

Radio Race Car looks at Tamiya's latest hot off-road racer



The Fox is a well finished car with its gold anodised wheels and glossily finished injection mouldings.

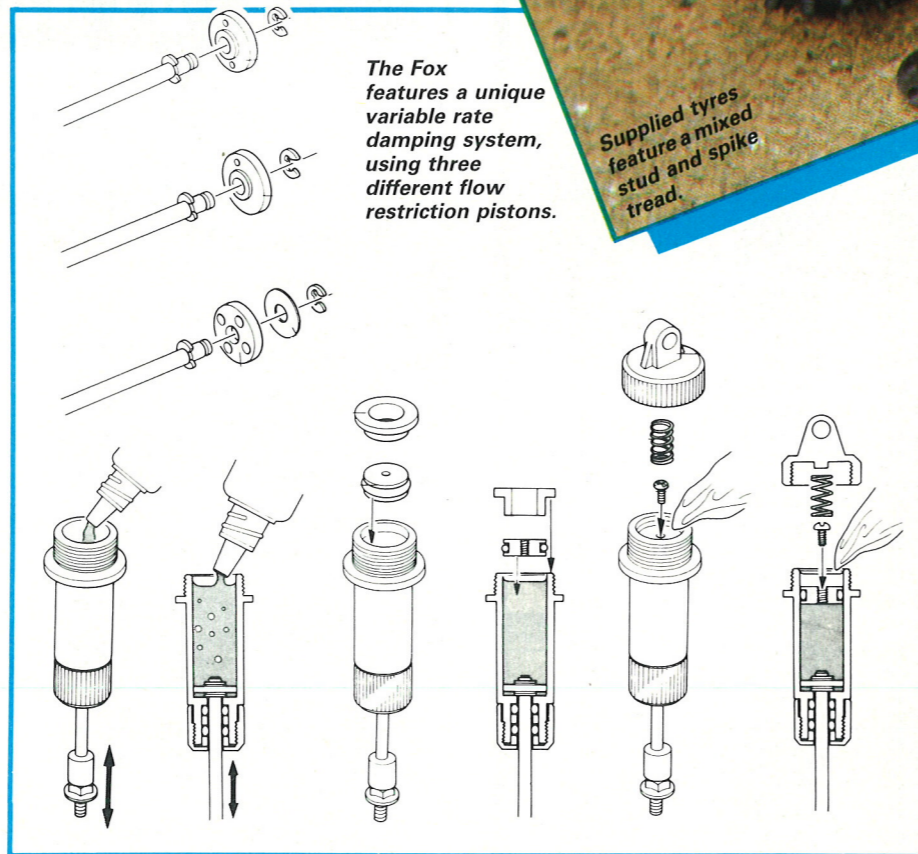
No doubt launched at this time of year, the latest addition to Tamiya's stable, the Fox, is intended for the high intensity interest generated around Christmas.

The Fox follows on from the highly successful four wheel drive Hot Shot, now accepted as a suitable vehicle for novice and seasonal campaigner alike.

Tamiya, have not and presumably will not in the future, rest on their laurels. Constant design and development takes place, with several new or uprated concepts appearing each year.

The Fox shows an obvious allegiance to the Hot Shot, but is only powered through the rear wheels. To some, this will be to its advantage, in being cheaper, easier to assemble and keep serviced. To the younger fraternity, the marketing and subsequent packaging of Tamiya kits is of a deciding influence. The artists impression of the car portrayed on the packing, can be "stretched" or "reduced" as per draughtsman's licence, to give an aggressive, racy, appearance. When finished, with painted body, full decals in place and those expensive looking plated hubs, the car looks better than that portrayed. With a slim aerodynamic centre structure, combined with a longer, better handleable wheel base than certain previous Tamiya kits, the car has a charm of its own that spells best seller.

Let us now sectionalise the car in order to establish the thoughts behind the design and whether value for money can be given an affirmative vote.



The Fox features a unique variable rate damping system, using three different flow restriction pistons.

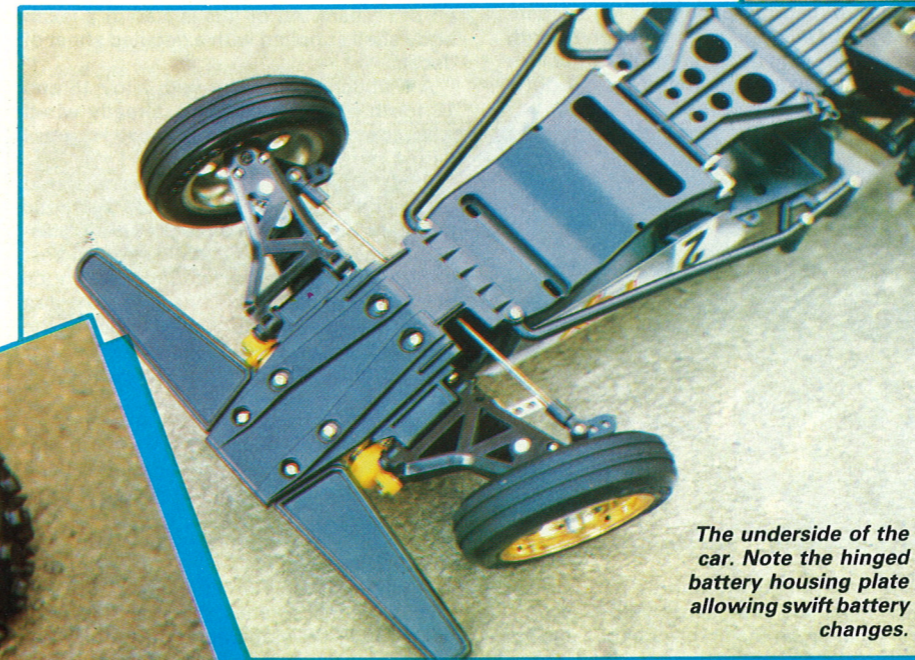
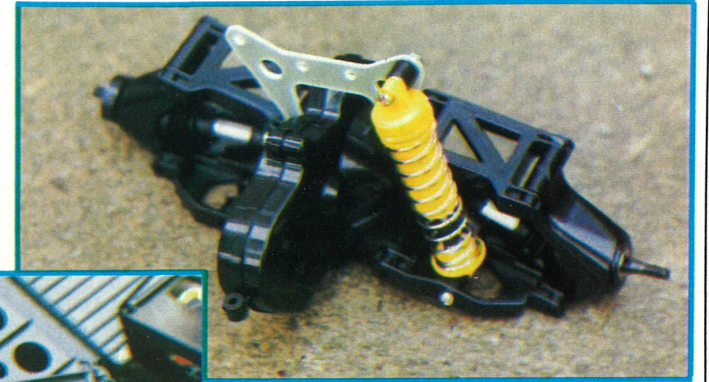
Supplied tyres feature a mixed stud and spike tread.

Centre section

This kit shows Tamiya's continuing use of a full length box monocoque formed from moulded upper and lower sections. As long as suitable, strong mounting points can be established, a box monocoque chassis can give the car a lightweight, strong, waterproof, narrow, unflexing basis for building onto.

Provisions are made up front for the loca-

Rear suspension and transmission 'power egg' with one of the distinctive adjustable dampers.



The underside of the car. Note the hinged battery housing plate allowing swift battery changes.

tion of wishbone support brackets. Moving back we have a fully waterproof radio box to locate and store all electrical gear, including Tamiya's own three-speed controller, mounted direct onto the servo. Further back is the location point for your five or six cell battery pack, the batteries held in place by a pivoting plate which doubles as a stand, when lowered down.

To the rear of your moulded driver figure is the provision for fitting a waterproofed radio switch, with the upper moulding finalising at an extended bracket for bolting on the gearbox assembly.

The UK distributors of Tamiya kits would no doubt like to see customers install in their new acquisition, one of their Acorns radio sets and supplied with this kit was one of Acorns battery eliminators, installed into the on-off switch harness. This allows you to tap off the power to your receiver



Note the fully exposed motor for effective cooling.

from the main battery pack, thus eliminating the use of radio batteries. An obvious advantage for radio installation and weight saving.

Front suspension and steering

Equal length wishbones are utilised at the front, giving no camber change at full suspension travel. With rear wheel drive only, the ability to alter your top wishbone member is of great importance in order to dial in on front wheel grip. The Fox has fixed length wishbones and perhaps I am hoping for too much.

The lower wishbones have a wide spread for the pivot points and moulded extensions for the location of the hydraulic damper.

The upper wishbones have a narrow pivot width, comparable to the Hot Shot, but here I feel is a potential wear area, and could be held in check by a supporting brace.

Steering arms are nylon moulded with centre point stub axles. A small steel stay is clamped around the steering arm and acts as a strengthening member for the arm and supports the top and bottom king pin ball connectors. These connectors are held into the wishbones by a nylon washer and thin steel plate. The plate being retained by three small self tapping screws.

A track rod assembly is supplied with steel threaded arms and snap-on nylon connectors with brass ball fittings in the steering arms. The servo saver on this car is a development of Tamiya's usual Futaba, Sanwa, etc. adaption, giving full weather-proofing via moulded rubber seals in the front of the chassis.

Damping is effected through a single coil spring over oil filled shock absorber. A further development here is that in order to make the dampers cost effective and save weight they have been produced as nylon mouldings.

These dampers are worth a closer look, because they are a little more than a piston in a tube. The mouldings are free from any flashings, allowing easy assembly and freedom of movement of their internal parts, and also easy rotation of the moulded threaded parts.

The screw-on base of the cylinder has a double seal for the piston rod. The piston rod is machined for the fitting of circlips, which retain the ported piston and a thin nylon valve. Three choices of piston are available with one, two or four ports giving a good range of damping, using the one type of damper oil provided with the kit.

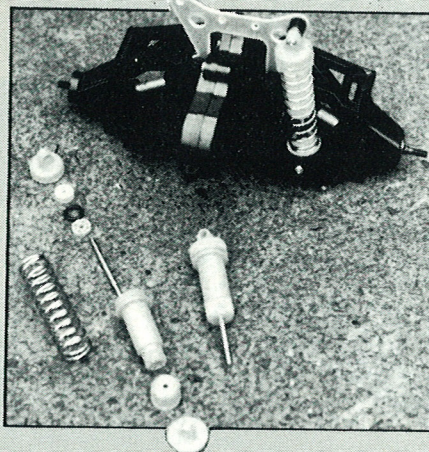
The valve allows a rapid rise of the suspension arm, via free movement of oil through and around the piston, and a slower return of the suspension with the piston ports sealed and oil only around the outside of the piston.

Rear Suspension and Gearbox

The two-part nylon moulded gearbox body houses the now traditional Tamiya bevel differential and meshing counter gear which takes the motor drive.

The drive shafts, where they locate into each side of the differential, run in ball bearings, as do the counter gear, all bearings being supplied standard with the kit.

Unequal length nylon wishbones are attached to the gearbox housing, giving about 5° of camber change at full suspension travel. Once again the wishbone length is fixed, allowing no variation in camber for adjusting rear end geometry to suit different conditions.



The drive shafts are a three-part fabrication, made up with alloy centre section, steel location points at the gear box end via machined flats and a lightweight 'C' ring for retention. A hardened hexagon drive joint at the wheel end is utilised, as with Tamiya cars dating back to the Frog and Subaru Brat.

Most people who have driven Tamiya cars with this hexagon drive know that they have a nasty habit of losing the drive when excessive suspension travel occurs. Not so now, because a special pressed steel cap is fitted over the end of the drive shaft and into its mating part on the axle. Once pressed into place and packed with grease this should prove a safe, trouble free joint, suitably sealed from abrasive dust and dirt.

The rear suspension is finished with the fitting of a fibreglass damper stay and individual coil over oil filled shock absorber to each lower wishbone. The shock absorbers are of identical design to that used on the front of the car. Incidentally, spring tension can be increased by simply compressing the spring by hand and inserting a thin nylon spacer between the spring and end cap of the shock absorber.

All of this assembled section can then be offered up to the main monocoque and clamped to the upper half by means of two M3 screws and nuts.

Finalising the Build

At this stage your car is looking almost like the finished article, but in order to arrive at that final stage we are presented with fitting the following parts.

A full width moulded front bumper attached to a nylon skid plate, covering the vulnerable parts of the front suspension.

Nylon nerf bars and battery retainers are screwed along each side of the car, along with a moulded driver figure for that little bit of realism. All of this is clad in a lexan body shell supplied with a detailed sheet of decals.

A Mabuchi 540 motor with alloy 15 and 18 tooth pinion is supplied, already wired with connectors, to suit the speed control wiring harness.

Front and rear wheel hubs are plated gold, adding greatly to the cars aesthetic qualities, but the front ones run only in plastic bushes, something I would suggest best improved by fitting ball bearings. Rear hubs are located on the axle, via a small nylon adaptor, locating onto the inner face of the hub and over a steel pin through the rear axle. All hubs are then held in place by nyloc nuts.

Tyres are Tamiya Hot Shot at the rear and narrow ribbed at the front, and I note that all hubs are provided with small moulded holes to expell air when the tyres are compressed.

Conclusions

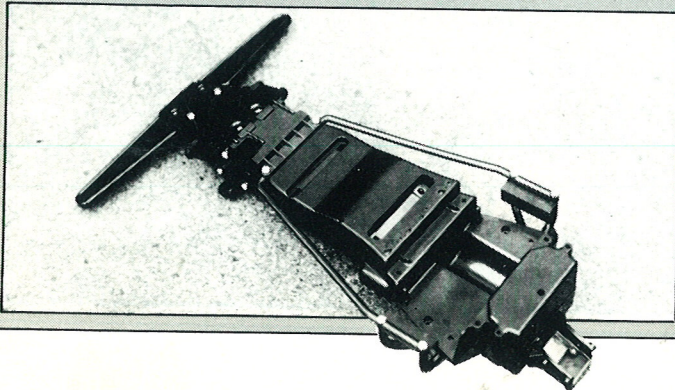
The whole of the Tamiya range of kits, enjoys wide acceptance from all types of users. Their development programme continues to produce new kits each year, showing improvements in design, to keep up with modern trends.

The Fox is obviously no exception to the rule, being very lively and extremely light straight out of the box, at 3lb 6oz (on our scales). Improvements in shock absorber design are a great asset to the car's handling, but perhaps the front suspension could be improved by having some roll damping. The location of the front mono-shock does not allow for any damping of body roll, which can be quite excessive on hard cornering, resulting in the car lifting rear wheels. A simple front anti-roll bar would improve that effect and I am surprised that Tamiya have not utilised the one from their Hot Shot kit.

The sealed box monocoque chassis offers good strength and weatherproofing for any radio installation. One difficulty with this chassis is that changing your frequency can be a major dismantling job. For the serious racer it's worth giving consideration to one of those crystal extensions made by Ashbourne Technology and Motile Model Developments.

The kit is available from all leading model shops. Distributor: Richard Kohnstam Ltd.

The underside of the chassis with roll bars attached.



Detail of the front end shows the mono-shock suspension.

