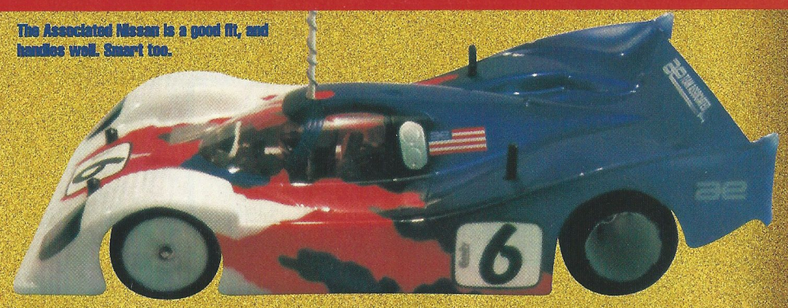
Russ Giles & Mark Christopher

PART 2



The Associated Nissan is a good fit, and handles well. Smart too.

Little and Large

No it's not a Yamaha

by Russ Giles

Following on from last month's Little & Large we have the same , but a slightly different theme. This month we should have had a Trinity Switchblade double header, but due to various time and production problems we now have the Associated World Champion 1:12th car and the Trinity Switchblade Pro-Ten, sorry about that, over to you Russ.....

I may be showing my age here, but I have always thought of a 'LC' to be a Yamaha two stroke motorbike . So when Our distinguished editor rang me and asked me to review the new 'LC' I was a little confused ! However when he explained that it was actually the new Associated 1/12 scale he was talking about, it all became clear . By my reckoning this is the eighth generation 1/12 scale Associated, the first being back in 1978, and the forth generation based on the RC12L . Most of these derivatives have won world championships, in fact the only IFMAR world championship that Associated have failed to win was in 1994 when David Spashett won with his Corally . The RC12LC maintains this winning trend by top qualifying and winning the 1996 worlds in the very capable hands of Masami Hirosaka, in fact the top five were all RC12LC's .

The 'C' Designation stands for Cliff Lett the cars designer. Cliff has continued the Associated tradition of evolution rather than revolution and at a glance the new car looks just like the old one, However closer investigation reveals that there has been a whole host of improvements throughout the car, the damper post at the rear of the car has been relocated for more consistent performance, there are inserts in the damper to limit roll movement for quicker directional changes . There is a cross brace between the two front suspension assemblies and a new more rigid material for the suspension components to improve front end precision, the batteries are moved closer to the centre of the car and a new chassis brace now incorporates the rear body post mounts . A new symmetrical 'T' bar has been designed and a 'T' bar brace is now fitted, a new rear pod assembly with redesigned top, bottom and side parts give better bearing alignment and improve access to the motor connections . These changes allied to the existing dynamic strut suspension, Delta shock and stealth diff assembly all combine to give a car that is better than any Associated I have seen before .

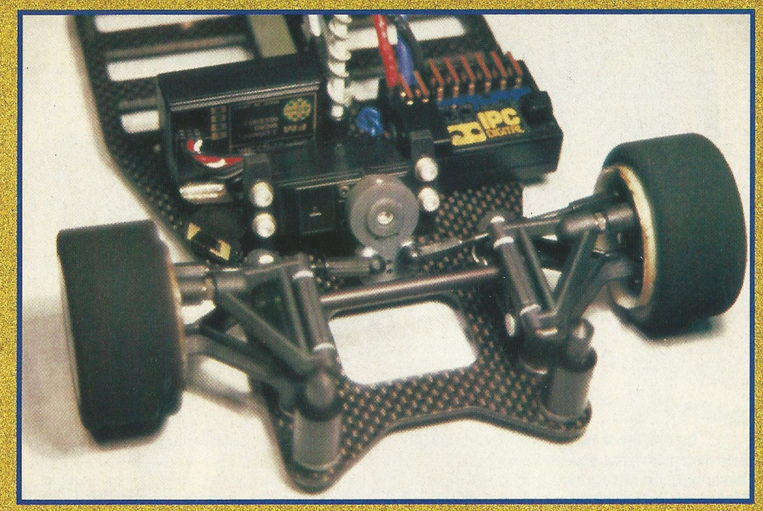
Little & Large, The LC12 and the Switchblade 10.

A rolling chassis

The kit builds up to a rolling chassis so you have to find your own electric's and bodyshell, as this car is not aimed at the raw beginner this is not really a problem . The instructions are really quite comprehensive but can take some getting used to, they are text instructions backed up with photographs rather than the Japanese style of diagrams with explanatory notes . If you do build one of these cars, take some time to read the instructions fully as there is a wealth of hints and tips that have been included to help you have a car that works straight out of the box, do not try to cut corners as it will cost you in the end ! I built the review car as per book with the only change being the use of 64DP gears rather than the supplied 48DP .

A great build

The car goes together very well the only area that caused any concern was the screwing of aluminium screws into virgin plastic holes . I stripped the head of one of the front suspension screws quite early in the build and thereafter used a steel screw of the same size to form threads in the plastic before finally assembling with the correct aluminium screw . You also need to take great care to make sure that the suspension pivot balls both in the front and rear suspension pivot freely and smoothly but with little or no slop, a little extra time spent here will give a much more consistent performer on the track .



At the front the only major addition is the brace between the front mounting blocks.

Fit radio gear

On completion of the rolling chassis you are instructed to fit the radio equipment and electric's, the car is obviously designed around the Sanwa 141HS (Airtronics 94143) steering servo which is almost the standard for 1/12 scale today, however the instructions do give details of how to fit other manufacturers servos, be careful to check that the servo saver supplied in the kit is the correct one for the servo you intend to fit, for instance Sanwa and Futaba servos have different output splines that look very similar ! There is not much room for receiver and speed controller in any 1/12 scale car and the Associated is no different, so small units and careful positioning is the order of the day .

I fitted a Futaba 103R receiver and the new IPC digital speed controller from LRP which went in without any problems, next in was the motor which is much easier to fit and solder in

The PROTOform Peugeot is available in three down force spec's, also each shell comes with a "tweak" sheet so you can make the best use of it. It fitted the SwitchBlade really well.

than the old car, the extra access around the left hand bulkhead really making a difference. Once the electric's are in, the wheels and tyres are fitted, this brings me to my only real criticism of the kit, the tyres supplied are green compound all round, however greens are not really suitable for the serious racer these days and as this kit is aimed squarely at the top, Associated should really supply better rubber such as Yokomo or Jaco in a suitable compound . The kit comes with the new Stealth differential which enables the wheels to be changed without striping the diff, there is a downside to this however, the old standard type American wheels will no longer fit . You can however still use old wheels if you use the old style diff which will still fit the car .

The cells are held in with fibreglass reinforced tape as with most American 1/12 and 1/10 cars, I am sure that a reliable battery fitting method can be designed by these people without all the problems that using tape can produce, However they don't seem willing to look at it !

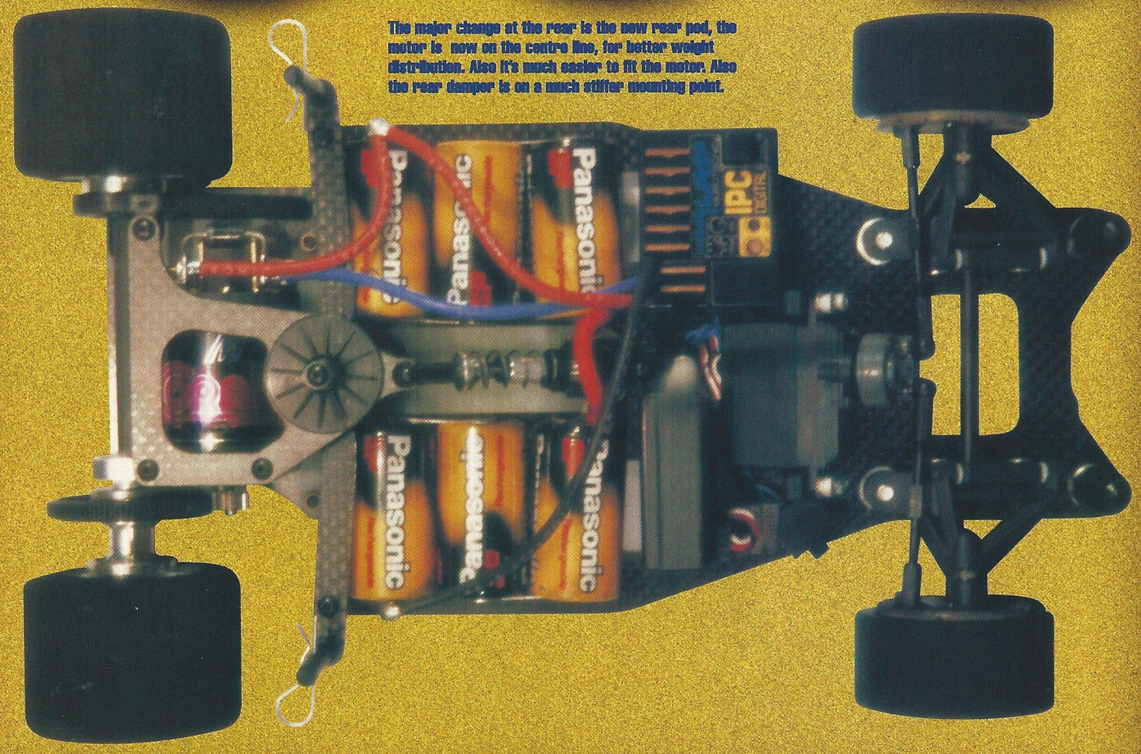
It's a Nissan.... ..surprise, surprise

The bodyshell provided with the test car is an Associated Nissan, this needs to be carefully cut out and fitted, a 1/12th car with a badly fitted bodyshell can be a nightmare to drive . When fitted correctly it fits like a glove, with a very low and mean look .

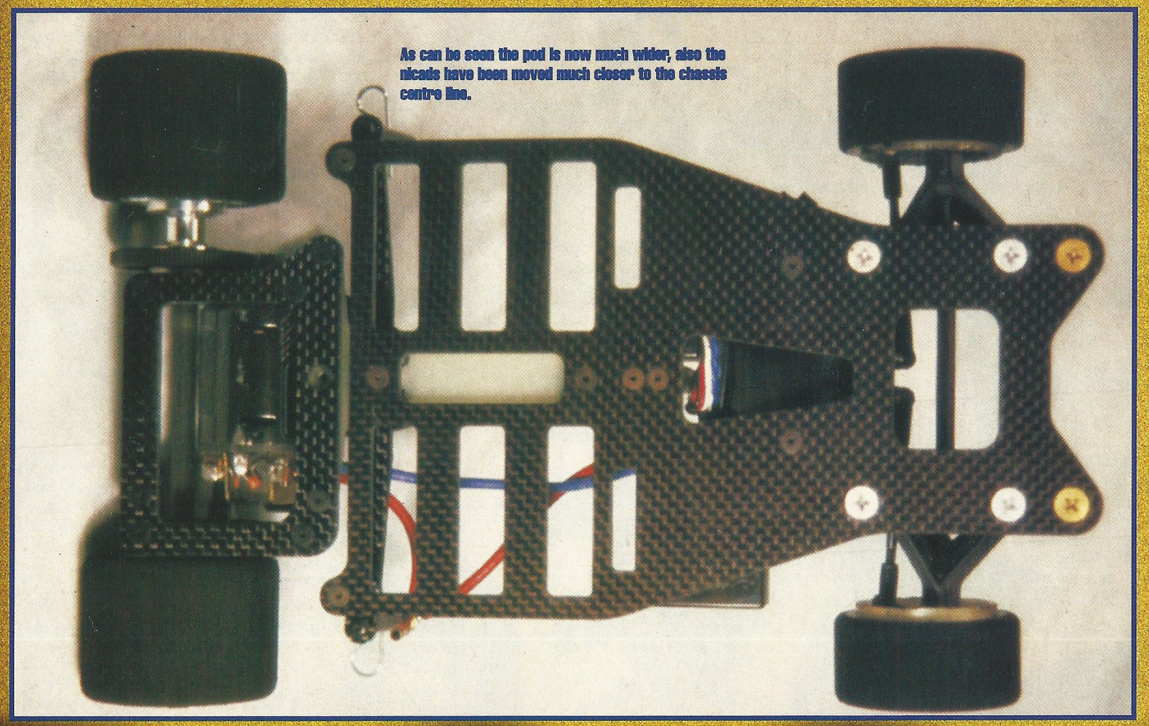
Once the car is fully built the 'tweak' will need setting, it tells you in the instructions how to do this. don't be tempted to miss this bit out as it is one of the most critical areas of setting up

Track Test

The first outing with the car was at the Chesterfield club, their combination of a relaxed atmosphere, four full 8 minute runs, a National sized circuit and good competition make it the ideal venue . The first run with the car was with a standard 27 turn motor, SCRC batteries and I used Yokomo tyres . The first thing that struck me was the ability of the car to change direction very quickly but still remain stable, if anything it was a little bit too stable with a fair degree of power on understeer . I hoped that putting on some extra caster would help to correct this tendency, the



The major change at the rear is the new rear pod, the motor is now on the centre line, for better weight distribution. Also it's much easier to fit the motor. Also the rear damper is on a much stiffer mounting point.



As can be seen the pod is now much wider, also the nicads have been moved much closer to the chassis centre line.

caster is adjusted by shimming the top wishbone with washers, forwards to decrease caster or rearwards to increase,

I moved the wishbone to give maximum caster and also dialled a little extra negative camber with the turnbuckle top wishbones, not forgetting to reset the toe in afterwards . This had the desired effect with the power on understeer greatly reduced by the extra caster and the mid corner steering improved by the extra negative camber . I was very impressed with the way the car reacted favourably to the changes, I have had cars in the past that have been very unresponsive to changes which makes tuning a car to a circuit very difficult . The next thing to try was more power in the form of a modified motor, I chose my favourite wind, a 17 triple and fitted this with some Panasonic SP cells . The extra power did not affect the balance of the car unduly and in fact seemed to liven the car up in the handling department as well as the straight line performance The car also seemed to carry its speed round the comers very well, which is a very good thing to have as the power is not wasted driving the car through the corner

Phil Davis' set-up For the RC12LC

Front Springs	.020
Caster	Max
Camber	1 deg
Shock oil	20 wt
T bar	Thin
Ride Height	3 to 5 mm (always keep the chassis level)
Bodyshell	Associated Nissan
Tyres	Jaco Grey 53-47mm dia Jaco Purple or Pink 47 42mm dia (rear tyres 5-6mm larger than fronts)

Motor Gearing Notes

Reedy Tri Sonic 15 ~16 Quad-Quin (depending on circuit)

33-36 mm/rev (depending on circuit and motor)

Diff grease on damper plates

Turning circle 3 feet

Quick Spec

2WD. Flat Pan Graphite Chassis. Saddle Pack Nicads. Fully Ballraced. Alloy Motor Mount. Graphite Axle. Adjustable Ball Diff. Central Pivoting "T" Bar. Central Twin Plate Roll Control Damper. In-Line Alloy Oil Filled Spring Damper Unit.

Fixed Lower Wishbone. Hinged Top Wishbone. Sprung Sliding Pillar King-Pins. Reactive Caster. Fully Adjustable. Multi-Spoke Wheels.

TESTERS KIT

Radio	JR X756
Servo	Sanwa 141HS
Speedo	LRP ICS
Nicads	Orion SCRC/Panasonic SP
Motor	27T Standard/ Corally 17 Triple
Bodyshell	Associated Nissan/ PROTOform Nissan
Tyres	Kit Jaco Green Yokomo

Only so much time

There is so much more I want to try with the RC 12LC but the pressures of writing the review have meant that I have only scratched the surface of the possibilities of this car, I haven't even gone through the options supplied in the kit never mind the optional parts listed in the spares list . There is also a thriving optional parts industry in America that gives an almost infinite choice of spec for the car, even Trinity make parts or it!!

I am very impressed with this car, I believe it addresses almost all the shortcomings of the old RC12LS and moves the goal posts as far as the other manufacturers are concerned moving 1/12 scale cars on to another plane . This, combined with the relatively low cost of the car compared with the competition, gives a whole package unmatched by the others .

TRINITY SWITCH-BLADE 10

By Mark Christopher

How Fast will they Go !!!

At the Radio Race Car and B.R.C.A. National meetings I run a Formula One car and seeing the Pro 10 cars I have often wondered how they go so much quicker than an F I . Talking to the Ed he agreed to send me one to review.

Late last year after the Pro 10 and 12th scale World Championships new cars were released by most manufactures. The Ed rang to see if I was still interested and a definite 'yes please' was the reply. A new Switchblade 10 by Trinity arrived, it had qualified 5th and finished 4th in the Worlds 'A' Final.

Now for the good stuff

Now the good stuff. Most people like to think they are going to get a big box for their money but nowadays many kit boxes are getting smaller to help cut shipping costs etc. This does not mean you are getting any less for your money. Many people have said to me we don't want to know what's on the box, just what's in it. This is all well and good but the box itself obviously has a part to play. If you went into a shop to buy a kit and saw a plain card box and a colourful displayed one which one would grab your attention ? Although, I think this is the first time that graphics have been on top, bottom and all sides of a box. Shown are the different specs of car available. The box also has a factory seal with a serial no which ensure that the contents have been triple-checked.

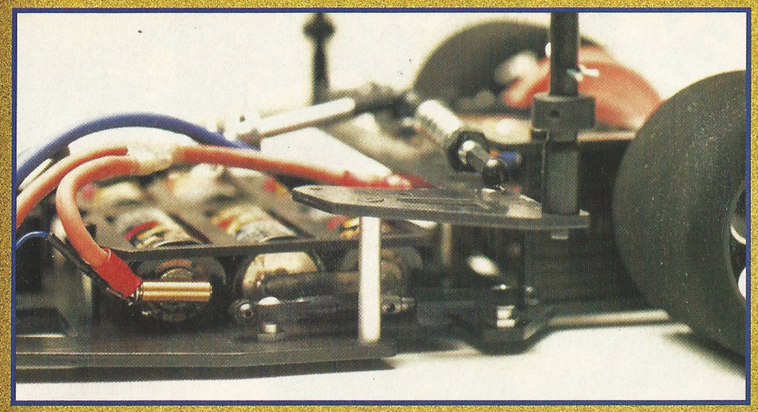
Inside the box you will find the parts are in separate numbered bags. There is also a set of wheels with green Jaco tyres already trued and glued. Two instruction manuals and a Trinity parts catalogue are also enclosed. One instruction book covers the all new suspension and the other one covers the rest of the batteries with no need for any tape. This gives you a neat retaining system.

Chassis

With a competition kit like this, graphite parts are used through-out. To prevent the edges from splitting first sand them with wet and dry paper, using water is recommend (as graphite dust is not healthy for your lungs). Thoroughly dry the parts and rub some Superglue along the edges to seal and protect them. The main changes on Trinity's chassis is that they now use the saddle pack style instead of the previously used in-line stick pack layout. This has been done to help keep the weight in the rear of the car for improved traction . Trinity say it also it makes it easier to set-up the car for different tracks.

Front End

This consists of fixed lower arms which mount on blocks to adjust the ride height. These along, with the upper arms have ball sockets where Delrin pivot balls pop-in. This then allows the king-pin, mounting pin to pass through with the spring held below by an E-clip. Next comes the steering block. A word of warning from my own experience. The blocks are a tight fit on the pins, I made the mistake of reaming out the block and making the hole too big, ending up with lots of slop on the steering. I managed to rectify this by inserting a tube into the block. The correct way to do the job is to put the king pin in a dremmel or drill and polish with fine wet and dry paper until every part is free, but with no slop. Next is the top wishbone which fits on top of a brace via an inner pin mount. Adjustments can be made to Camber, Ride Height, Caster and Roll Centre. You can also fit an angled inner pivot mount which gives reactive caster (decrease's angle by 1 or 2 degrees depending on suspension movement). Steering blocks are the trailing type but in-line blocks are in option. All in all this makes the front suspension tuneable to any track.



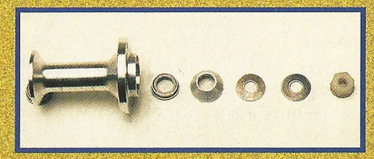
If you intend to use Corally style connectors you will have to position them like this.

Rear Axle

Now to the rear-axle. This is height adjustable via bearing carriers. The diff has no thrust race bearing but uses a cone on the centre hub bearing, so as you tighten the diff you also tighten up the "wheel bearing", so run the diff as loose as possible. A 48dp spur gear comes with the kit and the way the diff drive plates clip into the spur, seals the diff from dirt, a neat idea. A clamp on left-hand hub completes the build.

Rear End

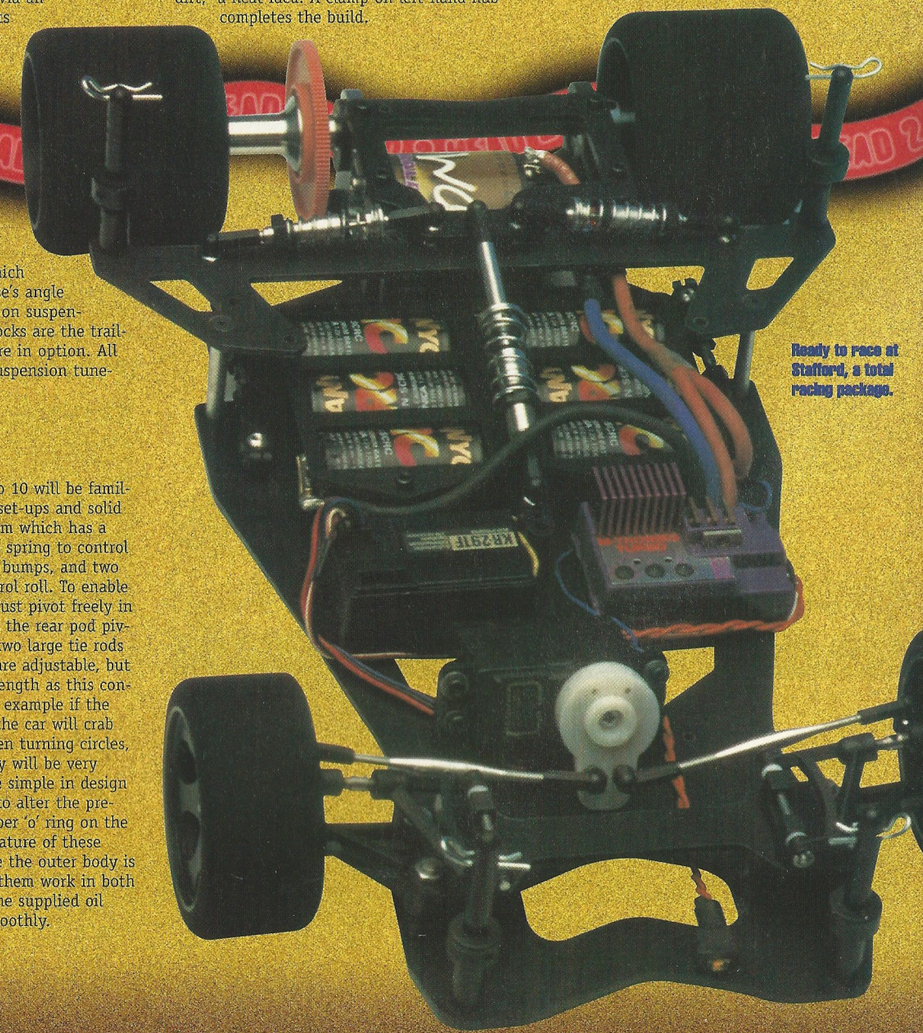
Any one who has seen a Pro 10 will be familiar with the rear suspension set-ups and solid rear axles. Trinity use a system which has a central rear shock-absorber & spring to control up and down movement over bumps, and two side shocks & springs to control roll. To enable these to work the rear pod must pivot freely in all directions. To achieve this the rear pod pivots on one central ball with two large tie rods on each side. These tie rods are adjustable, but each side must be the same length as this controls the track of the car. For example if the left is longer than the right the car will crab along the track making uneven turning circles, and also straight line stability will be very poor. The shock-absorbers are simple in design with threaded spring collars to alter the preload on the spring and a rubber 'o' ring on the shaft acts as a piston. One feature of these shock-absorbers is that inside the outer body is another spring which makes them work in both directions. Once filled with the supplied oil they seemed to work very smoothly.



Although the diff is very similar to most Pro-Ten, it has no thrust bearing, but it works very well, keep it loose.

Making It Go

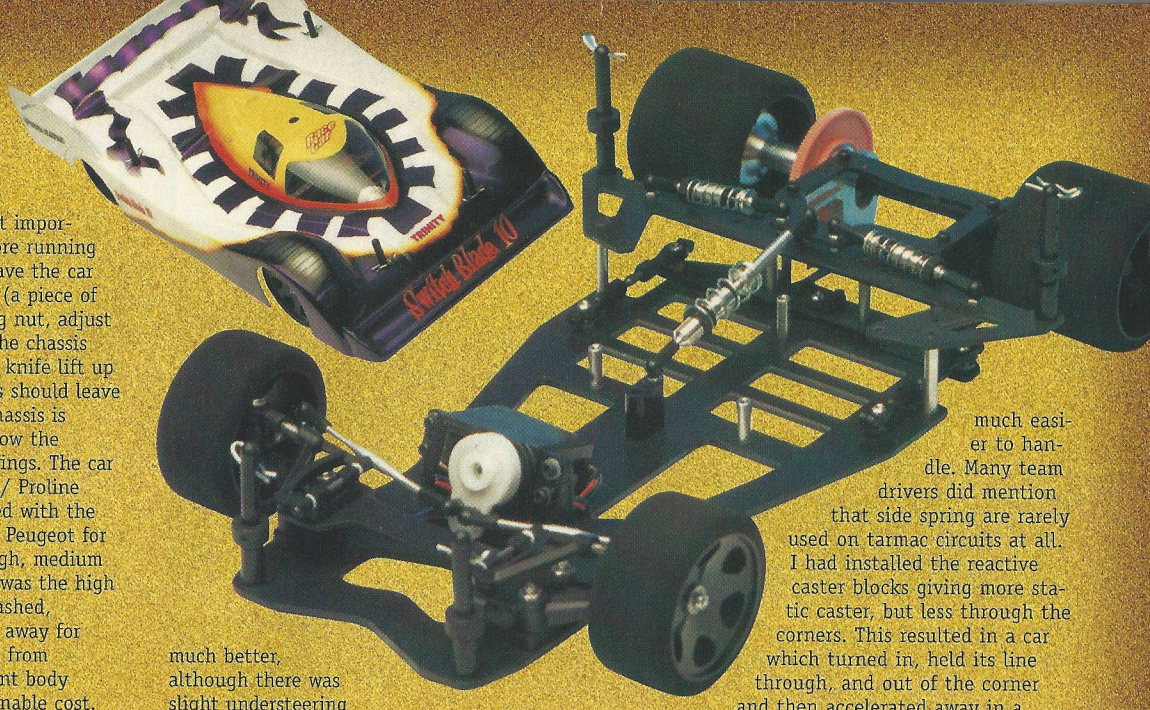
To install the servo you need to drill the supplied servo mounts and possibly the chassis. The servo mounts are angled to eliminate bump steer. You will need to provide your own servo saver which will connect to the steering blocks via the alloy turnbuckles, alloy ball studs and plastic ball cups. One note here, with the ball joints being alloy do not try to over-tighten them as they will snap. There is plenty of room on the chassis to mount the speedo and receiver. Because of the style of the nicad tray if you use Corally connectors on your nicads, you will need to lay them on their sides (see photo). Getting the motor mounted to the alloy motor mount is easy as long as you put the motor through the bottom hole and not the top one.



Ready to race at Stafford, a total racing package.

Set-Up

The next step is one of the most important parts of the preparation before running the car. To do this you need to have the car 'race ready' and on a flat surface. (a piece of glass is ideal). Using the adjusting nut, adjust the centre spring tension to set the chassis and rear pod level. Using a model knife lift up the centre of the car. Both wheels should leave the ground together, if not the chassis is tweaked and you will need to follow the instructions to adjust the side springs. The car comes with trued and glued Jaco / Proline green tyres. As no body is supplied with the kit the Ed organised a PROTOform Peugeot for me. It comes in three versions, high, medium or low down-force. The one I had was the high down-force type. The body was washed, trimmed and fitted and then sent away for painting. I sent it to Roger Parkes from Worksop who will be happy to paint body shells to your own spec at a reasonable cost. (01909 473607) .



Track Test

Due to the weather conditions at the time of writing snow, frost, rain etc. an outdoor test was out of the question. Fortunately for me Mr On-Road Robson was running an indoor series at Stafford which catered for Pro 10s. After arriving and setting up stall it was time for a practice with the car set-up to the book I installed a 16 triple motor and off I went.

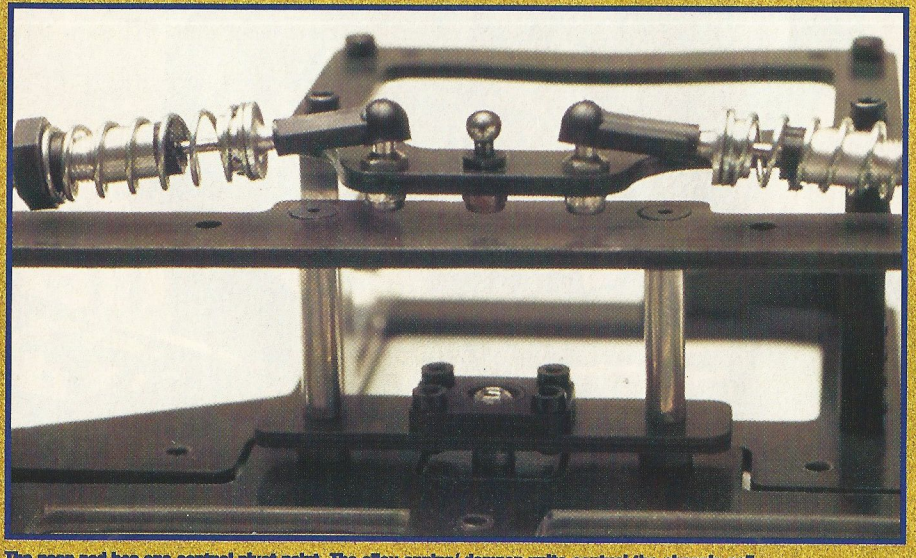
On accelerating from stand still the Switchblade pulled hard to the left making it a handful to drive on the carpet track. Back in the pits a close inspection revealed that although both side shocks were of equal length one of them would only extend and not compress, this was my mistake when setting up so take care and make sure your shocks are set identical. Next practice saw an immediate improvement, with the Switchblade handling much better, although there was slight understeering through the corners. This was on original kit tyres, with additive full TQ modified on the rear and 3/4 from the inner edge on the front.

To make a comparison I decided to run the same tyres all day and play with the car set-up.

For Round One I kept the car as in practice and was placed 8th overall . The TQ car was lapping in 9 second laps! Round Two I gave the side springs more tension which reduced the understeer and made the backend more lively. I improved my time but dropped several places. Round Three saw disaster strike. As I came onto the straight, the rear let go and the car launched over the piping and straight into a big wooden post. Amazingly no damage was done but it did remove the speedo and receiver. Adding more caster had removed the understeer, but this combined with a little too much additive had made the car very twitchy. Round Four saw slight time improvement and the car handled much better. Loosening the tension on the side springs made the car much easier to handle. Many team drivers did mention that side spring are rarely used on tarmac circuits at all. I had installed the reactive caster blocks giving more static caster, but less through the corners. This resulted in a car which turned in, held its line through, and out of the corner and then accelerated away in a straight line. Starting 5th in the "A" Final, I had a good clean start and the procession followed round the track. Being such a tight and quick track over-taking was very difficult. I managed to pull myself into 3rd position which earned me a trophy.

Overall

The Switchblade proved to be sensitive to adjustments but easy to drive once set-up to your own individual style. In all, I think that this car is destined to be a serious contender, if not winner in this years Pro 10 Nationals, especially as current National champion and former World champion, David Spashett has been signed up. RRC



The rear pod has one central pivot point. The alloy spring/ damper units control the chassis roll.

Testers Kit

Radio	KO EXI
Servo	KO 1001
Speed Controller	MTroniks VH900
Motor	Corally 16 Triple
Nicads	Orion 1700 SCRC
Bodyshell	PROTOform Peugeot 906 (High Down Force)
Tyres	Kit Jaco Green

Quick Spec

2WD. Flat Pan Graphite Chassis. Saddle Pack. Fully Ballraced. Alloy Motor Mount. Graphite Axle. Adjustable Ball Diff. Centrally Pivoting Rear Pod. In-Line Oil-Filled Alloy Spring Damper Unit. Twin Roll Control Oil-Filled Alloy Spring Damper Units.

Fixed Bottom Wishbone. Hinged Top Wishbone. Sliding Pillar Kin-pin. Optional Reactive Caster. Fully Adjustable. Multi-spoke Wheels.