

# ASSOCIATED

## RC10L

### Rob Roy reviews the Associated answer to 1:10th on road

1/10 circuit racing has been in the UK for almost a year. In



- thereby increasing turning speed without compromising stability. The front suspension is a strengthened version of the

pivot balls - an original Associated design, now used by Parma, Kawada and Corally. The rear pod itself is built around a high grade alloy bottom plate - for heat dissipation. The motor mount is also of high grade alloy and is machined to be as light as possible. The other bulkhead on the rear pod is a lightweight nylon moulding. The top plate on the rear pod is either graphite or glassfibre - depending on your kit. The flexing of the rear pod is controlled in the roll plane by a friction damper, fore and aft movement is controlled by a hydraulic damper - this also preloads the T piece stopping the car sagging under the weight of the batteries. It is worth noting that the motor is mounted very centrally

America 1/10 is a few years old, and growing in popularity. The class is popular because of the large number of cars, which are both available and competitive, allowing individuality and freedom of choice. No single car has yet shown itself to be superior on British 1/8 scale circuits, with most of the major manufacturers' cars making the A finals at national meetings, with of course the exception of Associated who's car has not been available - until now.

The Associated RC10L has finally arrived in the UK. The car is based heavily on the design of the Double World Champion RC12L which placed 1st to 4th in the 1988 World Championships. The original prototype 10L took FTD at the 1988 ROAR Nationals - its first event. At the ROAR Regionals Associated entered ten prototype cars they took FTD and won both classes numerically dominating the A finals with seven cars in the modified and eight in the standard A final. So in America the 10L has been very successful, right from the drawing board. The question yet to be answered is how the RC10L will perform in British conditions.

#### The car

The RC10L, like the RC12L is available in the UK in two versions, Graphite and glassfibre. Chassis wise both cars are absolutely identical and can be expected to perform exactly the same. The chief difference of course is that the graphite version is lighter, stronger, fully ballraced and more expensive.

The glassfibre car can slowly be upgraded to the full graphite spec when time and pocket allow. This does not need to be done in a hurry, as the RC12L glassfibre car has always performed as well as graphite, but does require a slightly different set up. The design concept of the RC10L is as elegant as it is simple. The chassis is manufactured from Associated's own graphite it is very narrow, but does not flex excessively.

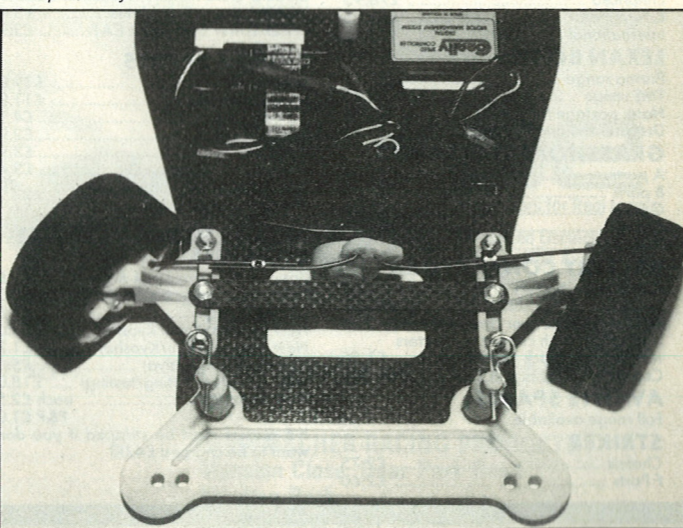
The chassis stiffness is probably due to the Kevlar crossweave, Kevlar being even stronger and stiffer than carbon fibre. The saddle pack cells are mounted very close to the centre line, keeping the polar moment of inertia low

discouraging tweaks. The rear of the car is finished off with a ballraced differential to which the rear wheels bolt. One apparent oversight is that whilst the diff hub is ballraced, the spur gear is not. This usually leads to excessive play in the spur gear which can cause 64 dp gears to strip - I will modify my car to take a ballrace. The Associated wheels are very light, and well engineered

12L front end. Suspension is achieved through sliding the kingpins in the suspension arms. Whilst this suspension is very simple it has proven to be very effective - four World Championships.

The rear suspension is of the fully floating type suspended on a T piece. The T piece pivots on two

The simple but effective RC10L suspension system and neat front bumper/body mount.



with webbing to make them stiff and true running.

#### The kit

All the 1/10 kits on the market are very full, this is very necessary in a new class where people cannot pinch bits off their old car. The RC10L is no exception, the kit is very complete requiring only the addition of electrics, a bodyshell and radio gear.

The RC10L is not only a complete kit, but is also very well presented. All the components are packaged in numbered assemblies, usually with any specific tools required - allen keys. The instruction manual is superb, all the assembly steps are clearly explained in words and photos.

Most assemblies are shown before and after with instructions printed with the photos. This all sounds very obvious, but is not found in many manufacturers' products. The instructions also include very useful information on handling, motors, batteries, charging and radio gear - this is very helpful for beginners and would do many experts no harm to read.

One final observation is that the components in this kit are of very high quality, showing great care in manufacture. All the parts fit superbly, requiring none of the 'preparation' most manufacturers expect from their customers. The countersinking is excellent with none of the protruding screwheads found on other cars. On asphalt a protruding screwhead is soon ground away making it impossible to remove, this is a problem RC10L drivers will never face.

#### Construction

The best advice I can give any RC10L builder is follow the instructions carefully and you will have no problems. Having said this there are few areas which deserve emphasis to ensure there is no confusion.

First take all the glass or carbon fibre components and gently rub over the ruled edges with some 400 grit wet and dry paper - this reduces the risk of them delaminating in an accident. You will notice some regularly spaced fluffy bits which won't go away, do not worry, these are the ends of the Kevlar which are almost

impossible to cut. The other work which is best done is gently bevelling the slots for the batteries, to help locate them in the chassis, it is also a good idea to round off the tape runs, or the sharp corners will cause the tape to break in a shunt. You are now ready to start building the car.

Start with the front end, assemble the suspension arms to the chassis along with the quarter inch ride height spacer.

Note that the ride height spacer has a flat side and a countersunk side, the countersunk side is fitted to the chassis. Fit the crossbrace then tighten the screws avoid overtightening as the nylon can be stripped by excessive force. Assemble the axles into the steering blocks then assemble the steering blocks, springs and kingpins into the suspension arms.

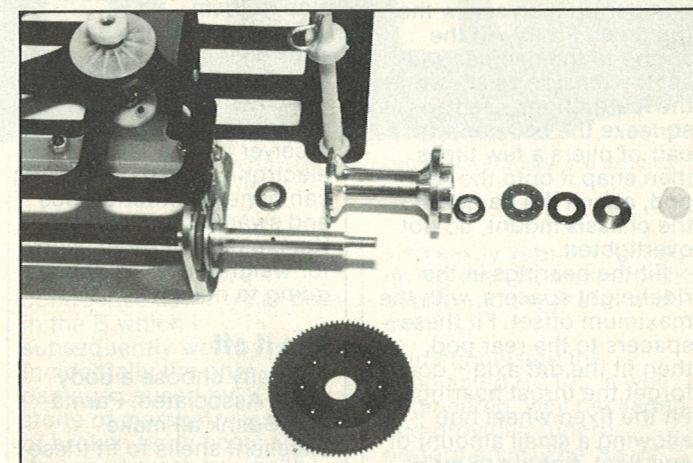
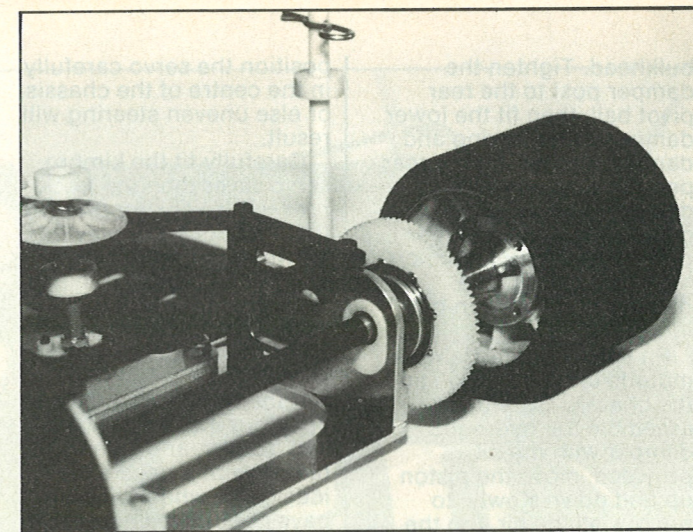
The suspension should operate smoothly without binding, there will be a small amount of play between the kingpin and the suspension arm.

Next assemble the pivot balls to the T piece, make sure that you do this the right way round. The long part of the T is on the left when the pivot ball is on top.

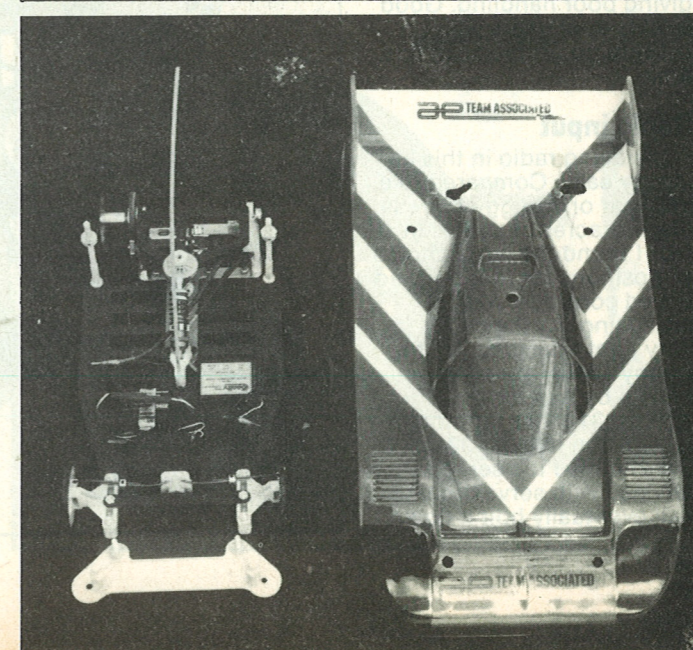
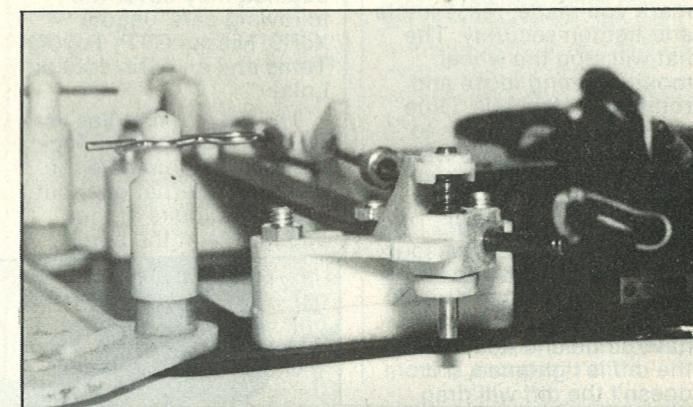
The pivot balls must be free moving, if they are not either polish the pivot balls with 600 and 1200 grit wet and dry paper, or loosen the pivot ball's screws until free movement is obtained. If you have to loosen the screws more than half a turn you will have to polish the pivot ball - on my car the balls were a perfect fit with no polishing required.

Mount the T piece to the chassis and tighten it down securely. Check that it rocks fully. This means that the T piece movement should only be restricted by the T piece itself touching the chassis. If the pivot ball socket screws touch the chassis before the T piece the suspension movement will be restricted. If this occurs fit a thin alloy washer between the pivot balls and the chassis - this is very important to the car's handling. On my car this was not necessary - but on my 12L the washers are required as the T piece is thicker.

The rear pod can now be assembled to the T piece, do not overtighten the screws in the nylon



Top: the assembled Associated diff. Above: all the parts! and eight ball diff is included. Below: neat and simple front end. Ready for the off!



bulkhead. Tighten the damper post to the rear pivot ball, then fit the lower damper collar, spring and damper washer. Fit the rear pod top plate, the upper damper washer, spring and collar. Adjust the damper pressure to a minimum, on high grip circuits the damper pressure can be increased.

Fit the hydraulic damper mounts to the rear pod and the chassis. Carefully assemble the hydraulic damper with the oil provided, move the piston up and down slowly, to remove all the air, top the damper up then screw the top down firmly. Fit the spring to the damper and set the tension as shown in the instructions. Gently squeeze the ball cup with a pair of pliers a few times then snap it onto the rear pod, attach the damper to the chassis mount, do not overtighten.

Fit the bearings in the rideheight spacers, with the maximum offset. Fit these spacers to the rear pod, then fit the diff axle - don't forget the thrust bearings. Fit the fixed wheel hub allowing a small amount of end float, tighten to mark the axle, then disassemble and file a small flat on the mark you made, reassemble and tighten securely. The flat will stop the wheel mount coming loose and rotating on the axle. Glue the diff thrust washers to the axle and diff hub with five minute epoxy, make sure they are accurately aligned, or a poor diff action will result. Fit a spur gear - 48 dp or 64 dp are best, and assemble the diff.

The spur gear should have some end float when the diff is tightened, if it doesn't the diff will drag giving poor handling. Good quality spur gears will present no problems in this area.

### Radio input

Installing radio in this car is very easy. Compared to a 1/12 car or a buggy there is literally acres of space. In fact I found the large choice of positions for receiver and speed controller almost confusing. As the car is very light I decided to fit a buggy 131SH servo, as shown by Associated.

The 131 looks far more in proportion than a 132 does.

I mounted the servo as advised with servo tape, but will eventually bolt it down,

position the servo carefully in the centre of the chassis, or else uneven steering will result.

Carefully fit the kimbro servo saver then the track rods - it is very important that there is some play between the servo saver and the track rods - this overcomes the fact that servos never centre exactly - the play helps the car run straight.

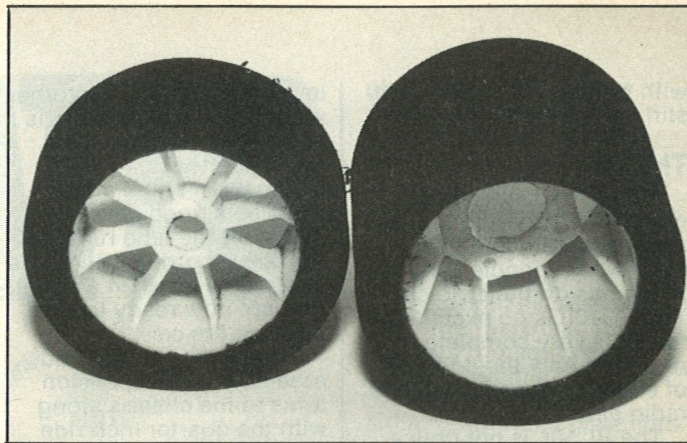
If the track rods are tight open out the holes in the servo saver, and steering blocks with a needle file - ideally the wheels should have about five degrees of slop in them.

The receiver and speed controller can be mounted anywhere on the chassis - a good tip is to keep the speedo well away from the receiver and aerial as electronic speed controllers can generate interference and swamp the receiver. Keep plenty of room spare for weight because you are going to need it!

### Top it off

Finally choose a body shell, Associated, Parma and Bolink all make excellent shells to fit these cars. The Associated shells are very light and highly detailed they cover the following cars, Jaguar XJR9, Nissan GTP, Toyota Toms and an open cockpit Lola.

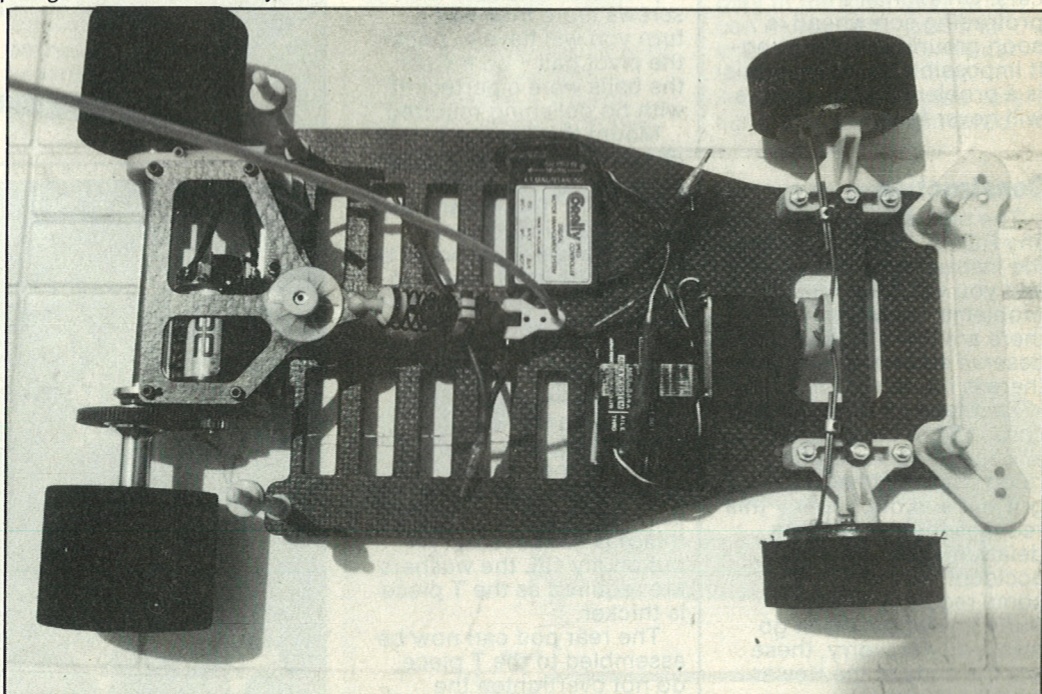
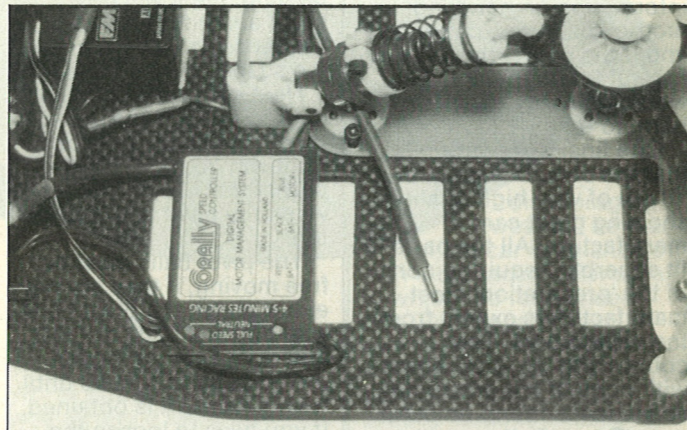
The Toyota handles very well - it was used by Rick Howarth to dominate the Austrian International but I prefer the looks of the Jaguar. Paint the body



carefully and spent a bit of time cutting it out, a badly cut out body makes the car look awful. Patiently try all the body posts and you will find the right one for your body, the bottom of the body should be parallel with the chassis. It is a good idea to strengthen the holes in the body by gluing (Evo-stik or hot weld glue) a lexan doubler underneath - use the material from the wheel arches.

Fit a motor in the car and you are ready to go racing. For 1/8 scale circuits motors of between 15 turns and 20 turns are suitable. This means a Reedy Pink dot, Yellow dot, Red dot, Gold dot or Silver star. For a Pink dot around 40mm rev is the ratio and 50mm rev for the Gold dot. This will of course vary according to the circuit. Gear ratio charts are available from SRM racing.

Top: the wheels and tyres glued and trued. Below: loads of room for the Ni-Cads. Bottom: simple chassis uses single RC10 damper.



### Setting up

If you have built the car, it's virtually set up. All you have to do is adjust the tweak, put the batteries in the car and put it on a flat surface. Work the suspension up and down by pressing on the damper post, then tighten the tweak adjusting screws. Flex the rear pod from side to side and check that the tweak adjusting screws do not lift off the chassis, if they do they need tightening. Now put the car back on the flat surface prod the damper post up and down to settle the suspension.

Place a screwdriver under the front of the chassis, exactly in the centre, lift the chassis up, if both the front wheels lift off and touch down simultaneously the car has no tweak. If one wheel lifts off before the other, the car is tweaked.

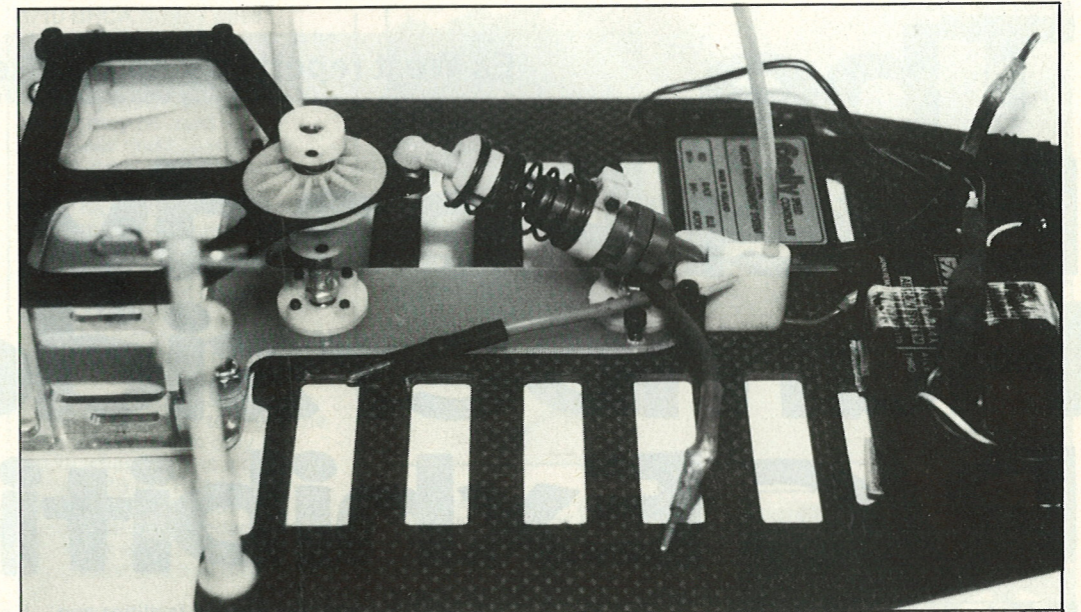
To detweak, loosen the tweak screw on the side of the car with the wheel still touching, tighten the tweak screw on the side with the wheel in the air. Adjust the screws 1/8 of a turn at a time settle the suspension and check for tweak.

Very few adjustments will be necessary to detweak the car. Detweak the car every meeting - it is a good idea to slacken off the tweak screws between meetings - check for tweaks before every run, especially after a big shunt.

### On the track

The first opportunity to run the car was at the Crystal Palace National. Practice on Saturday was attended in an effort to do some serious tyre testing whilst getting to grips with the car. The tyre testing showed TRC blue fronts and TRC or Associated green rears provided the best balance - this was true for most cars. On Saturday I had the only 10L but my SRM team mate David Gale managed to borrow Phil Davies' 10L, which he had part built. Phil is of course a Schumacher employee and Reedy sponsored, obviously Schumacher prefer him to drive a TRC which they import.

The 10L is a pleasure to drive once the right tyres are fitted. In my tyre testing I found that all but the hardest front tyres gave far too much turn in. Start off with hard front tyres and soft rears, you will find that the 10L has a lot of



steering, yet is very stable exiting corners.

When driving the 10L quite a few things become obvious. Firstly because the car has no caster it is very quick to turn in, and quite sensitive to steering corrections in a straight line.

In high speed corners the car handles very neutrally, so has to be steered smoothly through them, allowing pinpoint placement of line. In tight, slow corners, the car turns in very sharply - oversteering slightly, but once turned in the car gently understeers allowing the power to be fed in quickly without losing the back end. Through S bends and chicanes and 10L is great as it changes direction very quickly although this does mean you need to be smooth or else you will get the car sideways when turning in and lose time. I found that the 10L had to be run with a wing - but name a car that doesn't when you're not using additives. I also found that very little steering movement was required with the blue/green tyre combination but this did not result in slow cornering speeds.

The 10L is fun to drive and confidence inspiring, but is it competitive? At Crystal Palace there were two 10L's competing with UK's top drivers all running well sorted out PB's, Parmas, TRC's and Composite Crafts. I thought my car was very competitive and was in the top five after two rounds of qualifying, then an unfortunate incident with a

The neat and effective RC10 damper produces excellent ride and handling. Bottom: four bolt wheel fixing.

marshal's foot and a subsequent loss of confidence saw my car pole in the B which I subsequently won by a lap. Incidentally the only damage caused by 10 or 12 stone of marshal was a pair of broken body posts and a damaged receiver - so the 10L is also very strong.

Team SRM's David Gale underlined the quality of the 10L's handling prior to the meeting he had two five minute runs, yet he was instantly competitive. David was second fastest after the first round of heats. He narrowly squeezed in front of Glen Pegler in the second round, pulled clear in the third round and set a new track record for Crystal Palace, the first ever 17 lap score with a 1/10 car - and the only 17 so far seen. As if this was not enough David

also easily won the A final, giving the 10L a superb UK debut, and the first win of many!

In conclusion the Associated RC10L is well engineered, well packaged and provides superb performance. The 10L is being distributed in Britain by Demon Products, Ted Longshaw and SRM racing. A full range of accessories is also available and will be distributed by the same importers. Reedy Modifieds are also imported by Schumacher.

The RC10L is available now, and in a competitive and expanding market deserves serious consideration. All 10L owners will of course be able to ask the SRM team drivers for advice on tyres, motors and gear ratios.

