

# ULTIMATE

## Two Wheel drive

**Lewis Eckett discovers the developments in two wheel drive**

It must have escaped a great number of people's notice that at the World 1/10th scale Off-Road Championship (which are probably taking place as you read this) there are in fact two titles at stake.

Two? I hear you ask. Are you sure?

Yes, I am quite sure, there will be TWO World Champions crowned at Romsey in August, one for the 4-wheel drive class, the other (if indeed the same driver does not win both) for the ability to control a 2-wheel drive car at speed around the dusty confines of the RORC circuit.

Way back before the 1985 Worlds the International Federation of Model Auto Racing (IFMAR) decided in its infinite wisdom to create two separate championships as outlined above. The decision was a good one simply because it meant that two-wheel drive as a racing class would not be summarily killed off as the technological advances in 4WD took hold. In America this is what has happened. Their 2WD racing scene is extremely popular because of the fact that it is kept entirely separate from the 4WD class.

In Britain however the absolute opposite is true. Here 4WD reigns supreme at club as well as national level. So blinkered have we become is shown by the fact that at a recent BRCA National meeting you would have been hard-pressed to find a single 2WD car in operation.

Why is this so?

The truth of the matter is that 2WD racing is predominantly cheaper than its rival, involves much more skill as a driver, takes less effort to maintain and in the sincere opinion of this writer is a hell of a lot more fun!

That still doesn't explain why everybody races 4WD. Perhaps it is because the cars are easier to drive on a wider variety of surfaces, or maybe that the technology involved is more interesting (all those chains and belts and...).

Whatever the reason, I for one will be looking at the World Championships to revitalise interest in 2WD racing. Anyone watching the likes of Jay Halsey thrashing their 'inferior' machinery around Romsey quicker than you, or I can, with the benefit of drive to all four wheels won't fail to be moved by the

skill and excitement on show.

Another reason why the Worlds will be interesting for us 2WD fans is the fact that the manufacturer's result is now wide open.

Six months ago I wouldn't even have contemplated the possibility of a non-Associated car winning the event. In fact up until now was the be-all and end-all of 2WD racing. This is now no longer the case as those nice people from Kyosho in Japan have come up with a car that lays down a firm challenge to the

supremacy of the California-based 'RC10'. This is a classic East/West confrontation and I for one am not going to bet against the possibility that Kyosho's new 'Ultima' can carry off the honours.

The reason for this view is that Kyosho are virtually alone amongst the big Japanese manufacturers in providing traditional mass-production R/C car kits that are also expressly designated as competition vehicles. The 'Optima' was a case in point and now Kyosho have taken

some of the lessons learned from their extremely successful 4WD car and incorporated them into the 'Ultima'.

### The main points

It is not my intention to bore you with the details of how I put it together — there are a perfectly good set of instructions for that plus of course Kyosho's excellent build reputation which will ensure that no-one will have a problem.

There are however quite a few design points which are well worthy of mention.

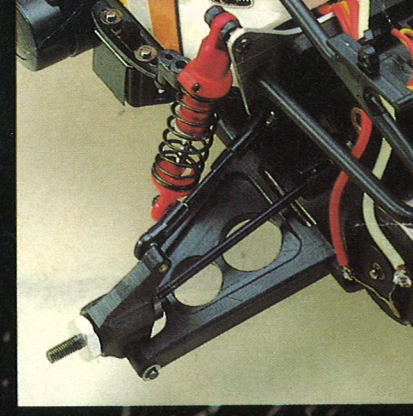
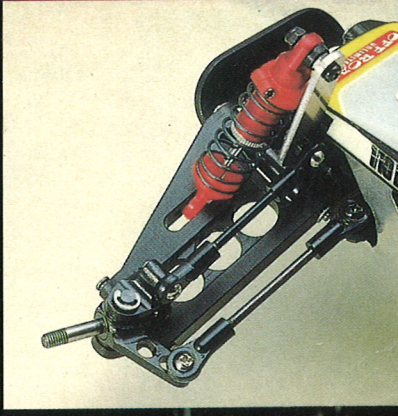
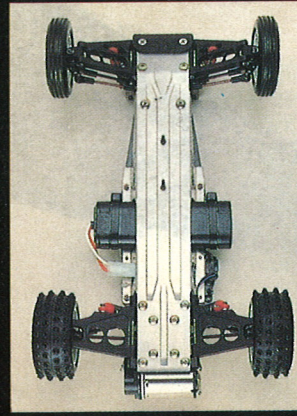
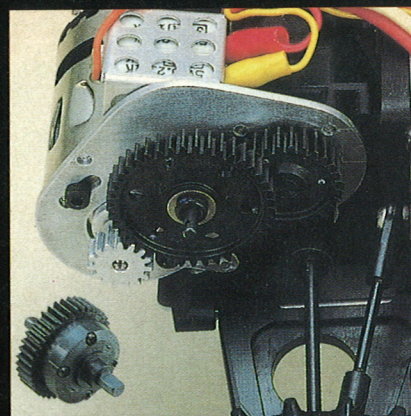
The first to catch my attention is the chassis. Trying to visualise the machine that stamps out these alloy 'U' channel chassis' complete with all the holes for 'Ni-Cads' and steering is simply mind-blowing. The alloy channel on its own is fairly rigid, but once the top plate is bolted into place the whole thing becomes extremely strong and resistant to twisting without the problems of excessive weight.

Another very neat feature is the moulded-in nut retainers in the top plate.

The rigidity of the chassis undoubtedly allows the suspension system to do its stuff. 'Ultima's' wishbones are, according to Kyosho, produced from 66EX nylon (whatever that is) and are exquisitely moulded again with the minimum amount of material necessary to ensure low weight with adequate strength. Fixed length upper arm links are a slightly annoying substitute for

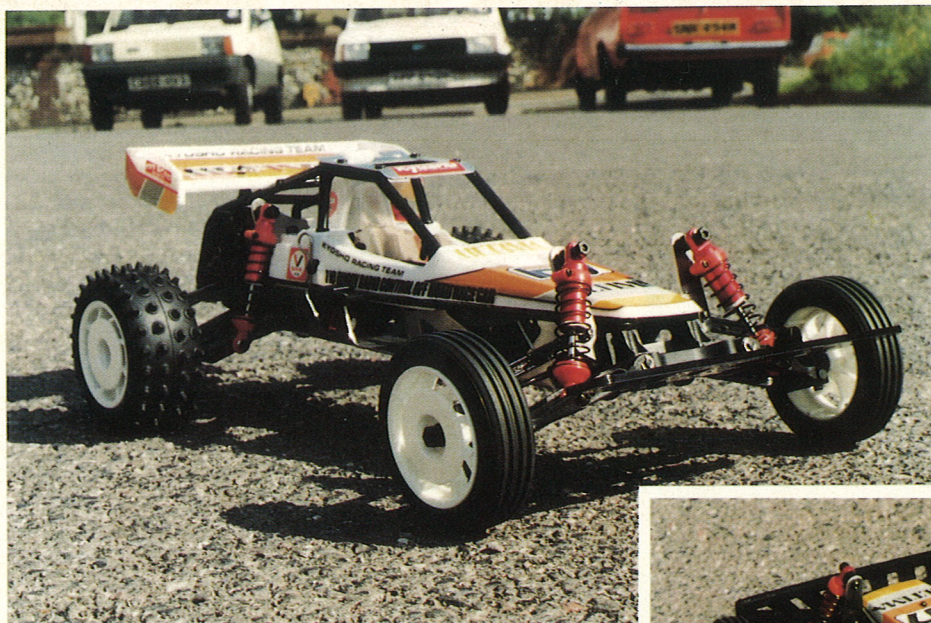
adjustable track-rods to alter camber angles. The fact that an 'Option House' package to do just that is available as an extra means that Kyosho thought it was a good idea, but couldn't include it without increasing the cost of the kit.

Kyosho claim that the 'Ultima' suspension will permit 40mm of travel using the kit standard oil-filled shock absorbers. These look similar to the units fitted to the 'Tomahawk' and 'Turbo Scorpion' by virtue of their red anodised damper barrels. As a



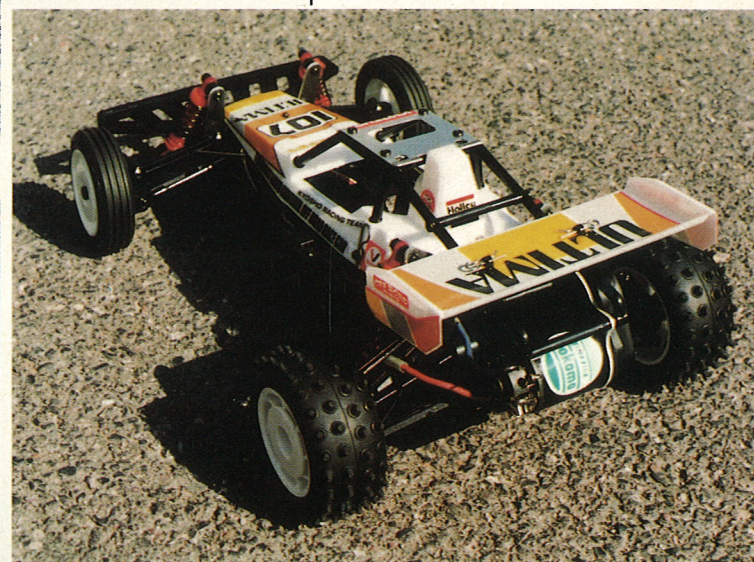
Above: the Kyosho 'Ultima' should revitalise interest in two wheel drive with its excellent good looks and handling.





Interestingly *Kyosho* supply two bumpers in the kit for reasons of the British rules. The one that I think most people will want to fit is the small curled up one which just covers the front of the chassis. The alternative is much wider, stretching out to the inside edge of the front wheels, and is BRCA legal.

Anti-roll bars usually seem to be a bit of an afterthought and the example fitted to the front of this car looks as though it might fall into this category. I for one couldn't discern any effect whatsoever, so fitting it isn't going to make any difference either way.



Lastly *Kyosho* with their recent issues seem to have been exploring further the newfound interest in 'aerodynamics' sadly this research has not crossed over to the 'Ultima' and what we have here is a pretty standard issue 2WD shell in the 'Scorpion' mould.



means of keeping the wheels in contact with the ground whilst absorbing the bumps in the track surface they are quite adequate, although not on a par with higher specification types now available. Needless to say the 'Option House' catalogue has the answer, but more of that at a later date. The wishbones carry four and three alternative damper fixing points respectively. Medium weight oil is also provided.

In traditional fashion the 'Ultima' has a rear-mounted motor driving through idler and layshaft gears to a geared differential motor pinion. Plastic gears unless produced from a suitably strong engineering plastic fill me with trepidation. Shock loads transmitted through the gearbox, particularly if the track is bumpy can strip the teeth of a gear very quickly and once one goes, they all go. The alternative is of course tougher gears or perhaps *Kyosho's* own slipping clutch

pinion gear. Only time will tell. Plain bearings are supplied throughout, even though the English instructions have a heavy black line across the mention that four are included in the kit. Cost again! Of course alternative ball-races are available and these would be the simplest, most effective tune-up parts available. I was fortunate in that the *Model Shop, Otley* was able to provide a complete set for £23.95 which is extremely good value for money.

### The finer points

Stylish is how *Kyosho* describe their new nylon spoked wheels and who are we to disagree? Honestly though, they are quite attractive (well I think so anyway) albeit a bit on the plain side. I wonder if you can dye them? New low profile tyres also figure with some very useful looking spiked rears coupled with the ubiquitous ribbed fronts.

Above: three views show the large ground clearance and stance of the 'Ultima'.

### Going, going, gone

When I first built one of the original 'Optimas' I could feel that the car sitting on the worktop in front of me would work. I have the same feeling with the 'Ultima' although I recognise that only with future testing will the real truth of the 'Ultima's' on-track performance be revealed. Rest assured these will be communicated to you in due course.

On first impressions however, it has to be said the 'Ultima' does very nicely displaying a fine degree of handling, and excellent speed potential due to its very low standard weight. On the scales the review car comes out at a shade over 3lb. 2oz. which is plenty light enough.

With development this car, I feel, could beat the 'RC10' and any other 2WD car you care to mention. Which is where the 'Option House' package comes in.

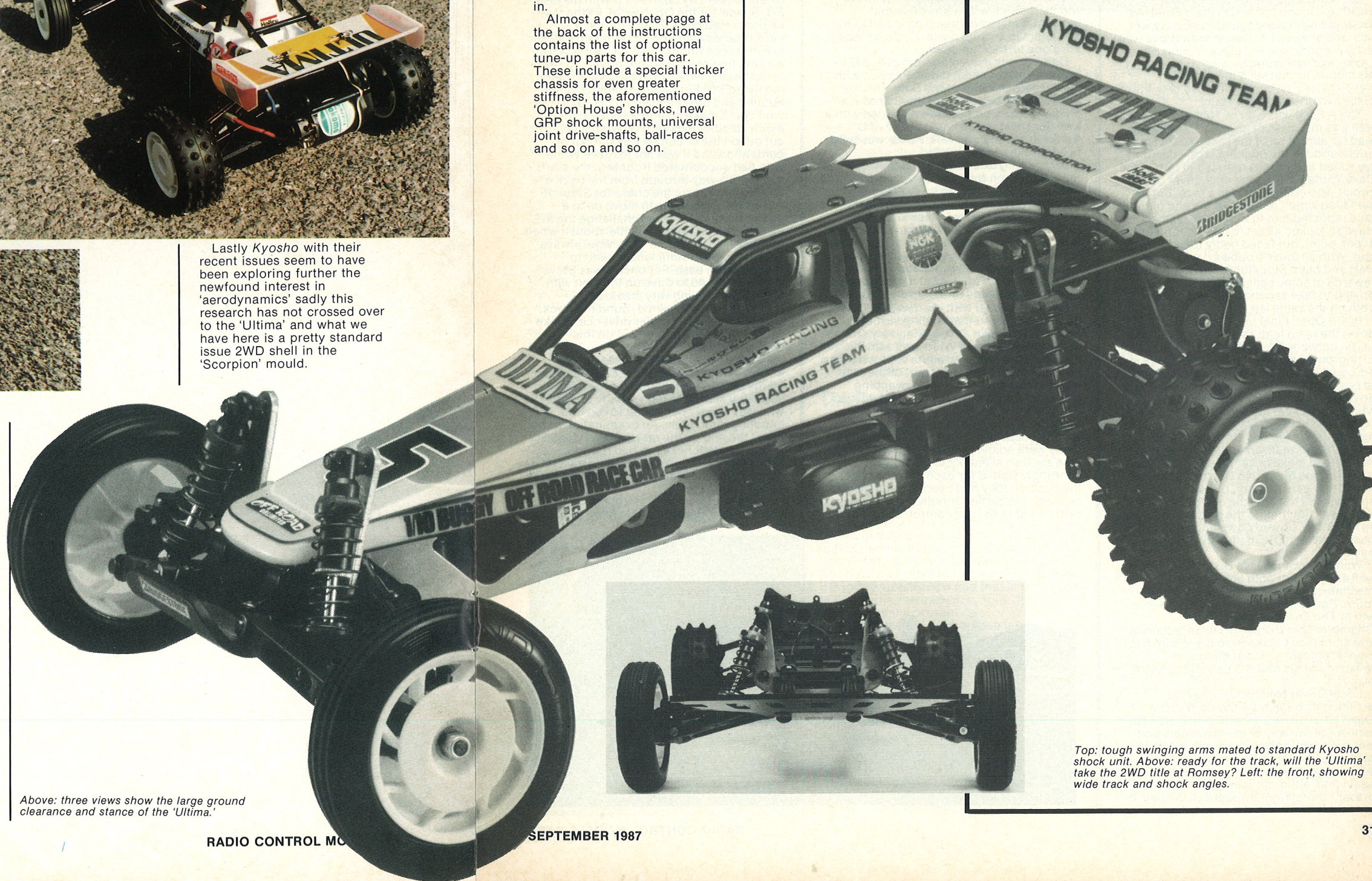
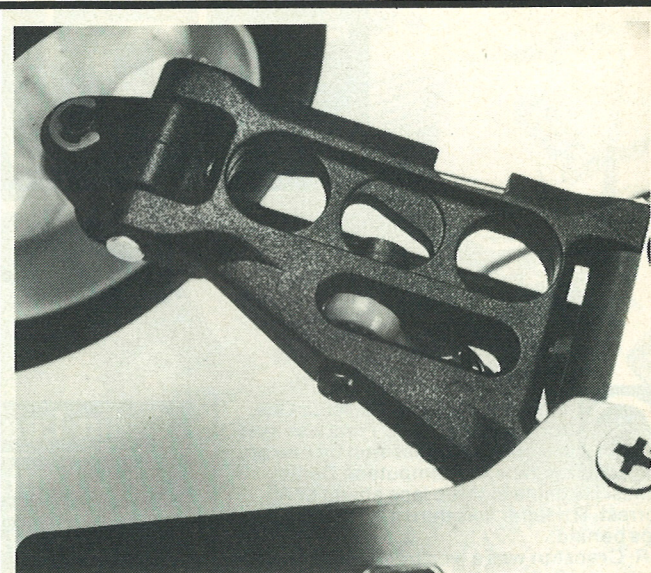
Almost a complete page at the back of the instructions contains the list of optional tune-up parts for this car. These include a special thicker chassis for even greater stiffness, the aforementioned 'Option House' shocks, new GRP shock mounts, universal joint drive-shafts, ball-races and so on and so on.

All this begs the question: what came first 'Option House' or the 'Ultima'. Also when will we be seeing the 'Turbo Ultima' kit? The truth of the matter is that if you went through only half of the list you would end up spending virtually as much as the kit cost in the first place. Fortunately you do not need to do that.

### The final point

Getting out on the track with my 'Ultima' is really something to look forward to, despite the possibility that getting back into 2WD is going to be a bit of a problem. Still the organiser of the local club shares my opinion and is keen to promote 2WD racing.

Maybe this year the BRCA will get round to forming a separate racing class for 2WD cars.



Top: tough swinging arms mated to standard *Kyosho* shock unit. Above: ready for the track, will the 'Ultima' take the 2WD title at Romsey? Left: the front, showing wide track and shock angles.