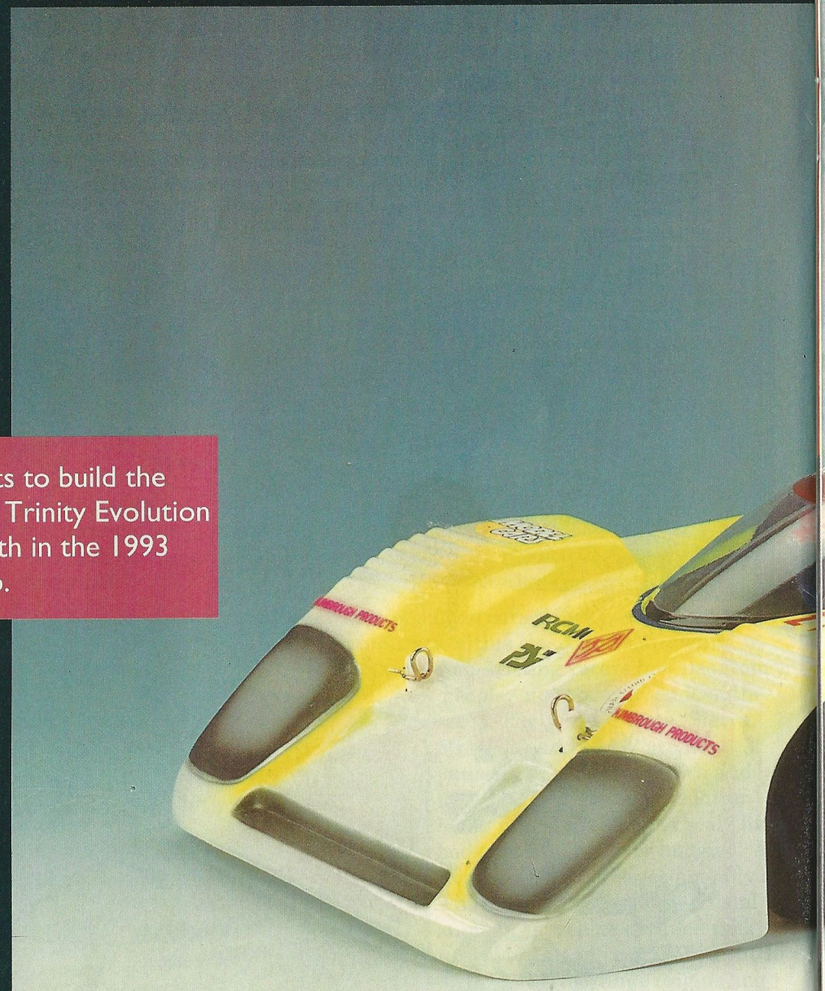
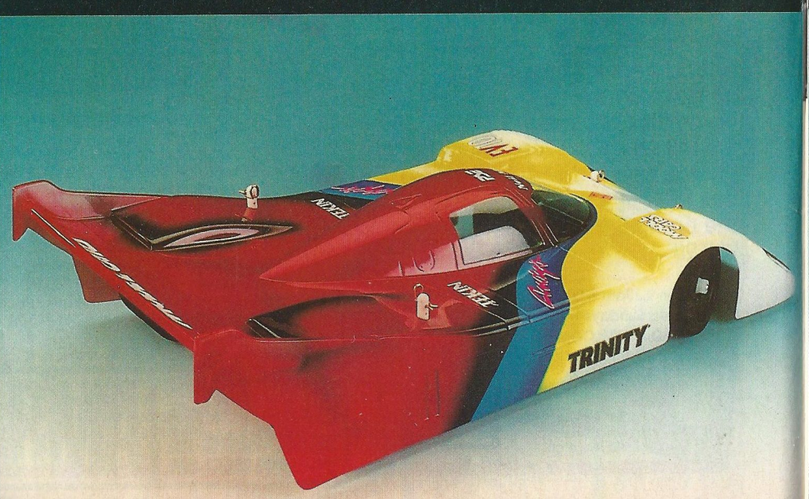
KIT REVIEW

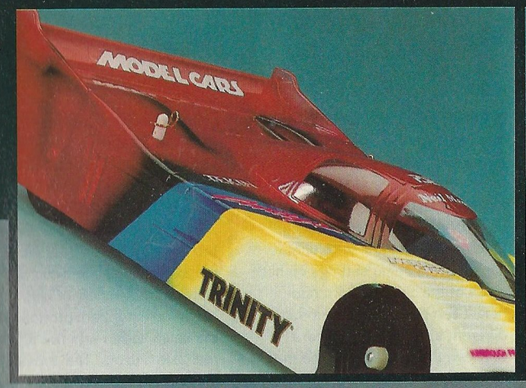
TRINITY'S THEORY

Last year, in the stifling heat of California, Trinity took on the best in the first IFMAR World Championship for 1/10th on-road cars – and they dominated it. Joel 'Magic' Johnson was their star driver; quickest throughout practice he only missed taking TQ by a fraction but made amends for this by winning all three A-final legs with consummate ease. His car was the one everyone wanted to look at, but a few tempting glimpses were all anyone could get. Away from the track, it spent its week hidden under a towel, guarded by big Ernie Provetti, the team boss no-one dare argue with. Trinity had obviously come up with something special.

Graham Creasey finally gets to build the World Championship winning Trinity Evolution 10 that he will compete with in the 1993 Championship.







Only now is their secret out. The Pro-10 that won the Worlds has arrived in Britain, and I for one couldn't wait to get my hands on one. The first thing that strikes you when you get your Evolution-10 is how small the box is. It is also covered in an enormous amount of trademarked gobbledegook; reactive caster suspension system, quasi-isotropic zero-flex pencil graphite, triad three-dimensional damping, low polar moment battery mounting system. Where does Trinity get them from? The instruction booklets provided are functional rather than outstanding. One contains the text, another the photographs and both are easy to follow. There are a few mistakes with the photos but Trinity points most of these out in the text and even has a bit of a laugh about them!

Chassis

Preparing the chassis is the first task, which means filing off the rough edges from this incredibly stiff piece of carbon fibre. Trinity recommend coating the outside edges of this with superglue to prevent the fibre from delaminating in the event of an accident, which could prove to be a good idea if you intend crashing a lot.

The front axle unit is also made of carbon fibre, the king pins sliding through two plastic bushings which have to be pushed into the plate. Don't try forcing these into position; I did and the plastic started to splay. File out the hole slightly instead and the bushings then clip firmly into place. Front suspension is provided by the traditional sliding king-pins, complete with springs and, in this case, silicone O-rings which Trinity claims 'fools' the car into thinking it has front shocks. The centre-point steering blocks slide onto the pins and with the assembly complete you are left with one of the smoothest 1/10th on-road front suspensions around.

Adjustment for caster, camber and toe-in is provided by the turnbuckles that support the front suspension. These can be twisted independently using an allen key, altering the angle at which each king-pin is held. Using this method makes it very difficult to accurately judge the angle at which the king-pin is supported, so spend plenty of time fiddling with these to ensure you have the same settings on both sides of the car. The front ride-height can be adjusted by inserting different sized plastic spacers between the chassis and the front axle unit.

'The rear-end of the car is uncannily similar to Clive Stockham's scratch built design that won the BRCA Pro-10 Championship last year.'

At the Back

The rear-end of the car is uncannily similar to Clive Stockham's scratch built design that won the BRCA Pro-10 championship last year. The rear pod pivots on a single aluminium ball suspended between two halves of a nylon ball socket. This is secured to a small graphite ball plate with four tiny screws and the assembly is then attached to the chassis. Above this goes a triangular shaped graphite top plate which provides the fixing points for the tri-shock rear suspension and the rear body posts.

The rear pod itself consists of two graphite plates that sandwich the axle blocks, one nylon and one aluminium. A variety of plastic ride height adjustors are provided giving the ability to run with five different rear axle heights. The pod is attached to the chassis pivot using a small screw and is then supported either side using threaded steel turnbuckles and ball sockets; much like the TRC/CC Lynx II. It is important to make sure that both of these rear links are set to the same length; a rear pod secured at an angle will lead to some very peculiar handling on the racetrack.

It was at this stage that I hit my first real problem with the car. The rear pod had plenty of movement in one direction and hardly any in the other. A detailed examination revealed that the kit had come supplied with a faulty chassis – all the holes had been drilled off-centre! This didn't stop the rest of the car being built up, but a replacement chassis had to be ordered before the car could be raced. This wasn't the only faulty component in the kit either. One of the rear shock absorbers had a shorter piston than the others, restricting the amount of movement it could give. On the EV10 box, Trinity boasts that 'unlike other kits, everything in this box is championship quality'; this certainly wasn't the case with my kit.

Rear damping is provided by a three small shock absorbers. Assembly of these can be a little tricky; avoid getting air bubbles in the oil and try to get the same amount of oil in all three shocks, otherwise they won't be the same length when you have finished. The three shockers snap into place on the ball joints fitted to the top chassis plate and the top rear pod plate, giving a very smooth rear suspension that can pivot in all directions.

Diff Time

The rear differential is simple but effective. A 12 ball, 120 tooth Magic spur gear is provided, the diff rings snapping neatly onto the spur to hold the balls in place. Unfortunately, the diff rings aren't pinned so it may be worth spending some time doing this. The spur gear slides onto the graphite rear axle and the ballraced aluminium diff hub is added, secured using a thrust cone and washer and a diff nut. Surprisingly there are no thrust races in the assembly. The result is a very free and lightweight differential that achieves its purpose with the minimal number of components.

Cell Mounts

With the rear axle inserted in the ballraced rear blocks, the left-hand wheel hub can be fitted. Note that there is a mistake with the photographs in the manual here. Two spacers have to be inserted before the hub is secured, otherwise you end up with an off-centre rear axle. A superb set of lightweight hubs equipped with glued and trued Green compound tyres are provided, and with these fitted you now have a Trinity EV10 rolling chassis.

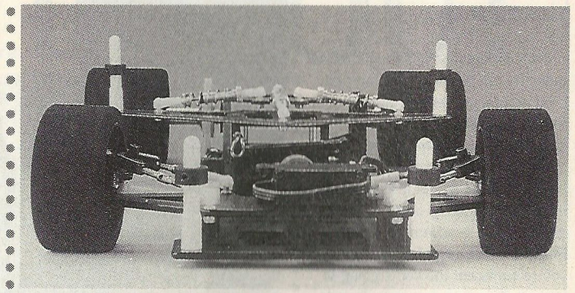
Perhaps the most revolutionary aspect of this car is the positioning of the cells; held stick-pack fashion down the middle of the car. This concept is hardly new, two-wheel drive buggies have been like this for years, but this is the first time this layout has found its way onto a 1/10th on-road car. The main advantage seems to be reduced roll round corners, which gives a better overall balance to the car.

The cells are supported front and rear by a couple of plastic cups, the front one having a small lid that will hold the cells in place once they have been squeezed into the car. Be warned; these plastic cups are not very strong, mine broke after just one race meeting! The EV10 box shows Joel Johnson's car using a stronger Losi battery cup which has two extra supporting screws. Alternatively, it should be possible to fit a Schumacher Cougar 2 unit instead.

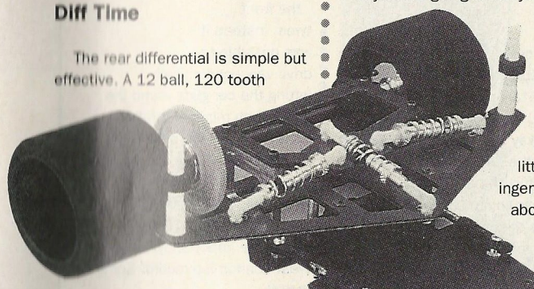
If you are going to run your cells without a link wire, then you have to be a little bit ingenious about where you mount your connectors. Joel Johnson didn't use connectors, so the manual goes on about soldering your speed controller wires directly to the cells – no thanks! The best way round the problem is to add a couple more cell tags that point in from the outer cells and mount your connectors on the end of these. Heatshrink these to prevent them shorting out and then you are back to plugging in wires; a much more civilised way to go racing.

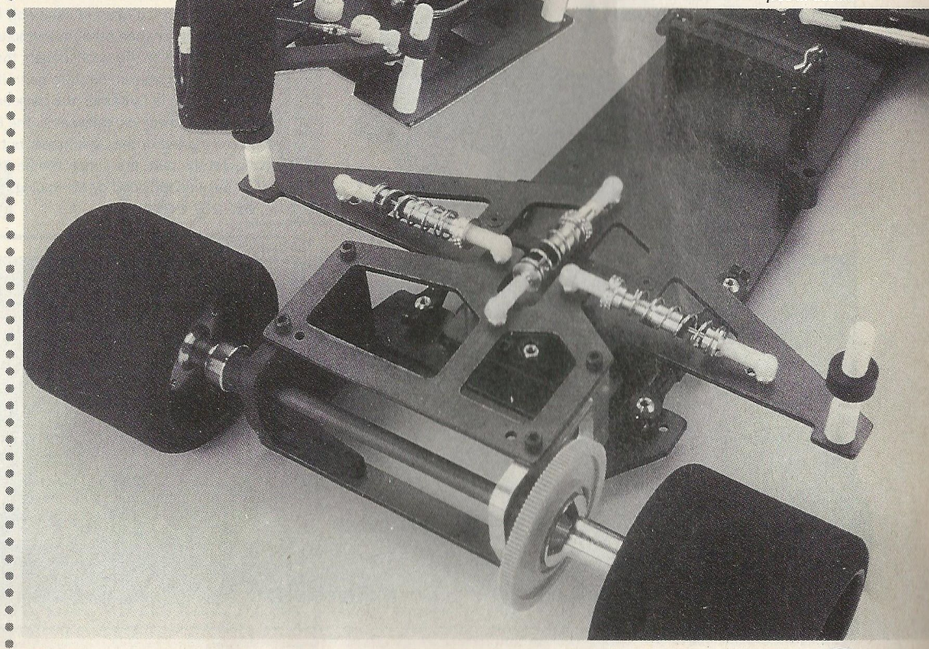
Space for the radio gear is strictly limited. At the front of the car, small, flat steering servos are the order of the day, the height of this deciding how low the bodyshell can be mounted. The receiver and speed controller can be mounted either side of the cells, although this arrangement does leave them rather exposed and prime candidates for damage in the event of a crash. The kit does not come with a bodyshell, a rear wing or even rear wing mounts, although holes are provided in the rear motor plate where you can fit them.

The setup tips in the booklet are excellent and tell you exactly what to alter on the EV10 to get it handling to your satisfaction. Follow these tips carefully and you will end up with a car that is ready to race. With everything in place, including a freshly sprayed PSE Mazda bodyshell, it was onto the scales for that all important weigh-in. 1140 grammes, 60 under the old weight limit. Just the business for this year's weightless BRCA championship!

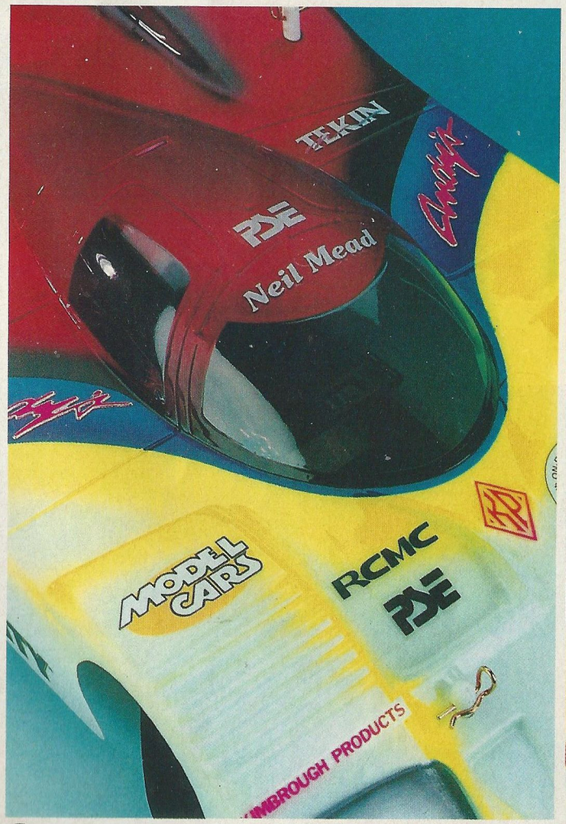


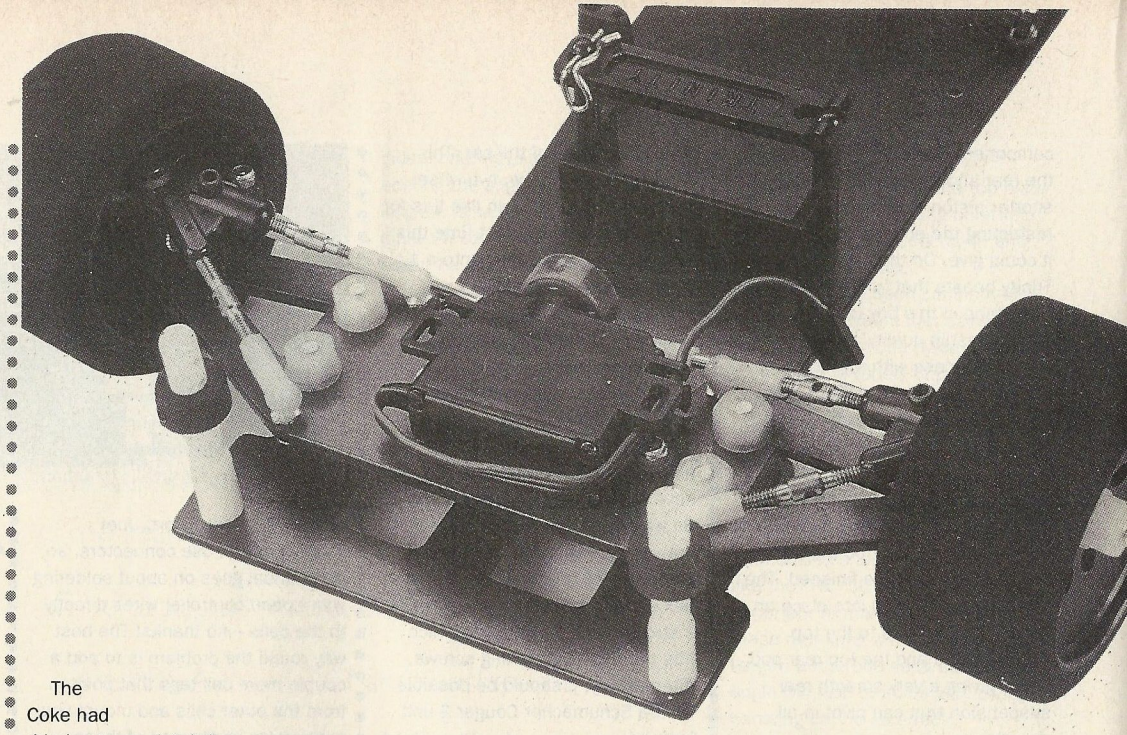
Trinity's front suspension although not a new idea is the first to be seen in Pro 10.





Super smooth rear end movement is controlled by three oil filled dampers. Differential is also ultra free in action.





First Time Out

Past experience has taught me to never try out a new car for the first time at a race meeting. Murphy's Racing Law dictates that if something can go wrong it will do – usually when you're in the middle of a good qualifying run! It's usually a much better idea to sort the gremlins out in private and only make a race appearance when you're confident the car is going to go well. This time, however, I made an exception.

The chosen venue was the West London Racing Centre and the event was the Pro-10 season warm-up, notable for being the first big tarmac meeting in Britain to be run with tyre additives. If there was one type of racing in which the Trinity would excel then this would be it.

The Evolution-10 turned its wheels for the first time in the morning practice session. The track was still wet in places where the Coca-Cola track additive hadn't dried so the first few laps were taken very carefully. However, as confidence grew, lap times started to tumble and by the end of my five minutes the car was flying.

Turn-in was incredible. Even the tiniest of steering movements seemed to produce an instant response from the car. It could be powered hard into the hairpins, one quick flick of the thumb propelling it firmly round the bend. It was only on the wet parts of the track that the back end could be made to break away, and even here it only snapped away a couple of times; most other drivers were spinning out every lap.

The Coke had dried out completely by the time qualifying started so now it was time to see what the EV10 could really do. I was second fastest after round one, despite ending the race with four wheel steering thanks to the rear link balls shaking loose (lesson number one – make sure you tighten everything thoroughly when you build the car!). A very quick run in round two was ruined when the spur gear suddenly stripped – my fault really as I was trying to run with a very fine mesh to gain some battery duration (lesson number two – don't go getting too cocky too soon!).

So, with Murphy's Law still in my mind, it was all down to the final round.

Surely nothing could go wrong this time? It didn't. Starting last on the staggered start meant having to fight my way past a lot of slower cars, but the Trinity made light work of the traffic, the amazing turn-in allowing me to nip inside other cars going into the corners. With the back-end following the front so precisely, no battery power was wasted controlling a slide or scrubbing the front tyres. Instead it was possible to drive very economically, letting the car glide round the bends with minimal throttle movement. As the other cars started to slow, the EV10 was still going strong, the SCRCs only letting go on the very last lap of the race. The result? A win; TQ for the day and, more importantly, a new West London lap record. Some debut!

Conclusion

This is Trinity's first attempt at a competition Pro-10 car and they still have some way to go on the quality side. Parts don't go together as well as they should do and I've since come across a number of cars that have had faulty components. If ease of assembly and quality components are what you are looking for then other manufacturers still have the lead.

Once built and on the track though, the car is a revelation. To say it handles well would be a gross understatement. It is phenomenal. When tyre additives are used, turn-in is fantastic, the back-end refuses to step out and it can handle all the power you throw at it. The Evolution-10 may not be the cheapest car on the market or the best made, but if winning races is important to you, then forget the rest. It's simply the best Pro-10 I have ever driven.

(Our car was provided by MJ Racing, the circuit car specialists – Tel: 091 267 9463)