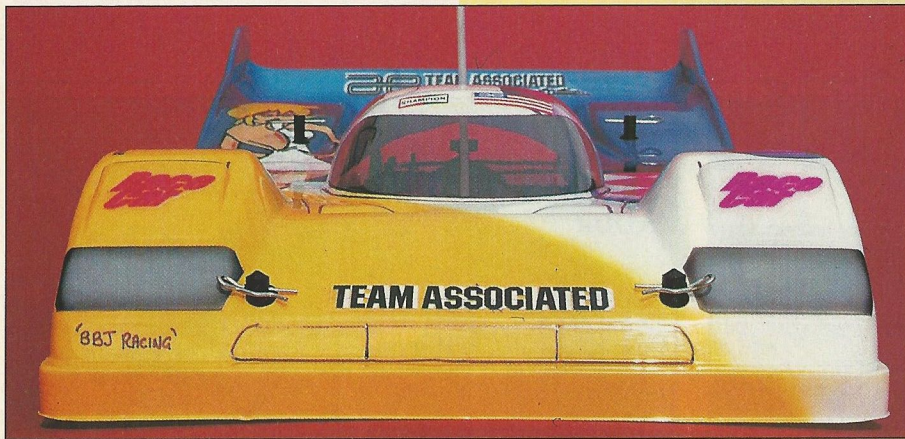


Associated 10LS

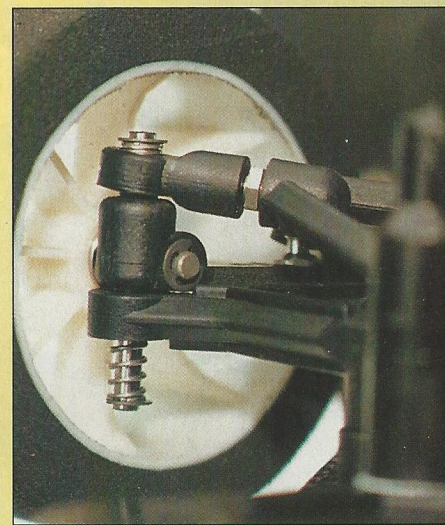


The latest version of America's most popular 1/10 On-Road car.

The Associated 10L has been incredibly popular since its introduction in 1988, not only in the USA but throughout the World. Why is this? Well, anyone who has run a 10L will tell you that it is not only easy to drive and maintain, but should a part be broken in a bad smash the replacement parts are usually readily available and at very reasonable prices too!

At the inaugural 1/10 On Road World Championships in Pomona, California, in 1992, Mike Blackstock took the TQ spot with his 10L, with seven more 10LS featuring in the A Final. Mike might not have won, but the sheer numbers of the car in the A Main obviously serve as an indication of the cars' competitiveness at the highest level of competition, so the very latest version, complete with the most recent development; the 'Dynamic Strut' front suspension set up, was obviously going to be a car worth looking at!

The new 'Dynamic Strut' front end has given the World Champs winning 12LW, now rechristened the 12LS, a new lease of life, improving the handling by leaps and bounds, so does it do the same for its' bigger brother? Robin Hammett's results in this year's British Pro 10 Championship with his updated 10L tend to suggest that the car has benefitted from the fitment of the new suspension system and bracing for the rear damper, so now is obviously the time for another look at Team Associated's perennial 1/10 circuit car.



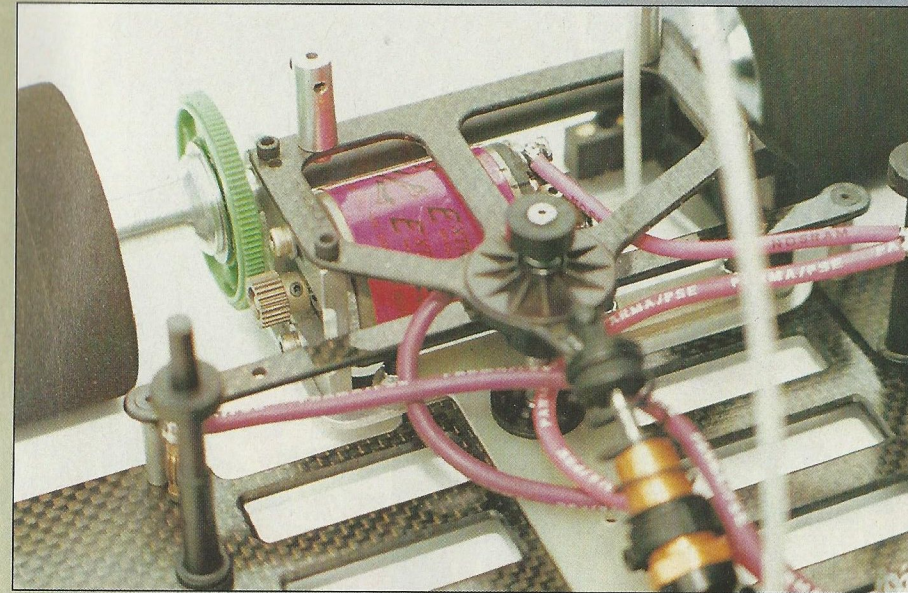
The Front End

The 'Dynamic Strut' suspension system's main feature is the ability to 'lose' some of the castor as the suspension is depressed, as it would when the suspension loads up when the car corners. The reduction in the castor angle endows the steering with more 'feel' and grip in mid corner, reducing power on understeer and making the car nicer to drive. Having then accelerated out of the corner, the castor angle then returns to normal to give stability down the straight. The new front end parts used in the 10LS kit are actually the same as that used for the 12LS reviewed in the April '93 issue of RRC. The basis of the 'Dynamic Strut' design is a moulded nylon, fixed lower wishbone, with a swivelling ball cup at the end through which the sliding king pin slides. The upper wishbone is pivoted at its inner end on either a



horizontal or 10° angled mount, the 10° mounting giving a reduction in the castor angle of 2° through the range of suspension movement. The two mounts are easily interchangeable by removing the upper wishbone pivot pin (without losing the tiny white nylon spacers!), and the two screws that clamp the upper mount to the lower mounting bolted to the chassis. The kingpin is pushed up through the lower ball cup, steering arm and upper wishbone, then spaced at the top with thin washers and retained with the usual Associated medium, the famous 'E' clip. The .22 spring is retained at the lower end of the king pin with yet another 'E' clip. The top wishbone is neatly moulded in two parts, joined by a

The 'Dynamic Strut' front end gives more feel to the steering.

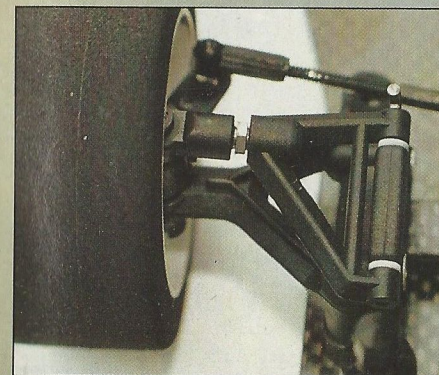


The rear brace really stiffens the chassis and damper post

best use of the new design, Associated have mounted the steering servo on nylon blocks that hold the servo at the optimum angle to reduce bumpsteer to a minimum.

The Chassis

The chassis plate has remained unchanged since the 10Ls introduction all those years ago, it only being found necessary to brace the aluminium damper post to bring the chassis up to scratch. Good damping is one of the key factors in achieving good handling and grip, regardless of the type of car or the surface being raced on, and with speeds as ever always on the increase, bracing of the damper post was an essential 'tweak'. It was quite possible to move the original post around by 2mm plus in some instances when thick damper goo was used, or if the springs were tightened up. The post is no longer made up

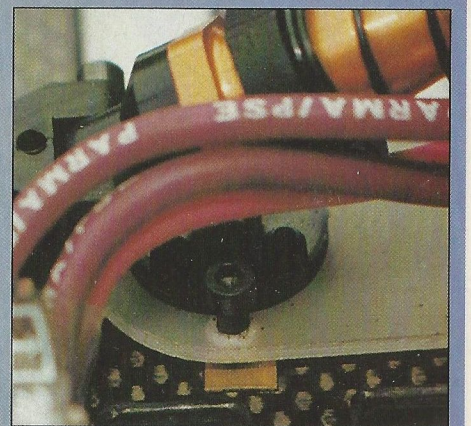


The white spacer washers are used to adjust the static castor.

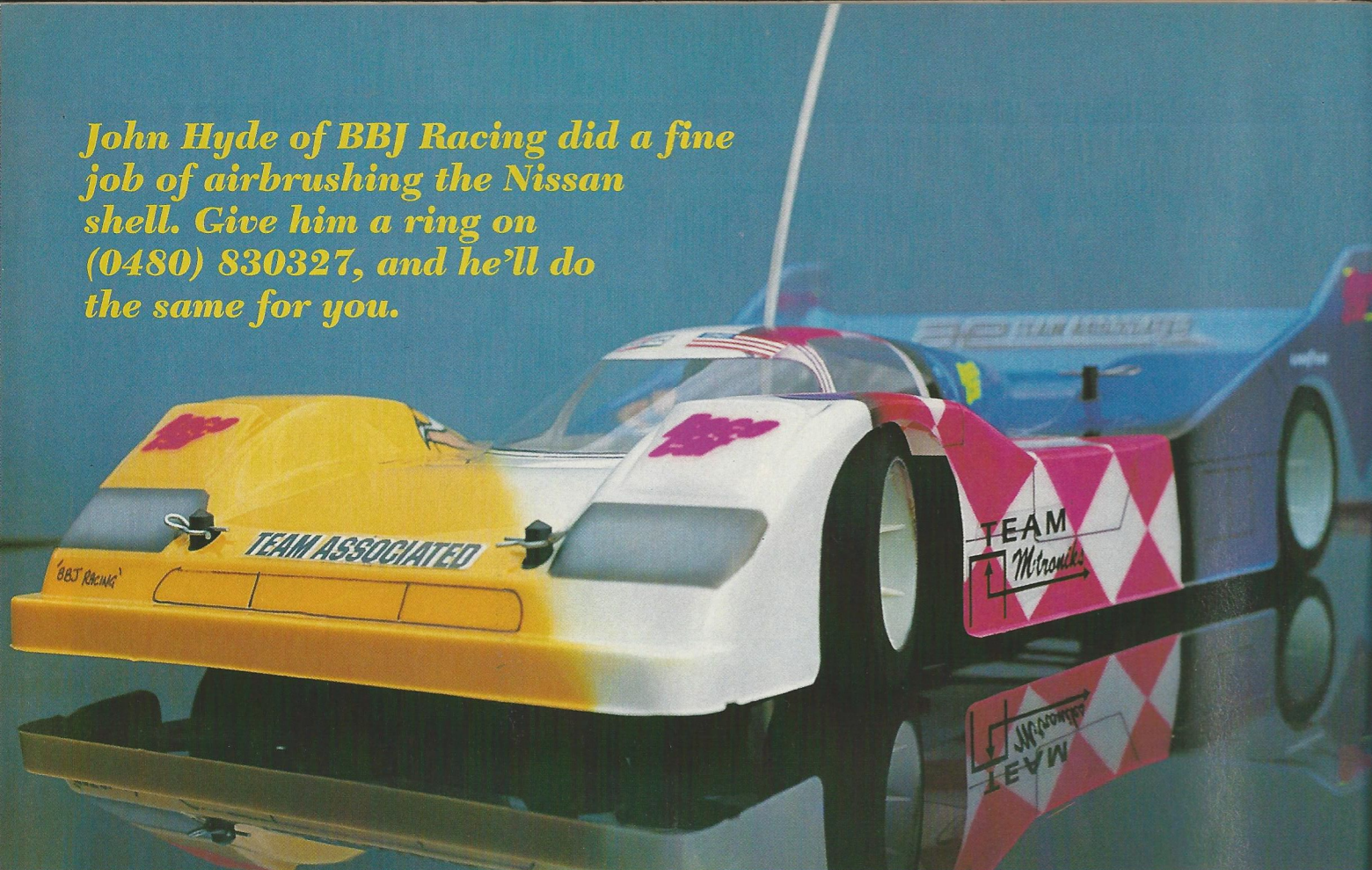
turnbuckle, to allow adjustment of the camber angle to be achieved easily with the spanner provided. When assembled, the front end is devoid of 'slop' and is quite rigid, the only play evident being in the actual bearings themselves.

The castor angle (the amount at which the king pins lean towards the back of the car) is adjusted by the small white nylon spacers that are fitted between the upper wishbone mount and the upper wishbone itself. It is usually found that one spacer in front of and one behind the upper mount is the ideal setting, this will give 4° of castor when the suspension is fully drooped, reducing to 2° at full depression. To make the

Brass strip was glued to the chassis to prevent damage from the 'tweak' screws.



John Hyde of BBJ Racing did a fine job of airbrushing the Nissan shell. Give him a ring on (0480) 830327, and he'll do the same for you.



The 10LS handles very well with the Dahm's Lola shell, purpose made to suit the car.

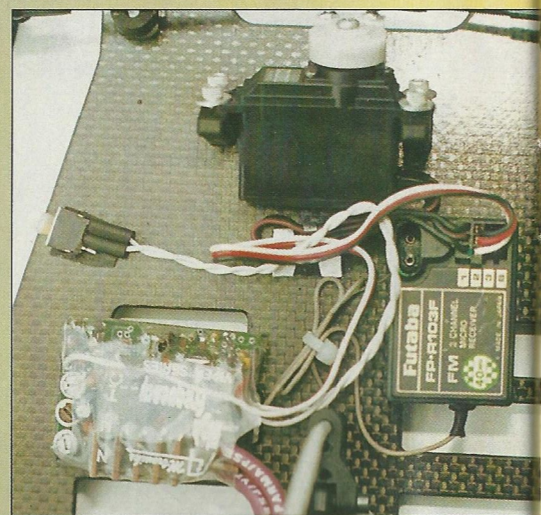


from one tube, but is now in two parts joined by a set screw through the graphite brace, the ends of which are supported by short aluminium posts situated at either side of the chassis. The end result of all this bracing is a very rigid feel to the chassis which should give good road holding, as it will let the suspension do the work as intended, rather than the chassis through flexing!

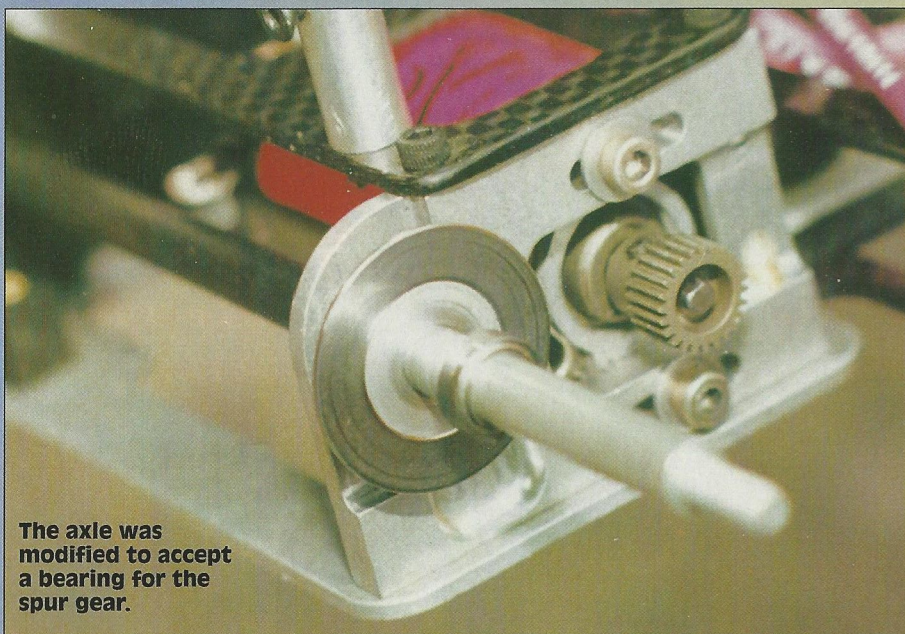
The Rear Power Pod

The rear pod is unchanged from that seen on the original car, and follows the now accepted traditional design of two uprights sandwiched between upper and lower plates. The 'sandwich' consists of an aluminium baseplate on which is mounted an alloy motor mounting plate for good heat dissipation qualities, and on the opposite

The high quality graphite can be seen clearly in this shot.



The axle was modified to accept a bearing for the spur gear.

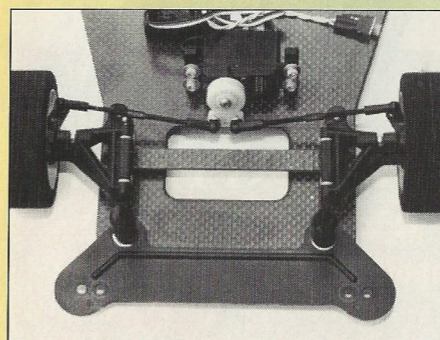


side of the pod a nylon moulding to carry the other axle bearing and support the graphite top plate upon which the damper discs bear. The fore/aft shock absorber also mounts to the front of the top plate on a small ball joint. The completed assembly is well proven and seemingly can only be improved upon by the fitment of the Associated finned motor mounting plate (available as an option part), to give even better heat sinking properties.

The Rear Axle and Differential

The axle is nicely made from carbon (graphite), as per the norm these days, with the 'business' end that carries the differential machined from alloy and sleeved over a turned down portion of the graphite axle. This form of construction should give a good life span providing the driver doesn't hit too many objects around the track! The differential itself is the usual 'ball in spur gear' design, with the type of thrust cone found in the 12LS now evident in the 1/10 kit. This is a feature that can give a very free running diff action, but I do wish that Associated would produce the axle assembly to cater for a ball race to be used in the centre of the spur gear. This is the one thing that I think that could be done to improve on the design, and has been commented on now by reviewers over several years, so please Team Associated, machine off the alloy shoulder to accept a ball race? I persuaded a friend of mine to do this little job, then fitted a 106 tooth PSE Rocket Sprocket (with bearing!), as the kit supplied 32d.p. spur was consigned to the bin!

The latest type of thrust cone bears against the inner race of the outer hub bearing, the old thrust race and washers design now superceded



Mounting the servo at an angle and taking the track rods from the bottom of the servo saver reduces bumpsteer.

by this much more efficient method of achieving the same effect using less in the way of parts which also results in a lighter rotating mass!

The Rear Suspension

The famous Tee piece design is very hard to improve upon when it comes to designing a light rear suspension with inherent roll stiffness that can also be adjusted for 'tweak'. To explain 'tweak' to those readers who aren't conversant with the term; if one of the rear tyres lifts off a flat surface before the other when the rear of the car is raised in the centre, this means that the tyre that lifts last will have more of the car's weight placed upon it, so the car will not only accelerate to one side, but will tend to 'understeer' in one direction and 'oversteer' to the other. For circuit racing it is usual practice to set up the rear end to be 'neutral', giving equal

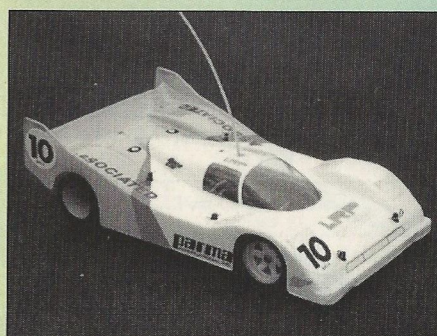
The 10LS on the grid at Halifax.

characteristics in both directions, but for oval racing the car will be deliberately set up to steer better in one direction than the other (usually to the left), as the car is only asked to do one thing well, and that is to turn left at as high a speed as possible! The Associated Tee piece design makes this very easy, as the small tweak screws that project through the Tee piece either side of the forward ball socket (these ball sockets house the ball joints upon which the Tee piece moves) bear on the top surface of the graphite chassis, and can be adjusted to give the rear end the required characteristics by altering their length, ie shortening the right hand screw and tightening the left hand screw will put more of the car's weight on the right hand rear wheel, thus making the car turn well to the left and badly to the right! To stop the ends of the tweak screws damaging the chassis, it is advised that a small piece of the servo, these strips can be seen in the photos.

The GRP Tee piece gives suspension in roll by flexing around the front ball socket (this area is made rigid by the tweak screws), with the damping for roll supplied by the friction damper, the pressure for the damping washers supplied by the springs above and below the washers. These are adjustable for pressure by moving the plastic retaining collets up or down the aluminium damper post, then tightening the small grub screws to keep them in the desired position. The Tee piece also gives suspension action by actually bending in the middle between the ball sockets, with the coil over oil filled shock absorber doing good work in keeping the rear pod under control. The shocker supplied with the new 10LS kit is of the latest type from Associated, with a redesigned piston produced in Teflon, with the oil seals contained in a cartridge that 'clicks' into place at the lower end of the shock. When filled with the 20 wt oil supplied, the new shocker gives a smooth, leak free action that should aid rear end traction.

The Build

The car was actually delivered to RRC's offices on the Friday preceding the Pro 10 National at Halifax, prompting the decision to get the car running and give it its Baptism at the race meeting on Sunday, so Friday evening was spent removing all the nylon moulded parts from their sprues, rubbing down all the graphite chassis parts and super gluing the edges to prevent them delaminating in heavy crashes, and then dyeing the white nylon components black. Mind you, as soon as I picked up the instruction manual on Saturday morning, one of the first things I saw was a recommendation not to dye the nylon parts, as the fits of the front suspension balls might be altered! However, the deed had been done, without doing any harm I might add, and I much prefer the look of the mouldings when they're dyed black.



The front end went together nicely as did the rest of the car. Literally every part fitted as it should, so actually building the rolling chassis was a matter of only an hour or so. The servo mounting holes had to be marked out and drilled, this was done by laying masking tape on the chassis, marking the centre line, then moving the servo, fitted with the servo saver and track rods to and fro until the correct position was found. The chassis was then marked with the position of the servo mounts and drilled. I would have preferred to have countersunk the holes to give a flush underside to the chassis, but at the time I couldn't find the tool so used the buttonhead screws supplied with the kit.

By the time that my friend had removed the shoulder from the axle to allow me to fit the bearing in the spur gear, I had sprayed an Associated Nissan shell (not supplied in the kit) and was ready to install the radio, but this had to wait until I had come home from a social engagement on Saturday evening, so it was 12.30 am by the time the radio installation was completed, so it would be a case of 'suck it and see' in the morning!

The manual suggests the use of standard size servos for the steering, but I used a Sanwa 141HS, as this had given good service in other cars and is really quite sufficient given the level of grip on most British tracks. The speed controller was an LRP LE 25AMS, with the receiver my trusty Futaba 40mhz unit. Motive power was supplied by my Extreme 15x6.

The Track Test

It could be said that taking a brand new car to a National meeting and expecting to do well is asking too much, but this is exactly what we did, and things didn't turn out too badly. On arrival at the track I was ready to go, having charged the cells in the car during the journey, so with ABC Red tyres on all round it was time to give the 10LS its initial run. After a tentative few laps to get the car trimmed correctly, it was immediately apparent that the 10LS was really very stable with an Associated Nissan shell and that the grip at Halifax was already starting to build. The car was being run with a small wing 'just in case', but this in fact proved unnecessary. After another practice run, I changed the tyres to PB Jap medium rears and PSE Redstar fronts, as if anything, the ABC Reds gave too much grip on the recently resurfaced Halifax track! I stayed with this tyre combination throughout qualifying, with the 10LS feeling very good, although too 'safe' for my liking. The eventual result was 3rd in the B Final, having changed motors to a Trinity 'Buzz Saw' 14dbl geared on 38 mm /rev using Parma Final Match SCRC-SP cells. It was only after the meeting had ended that I hit upon the tyre combination that really worked well (as usual!), this was PB Jap mediums on the rear with PB Gold rubber on the front.

Having driven the 10LS for some time now, and got used to it, I think that the adoption of the new front end and bracing of the damper really has done great things for the car, as the grip it generates is prodigious. It has become a much more 'driveable' car in its latest guise, and disregarding a bad day at Aldershot where interference badly affected the whole meeting for me, the 10LS has to date performed very well, working well with many types of bodysells from the short PSE Mazda to the Dahm's Lola.

Manufactured in the USA by Team Associated Electric, and imported and distributed in the U.K. by:- Ted Longshaw Model Cars, PO Box 89, Orpington, Kent. Tel: (0689) 855313.