CIRCUIT METEOR

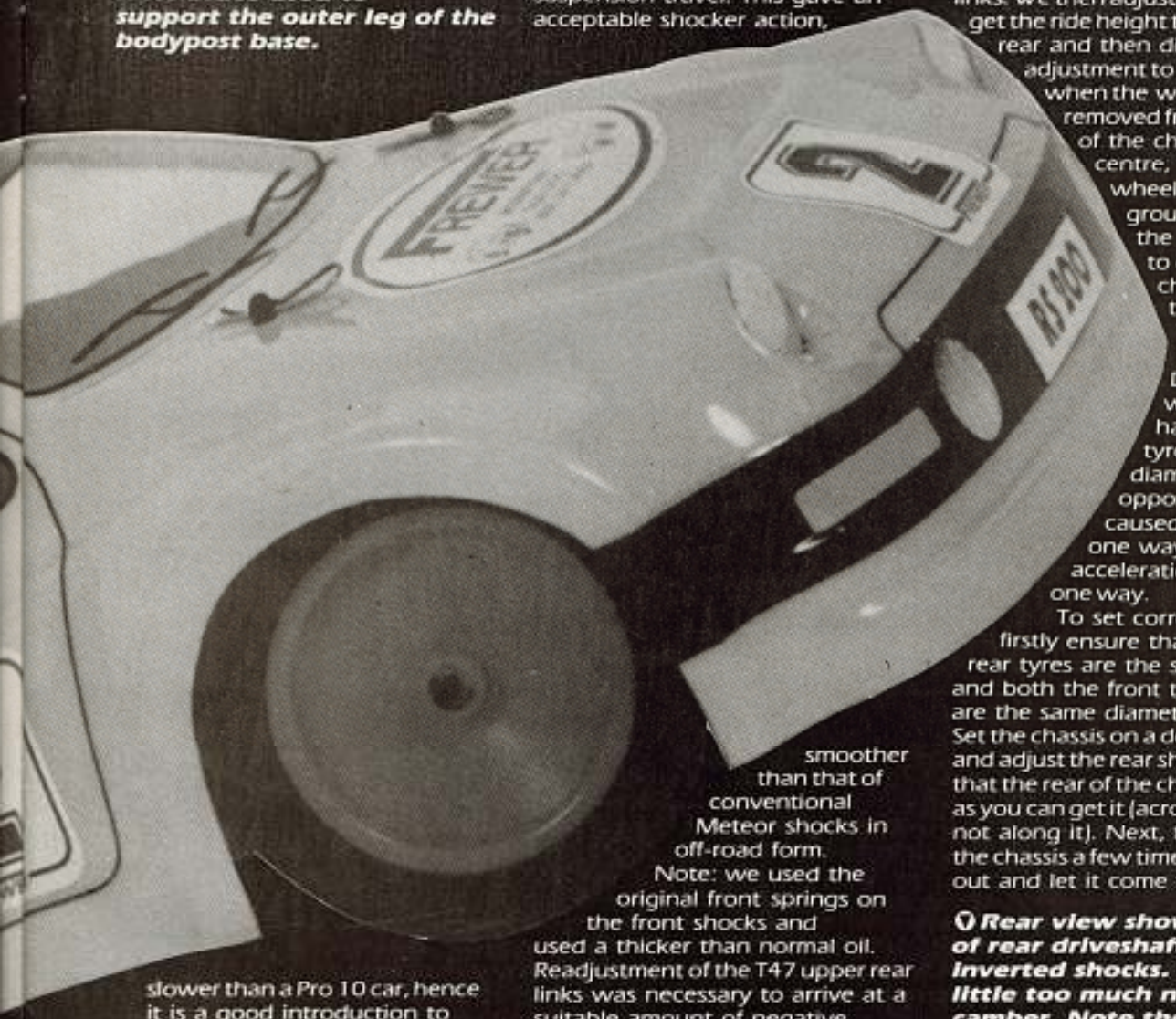
Saloon bodied buggies are big news in New Zealand. Carl Robinson describes how they do it DOWN UNDER

With the advent of 1/10 circuit racing on tarmac, be it 1/8 scale purpose-built tracks or supermarket car parks, an opportunity to race converted buggies with realistic saloon bodies exists, especially for those who do not wish to buy a Pro 10 car.

The vast number of saloon bodies now available are ideally suited to circuit racing because the limited amount of suspension movement means the bodyshell can be mounted very low on the chassis without the fear of tyres rubbing on the guards, making for very realistic racing that is bound to attract new people to the sport.

The advantages of 1/10 converted off roaders are:

1. There are plenty about. There is no doubt that 1/10 is the most popular type of R/C car racing, so any secondhand off-roader can be used and can be very competitive in perhaps a 2WD state.
2. They can be much smoother than Pro 10 cars, especially on some of the bumpier 1/8 tracks.
3. Extremely realistic in appearance, right down to body roll in the corners.
4. Very limited cost — enables many people to participate.
5. They don't travel that much



Front view showing locked up front suspension — this didn't seem to upset the handling. Also the front of the bodyshell was able to be put low on chassis without fear of the tyres rubbing on the guards.

Note the die cut Lexan cross brace used to support the outer leg of the bodypost base.

slower than a Pro 10 car, hence it is a good introduction to circuit car racing in general.

For the purposes of this article we chose the Mardave Meteor because of its simplicity and low cost. Also the MKI rims have no ridges, meaning we don't have to explain how to get rid of the ridges if you wanted to fit foam tyres...

Suspension Lowering and Damping

We used a Meteor LWB chassis, discarded the rear shocks and mounted the front shocks inverted where the rear shocks normally go. This had the effect of lowering the chassis and adjustment of the collars would dictate a ride height of around 5mm.

Because the shocks were mounted inversely, oil could not leak out at the threaded end but more importantly the piston inside the shock is constantly immersed in oil because of the limited suspension travel. This gave an acceptable shocker action, smoother than that of conventional Meteor shocks in off-road form.

Note: we used the original front springs on the front shocks and used a thicker than normal oil. Readjustment of the T47 upper rear links was necessary to arrive at a suitable amount of negative camber.

After studying a lot of Pro 10 cars we concluded that little if any suspension was needed at the front so we decided to do away with springs and shocks and replace them with solid links as shown in the diagram. We used a couple of 30mm x 3mm screws and chopped the heads off them to make the links. We then adjusted the links to get the ride height the same as the rear and then did some fine adjustment to ensure that when the weight was removed from the front of the chassis, dead centre, that both front wheels left the ground at exactly the same moment to ensure the chassis was tweak free. This is most important!

During our trials we accidentally had one front tyre of a smaller diameter than the opposite one. This caused the car to pull one way upon acceleration and spin out one way.

To set correctly, you must firstly ensure that both the rear tyres are the same diameter and both the front tyres are the same diameter.

Set the chassis on a dead flat surface and adjust the rear shock collars so that the rear of the chassis is as level as you can get it (across the chassis not along it). Next, tap the rear of the chassis a few times so it bottoms out and let it come to rest in its

Rear view showing angle of rear driveshafts and inverted shocks. Perhaps a little too much negative camber. Note the unobtrusive bodypost set-up.

Another Meteor front end this time with chopped down shock towers, aluminium cross brace and inboard mounted shocks. This fastidious owner wanted to get his body down lower than everybody else. Shown at right are the new Frewer pneumatic slicks which come complete with foam inners because the soft rubber barely supports the chassis. The weight of the foam is virtually immeasurable. These tyres will fit all the usual rims.

natural position. Gently lift the front of the chassis with a small instrument dead centre and check to see that both front tyres leave the ground at exactly the same moment. Adjust one of the links until this has been achieved. The front balljoints to use are the T20 balljoints which come in a pack of four.

A few spacers from the Meteor shocks will be necessary at the bottom of the links, through which the long self-tapping screw will pass. The links then fit straight on and are secured with a 3mm nut.

Note: we have not tried springs and shocks at the front but they will just fit. Also we feel you could use the rear shocks at the back if you wanted to. This would cause the rear suspension to droop considerably when the weight was taken off the chassis, but several drivers have done this with their Mid Optimas and it does not upset the handling at all.

Also, you may need to shorten the springs to get the ride height down. We used the front shocks purely because we had them and they fitted perfectly.

Wheels and Tyres

We thought we would try the car with semi-pneumatic rubber slicks first because these tyres pull straight on to the Meteor MkII rims with no fuss and bother about gluing and truing. This would suit the novice/standard motor brigade who are not familiar with foam and therefore could go and race instantly.

We also made up a set of foams. For the rear we used the convenient Meteor MkI rims because there are no ridges, and this made the gluing on very easy.

For the front we made up two sets. One set again used the Meteor MkI front rims with one ring per rim of JAP 40 rubber, the same as that used extensively in 1/8 scale. The other set was a combination front tyre consisting of common electric front rubber that we call "black" and the common "green" rubber. This was in an effort to get medium steering only as saloon bodies (especially blunt European types) give violent oversteer in comparison to, say, a group C body.

In order to fit the dual compound tyres on the narrow Meteor MkI rims we decided to widen the rims by cutting up another set of rims and adding the piece we wanted on to the existing rims to increase the width by about 5mm. (The low cost of the rims made it justifiable.)

Bodyshell and Bodypost Kit

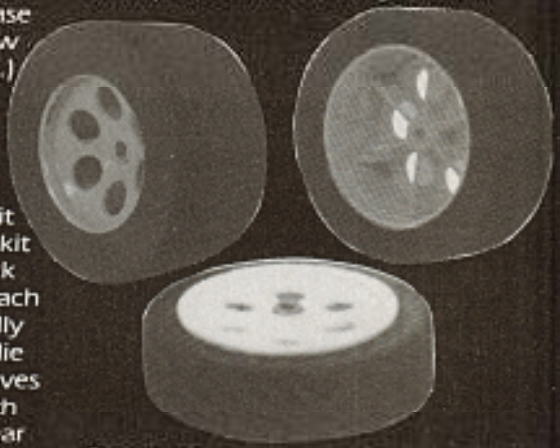
We mounted the bodypost kit first. We used a TMS bodypost kit which utilised the top of the shock absorber mounting point to attach the post base, which is additionally supported on the outer leg by a die cut polycarbonate plate. This gives low weight and does away with long heavy floppy posts. The rear mount on the Meteor is a bit different than most other cars due to the nature of the rear shock tower. However, a similar method is used.

The posts were set very roughly into the base and we proceeded to lower the clear bodyshell over the chassis. (It is important not to cut anything out of the body at this stage — nor should you paint it!) Adjust the posts to give the correct height of the body on the chassis by merely resting the body on the tips of the posts. Mark the positions for the post holes on the outside of the clear body with a felt pen before drilling out.

Remember, the body will be 1/4" lower after you cut the holes so ensure you allow for this! Also, ensure that the body is correctly lined up, ie the front wheels are exactly in the middle of the front wheelarches and the clearance between the inside of the body and the outside of the tyres is the same on both sides. The beauty of not cutting out the wheelarches initially is that the wheels and tyres on the chassis help to line up the body for you.

It is important to get the body down as low as possible to help the handling and to make it look realistic. An RS200 body, for example, gives plenty of room for wheel travel at the rear and the stiff front suspension means you can set the front of the body to give only about a 4mm clearance between the top of the tyre and the body wheelarch.

Finally, before chopping the posts down at the front, give thought to the fact that you may wish to try a different body at some stage, or when at the track you may feel the need to raise the post in the post base because the tyres might be rubbing on the body. Leave about 12mm at the bottom of the post to allow for adjustment

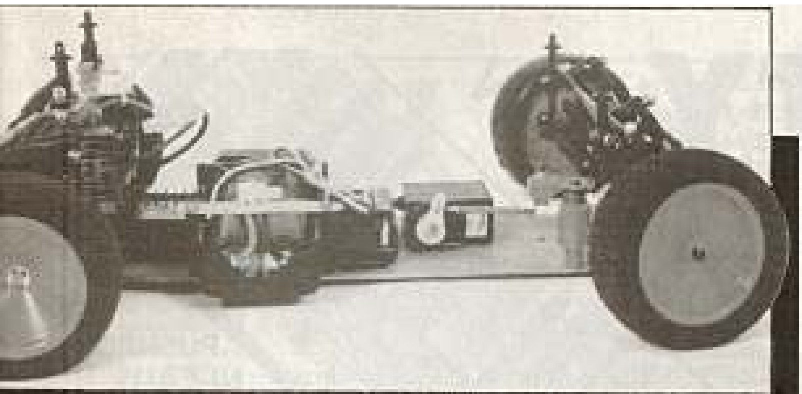


MkI Meteor rear rim with foam on left, Jap 40° foam on MkI rim (centre) and dual compound front tyre with widened MkI rim (right).

and possibly different bodies. You are committed to cut the posts at the rear to length (with the Meteor) but you should be able to purchase posts only, very cheaply.

Off to the Track

We proceeded to one of the purpose-built tarmac tracks in Christchurch. With the car in



Side on view illustrating bodypost set-up.

semi-pneumatic slick tyre form and a standard 540 motor it was very driveable and went for ages. The most noticeable features were the body roll through corners and the general all-round smoothness in comparison to Pro 10 cars and, of course, the realism was the biggest bonus.

The handling was perfectly balanced and no wing was necessary. The tyres gave off a hollow sound with hard cornering which I guess could be classed as realistic.

The next test was to try the foams. There was little noticeable difference in steering between the JAP 40s on the front and the dual compound fronts we spoke of earlier. Again, the balance was just right and a wing was not used. We then popped in a 15T double motor with the foams, again with no problems.

We reverted to the slicks with the modified motor and had trouble on the sweeper with the outside tyre dislodging itself from the groove. We superglued the outside only of the outside tyre and had no more trouble. Glueing was not necessary with the standard motor.

Parts Needed to Convert your Off-Road Racer

1 Bodyshell mounting kit
2 Pneumatic slicks
3 Greens (foam)
4 Meteor T20 balljoints
5 Meteor MkI front and rear rims
(Note: you can still use the MkII rims if you want to, but you will need to grind off the lips so as to fit the foam tyres on.)

Conclusions for possible classes

This is a great form of racing for those with cars rather than cigars. Many current off-road racers have a spare car lying around their back yard that can easily be converted in the same manner as we have done with the Meteor.

Most of the racing that we have witnessed has been 2WD but several drivers are actually using their 4WD cars such as the Mid Optima and running them in 2WD form. All were using dual compound fronts and greens or yellows on the back. Winter running is possible and is clean. Wings are not being used at all which surprises us, yet there is little sign of oversteer! Perhaps with greens all round you would get oversteer and then the wings may be used. However, once this is done the cars become unrealistic. ●