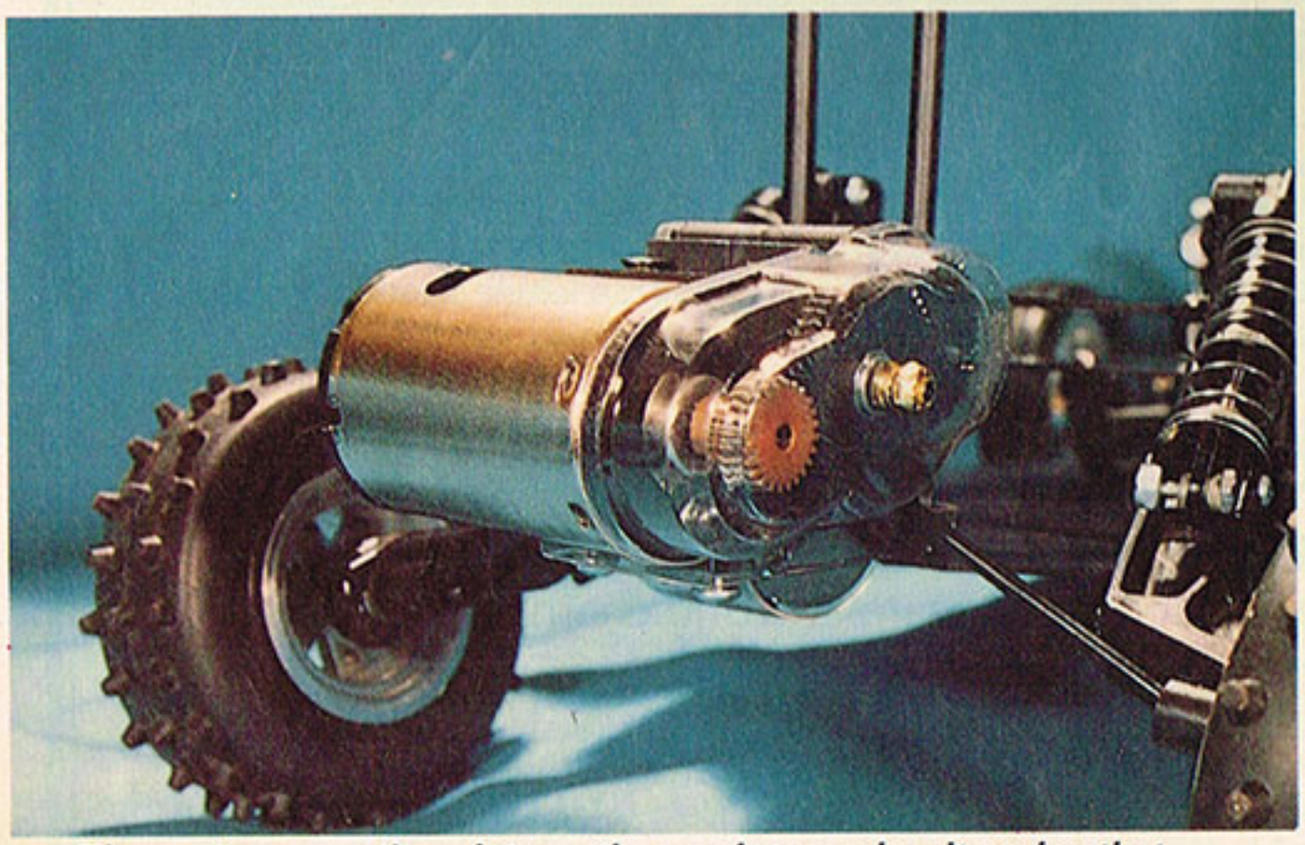
ROM AMERICA

PRO-110

by Frank Hughes

The American company, Model Racing Products, has an enviable reputation for producing high quality and well developed RC racing products, especially in the buggy area. Unfortunately, I don't believe that the MRP Pro-110 off-road buggy comes up to scratch, as far as MRP's reputation is concerned, when compared with other American two wheel drive off-roaders. Certainly the Pro-110 has some features which demonstrate the high level of research and development that have gone into this buggy, but as far as I'm concerned, some of the finishing, and some of the construction basics leave a lot to be desired.

The MRP Pro-110 is a two-wheel drive, off-road, competition buggy, built on a chassis plate made from aircraft-grade aluminium. There are two instruction manuals which cover the kit assembly; one has the text and the other the pictures, which are drawings rather than photographs. I found this system to be unnecessarily complex, and the drawings needed to be made clearer. The process could have been simplified by matching the text to the drawings, combining them in just one manual.



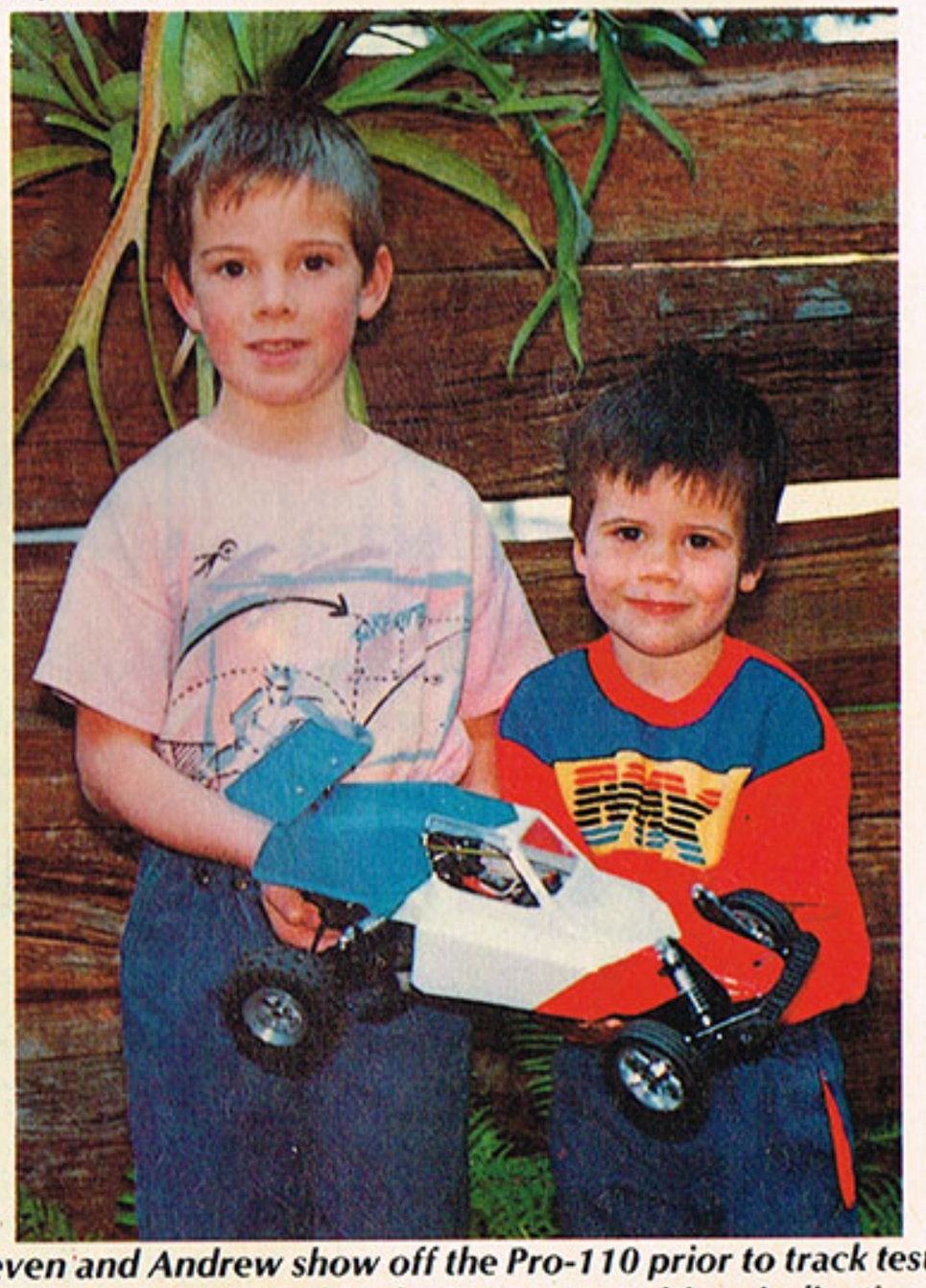
The motor mounting plate on the gearbox can be altered so that the motor can be mounted either fore or aft of the gearbox, depending on where you want the balance point to be.

Features

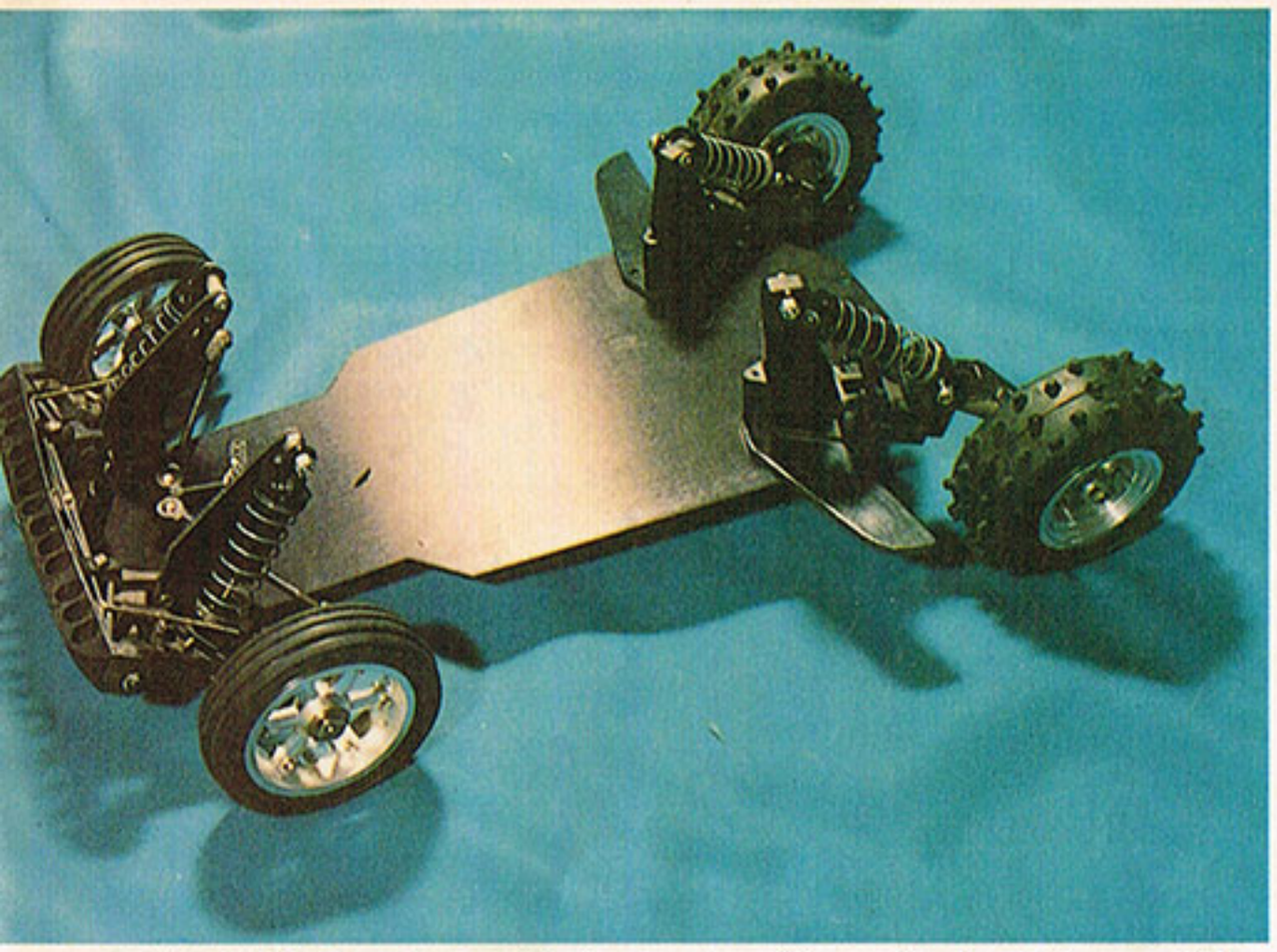
As standard, the Pro-110 is fully ball-raced, has oil-filled shocks which are fitted with bleed screws, and two grades of oil are supplied.

Castor and camber can be easily adjusted by rotating a hexagonal eccentric nut fitted to each wishbone pivot point, and the centre of balance can be changed by careful choice of one of the three transverse nicad mounting positions.

The motor mounting plate on the gearbox can be altered so that the motor can be mounted either fore or aft of the gearbox, depending on where you want the balance point to be.



Steven and Andrew show off the Pro-110 prior to track testing. Rear wing is mounted in the rearmost position, indicating that the motor has been mounted in the fore position on the gearbox.



Pro-110 chassis, made from aircraft grade aluminium, with suspension fitted.

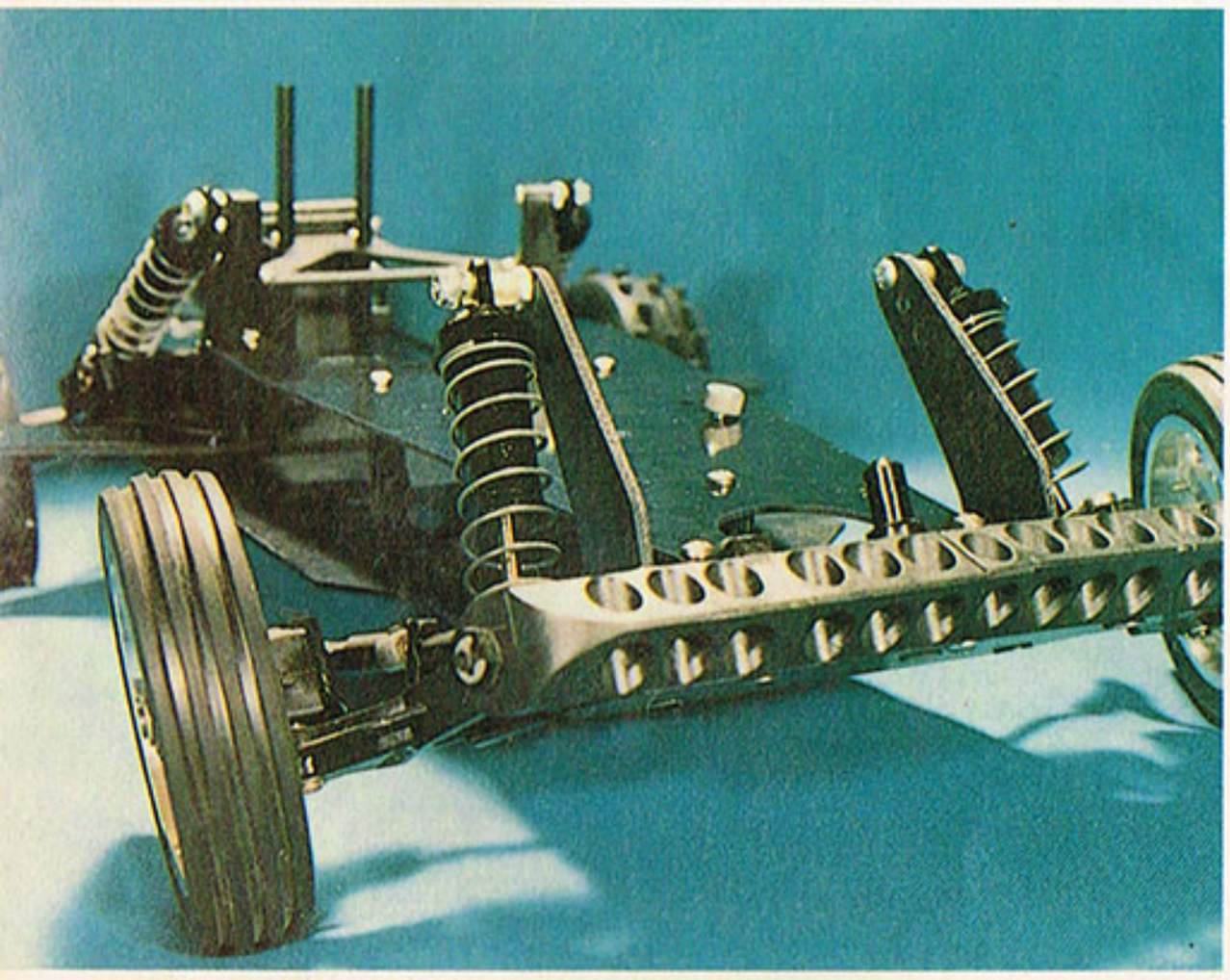
With the Pro-110, dropping a drive shaft should be a thing of the past. Inside each rear axle yoke is a spring which applies pressure to the shaft end, forcing it back into the gearbox yoke. This is a great idea; it works and should be a standrad fitting on more buggies.

While the chassis plate is aluminium, the radio plate is fibreglass to keep the weight down. The Pro-110 comes with two Lexan body shells; one has the driver moulded into it and fits over the radio plate to keep the dirt out, and the other goes over everything to provide the finished look.

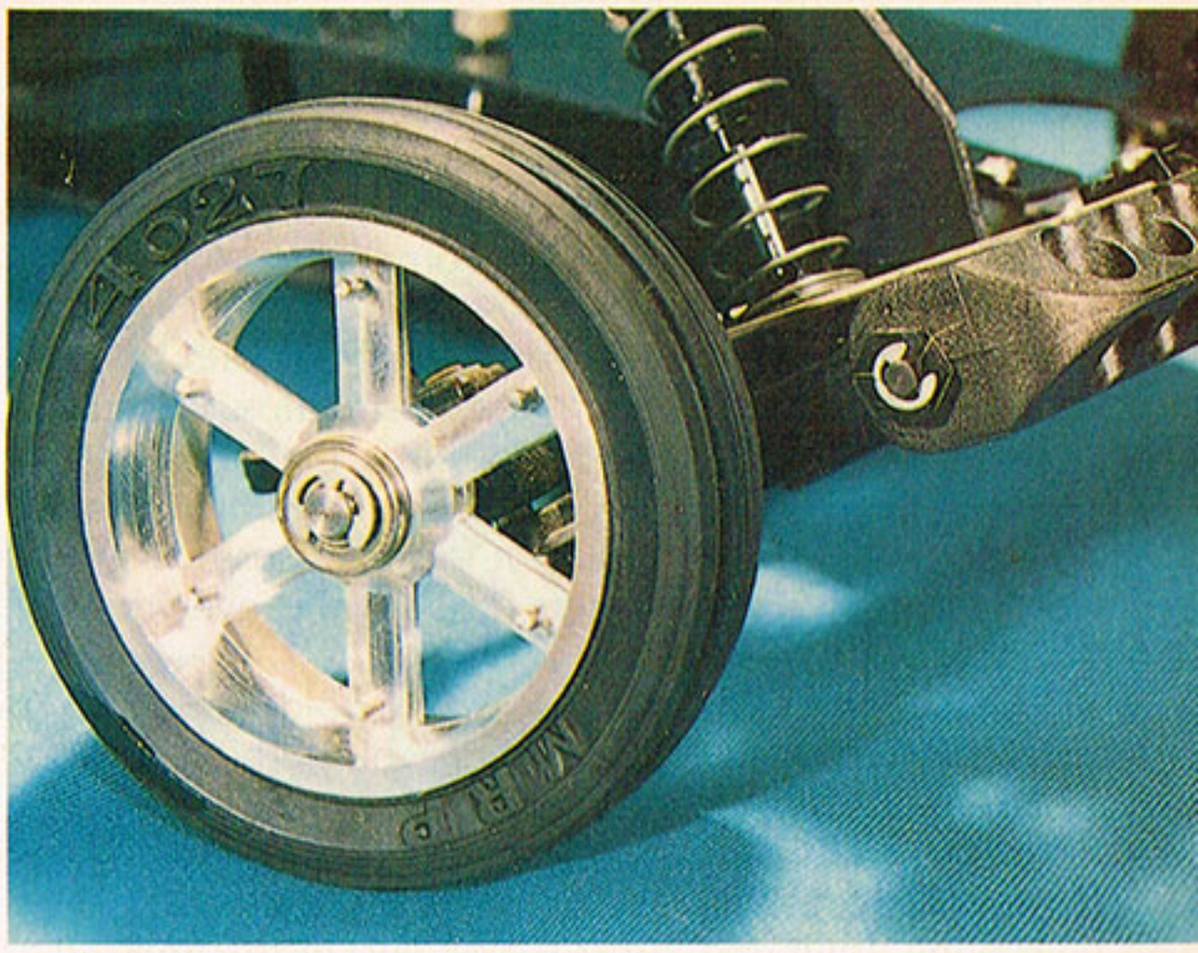
The track width of the Pro-110 can easily be widened for better handling, and it's done without add-on bits; simply reverse the wheels on the stub axles.

Painting the outer Lexan shell is made a little easier by the provision of adhesive masking shapes which are pre-cut to fit the window areas. This is another good idea which other manufacturers could take notice of.

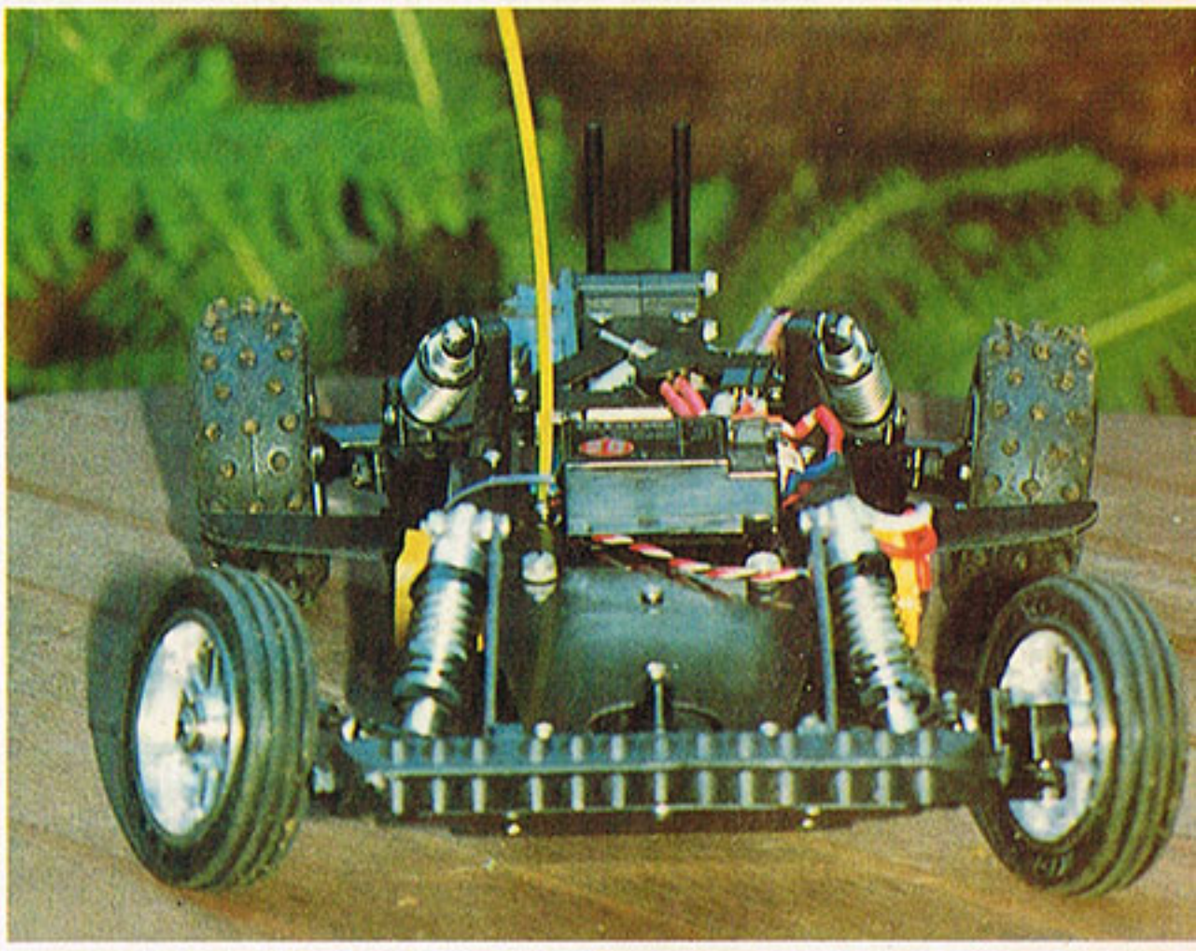
A very effective mechanical resistive speed controller is supplied. It has proportional forward, and also braking. Unlike some resistive controllers, this one is a heavy-duty unit, and should take a lot of punishment.



Radio plate, made from fibreglass, now mounted. Leaves plenty of room for steering servo, although adjustment to steering throw can be tricky. Battery can also be moved fore and aft to get better ride by means of relocating the mount.



Eccentric nut, mounted on the front wishbone, allows camber to be adjusted quite easily.



All ready to go. The Pro-110 easily accommodates all RC gear and battery. Note that the motor, although unseen here, has been moved to the forward position on the gearbox, and Option House shocks fitted for better handling.

Criticisms

While the features are good, there are some bad points which could well indicate a lack of thought in the design of the Pro-110.

The front shocks are fitted to the wishbones by just a self-tapping screw. This screw goes through a plastic-nylon section, then emerges, leaving a length of screw protruding across the top of the wishbone itself. While I'm sure that the self-tapper will hold the shock quite firmly, it's a shoddy piece of engineering which should not have been allowed out of the factory.

As I've already mentioned, there are two motor mounting positions, and both of them have their problems. If the motor is mounted in the outboard position, the wing mounts have to be moved forward a good 12 mm, bringing the wing to a point where it probably won't do very much. No, you can't leave out the wing mounts, because these two tubes also hold down the Lexan shell at the rear. With the motor mounted in the inboard position (as suggested and shown in the instructions), the body and wing mounts are fine, but changing or adjusting the motor is a nightmare! It is a case of removing one rear suspension assembly completely to get at the motor retaining screws, or removing the entire gearbox. Both methods take time.

The rear suspension seems to be very badly designed, leaving the back end with excessive ground clearance, even when the shocks have reached the end of their travel. There's no risk of scraping the gearbox on anything, but the high back end does tend to make the Pro-110 rather unstable in tight corners.

Construction

The kit construction is very straightforward. It really is just a case of following the instructions in the two books. The only slightly tricky bit is the assembly of the gearbox and differential unit: a ball-differential construction which will require the liberal use of grease to hold the balls in the centre gear, while everything goes together.

Grease will also be needed to hold the thrust race assembly together on the shaft, which goes through the differential and allows the diff action and tension to be adjusted to suit track conditions and driving style.

Testing the Pro-110

Having built the Pro-110 as per instructions, it was taken out for a test run, and frankly, I was a little disappointed. I found the Pro-110 to be somewhat unpredictable in the corners (possibly because of the high rear end), with a tendency to tuck the back wheels underneath and roll. No doubt this is caused by the amount of positive camber on the rear wheels. This camber cannot be removed by using the castor-camber adjusters; they just don't have enough adjustment available.

Conclusions

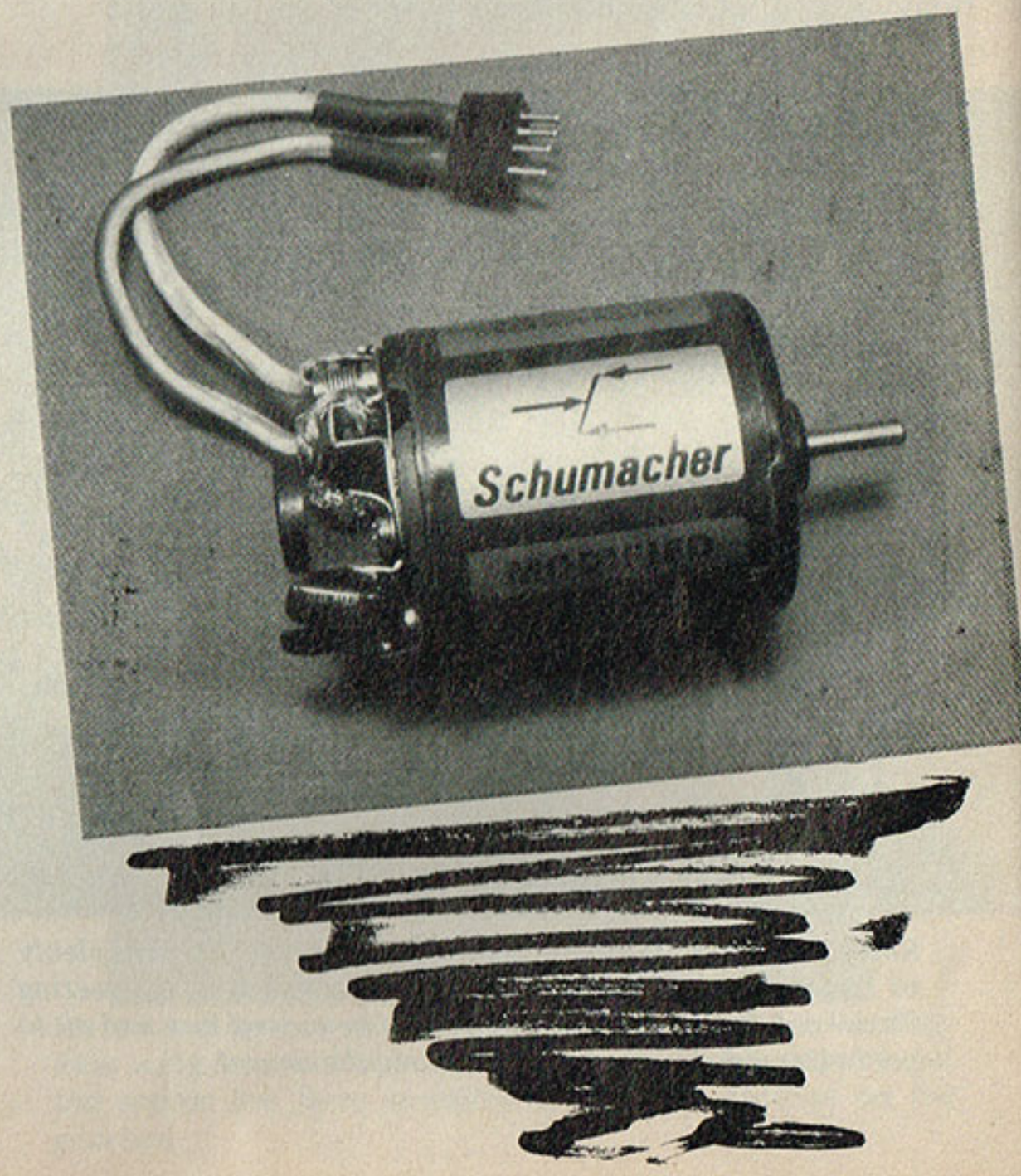
The MRP Pro-110 is not a buggy that I felt I could regularly drive with any real confidence. It is a fascinating combination of good and bad design engineering, making this buggy one for the adventurous, or perhaps for those not afraid to do some extensive modification work.

REVIEW AT A GLANCE

Quality of Instructions:	★★★★
Ease of Construction:	★★★★★
Quality of Materials:	★★★★
Motor Supplied?:	*Yes; Mabuchi 540*
Chassis Type:	*Aluminium plate*
Suspension Type:	*Front — independent arm* *Rear — trailing arm*
Shocks Type:	*Coil spring over oil filled shock*
Sway Bars?:	*Yes; front only*
Ball Races Supplied?:	*Yes*
Motor Accessibility:	★
Battery Accessibility:	★★★★★
Speed Controller Supplied?:	*Yes; mechanical resistor type*
Steering Servo Saver:	★★★★
Body Shell:	*Lexan; you cut out and paint*
Balance of Car:	★★★★
Handling on Track (as tested):	★★
Ease of Setting Up:	★★★★

THE 19 TURN SCHUMACHER-YOKOMO MODIFIED MOTOR

by Paul H. Bird



With a retail price of about $130.00, the 19 turn Schumacher-Yokomo modified motor falls into the middle of the range price bracket. It's a case of 'you get what you pay for': this motor has middle of the range performance. It develops good torque, but lacks the top end rev range of some of the more expensive motors, and, with a 19 turn wind on the armature, that's to be expected.

As you'd expect with a modified motor, it is ball-raced, and has an adjustable end bell, fitted to a black Yokomo 05 can. For its price, the 19 turn Scumacher-Yokomo is good value for money. It is a motor which would be ideal for the newcomer to modified class, or perhaps to use when getting used to a new buggy. The motor can also be used in 1/12 scale cars.

Test motor supplied by:
Performance Hobby Supplies,
P.O. Box 96, Box Hill, Victoria, 3128.
Trade enquiries only.