

REPEAT PERFORMANCE

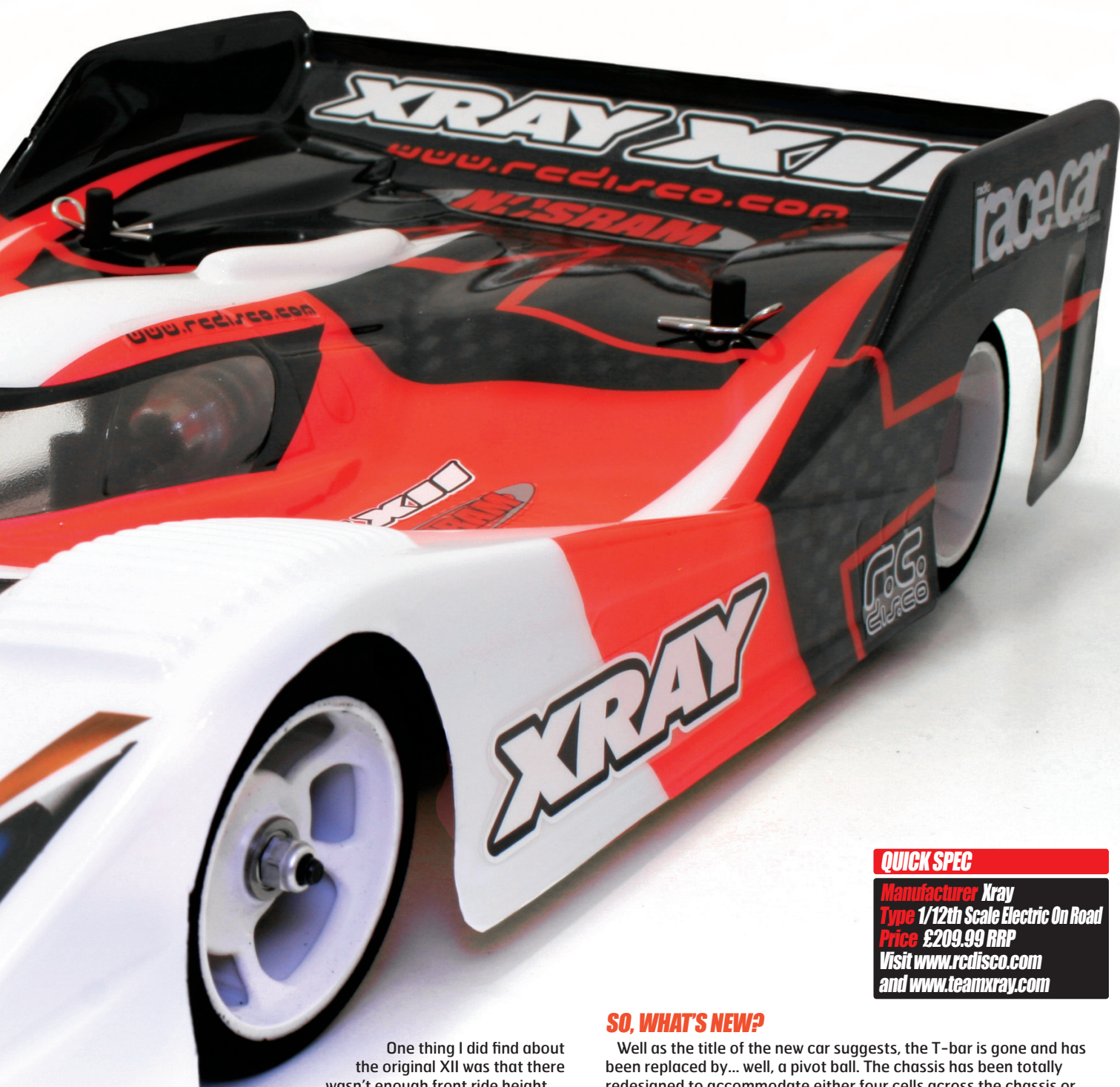


Back in June 2009 I had my first taste of 1/12th with the help of the Xray XII. This car went on to win the 2009/2010 1/12th National Championship in the hands of a certain young driver called Elliott Harper, totally dominating that season. So Xray have now moved on and have gone with the flow of current trends and have produced a 'Link' version of the dominant XII. Will the Link car be a better package than the T-bar car? We give it a thorough testing with new Nosram electrics and an attractive looking new 1/12th Set-up Station from Hudy, to see how well it goes compared to its older brother.

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DOUBLE TAKE

So putting the two cars side by side you can see what is new and what is old. Basically the only things that are carried over from the original XII are the front suspension components, the rear motor pod alloy uprights and rear axle components, so geometry wise they have the same width and wheelbase. The front suspension is exactly the same with the fixed lower arms and pivoting upper arms with camber/caster/active caster adjustments.

**QUICK SPEC**

Manufacturer Xray
Type 1/12th Scale Electric On Road
Price £209.99 RRP
 Visit www.rcdisco.com
 and www.teamxray.com

SO, WHAT'S NEW?

Well as the title of the new car suggests, the T-bar is gone and has been replaced by... well, a pivot ball. The chassis has been totally redesigned to accommodate either four cells across the chassis or a 1S LiPo cell, as is the current trend in 1/12th. The rear motor pod now pivots on a single pivot ball and is held square by two link bars mounted either side of the chassis. The damping is now done by a 'through shock' and small side springs now control the 'roll' of the pod. Everything else is totally new. So let's take a closer look at the new stuff.

CHASSIS

The chassis is 2.5 mm carbon fibre. It has a narrower design than the original, as the cells won't be straddling the T-bar. The servo mount is now further forward and is now laid down rather than being mounted at an upward angle, giving more accurate steering and settings. By moving it forward they have also created more room for electrics on

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One thing I did find about the original XII was that there wasn't enough front ride height spacers under the front mounts if you wanted to run trued and glued tyres straight out of the boxes. Personally I hate having to buy tyres and then remove half of the rubber... I'm a bit tight and see it as a waste. So I run them straight out of the packets. But with the XII, Xray only supply three ride height spacers and this gives a huge ride height on large profile tyres. So if like me you want to run full size trued and glued tyres, you will have to add more spacers under the front suspension mounts. I added a 2.5 mm spacer to each stack to give a ride height of around 3-4 mm.

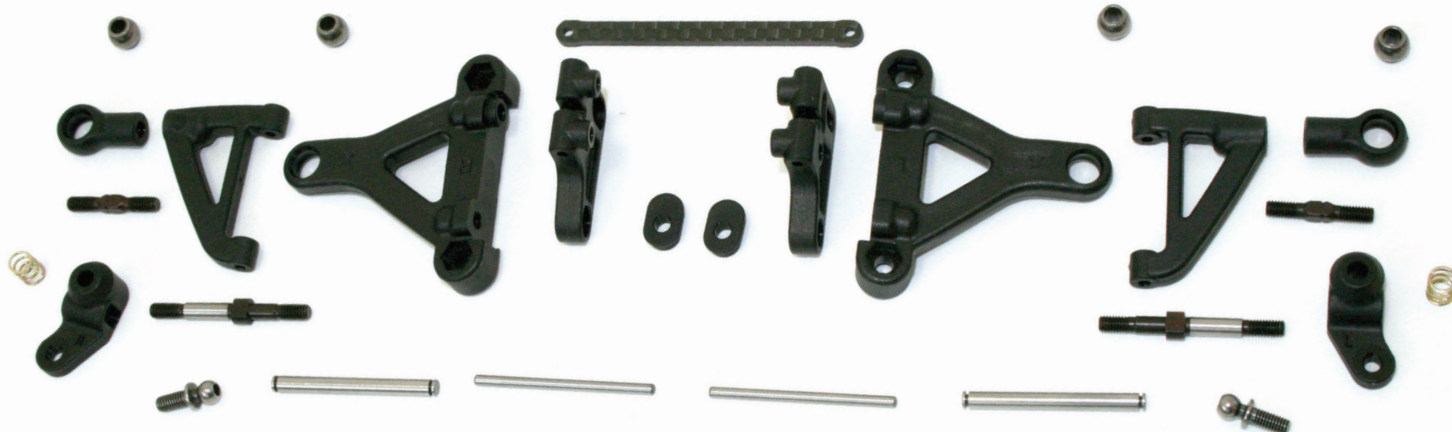
One other thing I did to the original was to add threadlock to the outside of the lock nuts on the lower front suspension mounts. Basically I got fed up of chasing the nuts around the floor when I wanted to alter the ride height, so putting threadlock on the nuts holds them in place when you turn the car upside down, but without the permanent affect of CA glue. These were the only modifications (If you can call them mods) that I made to the original car's construction. It was pretty much perfect.



Above: The front end is the same as the original XII



Above: With the links in place the new look is starting to take shape



Above: Front suspension components

the chassis so if you have to use a voltage booster or receiver pack there will be plenty of room. The cell slots are now centrally across the rear as the T-bar has gone and the chassis is narrower to make room for the links either side. The motor pod is now attached to the chassis via a single pivot ball. It tells you in the instructions not to tighten the clamps up until the links are on. Make sure this is adhered to otherwise the pod will not move freely and will seriously hamper the handling.

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There is a carbon cross brace that stretches the full width of the chassis. It holds the rear body posts and accommodates one of the mounts for the side damper. Underneath the brace it holds the lugs that suspend the side springs. The side springs then mount loosely onto the rear end of the link bars. The side damper attaches to the motor pod's upper plate. They've used the 'through damper' design as this type of shock keeps a constant rate of damping without providing any unwanted rebound that may upset the side balance of the car's handling. The link bars connect to ball joints on the chassis and on the motor pod. They have a grub screw on each joint to keep the amount of slop in control. Not keeping check on the links will eventually make the pod move around too much, so if the car starts to feel odd, check that the slop on the link joints are tight enough but move freely. 35wt oil is used in both the top shock and the side shock. By altering the thickness of oil in the side damper it will alter the way the car handles. Lighter oil will make the chassis roll more and make it feel safer. Whilst thicker oil will have the opposite effect and make it feel loose. This is something that is quickly changed trackside and can be a major tuning aid.



Above: This is the ball joint that has basically replaced the T-bar of the original

BALANCING ACT

The XII Link has been designed and optimised around the use of 1S LiPo and brushless motors, so the chassis should have the correct balance for this type of set-up. Although using 1S LiPo will produce less weight over the rear wheels, giving you a more forward weight bias. This should help turn in and increase the corner speed, but could make the car feel nervous if the bias is too much. The rear pod as mentioned

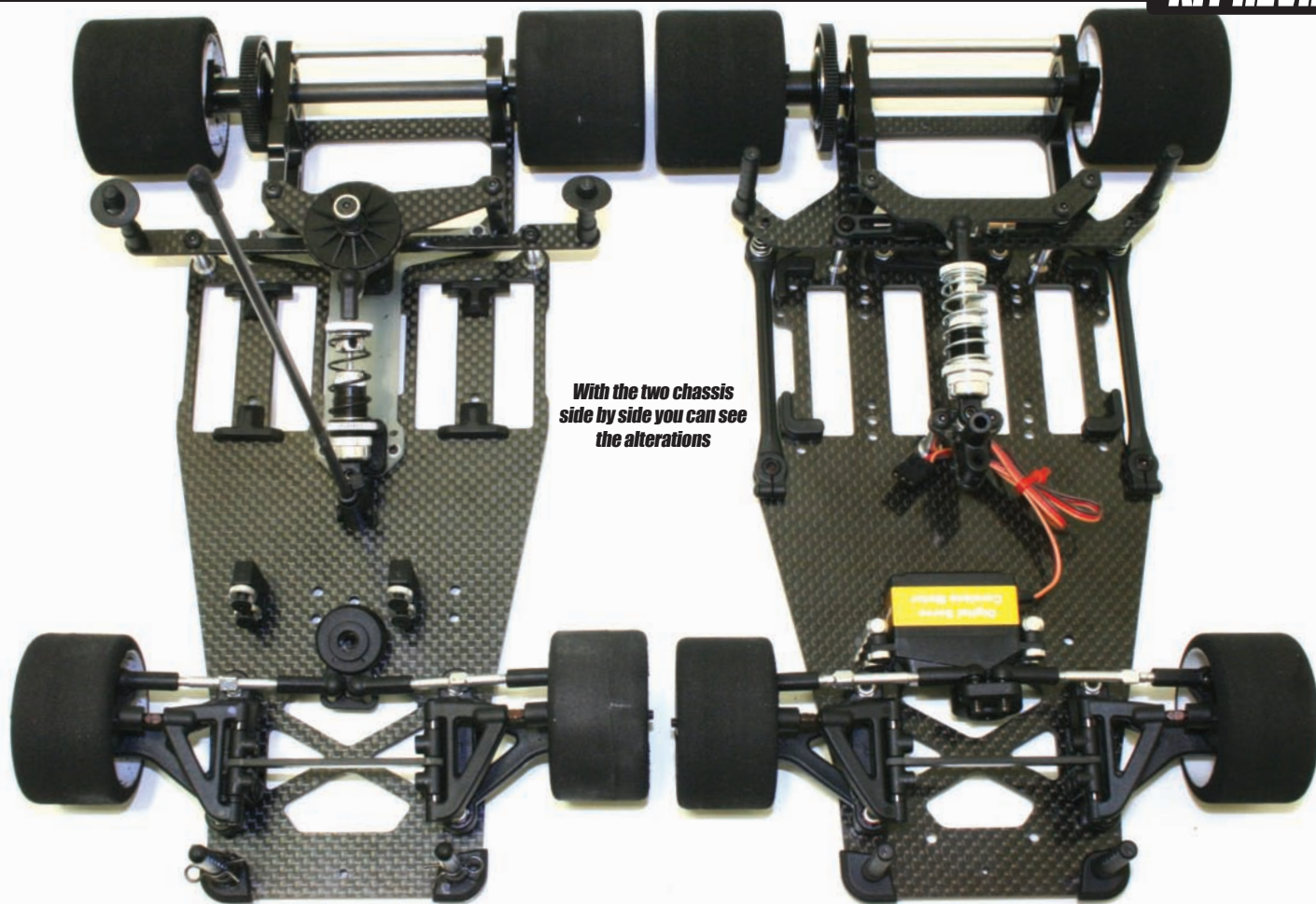
has the same alloy pieces as the original but with different carbon parts. This is only due to the new shape of the new link chassis though and the new parts have no performance change as such. The pod still has plenty of room for both brushless and brushed motors, giving plenty of space for the sensor wire. The motor was perfectly placed anyway so there was no need to change the position, this way Xray have not had to change any of the rear axle/diff parts and the hubs are the same as previous.

THOSE EXTRA BITS

For the shell and tyres we decided to go with the newly approved Protoform AMR shell with closed cockpit. The closed cockpit is becoming popular again due to the new regulations, which is good news, as they look so much more scale like than the open cockpit shells. The only thing about the XII Link is the fact that the rear body

Below: Springs control the roll of the rear pod





With the two chassis side by side you can see the alterations

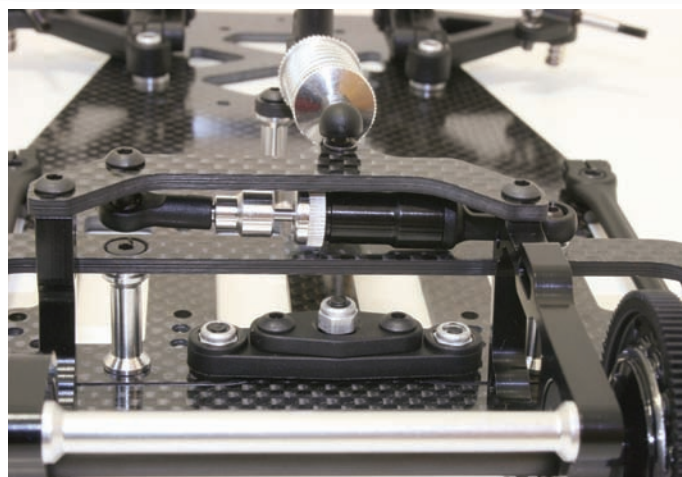
posts are further back so you will have to put a new hole in the shell you already have, if you wish to re-use it on the link chassis.

Tyre wise I had a couple of different types that I ran on the original XII. I started using CRC magenta and greys, but ended up back onto the trusty old Jaco double pink front and yellow rears. The Jaco seem to work better on the GT carpet that the club use.

"The system measures camber, caster, toe and steering throw accurately all in one go, making trackside adjustments quick and easy"

HUDY 1/12TH SET-UP STATION

New from Hudy and supplied as part of the review for the Xray is the new Set-up Station for 1/12th and 1/10th pan cars. The Station has stands that fix to the front axles, using the car's own bearings and nuts, along with a clear acrylic brace to place on top. The system measures camber, caster, toe and steering throw accurately all in one go, making trackside adjustments quick and easy. All the stand parts are made from high-grade aluminium and are ball raced for free movement. All the markings are well engraved and are easy to see.



Above: The through damper is a tight fit, but it does go in



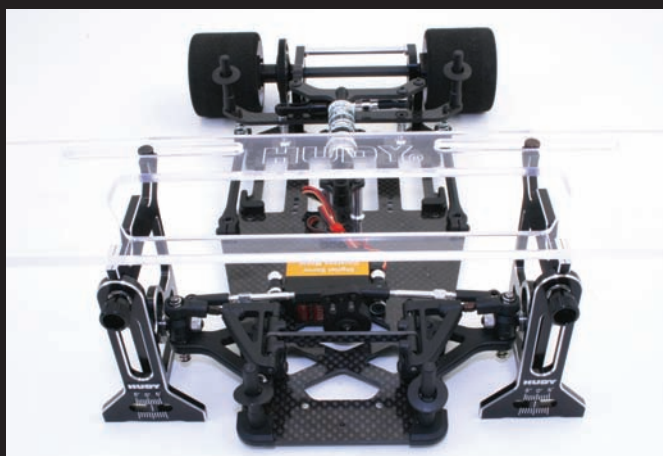
Above: The upper shock controls the damping and the lower is the new 'through' shock, which controls the roll damping

The stands use the bearings in the same way that the wheels on your car does and they fit into an alloy adapter that screws into the main stand. There are two holes to screw the adapter into, the upper is for 1/10th pan cars and the lower is used for 1/12th. Once in place the axles are tightened into the bearing using the nuts off your car. There are some alloy thumb screws available to save using the car's nuts and having to use a driver to put them on. Don't over tighten the nuts when you put them on, the bearings need to be free and not binding or else the set-up system won't be able to measure properly.

Camber is measured via a T-piece at the front and caster is measured on the main upright sections. This is quite hard to measure as the engravings are a fair distance away from the axles, so it is basically done by eye and not that accurate. Toe and steering throw is measured via the clear acrylic top gauge. Basically for the side that you wish to set-up, move the gauge across so that the steering is central, and then measure the toe with the steering in neutral. To measure steering throw just turn the steering to either side and make note of the setting and adjust accordingly. Simple! I can see these being on view at many pit tables at 1/12th meetings around the country. They are an ideal



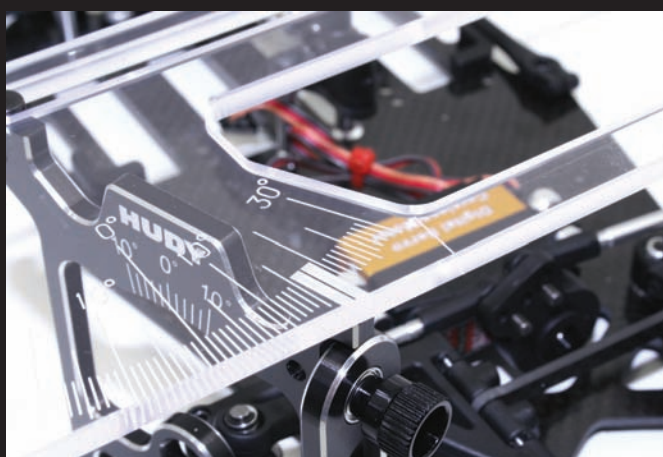
Above: Bearing insert, upper for tenth and lower for twelfth



Above: The Hudy Station fitted and ready to set the XII up accurately



Above: Camber adjustment can be accurately measured



Above: Steering throw is easily adjusted on the bench rather than the track

piece of equipment to have to hand and a hell of a lot more accurate than other tools that can be found in pit boxes around the country. Well worth adding to your arsenal of weapons on your table...even if it's just to psyche out the opposition!

NOSRAM ELECTRICAL EQUIPMENT

Supplied for the review we have the latest speed control from Nosram, the 'Spec' version of the Pearl. Motor wise they provided a 6.5 Nosram Pure Evolution brushless motor and to back these up we have the amazing little 1S 5400 50C Nosram LiPo battery. The Pearl is a perfect speed control for 1/12th with 1S LiPo as there is no need whatsoever for a voltage booster or a receiver pack. The Pearl has a built-in Super BEC, providing a constant 6 V/3 A output from 3 V to 7.4 V. This means that it will always provide a constant voltage to the servo and receiver even when the voltage starts to drop. No need to worry about the LiPo deep discharging either as the Pearl will detect this with its Smart Cell System 2, and cut off before any damage is done. I tested this by not charging the LiPo for one round, and it worked perfectly. No need to worry about buying extra booster or receiver packs!

Set-up is easy to do and is the usual one-touch type that is common on most speedos now. It has two new profiles, which are 'Feel' and 'Boost'. The Feel detects what state the car is in (whether it's moving, stopping, at full speed or just accelerating) and alters the setting depending on what the wheels are doing. If it's a slippery surface a low setting on the Feel profile will give better control over the car and improved control. Boost monitors the motor's current, throttle position and rpm and provides the perfect commutation and timing.

RUN TIME

Now bearing in mind that the LiPo is only 3.7 V, the 6.5 motor should be just about on par with a 10.5 and NiMH cells, as these will pack 4.8 V into them, so there's just over a Volt drop on power using the LiPo cell. This is why the modified 1/12th lads have gone up on the winds to 5.5

or 4.5... or higher to make up for the drop in voltage. I decided to go to Sharley Park Car Club night to run the XII Link, as this is where I ran the original. It was going to be a good test, as everyone seemed to be running 10.5's with NiMHs so the comparison could be done. And as I thought, the two were very much evenly matched.

Although the fastest man all night over 8 minutes was running 13.5 he was very consistent and a regular at the club. But with my head still in 'buggy mode' from the national the previous week I was throttle jamming a little too much and found it difficult to get a clean 8 minutes in. I only made changes to the caster on the front, to get more initial bite when turning in. Then I changed tyre compound and ended up running yellow rears and double pink front Jaco tyres. Other than this it was run out of the box and was very competitive which we proved by getting the fastest lap in every run by 0.2 seconds, which we held on to all night.

VERDICT

The XII Link did have a tendency to want to throw the rear end out, which may be a case of the nature of the LiPo layout giving more weight over the front wheels. Given more time I'm sure I will cure it and get this car running like a dream. Completing the box of tricks is a full set-up sheet and a complete book telling you what changes do what to your car and how to overcome set-up problems. It's a shame all manufacturers don't do this with their models.

The electrics ran faultlessly all night and provided very smooth power delivery to what I would normally consider a quick motor for my ability. The Hudy Set-up Station provided an extra bit of help when setting the car up trackside and made any alterations a lot more accurate than other tools.

Once again Xray have produced a piece of perfection in terms of R/C design and development. They've moved on with a fast moving market and have responded to what the racers wanted. In my eyes they definitely have another winner on their hands, only time will tell otherwise. **RRCi**