

Axial in the UK

HYPER ST RTR GETS THE AXIAL TREATMENT

BY PETER GRAY

MY WAY

When we reviewed the RTR version of the ST it was amazing how well it performed straight from the box. After months of club racing we decided to take its looks and performance to the next level and put a 'Madpete' slant on things, inspired by my punk tendencies. Having recently attended an anniversary event to celebrate 30 years of this anarchical music, I can confirm the scene is alive and still kicking, albeit slightly quieter than in earlier years!

PUNK MY RIDE

CML Distribution put together a package that would add distinctive looks and boost performance. With the addition of a new Axial Racing .32 Spec 1s Engine, a new set of Axial 8-spoke oversize monster truck wheels mounted with Axial Racing 'Cubes'. The 8-spoke oversize wheels have regular 17 mm hex drives but like all the Axial wheel sets, adapters are included that allow you to fit 14 mm hex hubs, for use on the Savage, Tmaxx and Revo.

We also fitted a great looking Axial fuel filter with removable element, and upgraded my standard receiver pack to a Venom LiPo pack and Novak regulator. A 2s Venom LiPo running through a 6 Volt 3 Amp Novak regulator means even consistent speed and torque from the new Associated XP servos. With the highest torque, highest speed 1015 fitted to the steering because of its 0.108 sec/60° transition speed but also because it offers 14.5 kg-cm of torque for corner holding and quick direction changes. Fitting two ultimately fast and high torque servos would put too much of a drain on the receiver battery, so the 1313 servo is roped into throttle duties to reduce the current draw on the receiver pack without sacrificing response or performance. A 0.13 sec/60° transition speed means plenty of throttle response for attitude correction over jumps but also because it offers 12.5 kg-cm of torque the brakes can be activated with around 30% of the servos' maximum capacity and the metal gear train will remain intact for many seasons to come.

Rewired with a switch that would fit into the cover of the ST radio box, the tiny regulator disappeared into the foam packing around our Spektrum PRO receiver, so we decided to stick it to the lid of the box so we could keep the wiring tidy and save the regulator migrating around the receiver box.

The 2s 1600 mAh 2s LiPo was strapped to the battery bar and slotted right in. The balance lead was left poking under one of the restraining O-rings, but pointing backwards so that it didn't fill with mud and dust

flung off the front tyres and in this way we could still balance charge with the battery in situ. Switching the radio off between races is OK, but between race meetings the LiPo should always be disconnected from the regulator as there is a tiny quiescent drain that could take the LiPo below its 6 V minimum threshold if left connected for long enough. We fitted mini Corally style 3.5 mm terminals between the LiPo and regulator, and carefully planned one pair to remain outside the radio box so we can disconnect it from the regulator, without having to remove the lid time and again.

To charge the LiPo receiver pack we chose the Prolux balance charger, with its three ports it can handle up to 4 cells and charge at up to 2 A, so is perfect for receiver packs as well as the LiPo packs fitted in my FTX Blaze. The charger will accommodate 2-4 cells with a JST XH connector and features a 12-bit CPU controller to provide a precise charge, selectable charge rate of 500 mA, 1000 mA, 2000 mA, automatic cell count, with LEDs and a beeper to indicate charge status.



GOD SAVE THE GREEN

The engine chosen to bring a bit of sparkle to the RTR Hyper ST was the new Axial Racing .32 Spec 1s, a .32 cubic inch big block engine featuring a machined cast aluminium heat-sink head for extra cooling, dual bushing aluminium connecting rod, true ABC chrome sleeve construction for durability, and a three needle 9.0 mm slide carburettor (including 8.0 and 8.5 mm optional venturis). There is also an optional 'Turbo' button head available for those that prefer the conical seat method over, the brass sealing washer of regular glow plugs. From the box the carb settings were (to bottom gently) 3.5 main jet, 7.5 low speed jet (flush), 2 intermediate jetting (flush).

The cylinder liner inlet tract is chamfered for easy inlet tract with minimal losses, while the exhaust port has a curved roof to raise the centre section, this in turn softens the crack upon opening the exhaust port as the piston falls on the power stroke, reducing the harshness of the exhaust note, improving gas flow, scavenging and increasing the mid range power. The main jet is sealed by a single O-ring in a brass housing and has a knurled plastic outer allowing finger tip adjustment without a screwdriver.

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From RTR to the extreme with the Axial range plus other CML products, the tough Hyper ST can cope with it all



The Axial .32 came with a huge green cooling head and alternate Venturi for restricting the inlet tract



Running partners, the Axial engine range and Byron nitro fuel



The multi ribbed crankcase adds strength and improves cooling

Simply enormous, easy access chamfered porting, multi transfers and arched exhaust port roof are Axial trademarks



Composite body maintains temperature stability, infinitely adjustable though factory settings were amazingly close



HoBao +8 mm wheel hex adaptors required to get the oversized Axial wheels to clear the suspension

Twin turbo veins help cylinder fill, huge conrod bearings spreads the load

During our usual complete strip down of the engine it was evident that this was manufactured to very tight tolerances and that a thorough running in would be required to get the most performance and longevity from the unit. Another neat touch is the 3 different engine back plates available to accommodate a rota start, pull start (supplied as standard) or a blanking plate for minimal losses when utilising a bump box, which is the option we chose for this review. The Axial Racing multi-position easy start back plate option has a real innovative touch that you can move the angle of the rota start socket to suit any application. The good news is that it works with any standard roto-start system on the market and will bolt straight onto the Axial .28 and .32 engines and also fits the Surefire .32, HPI K4.6 and HPI K4.6 High Output engines.

We chose a gorgeous new polished alloy Tsais exhaust that doesn't just have a free flowing silencer chamber, but the sweeping header manifold helps improve gas flow directly from the cylinder port by reducing gas restrictions around the exhaust port. More out = more in, so the resulting increased air flow will mean a better cylinder fill and increased power on every stroke. The hard anodised coating on the Tsais keeps the pipe looking good for much longer, simply brushing off the flying grit and gravel of a race track, and adding a professional quality finish that resists the intrusions of your competitors.

Once bolted in and plumbed into the fuel tank using green dayglow fuel tubing from CML, the engine was primed with 20% O'Donnell fuel and fitted to the King bump box ready for its first firing. As with most performance engines the hardest part usually is getting the first few tanks through. After heating the block gently with a heat gun the engine would turn over on the bump box and eagerly burst into life. 6 tanks of fuel were put through at low revs allowing the piston and liner to become better acquainted, which may seem extreme but with an engine this tight, caution is never a bad thing. I then progressed to the track to run gently around on the grass while the carb was dialled in to perfection. Running in can never be rushed, and failure to complete it properly will always lead to premature failure.

The Axial wheels are offset but their internal strengthening ribs fouled the hubs so some wider HoBao hub adaptors were called for. Machined from aluminium, lightened and hard anodised they are available in the following offsets - standard, 1 mm, 1.5 mm, 2 mm, 4 mm, 6 mm, 8 mm, 10 mm and 12 mm to suit any requirements. We fitted the 8 mm versions, which combined with the wider wheels and tyres brought the track width up from 415 to 450 mm, and how mean do they look! This increased track width, combined with the oversized Axial tyres should add more stability and offer better traction on most surfaces. The tyres themselves come



Replace the Axial pull start with ingenious adjustable angle rotor start or bump box blanking plate



Prolux LiPo Charger with safe balance port charging, and Venom Rx LiPo pack bring the truggy bang up to date

with foam inserts that typically needed trimming to match the section of the tyres better, before bonding to the rims using Pro-Line tyre adhesive. After allowing the bond to cure overnight, I tried to balance the wheels but found they were so accurately moulded that they needed little or no balancing at all, which was a refreshing change. The final crowning glory is an amazing Axial inspired punk-esq paint job from the maestro of

paint himself Tel at TelsShells, and I'm always gob smacked by the tricks he can pull with a clear shell and a couple of suggestions. In this case we sent him the Axial motor box and left him to it, the result is well, breath taking as always with a perfect recreation, skulls and all! Once the Pro ST body was fitted with its roll bars and stickered up everything came together to create a truggy I would be proud to enter for a Turner prize let alone a race meeting!

NEVERMIND THE RTR, HERE'S THE AXIAL ST

The day came to give the ST its first track test prior to my first race meeting. I have in the last year put many different types of model around the astro circuit at



Wired tidily, the Venom LiPo fitted the receiver battery carrier, while the radio box swallowed the receiver, regulator and switch

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We swapped from the 13 to a 15 T Axial hardened steel clutch bell and lap times improved, engine temps dropped



Running the Venom LiPo through a 3 A Novak regulator gave consistent results



Power and control, the XP Servos from Associated proved a formidable tag team

Baginton. We fired up the ST with the Axial .32 engine still on the factory carb settings and I took it round on its first few tentative laps dialling in the brakes and steering rate to suit my driving style and confidence level. There had been a lot of rain the days before and even with a team brushing water off the track prior to the test, there were a few small puddles and the astro was quite damp. This truggy was a revelation, in short it just soaks up everything you throw at it, corners on rails, eats jumps and the infamous double as though they're not there. Even on a wet track the tyres gave good grip and the wider track aided the stability and traction on corners. The car would go exactly where I placed it; undulations and imperfections in the surface were just driven over as though they didn't exist.

A sunny week later we had a completely dry track to test on, and after warming the engine up we started a full race day simulation and began to lean off the carb as the engine became looser. We ended up just giving the main jet a turn and a quarter tweak in gradual stages, so the main jet ended up 2 ¼ turns to bottom, and hadn't touched the factory setting for the middle jet which remained 2 turns out (flush) or the low speed jet which remained 7½ turns out (flush). We then fitted the 8 mm venturi changing the carb inlet from 9 mm and did another full tank. This gave a run time of 9 min 45 seconds, exactly what we got without it fitted! So surprisingly no discernable difference in fuel economy or performance was to be had by changing the venturi. One thing that we did notice was that with a 13-tooth clutch bell pinion fitted the engine was just spinning the wheels out of corners and struggling for speed on the straight. The other side affect using this gearing was that temps were high, in the 250-260°F range due to the motor over revving. We swapped to a 15t vented, hardened steel Axial clutch bell and the affect was instant. Temps dropped to 220-230°F range while acceleration and top speed were perfect for the high grip astro track, using the power better and putting it straight down through the Axial tyres and onto the track.

The ST like most truggies usually have a large opening cut out of the front windscreen to aid cooling, but even with a solid screen we maintained these temps, showing the effectiveness of the cooling head fitted to the engine. The only big hit we took was in fuel economy as we only managed to get 7 ½ min run time tank after tank. The tyres gave so much grip that I had to be careful when gunning the throttle out of corners as they would grab the astro and cause grip roll. The great thing with this amount of grip is how quickly the car would turn into corners, with the tight apex of the chicane becoming a breeze to hit time after time. During the day, the LiPo receiver pack did the equivalent of a full day's racing and was still within the safety minimal voltage and had just under 10% left in it! So relax, enjoy your racing and just re-charge the receiver pack before the finals and you will be just fine.

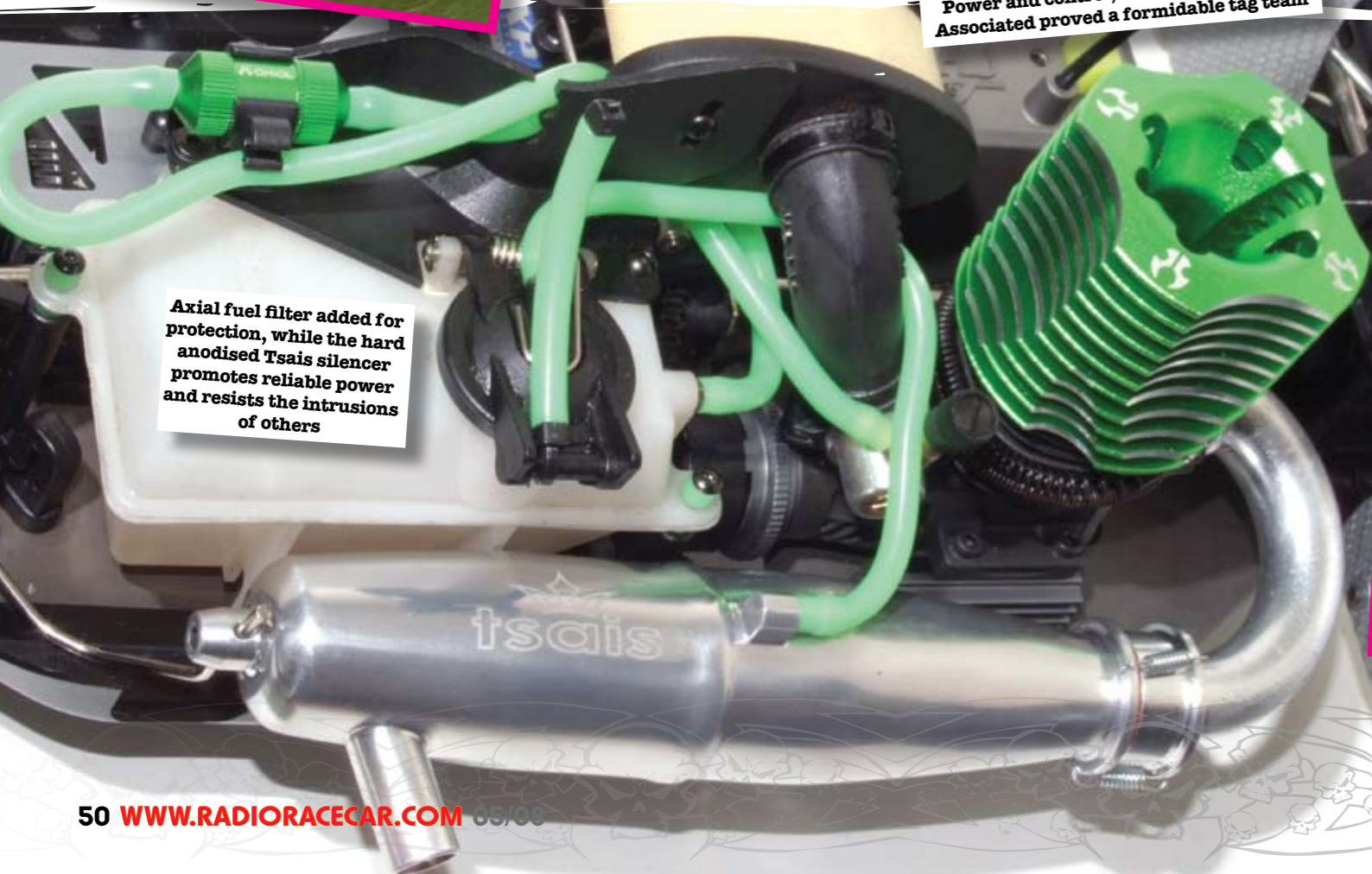
When we started testing my average lap time was 34 seconds. I was new to the car and its handling and using the smaller 13T clutch bell we were losing precious seconds. By the end of the day I was able to do consistent 30 second laps of the full Baginton circuit, and in the hands of more experienced drivers I witnessed a sub 29 second lap and made notes of their lines and throttle techniques over jumps. I just didn't want to pack up and go home, it's the most fun I've had in ages and I know where I'm going on my next day off, as a Baginton club member I can use the facility on my mid week breaks, so I'll be back for more! Perhaps if we add a hole to the front screen, we can lean the motor off even further making use of the extra cooling air flow to push the motor harder and extend the run times on a tank full, perhaps cracking the 30 second barrier on a regular occasion. I will just have to go find out for myself, and then work my way up to entering my first nitro race with the new improved Hyper ST Axial powered truggy.

Other types of car have idiosyncrasies that make them a challenge to drive; this was pure racing fun in its own right. I'm another convert to the truggy, I can see why people get hooked and hope this section grows from strength to strength in the future. Punks not dead it's just evolved into something new, just like rallycross has evolved into the development of the truggy.

The Axial motor proved reliable, easy to tune and stable at all temperatures, plenty powerful enough for even more experienced drivers than myself, yet flexible enough to allow me to drive at my own pace without over heating or oiling up. We are still running the same glow plug we ran the engine in with, and nearing the end of our first gallon of Byron fuel. It's time for a new glow plug and a fresh can of fuel, I have a whole new outlook on life, the Hyper ST has a new power plant, so we can go explore the world of Truggy racing together.

In conclusion if you have a RTR and fancy taking that next step in performance and looks, you can't go far wrong with the ever growing range of Axial goodies available through CML via any good model shop. The engine though tricky at first to run in has proved itself reliable, powerful and a perfect replacement for the RTR stock unit. I hope to see you trackside soon at a truggy event with my flying green machine, and if I win an A-Final or come dead last on the day doesn't matter, it's the fun had along the way and the banter in the pits I truly enjoy, and that's the real drug, it's the reason I keep coming back for more...I'm just off now to put some Pistols on! RRC

Axial fuel filter added for protection, while the hard anodised Tsais silencer promotes reliable power and resists the intrusions of others



QUICK SPEC

Axial .32 Engine	AX041	£169.99 RRP
Axial 13T Clutch Bell	AX5013	£9.99 RRP
Rotor Start Backplate	AX0507	£14.99 RRP
Bump Start Backplate	AX0090	£14.99 RRP
Tsais M25 Exhaust	E0816CH	£49.99 RRP
Axial Fuel Filter	AX0500	£5.50 RRP
XP 1015 Servo		£66.99 RRP
XP 1313 Servo		£56.99 RRP
Novak Reg	NE5460	£24.99 RRP
Venom Lipo	VEN1559	£20.99 RRP
Prolux Charger	PX3839A	£29.99 RRP
Axial Wheels	AX8007 (Pair)	£10.99 RRP
Axial Cubes	AX12004 (Pair)	£20.99 RRP
HoBao +8 mm Hex	H86106	£9.99 RRP

DISLIKES

Engine very tight at first hence a long run-in period

LIKES

Competitively priced
Buckets of usable power
Easily tuned, and stable
Factory set carb
Wheels needed no balancing

CONTACT

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