

# Revision Rather Than Revelation

Associated RC10L2 Review  
World Champion 1996

Powering on at Ashby. Nissan body shell.



It's now some 12 months since Mike Swauger took his Ron Paris tended RC10L to the Pro Ten World Championship, giving Associated a minor problem along the way. For '96 Associated had built several prototypes of a smaller, true-scale

Pro-Ten car. This was the car used by most of the team, including our own Craig Drescher. The "true scale" car was very quick and there was very little difference in performance between the two cars, so which car would Associated release to a keen, and waiting world?

## Third Generation

Well after much musing, Associated have released the RC10L2, a sort of halfway house, using much of the current RC10L and all the good parts from the World's prototypes and several of the "mods" that Ron Paris built into Mike Swauger's winning car. So we get the best of everything.

There are two cars in the L2, an on road edition and an oval car, these are addition to the range, the standard or basic car and 10LS being still available.

## On Road Edition

The car we are reviewing is the on road edition. When you open the very colourful box, you are greeted by a host of carbon fibre, alloy and composite mouldings. But it does seem to be different from the 10L, I was very wrong wasn't I.

## It really is different

In fact, there are very few parts which haven't had some form of development. The main graphite chassis plate has had the battery slots slightly repositioned

and widened, giving a different weight distribution. But most of the changes centre around the rear suspension and motor pod. A totally new symmetrical "T" bar replaces the old asymmetrical one, also a carbon brace is added to the pivot points on the "T" bar. For the record, the "T" bar is the main suspension "spring" for the rear end, and is made of glass fibre, some 0.075" thick. From the rear of the two pivot points a relocated and braced, "roll damper" post is located. This is now made from carbon fibre. Within the confines of the "roll damper" new roll stops are included. These operate like a very stiff rear anti-roll bar, making the car change direction better, and of course giving more "steering".

Now we come to the rear "pod". This is totally new, starting on the left, a composite space frame bulkhead, replaces the old solid one. This allows better cooling and motor access, which makes soldering the motor wires much easier. The alloy motor mount lowers the motor in the pod for better handling, still using the "cam" system for altering the ride height. An alloy bottom plate joins the two bulkheads together, adding strength and also acts as a heatsink. Finally a cutaway carbon plate tops the pod off.

That's about it for the rear, expect for a change to the length of the shaft for the internal seal shock and the change to the harder silver spring on the "bump" damper.

At the front the major change comes from a change of material. The same "Dynamic Strut" front suspension of the 10L is kept, but now the wishbones and their mounts are moulded from a new high tech composite material, which is much, much, stiffer. Gone is all the flex the older cars used to suffer from. Also a carbon brace runs from both the towers which the suspension mounts on. So there we are, although very similar in layout to the old 10L the L2 is a very different animal.

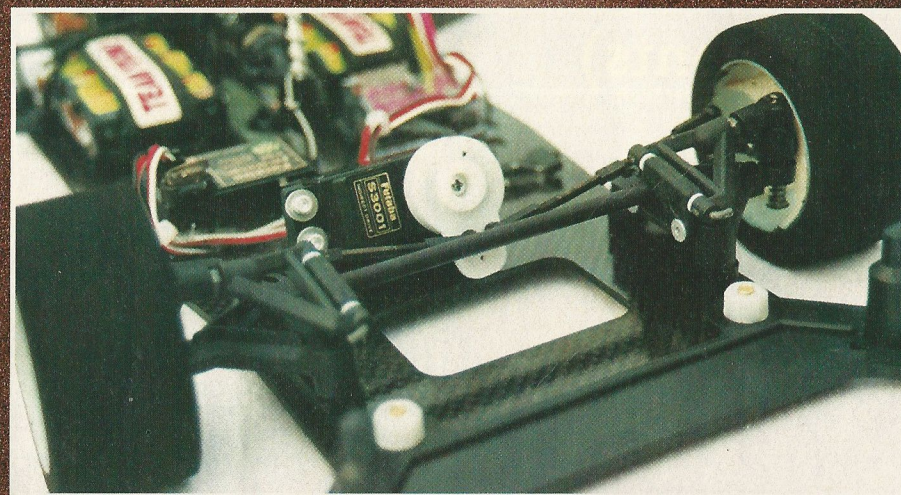
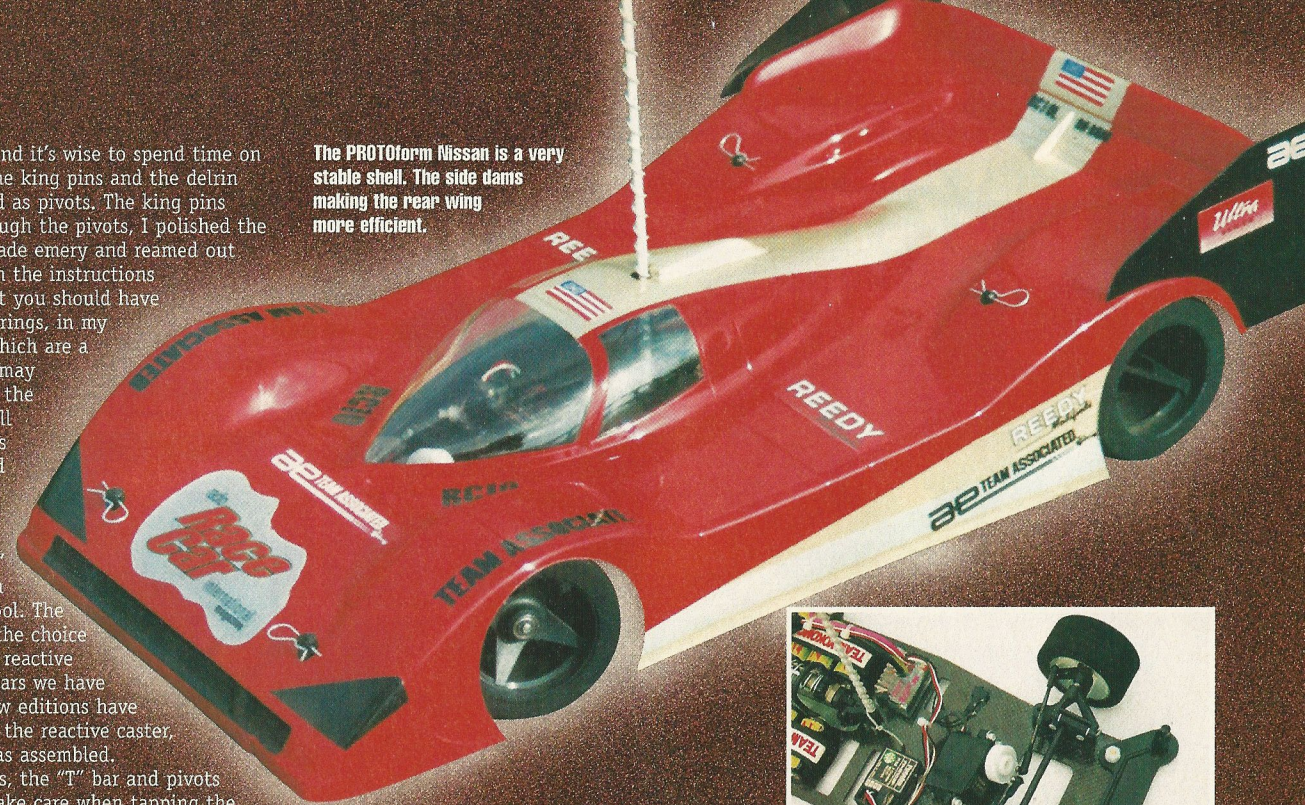
## How did it build?

As with all the Pro Ten cars RRC has built recently, the chassis prep was first, filing the battery slots and radiusing the edges of the plates, then sealing them with this super glue. Do remember to do all eight cell cut out if you intend to change the weight distribution. Also radius the parts of the chassis that the cell tape, that is used to trap the cells in, will run on.

With the front end it's wise to spend time on the fit between the king pins and the delrin balls that are used as pivots. The king pins have to slide through the pivots, I polished the pins with 1200 grade emery and reamed out the delrin balls. In the instructions Associated suggest you should have the .020" front springs, in my kit I had .022", which are a little harder, this may not be so with all the kits. Also I used all the king pin shims that were supplied in the kit (5), these can be used to change the amount of "droop" you can tune in, a valuable tuning tool. The L2 does give you the choice of reactive or non reactive caster, as all the cars we have run in the past few editions have handled well with the reactive caster, this was how it was assembled.

Moving rearwards, the "T" bar and pivots fell together, do take care when tapping the

The PROTOform Nissan is a very stable shell. The side dams making the rear wing more efficient.



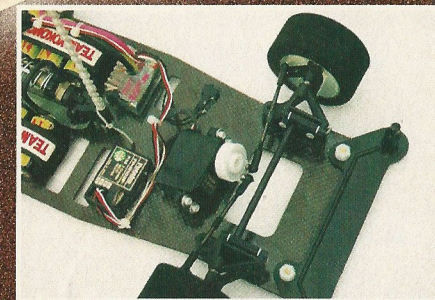
A carbon brace now goes between the mountings for the front suspension.

threads in the glass fibre for the "tweak" adjustment screws. Threadlock the bottom of the damper post to the bracing bar, if you don't you will find the maintenance of the damper very difficult. When you mount the bottom of the pod to the "T" bar you have the choice of how many mounting points you can use, if you add the centre screw, you will have more slow speed steering, but much better high speed stability, your choice.

The rest of the build was very straightforward, in fact the whole car was built in just three hours, less body shell of course. With the amount of space available any radio gear will fit, but do plan it out, as the position of the weight will make a difference to the handling.

## Body shells - which one?

Now with the kind of speeds a Pro Ten runs at, the choice of body shell can make quite a difference to the handling. In the UK four shells seem to have found favour with the racers:



The Yokomo straps holding the nicads are much easier to use than the dreaded cell tape.

Nissan/PROTOform Nissan. High down force, best on short low grip tracks, much higher drag factor.

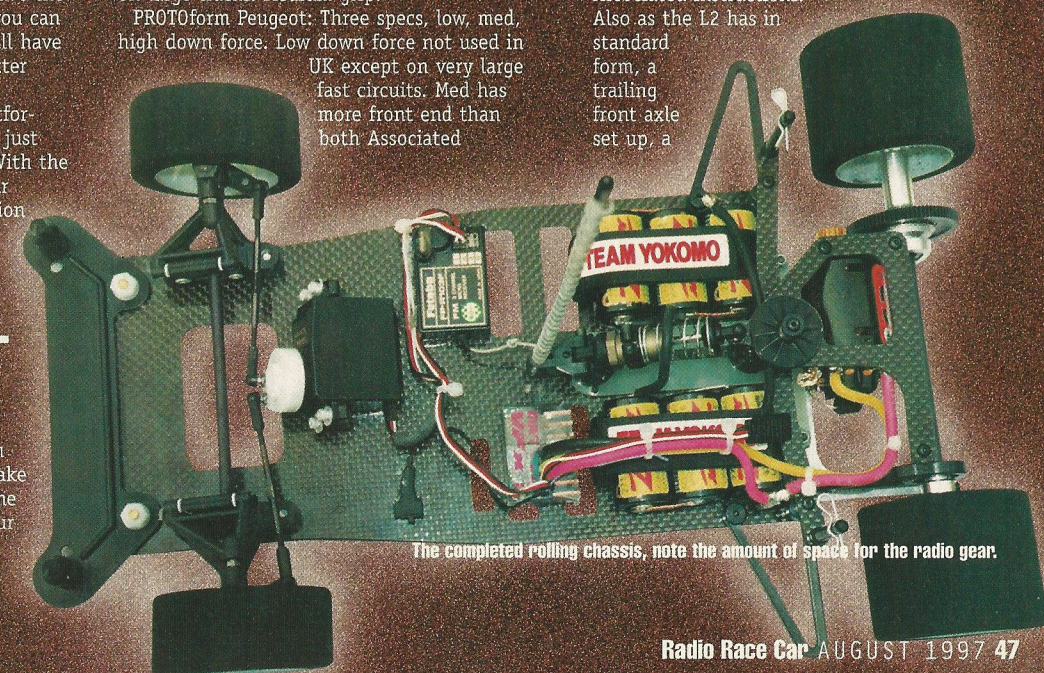
Andy's Nissan: Very similar in performance to PROTOform Nissan. Suits aggressive drivers, very quick in a straight line.

With Ashby being my chosen test track I decided on a PROTOform Nissan and a medium Peugeot shell, just for those of you who don't know Ashby, it's of very good grip, but has some slow corners and a very long straight. So for a car to handle well in all areas, mechanical grip, aerodynamic etc.

## Testing Time

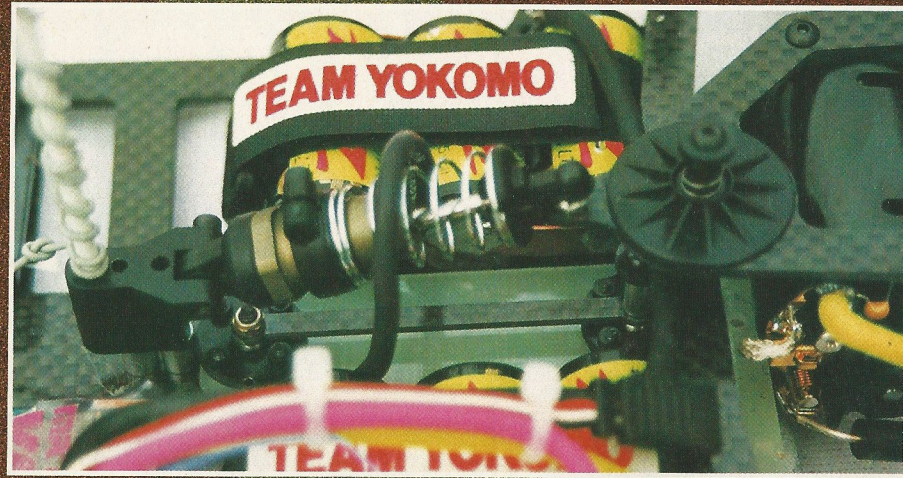
Fortunately the weather was very kind and a good day was easy to find. Prior to the run the car was set up using the information in the rear of the very complete Associated instructions.

Also as the L2 has in standard form, a trailing front axle set up, a



The completed rolling chassis, note the amount of space for the radio gear.





Note the carbon "brace" running between the pivot points. Also the relocated damper mount.

set of "in-line" steering blocks was acquired from CML Distribution, just for comparison. The trailing arms should be softer to drive and would be better if the grip was low. As I still had the tyres from running the HPI Roadstar test, they were pressed into service again.

With the Reedy Tri-Sonic 15 turn quin bolted in the pod, the test began.

## Run one (kit tyres - green - Jaco blue fronts Nissan - air dans)

Well this was a non-start, the Green fronts were far too soft, giving loads of steering, they may be OK in very low grip, but not at Ashby.

## Run two (kit rear tyres - green - Jaco blue fronts)

This was much better, the harder tyres on the front making the car driveable. In the slower corners turn in was sharp, apply power gave a little understeer. But on exit the understeer really had set in. Through the quick chicane the car felt too secure and you had to lean on it to make it quick. In the fast corners the car was very stable. All in all a good start for any new driver to Pro Ten. But could I make it faster?

After reading through the "tuning instructions" I made the following changes.

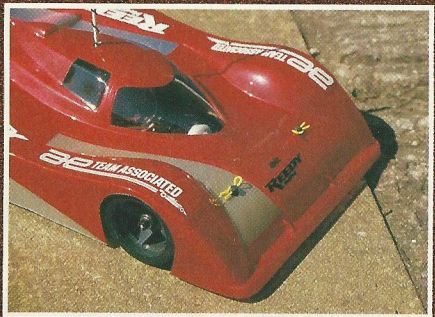
- 1) Increase caster to maximum (all spacers to rear).
- 2) Raise rear ride height one increment (No 3).
- 3) Add in line steering arms.

## Run Three

Now the car felt very aggressive, the steering was much sharper in the middle of the corner, also less understeer was felt on the corner exit. In the chicane the car was quicker, but still I felt it could gain direction quicker. I could carry more speed through on to the main straight. In the quicker corners raising the ride height gave just that little extra steering I felt I needed.



A new material is used for all suspension parts, much stronger and stiffer.

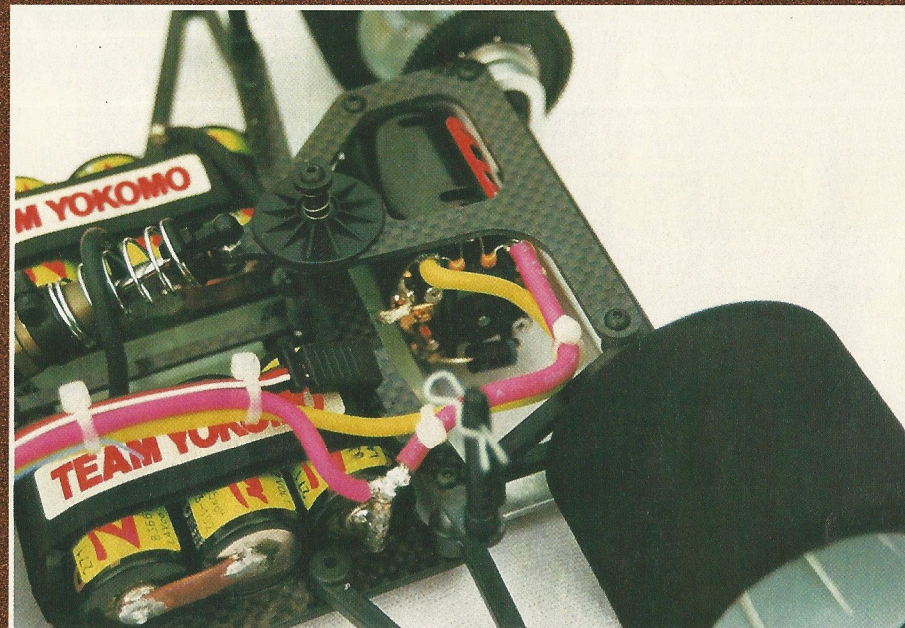
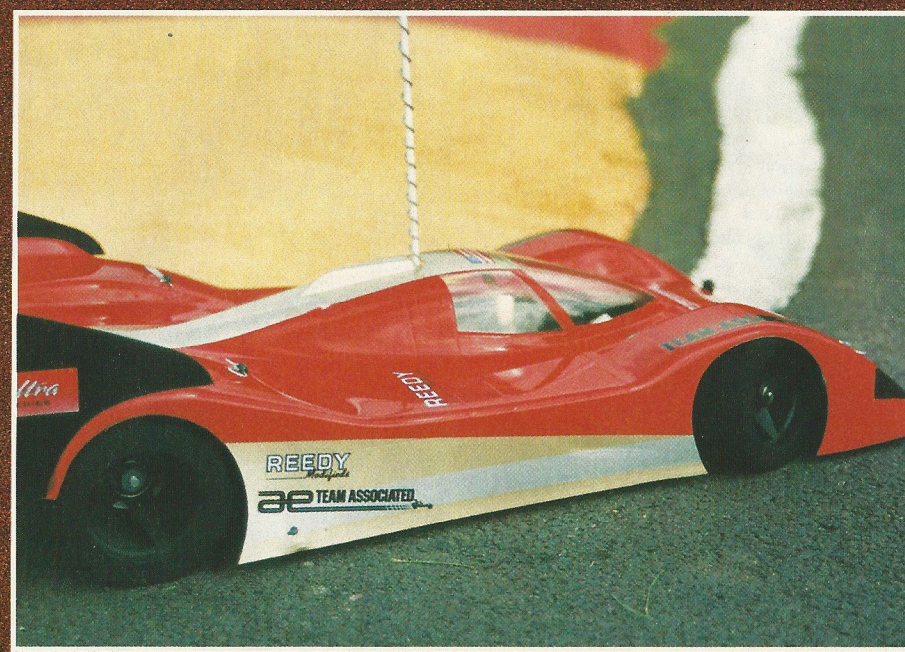


PROTOform Peugeot body shell (medium down force). The extra lip at the front giving more down force and steering over the Nissan.

So the only place I felt I needed improvement was in the chicane, back to the instructions. As I have written earlier in the review, Associated supply roll restrictors with the L2, these fit in the cut-out for the roll damper. This the instructions suggested would cure my problem.

## Run Four (Largest roll control insert)

Straight away the car was M.P.H. quicker (or K.P.H.) in the chicane. But in the banking the car was now quite "twitchy". Reducing the amount of roll had stiffened the rear too much. On all the slower corners the car was even better, allowing a really late turn in, and more power on steering. Back to the drawing board.



The cut away pod makes motor access much better, when racing the "nerf" wings are very useful.

Prior to the third run I had raised the rear ride height to try and give a little more steering. By raising the rear I had induced more roll and thus more weight transfer. Now I had restricted the roll with the insert. The cure was obvious, lower the rear and let it roll less. OK?

## Run Five (lower rear ride height no 4 insert)

Job done, I had a totally balanced car, in all corners. The roll stiffener was still doing its work, but through the quick sweeper the car could now be pushed very hard without spinning out, great.

## Conclusion

Associated have been very clever, the L2 has all the resemblance of the 10L, but with a whole lot more going for it. The new rear end has improved the grip level and has made the car very tuneable. In fact the car has just about every adjustment available to get the best out of it. At the front you have caster, camber, ride height, spring stiffness and reactive caster.

At the rear you have ride height, roll stiffness, squat and spring stiffness (middle mounting point in pod). Plus you have a very simple and easy car to maintain and of course the price reflects this, and it appears to be very quick. Jason Varley on his first outing with his car qualified for the "A" final and finished a very close fourth in the recent Pro Ten National, with a kit standard car, other than the in-line steering blocks. It was just a matter of chassis tuning.

Available from all Associated stockists. **RRG**

# Set Up Sheet

(changes in brackets)

### FRONT SUSPENSION

Upper arm mount - 10°  
Caster shim - centred (rear)  
Front ride height spacers - 4mm under block  
Steering block - STD (in line)  
Camber - 2°N  
Toe in - 0°  
Springs - .022  
King Pin Shims-5 on top of kingpin

### REAR SUSPENSION

Axle height adjuster - 1 up (4 up)  
T Bar-075  
Dampener lube-Parma  
Dampener lube springs - STD

### SHOCK

Body-STD  
Oil - 30wt  
Piston - No 1  
Spring - silver (6mm pre load)

### OTHER

Wheels/Tyres:  
Front-green (Jaco blue) 62mm dia.  
Rear-green - 65mm dia.  
Tyre treatment - Agygrip  
Width-Full front and rear  
Body shell - PROTOform Nissan + side dams  
Motor-Reedy Trisonic 15 quin  
Gearing - 18-81 = 45.4 mpr  
Nicads - Reedy Zappers 1700 SCRC SP  
Location - rearward

### TESTERS KIT

Radio - JRX756  
Receiver - X756  
Servo - Futaba 3001  
Speedo - MRT VFX (Profile 40/80 amp. 60%  
ramp. Brakes 40min/100ma)  
Nicads - Reedy Zappers  
Motor - Trisonic 15 quin  
Tyres - Kit + Jaco blue front  
Body shell - PROTOform Nissan + side dams

### QUICK SPEC

2WD. Carbon flat pan chassis. Saddle pack nicads. Full balltraced. Ball diff carbon axle. Double wishbone sliding king pin front suspension. Fully floating rear pod. Glass fibre - T bar. Alloy oil filled coilover shock absorber. Multi spoke wheels. Green tyres.

### LIKES

Instructions - so much information  
Quality - mouldings, carbon  
Simple build - quality of fit.  
Simple set - all adjustments needed  
Fast - Simple to tune, just read the instructions

### DISLIKES

Front axles - in line block could be included  
Cell tape - there must be a better way.