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*I couldn't help it, I had a new airbrush*

TEXT: Rob Fitzgerald  
PICTURES: Ray Sturman

# WORKING CLASS HERO

## XRAY REINVENT THE 'RAYCER' WITH THE T2R

I was lucky enough to get my hands on one of the first ever Xray T1's when they hit the R/C world back in 2001. Those very first kits came with a full set of Hudy tools included. I still own that car and the tools are still in daily use.

That might sound like self indulgent nostalgia but it's important that you know that Xray are a company that values quality and performance above everything else. When those first cars arrived, the R/C world was stunned by the sheer quality of the car. There had been some very nice cars before, but this moved the goalposts and not by just a few yards either. When owners tried to describe how it felt to build an Xray you would often hear the words 'it's

built like a Rolls Royce' – you don't hear that anymore; people simply say 'it's an Xray' which is a statement that makes the word an adjective as well as a noun I suppose but certainly says a lot about Xray ownership.

Xray touring cars have been through a constant evolution since the T1 and when the T1R Raycer came out I think a lot of us were surprised. It was hard at first to see why they had decided to get into the cheaper end of the market but when we saw the cars and got to drive one, it all made perfect sense. The car built easily, as you would expect it to, but the moulded chassis parts that had previously been carbon fibre, both kept the cost down and

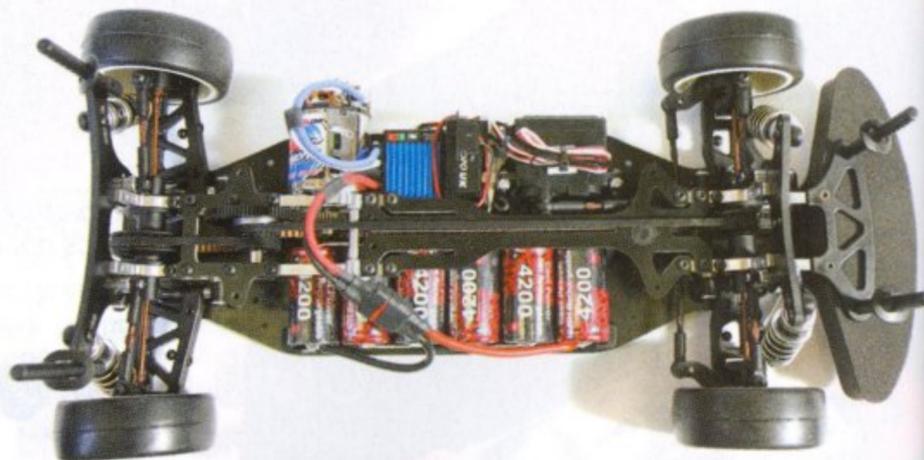
made getting a great set up a little easier into the bargain – and it was a bargain!

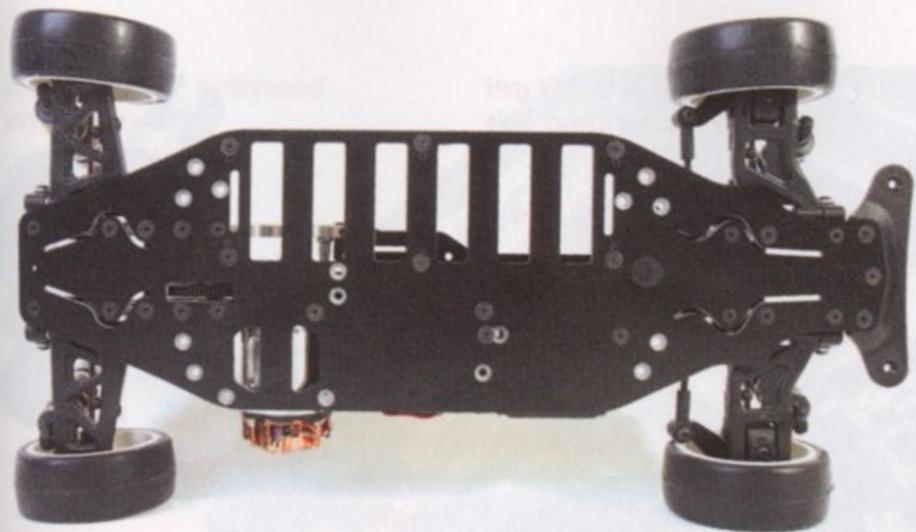
### LOWER AND LOWER

Over the last few years touring cars have gone through a mini revelation with larger pulleys

and ever lower centres of gravity and this left the once great T1R behind a little. The T1 range, and its derivatives, had morphed into the T2 and whilst the new car somehow managed to be a little cheaper than the car it replaced, it was most definitely a

*This is about as narrow and compact as it gets*





### Multi-flex slots for chassis tuning

pro spec car with a price tag that almost matched.

I don't think anyone expected to see the T2R quite as quickly after the release of its pro spec sibling, but its announcement didn't come as a complete shock. What was a shock however, was the fact that the price was even lower than the T1R Raycer of a few years before and that this time it didn't feature moulded chassis parts!

If you look down the spec sheets for the T2R you would be surprised just how little difference there is between the 'pro' car and this one.

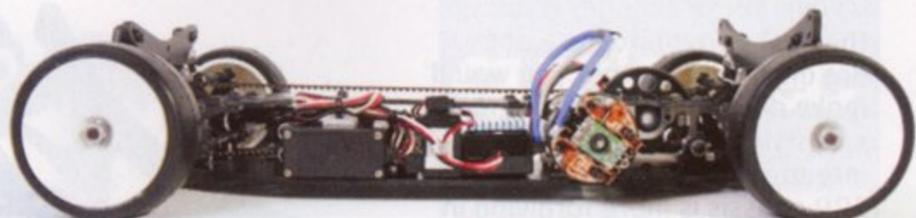
### HOW DO THEY DO IT?

When specifying a car there are a few obvious places where you can save some money to get a car down to a price bracket. Cheaper bearings are an obvious starting place. Turnbuckles can be made of cheaper materials or replaced with simple rods. Drive belts can be made to a lower spec. Diff and thrust race balls are usually the first things to get

### Proud to display the T2R logo

swapped out for cheaper items and the alloy parts can be made from cheaper grade base material. Driveshafts can be replaced for cheaper universals or even dog bones. So, which of these did the Xray bean counters choose to slash the price? – NONE of them!

This is unbelievable but true – everything listed above is the same as the top level T2. The T2R uses the same blue seal ball races, lubed with Shell Aerolube. The turnbuckles are the



### Lower than a snake's belly button

famously strong Hudy items. The same Kevlar drive belts are included and the diff and thrust balls are all carbide items for accuracy and long life. All of the alloy bulkheads are machined from 7075 T6 aircraft alloy just like its dearer twin.



Even the driveshafts are the lightweight (but strong) Hudy spring steel items.

Now obviously there are some differences between the two cars but basically it's this; the chassis parts and the shock towers are made from FRP (fibreglass) rather than carbon fibre and ball diffs are fitted at both ends of the car and these are made from lightweight composite. That is pretty much it.

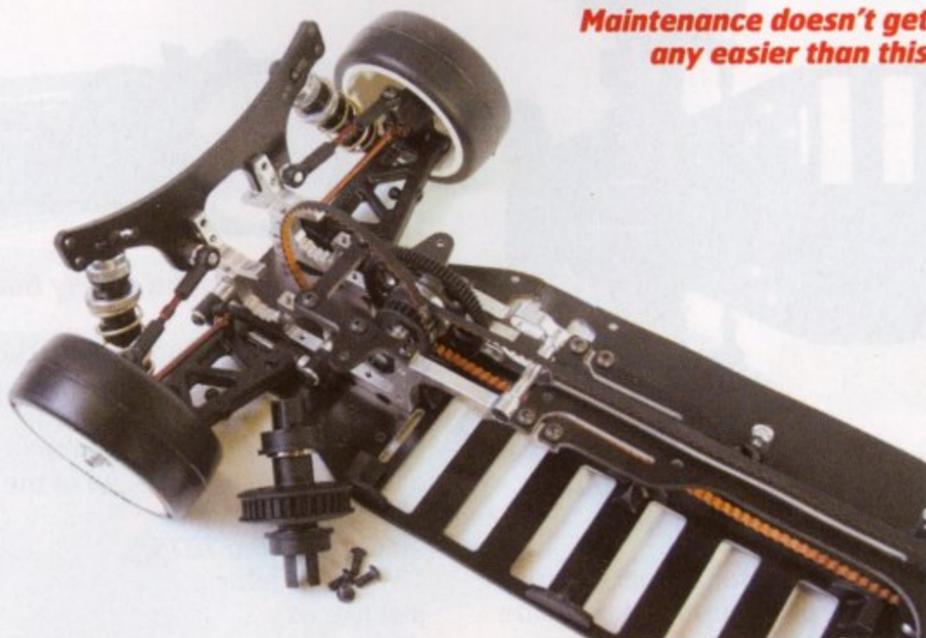
While these changes reduce the cost of manufacture, they are also changes that you would make deliberately if you were specifying this car for its intended drivers anyway. The FRP chassis is more forgiving in many ways; it makes a car easier to set up than a very rigid carbon version, it's more forgiving to drive and it will tolerate more abuse from crashes than carbon fibre, so it's actually perfect for this application. The diffs might seem like a simple economy option but again you'd be wrong. The T2R comes with an alloy diff at the rear that sacrifices a little weight for the strength required for a full blown modified motor. Xray realised that the T2R was more than likely going to be fitted with a stock or 19t spec motor so gave the car a lighter diff to suit. The T2 has a very clever 'diff' at the front that allows you to choose between a one-way or a spool. The one-way is ideal for drivers with the skill levels required and who are chasing a little more steering. The spool is ideal for when you need to abuse the car's steering inputs, both entering and exiting corners at the expense of tyre and drive train life. The T2R uses the same composite ball diff as fitted to the rear that is easier to drive and is much easier on tyres and drive train parts. Being the same as the rear unit also reduces the amount of spares needed – a perfect choice again.

The design of the car really moves TC into a new era. The large 36t and 20t pulleys ensure that the drive train is as free as possible by not wrapping the belt any harder than it needs to be and the final ratio of 1.7:1 is perfect for the motors that are most likely to be used. The bulkheads not only keep everything as low

as possible but they also allow the diffs and the layshaft to be removed with just a handful of screws which makes maintenance a breeze. The belts are adjusted easily using the clever cam system built into the diff carriers. The patented multi-flex chassis gives you plenty of scope for fine-tuning the chassis' rigidity, but the kit settings will see most people happy most of the time. The 'quick roll centre' adjustment system is a little hard to explain but is very simple to use and with just one screw per corner allows you to adjust the roll centre (obviously) and this is an adjustment that you might find yourself using to suit track conditions. The shocks come with a set of springs that seem ideal and it makes a nice change not to have to buy springs right away.

The build was very uneventful and was just a case of following the very detailed, glossy manual. I always make notes when I build a car so I can report on any problems or build tips when doing these reviews; this time that page is blank. The blank 'build notes' page can only mean one thing – it 'builds like an Xray'.

**Maintenance doesn't get any easier than this**



**Lightweight composite ball diff**



**LESS IS MORE**

The car comes without a body, wheels or tyres and I think this is a good thing. There is nothing worse than having to buy more suitable replacements for items that came in the box (that you paid for) and are no good to you. When I decided on which equipment to use I decided it only made sense to use gear that reflects what the average driver of a T2R would use. I made a list and got on the phone to call a few favours in.

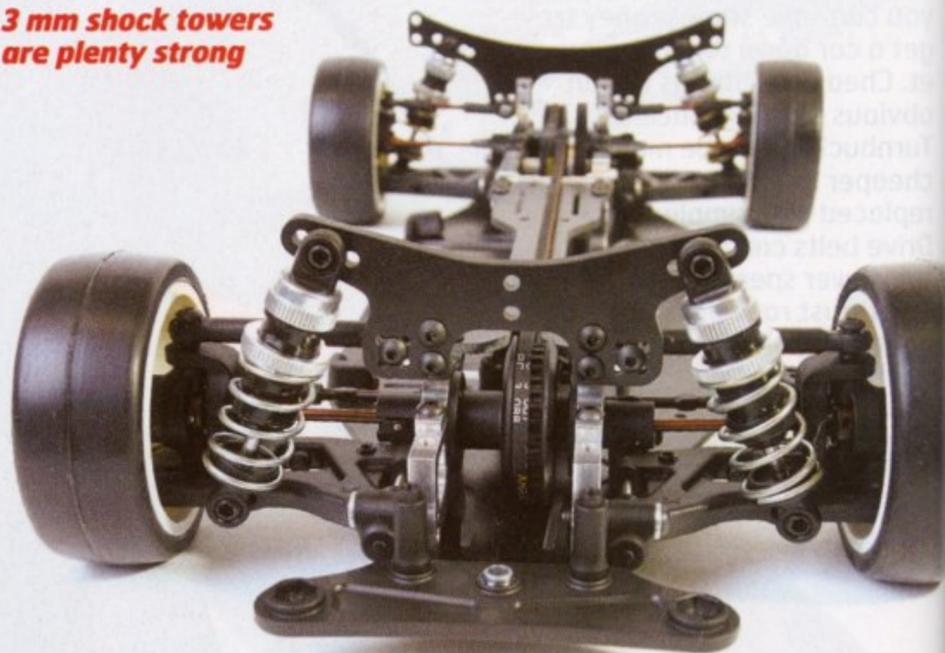
The bodyshell was a fairly easy choice as the Protoform Mazda 6 is already hugely popular and

**The quick release layshaft and spur**



gives slightly more steering than a Stratus and this would compliment the ball diff at the front nicely. I was going to do a very simple paintjob but I had just bought a new airbrush so please excuse that indulgence. The tyres were a simple choice for me as I had used the STCC tyres on many occasions and knew

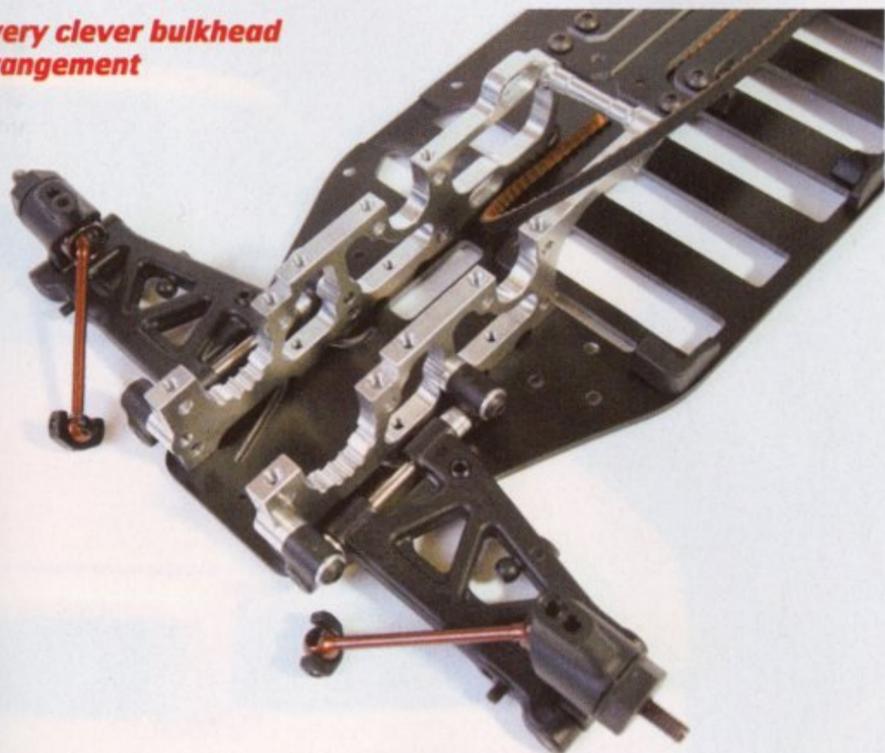
**3 mm shock towers are plenty strong**



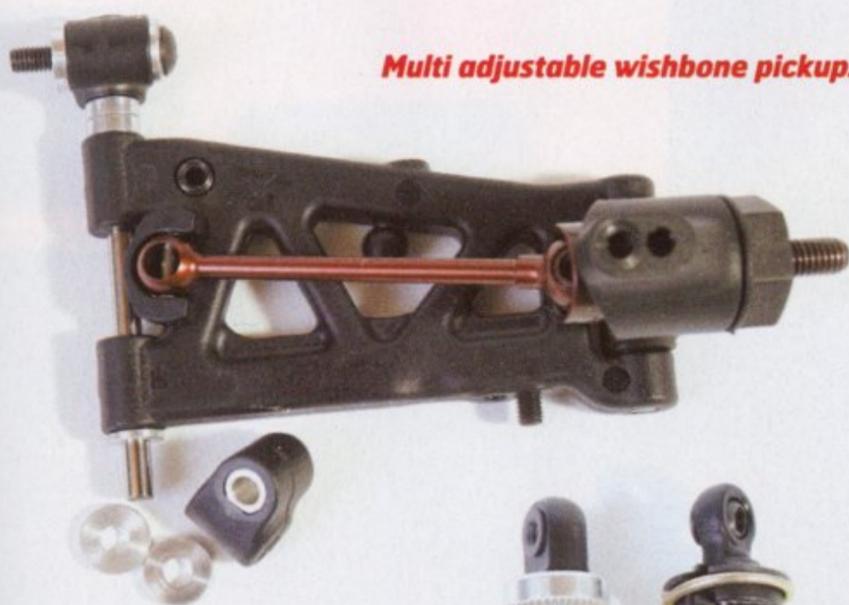
**The ever popular Mazda 6 body**



### A very clever bulkhead arrangement



### Multi adjustable wishbone pickups



they would give great grip in all conditions and last for ages too. While I was on the phone to ModelTech for the tyres, I was told about the new East Power cells that they were importing that come factory matched for voltage at stick pack prices, these seemed ideal for the car so I bought a set of those too.

I had a nice box of modified motors and some top end speedos but that would have been cheating, so I gave Microtech a call and asked if I could have one of their EA Motorsports 19t spec motors to try and again the chat turned out to my advantage as they had just taken delivery of the latest Robitronic speedos. With a 12 turn limit, optional reverse and even a LiPo cut-off facility it seemed the perfect speedo for the car. When I was told the price I nearly fell off my chair; well would you expect to be able to buy a speedo with ABS brakes, 3 power profiles and splash proofing for well under £40?!

### PUTTING RUBBER ON THE ROAD

With the car fully built it was time to get out on the track. I didn't really want to try it indoors as carpet can some-

### Adjustable shocks with kit springs that work



times mask a car with poor grip and I was keen to find any shortcomings with the car, if indeed there were any. I waited and waited for some decent weather and eventually a dry (but very cold) day presented itself and I rushed to the model circuit at Snetterton; a track I know well so I could concentrate on the car and not have to figure out the racing line. The track wasn't too green because there are open practise sessions available every weekend throughout the year, when racing isn't taking place, so even in the winter weather it only took a few laps to clean a line up and get a feel for the car. It's actually difficult to describe what it feels like to drive as it has no natural vices

### Hudy spring steel CVD driveshafts are top quality



and tends to just do what you tell it. The handling is set slightly with a tendency to understeer, but it's very subtle and gives you the confidence to push hard on every corner.

The car didn't feel quite as fast as I expected and I wondered if I had the gearing set quite right on the motor. I went up 2 teeth on the pinion and the car was transformed and now I was actually shocked at how fast it was lapping considering how cold it was and that it 'only' had a 19 turn motor using last year's cells. The weather took a turn for the worst so I decided to try the new East Power 4200 cells and see if they made an improvement...

I have been around for long enough to know new cells always feel great but I was impressed with these. I had been running LiPo all winter and was expecting to notice a difference in punch when going back to NiMH, but not so with these cells. With the 19t motor fitted I obviously had more than enough runtime. The punch and top speed that I had would be very competitive on race day. I also realised that I hadn't been thinking about the speedo and this is a good thing. It was nice and progressive on the middle setting and had coped with the higher gearing and high voltage cells without a murmur, a fantastic speedo for the price.

I think this car is a winner in the right hands and with the cost effective equipment that is now available, a very competitive package could be put together at less than half the price of going 'top end' on everything. If you remember my opening paragraph you will also realise the car is an even bigger bargain when you factor in how long

# quickspec

**CLASS:** 4WD Electric Touring Car  
**TYPE:** Self build kit  
**MANUFACTURER:** Xray  
**PRICE:** £139.99 RRP

### EQUIPMENT USED

EA Motorsports 19T Motor  
Robitronic Speedstar speedo  
KO Receiver  
KO Servo  
East Power 4200 mAh NiMH  
Pro-Trak charger

### LIKES

Extreme quality  
Ease of build  
Great kit set up  
Crazy cheap price

### DISLIKES

Having to tape the cells in

### CONTACTS

For more info on the Xray range contact Mirage RC Enterprises on 01283 226570 or go to [www.mirageracing.com](http://www.mirageracing.com)



### MFT top deck and adjustable Ackerman bell crank

Xray cars last – they are not expendable items like some other cars.

I expect this to be a hugely popular car that will be seen everywhere from club level and in the National TC series too. The biggest problem right now might be getting hold of one. The first batch sold out so quickly that Xray were forced to send out a notice explaining that the entire first production run was sold out. Don't worry if you want one though (and you should) because by the time you read this they should be back in the shops.

It's about time that someone produced a car for the average guy in the street, I just never expected it to be this good. The Xray T2R really does deserve the title of 'Working Class Hero'

### THANKS TO...

ModelTech for the STCC tyres and the East Power cells. Call them on 01933 224517 or on the web at [www.modeltech.co.uk](http://www.modeltech.co.uk)

Microtech for the EA motor and the Robitronic speedo call them on 0800 0837477 or on the web at [www.microtechracing.com](http://www.microtechracing.com)

RCI