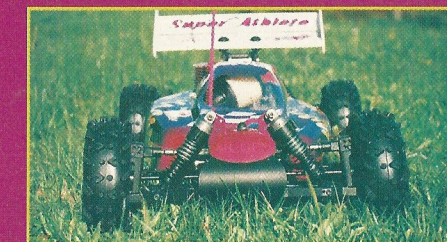


# The Mugen Super Athlete Review



covers to protect the actual shaft. At the other end of the wishbone the hub carrier top mounting now comes with 15 holes, yes 15 to give you infinite choice for mounting the top link. Mugen do supply in the kit, a separate set up sheet, a very useful item when the car is so adjustable. Both top arms now come with turnbuckle type adjusters which were optional in the original Athlete kit. At the rear of the car as standard equipment, Mugen supply you with an anti-roll bar but the front is optional, I would advise you to purchase one of these with your kit as it is a must.

## Should it flex??

With both front and rear now complete we come to the centre differential, the oils used for these items are front and centre diff 10,000 weight oil whereas the rear can use something thinner in the region of 2,000 and 3,000. The centre diff provides the drive to both front and rear and also the mounting for the brakes of the car, included in the kit are two fibreglass discs, these are the best. So many other kits supply plastic items which are useless, they simply melt, not these they will last forever, almost! The top mounting plate of the centre diff, differs from the original in its shape, it now has an extended front, from this is mounted an optional fifth shock absorber or solid stabiliser bar. The other end of which is bolted to the front gearbox housing. What is its purpose you are asking, according to Mugen and their team drivers the chassis now being 1 mm thinner it will flex, they believe this



problem, the actual head of the screw sits a little too high on the casing and when fitted into the gearbox housing it rubs on the side, to alleviate this problem take each bolt in turn and remove approximately .75 mm from the head either on a bench grinder, mind your fingers though, or with a file. Once that was done to all twelve bolts the diffs were perfect.

## Shocks & Shafts

The next step in the kit after building the gearboxes is mounting the shock tower, again these are new with more holes drilled to give more adjustment. From these hang, the new shocks, these are smooth bodied dark grey unit with spacers provided for adjustment. For added protection they are now mounted within the bottom wishbone, they also come with dust

In 1990 the Mugen Sport was born, its designer Koji Sanada took the car to Bangkok, and with it won the World Championships in 1992. With the Supersport he was almost certain of retaining the championship in Germany, but radio problems ended his chances, water having crept into his receiver.

Sanada went away and totally redesigned the car, and the Mugen Athlete was born, with this car the Mugen drivers out qualified all the other manufacturers at the 1994 World Championship, taking F.T.D. and having five Mugen Athletes in the top ten. Sanada still felt that there were areas for improvement so not content with the Athlete, Sanada went away and has now developed the new Mugen Super Athlete in time for a crack at the 1996 World Championships that are being held in the U.K.

The car is already performing extremely well in the U.K. and to date has recorded more F.T.D.s than any other car. I have run an Athlete for some time and after watching the new car over the extremely rough track at Slough it seemed to relish in all the roughness. I felt that it was time to review this new car as it was obviously a big improvement over the old model, a few words were had with the Mugen Team Manager, Dave Mackey, this was then followed by a phone call to the U.K. importer Ted Longshaw and low and behold a kit was on its way.

Outwardly the car differs very little from the previous Athlete, this was initially rather deceiving and many drivers felt that the car was

not dramatically different from the Athlete, well that's where they were wrong, for although the older bodyshell would fit the new car, the only other major item not to change is the radio plate and receiver box unit.

## Let's delve

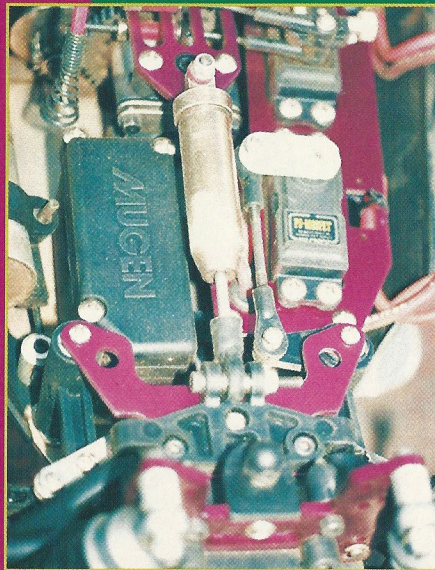
So let's delve into the hidden secret of the new car, firstly the chassis is 1 mm thinner than the older purple anodised unit plus it now has a kick up at the front. The reason for this is to aid the car's passage over the rough, an idea that has been common in 1/10 cars for some time but not so in 1/8.

Sanada has changed all the components which mount to the chassis, the three diffs are all cased in new gearbox housings. Again the diff is all new, as can be seen by the photo's, gone has the old straight cut contra rotating gear type diff, replaced by the more common bevel gear type unit. This has four small gears and two larger bevels all housed in a new alloy housing, the output shafts have a new O ring seal which provides a perfect seal and is considerably easier to install than the older one. Since the diffs are now of the bevel type a lighter grade silicone oil can be used to stiffen them. The fact that a lighter grade can be used also means that a wider range of oils are available. The two diff halves of the casing again are all new and are now held together by four cap head screws rather than just two on the earlier car. Now here lies a small

# A World Champion in the Making ???







**The "Flex-control" shock absorber.**

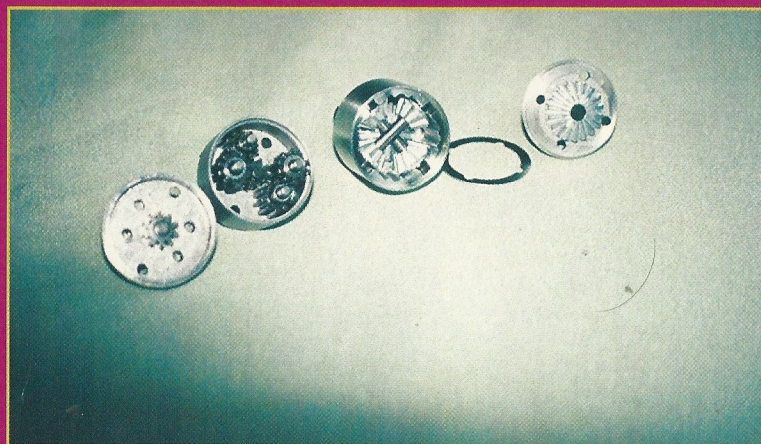
is good as the whole car acts like a shock absorber, but to stiffen its flex they mount the fifth shocker filling it with 3,000 weight oil. The shock that is used is a rear item, alternatively a solid bar can be fitted as a cheaper alternative.

To complete the rolling chassis all that is left is the fitting of driveshafts, the rears are the simple dogbone type, as are the two centre ones, the front are the usual U.J. items, again a little tip here. The grub screws that hold the shaft to the U.J. are a little too long, assemble the U.J. and shaft using a strong threadlock and then carefully grind the top of the grub screw down until flush with the U.J. if this is not done it will rub on the upright and wear a groove which will weaken it.

### Engine & Radio installation

With the rolling chassis complete all that remains is the installation of engine and radio gear. The choice of engine is purely personal. I have used Mondial engines almost from when I first started in 1/8 Rallycross, because they are very reliable, some drivers say they aren't quite as quick as a Nova Rossi or Tops, well I can assure you not many drivers get past me on the straight. Saying that, any engine will fit. The kit comes complete with flywheel and excellent three shoe clutch, also included is a manifold and silicone seal, these are designed to fit all engines using the wrap around spring to retain the manifold to the engine. The only item not included in the kit is a

**The new type diff gears. Compared to the old diff, old diff on left.**



**All bevel gears now.**

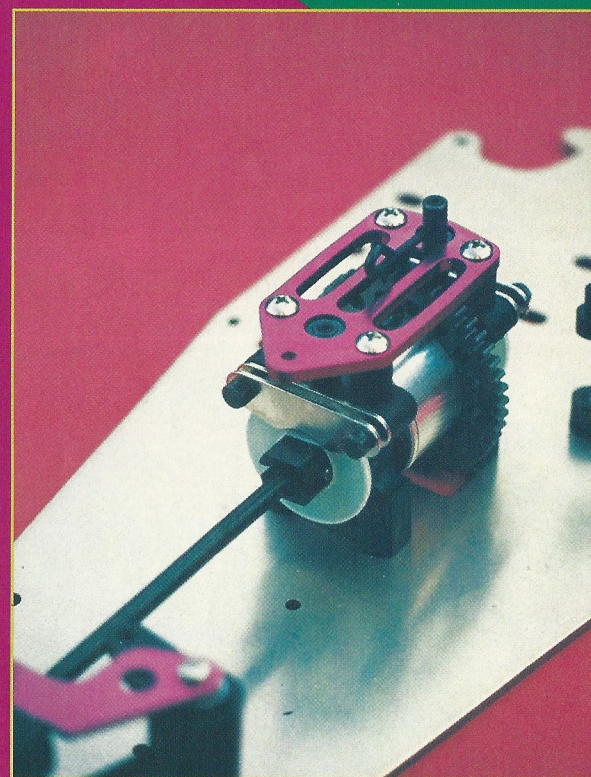
tuned pipe, these are available as a Mugen part from your local shop or direct from Ted Longshaw.

Radio gear, well any radio equipment will fit, the car will operate using the most basic of servos but not to its full potential, but what is really required are two uprated servos, these are not cheap. The choice is either KO 1003/1006 or 1001, Futaba 9402, Sanwa ERGZZ or the cheaper Hi-Tec Hi Torque. All these servos offer high torque which is what is needed when trying to halt a 60 mph projectile in the shortest possible distance or to wind on full lock when accelerating, on full power those front wheels desperately trying to straighten.

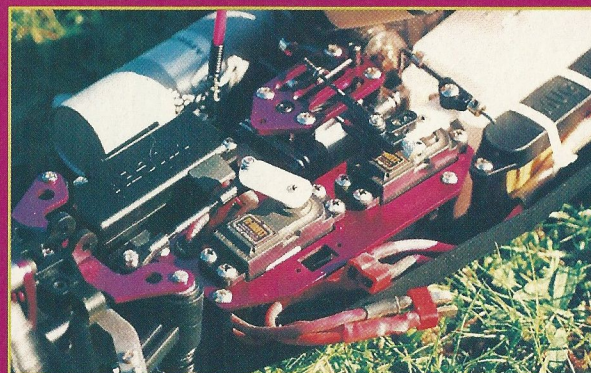
### Testing time

Once the body has been trimmed and sprayed, next stop was the track, after watching the new car at Slough I couldn't wait to try the car myself its first outing the British championship at Woburn Safari Park, an excellent event for the new car as all the little bugs could be sorted on the Saturday as this was a separate event to the more important meeting over the following two days.

The track was all grass and quite long at the start of the day,



**Everything just fits in. The receiver is mounted in the Mugen "box". Note the use of Deans plugs instead an on/off switch.**



so there was lots of grip, all to easy to roll the car, instantly there was a need to fit a front anti roll bar so the for the second run one was fitted. Also in the first run the steering jammed, odd I thought, a quick inspection and the problem was obvious, the ball joints that screw up through the centre drag link were just too long, these ball joints are common to other parts of the car so when fitted to the drag link you will need to take off the thread that protrudes through the nut. The second run and no problems whatsoever, the rest of the day was trouble free. The car performed very well and I was looking forward to Sunday.

### Is it better

Is the car an improvement on the older model, well it must be for on the Sunday I qualified eighth overall, in fact beating Justin Mackey, the one team driver, so could this be a comeback for me, who knows, seriously the car is better over the rough than the older car and the new transmission seems to let the car accelerate quicker out of the corners with no sign of any diffing out, so the oil must be doing its job. Yes I am very happy with the new car and hope to perform well with it, if your appetite has been whetted by this review then pop along to your local model shop or give Ted Longshaw a ring. If you would like to have a chat or look at my car then see me trackside, what I do know, is on seeing my performance, a past champion tried my car at Woburn, he liked it that much that one was in the post to him the following week, who it was you will have to wait and see.

For this review I must thank Ted Longshaw for supplying the car.

### Quick Spec

**4WD. Shaft Drive. Triple Gear Diffs. Fully Ballraced. U/J Front Driveshafts. Dog bone Rear Driveshafts.**

**Alloy Chassis. Flex- Control Radio Plate. Adjustable Disc Brakes.**

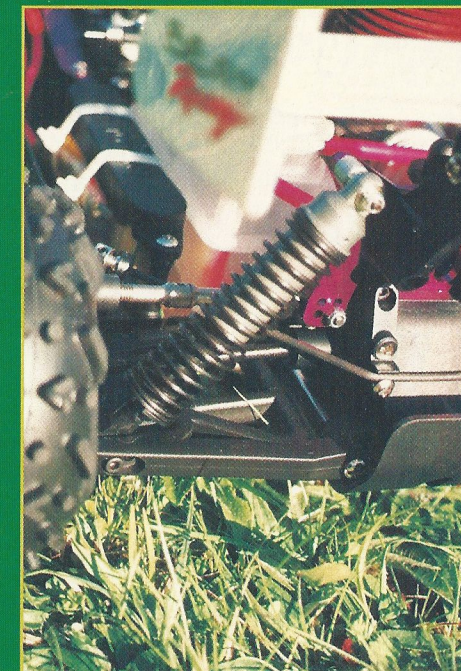
**Three Shoe Centrifugal Clutch. Independent Suspension. Top Link And Bottom Wishbone. Rear Anti-roll Bar. Oil Filled Coil/Over Shock Absorbers. Clip-in Ride Height Spacers. 6 Spoke Wheels. Mugen Green Dot Tyres.**

### The Tester Kit

**Engine: Mondial supplied by the U.K. Importers, Models in Motion.**

**Radio Transmitter: K.O. Esprit. Servos: KO1003 x 2 supplied by the Hereford Model Centre.**

**Fuel: Model Technics Duraglo 25%.**



**The new smooth body shock absorbers and rear anti-roll bar.**

**Mondial engine and pipe fit in perfectly. Exhaust silicone joiner and fuel tubing are included in the kit.**

