

ASSOCIATED

R.C.500

RADIO RACE CAR KIT REVIEW

by J. R. Varley

When an established company like Associated, combines with the former world 1/8th champion Phil Booth, and Dave Preston's renowned skills, the end result can only be expected to be an instant success.

I suppose that wins in the British Championships, and USA ROAR Nationals, virtually proves that point. Successes that I am sure will be continually added to, throughout Europe, Asia and the Americas.

It was with a great deal of pleasure and anticipation that we received our R.C.500 for review.

A long look through the building instructions, soon showed that the assembly of any kit of this nature, should not be taken lightly. Twelve pages of written instructions, and over 100 photos, should however help even the most inexperienced builder.

FRONT SUSPENSION & STEERING

The written instructions commence with the front independent suspension. Each numbered photo is accompanied by its appropriate numbered written instruction and this situation follows through the entire build programme.

Close examination of the suspension mouldings, shows that they are of a very high quality, and with the strength they show, could well have some percentage of glass in their make up.

Steering arms are attached to the hardened steering blocks, with socket cap screws.

The nylon moulded front bulkhead has the shock absorber mountings installed. Before the wishbones are fitted to the bulkhead, the steering ball joints are assembled.

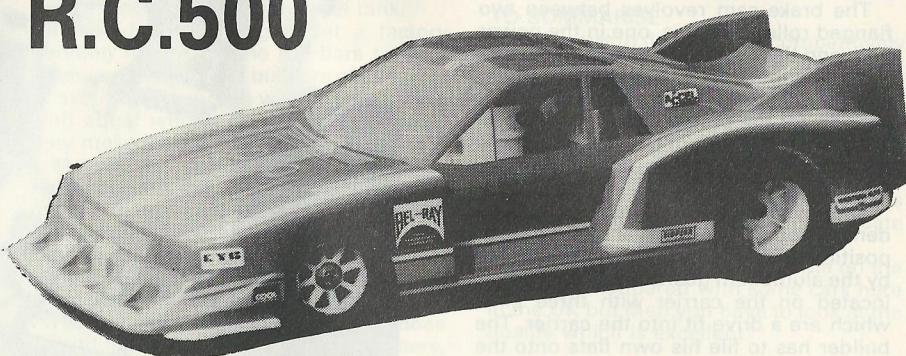
Two part nylon cups are fitted over the top and bottom ball of the steering arm, the top and bottom wishbone is slipped over each assembly, and held in position with a locking ring. This right and left wishbone assembly is then offered up to the bulkhead and finally positioned with the 1/8" dia. steel pivot pins that are a close run fit in the wishbone, but a press fit through the bulkhead.

To complete the front suspension, we now only have to assemble the shock absorbers. In this case, we have been favoured with Associated's custom racing shock absorbers, which are beautiful pieces of engineering in their own right.

I will not go into details viz. the assembly of the shocks, but would point out that for these assemblies to work in the correct, efficient manner, then follow Associated's written instructions to the letter, and I assure you that the end result will be well worth while.

I would point out here, that although our photos show the shocks without any cover, do not run the car unless you have sealed these shocks from surface dirt and grit, with the rubber 'balloons' provided.

Where the custom shock absorbers differ from other oil filled shocks, is that the main shaft is supported at both ends with nylon guides. The piston is positioned centrally on the shaft, which is sealed with 'O' rings. The chamber in which the piston moves is completely oil filled and contains no air whatsoever. A nylon nut



on the outside of the piston body adjusts the coil spring for ride height.

DIFFERENTIAL & BRAKE ASSEMBLY

The differential is of the limited slip type, and follows the same basic design principles that we have all come to know from 1/12th racing.

Drive through the differential is via a chain, and we start the build by inserting nylon bearing cups into holes in the chain sprocket. With diff. lubrication provided in the kit, all 12 ball bearings are inserted into their individual cups.

With the aid of a small grinding wheel, used in an electric drill, all sharp edges are removed from the breached hexagon in both drive hubs. This allows for an easy fit for both drive hubs. This allows for an easy fit for both halfshafts later, and prevents a high rate of wear.

The offside drive hub is inserted into the brake hub. Hardened steel washers placed either side of the drive sprocket come next, followed by a smaller alloy hub to complete the assembly relating to the drive sprocket.

In the centre of this latter mentioned hub, provisions have been made to place a roller thrust bearing, running between hardened steel thrust washers. Load on

this bearing, and adjustment for the level of slip you require, is done by a socket cap screw clamping three bellville washers against the outer thrust washer. This cap screw being located in the end of the offside hub.

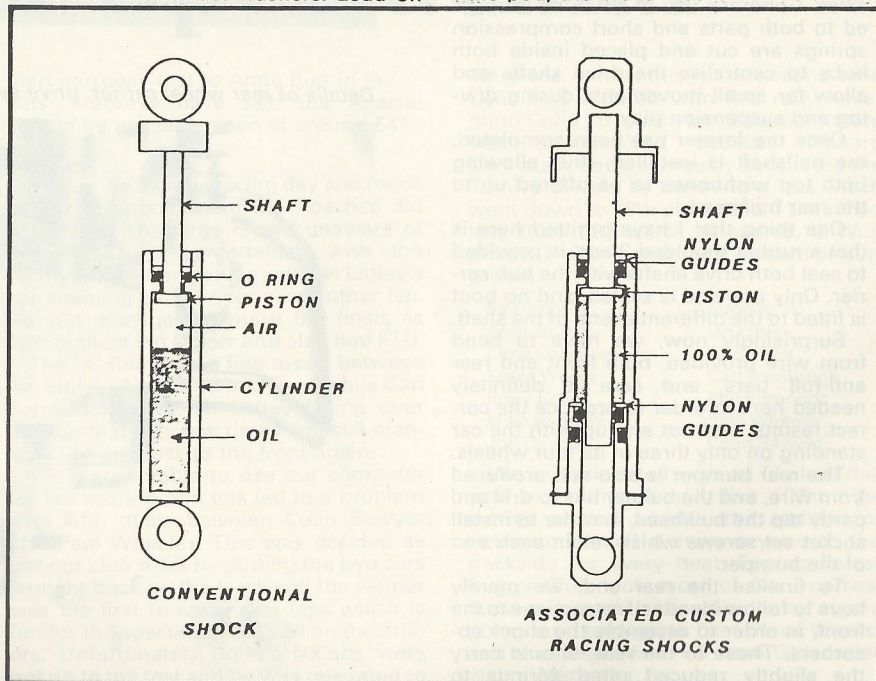
This leaves only one component left for fitting, this being the nearside drive hub, held in place with four socket cap screws to the alloy hub carrying the roller thrust bearing.

The final assembly is very neat and compact, with workmanship to a very high order.

NOTE: In the building instructions, there are references to various fitting instructions, take note of these, and ensure you follow them in order for your differential to work properly from the start, and also to ensure you get long life from this assembly.

The differential is supported between nylon moulded blocks which also support the layshaft assembly. Socket countersunk screws attach the blocks to the aluminium power pod, and are supported to their rear by a separate fibreglass plate that extends beyond the pool.

Before final assembly of the blocks to the pod, the brake mechanism is assem-



bled. In this case, braking is effected by twin fibreglass discs with steel brake pads. Supplied with the kit was a modified version of this with fibre pads and steel discs.

The brake cam revolves between two flanged roller bearings, one in the power pod, and the other a press fit into a nylon moulding that acts as a bracing member across the bearing blocks, and in turn is a support for the brake cam.

To finish this part of the car, we merely have to install sealed roller bearings for the layshaft.

The layshaft in turn constitutes a hardened ground steel tubular shaft, held in position one end by circlip, and the other by the aluminium gear carrier. The gear is located on the carrier with three pins, which are a drive fit into the carrier. The builder has to file his own flats onto the shaft in order to allow for locking of socket set screws when positioning both gear carrier and small chain sprocket.

A warning here, when fitting the brake support bracket, beware that the chain will rub on the rear lower edge. Pictures in the assembly instructions will show a slot cut in the moulding for clearance, but no mention of this appears in the instructions.

REAR SUSPENSION

As with the differential, both stub axles have to have their lead into the hexagon drive, ground by hand drill as instructed, to allow for removal of any sharp abrasive edges that would wear the driveshaft during suspension movement.

Sealed bearings are fitted into both right and left hand hub carriers. Checking for any moulding flash, we next install top and bottom wishbones, and as with the front suspension, the steel pivot pins are a near fit in the wishbones and a press fit into the hub carrier. Following the same procedures we then fit both lower wishbones to the rear bulkhead, thus leaving only the installation of the drive shafts to be done, to complete this section.

Plastic spacers are installed into both left and right diff. drive hubs and stub axles. Generous use of diff. lube is applied to both parts and short compression springs are cut and placed inside both hubs to centralise the drive shafts and allow for small movements during driving and suspension play.

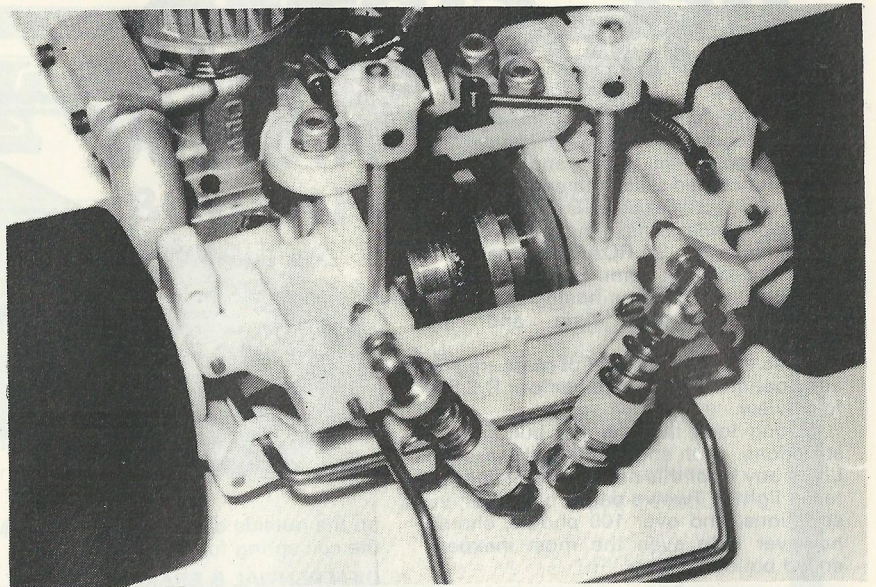
Once the former has been completed, the halfshaft is installed, thus allowing both top wishbones to be offered up to the rear bulkhead.

One thing that I have omitted here is that a rubber moulded 'boot' is provided to seal both drive shafts with the hub carrier. Only one end is sealed, and no boot is fitted to the differential end of the shaft.

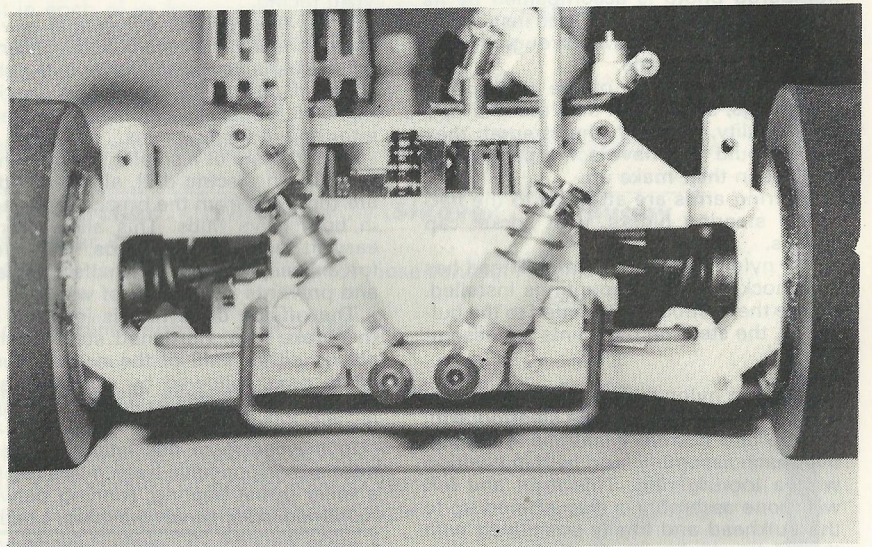
Surprisingly now, we have to bend from wire provided, both front and rear anti-roll bars, and care is definitely needed here in order to produce the correct results, and not end up with the car standing on only three of its four wheels.

The rear bumper is also self produced from wire, and the builder has to drill and partly tap the bulkhead, in order to install socket set screws which retain each end of the bumper.

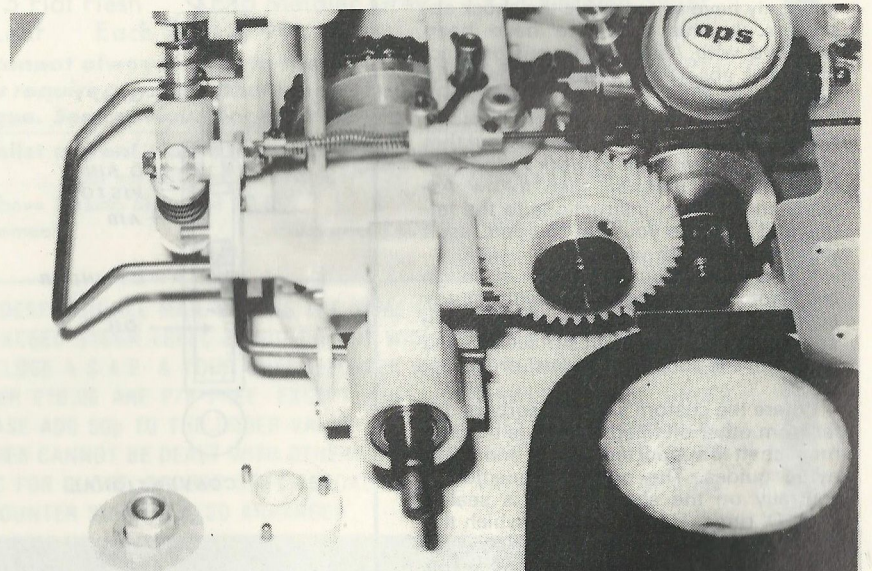
To finalise the rear end, we merely have to follow identical instructions to the front, in order to assemble the shock absorbers. These to the rear, should carry the slightly reduced rated springs to



Two views of the rear suspension layout and diff unit



Details of rear wheel carrier, drive system. Two speed unit should now be available.



those on the front, and be assembled with the correct oil provided. Don't forget once more, to run only when the shocks are sealed from outside dust.

ENGINE & RADIO INSTALLATION

Radio installation is a very simple affair on this car, although some personal work has to be done in order to get everything in position on the radio plate.

What I mean by that, is that we are provided with a template to mark out the positions of fuel tank, servos, holes for receiver mounting posts, and radio switch.

After making sure that your equipment suits these markings, then careful use of drill, saw and file, will soon have you the finished radio plate.

Two bolts clamping the front bulkhead, the extended servo saver bolt, and two bolts to the rear of the radio plate (that also position chassis to power pod) act as location. When in position this radio plate gives considerable rigidity to the narrow parallel fibreglass chassis.

Using the engine mounts, aluminium flywheel, clutch nut, clutch shoes and clutch bell provided, we installed into our car an OPS 3.5 Speedcar competition motor, along with its very elegant and very effective tuned pipe assembly.

Wires are provided for you to cut and bend your own brake and steering linkages. With all parts provided, such as override springs, collars and nylon pivot blocks, these linkages are soon assembled, and we are ready to fit the bodyshell and start the car up for its trial run.

At this stage, minor complaints would be the fibreglass extension to the power pod, that has the impression of being an afterthought. The lack of rollover bar to

fully protect motor heatsink, and enable the car to be carried on and off the track easily. The need to bend *ALL* wire components especially the anti-roll bars, and the lack of ready made cut-outs on the radio tray, especially that for the fuel tank.

I would have thought that a factory bending fixture for the roll bars to be a must, in order that kit builders of all levels of skill, would end up with the car sitting with equal weight on all wheels, before they make a start at any special tuning.

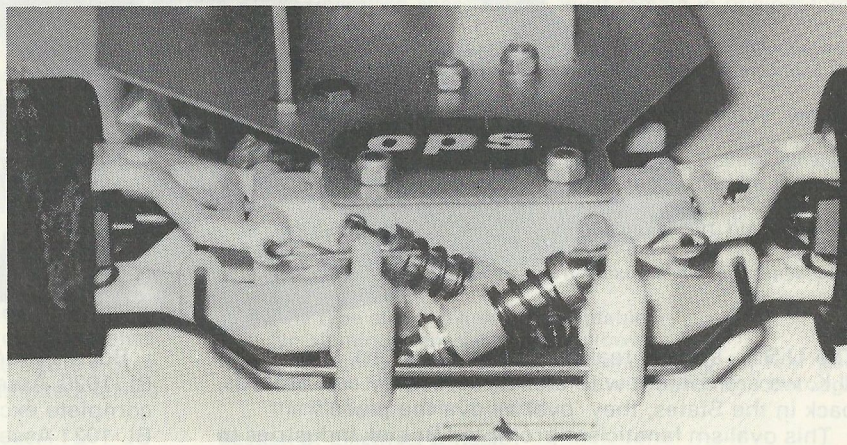
My obvious preferences would be the high degree of quality in all parts, both metal and moulded. The limited slip differential, that by virtue of its range of adjustment, can be one more aspect in attaining the correct race set-up, track to track. The well moulded fuel tank with its very expansive sive sealing flip top, those beautifully engineered shock absorbers,

and last if by no means least, I personally took to the front suspension geometry, that does not show any tendency to over accentuate bump steer, as we see in other independently sprung cars.

TO SUMMARISE

We have yet to drive the car competitively but Ralphie Birches TO at the world champs really does say it all! Our own practise so far indicates that you don't have to be a wonder driver like Ralphie to get good times with the RC500. This is a car with an excellent pedigree and coming from the Associated stable assures owners that it will be kept right up to date with current developments.

The price tag is I suppose a little on the high side compared with some cars here in the UK but then you have to look at the quality which is excellent.



Front suspension detail.