

Precision  
Aerobatics

# Addiction X

by Mike Evangelista – Photos by Neil Guthrie



I currently own several of PA's existing models and was honoured when asked to do a review of their newest entrant into the marketplace, the 50" Addiction X.

## INTRO

As its nomenclature would imply, the Addiction X continues PA's lineage into hard-core 3D aerobatics with its smaller predecessor, the 39.5" (1003mm) Addiction, already establishing itself as one of the top 3D park flyers money can buy. Now PA has a new plane available to help take our flying to the next level. The Addiction X is aimed at the 3D enthusiasts out there looking for a great handling and responsive aircraft for 3D flight.

In a 3D world full of Yaks, Edges, Extra's, MX's and the like, the Addiction X provides an alternative to those pilots looking for an aircraft that stands out from the crowd. With its unique silhouette and hot-rod inspired colour scheme with flaming graphics, this is one aircraft that looks as good as it prop hangs!

## THE KIT

I purchased the Addiction X 'iPAs (integrated Performance Airframe drive System) Pro combo' along with the 'Bling package':

### iPAs Pro Combo

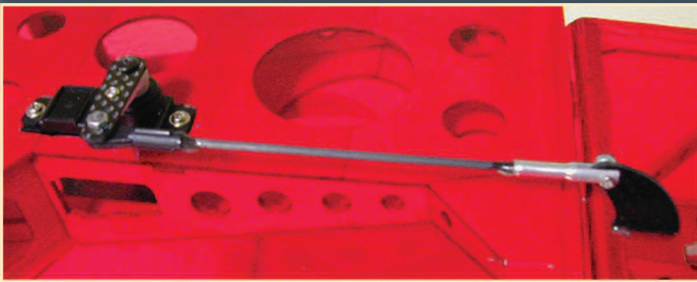
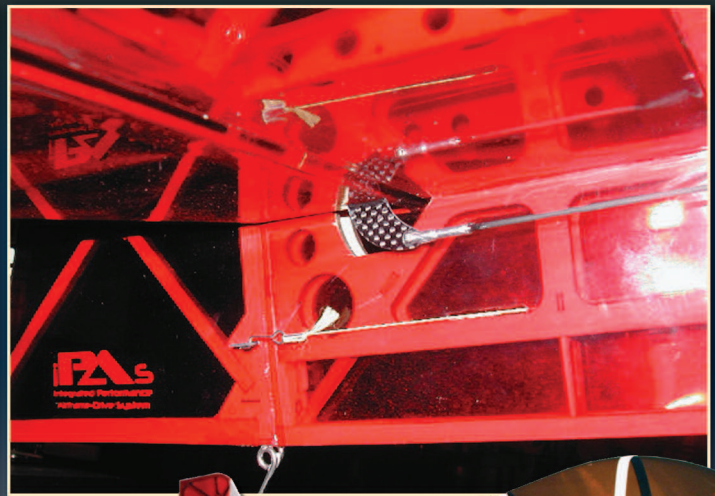
- Addiction X
- PA Thrust® 40 outrunner motor with RotorKool® Technology
- PA Quantum Pro 45 with SBEC
  - High performance Programmable ESC
- German made precision machined prop adapter
- PA V2 Lipo 2,200mAh 11.1V 20-40c V2
- Set of 4 Carbon Fibre extended servo arms specifically designed to achieve full control surface movement
- 4 Hitec HS-82MG
- Twisted extension lead
- Low resistance Original Deans Ultra Plugs & Gold plated bullet connectors
- Vox T-40X Prop

### Bling Package

- 1.8" CF Spinner with CNC machined backplate (pre-cut for the VOX T-40X)
- CF Vortex Generators (20pc custom made for the Addiction X)
- Carbon fibre wheel pants
- Custom made wing bags







The Addiction X arrived double boxed with no damage. All components were all securely taped down. As always with PA's kits, I am immediately impressed with the build quality and finish of each part, with no wrinkles evident or apparent warping to any of the pieces.

The Addiction X's structural frame is nothing short of artwork which is exposed for all to see thanks to its clear covering. To cover this plane in anything other than transparent film would be akin to driving around in your Ferrari with the car cover on it! One of the first things that caught my eye was the built up solid edges of the wings and elevator resulting in a very solid outline. Great news for those pilots who, like me, do more damage to their planes putting them in and out of the car than actually flying them!

The Addiction X has been designed and built using PA's FiberFusion® technology consisting of light ply and balsa reinforced by bonded carbon rods and carbon fibre plates resulting in superior strength with minimal weight. Removing the magnetically latched canopy reveals the use of carbon fibre bolstering at critical structural points in the airframe and carbon rods reinforcing the expansive stringers.

## THE BUILD

Typical of most ARF's on the market these days the Addiction X's airframe only requires the standard gluing of the Horizontal Stabilizer to the fuselage and control surface hinging. The horizontal stab slot needed a little sanding to get it seated all the way home, and using the wing tube as a reference lined up dead straight. The motor-box needs to be glued to the fuselage. This is not a particularly difficult job, however it would be nice to see this step already done. The motor-box has four tabs which key into pre-cut slots on the firewall and is then secured in place by four carbon pins. The joins and pins are then coated with epoxy.

All hinge slots are pre-cut from the factory, which makes alignment of the control surfaces

a breeze although you will need to cut the film covering the slots and ensure they are clear to receive the CA hinges freely.

A decent hinge gap is required due to the huge throws achieved when deflecting the control surfaces, so strips of matching covering are supplied to cover the gap. I found the material very easy to work with and ended up with a smooth result that I was chuffed with.

Assembling and mounting the two piece carbon fibre landing gear with wheel pants is a straight forward with only the need for a small drill to attach the pants to the landing gear struts.

Once the servo's were installed the iPA's carbon fibre long servo arms were fitted to the Hitec HS-82MG's arms to give the Addiction X a massive range of over 50 degrees each way on the control surfaces. Wings slip into place over the carbon fibre wing tube and are secured by 2 x 4mm nylon wing bolts.

Interestingly, PA have given 3 possible locations for the rudder servo.

- The rear of plane on the side of the fuselage connected via pushrod.
- At the rear of the battery and receiver trays connected via pull/pull system.
- Located upside down on the bottom of Motor Box connected via pull/pull system.

The manual insists if you're using PA's recommended iPA's setup then we must go for option 3.

As it turns out, this is definitely the right spot for this combo as choosing either of the other positions would see you pushing your battery right up under the front cowl to achieve a good C.G. and possibly adding lead weights!

The other positions are presumed for those who choose to go for alternative setups and hats off to PA for recognizing this and providing a pain free solution for those punters as well.

The pull/pull system is simple to install, with the rear crimp left for you to crush once you tension the Kevlar lines. An extra pair of hands will help make this step easier. After 30+ flights I have not needed to tighten or adjust the lines.

Another point worthy of mention is PA's 'Ball Link' system to the control surfaces. The ball links are imported from Germany and work with CNC machined metal clevises which ensure smooth operation.

Fitting the Motor/ESC is a straight forward affair with the motor reverse mounted inside the motor-box and the ESC simply secured to the side using zip ties. If the ESC's battery and Rx cables were extended slightly, it would make life a bit easier. (PA do supply with you twisted 3 core extension lead in the iPA's package.)

The manual was sufficiently detailed to follow, however I feel it could be improved with some larger and clearer pictures. Colour would help a great deal with deciphering the pictures in the more technical parts of the manual. Whilst I wouldn't call the Addiction X a complex build for experienced builders only, it's still quite an involved build and will take the average builder a few nights work in the man-cave to have it ready for maiden.

## FINAL SETUP

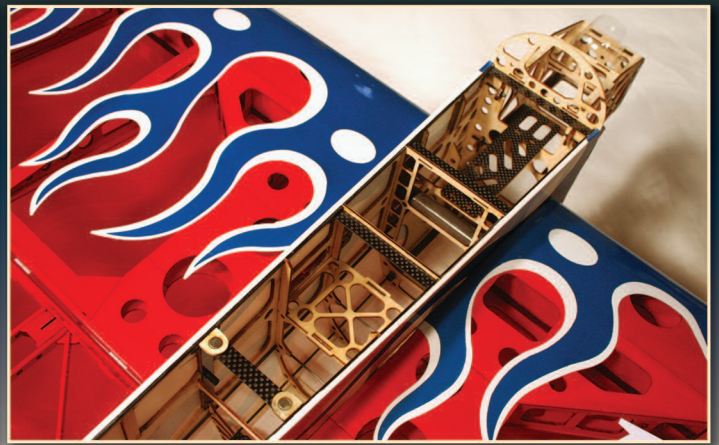
The carbon spinner was trimmed and fitted to the Vox T-40 prop, decals applied, C.G. checked and we're ready for the maiden flight! After much deliberation and a vote, the standard white wheel pants with blue flames were installed over the carbon fibre ones included in the bling kit. I installed a Spektrum 6250 satellite Rx.

I started with the same setting used for the smaller Addiction and have felt no need to change them.

	HIGH RATES	LOW RATES
<b>Mixing</b>	None	None
<b>Ailerons</b>	+/- 50° & 55% expo	+/- 25° & 35% expo
<b>Elevator</b>	+/- 50° & 55% expo	+/- 25° & 35% expo
<b>Rudder</b>	+/- max. & 65% expo	+/- 35° & 50% expo

The amount of expo is really down to pilot preference but the above table shows what works for me.





## FLIGHT

A take-off speed of just over brisk walking pace will see the 'X' rise off the deck effortlessly. Stable circuits can be achieved at around half throttle with enough speed to enable banked turns without losing altitude. (This applies with or without the Vortex Generators (V.G.'s) supplied in the 'Bling Package'. I deliberately left these unglued so I could give an honest opinion of the effects they have on the plane, if any). Flying inverted reveals the predicted C.G. in the manual equates to very neutral handling with just a hint of down elevator for level flight. The roll rate on this plane is just right at higher speeds with clean and crisp snaps on exit. Pulling back on the elevator will abruptly stand the Addiction X up squarely to attention whilst just over half throttle and a small amount of right aileron will have you locked into a stable hover that needs to be experienced to be believed. The massive aileron surfaces are easily up to the task of countering the torque-roll induced from the Thrust 40, requiring only the slightest of inputs here and there to hold it steady. Releasing the correction on ailerons will allow the Addiction X to torque roll with a slow and graceful rotation requiring only the slightest input on the rudder to keep it tight. The Thrust 40 / Quantum ESC / Vox T-40 combo provides a broad and useable thrust range that is essential in keeping those hovers and high alpha manoeuvres settled and smooth. The feeling of rock solid stability is immediately apparent and in no time at all I was dragging the rudder around and snap rolling very close to terra firma. Straight up '12 o'clock' vertical hovering is also an area where I tried the V.G.'s with and without, and to be completely honest I couldn't really feel much difference.

This plane punches well above its size class in harrier flight with virtually no wing rock regardless of angle of attack (AoA) or whether upright or inverted. This is one flight condition where the V.G.'s did have a definite impact. When descending smoothly in harrier flight the Addiction X was noticeably more stable with the V.G.'s fitted, not to

say that it was rocking without them but I felt it performed better with them. Whilst cruising around in 'harrier mode' the introduction of rudder has you drifting around corners with hardly any counter inputs required to keep the wings level.

Perhaps the biggest surprise to me was how well it knife edges. I wouldn't exactly call the smaller Addiction much of a knife edge maestro, so I wasn't expecting a whole lot from its bigger brother in this area. However this plane is a knife edge beast! With the recommended C.G. of 132mm, it locks into high alpha knife edge flight effortlessly with only a minimal amount of rudder being needed to keep this plane tracking straight on its side. Squeezing the rudder a touch more points the nose a little higher and the Addiction X slows down to a crawl without pushing or pulling off course, and because the plane is not doing 100mph, the pilot has ample time to make adjustments to the throttle and rudder and coax the plane down lower and lower with confidence.

This is also the area I most noticed the effect of the V.G.'s and the wing tip side force generators. With these fitted the Addiction X's rudder seemed to gain a fair amount of authority and I can see this plane helping me tremendously with my knife edge loops. Hence I think the V.G. kit does enhance the flight characteristics of the aircraft as well as make it look cool! Win, win!

Performing rolling harriers and rolling circles is a cinch with the Addiction X. The 'tail moments' are near on perfect with familiar stick inputs allowing for the smoothest and slowest of rolling harriers. For those wanting to add this 'high end' maneuver to their repertoire, I cannot recommend a better aircraft for learning and mastering this trick. With its massive wing area (744in<sup>2</sup>) and huge fuselage, the Addiction X works really well at grabbing a hold of the air and hanging itself up with gravity defying ease. The inherent drag that comes with its thick

wing also aids in slowing down the aircrafts roll rate allowing the pilot more opportunity to time their stick inputs and get that timing nailed.

Impersonating a helicopter is not the only thing the Addiction X is capable of as it also tracks at speed very well.

Whilst not exactly designed for IMAC competition, the Addiction X does cater for this side of flight quite well offering a very wide flight envelope to the pilot. Crisp point rolls, perfect loops, tight hammer head turns and laser straight half Cubans are easily achieved.

Harrier landings are easily handled by the robust two piece carbon fibre landing gear and spring mounted tail wheel. For more conventional landings simply wind the throttle back to around 1/5th and let the Addiction X float back to earth for a perfect three point touchdown. The stall speed of this plane is low enough to make perfect dead-stick landings time and again.

In my final comparison against its smaller sibling, obviously due to the extra size and weight, the newest Addiction from PA also handles the wind quite a bit better with me finding 10 - 15knot winds do-able and that's a huge bonus for us pilots who live in windy places.

## iPAs

With an all up weight of 1.2kg's (42.3oz) including battery, PA have chosen to power this aircraft with their proven Thrust 40 outrunner first unveiled in their 40" Ultimate AMR Biplane. When paired up to PA's trusty Quantum 45 ESC and VOX T-40 prop, the 850kv motor, my watt meter showed 500W of power, pulling 41 Amps using a 3S Lipo. A full 6 minute flight consisting of mainly 3D flying will see the batteries come down lukewarm to touch and will have consumed 1900mAh.

## Conclusion

Precision Aerobatics have produced another great aircraft in the Addiction X. It ticks all the right boxes and is very well balanced; looks great, goes great and handles amazingly. I've had an blast getting to know this aircraft. Whether learning 3D, perfecting 3D or needing to showcase your top shelf 3D flying you can be sure the Addiction X has you covered. Definitely a keeper!

Good Winds!



## SPECIFICATIONS

Wingspan:	1,270mm/50 in
Length:	1,331mm/52.4 in
Flying Weight:	Total ~1200g/42.3oz
Wing Area:	744 sq. inch
Wing Loading:	8.18oz/sq.ft