



# PORSCHE 959

**Scale effect is back in fashion! John Cundell has been test driving a 'Porsche 959'**

## Germany and ...

Zuffenhausen, West Germany — the home base of one of the best known car marques in the world; it is of course the headquarters of *Dr. Ing H c F Porsche*, builders of high performance sports, saloon, racing and rally cars of international renown.

## Japan produce ...

Shizuoka-City, Japan — the base for another world renowned car manufacturer; it is of course the headquarters of *Tamiya Plastic Model Company*, builders of high performance model vehicles of all types.

## The '959'

It was not unexpected for *Tamiya* and *Porsche* to get together and produce a scale model of one of *Porsche's* designs. But which one to choose?

*Porsche* are very prolific car manufacturers in terms of design variety; in fact in 1986 the company introduced so many new models, it almost seemed like there was one new variant per month. Also, over the years the company has had considerable success in rallying, so the subject finally chosen reflects some of that glory; the '959' car which won the eighth Paris-Dakar rally.

The shape has those classic, distinctively *Porsche* lines created by clever use of aerodynamic curves, with the advantage of a fairly beamy aft end which gives a little more space for the engineering.

Despite the added volume, the chosen scale of 1/12th necessitates a pretty packed concept, but because of some typically clever *Tamiya* engineering, the impression given is one of efficient use of space with no compromises that will affect strength or performance.

## Scale choice

The choice of 1/12th rather than 1/10th must have caused some heart-searching in *Tamiya's* design department. Okay, 1/12th is the scale for flat tracking and 1/10th for Off-Road. But in which grouping does this model fall?

*Tamiya* obviously had difficulty in deciding the scale; if you look closely at the box artwork you will detect that the 1/12 label has been very neatly stuck over a 1/10 label. Printer's error? The option of building the car as a flat tracker or an Off-Roader is also given to the builder by you having to decide whether to go for the 18/40 pinion/drive gear (2.22:1), or the 16/41 (2.56:1) ratio drive. Think about it before you make this decision. To change the ratio after assembly of the whole model is not a five minute job. You need to disassemble practically the whole mid section and rear-end of the car to make the alteration. We opted for the 'normal' 18/40 set up.

## Engineering concept

The monocoque chassis is moulded in top and bottom halves from a very tough black plastic and features a compartment to accept the standard 7.2 volt Ni-Cad pack.

The front-end houses the servo saver and is vertically grooved to accept the forward gearbox/suspension assembly; whilst the rear-end culminates in two side members shaped to accept the nylon block mounted rear gearbox/suspension assembly.

The motor is clamped between the chassis and the rear gearbox assembly. Two nylon collars locate the motor centrally and a small screw protrudes into an adjacent hole in the rear gearbox housing to prevent the motor rotating.

The servos sit adjacent to the motor, the receiver is in front

and the three-position forward and three-position reverse mechanical speed controller is located forward of the speed control servo and alongside the receiver. The speed controller and the steering servo linkages are all easily accessible on top of the chassis and away from road dirt and physical damage.

The speed controller resistor is mounted on an insulated base, together with ally, heatsink, on the upper of the two specially reinforced bumpers. The lands on the speed controller are substantial and the contact point on the arm is of similar dimensions. Together with the switch lubricant supplied and the rubber dust cover which fits like a balloon over the controller, a long, trouble free life should be obtained.

The drive shaft from the rear to front gearbox runs along the top of the chassis, between the receiver and speed controller. All wiring is neatly led over the top of the chassis and can be harnessed to various designed attachment points with the cable ties provided.

Two lightweight moulded plastic underpans bolt to the underneath of the front gearbox, chassis and rear gearbox, performing the double tasks of protecting all parts from damage and dirt and also strategically reinforcing the overall strength of the completed car.

The polycarbonate body is very detailed and is blow moulded to facilitate the severe curved underpan at the rear of the car, and a driver and navigator assembly which attaches to the body providing a realistic look to the finished model. A fully detailed sheet of self-adhesive decals allow final finishing to a high standard. The receiver antenna is supported on a substantial black anodised piano wire pole which itself rotates about a steel shaft, clamped between the rear suspension upper supports.



## Radio installation

The car is designed to accept any modern fully proportional radio equipment using the BEC (Battery Eliminator Circuitry); and specifically servo arms and fitting brackets are included in the kit for Acoms, Sanwa, Futaba, JR and KO.

BEC allows the receiver to obtain its power direct from the main drive battery, providing a stable current flow. There is no room in this model for a separate receiver battery pack, so if the BEC system is not a feature of your radio equipment, you will have to make some provision for electrically feeding the receiver with the correct voltage from your main battery. Battery eliminators are now sold separately for most of the well known makes of radio equipment. Installation is very straightforward and as mentioned previously, access is excellent.

## Construction hints

There is no point in giving a blow-by-blow account of assembling the car as the instructions follow the normal *Tamiya* format of superbly detailed drawings and component requirements for each part of the building process.

Were there any areas of confusion? Only one, and that is only caused if the instructions are not followed exactly. During the construction of the gearboxes, in Assembly Point 7, a drawing of the Counter Bevel Gear shows the need to insert a plastic bearing (BD5) in one part of the drawing and a ball thrust bearing (SB2) in an adjacent part of the drawing.

As ball bearings are included in a special container, I naturally assumed that the plastic bearing was to be replaced. Only when the second gearbox was complete did the penny drop that both the plastic bearing, inserted first, and the ball bearing were required. So, back to the building board and the strip down and reassembly procedure was undertaken. Only an hour! You have been warned.

Be careful that all the various thrust washers and bearings are assembled in the correct order



as in many instances the car will work even if they are incorrectly located, but with resulting friction problems and perhaps damage to vital components.

If you are going for maximum speed and intend to adjust the motor timing to suit, that task must also be carried out before assembly. It is impossible afterwards without a major strip down.

The dampers are amongst the easiest to assemble that I have yet come across. They are all bonded with a non-ferrous metal piston, sealed with an already installed ring at their piston operating end, which is at the bottom of the damper.

The ally top or cap, screws onto the body with an oil seal between, and is hollow with a

nozzle to which is attached a short piece of neoprene tubing. By means of a specially supplied needle which fits onto the damper oil container supplied, oil is syringed into the damper after the needle has been inserted right to the bottom of the unit.

Manipulation of the piston then facilitates any entrapped air to escape; the oil is topped up and an ally plug inserted at the top of the neoprene. It is then possible to see at all times whether the dampers are still full of oil, and topping up is extremely straightforward.

This was the first time I have managed this task without turning the workbench into a Torrey Canyon type oil slick.

The front suspension

assembly wears the coil spring over the damper unit, a fairly normal arrangement, however at the rear the dampers are mounted fully aft and the coil springs simply sit between the upper supports and the wheel hub, located by two protrusions. There is nothing physical to maintain their location should they receive a knock. However the springs are fairly well protected and to date they have not been displaced during testing.

The superbly moulded tyres need sealing to the wheels with cyanoacrylate adhesive, a simple task and the tyres easily slip over the wheel mouldings. There is no need for the soap treatment and to look out a set of tyre levers.

The only area where some modellers may have difficulties is the fairly widespread use of circlips and E clips. Some of these are as small as 1.5mm; ranging out to 4mm. The big ones are easy to handle, but the little 'uns are another story. You can manage without a pair of good quality long nosed pliers, but it isn't easy. If you haven't got the pliers, persevere and work over a clean, unpatterned workbench of table so that when the beastly object does fly off into oblivion, you stand some chance of recovering it. Alternatively assemble the components in a large plastic bag.

I think one found its way into our video recorder, but we didn't tell *Radio Rentals* that!

There are one or two spares provided, thankfully, E clips that is, not video recorders.

Rear suspension can be adjusted for camber angle which will affect the degree of understeer — a simple operation necessitating removal and replacement of camber arms by means of one of the dreaded E clips; and also the rear dampers which can be arranged to give a soft or a hard ride, again by simple resiting the mounting point. Front suspension cannot be altered.

The polycarbonate body needs to be trimmed, although the worst job, cutting away the wheel areas, is already done for you. There are a number of small holes that need to be drilled for mirrors; then the

usual procedure of washing in detergent to remove smears and grease, followed by masking off and painting with polycarbonate paints, starting with the darker colours first. The figures are painted next, using plastic paints as these are moulded in styrene. These are fitted, followed by the headlight unit and its wiring roof brake lights; and the decals. The body is located by four body posts, two each at front and rear, and held in place by snap pins.

## On Road and Track

One thing's for certain. Just like the real McCoy, the 'Porsche 959' doesn't wait around. Even in the 'normal' mode gear ratio at the first

notch on the speed controller she is no slouch. Wind her up to the top notch, stand clear, and feel the power surge from the 'Technigold' motor. With the 'normal' ratio, top speed is certainly faster than the quickest Off-Roader, and probably faster than the average 1/12th flat track race car! We didn't get around to stripping the car in order to try the high speed ratio, but by the simple mathematics of the ratio differences, the car ought to be some 15% faster.

The tyres supplied are excellent for road use, tarmac or concrete surfaces, but in their unworn form are not suitable for carpet and even smoother surfaces, as the car oversteers.

The rear camber adjustment is initially set for what should give maximum adhesion on the back tyres, and there is no front suspension adjustment possible so the only alternative, short of trimming the knobs off the tyres or wearing them off by prolonged concrete running, is to fit the slicks available as an optional extra.

The performance on tarmac or concrete is very exciting, behaving just like the real thing, I assume — not having had the opportunity of a test drive! In other words you have to drive it. She won't go round corners flat out, but with the right line and speed, an emergent bootful gives a superb four-wheel controlled slide. A racing start is pretty impressive too — the bonnet lifts, rear drops and the 'Porsche' leaves the starting blocks like a scalded cat.

What is really required, assuming that this is not going to be the first and last example of a racing model car that actually looks like a car, is a special racing class. Six 'Porsches' dicing with one another on equal terms would be very exciting, and perhaps interest outsiders who find some difficulty in relating to our Off-Road and flat track cars. Which club will do the honours?

### In conclusion

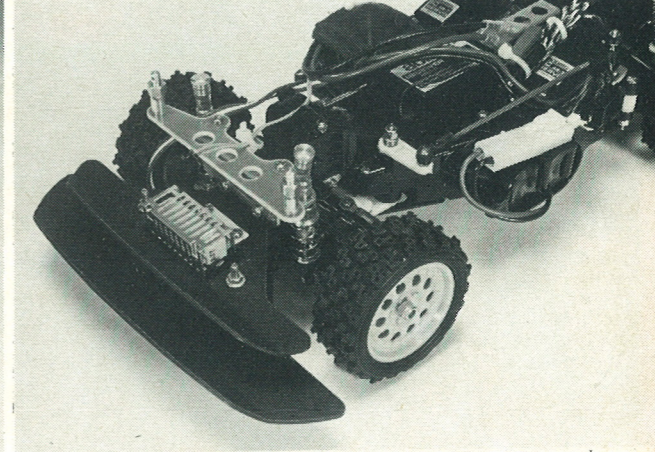
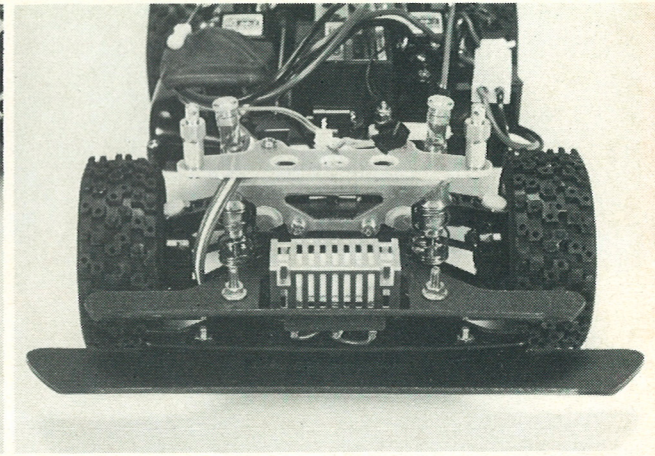
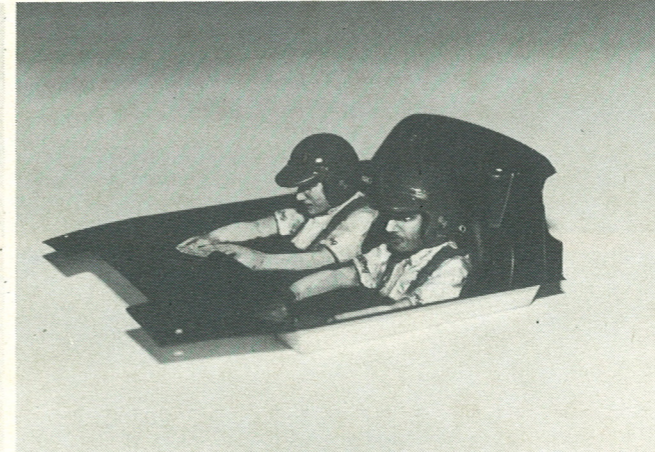
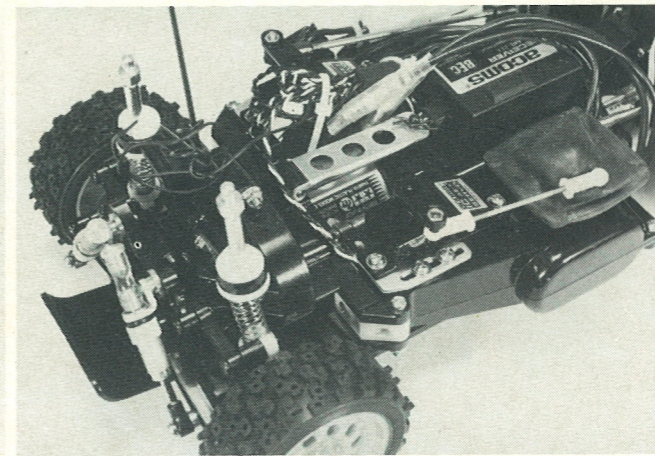
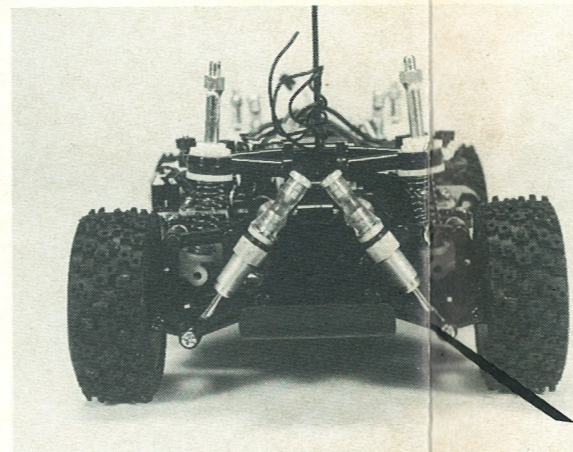
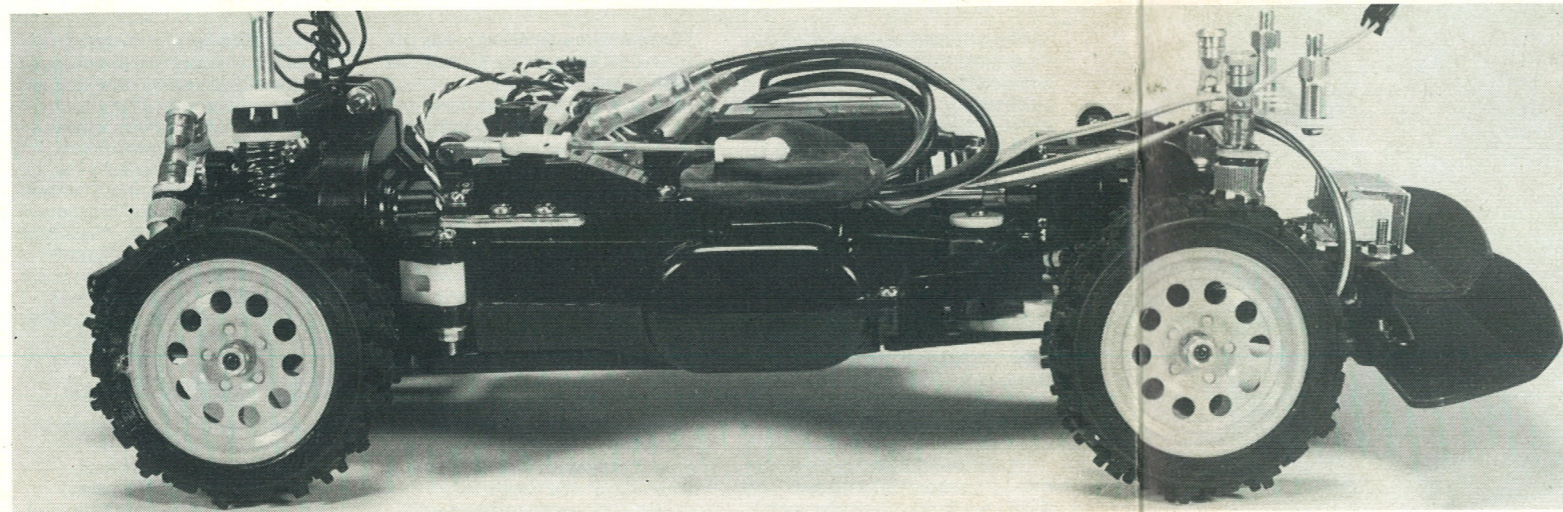
Okay, so the Tamiya 'Porsche 959' is not going to outperform a 1/10th scale four-wheel drive buggy, although it might well give some of the two-wheelers a run for their money; and in flat track mode, (or pavement mode as Tamiya put it), you will not win against a purpose designed track car.

The problem is, having seen one you won't be able to resist getting your hands on the sticks. And you certainly will enjoy the satisfaction of putting together a superbly engineered and presented kit.

The Tamiya 'Porsche 959' will have been a fabulous Christmas prezzy for any R/C model car enthusiast and we hope you were one of the lucky ones. If not, pester the providers in your family that you simply can't be left out in the wilderness, and after all they can always boast to the Jones's that they own a 'Porsche 959' — the scale is irrelevant!

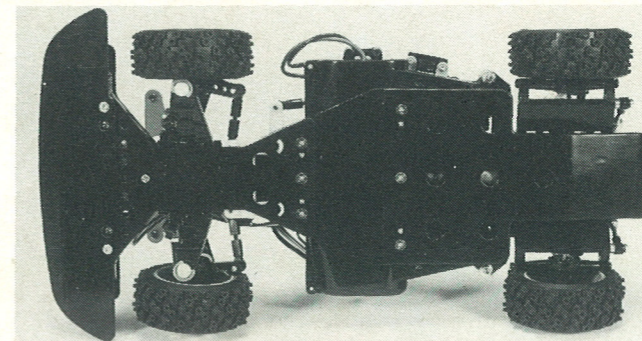
If you are your own provider, then go on, indulge yourself. The engineering is superb, she goes well and really looks the part. What a crowd puller at your next club meeting or street race.

Now where is Dakar?



Top: viewed from behind showing suspension coil springs and dampers. Above: cockpit detail is very good. Military Modelling magazine editor, Ken Jones, provided the paint job of our two drivers. Below: completed car minus bodyshell.

Top centre: the 'Technigold' motor can just be seen located behind the receiver. A full strip down is necessary to change ratios. Above: more close-up detail of the cockpit area.



Top right: front suspension detail showing coil-over shock dampers. Above: three-quarter view of the front-end. Left: underneath showing the chassis pan. Below: complete chassis with all R/C gear installed.

