

4-WHEEL DRIVE

CONCEPT

Part 2
of this
fascinating
UK/USA Union

Readers of last months issue, will no doubt have read the article concerning the four wheel drive 1/10 car currently under development by Alan Steward of Model Motor Sport Ltd., Birmingham.

A month has gone by, a lot can happen in a month and in this case that is so. The car has been completed, competed, and had revised parts produced in order for a limited production run.

Going back to our previous article, the car takes its form from a basic full length Associated RC10 car, utilising chassis and

suspension parts as per normal RC10, with these parts being married up with the Schumacher CAT four wheel drive system.

The original dimensions of the RC10 are retained, both in track and wheelbase. The wheelbase being more adjustable due to the trouble induced in making a suitable belt tensioner. With this car, as with the

Schumacher Cat, the belt tension is adjusted by means of moving the front differential forwards by means of machined slots in the alloy chassis nose.

Whilst mentioning the belt, photos will show that the original battery clamps are retained, but reduced in width to clear the belt passing between them. The clamps are

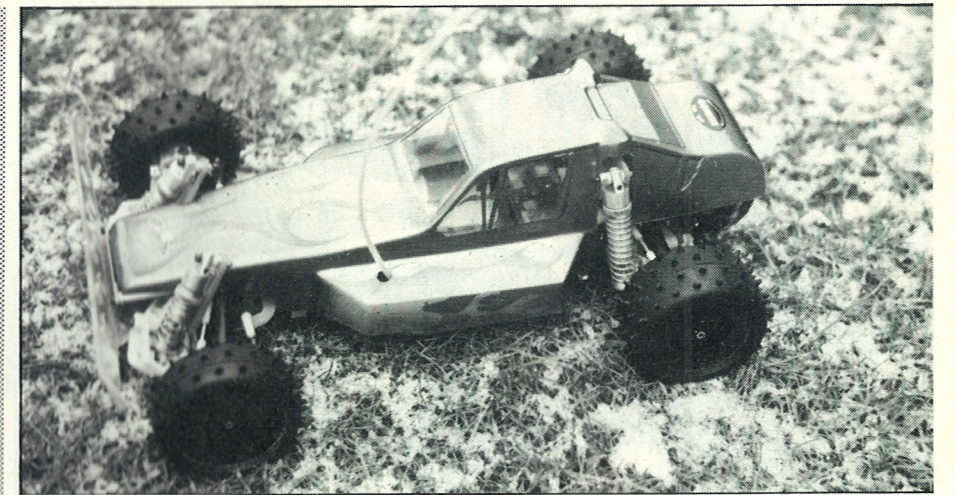
Concept Car

raised off the chassis by means of a couple of pieces of double sided tape. This allows the batteries to sit above the belt when used in normal 'stick' form.

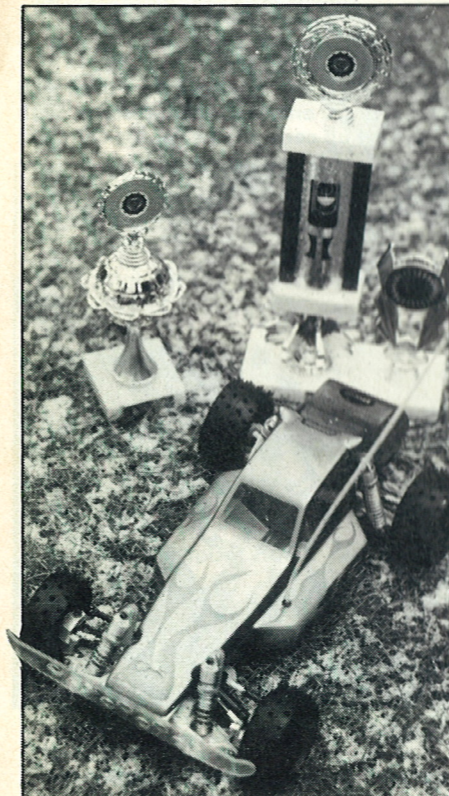
The belt drive system, positions the motor as per original RC10, and the motor mounting plate is designed to take the Parma gear cover, a necessity when running outdoors. Thoughts are also going towards making a suitable lexan cover to reduce the ingress of unwanted material onto the rear belts.

Up front on this car, aspects not mentioned in our first article centre around its steering mechanism.

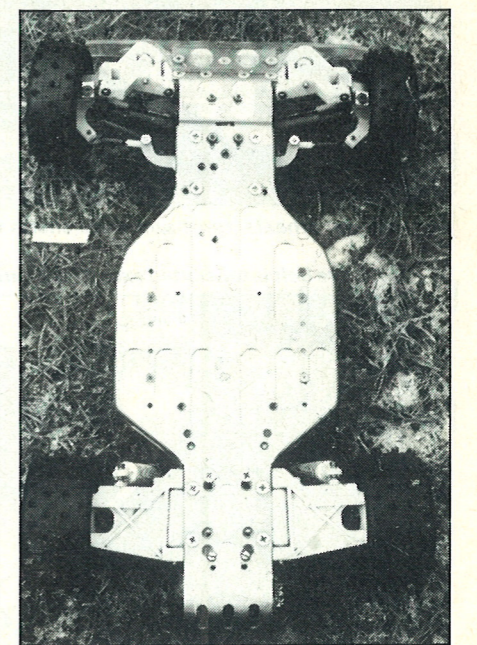
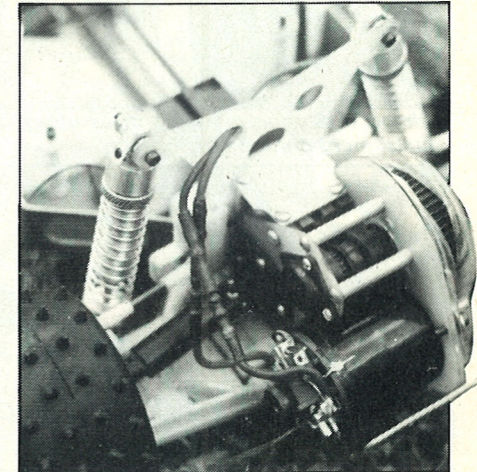
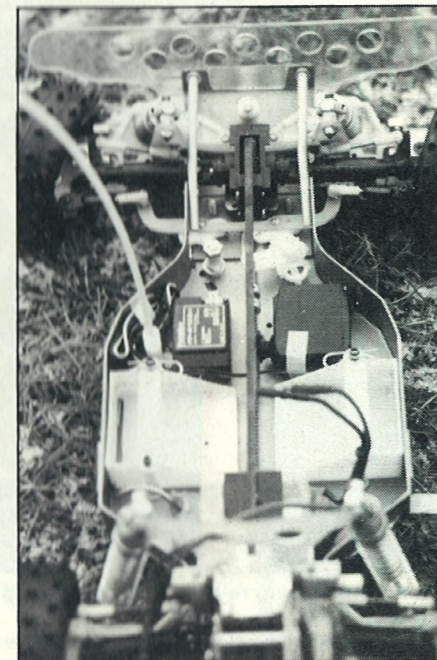
The alloy support brackets are tapped M4 for screwing in the top and bottom king pins. These king pins being made from modified M4 x 10 high tensile socket cap screws. They have about 5 millimetres of engagement in the steering arms, enough



A great deal of thought, planning and engineering skill has gone into the make up of the Concept Car as these pictures show. Note how items such as the motor mount has been specially manufactured to keep the weight in exactly the right position.



The Associated/Cat, already the trophies are being accumulated further development will surely bring greater victories.



to ensure safe, strong pivots to take the hardest knocks.

Track rods can be made up with either RC10 kit joints or the improved Parma joints. The RC10 kit servo savers are retained, but a one piece fibreglass link is pivoted across the servo savers through machined slots in the side of the chassis.

This steering assembly has proved very effective, but further thought could be given to it, in order to achieve at least some form of Ackerman effect.

With the front differential being clamped to the alloy nose it is absolutely necessary to fit the alloy braces across the front of the nose and the sides of the main chassis member. These braces having to be bent over the drive shafts before screwing back onto the chassis.

We have at this stage a finished car, given that we have to take parts from two separate kits, there are no real major changes, and very few completely new parts. The radio gear can be installed as

original, speed control and batteries along with all of the original RC10 body designs.

Upon completion, the car was taken next day to Donisthorpe to try at one of their winter open meetings.

Alan Steward a self confessed "avenger" driver felt that the whole basis of the work done could be lost if the car did not show up well in its initial shake down, especially when time had now allowed any testing whatsoever.

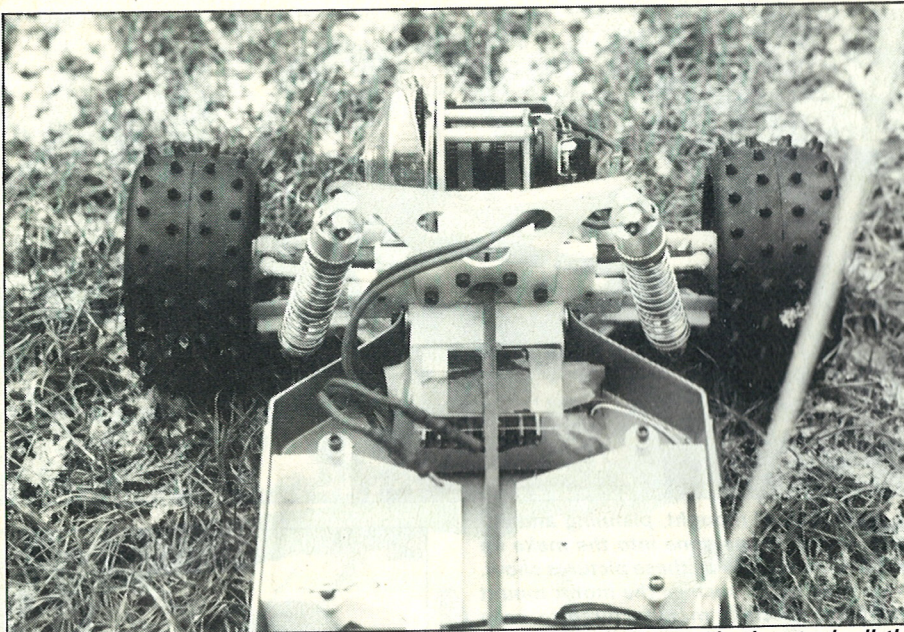
Therefore on race morning, Jason Varley was approached, without having touched the car before, and given the opportunity to put it through its paces, without the benefit of any race day practice either.

In fairness to the car and driver, it apparently ran faultlessly all day.

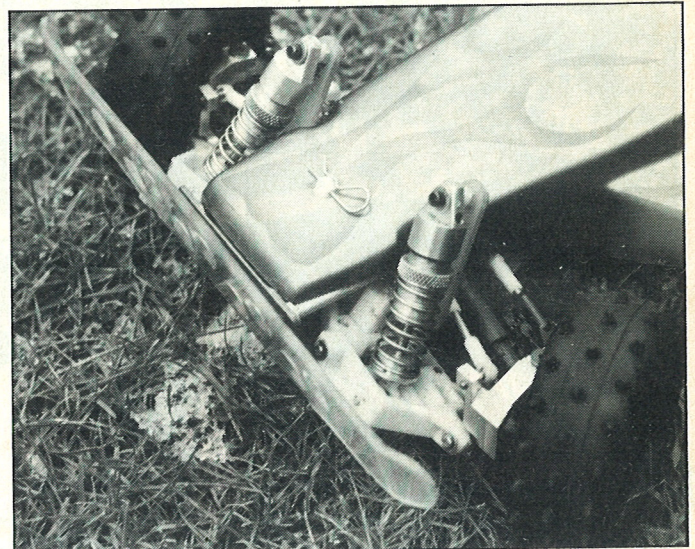
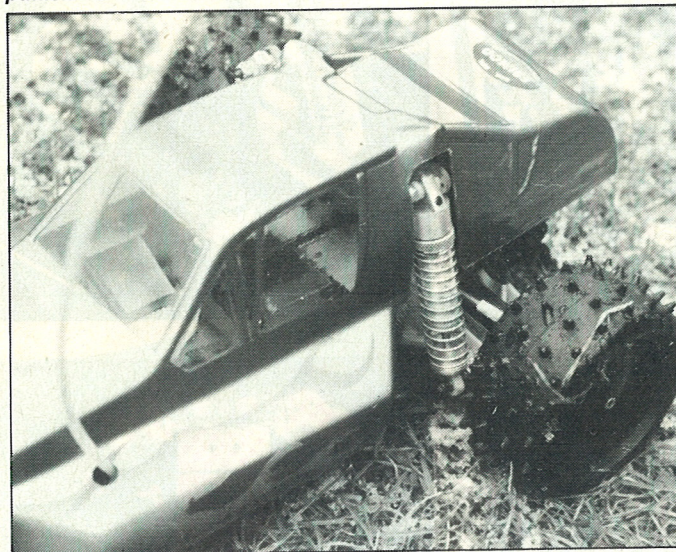
After five rounds of qualifying it didn't drop beyond second fastest qualifier, eventually ending up fastest time of the day, with several seconds in hand over second fastest.

The main 'A' final was apparently full of

incidents, with badly failing light and a start that only half of the competitors were aware of. The car was enveloped on the line and began the race in last position but ran strongly through the field to clinch third place at the end of five minutes. The final was made up of notable drivers using all types of the latest kits on the market, thus provoking justifiable confidence in the driver and the overall concept of the car.

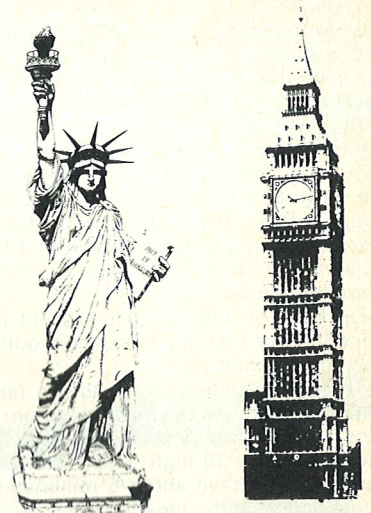
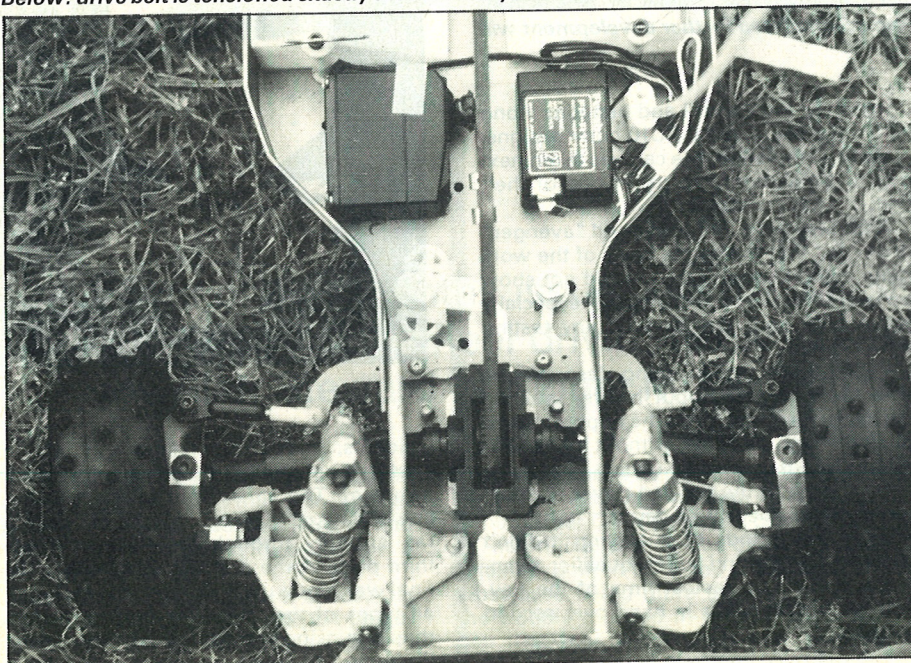


Brimod BDS shockers were fitted using soft springs, set up correctly they took all the punishment metred out.



Above: Cat wheels, tyres and drive shafts were retained keeping re-machining of parts to a minimum.

Below: drive belt is tensioned exactly the same way as on the Cat, by simply sliding the whole transmission housing forward or backwards.



The car ran with a Demon 27 turn motor on 16 x 55 gear ratio proving adequate in top speed, but not fast.

Brimod BDS type shockers were used with soft springs, and single port pistons. With these set up correctly the car took all track

surface irregularities very well, showing no vices except mild understeer on the exit of corners. The belt drive did exactly as was intended for it, giving very efficient all round drive with the bonus of excellent battery life. Whilst others fell by the wayside in the sticky conditions, there was enough power left for a couple more laps of the track after each qualifying race.

We at Radio Race Car are pleased to be able to show Mr Stewart's efforts, but let's not lose sight of the fact that excellent Associated parts are also on view, and we also stand testament to Cecil Schumacher's endeavours with the use of his kit parts, and Brimod's shock absorbers.

A small production run of between 40-50 cars is in process, with almost half already spoken for. With the finished article coming fully machined and built ready for your radio gear, it does not come cheap. Exact costs are not known at the time of going to print.

For further info send a S.A.E. to:- Model Motor Sport Ltd., 22 Castle Hill Drive, Castle Bromwich, Birmingham B36 NBD.