fuselage was then resealed. While waiting for the glue to cure, the motor mount was prepped next. All glue joints including the side frames and the rear surface of the front motor mount plate had a through go over with PVA and placed aside to cure over night.

Next came prepping the rudder, requiring the assembly of the tail wheel and the CF pull-pull horns. As I plan to fly the Extra 260 on rel-

atively rough flying fields on a regular basis, I opted to deviate slightly from the instruction manual for the tail wheel assembly in order to add more robustness. This is done by gouging out a narrow slot at the bottom of the rudder allowing the tail wheel wire to sit flush inside. It was then carefully flooded with a bead of 30 minute epoxy, with the excess quickly wiped off with a rag soaked in methylated spirits to preserve the lustre of the covering.

While waiting for the glue on parts on the airframe to fully set, the soldering stage commenced with the preparation of the electronics. As opposed to using regular off the shelf pre-fabricated extension cables, I opted to use solder on light weight servo extension cables and crimp JR connectors to save weight. This was done for both the aileron and elevator servos where the stock servo cables were clipped off and directly joined with lightweight servo extension cables pre-cut to the exact length.

Although FM/PPM receivers could be used, I opted to use a PCM receiver to hedge against the likelihood of radio interference problems prevalent at my regular flying field. The whip antenna cable of the JR R77S RX was trimmed down to the required length and soldered to the lead cable of the Deans base loaded antenna. Deans Ultra connectors were then soldered to the PA Quantum 40 ESC and PA 2200mAh Lipo packs thereby concluding the soldering stage. To attain the best possible throw geometry, I opted to use the recommended optional CF Servo extension arms made for the HiTec HS65 on both the aileron and elevator servos while the rudder servo is fitted with the CF rudder servo arm extension already supplied in the kit.

Once the glue parts cured overnight, work on the fuselage resumed with the installation of the



Smooth and well balanced rolling harriers.

airfoil rudder that only needs little work on the CA hinges and then having the gap sealed with the supplied coloured covering. As the supplied black covering ran the entire length of the rudder, it overlapped a bit of the grey trim scheme, so in order to preserve the overall scheme, I opted to trim that section of the black covering back to match the grey and substituted that portion with clear cellophane tape. This helps maintain the gap seal and preserves the original look of the grey trim. The servo bays were then elongated a little by filing to accommodate the slightly longer HS65HB servos. The pre-fabricated Kevlar pull-pull cables were then threaded through the fuselage and connected to the CF rudder horn and the CF rudder servo horn and EZ connectors assembled. As per the instructions, the pull-pull cables were then cross and terminated to the EZ connectors on the supplied rudder servo CF arm. Minor adjustments were made to attain the correct tension and centring.

With the elevator taped in neutral position and the elevator servo was installed and the arm centred. The CF control rod was then assembled as per the manual. The installation of the motor mount involves the use of PVA glue and inserting the 3 supplied CF rods. These rods when properly inserted, not only provides structural integrity but also ensures precise thrust angle, therefore care must be taken to check for the gap free and flushed seating of the mount. In anticipation that the Extra 260 will eventually be flown very hard and without question be put in harm's way, I opted to use canopy glue to install the moulded air scoops that allows easy removal for future motor mount replacements when I need them.

Installation of the Thrust 30 motor merely involves bolting the Thrust 30 to the mount and connecting up the Quantum 40 ESC. I had the ESC temporarily plugged to the receiver and powered up to make a quick motor rotation check. With motor rotation confirmed, the receiver was then installed along with a pair of 4" servo extension cables connected to the aileron channel for easy wing removal during storage. A

### THE INITIAL SETUP RATES

Control Surface	Rate 1 (Low)	Rate 2 (High)	Rate 3
<b>Aileron</b>	Dual Rate % Expo 30% Throw 25deg	Dual Rate 100% Expo 30% Throw 45deg	Dual Rate 100% Expo 0% Throw 45deg
<b>Elevator</b>	Dual Rate % Expo 30% Throw 25deg	Dual Rate 100% Expo 30% Throw 45deg	Dual Rate 100% Expo 0% Throw 45deg
<b>Rudder</b>	Dual Rate % Expo 30% Throw full travel	Dual Rate 100% Expo 30% Throw full travel	Dual Rate 100% Expo 0% Throw full travel
<b>Mixing</b>		None	
<b>Airframe CG @ maiden</b>		98mm (3D/ Freestyle)	

hole was then drilled on the turtle deck just aft of the canopy to accommodate the antenna probe and had the antenna base secured to the fuselage cross brace with double sided foam tape.

The installation of the pre-painted fibreglass cowl came next and involves installing the canopy to ensure proper fit and alignment prior to drilling the screw holes. All it required was to line up the trim lines, check the centring of the cowl and drill 4 holes for the supplied self tapping screws. At this point I could not resist the temptation to stick the funky tiger stripe sticker on the cowl and canopy. With the fuselage complete, the aileron servos and CF linkages were installed to conclude the build.

## Radio Setup:- To Mix or Not to Mix, That is the Question

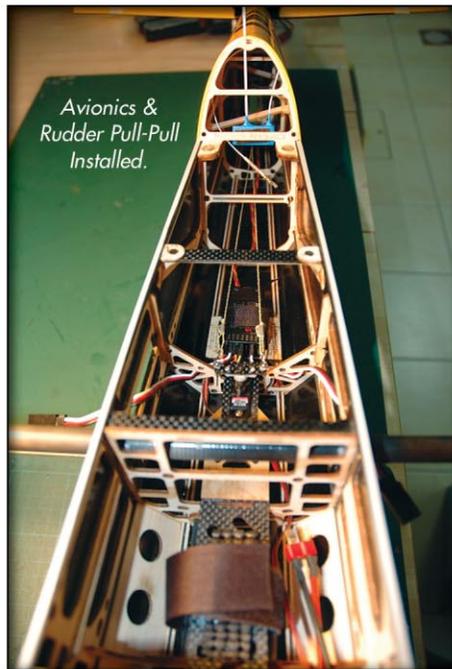
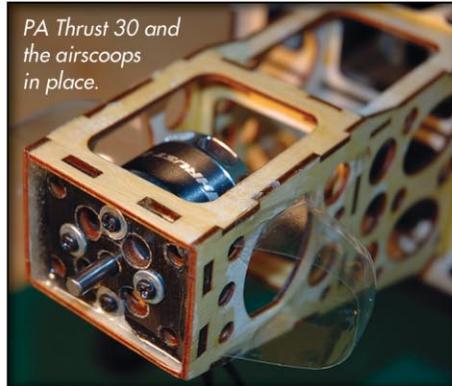
The bundled deflection gauge was a certainly a bonus and since it was there, I decided to go with the recommended throws as opposed to merely "guesstimating" by eye. I set the JR PCM9X for triple rates activated by the 3 position flight mode switch purely for convenience. Rates 1 and 2 were set to the recommended high-low rates in the manual with the expo set to 30% as opposed to the recommended 70% stated in the manual as a matter of preference. Rate 3 is set for my personal preference; which is zero expo at high rates. Since the Extra 260 is designed with precision in mind, I refrained from programming any control compensation "cheat" mixes to see how precise it will be when it is flown in the 'Full Monty'.

## The Check Ride:- Head Rush!

It was in the late afternoon when I finally made it to the field. After a quick range check and re-confirming my flight controls, it was time for the moment of truth. With the APC 13X6.5E prop installed, the take off was very short and proceeded to execute a fast knife edge circuit followed by a quick positive snap and then into a vertical climb followed by a violent blender into an inverted elevator down to the deck and popped back into a stable torque roll transitioning into a rolling harrier around the circuit. It felt very well balanced, smooth and remarkably quick in the air. Levelling off to make trim adjustments, I added a couple of clicks of down elevator and a click of click of right aileron and it tracked perfectly straight and proceeded to pull vertical to check the rudder trim. No trim adjustments required there.

With the expo switched to zero, I made a few fast paced circuits flying straight and level. It tracked exceptionally well with absolutely no hint of "bobbing" or being at all "squirrelly" as seen on some models of contemporary size. Going it into some basic IMAC manoeuvres the Extra 260 began to show its strength in terms of precision. On high rates the rolls were quick, axial and the stops were immediate and crisp. Putting it into fast knife edge, it tracked straight and stable without coupling on any axis. I eased back on the throttle and increased the rudder to make a slide-slip descend down to the deck followed by a relatively slow knife edge down the runway. This felt very stable and it was easy to maintain precise altitude throughout the entire length of the runway.

Just to be on the conservative side and since this was the maiden flight, I had deliberately set the timer for only 7 minutes and it was now time to land. I must admit this was one of the most exciting maiden flights I have ever had! What a rush those 7 minutes were, and I could not wait to get back up in the air for more Extra-time!



**Predictable and Responsive even at low speeds.**



## Conclusion

In the last couple of weeks of extensive flight testing, it became very apparent to me that the Extra 260 is built for precision and performance to a point where it gave the distinct feel of flying a considerably larger model. The immediate impression I got was of excellent agility, precision and energy making this a viable candidate for any modeller who aspires to take up competition level aerobatic flying very seriously.

Although the Extra 260 is a by virtue a serious competition level performer, it is by no means unsuitable for the casual, undisciplined, fun loving crowd whom, like me, are simply adverse to flying fixed regimented aerobatic routines. The excellent post-stall, superior agility and immense capacity for breathtaking high energy aerobatics allows virtually unlimited scope for any accomplished freestyler to simply break out and fly without the feeling of being restrained. The amount of fun derived is purely limited by the modeller's imagination and more importantly, proficiency.

Bang for the buck, this model is bursting with sex appeal and rates very high on the "Wow-factor". Coupled with the level of performance it's capable of dishing out, the PA Extra 260 certainly appears to have the potential to rival the very best of the contemporary aerobatic models. May it be serious competition level aerobatics or pure unadulterated fun, the Extra 260 has demonstrated that it certainly has plenty of Tiger for both! I will be hard pressed to classify this airplane as a mid-size, because from what I have experienced thus far, its performance has certainly out-classed its size!

