

Track Test

IN KEEPING with the 'big cat' influence on *Parma*'s current foray into electric car kits (first was the 'Panther') now the 1/18th scale 'Cheetah' looks set to establish a new class of racing for itself.

The 'Cheetah' first caught my attention at the Model Engineer, 1/12th Scale electric meeting way back in January of this year. *Parma* agent, Ted Longshaw, turned up with a pre-production sample which he thrust into the capable hands of John Chamberlain who, in turn, began to put it through its paces round the track. Bemused laughter from the other competitors soon died away as John proceeded to clock up a 25-lap time in the allocated heat time of six minutes.

Not surprising when you consider that 25 laps, or thereabouts, was the average lap score for quite a few competitors driving conventional 1/12th electric cars!

The next opportunity for me to examine the 'Cheetah' closely came when the postman dropped a small parcel through our office letterbox. It didn't take long for us to rip off the packaging (it never does) to find inside the basic 'Cheetah' kit.

The 'Cheetah' design owes much to recent developments in the UK 1/12th scale racing scene as the chassis is a scaled down version of the *Lexan* monocoque complete with miniature torque tube and sprung motor mount. The rest of the contents of the kit is fairly normal — it's just half the size that's all! The batteries are Pencil Ni-Cads, the speed control resistor is the size of a postage stamp and the motor looks as if it has come out of a 33M servo.



parma

CHEETAH

by Lewis
Eckett



The written instructions all refer to the exploded view diagram included, as usual it was tempting to ignore these and charge into the assembly just using the latter. Resist the temptation and use both, it will save time in the long run.

The first item on the agenda was the rear axle torque tube, this fits into two pre-drilled holes either side of the chassis, bronze axle bushes are installed to retain it, these should be fixed in permanently using cyanoacrylate, unless ball-races are to be fitted at a later date. The drive gear is held in place on the axle by an Allen screw, the axle should then be centred in the torque tube and the gear tightened using the Allen key supplied in the kit. The wheels and tyres can then be added, remembering to leave a small amount of end float to allow the wheels to spin freely. Next we move up to the other end of the chassis (not far to travel!) to begin the front assembly, the steering blocks pivot on the beam axle via the $\frac{5}{8}$ screw which passes through both and the chassis to be retained by a nylon nut. It may be necessary to remove excess moulding flash from all the moving surfaces with a sharp knife to ensure a free action. The steering blocks are set by fitting the tie-rod supplied into either side and bending this slightly to obtain the right degree of toe-in. The two stub axles are passed through from the inside and are retained with 'E' clips, press on the wheels also retained with 'E' clips and Hey Presto! one rolling chassis. Before moving on it is wise to oil the front and rear axle bearings before you forget. The body mounting posts are installed next with the slip-on collars to give the correct body clearance.

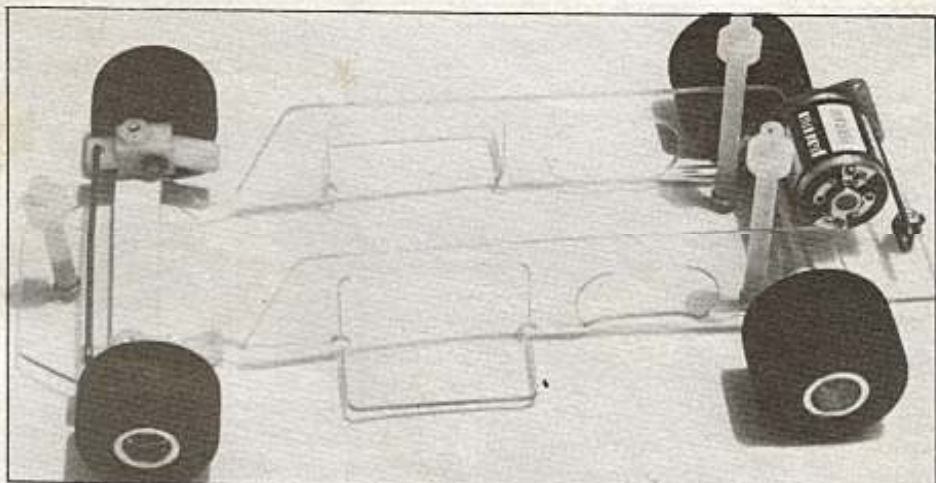
The motor with the pinion gear already fitted is attached to the motor mount and adjusted for the right amount of mesh between the pinion and the gear. The motor bushings should also be oiled. Finally, the pianowire torque spring slips through the hole in the motor mount and is then anchored to the chassis; by sliding the spring in and out of the motor mount the chassis can be adjusted or 'tweaked' to remove any kinks.

Laying aside the car for a minute, making sure the little beastie was safe from being sat or trodden on, I began soldering the Ni-Cad cells together.

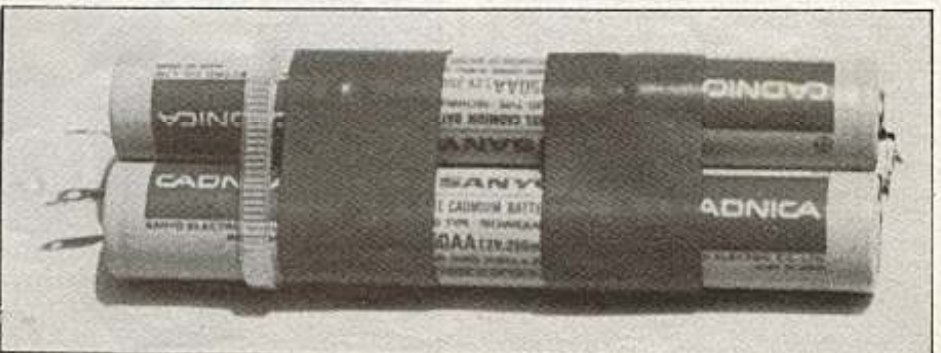
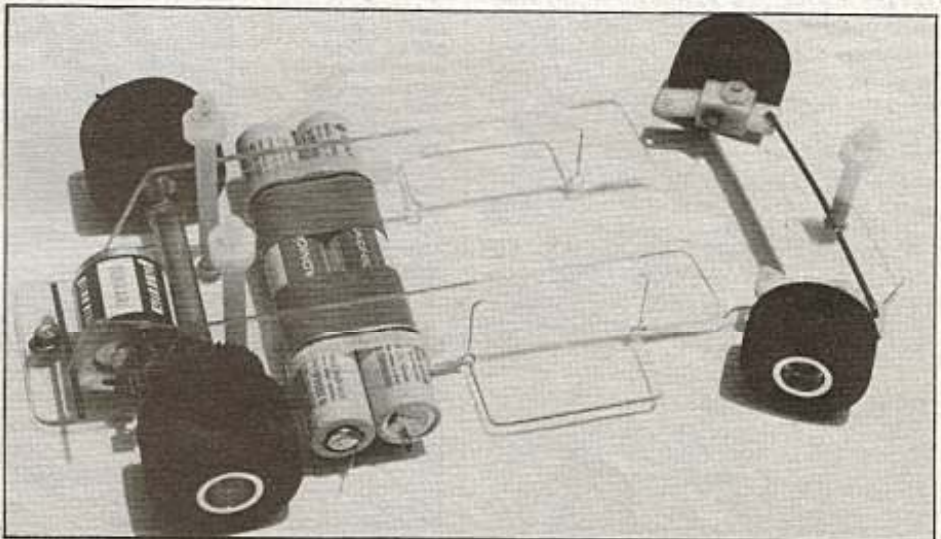
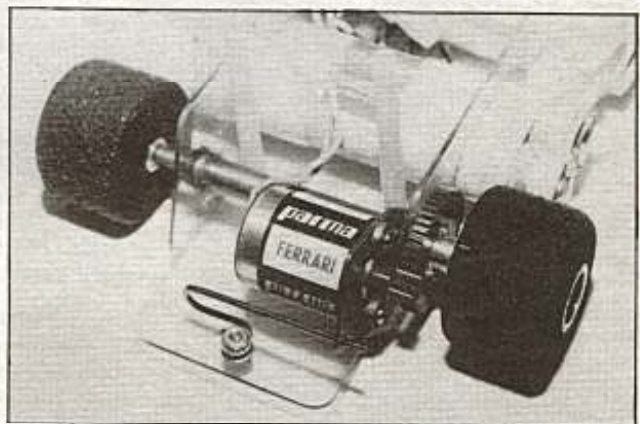
The battery pack comprises of two sticks of three cells which fit across the chassis in the same manner as 1/12th scale cars, and retained by tie-wraps when installed.

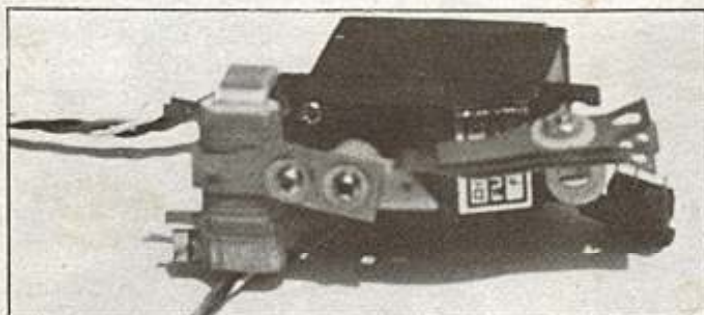
Getting back to the chassis and the installation of the radio gear — now, if you haven't already guessed it — then now is the time to tell you that mini servos are an absolute must, nothing else will fit.

I used *Futaba* mini-servos which were removed from my gigantic 1/12th scale racer, the steering servo is stuck to a double layer of servo tape (supplied) to give it the proper elevation. The tie-rod is installed and aligned correctly by either bending the rod or moving the servo.

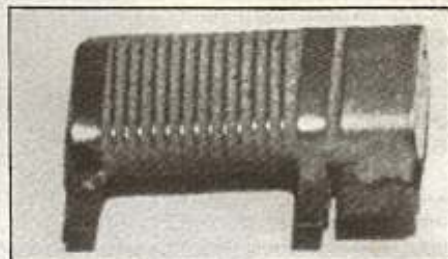


Above: Cheetah basic rolling chassis awaiting its innards. Before assembling the kit the lexan chassis should have any rough edges removed with fine wet 'n' dry paper. Right: close up of the motor mount placement and the piano wire torque spring. Below: the battery pack should be retained loosely to allow the chassis to flex. Bottom: pen-cell ni-cad battery pack ready for fitting.





Photographs left, right and below right: showing the speed controller mounted on its mini-servo. Parma recommend gluing the resistor and reverse switch brackets to the servo permanently.



Speed Controller

This little device warrants a separate heading as it is by far the most interesting and complicated part of the kit. The tiny resistor slides on to the U-shaped bracket which in turn bolts on to the servo through the servo mounting lugs. The servo arm has to be trimmed accurately as shown in the instructions to clear the resistor and provide a contact for the reverse switch. With the wiper arm fitted the resistor and bracket must be adjusted to make sure the wiper arm makes good contact. The reverse contact switch comprises three contacts bolted together (separated by nylon washers) so that the top can make contact normally, when reverse is engaged the servo arm presses the middle contact on to the lower one, if all three touch at the same time the whole system will short out, fine adjustment using needle nose pliers will be needed. The whole system is wired up as per the instructions, Parma do supply wire to do this, unfortunately this is all blue — so extra care is needed. The receiver leads are soldered into the matelock connector along with the wires to the resistor, so that the receiver takes its power directly from the battery pack. Once everything has been connected up properly the batteries can be given a quick charge to enable the steering and throttle to be set up properly.

Finally, the bodyshell supplied with the kit — a 'replica' of the Lancia 'Beta' — can be fitted, this won't take long as it is already trimmed and painted — so just fit it and go.

To the Racetrack

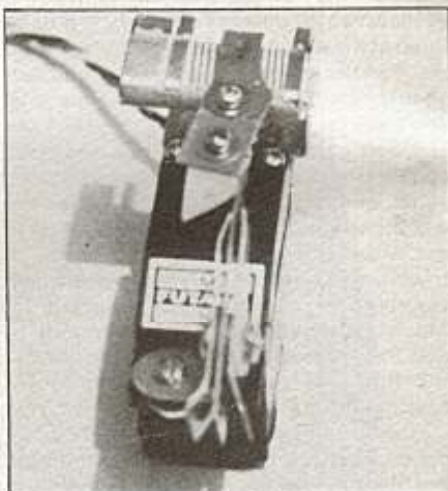
Parma recommend a five minute charge first time for the battery pack then discharged by running the car. A charging cord is furnished with the kit. For subsequent charges I monitored the voltage until the cells 'peaked' to give them a full charge. The moment of truth then — thumbs on the transmitter sticks and away we go.

The 'Cheetah' certainly lives up to its name, sprinting away at the first touch of the throttle. As far as 1/12th scale cars are concerned, the only area where the 'Cheetah' loses out is in full power up the straight, cornering is every bit as good. The only problem for indoor surfaces is the tyres, the ones included with the kit are of the outdoor variety, although Parma should be able to supply suitable indoor tyres soon.

Conclusion

A very nice kit which could turn out to be more than just a novelty racer and develop into a racing class of its own, particularly for those enthusiasts who have only a limited amount of track space available. The main point in the 'Cheetah's' favour is it is cheaper than a 1/12th scale electric car kit and is just as much fun, particularly when you don't have to worry about modified or standard motors, selected Ni-Cads and other such variables.

The 'Cheetah' is available from Ted Longshaw Model Cars and other Parma stockists, price £14.50 for the rolling chassis; £51.50 complete kit and £61.50 for the assembled kit (minus radio gear).



Right: the charging leads as supplied in the kit, careful monitoring of the battery voltage whilst charging should be made using a voltmeter to guard against overcharging. Below: the finished car ready for the racetrack and eager to show its teeth.

