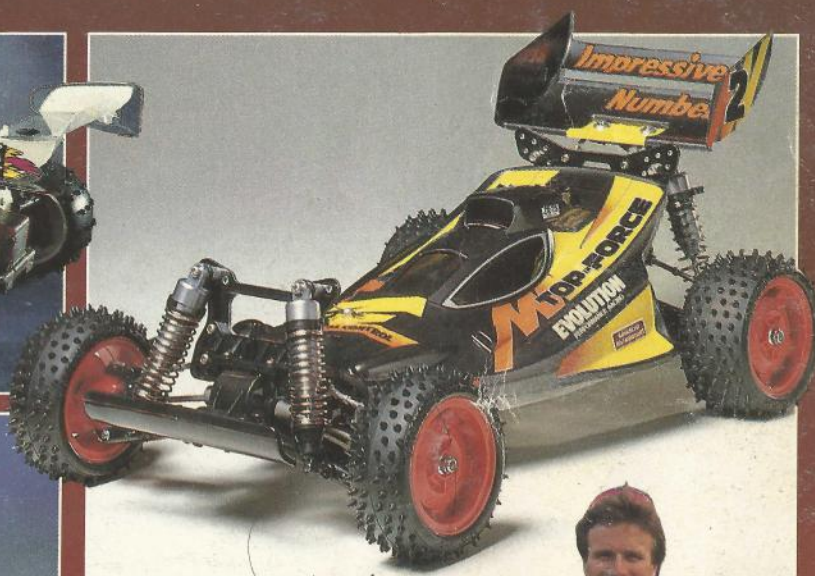


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MODEL CARS

RACING SPECIAL



CONSTRUCTORS
AND BUYERS
HANDBOOK



Kits, Motors,
Batteries, Accessories
Racing to win,
Building tips



AN ARGUS SPECIALIST PUBLICATION

Schumacher

club 10

First time racing



UNBEATABLE PRICE AND SPECIFICATION

Club 10 - THE CONCEPT

A car which is good enough to take you First Time Racing and into the Winners Circle with a price and specification which is unbeatable.

The concept of the Club 10 is to use the race winning experience at Schumacher to make fast, strong, reliable, and easy to build 1/10th scale electric model car kits, suitable for 2 channel radio control.

With clear, step by step instructions, the Club 10 kits are a joy to build and easy-to-maintain.

Club 10 - THE STYLE

It's your choice! The aggressive styling of the STORM Racing truck or the Off Road style of the COUGAR Desert Racing machine. A few optional parts mean you can swap between the two in minutes. Whichever you choose, these cars look the business!

Club 10 - THE FUTURE

A tremendous range of Speed Secrets option parts mean that you and your Club 10 can go a long way together. As your driving skill improves so too can you improve the performance of your car. Sealed Ballbearings, Quick Change Slipper Clutch, Pro-Diffs, Roller Drive Shafts and Ballbearing Steering are just some of the Speed Secrets accessories to keep you one step ahead of the competition.

PERFORMANCE AND TECHNOLOGY YOU CAN AFFORD

Club 10 - THE POWER

The Club 10 specification includes a powerful 540 motor and mechanical speed controller with reverse, driving through easily changed 48dp 'Whisper' gears. A dirt sealed differential and efficient transmission mean maximum performance with minimum maintenance.

Club 10 - THE SUSPENSION

The Cougar and Storm are designed to be smooth performers even when the going gets tough. Front and rear independent suspension, red anodised alloy varishocks, and adjustable rake angle, are designed for optimum handling over the roughest tracks.

DESIGNED & MANUFACTURED BY

Schumacher

AVAILABLE FROM ALL GOOD MODEL SHOPS

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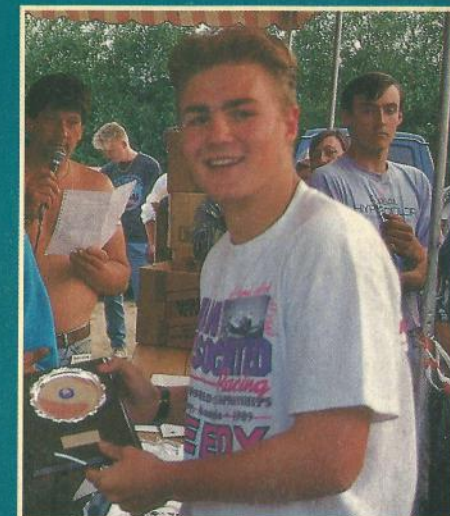
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RACING SPECIAL

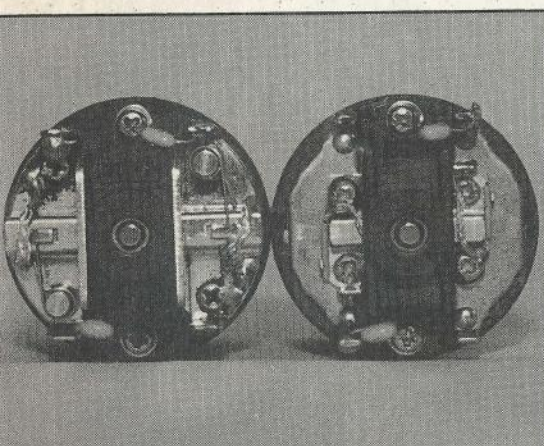
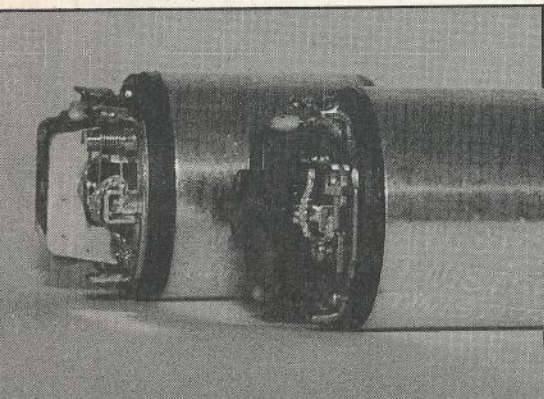
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Lee Boulden
ADVERTISING: Christine Contreras

Argus

Power On

There are now more motors in different specifications than ever before, quads, triples, doubles and singles all feature in our up to date motor list.



Twister series features too many winds to list, call PAP for a complete list.

Last year we witnessed the USA regulate the amount of advance allowed in a stock motor. Why, you might ask are we in the U.K. interested in what happens on the other side of the Atlantic.

As it happens we in the UK are probably more heavily influenced by the US market than anywhere else in the world. Ironically it is not the USA that is the prime source of all things RC, but it is the USA that controls what the market buys. The reason for this is very simple. The American market is vast. They dominate what Taiwan, Japan and Hong Kong produce, as such the influence that America wields is immense.

The regulations that are introduced are, on the surface for the benefit of the hobby. In truth the people that create the regulations are those with a

substantial interest in the commercial side of the hobby. So the wrangling over this or that motor being legal or illegal are really to allow this or that manufacturer to have the edge over his competitor. The latest fuss has been over the shortening of armature stacks. This allows less wire to be used in the winding with the benefit of lower resistance, less weight and higher performance. It now seems that idea has been crushed by ensuring the length of stack remains constant. The interesting aspect of that modification was that the change to a shorter stack was within the rules. The rules only stated the number of turns, not the length of wire to be used.

...Attempts at lowering efficiency have included making the armature smaller...

A modification to a standard motor that seems to be staying with us is to have gaps in the stack. This will alter the magnetic performance of the motor, by making it less efficient. This is not such a bad thing, as magnets are so good nowadays that most motors have magnetic saturation. They are only as good as the weakest point. The can (motor body) was the point of highest reluctance, with recent changes in can materials and some alterations to can thickness this may no longer be the case. Other attempts at lowering efficiency have included making the armature smaller to increase the air gap or machining chunks off the armature body. In the end it all a matter of balance. Ideally the complete magnetic circuit should make the best use of the available magnetic energy, at the best possible price.

So, some fifteen to twenty years after the original open brush motor appeared we are still going through developments. I must admit to being a little surprised,



The Trinity cans are brightly coloured with a good feel of quality.

but it is pleasing to see that innovation is alive and well.

At the risk of boring readers mindless I will repeat once again that the prime suppliers of virtually all motors are from Japan and Hong Kong with a few from Taiwan. Modified motors come from either Sagami or Orion. These two companies between them supply the major manufacturers Yokomo and Trinity. From here the motors migrate to the specialist companies such as Reedy, Peak Performance, B&R, C&M and just about all the others. Now do not run away with the idea that because the source is the same, all the motors are the same. It is now down to the skill of the winder of the armature, the balancing, the truing of the comm. choice of brushes, springs and setting up the magnetic field that make your motor a good one or a bit of a duffer.

Power Products

P.O. Box 12, Aldershot, Hants. Power Products after more than 15 years of producing specialist equipment for the RC business still have a substantial range of motors in many winds and magnet powers. Power have their own endbell design and are offered with a range of magnetic specifications.

All "adjustable" motors are precision balanced by Power Products in the U.K.

Full spares and rebuild service available. Magnetising of magnets, comm truing and balancing available for Power Products and Demon motors.

Standard

27 x 1 BRCA stock motor. 30 deg timing

Radio Control Model Cars

17 x 1 fixed timing. Fast for 4WD
20 x 1 fixed timing. Fast for 2WD

Modified

13 x 1
14 x 1
15 x 1
16 x 1
17 x 1
18 x 1
19 x 1
20 x 1
21 x 1
10 x 2 also in x 3
11 x 2 also in x 3 also in x 4
12 x 2 also in x 3 also in x 4 in x 3 also in x 4
14 x 2 also in x 3 also in x 4
15 x 2 also in x 3 also in x 4
16 x 2 also in x 3 also in x 4
17 x 2 also in x 3 also in x 4
18 x 2 also in x 3 also in x 4
19 x 2 also in x 3 also in x 4
20 x 2 also in x 3 also in x 4
21 x 2 also in x 3 also in x 4
22 x 2 also in x 3 also in x 4
23 x 4
24 x 4

Kyosho

The Le Mans range of motors has now been supplemented by the Mega Motor range. Kyosho have a good range of motors that are suitable for powering not only their cars but also boats, aircraft and helicopters.

Kyosho do not give wind details on the Le Man range
Pro High Speed high speed off road
Pro High Torque twisty off road courses

Pro On Road 8 minute races on road

Mega Motors

12 x 2
14 x 2
16 x 2
18 x 2
20 x 2
22 x 1
360 for monster trucks.

MRI Motors

Wetmags and ballraces
31 x 2
15 x 2
15 x 3
17 x 2
19 x 2
19 x 3
21 x 1
27 x 1

Yokomo CML

Yokomo motors have long been the source for other manufacturers to

Racing Special

rework. Yokomo's own range go under the generic title of Wing. This includes all types from stock to modified.

Reedy

Mike Reedy still dominates more international races than any other manufacturer. Although the Reedy outfit have a team of technicians winding and assembling motors, Mike himself is still heavily involved in the development of his products always trying to get just that little bit extra.

Tru Stock

This motor is a stock motor (non adjustable) with 24 degrees of advance. Slotted can, wet magnets and silver shunted low resistance brushes.

Mr Outlaw series

A maximum of 38 degrees of advance is achievable. Slotted can, copper head motor springs and heat sink brush holders. All winds.

Mr Series

Ultra torque magnets for a wider power band. Winds from 12 to 19 in numerous varieties, doubles triple and quads.

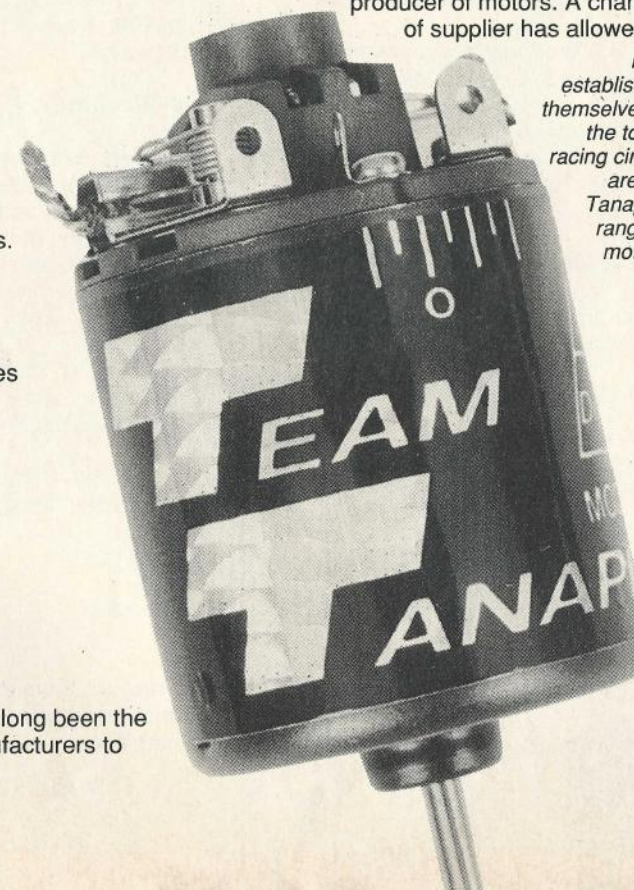
Losi CML

Super insane and Big Ed are hand wound very hot motors. The Double Trouble motors are non legal stock versions

Trinity

One of the USA's major producer of motors. A change of supplier has allowed

Now establishing themselves at the top in racing circles are the Tanaplan range of motors.



540 ELECTRIC MOTORS

some innovation of Trinities range. Determined to keep a slice of the stock market Trinity have the Slot Machine which meets the 24 degrees of advance rule. They also produce a very non legal 45 degrees of advance Team Tuned Stock.

In the modified range there is the Chris Doseck World Champion Edition. A 13 x 3 with something called 4.9 magnets. Although not stated this figure must be something to do with the magnetic field created by these particular magnets.

Oval Man

A 13 x 2 on the tri rotor armature. This armature has the armature stack split into three sections. This is claimed to lower its running resistance. All Trinity motors have 1.3mm cans.

Numerous other winds and powers available.

Lesro

One of the Trinity importers provide a motor overhaul and rebuild service including truing and balancing.

Twister

Pete's Awesome Products, 316a High Road, Tottenham, London, N15 4BP
19 x 2 Kris Moore special Championship winner.

17 x 3 Stadium special 2WD cars and trucks.

14 x 1 Titan Championship winner, best in heavier cars

12 x 2 Fast Eddie's Ride Masses of torque

14 x 3 Flash Intended for direct drive

Also available is the newer range of Scorpion stock and modifieds.

11 x 3
12 x 3
13 x 3
12 x 2

Parma

Parma have always turned out good reliable motors.

The long lasting Cyclone range:
The winds range from 11, 16, 19 doubles 13, 15, 17 and 18 quads

Cyclone II Motor Series

Stock motors with an excellent spec. Choices range from plain or ball bearings, some with legal (24 degree advance) to some non legal advance.

Wet magnets, large heatsinks and

thick motor cans. Some motors are still available with dry type magnets.

MG

After various moves around the country MG seems to have come to rest again in the Weymouth area. A full range of custom winds are available to order.

Red dot motors for standard class with slotted armatures.

Exterminator range for all modified specs. including hex winds.

Tamiya

Tamiya have their own version of high performance motors. Sadly some racers tend to dismiss the Tamiya race motors. These are of the finest quality and should not be underrated. The real problem is that they are not easily available to the specialist motor builder.

Technigold
Techniplus
Dynatech 01R
Dynatech 02H

Tanaplan

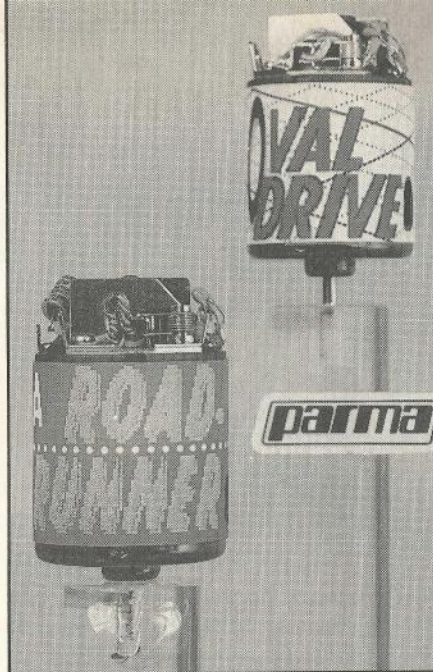
Tanaplan have had outstanding commercial as well as race successes over the last few years. Initially prices offered were excellent value for money, the hand wounds are now comparable with most other makes. Motors have ballraces, diamond trued commutator and with wet magnets.

13 x 2
14 x 2
15 x 2
16 x 3
17 x 2
18 x 2
12 x 1
12 x 2
13 x 2
13 x 3
14 x 2
15 x 2
15 x 3
15 x 4
16 x 2
16 x 3
17 x 2
17 x 3
18 x 2
19 x 2

Brushes are available in timed, hard and medium types.

Checkpoint

16 x 2
18 x 2



Parma have re-vamped the image of their range with these zany new labels.

Power On

HPI

Top Gear Models and Trading, 157 Parrock Street, Gravesend, Kent, DA12 1ER

HPI Motors

Original motor chassis by Air Supply.

Motors available in many winds both hand and machine wound.

Paragon

Holcomac Marketing Ltd., Britannic House, 17A George Street, Stroud, Glos. GL5 3DP

U.S.A produced motor, available in the U.K. in a limited range of winds.

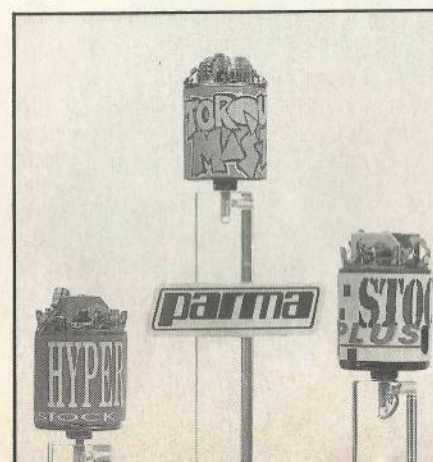
27 x 1 Stock motor
Modified range Eclipse

13 x 3
15 x 2
19 x 2

B & R Motorworks

Samifran Racing
5 Skimpot Road, Luton, Beds. LU4 0JB.

Standard motors are still the biggest sellers in the UK.



Motors from the U.S.A. offering both fixed and adjustable timing types. Stock motors are available with up to 44 degs. of advance, silver graphite brushes and in some cases wet magnets.

Modified are hand wound and epoxied, balanced armature, trued comm. wet magnets, silver graphite brushes and are tested.

12 x 2
13 x 2
14 x 2
15 x 2
16 x 2
12 x 3
13 x 3
15 x 3
16 x 3
19 x 3
12 x 4
13 x 4
14 x 4
15 x 4
16 x 4
17 x 4
18 x 4
12 x 5
13 x 5
14 x 5
15 x 5
16 x 5
17 x 5
12 x 6

Cobra

Motors available in both stock and modified form. Cobra have their own specially design spring which pushes the Cobra brushes onto the comm. The brushes replace the original equipment.

Corally

Corally have a range of high quality motors available in any wind the user requires. The motors are orderable from Intronic.

Re-Working

There are other manufactures or re-working companies. Some appear and then disappear so fast there is not even time to get the names onto paper.

A few more are listed below, whether they make it to the U.K. only time will tell.

Altech
Dialed Racing Products
Endurance Racing Products
Precision Motor Works
PSE
Quarter Flash Motors
Peak Performance
S & K
Speedworks
Stealth
Strike Force

All motors have attempted to be listed, our apologies for any omissions.

Radio Control Model Cars

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This 100% pure silicone oil has reliably proven not to thin out in hot weather or thicken in cold. 2 oz. bottles. 10 wt. (#5420), 20 wt. (#5421), 30 wt. (#5422), 40 wt. (#5423) and 80 wt. (#5425).



1/10 SCALE BODIES

off-road buggy #6121, \$14.00.



REEDY COMPETITION MOTOR ACCESSORIES

Ultra brushes for off-road, #735, \$3.00. Copper head springs for off-road, #740, \$2.50.

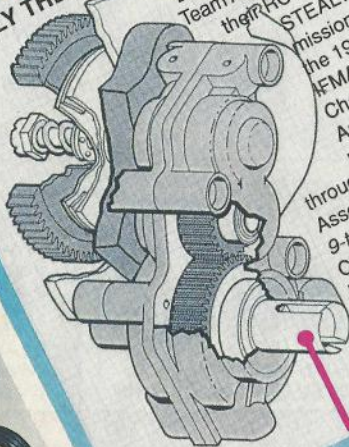
REEDY ULTRA SERIES

Each MR. series motor contains the Ultra Torque Magnet for broader power band, and free on-road conversion kit for added versatility.



SIMPLY THE BEST. STEALTH TRANSMISSION

Team Associated equipped their RC10 with the new mission and swept the 1989-1990 IFMAR World's Championship in Australia, a technological breakthrough helping establish Associated Electrics as a 9-time IFMAR World Champion! Includes the NEW Associated Torque Control with high torque ball differential and other race-winning features. #6560, \$120.00.



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Green, #6307
Yellow, #6319
Nose plate, #6315
#6316
#6317
#6318
#6319



CARBIDE DIFF BALLS

Super hard, longer-lasting and smooth. #6619, 1/8" dia., qty 8 balls, \$8.00. #6576, 5/64", 3/32", qty 12, \$12.00.



RC10 TEAM CAR BLACK ANODIZED CHASSIS PARTS

Chassis, #6301, \$30.00
Nose plate, #6309, \$9.00
Nose brace tubes, #6321, \$5.00
Motor mounting plate, #6604, \$6.00.

32 TEAM ASSOCIATED

3585 Cadillac Ave. Costa Mesa, CA 92626
Phone: (714) 850-9342 FAX 714-850-1744
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ATLANTIC GOMME RACING TIRES These long-wearing, high traction, low drag tires were used by the Team to win the ROAR 1/10 On-road Nationals! #8132, front, \$24.00. #8156, rear, \$26.00. NEW rubber compound. #8133, front, \$12.00. #8157, rear, \$16.00.



1/10 SCALE BODIES Chevy Lumina (narrow) Super Speedway on-road #6179, \$18.00. Chevy Lumina (wide) on-road #6172, \$18.00.



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2 CROSS GREEN OTLEY
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with sport
tuned motor



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WITH FUTABA R/C - 210 CB ESC
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FAST CHARGER

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TAMIYA KITS £

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SPECIAL DEAL: £166.00

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FORCE**



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TOP-FORCE EVOLUTION
LIMITED SUPPLY, KIT: £259.00

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KIT £79.00
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MADCAP



KIT: 78.00
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HAWK**



NEW! KIT £63.00
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COMPRISING:
ACOMS TECHNIPLUS R/C,
SANWA DASH SABER R/C,
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R/C, 7.2V NICAD PACK AND
ACOMS TRICKLE CHARGER
ONLY £55.00

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MAINS/12V FAST CHARGER
ONLY £65.00

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CONTROL, 7.2V SANYO
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MOTOR.
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(factory assembled)
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KIT: £69.00
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KIT: £219.00 DEAL: £269.00

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4 'D' size batteries 12 'AA
size' batteries and Fuel.
ONLY: £50.00
To suit: RAMPAGE CORVETTE
FORD RS200, & PEUGEOT & LANCIA

**KYOSHO
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KIT: £49.00
STARTER DEAL: £104.00

Meteor



KIT: £55.00 DEAL: £110.00
COMPETITION KIT: £53.00
HI-SPEC DEAL: £152.00

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DEAL ONLY: £75.00

KYOSHO INFERNO



KIT £309.00
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Maintain it!

With a guide to how motors work and how to get the best from them and a pictorial guide to cleaning is RCMC's motor expert Pete Winton.

Every Racing Special we include an article on the care and use of electric motors – because it is so important. This years is no exception. A slightly worn bearing, some chassis misalignment, or badly set suspension – all of these will eventually come to light because the car becomes difficult to drive. Electric motors wear only slowly, and the effect of their worsening performance is difficult to

detect. Follow our guide for more power all the time.

All you need

All motors have two primary characteristics which must be known before a proper choice

1. The endbell of a typical motor.
2. Un clipping the brush springs.
3. Removing the brush springs.
4. Carefully slide out the brush.
5. Both brushes released from the endbell, if badly worn consider replacing.

can be made. Motors develop torque, which is their ability to get the car on the move; and power, which is their ability to keep it moving against the forces of friction and air resistance.

Internal combustion engines develop their torque in about the middle of their speed range. Electric motors develop torque at the very bottom of their speed range. This is why an electric motor generally needs no gearbox. Underground trains and milk floats are two examples of very heavy vehicles powered by electric motors which need no gearbox. The gearbox on a car, with its five or so ratios is there to ensure that the torque from the engine can be multiplied to get the car on the move. An electric car has one fixed gear ratio in its gearbox.

Turn up!

Electric motors for 1/10 off road cars are identified by the number of turns and the number of wires. Copper wire is wrapped around an iron pole (three poles in most motors) and this makes the electro-magnetic field which reacts with permanent magnets.

The less wire on the pole, the more current is passed, and the more torque and power the motor can develop. If one wire is wrapped round the pole, the motor has certain characteristics. If two or more wires are used, the torque and power characteristics change.

We refer to the amount of wire as the number of turns, and the number of wires as single (one), double (two), triple (three) and quad (four). A 16 turn triple has 16 turns of wire around each pole, and has three wires wound at once.

Broadly speaking, the less wire, the more current the motor needs, but this does not mean more speed. So, an 11 turn double should be faster than a 14 turn double? Not always!

Unlike the internal combustion engine, electric race cars have a limited supply of fuel, or energy. Whether a very powerful motor is fitted or a less powerful one, the same energy source is used – we fit the same pack of cells.

Racing Special

MOTOR MAINTENANCE

Ratios

To obtain the best performance from a powerful motor the gear ratio must be changed so that the motor will only use the energy available during the race. An 11 turn motor requires a gear ratio around 12 to 1, so for every time the rear wheel turns round once, the motor turns round 12 times. A supposedly less powerful motor, say a 14 turn, needs a gear ratio around 9 to 1. For every once the wheel turns, the motor only turns 9 times.

There is a trade off between the more powerful motors and the less powerful. The 11 turn motor geared at 12:1 will give us more acceleration, thus reaching its top speed more quickly. Although the 14 turn motor gives less acceleration, it will probably reach a very similar top speed.

Trade off...

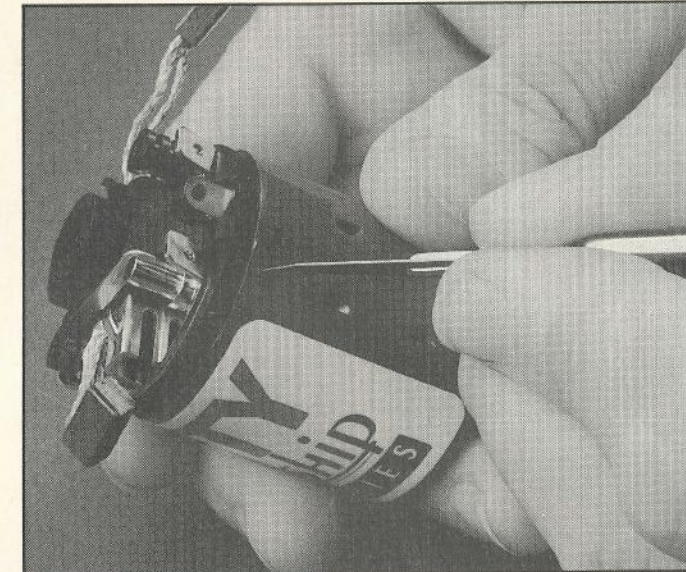
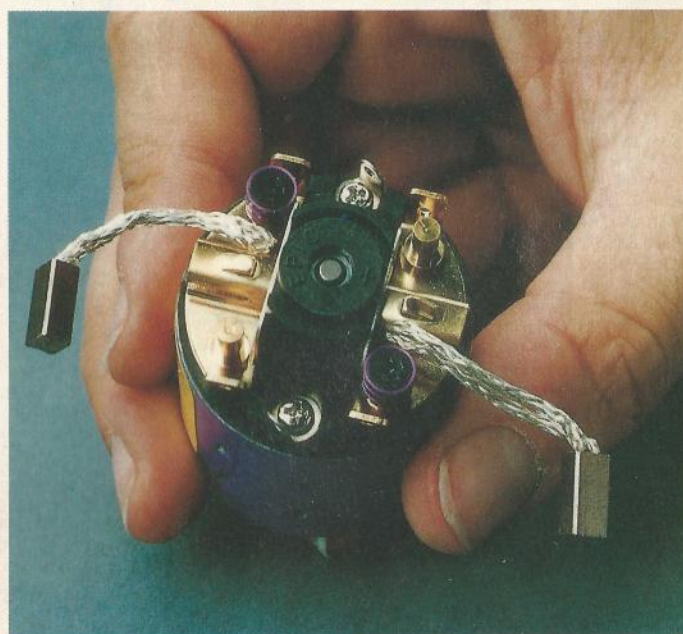
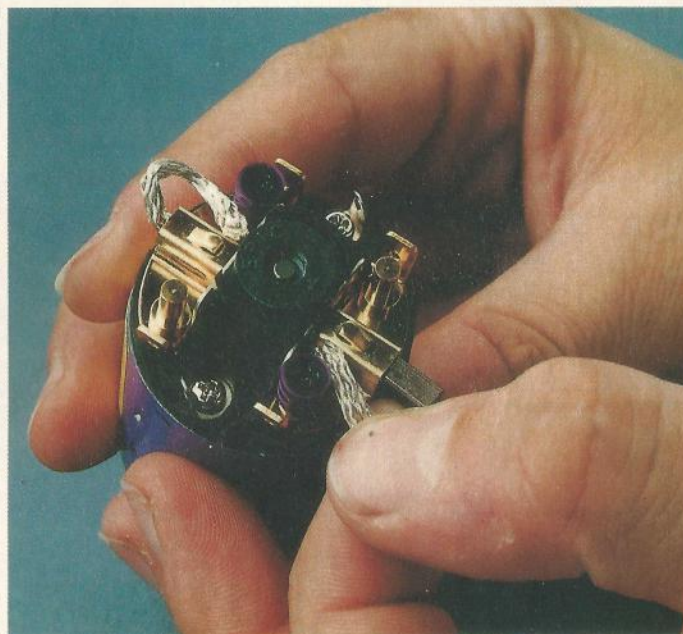
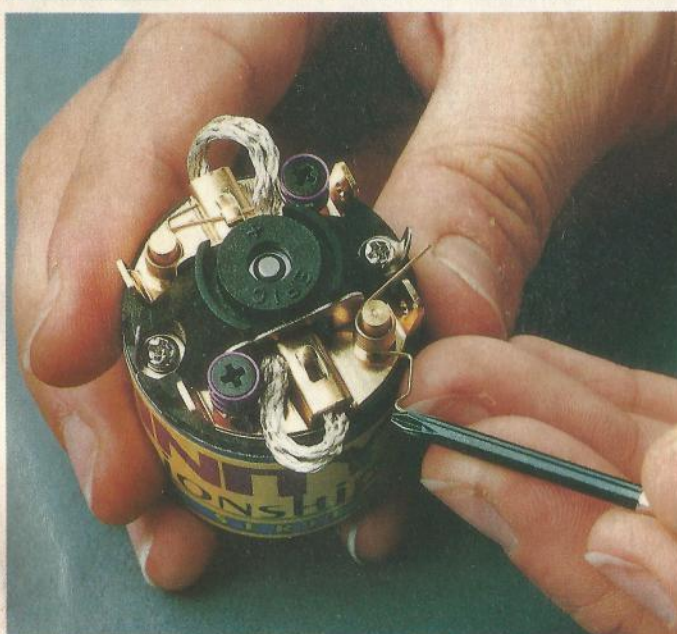
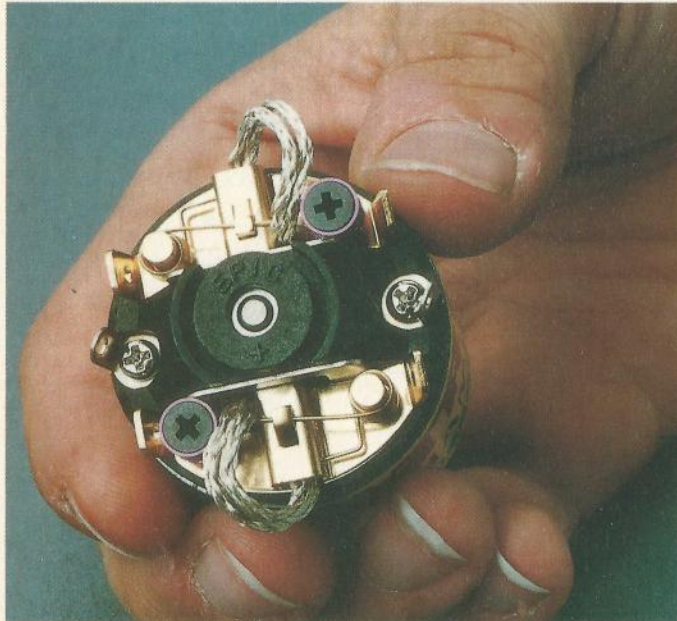
The trade off is in the amount of power you as a driver can handle. The more powerful motor makes the car more difficult to drive. Anytime you spin, or slide sideways, time is being lost, and anytime lost will reduce your laps in the race.

The wear and tear on tyres, gearbox, speed controllers and batteries from a more powerful motor is much greater than with a less powerful motor. What counts for more than power is efficiency.

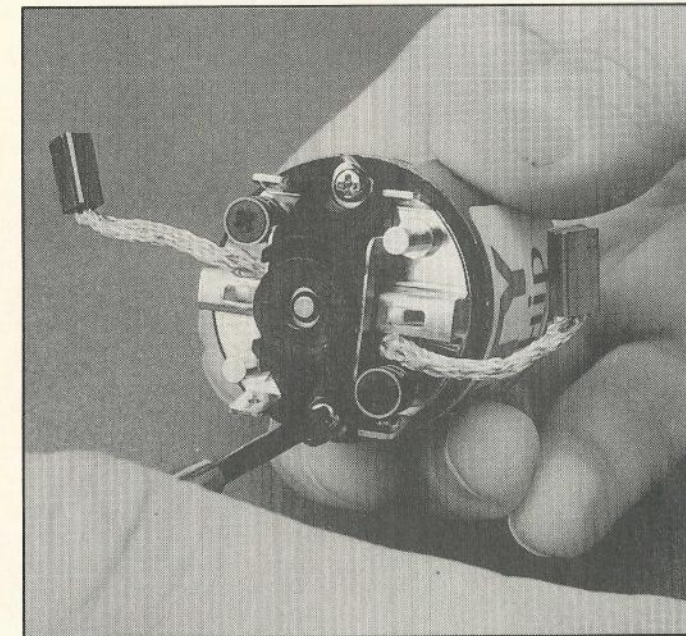
At its most efficient, the best electric motors in the R/C car classes convert 80% of the energy they consume into useful energy driving the rear wheels, or all four wheels. Dirty or worn bearings, worn brushes, or out of true commutators all contribute to reducing this figure to as low as 60%.

If the more powerful motor gives the driver a 5% advantage, but due to neglect it is only 65% efficient, more is lost through a badly maintained, but less powerful motor.

The choice of all cub racers should be motors of 14 to 17



▲6 Mark the can clearly so that it goes back together as it came apart.

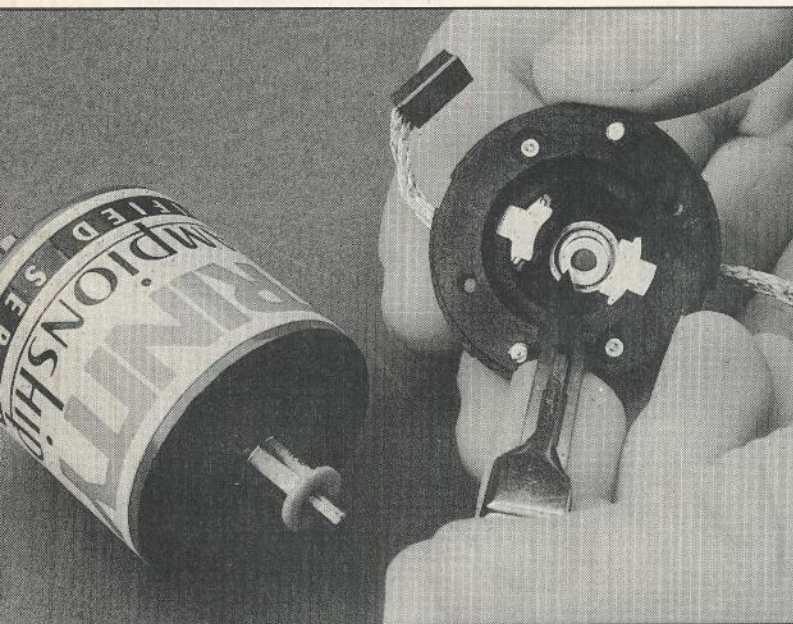


▲7 Unscrew the endbell screws slightly to allow it to twist.

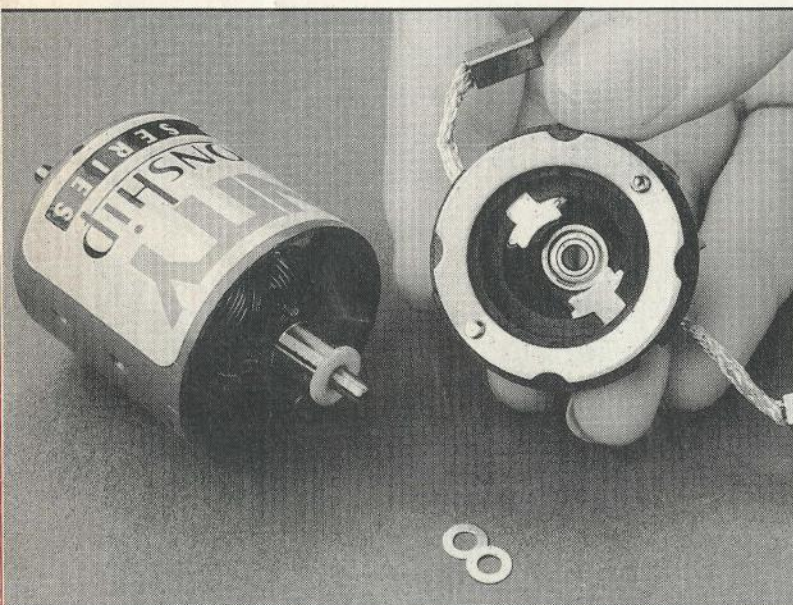
Carefully turn the endbell on the can until it is released.

8▼





Inside you will find that the spacer washers often hide inside the endbell – keep an eye on them and where they go.



Above; Remove the washers and lay them in the order they are removed. Below; Carefully pull out the arm and look for washers on the far end.



turns, with a selection of doubles and triples. These motors are easier to maintain, last longer, and give the sort of performance most of us can handle.

Double winds are the workhorse motor, giving an excellent spread of torque and power. They offer almost seamless acceleration right up to top speed, and pick up quickly when the throttle is opened.

Triple winds offer slightly less torque, but are strong on power.

Fast drivers

So many drivers use very powerful 11, 12 or 13 turn motors, and then use some device (torque limiting speed controller for example) to reduce the torque on acceleration. This is a waste of time. Better to use a 14 or 15 turn motor and be able to use all the power all the time.

How the motor is cared for is very important, but its use in the car has a bearing on how often care – maintenance is needed.

In the car, the most important aspect is the gear ratio. On almost all R/C cars, certainly on the competition models, the gear ratio can be changed. The gear that fits on the motor, the pinion, and the gear that fits on the gearbox, the spur, can be changed. This alters the gear ratio. Principally, it alters the number of times the motor turns to give one revolution of the rear wheel.

Gear ratios will depend on the weight of the car (2WD or

...In the car, the most important aspect is the gear ratio...

4WD) the type of track (short/long/open/twisty) and the track conditions (wet/dry/slippery/grippy). Despite all this there is probably one ratio which works for a given motor in the majority of conditions.

LRP recommend their orange AE motor for 2WD on an overall ratio of 10.2 to 1 (10.2:1). This ratio should never be varied by more than 1/2 to suit the track



conditions. From 9.7:1 to 10.7:1 the motor should work. This applies to all motors not just LRP.

If you need to vary by more than 1/2 a ratio, then the motor is not suitable for the track, or your driving style. 9.7:1 would be for long fast tracks giving higher top speed. 10.7:1 might suit short twisty tracks giving better acceleration.

The timing

The timing of a motor is important. LRP expressly forbid altering the motor timing as this is set at the factory. As a general rule there is no need to adjust the motor timing, but on certain occasions it can help.

On slippery tracks it is worth advancing the timing and running a higher gear ratio. Going from (say) 10:1 to 9.5:1 with an increase in timing tends to reduce the

torque (and hence wheelspin) at low revs thus making the car easier to drive.

Short track

On shorter tracks it is worth retarding the timing and going to a lower gear ratio, from (say) 9.5:1 to 10:1. This is okay providing there is grip, but on a short slippery track a 17 turn motor will be much easier to drive than a 14 turn, so look to motor choice first.

Never keep going to higher and higher ratios with the same motor (from 10.5:1, to 10:1 to 9.5:1 for example) because the car is too slow and lasts the race easily. Eventually the motor will overheat causing serious damage to the commutator and magnets. If a motor is obviously too fast (or too slow) change the motor, not the gear ratio.

It is the choice of gear ratio that is important, but so equally is the choice of motor. Take care with both.

Run in

New motors should be run in on a four cell pack. Run the motor until it is warm, let it cool, and run it again. Repeat until the brushes have clearly started to bed in to the shape of the commutator.

Drive gently on the first run, not too much acceleration and no brakes. After that make sure the motor is kept clean and any dust or dirt is cleaned off after every run. Check the brushes and remove any dirt with a cotton bud soaked in motor cleaner.

Change motor brushes after every 15 or 20 runs. Every second brush change have the armature re-trued by an expert. Check the bearings and clean them if they do not run true and freely.

Jurgen's choice

We asked Jurgen Lautenbach of LRP for his recommendations on motors. Jurgen's advice is:

- * **Never change the timing of an LRP motor.**
- * **Follow the gearing instructions with the motor.**
- * **Let the motor run once in a while on 4 cells to clean the commutator – no sprays or cleaners.**

Racing Special

* **True the commutator only when performance is going down, not after every heat.**

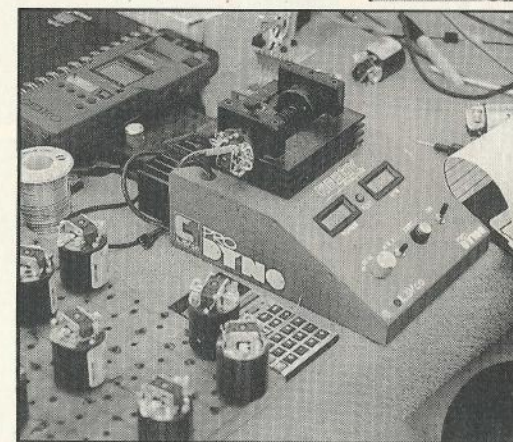
* **Have a motor service done once in a while, but only by an experienced hobby shop or driver.**

As to motor types, we would guide you as follows: Single winds – Rather out of fashion these days as they are all power and little torque. Not an off road wind, but all standard motors are 27 single turns.

...Never change the timing of an LRP motor...

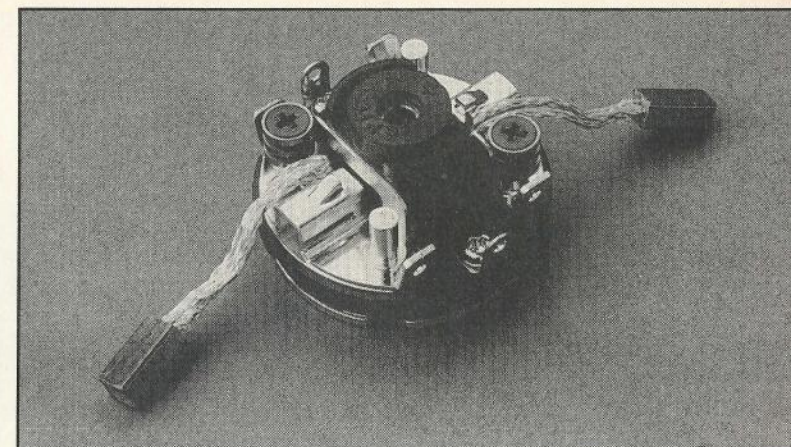
Double Winds – The workhorse, every driver should have one. We would recommend a 14 turn double of any make geared about 9.8:1 for 2WD and 10.2:1 for 4WD. Don't play with the timing, just get out and drive it.

Triple winds – More single than double in characteristics, but many people like them.

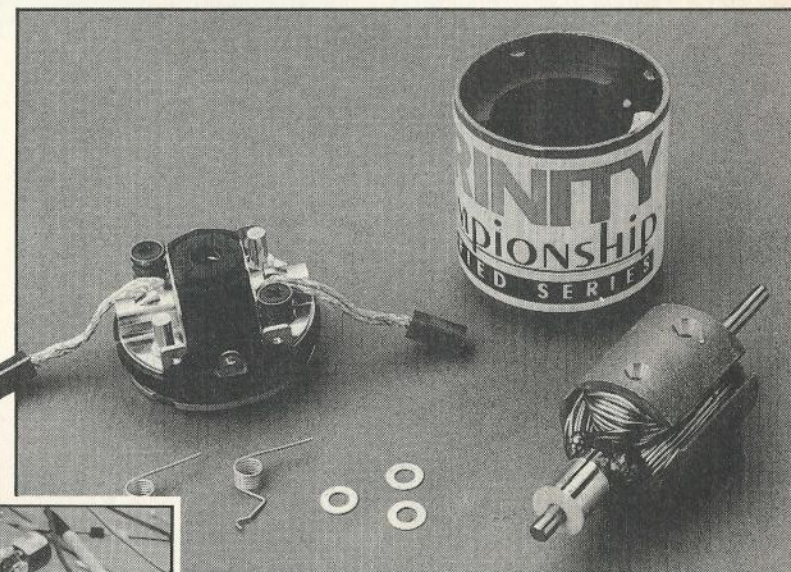


The components of the motor – lay them out on a clean surface so that you know where they go! Below; Give the arm a careful clean to remove dust.

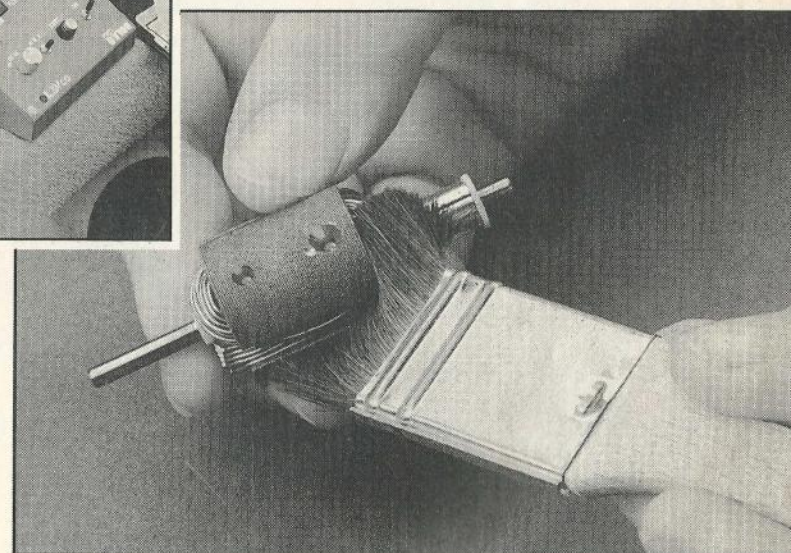
Go well in trucks where their power helps keep the brick-like aerodynamics on the move. We would recommend a 16 or 17 triple geared about 9:1 for those slippery tracks using 2WD. Not really a 4WD



The endbell ready for the bearing to be checked and brushes replaced if needed.



Mike Reedy used the Lavco motor tester to gain the ultimate at top meetings.



Maintain it! ➡

motor.

Quad winds – Fast making a comeback for their very smooth characteristics. Here we venture into the ultra-quick so try a 12 quad on about 11.5:1 2WD and 13:1 4WD. For this motor you need grip, skill, and preferably 1700 SCR cells.

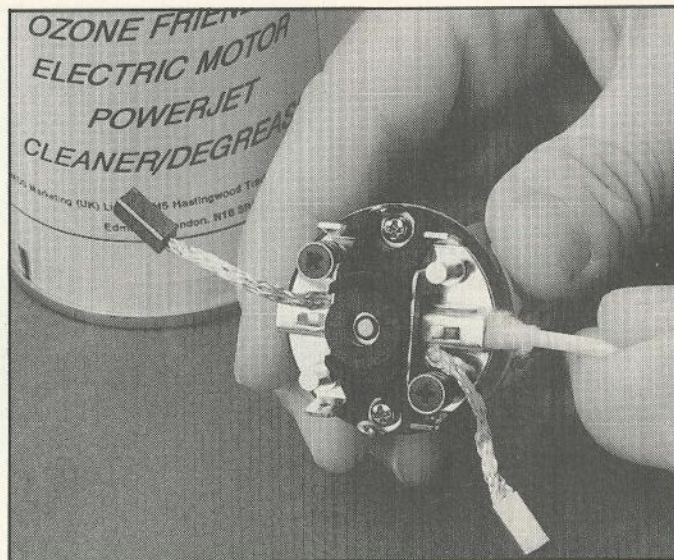
Get this out of shape at speed and the spares bill will rocket!

Jurgen recommends two of his LRP motors

- for 4WD LRP Blue SE geared 11.8:1
- for 2WD LRP Orange AE geared 10.2:1

Parma recommend two of their motors

Above; Cleaning the arm quickly can be done with a cotton bud and cleaning fluid. Right; Give the brushes a clean at the same time.



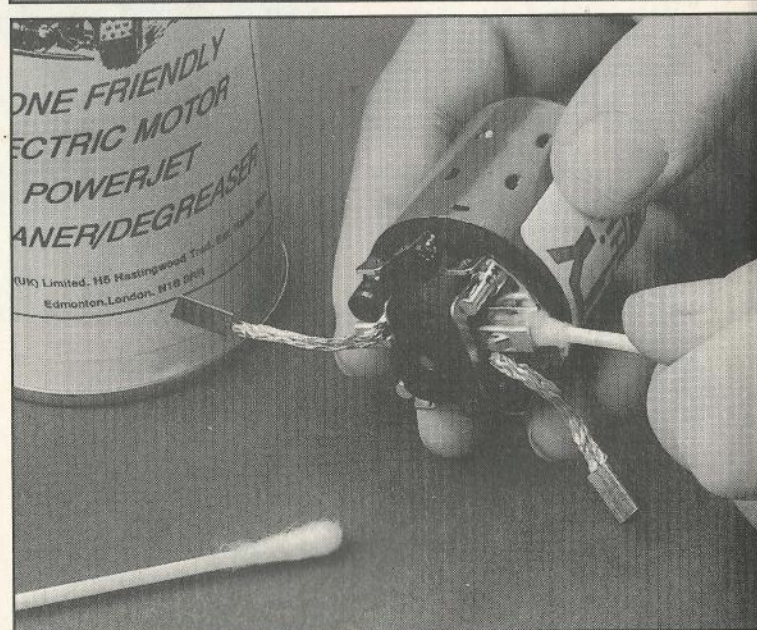
- for 4WD Parma 11 double geared 12:1
- for 2WD Parma 12 triple geared 11:1

Twister recommend two of their motors

- for 4WD Twister 14 triple geared 10.6:1
- for 2WD Twister 14 single geared 9:1

Always remember that the way you drive has far more to do with lap times than the power of the motor. Top National drivers using standard motors will always beat the average club driver with their hot modified simply because they have more skill.

Choose wisely, drive skillfully and happy motoring!



Left; Soft cleaning sticks can be used but a strip down and proper clean will give better performance.

Maintain it!

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The complete set only £34.95



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Blue Eagle L.S. Race winning, high performance truck. Graphite chassis, specially designed truck transmission with super smooth ball diff., slipper clutch, fully ballraced, special wide competition rear wishbones and drive line, Teflon coated shocks.



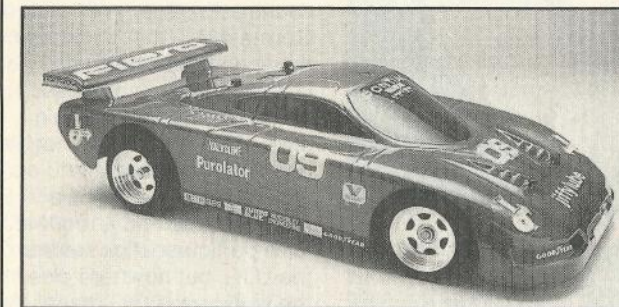
TRX-1. Our top, high specification racing buggy. Graphite chassis, super smooth ball diff., slipper clutch, fully ballraced, Teflon coated shocks with special low stiction seals.



Hawk. A truck racer to see off the competition. Nylon and T6 aluminium used in the construction of this kit. Oil filled shocks, planetary diff and a gear ratio designed for truck racing. Complete with motor & speed control.



Radiator. Terrific value buggy. Complete with motor and speed control. Made from high grade polymers and T6 aluminium alloy. Planetary diff, oil filled shocks.



Fiero. A 1/12 carpet racer that comes complete with body, motor and speed control. Independent front suspension, rear motor pod assembly has a single damper to control movement. Bevel diff. Terrific value for money.



Sledgehammer. Body is spring mounted and there are double oil filled shocks at each wheel to take the roughest of tracks in its stride. Planetary diff, just like the real trucks. Made from nylon and T6 aluminium.

TRAXXAS

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Specification subject to change without notice.

Radio control systems seem to have come to a full stop since 1991. Although there have been a few new items, the industry appears to be somewhat static on development. This means, either we have come to the end of RC developments or perhaps more likely there is insufficient demand to justify the large sums of money necessary for development.

The move to 40mHz has apparently stabilised, with virtually no new versions being available in that

Keepin' Control

The fast moving big business of Japanese RC systems has moved on yet again to higher levels of technology, Racing Special investigates...

frequency. Perhaps the best news about radio equipment is that the costs have not risen significantly, probably the increase in VAT.

accounts for the greatest part of any increase. For the most part the entry level RC equipment is still priced around the 1991 level, which means that in real terms the price has

reduced. We are at the point where servicing of the cheaper equipments is likely to cost more than replacements, this is the advantage or disadvantage (depending on your viewpoint) of volume production.

In the U.K. we concentrate on 27mHz a.m. and 40mHz f.m for land based vehicles. This frequency is not necessarily common to all other countries and manufacturers have to cater to the special needs of all countries. The U.S. have 27mHz, 72mHz and 75mHz, other countries range from 25mHz, 40mHz a.m. Power outputs will also vary as will the specification from country to country. For example Germany are much tighter on the specification than the U.K. Also some countries have a desire for a certain style of set which may not be popular elsewhere. For example one well known manufacturer had a request for a particular stick set from the U.K., but nowhere else in the world uses that model. As the maker must produce at least 5000 sets to make the operation viable, it is no wonder that he is reluctant to commit a factory to such an undertaking. So when you think it is about time that your favourite manufacturer produces this or that set the problems are far more complex than might originally appear.



Top of the Range Megatech radio has a very high specification.

Load in battery holder on the Megatech Junior from Futaba.

Futaba

Probably the highest volume producer of RC equipment in the world.

Attack. I would guess that a very large number of newcomers to RC, be that sea, land or air enthusiasts will at some time in their RC career be owners of Futaba equipment. The entry level RC from Futaba is the Attack. Versions of the Attack are:

Sport. Cheapest in the range. 27mHz with a BEC receiver. All black transmitter. Excellent value for money. **Attack R 27mHz.** Lots of glitzy bits of plastic on the transmitter case but basically the same as the Sport. Comes with S148 servos. Transmitter equipped with servo reverse.

The Attack can also be supplied with a Futaba 112B E.S.C in lieu of one servo. **Attack SR 27 and 40mHz.** White ergonomically styled case. LED battery indicator replaces the traditional voltmeter for battery condition. Recharging socket for batteries.

Megatech 2Ch.

One of the cheapest pistol radios around. Available in 27mHz only. Finger throttle and steering wheel.

Megatech FM 2CH. (2PFD)

This steering wheel style only available in 40mHz. Equipped with trim controls for throttle and steering

Megatech PCM 3CH. (3PFD)

40mHz PCM. outfit. Supplied with the high performance 9301 servo's. Loads of information on settings from a display panel. Includes direct servo control (DSC) allows car setting up without the need to transmit RF. Very small PCM receiver

Field Force 3 PCM. 3CH.

Pulse code modulation, stick transmitter with lots of nice features. Micro processor control, multi mode memory allowing up to 6 settings that can be stored away.



Biggest trannie yet? Futaba display unit seen at Earls Court on the Ripmax stand.

LCD screen for telling you what is going on. Pretty expensive.

Futaba sets may also be found in some almost ready to run equipment such as the Tamtech. Where the radio equipment is provided specifically for one use, it is quite common for no servo reverse facility to be installed.

Acoms

Richard Kohnstam Ltd., 13-15a High Street, Hemel Hempstead, Herts, HP1 3AD.

Techniplus Mk 5.

27mHz with BEC. excellent value set, often supplied as part of a "deal". Smart set with metal handle, servo reverse.

Technisport 27mHz with BEC. Steering wheel set. Trigger throttle. Servo reverse/BEC.

Sanwa

Irvine Engines Ltd. Unit 2 Brunswick Industrial Park, Brunswick Way, New Southgate, London, N11 1JL.

Don't touch! high levels of electronic wizardry mean the insides of today's sets are very packed.

RC SYSTEMS

RC outfits are also something to admire. The top of the range Exerd comes in a prestigious carrying case, definitely a touch of one upmanship.

Exerd Gemini. 40mHz FM. Stick set. All black finish. Opening panel on the base of the transmitter giving access to trim controls.

Exerd Pro. 40mHz FM. Stick set. Race timer, bar graph battery indicator, DSC option. Just about every trim control you could ever need.

JR

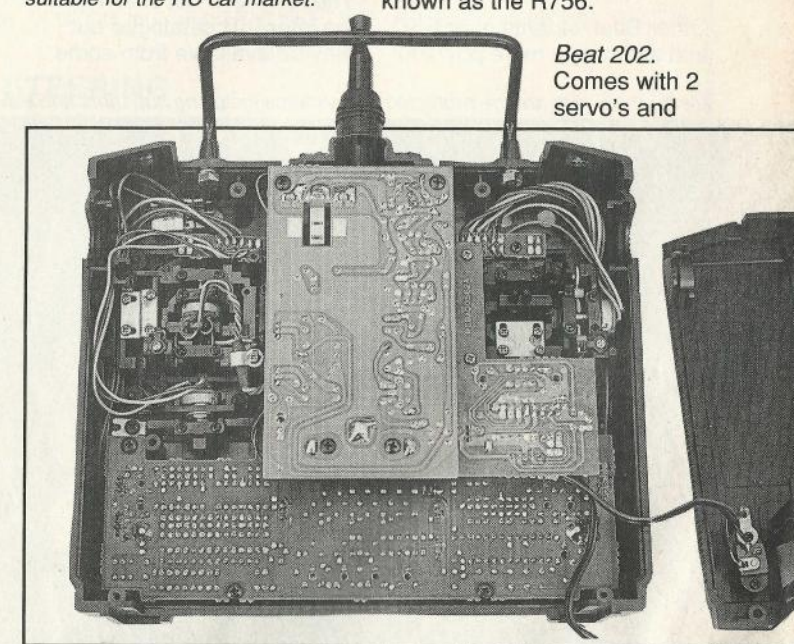
MacGregor Industries Ltd., Canal Estate, Langley,

Berks, SL3 6EQ.

With an RC set for just about every part of the RC hobby the JR range comfortably caters for the RC car enthusiast. Some rationalisation has taken place with the removal of the Alpina from the U.K. market and the introduction of an all new very special steering wheel set known as the R756.



Sanwa now have a top range of high quality servos suitable for the RC car market.



Beat 202. Comes with 2 servo's and

Keepin' Control



outlets. It is a 40mHz high spec steering wheel outfit with exponential rate trims.

R-756 PCM/PPM. This is JR's top model for cars. 6 memory functions for storing details of track set ups or different car set ups. Low voltage alarm, before everything fails on you.

Lap timer automatically operated when the trigger is squeezed plus the fact that up to 75 different lap times can be memorised. Should a restart be necessary the original settings are memorised and indication given that readjustment may be necessary. Fail safe with PCM model plus numerous other features.

KO
No dedicated importer but available from Top Gear Model & Trading Co. 157 Parrock Street, Gravesend, Kent, DA12 1ER and Power Products, P.O. Box 12, Alder-shot, Hants.



Economically priced and middle of the market Gemini is a good all round system.

the transmitter has servo reverse. Usual range of basic trim control.

Beat 202 PCM. Same servo's as the standard Beat but of course a PCM receiver. The use of PCM allows the introduction of fail safe circuitry so the car will not just wander off on its own.

Other Beat variants offer ESC and alternative more powerful

Max W4c-3C 4WD Intended as a 4 channel outfit for tanks or multifunction boats or even cars that have extra bits that need manipulating such as manual gearboxes.

The Apex 3 is not shown in the latest JR catalogue but may be available from some

Inside the Exerd are the protected adjustments including sub trims and travel limiters.

KO's reputation for producing the best is born out by the fact that the worlds top drivers use the equipment. The company specialises in two and three channel RC gear specifically for the car racer. Quality does not come cheap however.

Trendy 27mHz
This is sold as a budget line for entry level racers. May still be available from some stores.

Esprit 2 27 or 40mHz.
Interchangeable modules allow either 27 or 40mHz to be operated from the same basic set. Lashings of trim adjustments, limit stops, push on reverse, steering balance and so on. Could take some time to work out what every thing is for.

EX-1 27 or 40mHz.
Steering wheel set with all the trims and adjusters expected from a piece of KO equipment. Interchangeable modules for 27 or 40mHz operation. The EX-1 has had a bit of cosmetic work done to it. Still basically the same excellent set but adding a few green stripes has made the transmitter look a little more attractive.

EX-5
Steering wheel set with the usual range of trims and features but a little less expensive.

EX-7 and EX-9 may not be available in the U.K. They are both steering wheel sets, trendier styling and less expensive.
Servo's some of the more specialised servo's are detailed here.

KO started the race for higher power servo's. To achieve the amazing performance from a normal size package, KO pushed some of the electronics into separate module for which space additional must be found. **PS 302, PS 303, PS 88Z** These FET servo's deliver outstanding performance both power and speed. The

PS 303 has a direct power lead for connecting to a KO speed controller. The PS88Z features a coreless motor and metal output gears.

PS1001FET. This servo uses a separate battery feed. Develops 6.5 Kg/cm and rotates 60 degrees in just 0.07 sec.

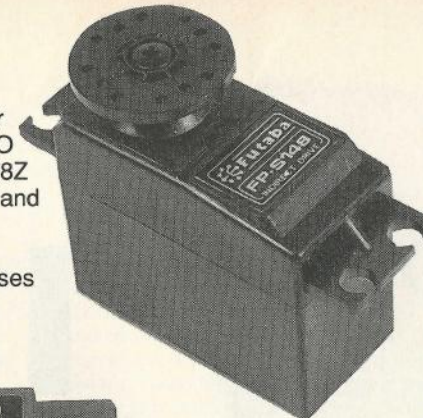


Sanwa servos are proving very reliable and have performance figures second to none.



JR
With around 13 different servo's in the range it is difficult to select one for special attention. One of the newest servo's is the NES 4131. This may not be the quickest with its 60 degree movement achieved in 0.23 sec but in its single package the servo produces 6.5 Kg/cm, and it has a double ball race output.

Futaba
Although Futaba cater for



Futaba 148 servo is supplied with their Attack range.

entry level racers with the good, reliable and reasonably priced 148 servo. Futaba also has a couple of servos that will satisfy the most demanding of racers.

9401
As a superb rotation in just 0.16 sec. The output is supported on a ballrace. It is waterproof, dust proof and incorporates a shock and vibration resistant potentiometer all powered by a coreless motor.

9302
The "other" Futaba high performance servo. Very similar construction details to the 9401 but develops outstanding torque output.

Sanwa
The ERG ES is one of Sanwa's high performance servo's. Sanwa have a number of other servo delivering great power coupled to good speed. The 141 is claimed to be one of the smallest and fastest servo of their size. Ball races and metal gears spell reliability.

RW Racing

NEW! NEW! NEW!
YOKOMO SLIPPER CLUTCHES

AVAILABLE IN BOTH FIXED AND 1-WAY MODE. THESE ALL NEW SLIPPER CLUTCHES ARE DESIGNED WITH THE SERIOUS RACER IN MIND AND USE HARD ANODISED ALLOY THRUST PADS TO MINIMISE WEAR, AND THEY COME COMPLETE WITH OUR OWN DESIGN SLIPPER ADAPTOR (COPIED BUT NEVER EQUALLED), ENABLING YOU TO CHANGE GEAR WITHOUT DISTURBING THE SLIPPER SETTING. ALSO AVAILABLE ON REQUEST, BOTH MODES OF SLIPPER CLUTCH INCORPORATING OUR UNIQUE DESIGN 14 TOOTH FRONT WHEEL OVER-DRIVE PULLEY.

TRUCK STEERING

DESIGNED ORIGINALLY TO IMPROVE THE STEERING ON MY OWN RC10T AND NOW AVAILABLE TO ALL TRUCKERS, THIS MUST BE THE STRONGEST BALL-RACED STEERING SET ON THE MARKET. THE USE OF ONE-PIECE ALLOY POSTS BOLTED TO THE CHASSIS WITH LONG C/SUNK SCREWS AND NYLOC NUTS ON THE TOP, 1/4" x 3/8" FLANGED BEARINGS, AND NYLON ARMS 5mm THICK, MAKE THIS SET VIRTUALLY UNBREAKABLE. WITH A LITTLE WORK IT CAN BE MADE TO FIT OTHER TRUCKS AS WELL.

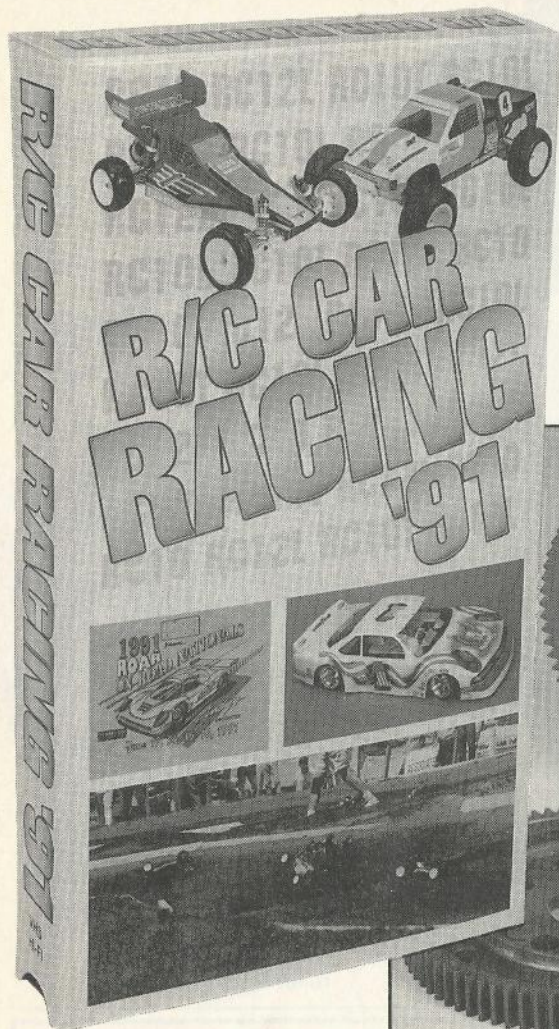
ALSO FOR THE RC10T AND THE RC10, HARDENED REAR AXLES, THESE REDUCE THE RAPID WEAR OF THE KIT ONES AND UTILISE THE MORE READILY AVAILABLE M4 NYLOC NUTS.

ATTENTION ALL CAT AND COUGAR DRIVERS.

ALL OF OUR ASSOCIATED STYLE SPURS, IN BOTH 48dp and 64dp, ARE NOW MACHINED TO FIT BOTH THE STEALTH AND SCHUMACHER SLIPPER CLUTCHES.

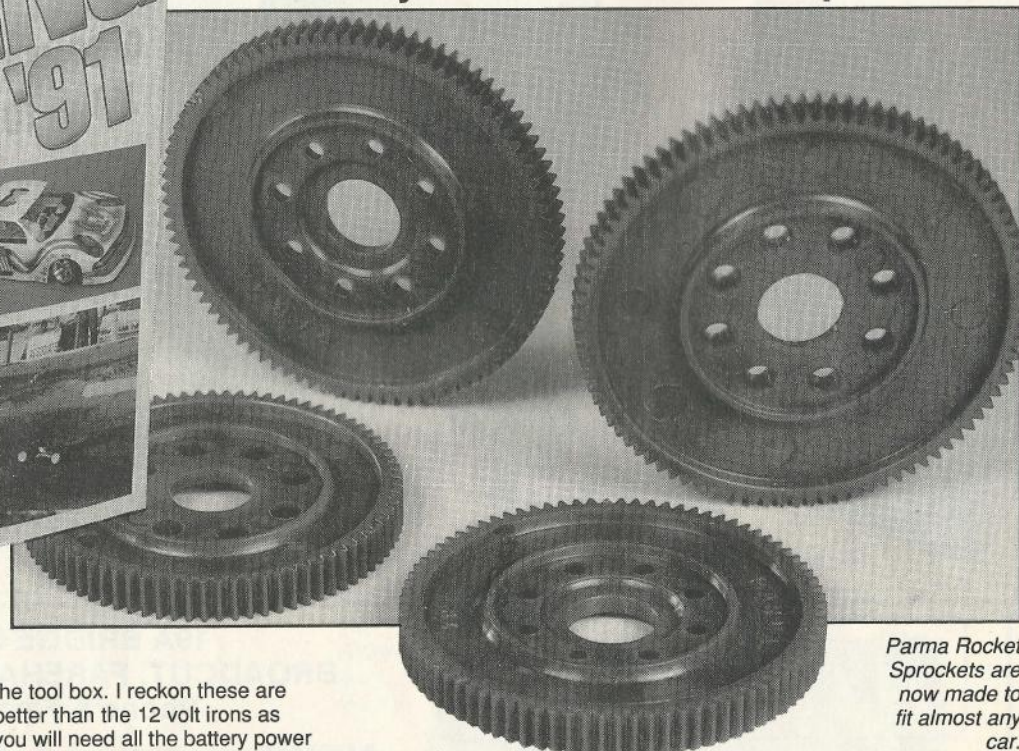
ALL THE RW MANTA-RAY UPGRADES ARE STILL BEING PRODUCED, INCLUDING SPUR GEAR MOD, GRP CHASSIS KIT AND NYLON GEARS, NOT FORGETTING OF COURSE THE CARBON FIBRE PROPSHAFT, SOLD WORLD-WIDE, AND ACKNOWLEDGED AS POSSIBLY THE PART THAT DOES THE MOST TOWARDS UPGRADING THE PERFORMANCE OF THIS VERY GOOD ENTRY LEVEL CAR.

ALL THE ITEMS LISTED, PLUS THE REST OF OUR COMPREHENSIVE RANGE OF TUNE-UP GOODIES ARE AVAILABLE AT YOUR LOCAL MODEL SHOP. SEND SAE A4 SIZE TO ABOVE ADDRESS FOR CATALOGUE AND RETAIL PRICE GUIDE.



Ten Ideas

Just a few ideas that may well take your fancy at the local model shop...



Parma Rocket Sprockets are now made to fit almost any car.

This top ten selection is not quite the same as previous years. I have attempted to avoid making the choice product specific. What this means is that you can use the chosen item on any car or motor you drive. Well that was the plan when I started, I might have strayed from this holy path now and again.

The choice to make is, as always mighty difficult. I have not deliberately left any manufacturer or importer out. The choice I have made is simply a personal one, my ideas, that is all. As you will see in fact they are not all products in the true sense of the word, but perhaps suggestions of things to do as well as buy. Perhaps, this might be an opportune moment to mention that with all this self indulgence and the spending spree that RCMC and the trade are trying to persuade you to carry out, is it about time that all you club racers who turn up each week to compete should start to think about what sort of contribution you can make to your hobby. So, go on, get out their and build a track or organise an event!

1. Gas powered soldering iron.

Not perhaps the ultimate gismo, but a really useful item to have in

the tool box. I reckon these are better than the 12 volt irons as you will need all the battery power you have to charge the racing packs. There are a number of versions around. One of the most powerful I have come across is sold by RS Components, a little pricy but well able to solder wire onto a nicad can. A cheaper version is made by Portasol. Both types (and there are probably others) should be available from your local model shop.

2. Dyno.

Now this is perhaps something of a hype device. The idea is that you can check out each motor that you have for performance and efficiency. At the moment the way you use these testers may make interpreting the results a little tricky but things are getting better. Probably the most widely available is the Tekin. There are a fair old deluge of the machines being made in the USA, no doubt soon they will be appearing on these shores.

3. Ceramic diff balls.

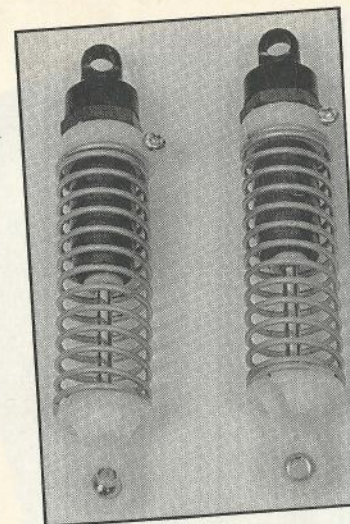
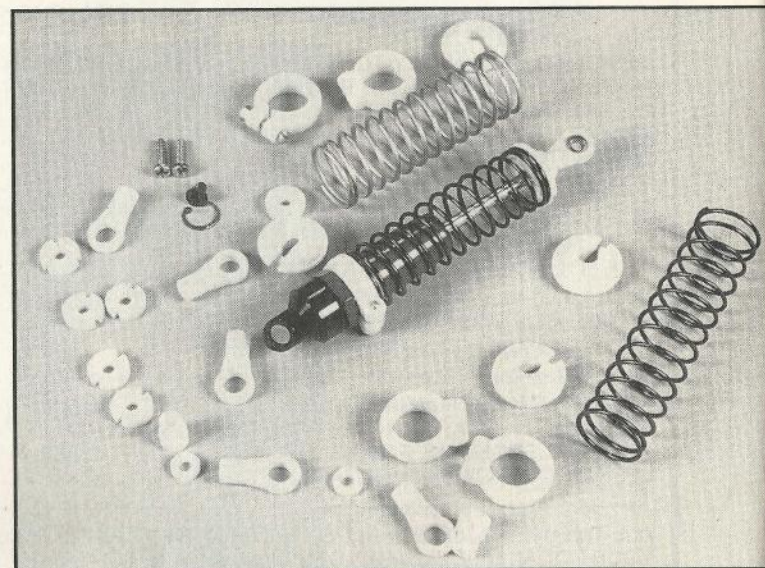
Available for most types of ball diff. As these diffs are the most

Tanaplan shocks are similar in design to the American items available and work very well.

common to be found in top line racing buggies and trucks, anything that can improve reliability and make them operate smoother has got to be a good move. Parma produce suitable ceramic balls. Alternative types are the Carbide diff balls as used by Associated. Available from most good model shops.

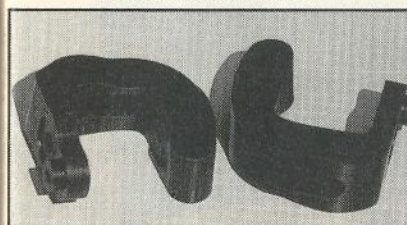
4. Alternative gears.

There are a mass of companies producing alternative motor pinions and spur gears. Some motor pinions are produced in Titanium and are machined to reduce weight even further.



The Traxxas shocks must be good - finding their way onto many top drivers cars...

These pinions are extremely hard wearing, if a little pricy. Spur gears for use with slipper clutches. Once again loads available, Trinity have a useful range. The wide choice available ensures that virtually any ratio you might fancy can be achieved. Pete's Awesome Products plus other specialist shops.



Teamline castor blocks for Kyosho are also almost a must for Lazer runners.

5. Something a little different.

We all know that it is possible to have your motor comm skimmed, and a very useful operation this can be. Some more enterprising outfits are also able to balance armatures. So how about this; a complete motor rebuild which includes:



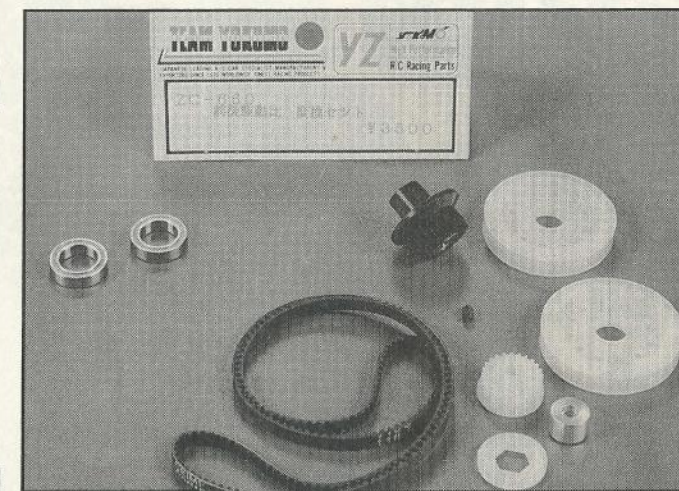
S and K battery tray will fit into most cars and keep the batts in place.

Comm true (with diamond tool)
Armature balance
Zap the magnets (to get back to original strength)
Replace brushes and springs and if necessary bearings.

Then a performance graph of power/efficiency/torque/RPM measured and calculated on a computer based dyno. All for less than a tenner.

6. Alloy wheels adapters.

to allow Tamiya, RC10 or Schumacher drives to be fitted with Yokomo wheels.
CML. Bristol Road, 1684 Bristol Road South, Rednal, Birmingham.



7. Alternative suspension.

wishbones plus a whole mass of other plastic parts made by RPM. The quality of these parts has to be seen. Superb finish and (the makers claim) virtually indestructible. Parts for Associated, Kyosho, Tamiya plus others. If you are prone to getting a bit too close to unmoving objects, RPM could save you a lot of bother in the long term. Thor Racing. Bournemouth.

comes together to make a damper that the other manufacturers are now wondering about. Fortunately for us these dampers are available in two lengths and can be fitted to virtually any other make of car.

Traxxas U.K. P.O. Box 1128, Winterbourne, Bristol, BS17 2SH.

9. Motor carrying case.

Maybe a bit of a pose, but who cares. Trying to get a motor out of a tool box and then trying to remove the nuts and bolts that have managed to work their way inside is really not a lot of fun.

So, although it may sound obvious why not carry motors (and batteries) in a case made for the job. A few manufacturers

have some smart versions. Wasp have a French made case with inserts all neatly cut ready to take motors and Yokomo have some clear plastic boxes suitable for the job. Either that or pinch your mum's hand bag. Wasp Racing CML.

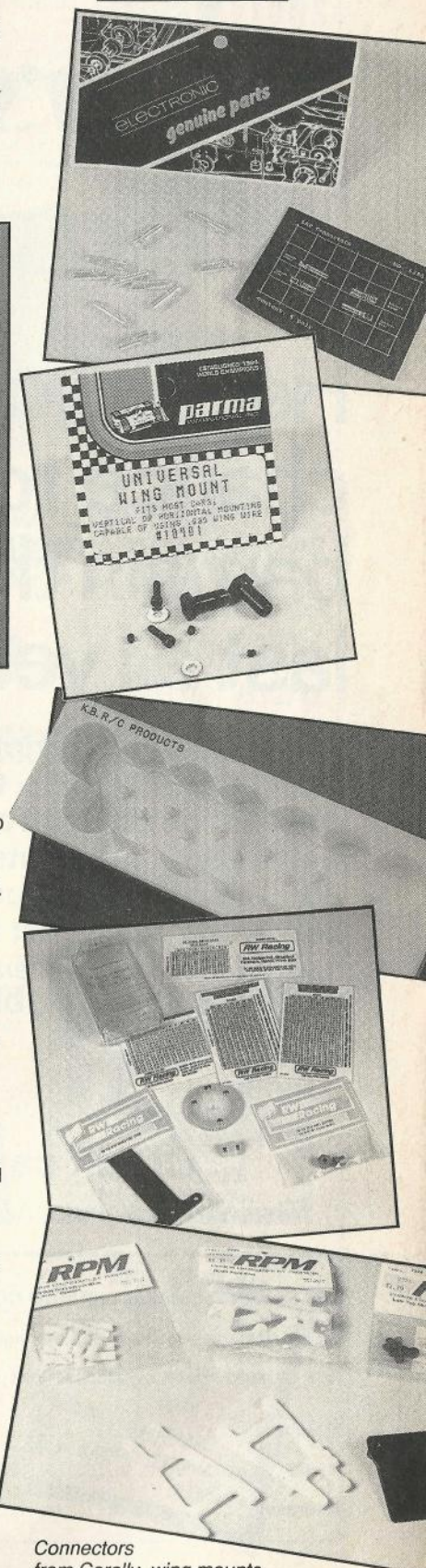
8. New dampers.

We had all assumed that development of dampers has reached its pinnacle, nothing more could be done to improve them. We have had diaphragms, Teflon coating, nylon bushing all of this afar cry from those far off

10. Titanium track rods.

At the moment I have not heard of any importer of these, but I am sure it cannot be far away. The Lunsford items are nicely made, easy to adjust and of course light and very, very strong.

AFTER MARKET GOODS



Connectors from Corally, wing mounts in alloy from Parma, KB battery holder, RW gear charts and RPM wishbones are all good quality accessories.



The KIT LIST

With a seemingly never ending list of kits on the market Racing Special sets out to give a description and specification for the kits to help you choose

In last years racing special it was mentioned that 1991 had been a tough year for most people in the RC industry. 1992 has been no less easy and indeed for some it has been even tougher. Even the hobby industry cannot ignore the facts of a financial depression and that many financial pundits reckon the country is still "bouncing along the bottom". Despite all this doom and gloom there are bright spots, and it must be acknowledged that there are areas in the U.K. where all is well.

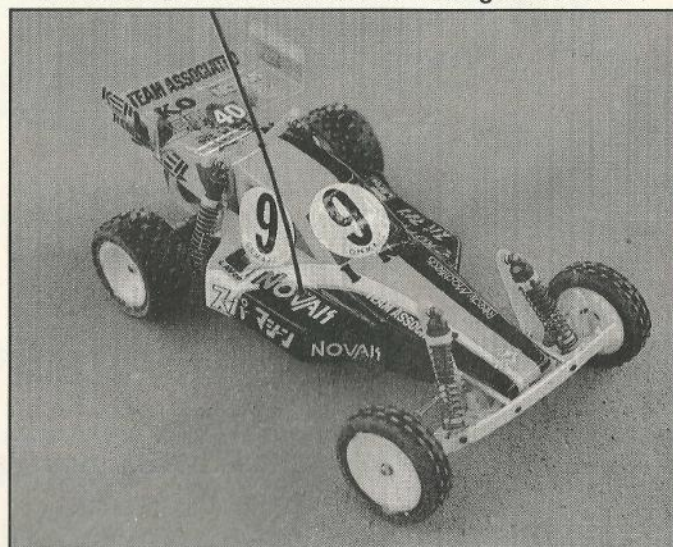
The major players in the industry are able to continue developments funded perhaps by expanding their marketing base. The Japanese, of course sell all over the world as do the larger of U.K. manufacturers. In the USA Tamiya have created Tamiya USA and taken over the distribution of their product range. The latest U.K. Tamiya factory sponsored racing team are beginning to make their presence felt with the new development cars.

Kyosho have a firm hold of 4WD with the Lazer, but are having to work hard to get the Triumph on the leader board.

Schumacher is still doing well all over the U.K. and having established Schumacher U.S.A. is apparently doing quite nicely over there. Even Schumacher does not appear to be able to penetrate the far east market in substantial volume. This seems to be the case for most non Japanese manufacturers. Race successes continue to come to the 2WD Cougar although the cars are not having it all their own way. It is too early to predict similar

successes for the latest addition to the Schumacher cattery, the Bosscat. We all wait to see how the 4WD Bosscat will perform. It must be said however that although Schumacher are obviously heavily committed to electric racing the company is working hard at promoting IC cars in an attempt to stimulate a newer market.

On home soil there are the never ending trail of small



Associated RC10 ranks as the most successful RC car ever, still selling strongly and raining world champion.

specialist importers bringing in the less well known RC names. On a larger scale, and after years of thinking about the U.K., Traxxas Corporation of Dallas have opened a U.K. office and distribution unit to service the U.K. A brave move in these depressed times, but it looks like the gamble has paid off as the top of the range TRX-1 is making steady inroads into the U.K. club market.

Tomy have now established a firm base through two U.K. distributors the operation being fully supported by the Tomy Corporation of Japan.

World Champs 1993

Next year sees the 1/10 world championships in Britain again. Most of the major teams have already signed up their drivers and car development is well under way. All of this factory sponsored effort cannot happen unless manufacturers sell their products, and manufacturers cannot sell their products unless they are seen to be winning races, looks to me like a closed loop problem.

Tamiya
Richard Kohnstam Ltd.,
13-15a High Street
Hemel Hempstead,
Herts.

Tamiya still must be considered world leaders in the production of RC cars. Of course I have no evidence to support that statement as sales figures would be a closely guarded secret, as, of course they would be with all manufacturers. But the sheer size of the Tamiya range must provide some indication of the scale of the operation. Life for Tamiya must be as tough as everywhere else and although we have not been deluged with a never ending trail of completely new products this year, we have seen new leases of life for established chassis designs.

However, Tamiya have not become a simple "re-issue" company as substantial effort has gone towards some all new designs. These "new" designs have taken Tamiya away from the traditional off road market.

It appears that the company, although not neglecting 1/10 off road, has had a recent push with alternative scales and types of RC vehicles such as the 1/10 Formula 1 cars such as the Lotus Judd, Tyrrell 019 and the Ferrari 189. In 1/10 Group C there are the Jaguar XJR12, Nissan 300ZX and Mercedes C11 sports cars, not to mention the superbly styled road going Honda NSX. In 1/12 Porche 956 and Toyota

KIT SURVEY



Tamiya's Astute is an ideal 2WD club car, although when raced by the team the car is heavily modified.

Tom's 84C and then of course the refined 1/12 4WD chassis which is available for the Celica and Porsche 959 bodies. Quite honestly a pretty daunting selection.

Grasshopper II 2WD

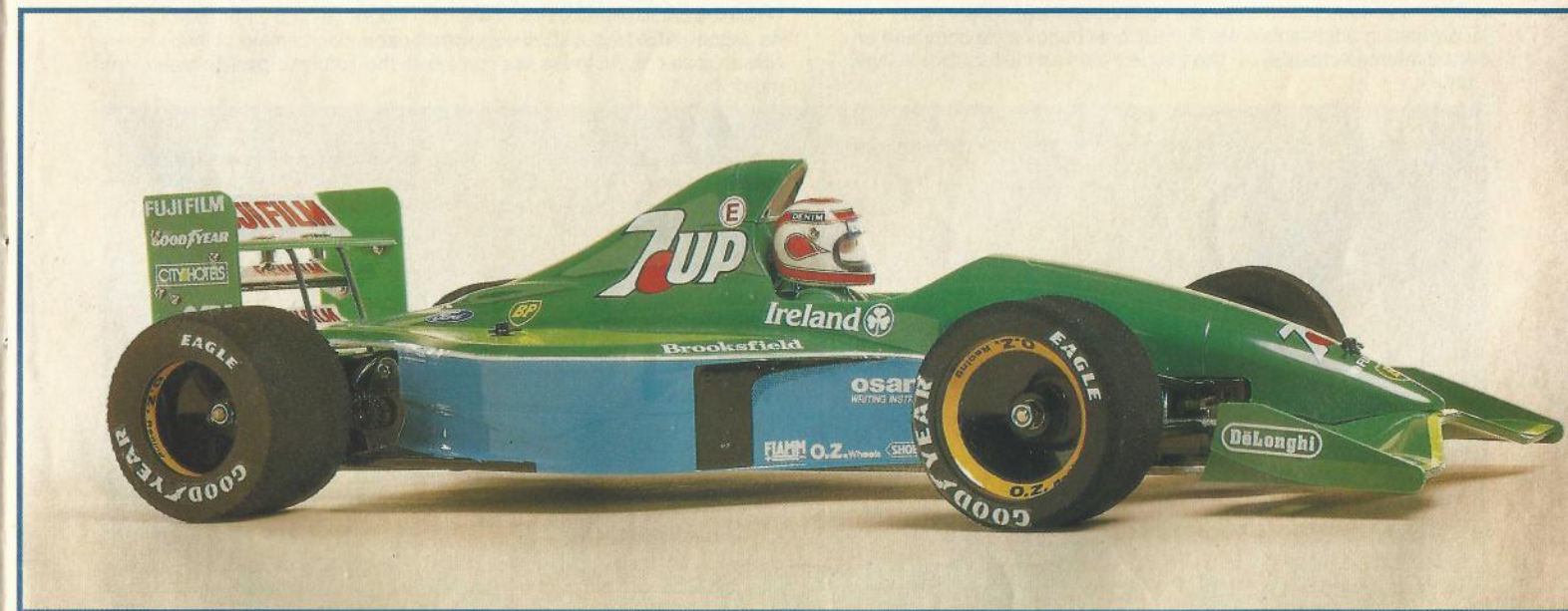
The classic RC entry level 2WD car. Bathtub chassis with swing axle front suspension and a live rear axle which incorporates the 380 motor and transmission assembly. ABS body.

Hornet 2WD

Much the same design and construction as the Grasshopper but with the more powerful 540 motor, polycarbonate body and oil filled dampers.

Bear Hawk 2WD

One of the latest entry level car to come from Tamiya. Independent suspension all round, with a robust and rigid bath tub chassis. Comes with a 540 motor and a injection moulded body.



The Tamiya F1 Euro Cup has improved sales of the pretty Tamiya cars that are really fun to drive.

The KIT LIST

Rookie Rabbit

Not available in the UK the Rookie Rabbit is a 1:10 ready to race car with electronic speedo, battery and charger all in the well presented box.

Super Sabre 4WD

Value for money, 4WD, independent suspension and incorporating fairly dated form of horizontally mounted damper unit.

Thunderdragon 4WD

Although using a horizontal front damper this car is significantly different to the Super Sabre. Usual Tamiya shaft drive system for the 4x4 transmission.

Firedragon 4WD

Transmission and suspension very similar to the Thunderdragon but with two front damper units. Yet another futuristic polycarbonate body.

Terra Scorcher 4WD

Strong similarity with the mechanics of the Fire Dragon but is equipped with ball races to reduce friction and has adjustable suspension links.

Vanquish 4WD

One of Tamiya's top racing 4x4's. A unique design incorporating mid mounted, in line motor, ball centre differential. Using the tried and tested Tamiya shaft drive front to rear and fully adjustable suspension.

Avante 4WD

Very close to the Vanquish in specification and engineering. A little over complicated and now outdated.

Egress 4WD

Uses the basic design of the Vanquish/Avante and then makes use of the latest in hi-spec materials. Titanium, carbon fibre are used in suspension and chassis manufacture. Metal dampers provide the road hugging performance. Cost is not a consideration at this level of performance.

Manta Ray 4WD

Not just another Sci-Fi body for this chassis, but was intended to be the Tamiya racing flagship. Sadly for Tamiya no international honours were forthcoming. The car uses the now famous Tamiya shaft drive system.

Saint Dragon/Madcap 2WD

Common chassis engineering for two body styles. Good spec which includes ball differential, bathtub lightweight chassis.

Astute 2WD

A first class competition racer with all independent suspension incorporating adjustable links. A traditional buggy style body and an fibre reinforced chassis.



Reining British Champions - the Tamiya Manta Ray in full race spec.

Super Astute 2WD

Top level 2WD racer from Tamiya. This car was responsible for giving Tamiya top results in 1991.

Incorporates many race winning features developed to take the car to the top of its class. All ball races are included as is a slipper clutch allowing this high performance racer to be kept under perfect control.

Porsche 959 4WD

1/12 scale fully ballraced Paris-Dakar winner. High detail body and driver figures makes the all independent double wishbone suspension chassis quite crammed with electronics.

Toyota Celica 4WD

Similar to the Porsche 1/12, this rally special is another beautifully detailed car with a lot of near scale items built in.

Toyota Celica 4WD

Strange perhaps that Tamiya should produce two Toyota's in different scales. In fact they are quite different cars. This model uses a chassis and transmission which is more akin to the buggy range of cars. The scale tyres make it a definite rally car suitable for on and off road use.

Jaguar XJR-12

This is one of the range of group C sports cars in 1/10 scale. The chassis is a bath tub design on which is hung independent front suspension and a rear rigid T-bar carrying a motor pod with a single oil filled damper. A ball differential completes the transmission train. A vacuum formed polycarbonate body finishes off the model.

Mercedes Benz C11

As Jaguar XJR-12 but with a new body moulding and superb decal set.

Nissan 300ZX IMSA GTO

As Jaguar XJR-12 but fitted with sports car racing version of the Nissan road car. All these kits come with the Tamiya Sport Tuned motor.

Honda NSX

Not perhaps a Group C car but it must be considered as perhaps one of Japans own "cult cars". This state of the art Honda car is carried on the same chassis that Tamiya use for the Group C sports cars, which perhaps says something about the performance of this outstanding car.

Lotus Honda 99T

This is one of a series of F1 cars that Tamiya now have on similar chassis. A 1/10 series that is bound to attract a lot interest as they look so much like the real thing. Double deck chassis giving high rigidity and stability.

Williams FW 11B Honda.

As the Lotus Honda 99T but with the 1986 Williams body, prior to moving to a Renault power unit.

Lotus 102B Judd.

Perhaps inevitable that Tamiya should produce this model as they are part sponsors of the real thing. Not exactly the same as the other F1 offerings. Suspension is slightly different and this model includes a ball differential.



The Manta Ray chassis and drive parts are used in the scale like Tamiya Toyota Celica Rally.



Tamiya's Celica can be updated with the Skyline body parts set.

Ferrari 189

As Lotus Judd simple chassis with realistic body features the biggest rear wing in the series.

Tyrrell 019 Ford

As Lotus Judd but with new shell and moulded front wing that immitates the radical Tyrrell design.

Porsche 959/Toyota Toms.

Racing Master series: The Porsche and Toyota Tom's 1/12 race cars are pure indoor circuit racers. Tamiya say they are the fastest RC cars they have designed. Traditional rear motor pod on a three point T bar. Coil spring front suspension help give these cars the sort of handling that carpet racers expect.

Ford Black Foot

Monster Beetle Subaru Mud Blaster

Using a well tried and proven triangulated chassis able to take the high loads imposed by leaping around. These monster wheel vehicles are in the true fun category. Independent suspension all round injection moulded bodies.

Lunch Box

Midnight Pumpkin

A chassis based on the Hornet design but suitably modified to carry monster bodies and big wheels. Good value for money fun off roaders.

Nissan Kingcab

Toyota Monster Racer.

Truck racers using similar mechanics developed from the Tamiya buggy family. Robust, great performance and a lot of fun.

Clod Buster

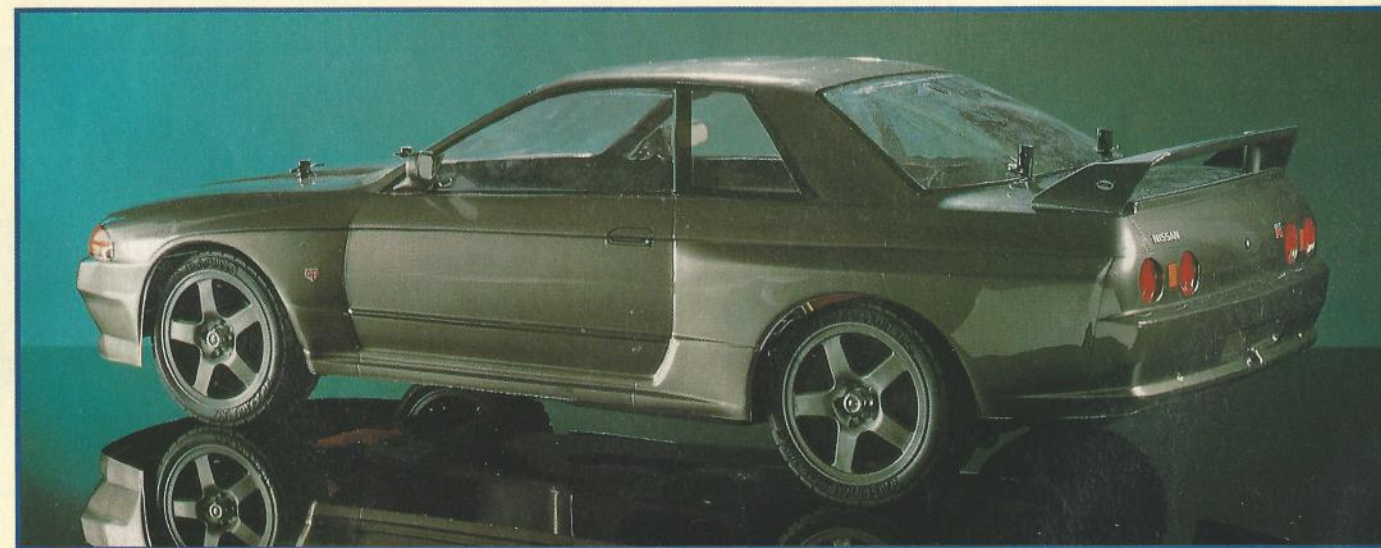
Bull Head.

No special category for these trucks. Four wheel steering, twin motors, double shocks at each wheel. If crushing cars is your fun then these are the monsters for you.

Top Force Evolution

Top of the racing line from Tamiya, the kit includes ballraces, titanium screws, new ball joints, light weight diffs, carbon chassis, UJ safts and one way roller clutch. Has performed well at National level.

Skyline with a classic single colour paint job will appeal to the scale minded.



The KIT LIST

Kyosho.
Ripmax Ltd.
241 Green Street,
Enfield,
Middx, EN3 7SJ.

Kyosho have kept up production of the 4WD Lazer range with the latest offering the Lazer ZX-R and the lower priced Lazer Sport. In common with some other manufacturers Kyosho have appeared to be content to keep to the successful, well proven design, and not embark on new products in what must be assumed to be a fairly flat market. Like Tamiya, Kyosho have resurrected an old chassis and topped it with a new body. The 1/12 Mini Cooper chassis appeared first as the Honda City around 4 years ago, although it may never have been offered on the U.K. market. Now in it's "British" form it seems to be a very popular entry level RC car. Two wheel drive at the top off road competition level is provided by the long lasting Ultima II and the substantially expensive Triumph. It must be recognised that some realignment of pricing strategy (price cutting) has recently made the Triumph a much more attractive proposition. Some successes at national level have been achieved with the Triumph, but domination of 2WD still eludes the Kyosho team.



Kyosho Lazer must be regarded as one of the best 4WD's available.

Kyosho have a strong supporting range of RC products with the entry level Raider Pro plus earlier models such as the Super Bomber which may still be available from some shops.

On road cars from Kyosho have highly detailed bodies which have tended to put these cars in a class of their own. Names like Porche, Lamborghini and Ferrari have given Kyosho a line up which must provide exciting opportunities for the skilled body painters. Formula 1 cars in 1/10 scale include Ferrari 189, McLaren MP4/5B and the Eslo Larousse among others. Group C sports cars come with Nissan R89C, Toyota 89C-V or Kremer Porsche bodies. On the 1/10 rally car front their is a Ford RS500 Cosworth and the latest offering a Citroen ZX in Paris Dakar regalia.

In the 1/10 2WD road going category Kyosho have some breathtaking cars. The Nissan 300 ZX, Porsche 911, Ferrari Testarossa, Lamborghini Diablo and Jaguar XJ220 prototype, now that is an impressive line up.

Unlike its main Japanese rival, Kyosho have an excellent selection of I.C powered cars. These range from the 1/10 Rampage buggy 2WD and Stinger Mk.II plus some very stylish rallycars such as the Lancia Delta, Peugeot 405 and Ford RS200. 4WD comes in the form of the 1/8 Burns racing buggy and the top level Inferno. At the top end of sophistication is the 4WD Nissan Terrano in 1/9 scale with automatic transmission and very near scale chassis and suspension. Finally their is a mind blowing 1/5 scale Lancia Delta Integrale 16v with a 22cc two stroke engine, this is big enough to do a real job of work.

Most of the Kyosho I.C cars come with an engine and in recent months Kyosho have introduced their own brand 0.11 pull start engine. Some of the larger scale (1/8) I.C. trucks come with a 0.21 engine.

Raider 2WD

An entry level racer with independent suspension, friction dampers and powered by a 540 motor driving a gearbox with a gear differential.

Ultima II 2WD

Although this car is described by Kyosho as the ideal choice for beginners, the Ultima series of off road racers was the mainstay of Kyosho's 2WD competition effort. For that reason the buggy has all the adjustment and specification expected of a top line race car.

Triumph 2WD

Designed as Kyosho's next world championship pretender. Incorporates all the sort of features that a top spec racer should have. New oil dampers, long travel suspension, rigid double deck chassis and all the adjustment that you could ever need. Transmission is toothed belt and includes a torque limiting clutch. Fully ballraced.

Lazer ZX-R 4WD

One of Kyosho's most successful off road cars. The ZX-R takes wins all over the world. Toothed belt transmission, adjustable ball differentials front and rear, torque limiting couplings and off course fully ballraced.

Lazer Sport 4WD

A cost reduced version of the ZX-R but using the same major components. The differences centre around plastic dampers, Kelron chassis and gear differentials. The Sport also includes a motor and mechanical speed controller.

Outlaw Raider 2WD

This entry level 1/10 truck features much of the mechanics from the Raider buggies. Supplied with 540 motor, all independent suspension and friction dampers.

U.S.A. 1 Monster Truck.

Four wheel steering, twin motors and weighing well over eight pounds, this is a real monster. Two friction dampers at each wheel help to keep this Chevy based truck in contact with the ground.

Double Dare

Another of the car crushers so popular in the U.S.A. This 9lb 4WDS monster, features all independent suspension, gear differentials and shockers with internal springs.

Big Boss

This monster off road racer is one of a number of Kyosho's so called recreational vehicles. Complete with chromed engine detailed engine parts. All independent suspension with long travel plus plenty of protection for the all important radio gear makes driving this off roader pretty exciting.

Hi-Rider Corvette

Another of the big wheeled R.V's. Strong transmission allows the car to be driven over the most tortuous of terrain without breaking. Includes detailed engine parts.

Toyota 4 Runner 4WD

This 1/9 near scale off roader is based on the original I.C powered Nissan Terrano, but now carrying a Toyota body. Changes have been made to the transmission to make it suitable for electric power, but the same highly detailed chassis and suspension make this a delight to look at. If your fancy is driving scale RC in style and you are not in a hurry then this is a gem.



The Terrano received high praise in our review for breaking new ground in technology.

Mini Cooper VW Beetle

A pair of popular classics in 1/10 scale. Independent front suspension and a three point live rear axle with differential. Scale tyres with scale tread pattern to finish off a very nice pair of almost ready to run cars.

Ferrari 189 McLaren Honda MP4/5B ESPO Larousse 90 Brabham Yamaha Tyrrell Honda

These 1/10 scale F1 cars are lifelike, accurately moulded race cars with a very high specification that are fully ballraced and drive like the real thing. All that the driver needs to add is skill. Strong and light with a terrific power to weight ratio that will give all the thrills and spills of real F1 racing.

Nissan R89C Toyota 89C-V Kenwood Kremer Porsche 962C

Utilising a chassis that has more than a passing similarity to the Kyosho F1 cars these Group C sports cars are of the type raced at the Le Mans 24 hour race. With a limited entry at Le Mans this year it would be possible to organise an alternative Group C event in 1/10. Independent suspension all round, inboard friction dampers and a Kelron double deck chassis gives the sort of specification demanded of these super fast cars.

Ford RS500 Cosworth Citroen ZX Rallye Raid.

Two 1/10 rally cars with superbly detailed bodies and featuring all independent suspension with friction dampers, gear differentials and a fully sealed gearbox.

Scale pattern treaded tyres, metal finish wheels, mirrors and wipers complete these high performance road cars.

Nissan 300ZX Porsche 911 Ferrari Testarossa Lamborghini Contach.

Beautiful cars from the worlds most prestigious makers are the hall mark of this 1/10 true scale series. Two wheel drive, independent suspension, oil filled dampers, totally enclosed gearbox and gear type differential are the mechanics underneath the highly detailed exterior.

Lamborghini Diablo XJ220 Prototype

Two of the worlds most exotic and unaffordable cars. Terrific bodies on terrific chassis. Four wheel shaft drive transmission with double wishbone independent suspension, friction dampers and pattern tyres.

Ferrari F40

Another classic motor car of the rich and famous. This time Kyosho have taken a transmission system developed for their off road racers and squeezed it into the F40 body shell. Four wheel drive, gear differentials independent suspension plus oil filled shocks.

Ferrari F189 ESPO Larousse.

A pair of 1/10 scale racers using the renowned Cox 0.049 glow engine that is in itself a classic power plant. Double wishbone suspension, friction dampers and a glass reinforced chassis to make some really tough IC starter cars.

Mini Cooper VW Beetle

Using the same IC power unit as the F1 cars these two 1/10 saloons. ZR-1 Corvette 2WD This car is powered by a 10 size glow plug IC engine. All mechanical parts are pre factory assembled. It could not be simpler to get into IC cars.

Calsonic Skyline GT-R 4WD

A 10 size glow plug engine powers this 4WD drive car through a toothed belt transmission system with three differentials. Oil filled shocks and long travel suspension arms.

Ford RS-200 Peugeot 405 Lancia Delta Integrale 4WD

Some of the worlds most famous rally cars in 1/10 IC form. 4WD and three differentials with a toothed belt drive system. Oil filled dampers supporting the now famous Kyosho high performance suspension in contact with the road via the detailed tyres.

Nissan Terrano 4WD

This must be one of Kyosho's most sophisticated RC cars. Features an continuously variable transmission system developed by Kyosho and Bridgestone. The suspension features independent front and five point location live rear axle, just like the real vehicle. To get the best from this outstanding model a three channel RC system is recommended.

Rampage GP-10 2WD

A 1/12 entry level I.C powered car. Easy starting from its 0.10 engine. Oil filled dampers and all round independent suspension.

Stinger Mk II 4WD

Using transmission components from the best selling Optima electric powered buggy this 1/10 scale buggy will get you into I.C cars without a problem.

Gear and belt transmission and long suspension arms with oil filled dampers all carried on an alloy chassis. No engine included.

Nitro Brute

A 1/10 big wheeled R.V. The Rear mounted Enya engine comes complete with a Zip starter. Independent double wishbone suspension and friction dampers.

Nitro Crusher

Intended for any .21 engine to provide the power for this mighty four wheel steering, three diff based transmission which is based on the world famous Burns chassis.

Burns

Requires a 0.21 engine to power this IC powered car which Kyosho think will be a good beginners car. Independent suspension, metal dampers and four wheel drive with centre and axle differentials.

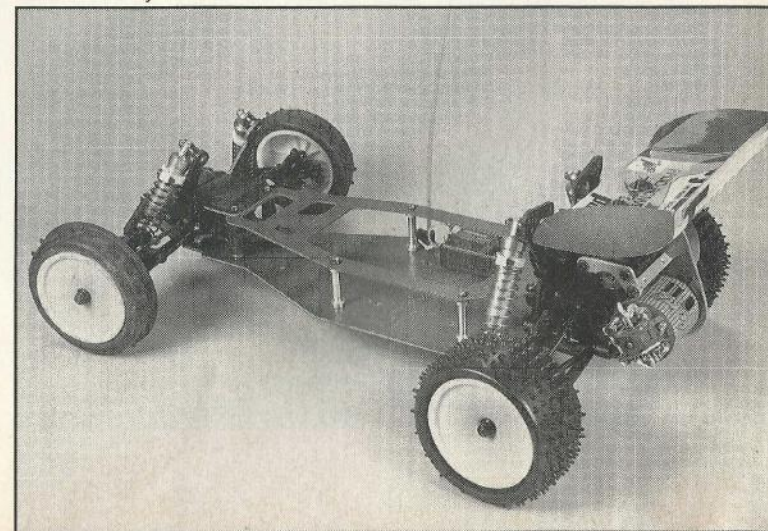
Outlaw Rampage Truck

Alloy chassis, oil filled dampers, sealed final drive transmission with shaft and belt offer real off road appeal in this Ford bodied truck.

Schumacher Hansons Business Park, 71-73 Tentor Road, Moulton Park, Northampton, NN3 1AX.

With race successes in just about every aspect of the RC electric race game, you might think that Schumacher might sit back and bathe in their own glory. This is not to be as the company continues to push forward in all areas of development. Cars continue to pour out of the Northamptonshire factory. The latest electric offering is the Bosscat. A very high specification car, with (it must be said) a pretty high price tag. In the 2WD area the Cougar range offers something from starter car to full blown race spec. with other variants to take in truck racing. There is no doubt however that Schumacher are trying

The Triumph has had a hard start to its racing career but has now been sorted by the race team.



The KIT LIST

hard to get a 1/10 I.C interest rolling with their numerous adaptations of their cars to 2.5cc pull start engines. These very complete cars only need radio gear and fuel to get them moving. Off road buggy, truck, sports and touring car are the styles of body available. Judging by the advertising effort behind this range of cars, there is no doubting the Schumacher commitment to the range.

Schumacher's range of I.C vehicles have the all embracing title of Nitro 10. These vehicles are powered by a 2.5cc engine which is fitted to a number of different body/chassis choices. The cars are based on the mechanics of the best selling Cougar range of 2WD cars. Alloy chassis, independent suspension with oil filled dampers. Pre-assembled gearbox with Kevlar toothed belt and ball differential. Twin ball bearing clutch and alloy flywheel. Cars available;

Racing Truck

Cougar based, very tough, fitted with neat body mounts and supplied with Parma bodyshell.

190 Evolution

A 2WD Mercedes style Touring car racer again styled on Cougar, fully ballraced and excellent body shape.

BMW M3

Touring car chassis again, as per 190E but with alternative bodyshell.

Panther

A tradition buggy style body hides the Nitro chassis and high performance.

911 Sport

Porsche 911. Unmistakable, Schumacher body moulding has proved popular in the IC market.

Cougar Club.

Intended as the entry level racer from Schumacher, low specification means a good price and the chance to update to top Cougar spec at a later date.

Cougar II

The range comes in various options but all cars have the same basic specification. All independent suspension with hard coated, oil filled dampers. Transmission is by 48DP gears with ball races. Chassis is alloy tub. Car has excellent record of UK and European titles.

Sport Model

Basic spec. Aimed at the beginner. Easily updated with Speed Secret Parts.

Racing

Everything included to get a winning performance on the track. Includes pro. diff and slipper clutch.

Team

As close as you can get to the specification used by the Schumacher team drivers. Includes high performance alloy roller drive shafts, and pro diff. and slipper clutch.

Shotgun.

Truck racer with similar 2WD spec. Big wheels and tyres included.

Procat 4WD.

Belt transmission, oil filled dampers and alloy tub chassis make this one of Schumacher's most popular 4x4 cars. A natural development from the original CAT.

Bossat 4WD.

Latest development in the long line of race winning cars from this company. The specification of the Bossat is impressive. Hard anodised, lightweight dampers, roller driveshaft to reduce friction during telescoping, sealed pro diff plus numerous carbon fibre bits for minimum weight and high strength.

Traxxas U.K.
P.O. Box 1128,
Winterbourne,
Bristol, BS17 2SH.

The only really new entry to the U.K. market in the last year has been the Traxxas range of buggies and truck racers. The range starts with the entry level Radicator. This 2WD car features a traditional bath tub style chassis made from mainly nylon components. There are a whole range of upgradable items available for the Radicator from alloy dampers to ball diff. It is even possible to upgrade the chassis to a carbon fibre version.

Using a large number of components from the Radicator, the Hawk is the Traxxas entry level truck, this vehicle also has a substantial number of Traxxas upgradable parts. Perhaps a unique feature of all the Traxxas entry level cars is that they are also available in ready to run form. They come completely assembled, only requiring the body to be painted. Pistol grip radio is supplied and even an electronic speedo is fitted. The Traxxas offering for the Big Wheel brigade is the Sledgehammer. This monster comes with double shocks to support each of its 5.25 inch wheels. Once again available as a kit or in ready to run form.

At the top end of the range the TRX-1 racing off road 2WD buggy entered the market with a flurry of interest and managed A final placings in the world championships at its first international meeting. The car has gone on to take wins all over the world and is rapidly making a name for itself as a true racing thoroughbred.

The suspension and in particular the dampers of the TRX-1 have created tremendous interest with racers everywhere. It is this successful feature that has been exported to the Traxxas truck racer, the Blue Eagle LS. Although there are some similarities between the truck and the TRX-1, the truck has its own unique chassis, gearbox and rear suspension components. Traxxas have not simply transferred the TRX-1 chassis under a truck body, the Blue Eagle LS has been fully developed and engineered in its own right.

Fiero

A 1/12 carpet racer with independent front suspension and flexing chassis rear end with single rear damper. An excellent value for money way to get into carpet racing.

Radicator 2WD

Entry level buggy with oil filled shocks supporting the all independent suspension. Aluminium and nylon construction with bath tub chassis. Metal gear planetary differential. Many upgrades available. 540 motor and speed control included.

Hawk 2WD

Excellent spec, entry level racing truck uses many parts from the Radicator design, including planetary diff and oil filled dampers.

Sledgehammer 2WD

Massive 5.25 inch tyres. Twin oil filled shocks at each wheel. Planetary differential, robust construction and able to take a terrific amount of off road punishment.

TRX-1 2WD

Traxxas's full spec. high performance racer. Carbon fibre chassis, teflon coated dampers with low stiction seals, all nylon plastic parts. Lightweight, smooth transmission with ball diff which is adjustable without dismantling the car. Includes slipper clutch. Fully ball raced.

Eagle LS 2WD

A specifically designed 2WD truck racer. It has its exclusive transmission and power train, chassis, suspension components and off course distinctive racing body. Fully ballraced. Already taking many awards in the USA, just waiting for the U.K. races.

Tomy
Samifran Racing
2D Guild House,
28 Guildford Street,
Luton,
Beds. LU1 2NR

or
Top Gear Model Trading
5 Page Close,
Bean,

Dartford,
Kent DA2 8BX

Tomy RC cars arrived in the U.K., not as might be expected in the hands of Tomy U.K. but under the control of two specialised importers. These two importers must doing a good job as Tomy have continued this unusual marketing technique. The massive Tomy company of Japan are more used to selling toys from diecasts to big ride on devices. It may be that Tomy perceived RC as an area of high specialisation needing substantial knowledge, backup and spares support, not the sort of thing one usually associates with fluffy rabbits.

Adonis 4WD

The Adonis comes with an aluminium chassis, plastic oil filled dampers and belt drive transmission. An excellent specification for a cheaper 4WD off road racer. The transmission of the Adonis is in essence the same as the higher spec Intruder.

Intruder 4WD

This off road buggy is unique in the number of transmission options provided in the kit. By changing various elements around it is possible to achieve a centre differential car with torque split or diff less 4WD, or direct drive to rear wheels and roller clutch to the front. GRP double deck chassis, an amazing 16 ball races and adjustable belt tension on front and rear diff housings. Many more features on this outstanding buggy.

Toyota Celica

Nissan Pulsar GTI-R

These cars are variations on the Adonis theme. The basic quality spec of the Adonis is carried into these performance saloons but with a saloon body mounting kit and different coloured wheels.

Mardave R/C Racing

7 Heanor Street,
Sanvey Gate,
Leicester.

From their small Leicestershire factory the Mardave company, headed by Les Rayner have for years produced a steady stream of excellent value for money RC kits. These range from Mini stocks to the Meteor 1/10 off road car and even 1/8 I.C. powered off roaders. All Mardave kits are simple to build yet extremely robust and offer tremendous value for money.

Meteor 2WD

Aluminium chassis with plastic oil filled dampers. Gearbox with ball diff comes ready assembled and fitted to the chassis. Body supplied with the kit must be painted on the outside.

Yokomo

World and European champion - the Yokomo Works '91 record stands for itself.

CML Distribution,
1684 Bristol Road South,
Rednal,
Birmingham, B45 9TZ.

The Yokomo 4WD Super Dog Fighter is now in "works 92" trim and promises to be as devastating on the tracks as previous versions from this relatively small Japanese company. The interest in near scale bodies has also been taken up Yokomo with the Honda NSX, a beautifully styled sports car on a modified Dog Fighter chassis.

Wonder Dog Fighter

One of the expensive 4x4 cars on the market. However you get the finest equipment. Carbon chassis, cast alloy gearboxes with toothed belt drive with one way roller but no slipper clutch is included. Improved suspension arms, shock brackets with additional mounting positions. Perhaps the best thing that can be said about this car is that it wins world championships, that must be enough.

Honda NSX

Tub chassis with independent suspension and fold back front end for safety.

Associated

Ted Longshaw,
P.O. Box 89,
Orpington,
Kent.

Associated claim to have the worlds most successful RC off road car, the RC10. There can be little dispute that the RC10 has taken more awards world wide than any other car. It is also a fact that Associated are one of the slowest companies to bring out changes to their product range. No doubt the claim would be, why change it when it is working O.K. which is probably fair comment. It must also be said that Associated have some of the worlds best drivers. Not a bad combination; excellent car, outstanding drivers this must be something of powerful recipe.

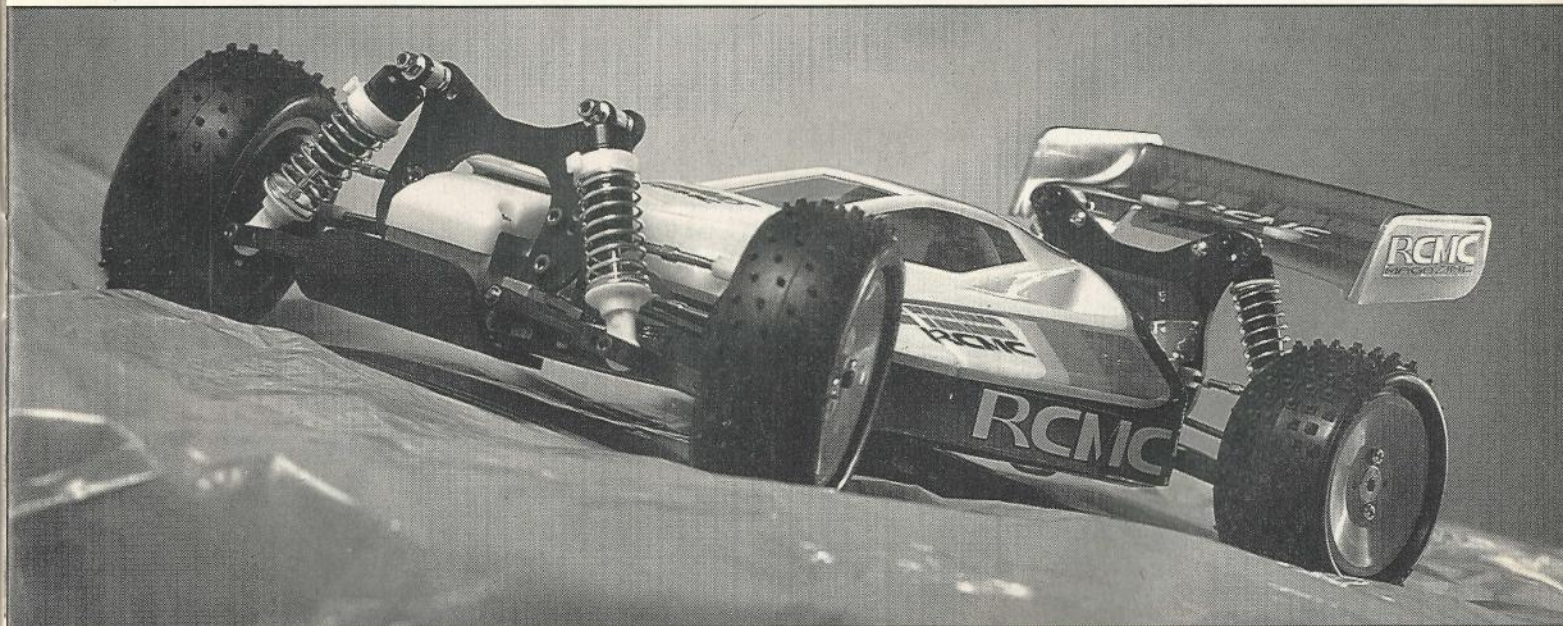
The Team Car is the current Associated top of the range model.

RC10 2WD

Well, if you are completely new to RC electric racing it is possible, just possible that you might not have heard of the RC10. Plastic parts are all nylon, aluminium tub chassis, teflon coated hard dampers, the now renowned high efficiency lightweight Stealth transmission. Some other features making the Team car different from the others are:
Longer front suspension arms,
Black chassis
Longer teflon coated front shocks and shock mounting positions
New rear hub carriers
Many more points worth talking about but not enough space.

RC10T 2WD

Much the same in overall spec as the RC10 buggy including the same alloy tub, shocks and Stealth transmission. The truck has a larger wheelbase and wide track for increased stability.



The KIT LIST

RC10L

Graphite or Fibreglass chassis circuit car. Masses of adjustments and a motor pod which uses Associated's super smooth movement control system.

Losi

CML Distribution,
1684 Bristol Road South,
Rednal,
Birmingham, B45 9TZ

The Losi range of RC cars has steadily expanded over the last few years to include entry level as well as top flight racing spec and truck racers. Gill Losi Jnr is the inspiration behind these products which are created after years of world class racing.

Junior Two 2WD

This economy racer comes with a high class specification. Features such as ball races for the gearbox, oil filled dampers and externally adjustable limited slip differential. Chassis is a "matrix" fibre resin injection moulding.

Junior T 2WD

This entry level monster truck racer has the same chassis and suspension as the Junior Two buggy. The differences apart from the body are the competition tyres and of course the truck body. The same tough transmission and driveline finds its way into this purposeful racer

JRX PRO "SE" 2WD

This full blooded racing buggy has a specification as good as any. Gearbox based on the Junior cars with limited slip differential. Friction slipper clutch which will accept the Losi "Hydra Drive". Teflon shock pistons working in hard coated damper barrels. Drive shafts are the telescopic sliding type. All of the cars hardware is mounted on a completely flat graphite composite chassis.

AYK

AYK were, at one time very big in the U.K. and many products came from this Japanese factory. The company ceased production of RC cars more than a year ago, although it may be possible to get hold of kits in limited quantities, from companies such as TOP Models who are still offering this once famous name.

Marui

Marui had a reasonable range of RC cars in their hey day. Stocks of their products seemed to have dwindled. It is possible to find shops such as GK Models of Bournemouth who may still have kits available. No new 1/10 products have appeared, although the company does seem to be surviving, although the decision to produce a range of miniature RC cars of around 1/40 scale did appear a bit questionable.

Big Bear 2WD

Big wheel Datsun truck. Tough construction but not a racing truck.

Ninja 4WD

Off road racer with coil sprung oil filled dampers. Transmission is by front to rear shaft.

Shogun 4WD

Similar to Ninja, different body.

Thunderbird 4WD

On/off road racer with adjustable ride height. Passenger car body. Mechanics as Ninja.

PB

Downley Road,
Havant,
Hampshire, PO9 2NJ.

PB have apparently drifted away from the 1/10 off road scene concentrating on their 1/8 circuit cars. No doubt a phone call to either PB or the main distributor would bring a kit to life if the need was great.

TRC Composite Craft.

Phil Greeno Models Ltd.,
9 Village Way East,
Rayners Lane,
Harrow, HA2 7LX.

Lynx II Elite.

This race winning design from the U.S. TRC company relies heavily on composite components. There are a number of versions available under the "Lynx" range.

Ball races, magnesium alloy front crossbar, adjustable wheelbase, aluminium diff components plus many other features.

Lynx II Sport.

Cheaper version but still with graphite chassis rear monoshock but more plastic parts.

Bolink.

Ted Longshaw,
P.O. Box 89,
Orpington,
Kent.

Few Bolink cars are seen in the U.K. This is perhaps a little odd as Bolink are one of the dominating RC cars in the U.S. circuit racing scene. Bolink have consistently produced race winning chassis for 1/10 circuit cars. Given the chance to demonstrate the range on U.K. circuits, Bolink could once again be a significant force.

As with most U.S.A manufactured kits Bolink have a whole pile of LTO models (Left Turn Only). These very special cars cater for the American obsession of driving around in circles at phenomenal speeds (Like Indianapolis). I guess that is pretty self explanatory.

The Bolink Eliminator range of kits Although the cars look simple in design they are the result of years of refinement offering the very best in flat chassis designs.

The basic design is a GRP chassis (graphite chassis available on some models) with all the cut outs to accept cells. The motor pod is an aluminium and GRP fabrication which makes up a T shape. This pod is attached to the main chassis with either a ball type pivot as in the case of the Super sport or a simpler flexible mounting as used in the Sport. Most of the pods have a movement controlling damper unit fitted between the pod and chassis.

Front suspension is vertical sliding suspension with castor adjustment. Models are:

Eliminator Sports

.GRP chassis, Adjustable diff. Adjustable castor.

Eliminator 10 Gold edition

As Sports plus, Graphite chassis, Adjustable ride height,

California Flyer

Ball races, Graphite chassis, lightweight pod, wing kit.

Eliminator Super Sport

As Sports plus ball type rear suspension, adjustable coil over damper units.

Invader

This is the Bolink off road truck chassis. Similar pod design as circuit cars but with a lower gear ratio. Swing arm front suspension.

Trinity

Lesro Models,
Stony Lane,
Christchurch,
Dorset, BH23 7QL.

Perhaps better known for motors, Trinity have now tried their hand at making RC cars. The first product is a 1/10 U.S. style oval racer. The Reflex, as it is named incorporates some features not normally seen on 1/10 circuit cars. Fully enclosed transmission and independent suspension all round, with machined suspension arms. At the time of writing no information as to availability in the U.K.

Serpent

Richard Kohnstam Ltd.,
13-15a High Street,
Hemel Hempstead,
Herts HP1 3AD.

All independent suspension on an alloy chassis. The cars are available in electric and IC form and are well made, aimed at the racing market. The cars use belt drive and the Serpent design team have produced one of the neatest chassis available on the market.



One of the best in the truck line-up has to be the RC10T from Associated.

Advanced Racing Technologies

Agitator.

Graphite chassis with adjustable wheelbase. Graphite axle comes with a adjustable ball differential. Pod movement is controlled by a Delrin silicon damper.

McAllister

Savage Racing Products
195 Badminton Road,
Coalpit Heath,
Bristol.

McAllister have been around for a few years now. As no importer was willing to take the product on, the U.K. was virtually a McAllister free zone. Now a newcomer to the scene "Savage Racing Products" have taken on the importation of this acclaimed chassis.

Described by McAllister themselves as a "no frills, no nonsense, get down to the business car". As far as the MX-PRO is concerned no frills does mean just that; no frills, no body, no wheels, which to be fair is much the same as many Pro 10 kits around today. A basic chassis which has shown in the USA to have race winning potential.

Perhaps not the appropriate place to include it, but it could be the start of something new. McAllister is the only company to produce a racing 18 wheeler articulated truck.

Corally

Intronics,
Claerwen,
Bexhill Road,
Pevensey,
East Sussex, BN24 5JT.

Corally have set standards in manufacture and design that others strive to copy. They are among the world leaders in 1/10 and 1/12 circuit cars, but they are not cheap. So if as they say you want the best, then it costs.

Corally cars come ready assembled, include a free floating T Bar which requires no adjustment plus a whole host

Racing Special

of up to the minute hi-spec features.

SP12/12G

SP 12 is the European champion for 1/12 scale. Independent front coil spring and the free floating T bar rear all carried on the Coral alloy chassis. 12 G is similar but with graphite chassis and with anti roll trailing front beam

SP10

Based around the SP12 series. versions available are: SP10 chassis alloy, SP10 X, chassis alloy, antiroll front beam with camber/caster adjustment.

SP10G/SP10GN

As the SP10 X but with graphite chassis, the N version has NASCAR wheels.

Corally also produce a number of cars specifically for oval racing.

Parma

Helger Racing Ltd,
Unit 2,
R/O 25 Horsecroft Road,
The Pinnacles,
Harlow,
Essex, CM19 5BH.

Days of Thunder

Fibreglass chassis, ball differential. Alloy hubs and topped off with a massive Chevy body.

Hemi Coupe.

Lots of chrome fun buggy. Riding on a fibreglass chassis, steel axle and ball diff in an aluminium motor pod.

C & M Mfg.

Cobra

U.S company producing winners in their "Oval" series. They also have the SS chassis. Made from graphite plus some other very high quality components. Differential made from titanium components with full bearings, the turnbuckles are also produced from the same material.

Motor mount acts as a heat sink includes ride height spacers.

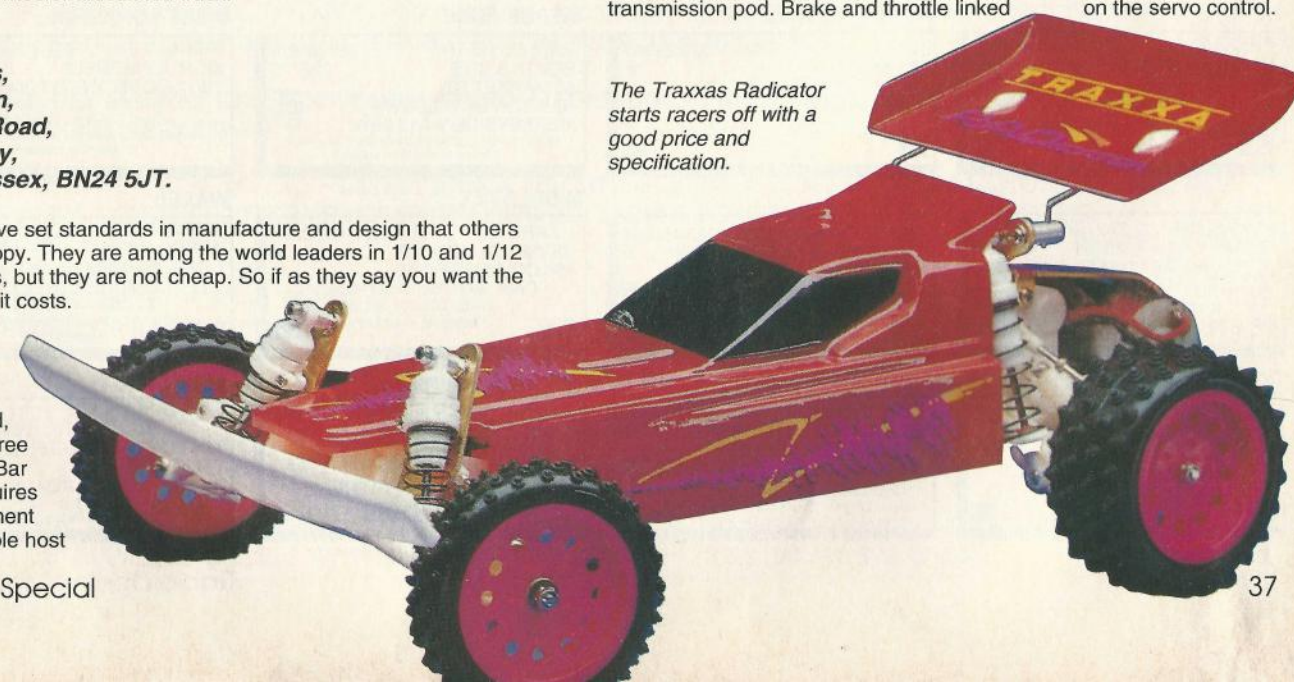
Cox

Amerang Ltd.,
Commerce Way,
Lancing,
West Sussex, BN1 8TE

As we have included a few 1/10 IC cars it seems only right to include the Cox I.C cars.

Using the now legendary Cox .049 glow engine these little 1/12 cars provide and excellent entry to the exciting world of I.C driving. Zip starter, gear differential, independent front suspension and rear motor transmission pod. Brake and throttle linked on the servo control.

The Traxxas Radicator starts racers off with a good price and specification.



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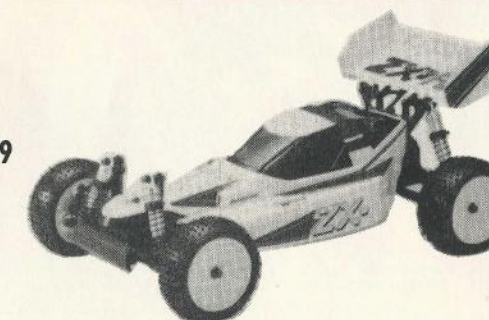
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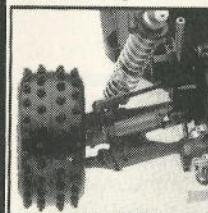
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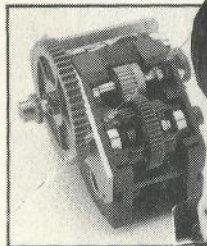
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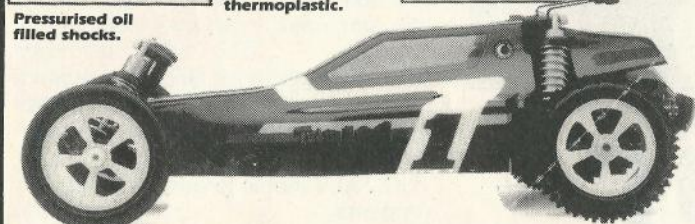
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Junior Two TRANSMISSION The Junior Two transmission uses a unique centre mounted, bearing supported, limited slip differential. Gears are precision moulded from lubricant impregnated reinforced thermoplastic.



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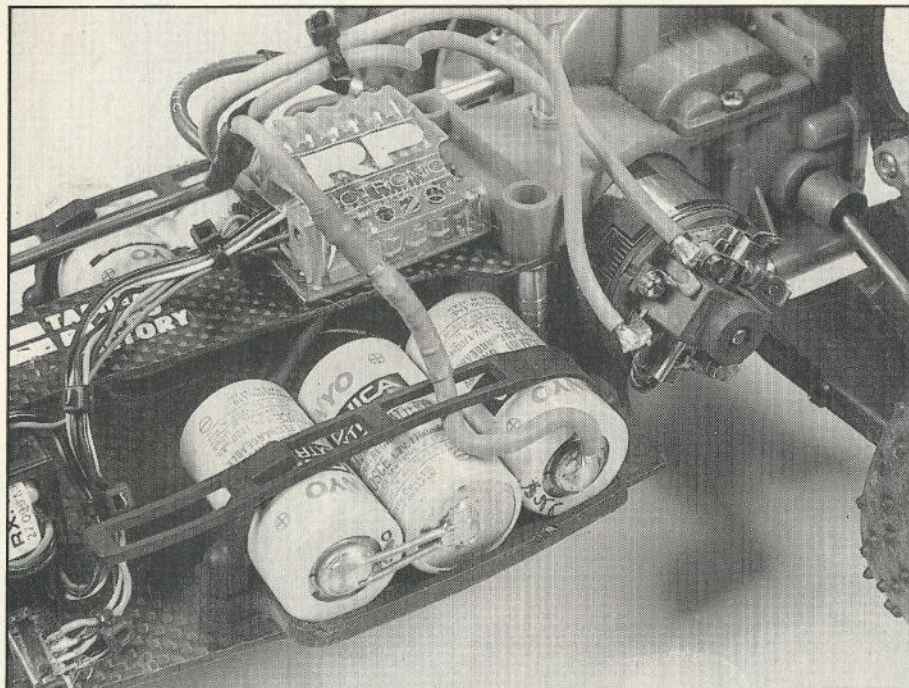
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Need for speed

Today's speed controllers are highly sophisticated electronic devices, they are a large part of the RC purchase and deserve close inspection.....

Funny old business the speedo game. The manufacturers range from one person businesses to the largest RC makers in the world with every shade in between. The technology ranges from the most basic to some at the edge of science fiction. Electronic speed controls are perhaps one of the areas of RC that has benefited most from technology. We now have features built into speed controllers that a few years ago we could not even dream about. With all of the high tech features has come the other great advance and reliability. It must be said that some of the highest level speed controllers will cause some flinching in the wallet department, it is also true that at the less sophisticated end of the market prices have remained very stable. In fact these speed controllers have, in real terms become cheaper. Another interesting point to note is that for the most part the newer range of feature packed speed controllers are not much larger than the simpler earlier models, yet another benefit from technology.

However there is aspect of speed controllers that has yet to be overcome satisfactorily and that is reverse

provision. Sure some speed controls do offer reverse. These tend to be at the cheaper end of the market. When we get into high sophistication is it assumed that the really smart drivers who will buy this equipment will never make a mistake and need to go into reverse? Perhaps we have not reached the zenith of electronic speed controllers after all.

Futaba

MC 111 Fwd/reverse/brake 130 ampere relayless Mosfet circuitry, three tuning adjusters with LED checker. 35 gm. Can be mounted in place of a servo.

MC 112 Fwd/reverse/brake 100 ampere All the features of the 111. Single speed reverse, LED checker

MC 116 Fwd/brake 210 ampere

C 110 Fwd/brake 75 ampere Adjustments for neutral, brake, high speed and power curve. Full speed indicator light.

Hi-Tech

Fwd/reverse/brake 150 ampere

Tekin

TSC 408. Fwd/brake Mosfet technology includes regenerating circuitry for recharging batteries on motor overrun (this is common to all 410 series). Anti-glitch circuitry. 250 Ampere

TSC 410. Fwd/brake 250 Ampere. Torque control to ensure that no battery power is wasted by stirring the dirt. Fused protection.

TSC 411 Fwd/brake. high frequency switching on both power and braking. Claimed to give much smoother power saving wear and tear on the transmission. Torque control. Also available as a "Goldfet" model. 7 FET's. 250 Amperes

TSC 420 Fwd/brake. Surface mount technology as in the 411. 8 FET's 400 Amperes. Very small, very high power.

TSC 700 Variable torque. over 480 Amperes

TSC 610R Fwd/reverse/brake handles up to 10 cells.

TSC 410K Claimed to have been under development for three years this is the very latest in leading edge ESC (electronic speed controls). Weighing no more than a conventional speed control this speedo is programmable. It is possible to key in 3 different current limiters that can be set to activate at different times during the race, this allows the driver much more control over the discharge curve. The sensitivity adjustment is also programmable allowing the driver to precisely select the sort of sensitivity to match his/her driving style. Finally the brakes are also settable to suit the track and driving conditions.

It is even possible to turn the speedo and receiver off from your transmitter, so ensuring nothing happens to the car at the end of the race. Built in memory prevents loss of settings even if the battery is disconnected. Uses Goldfets, which according to Tekin offer the lowest resistance, 8 goldfets being equivalent to 12 conventional FET's. This means less loss in the speedo and more energy for the motor. The disadvantage is that this speedo is not cheap.

Speedmaster

Speedmaster have and continue to provide some first class speed controllers that will not burst the budget. High reliability plus the fact that servicing is quick and sensibly priced ensures the continued success of these very good speed controls.

Silver Star Fwd/reverse/180 amperes
Silver Star turbo Fwd/reverse 310 amperes
Gold Star Fwd/brake 180 ampere
Gold Star Turbo Fwd/brake 310 ampere
All these speedo's are very simple to install and set up.

Nosram

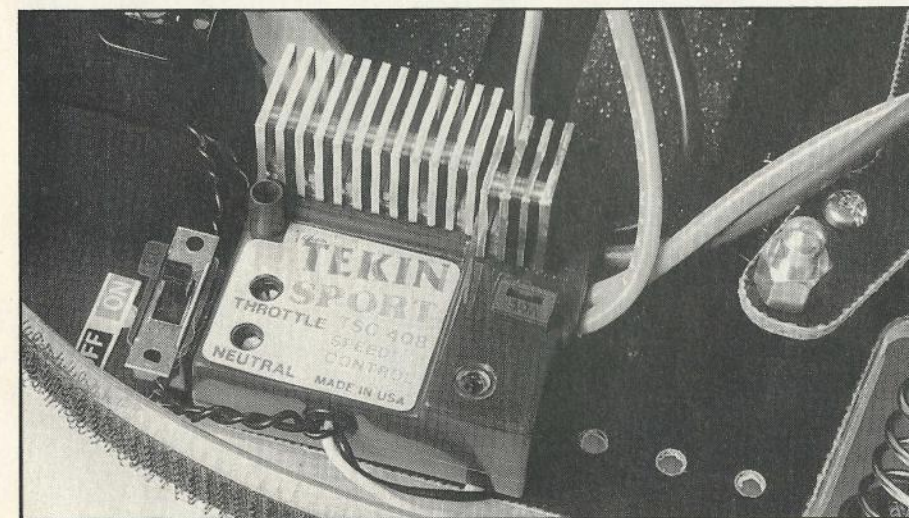
A great list of successes continue to mount up in the Nosram record books. Tomahawk Fwd/reverse/brake 6 TEMPFET's Enhanced Fwd/reverse/brake 180 ampere Exterminator Fwd/reverse/brake 11 FET's 270 ampere Exterminator Pro Fwd/reverse/brake 12 FET's 450 ampere Exterminator TL motor management. 12 FET's International Fwd/brake 8 FET International Pro 7 FET International PDQ Fwd/brake 7 FET very small International Pro TL motor management

Novak

Very successful U.S manufacturer. 410 M1c. Fwd/brake High frequency, digital, adjustable current limiting 7 FET 250 ampere. Protection against reverse connection.

410 M5. Fwd/brake. MegFET transistors with 0.003ohm forward resistance. Thermal shutdown dual colour LED for setting up.

410 MXc. Fwd/brake. High frequency megfet. Regenerative braking, adjustable current limiting, 50 ampere braking plus a dual colour LED for setting up. 14 FET 500 ampere. 610-RV. Fwd/reverse/brake. High frequency megfet with reverse.



The Tekin Sport is economically priced and compact.

Racing Special

SPEED CONTROLLERS



Advanced Schumacher Traco caught our eye with its ABS braking facility.

Adjustable time delay for reverse from 0 to 3 seconds. Thermal shutdown. Dual colour LED for setting up.

Traxxas

Traxxas have three speed controllers in their range. All have fixed price servicing available.

XL-1 Fwd/reverse with neutral and proportional adjustment and tri-colour LED for indicating status. On the largish size but is probably the cheapest speedo available from a major manufacturer, has lugs that allow it to be fitted in place of a normal servo. 75 ampere

XL-2 Fwd/brake. very compact with tri-colour LED indicator. MOSFET technology, neutral and proportional adjustments. 150 ampere, comes with aluminium heat sink.

XL-3 Fwd/brake. Top of the range can comfortably handle any of the modern motors. Weighs only 2.1oz yet can handle up to 447 ampere. Thermal protection. Neutral and proportional adjustment with LED check.

...The technology ranges from the most basic to some at the edge of science fiction...

JR

MacGregor Industries Ltd., Canal Estate, Langley, Berks, SL3 6EQ.

JR is one of Japan's leading manufacturer of RC equipment. Speed controls make up just a tiny part of their high spec. high quality range. NEA 950 Fwd/brake. FET's for high performance motors. 40 ampere continuous. NEA 950B Fwd/reverse/brake similar in style to the 950 but with reverse. 25 ampere continuous. NEA 850B Fwd/reverse/brake intended for non modified motors. 20 ampere continuous.

KO Propo

No specific importer for this very high quality, high performance range of speed controls from this, one of Japan's smaller RC equipment producer.

CX-III Fwd/brake very powerful 510

Need for Speed

ampere, low fwd resistance with a two Mosfet reverse circuit. Adjustable power curve plus a power take off for the PS303 FET servo weighs only 1.52oz.

CX-11R Fwd/reverse/brake. This is one of the few reverse speedos produced by KO. Can handle up to 80 ampere. Finished in black anodised aluminium, comes with a separate pulse checker.

CX-IV Fwd/brake. Tempfet design with thermal shutdown. Logicfet brake and a built in pulse checker. 75 ampere

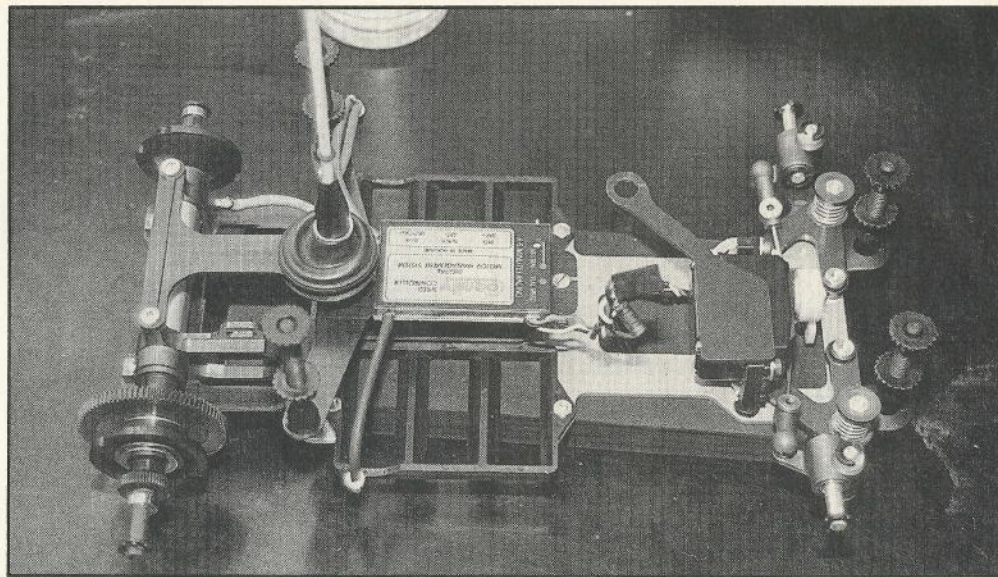
ZX 500 Fwd/reverse/brake

Corally

Intronics, Claerwen, Bexhill Road, Pevensey, East Sussex, BN24 5JT.

...Corally's Motor Management System can handle any motor...

Motor management system. Fwd/brake The first speedo according to Corally to offer high frequency operation with regenerative braking and adjustable current limiter. Also includes thermal shutdown and pulse checker for easy setting up. Can handle any motor.



The Corally MMS was designed to fit the tiny 1:12 class but suits most chassis.

Schumacher

Schumacher Tracco. Fwd/brake makes use of a microprocessor to control acceleration which is programmable to match driving ability/conditions.

Braking is described as anti lock (ABS). Speedo continually checks there is some output from the over-running motor when it is acting as a brake, this prevents wheels locking. Suitable for any motor. Comes with a programming button and lead.

Laser

Glenorie, Latchford Lane, Great Haseley, Oxford, OX9 7LA.

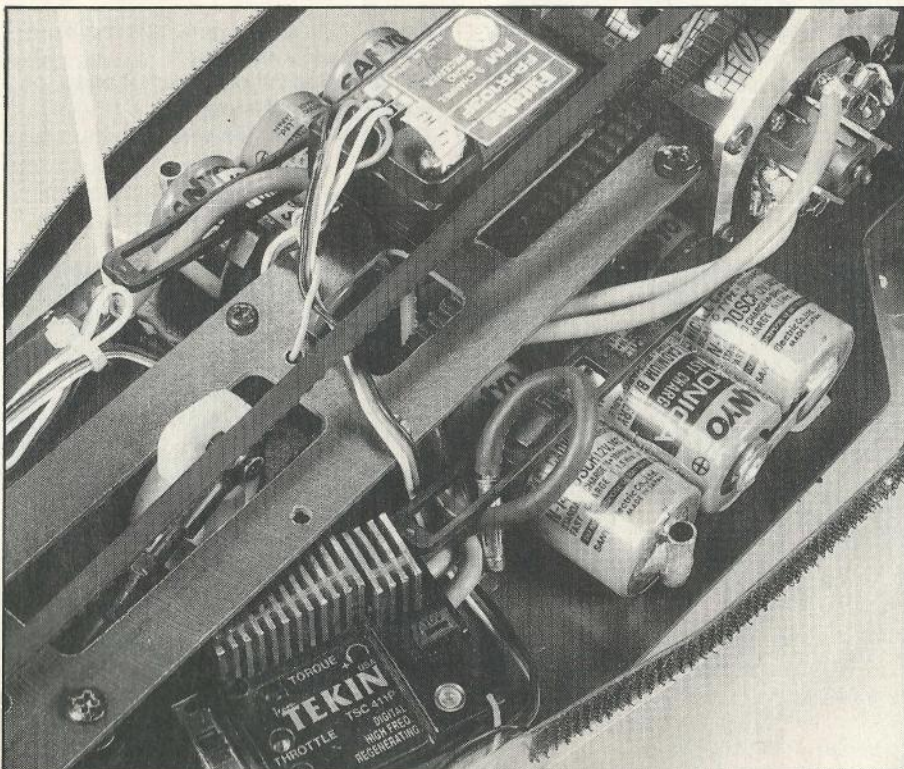
GT Fwd/reverse/brake. Good all round faithful speedo 215 ampere

TQ Fwd/reverse/brake. Higher spec but same reliability 285 ampere

TQ Gold Fwd/reverse/brake

Mini pro Fwd/brake. 215 ampere compact

Mini pro Gold Fwd/brake. Top specification forward only speedo 285 ampere.



Lazer ZXR requires the fitment of a fairly small speedo.

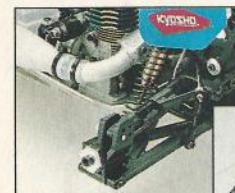
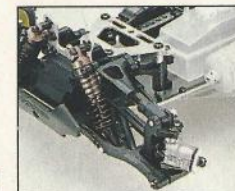
The kit item found in most RC cars, this is normally soon replaced with their more advanced ESC brothers.



'COOKIN ON GAS'

Kyosho dominate the 1992 1/8th World Championships in Usingen Germany with 7 out of the top 10 places taken by Infernos. To prove Kyosho's pedigree, a Burns also made the top ten!

- Double wishbone front suspension
- Easy camber adjustment
- Strong, glass reinforced parts
- Tough front bumper
- High strength 2.5mm aluminium chassis.



- Dual disc brakes, individually adjustable
- Self-sealing fuel tank
- Easy access to servos

- Double wishbone rear suspension
- Rear anti-roll bar
- Metal, pressure-type oil filled shocks



Turn on the Heat!

Through evolutionary design improvements, the Kyosho's Inferno offers the latest developments, combined with all the race-winning pedigree of their previous .21-engine buggies. Extra long wishbones provide even greater stability, whilst super-capacity pressure shocks keep all four wheels firmly on the roughest of terrains, aided by an anti-roll bar at the rear. Power is delivered via an efficient shaft-driven four wheel drive system, utilising bevel geared, easy maintenance differentials. The high strength 2.5mm aluminium alloy flat-pan chassis provides an extremely tough base for the glass filled nylon suspension and gearbox parts. Braking is easily achieved with Inferno's adjustable bias disc brakes, front and rear. Inferno is completed with its sleek, distinctive looking bodyshell and aerodynamic wing, making both its looks and performance well worth watching out for. Kyosho Inferno: The heat is on!

Ripmax KYOSHO THE FINEST RADIO CONTROL MODELS

PERFECT PAINT!

When Francois Lagrilliere first showed us his unmistakable paint jobs we knew they were certainly different, and that you would want to see them. Over the next few pages Francois details just how he gets these amazing results...

Every time I go to a race meeting, Zut alors!, I think to myself.

Horrible, sloppy paint jobs, monstrous designs and patched up, scruffy cars. Quel horreurs!

Of course, the main thing with a buggy is it's speed, but in this day and age, when the public, sponsors and dealers demand so much, it's not enough just to be quick - R/C cars must look good as well. One glance in the direction of full size motor sport will show just how important presentation has become.

Now, I know not every driver is a Van Gogh or Rembrandt in disguise but with a bit of effort, anybody

can turn out an attractively painted and prepared car, and fifth place with a nice body can give a lot more pleasure than the same position driving a wreck.

Preparation

So how are we to set about getting our bodies up to scratch?

Well, to start with, put away that Bullworker and cancel your season ticket for the local gym - this is going to take skill, not raw muscle!

The first step in preparing the body is to cut out the lexan shell. Scissors work, but for neatness it is far better to use a sharp hobby knife, which can follow the lines of the body precisely. If you run

around the outline a couple of times, the shell should break away easily, leaving clean, straight lines.

The body must then be scoured, using Scotch Brite or similar rather than too coarse sand paper, and then be washed with warm water and a little detergent before any paint is applied.

Painting

Now the body is ready for the paint to be applied. If you are only using one colour, then there should be no problem, but if you want to be adventurous and use two or more then some consideration is needed.

You must be sure first that the design you are planning will suit the body shape and secondly that your choice of colours will work with each

other. This can be checked using the plan that comes with your body kit. Simply take a photocopy of the plan and colour it according to your proposed scheme - if it doesn't look good, think again!

Once you are happy, sketch the design onto the body with coloured markers, which can later be wiped off. Choose which colour to apply first and mask off the rest of the body, not forgetting any lights, windows and other details.

Masking is simple. Firstly cut some thin 'pinstripes' from some tape and use these to outline the area to be painted, then cover the rest of the body with larger pieces of tape. Of course, this only

The Tamiya Astute shell is a maze of colours and careful design work, according to Francois this finish can be attained by anyone....

Radio Control Model Cars



**LEXAN
BODY
PAINTING**

Once the windows, lights and other details are masked the artwork side can begin - and as can be seen the limit is your imagination.

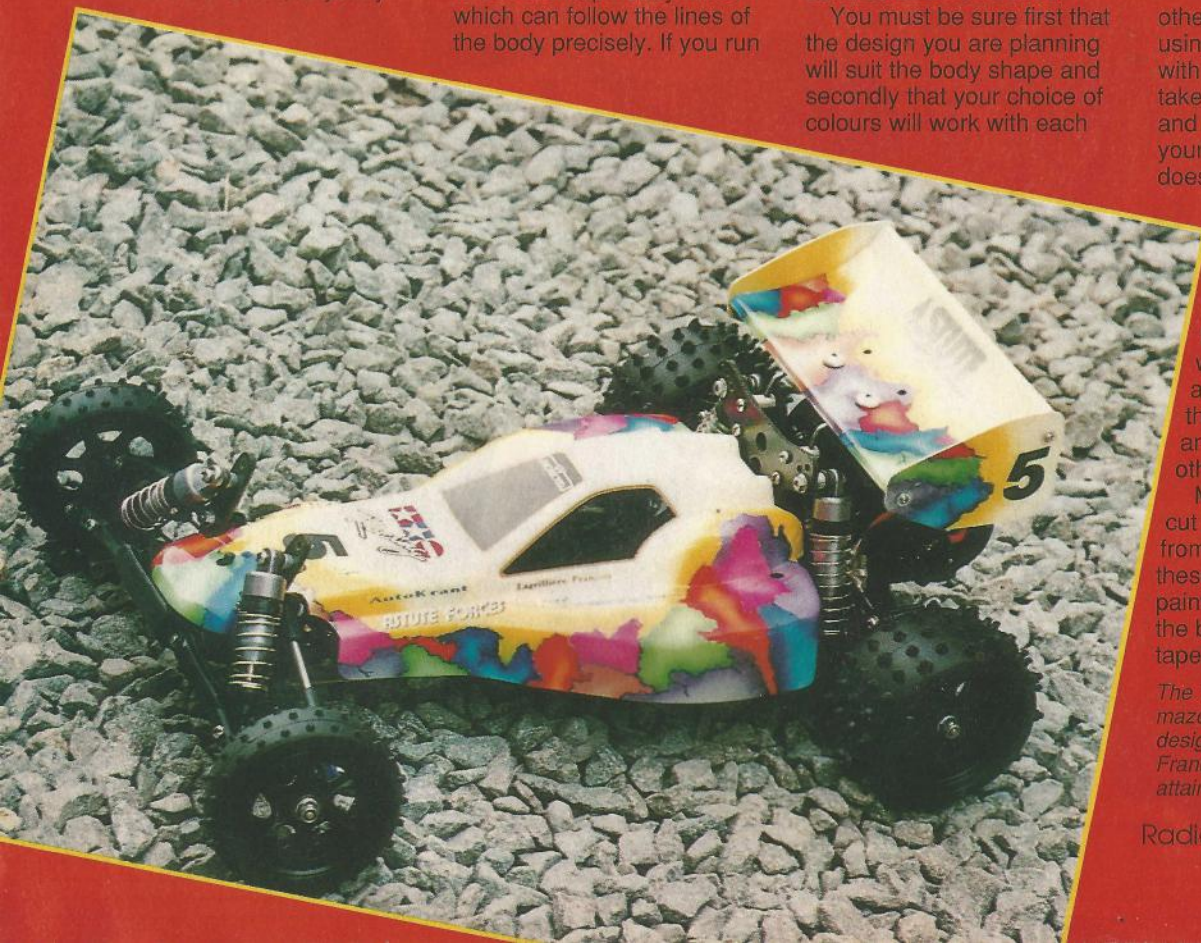
Rear of the Toyota truck has a black panel to show the storage area and is finished off with the kit decals.

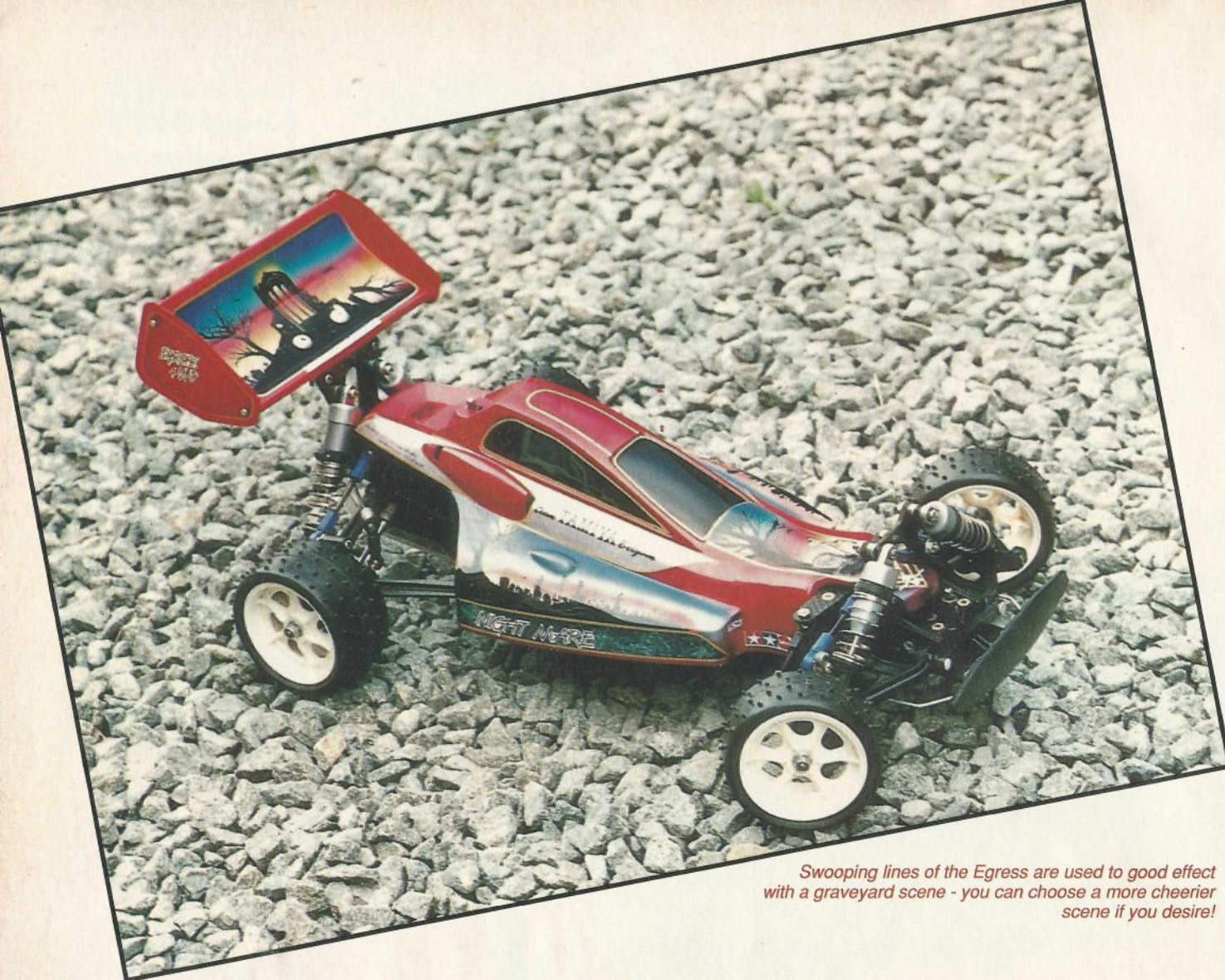
applies when the different colours are to be sharply separated.

For some designs, you will want to apply some thin colour lines and for these I use Tamiya PC paint markers, with the points cut to the appropriate sizes. Remember, with polycarbonate paint as with all other types, it is best to apply three thin coats rather than just one thick coat. You must also allow one colour to dry before applying the next, but this doesn't take long - twenty or twenty-five minutes should be enough.

Windows are painted with translucent colour, from Pactra or Tamiya, although if you use the Tamiya paint it is best to dilute it a bit with Pactra thinners, or it may well crack. You could at this stage simply use a spray can, but with these you cannot control the paint so well, and if you are applying more than just

Racing Special





Swooping lines of the Egress are used to good effect with a graveyard scene - you can choose a more cheery scene if you desire!

one or two different colours an air brush becomes essential.

Graphic designs

If you've got a weak spot for bright colours, you will want to get into more complex graphic designs, and for this an example is in order.

The Toyota High Lux pictured may look highly detailed but the actual process for creating this design is really quite simple. After masking off the windows and details, the various coloured shapes were applied by cutting the triangle, circles and squares out of pieces of tape and sticking them to the body. The road is no more than one long piece of tape torn in two and used to mask the edges of the design. Add a few colours around the edges and then spray on the black paint. The white lines were simple using individual pieces of

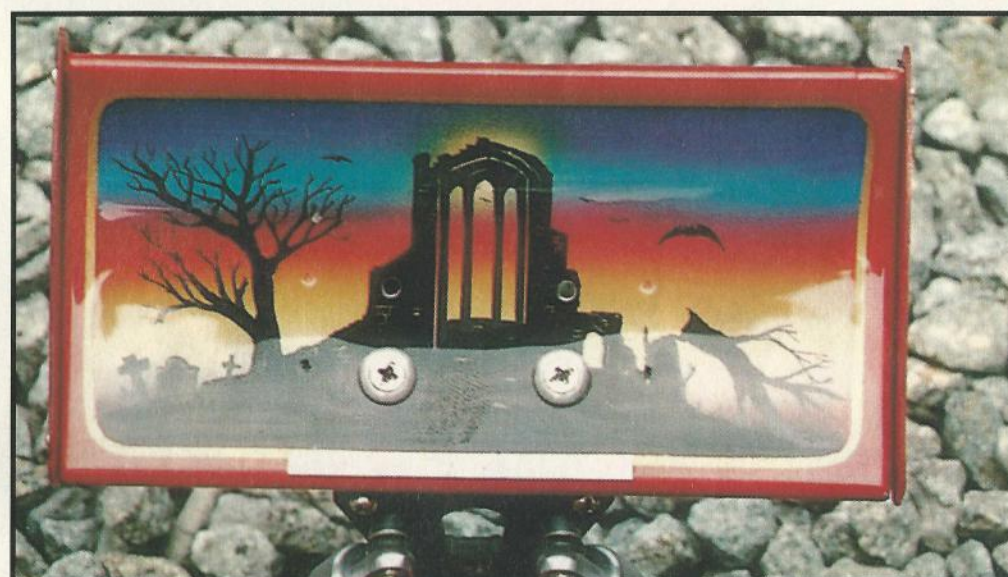
'pinstripe' masking tape.

Black paint was applied around the edges of the other shapes to add depth to the designs. After the paint had dried the basic colour was

applied and, as in this case it was white, the 'pinstripe' masking for the road lines could also be removed.

Next, the tape masking the various shapes was removed,

with the colour being sprayed onto the spaces left. Make sure you use two or three shades of each colour as this will again give more depth. The windows were painted in



Close up of the rear wing on the Egress shows the graduated sky colour, this will need careful application of the paint - try this method on scrap lexan first.

translucent blue, the rear lights in red and orange and the headlights and grille in silver. All that is left is to add a few stickers and put the body on it's chassis!

Murals

For many, the ultimate in design is to add a photograph or postcard to your body design. This is no more complicated than the technique described above, but it does take some more time - the tools are just the same, masking tape, PC markers and airbrush.

The best thing to do is to try a practice run with a simple design - a sunset with a few palm trees, for example - on a sheet of glass before you try a real body shell. If you make a mistake, all you've lost is the cost of the paint. A lot of masking and patience is involved, but with effort you will be able to come up with some spectacular designs.

The easiest way to start is to stick the original example on the outside so you can see from the inside which areas must be painted. If you're no great artist, you will have to resort to tricks, but basically all you need is to know how to handle your airbrush.

Again, the best way to

explain the technique is to use an example, in this case the Egress body. The first step is to draw the outline of the cemetery on a piece of tape, cut it out and stick the outline onto the body. The mask the rest of the panels, with 'pinstripes' and larger tape and it is time for the first colour, the black for the cemetery. Once this is dry, remove the tape and start on the sky above, using yellow, orange, red and blue paint, with no masking.

Next, start on the pinstripes using a 70% - 30% mixture of metallic red and black. The paint is sprayed in the centre of the tape, giving an even coverage down the length of the pinstripe. This mixture is also sprayed around the edge of the marbled areas, giving a similar effect.

The base colour can now be applied, this being Tamiya Metallic Red PC15. If the red is to dark for your liking, the tone can be lightened by adding up to 15% 'normal' red (PC2), also from Tamiya. After these colours are dry, some of the large tape panels can be removed, leaving the thin pinstripe tapes in place.

A mixture of Metallic Purple PC18 and Silver PC12 is next on the list, making sure that this colour is well diluted. Before spraying, a little more preparation will be required. ➡



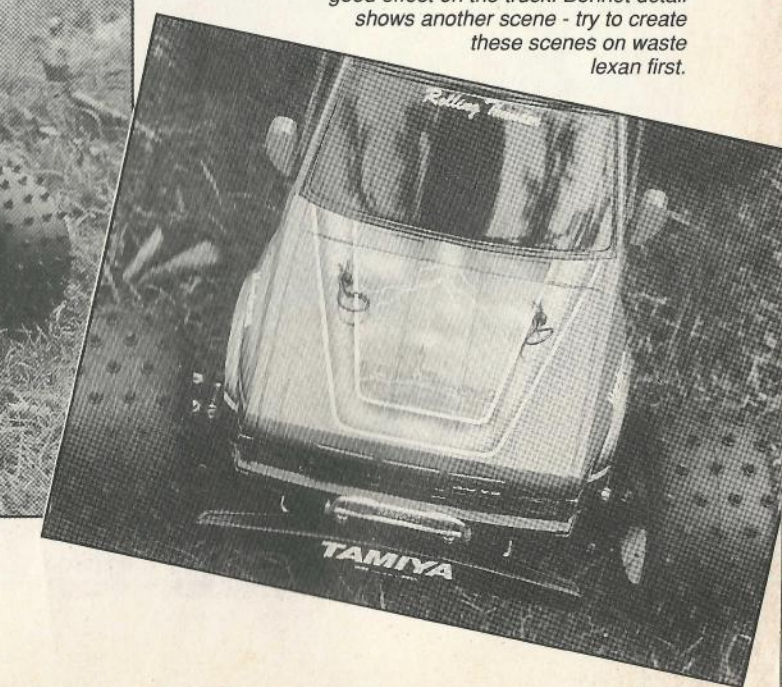
The addition of bolt on rear bars makes the truck look good but they may be a little fragile.



Blue tinted windows have also been used to good effect on the truck. Bonnet detail shows another scene - try to create these scenes on waste lexan first.



A fairly straight forward custom paint job uses three main colours and pinstripes.



Racing Special

PERFECT PAINT!

Take a sheet of 'cling film' food wrapping (the stuff your mum used to wrap your sandwiches up in) – scrunch it up, then unroll it leaving plenty of wrinkles. Apply a coat of paint to the body, then immediately lay the cling film onto the wet paint surface. Remove the plastic film before the paint dries and then back up with a contrasting colour – silver, gold, blue etc. You are left with a very convincing marble effect, with the minimum of effort!

In the final stages, remove the tape on the windows and spray black. Peel off the pinstripe and apply a layer of gold, and the body is finished. From the outside, the shell looks superb, but if you are a stickler for detail, the mess of colours on the inside can be neatened up with an overall coat of black.

Hopefully, this exercise will have showed that spraying a body shell is really not that difficult, so long as a little planning is carried out. It provides a good basis for more complicated schemes which employ the same principles, only more planning!

Adding extra details

Even a special paint job can be improved with the addition of a few extra detail items such as wing mirrors, windscreen wipers, working lights etc. As an example we can take a look at the King Cab, from Tamiya. On this truck I used the rear view mirrors from a Honda NSX. This looks good, and didn't take much time at all. From aluminium tubing I made two side exhausts and some fender bars on the trunk. To produce a chrome finish on these parts, I used Tamiya 'Compound' – a mild abrasive cream that can bring up aluminium to a bright finish. On the front I placed a small 'bull bar' with two extra lights giving the model a realistic look.

To keep this truck looking like new after a hard run over rough ground, simply polish the shell with normal car polish.

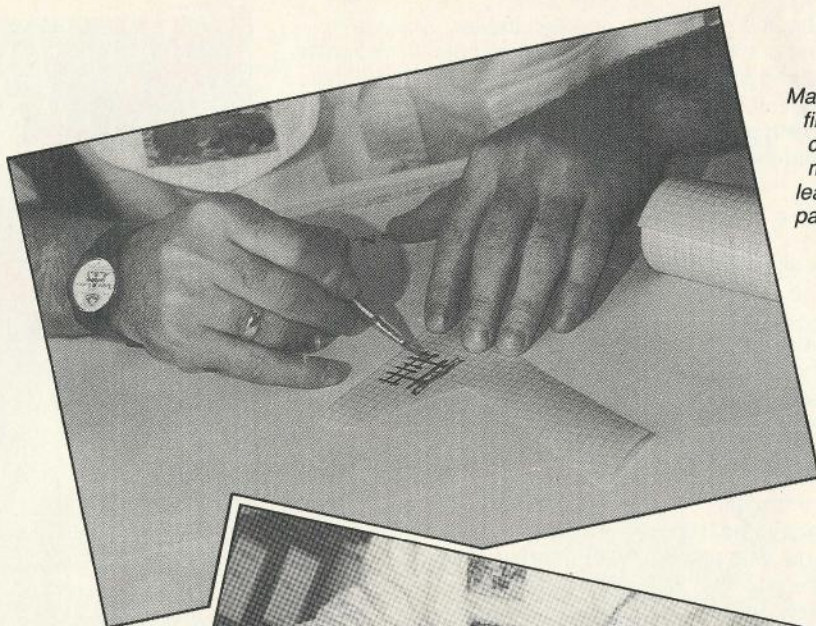
Making stickers

After a model car body has received a custom paint job, it is unlikely that the original stickers will match the new colour scheme. Therefore, some new stickers will be

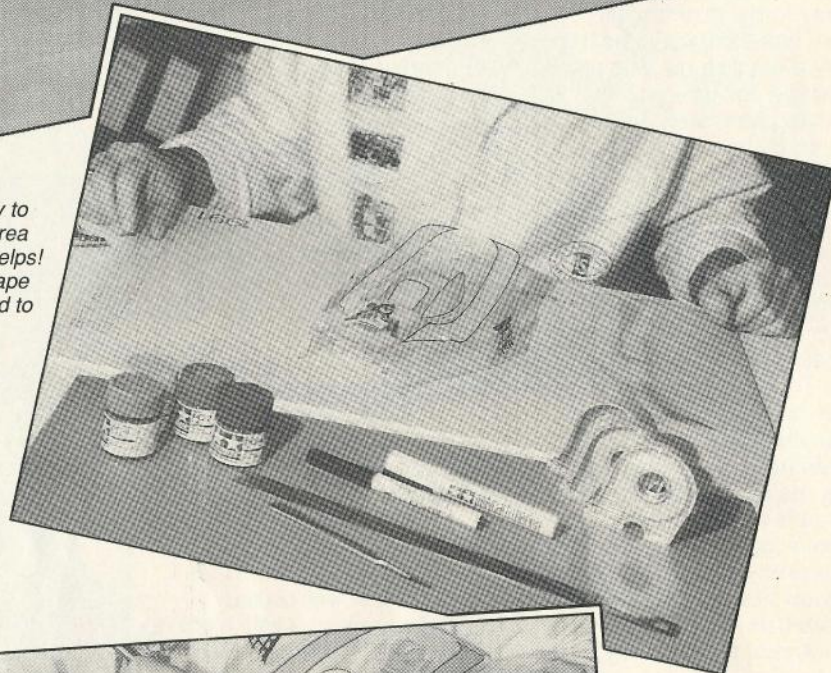
needed. They can be made in several ways – from rub down lettering, pre-coloured self adhesive plastic sheet, or by doctoring existing markings. As with the body shell, use a little imagination and some interesting

stickers can result.

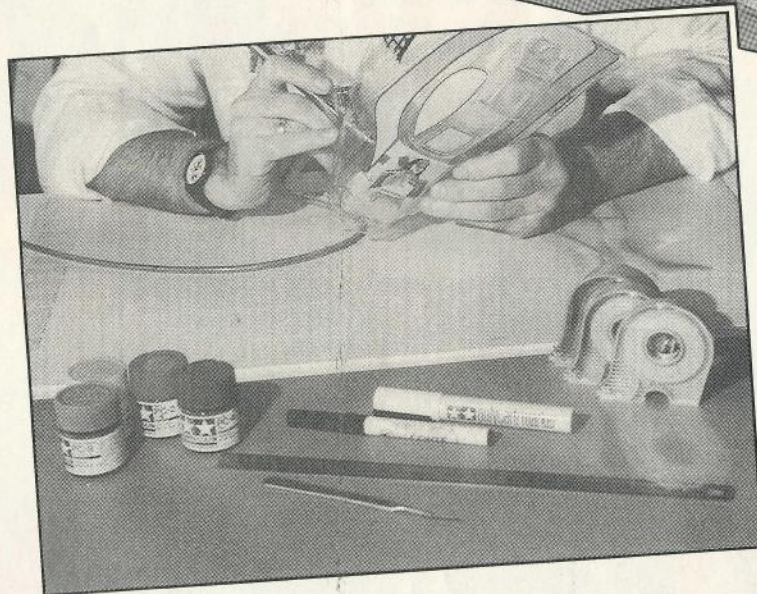
By using some imagination, planning and experimentation, you can achieve some very original and eye catching colour schemes – so clean that airbrush out, buy some new paints and get spraying!



Mark onto the tape first and carefully cut out, a cutting mat is ideal or at least on a layer of paper to allow the blade to cut through.



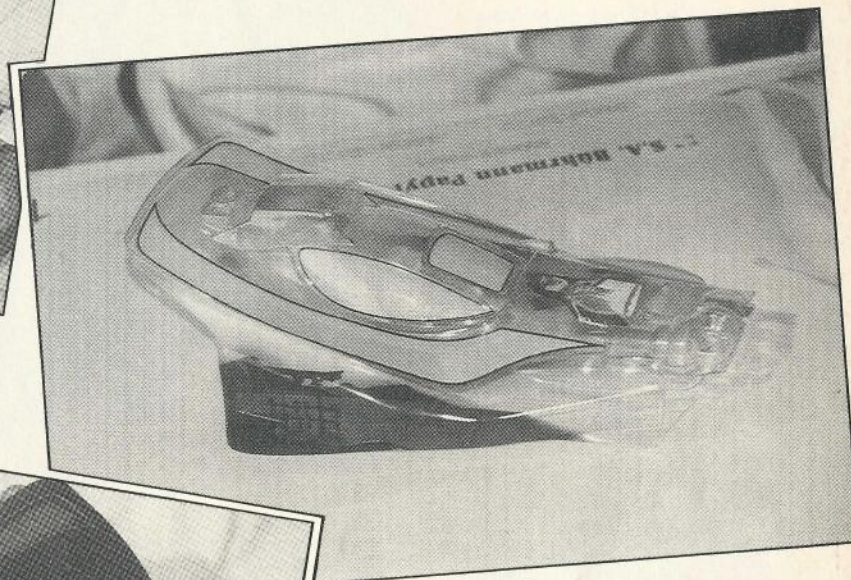
In the workshop; try to keep the working area clean and tidy – it helps! The first layers of tape can be seen applied to the shell.



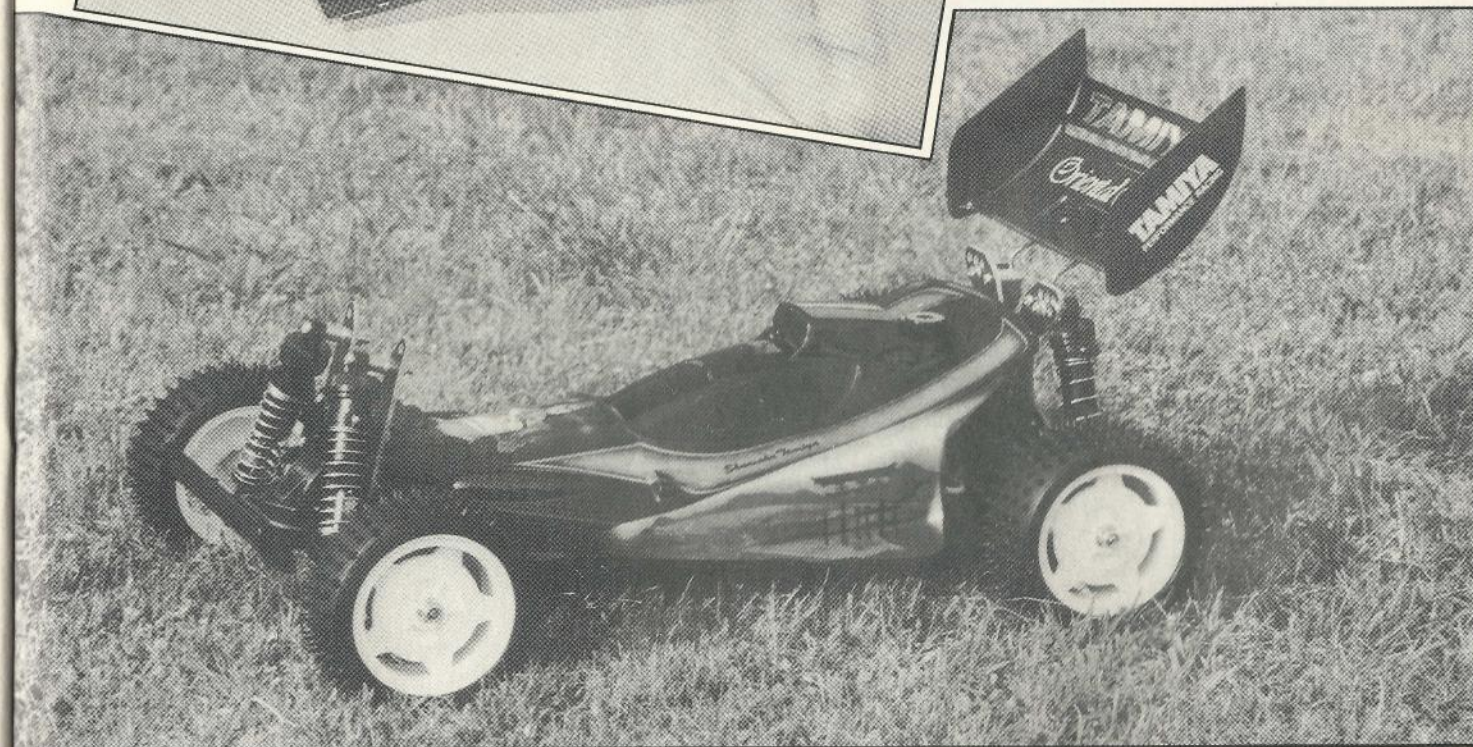
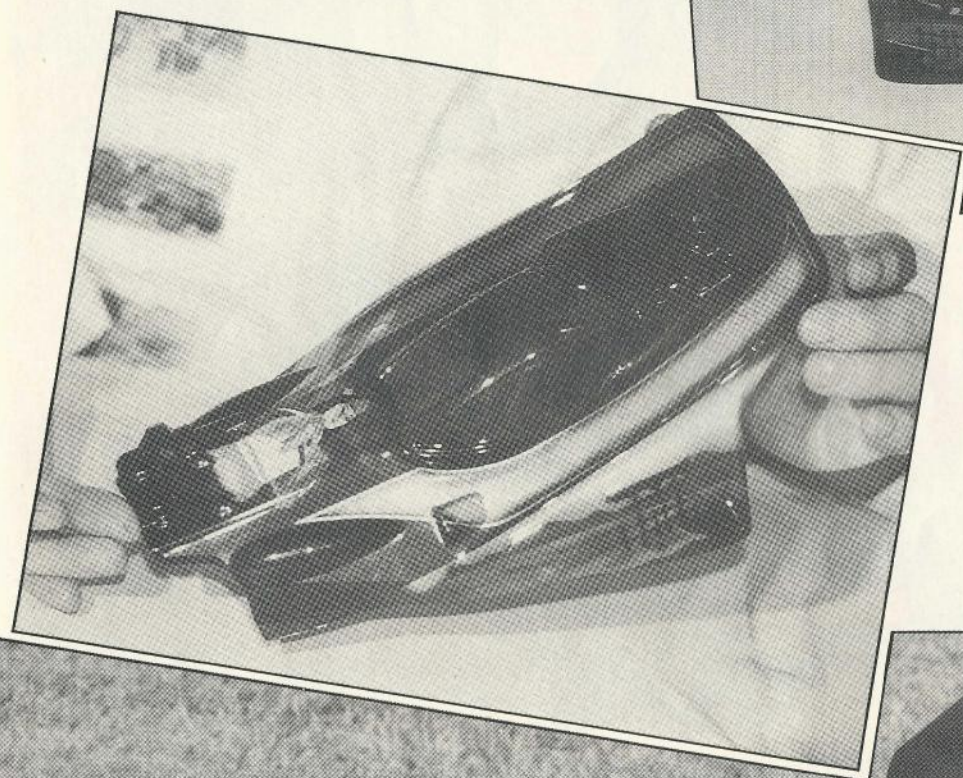
A detailed design is shown here having paint applied, a simple airbrush with variable paint supply is capable of finishes like this.



Applying the side detail on the Top Force bodyshell, if you are careful there is no need to mask the whole body when painting small areas – but be careful of overspray.



Above; The fading on the detailed side panel of the shell, this involves careful planning as to which order the layers are painted on. Left; The finishing touch to this shell is the tinted windows, also a coat of body wax will improve the overall impression and protect the shell. Below; Just a few decals and it's ready for the race track – or display cabinet!



PERFECT PAINT PARADE!

What you may need..

If that little lot has given you the enthusiasm to have a go at painting your own shell you may need some information on what you need.

We advise a number of tapes on the market in the UK, Ripmax can supply through local shops a tape named 'Betto', this has a good stretchability and is nice and sticky!

Tamiya now produce their own tape designed just for modelling, this is available in varying widths and is also available from any Tamiya dealer.

Cut!

Cutting the tape into strips or around delicate shapes can be done on a self healing board, these are available from hobby shops and allow the blade of the knife to cut through the tape without becoming blunt.

There are a number of airbrush suppliers including the Tamiya Spraywork set from local Tamiya dealers. Also Badger from Richard Kohnstam Ltd, 13-15a Old High St, Hemel Hempstead, DeVillbiss, Ringwood Rd, Bournemouth, BH 11 9LH. Harden Associates, (Powermax) Millet St, Bury, Lancs.

Paint

In the UK there seems to be two main paint suppliers, these are Ripmax, Green St, Enfield who supply the excellent Pactra range. Custom Colour is also very popular available in both spray and liquid form from Helger Racing, The Pinnacles, Harlow, Essex.

There are other paints available from Tamiya and Coverite (CML Distribution) which also have a good range and good availability.

Show us your workand win a Badger!

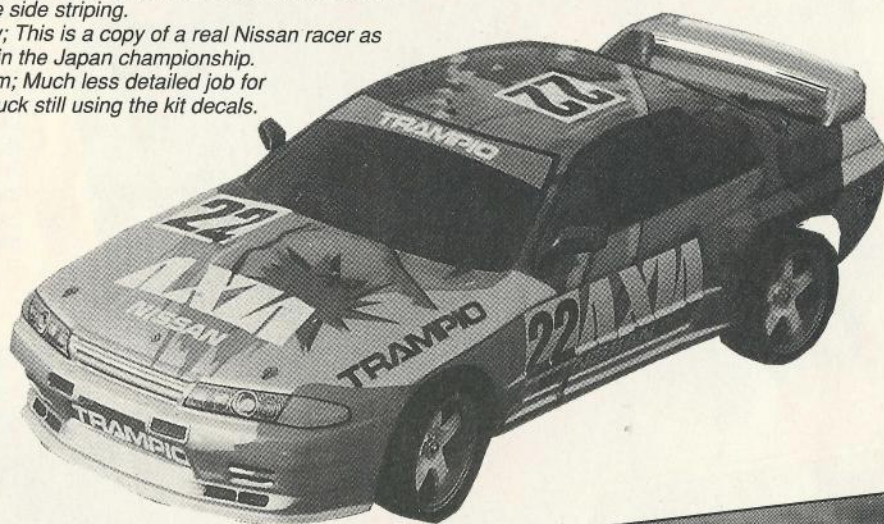
What we want to see at RCMC is some of your work! After reading this article if



Above; Variation on an old theme, a purple, red and orange flame job, the colours are also used on the side striping.

Below; This is a copy of a real Nissan racer as used in the Japan championship.

Bottom; Much less detailed job for this truck still using the kit decals.



you finish a paint job that you're particularly proud of let us have a look and we may well publish your work in RCMC.

Just take a colour print of your car and send it to us at;

RCMC,
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Boundary Way,
Hemel Hempstead,
Herts,
HP2 7ST.

The best picture to us by October 2nd will win a Badger airbrush set!

Just a few more ideas from the mind of the painter Racing Special would like to thank Francois for his help and time in producing this article.





OUR BRCA

The British Radio Car Association is responsible for the high level of organisation and racing of RC cars in the UK. You should be a member and this is why...

The British Radio Car Association was formed almost 20 years ago by enthusiasts competing mainly in 1/8 circuit. BRCA membership now stands at over 4000. Today the BRCA has grown to cover eight sections:

1/8 Circuit - internal combustion engined cars racing on purpose built tarmac tracks.

1/8 Off-road - same engines but racing on grass and dirt tracks.

1/8 Oval - same engines racing on tarmac ovals, often know as stock cars.

1/10 Off-road - electric

powered cars racing on grass and dirt tracks.

1/10 Circuit - electric powered cars racing on purpose built tarmac tracks.

1/12 Circuit - electric powered cars racing indoors on flat carpet tracks.

1/12 Oval - electric powered cars racing indoors on carpet ovals.

1/4 Scale - big internal combustion engined cars racing on tarmac tracks.

The BRCA's aims are to promote the construction and racing of radio controlled cars. This it does by facilitating the exchange of information and

many other benefits. You become a voice the running of the sport whether through your vote at the AGM, or the vote of your club representative. You gain access to the prestigious Regional and National Championships where higher levels of competition are available. For those who rise to the top, the BRCA issues European (EFRA) drivers licences to allow participation in Grand Prix and the European Championships. Most importantly, BRCA membership offers free insurance to cover any damage to other peoples property (excluding other cars or the track) and against personal injuries which may arise out of any accident caused by your car. In today's world this type of cover is essential - accidents can happen and damages are getting larger all the time. The limit of cover is £1 million for any one accident in any one year.

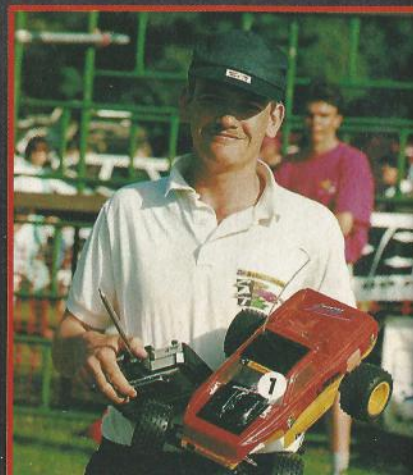
Your membership gets you access to the BRCA Handbook giving all the rules and regulations for your section. Every two months or so you receive (or your club receives) a copy of the BRCA Newsletter - Circuit Chatter. This gives up-to-date news and views from around the nation.

In short, there is no reason why you should not join the BRCA. Membership is less than a bottle of whiskey, and a minute part of your annual racing costs. To get an enrolment form write to:

*The Membership Secretary
16 St Giles Close
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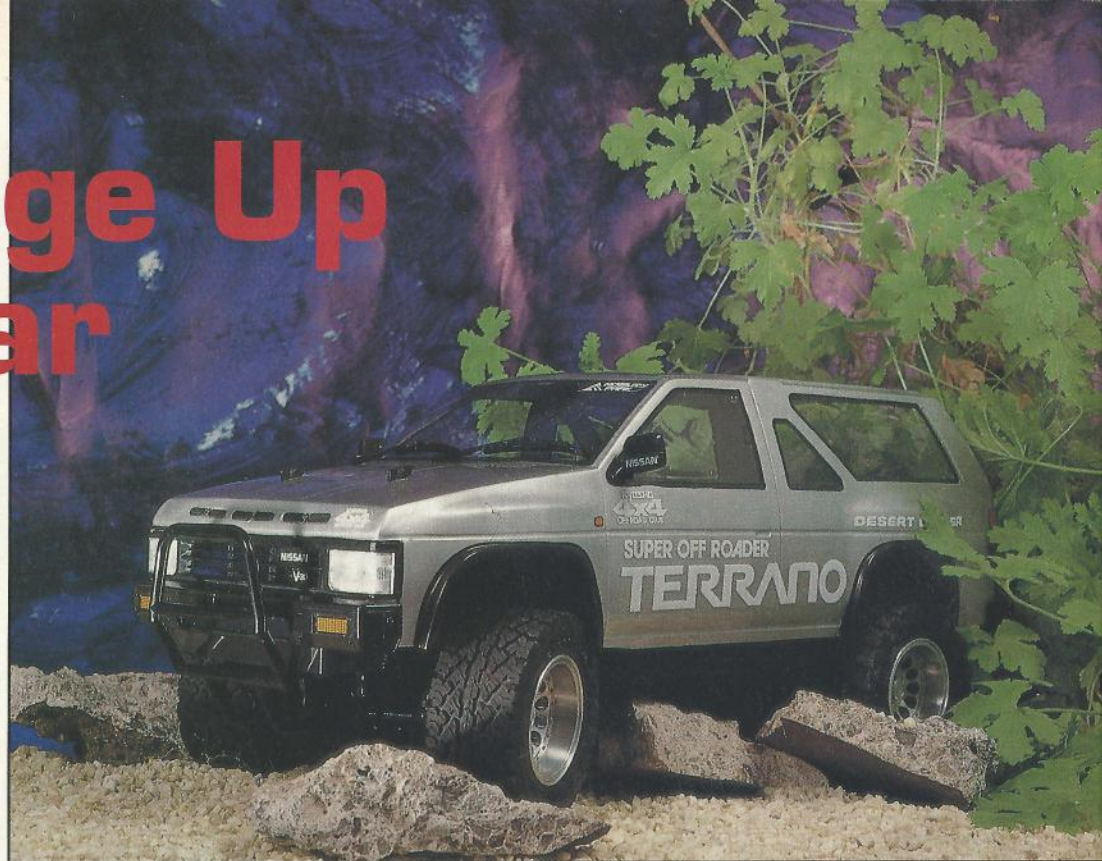
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Change Up a Gear

The extra dimension of noise and smoke plus the fact that a top up will keep you going are just some of the attractions of this new breed of cars

Kyosho Terrano leads the way with its realistic appearance and high levels of technology.



Internal Combustion (IC) engined radio controlled cars have been with us since the beginning of the RC Car hobby. In fact IC power was the motive force of the hobby since its earliest beginnings (excepting a few obscure clockwork devices). Of course back in those formative years, radio control was not the first method of controlling the car. A somewhat simpler idea of tying the car to a length of wire and then allowing the car to hurtle around a fixed pole at the end of the length of wire was the favoured method. Well, we have moved on a bit since then.

Power Changes

Apart from the sophistication and reliability of modern radios, which I suspect has the edge on a piece of gradually fraying wire, we have the changes that have taken place to the power unit. Gone is the lethal mixture of ether, paraffin and castor oil. In comes high performance methanol based fuels. Gone is the struggle with bits of string trying to spin a flywheel. In comes neat effective recoil and zip starters. Gone is the irritation of bad starting and difficult to control engines. In comes easy starting and finger tip

control. What have we left? It may sound like all the fun and frustration has been taken out. What we have is living power. There is nothing quite like an IC engine that can provide the same thrill of power. Maybe it's the noise, even if that noise is now much more subdued and acceptable to other members of the human race than it was in earlier times. Maybe the smell of the exhaust, or maybe.... well who knows what. One thing that you will certainly learn very quickly is that IC driving and racing is very different to electric. The torque is not available at zero RPM, so high acceleration is

achieved by high initial revs. No reverse, so more care is needed with driving. Braking will be different and so will be the power band of the engine.

New Styles

This will all need new driving techniques which will soon be picked up. The great advantage is that you can drive the car for much longer periods without the need to recharge. Even when refuelling is needed it is just a matter of coming back to base and topping up. The initial cost of IC is definitely higher than electric. Remember that there is no



need for an expensive speed control, costly batteries or pricy motors. For the most part the running gear, transmission and chassis are virtually the same as the equivalent electric car. However, when the IC engine does expire finally then this will be more expensive to replace.

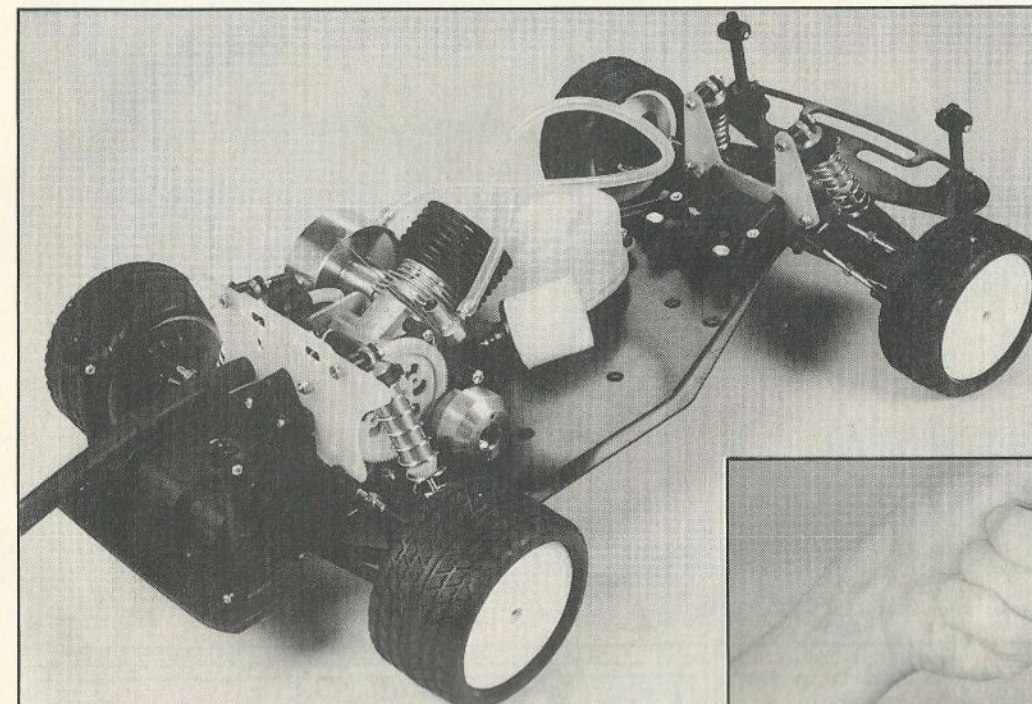
Leaving aside the traditionalist 1/8 scale on and off road, which is about as intense as a full blown formula 1 race at Silverstone or Imola. This smaller scale of 1/10 promises to be (at least in the early stages) more fun, less hassle and perhaps not so intense.

suspension associated with 1/12 racers. Motor starting requires a low voltage battery attached to the glow plug, fuel and a few pulls on the zip type starter. The cars have engine speed control, but as might be imagined no reverse. They do have a brake, which is operated from the speed control servo. Cox also put an IC engine in the Kyosho Scorpion which as an electric buggy enjoyed considerable success around five or six years ago, although to the best of my

ironically the power unit used is nothing less than the Cox .049 cu inch as mentioned earlier. They have even produced a 1/10 Mini and VW Beetle using the same power plant. Moving up to slightly larger vehicles, but still in the same 1/10 scale Kyosho have a Corvette sports car and a 4WD Nissan Skyline Group A car using a recoil pull start engine of 0.1 cu inch capacity. These cars have all the refinements of electric racers with coil over,

I.C POWERED CARS

oil filled shocks, differentials and rugged driveline. In the rally car field Kyosho have the Lancia Delta Integrale, Ford RS200 and the Peugeot 405. These all use similar mechanics and a 0.1 cu inch engine. Schumacher in this country have felt the need to push out the IC boat so to speak. They have a good range of sports (Porsche 911) Group A (190 Evolution Mercedes) bodies running on IC version of the very popular 2WD electric chassis which carries the Cougar range. All of these cars are powered by the .15 cu inch Irvine engine. The same engine is used in the Nitro 10 racing truck and Panther buggy. As with other makes, ease of use is the watchword with Schumacher. Recoil starter and an on board battery for the glow plug ensure that easy starting and good slow speed control. Kyosho's IC buggies are the Rampage which comes with an engine and the Stinger which does not. The Kyosho truck is the Outlaw Rampage which has a 0.12 cu inch engine. The body is based on a Ford Pickup and the transmission components are sealed for reliability and long life. Just by looking at the range of engine capacities available for the 1/10 IC cars and trucks it is easy to see



Schumacher IC range are capable of crazy speeds around 50MPH!

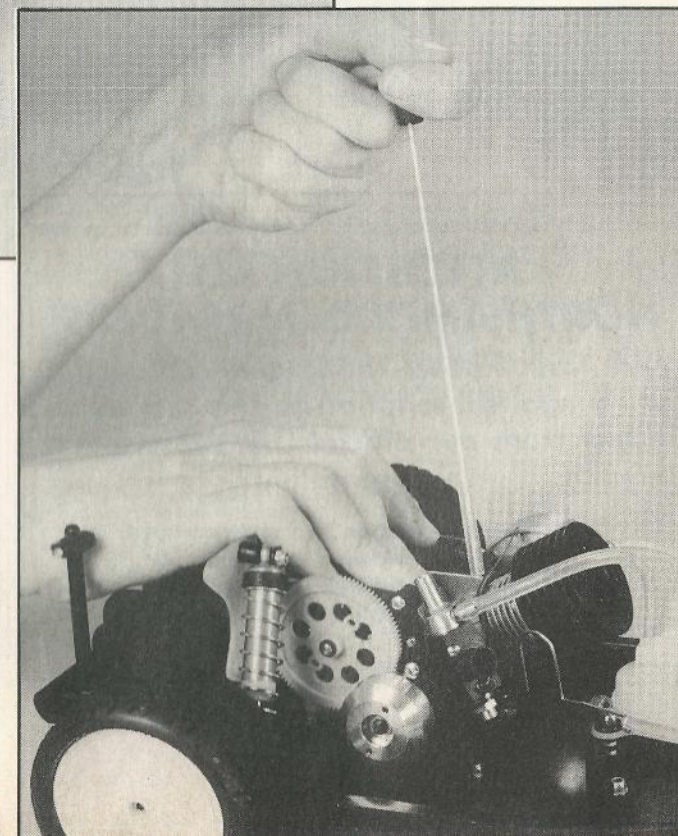
Small Brothers

Cox Hobbies have been in the IC game longer than most of us who recognise the name would care to remember. They have their own range of 1/12 circuit cars powered by a 0.049 cu inch Cox engine. These neat cars are very similar to the electric 1/12 racers with a motor pod, differential and the usual front

knowledge the product never made it to these shores. As far as Kyosho themselves are concerned they have been pouring out the IC powered vehicles for years now.

Ultimate Formula

Formula 1 based vehicles have been among the latest IC products from Kyosho and



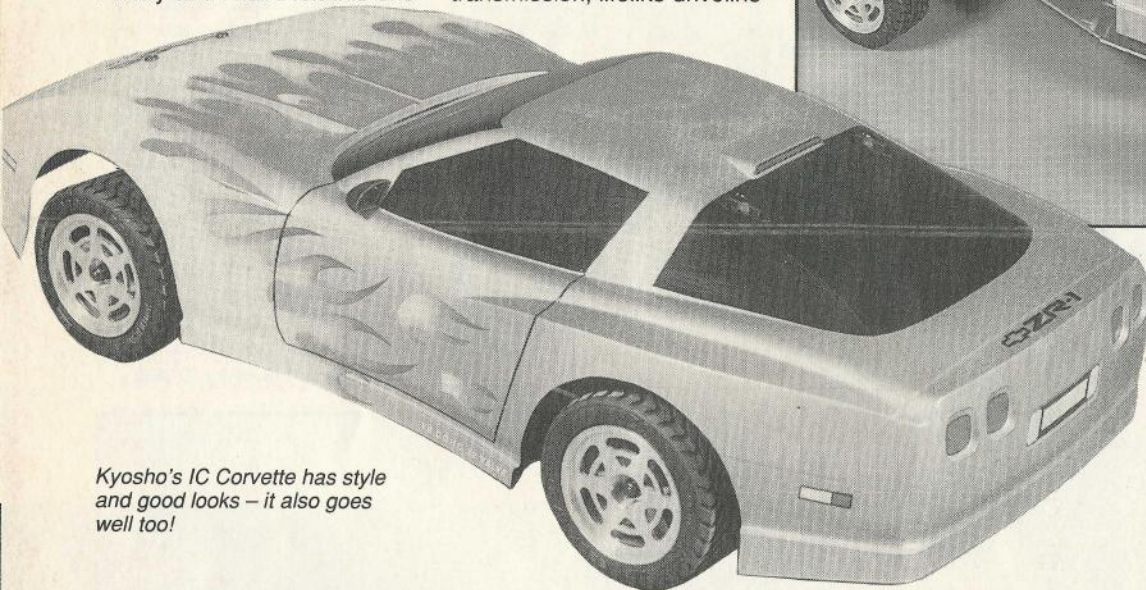
that at the moment the world has not zeroed in on a standard. Until this happens, it is unlikely that really serious racing will start, at least at an international level.

Schumacher, have sort of tested the water by thinking about a one scale/one make race, based on their own vehicles. As yet nothing seems to have come of that. Until manufacturers get the 1/10 engines sorted or at least agreed upon, then 1/10 and 1/12 IC could be kept to demonstrations and just for fun RC driving, and perhaps none the worse for that. The final area of the IC game are the specials. This area is, at the moment virtually the exclusive domain of Kyosho. They have the car crushing Nitro Brute. This has a Zip starter for the 0.10 cu inch engine, massive 136mm x 80mm tyres and with an all up weight of 1.66 Kg.

And Finally..

Finally and I have left this one

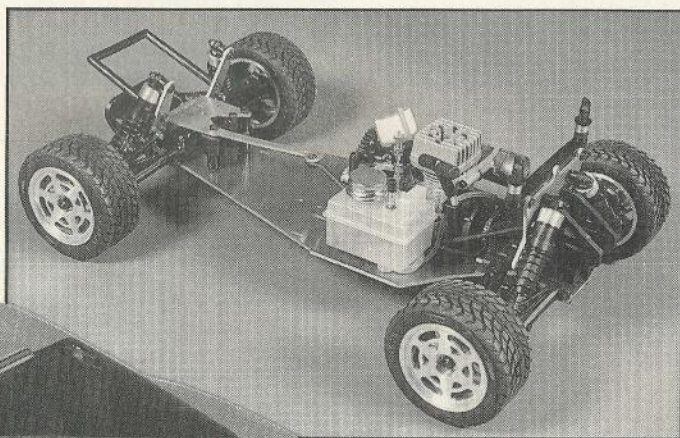
to the last because, if I am allowed a favourite this is it. The strangely sized 1/9 scale Nissan Terrano. I like it because it is so completely different. Scale suspension, continuously variable transmission, lifelike driveline



Kyosho's IC Corvette has style and good looks - it also goes well too!



The 4WD Nitro is based on the Bosscat and must be the ultimate in 1:10 IC.



with its five point located rear live axle. This is the one for me, off roading with style. The power comes from a pull start 0.10 engine and current versions of the 0.10 engine are produced specifically for Kyosho.

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The BIG CHARGE

Looking after your batteries properly will extend their life and improve their performance - read on.....

Nickel cadmium batteries have a limited life, and are a very expensive item for the enthusiastic racer. Amid the bewildering array of batteries available there is one type ideal for your level of racing, but how do you make that choice? Racing Special presents its guide to the current market.

Ni-cads are identified by numbers and letters, and it is important to know what they mean. The numbers tell you what capacity is available from the cells. There are two common ones, 1200 and 1700. These are units of measure and are in milliamp-hours. A milliamp is one thousandth of an amp and an hour is the time it takes to get a reply from directory enquiries!! 1200 milliamp is therefore 1.2 amps, and 1700 is 1.7 amps.

More Energy

This number is a rating which indicates that the battery will deliver 1.2 amps for one hour. Therefore if you can buy a battery which delivers 1.7 amps for one hour it has more energy stored in it and will give more energy out in the same time period than a lower rated (eg, 1.2Ah) battery so we should all buy 1700mAh batteries right? No!

It is the letters we now need to help us make a selection. There are three sets of letters in common use, SC, SCR, and SCE. The SC designation goes almost exclusively with the 1200 number to give 1200SC. These are the workhorse cells which come in many

altogether. Its internal construction is more suited to the type of performance we require. SCR's accept high charge and discharge rates without failure for many cycles (one charge, one discharge is a cycle) and can be used repeatedly providing they cool down between charges. These are high performance cells for the enthusiastic club driver using modified motors. They cost more, but they last much longer, than SC cells.

SCE's are very similar in construction to SC cells, and must therefore be treated with care. SCE's do not like high charge rates, and cannot be used repeatedly. At the very limit of their performance envelope some users have experienced cell failure, but this is unusual in the normal run of things. SCE's are for the top club and National drivers who can afford the higher outlay and more frequent replacement.

The choice extends to 1200SC, 1200SCR, 1400SCR, 1700SCE. Perhaps the best all-rounder is the 1400SCR, or 1200SCR if 1400's are not available. The 1700SCE is better for 4WD, but 2WD racers will have no problems with 1200SCR's powering motors from 13 to 19 double/single/triple.

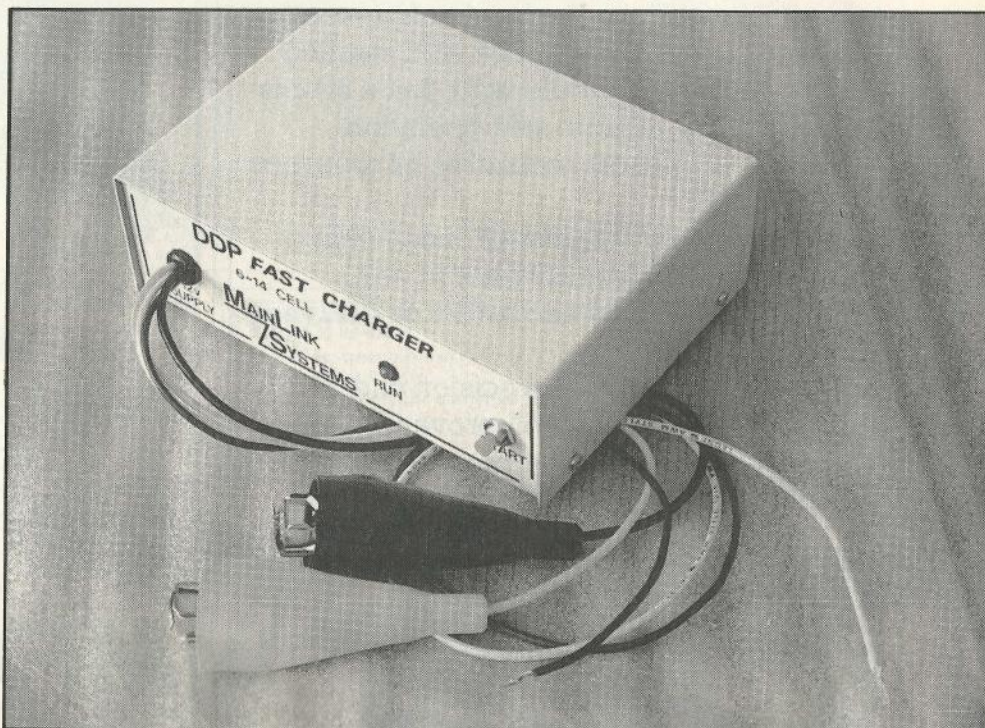
SC and SCE cells should only be charged once a day. The second charge gives a much lower performance than the first SCR cells on the other hand will give very similar performance if recharged the same day providing they are allowed to cool right down to the ambient temperature between charges. Allow 2-3 hours for this.

The new cell now arriving on the scene is the Sanyo SCRC. This is a 1700 SCR cell designed specifically for electric models, be they boats, cars or planes. Early reports from sponsored

low cost kits. They give good power and duration for standard kit motors and have a reliable life with few failures. For the beginner, and clubman using standard motors, 1200SC cells provide unrivalled value for money.

RC Suited

The SCR cell is a different animal



Six to fourteen cells can be charged on the Mainlink Systems fast charger.

drivers who have used them indicate good performance, and the SCR construction promises longer life and more frequent charges per day.

We know this already because Panasonic are on the market now with their 1700SCR. These are the cells first seen at the Detroit World Champs, and now available in the UK.

When choosing cells think first about your level of racing. Using standard kits like Tamiya, then the right choice is 1200SC. Those who race competition chassis and modified motors should look at the SCR cell as offering better value for money in the long term.

Calling 2WD

2WD racers can choose either 1200/1400 SCR's or the newer 1700 SCR. 2WD cars are lighter, have less friction, and cannot always put a lot of power down to the track. If the cost favours 1200/1400SCR's and you keep motors in peak condition, they are the best bet long term.

4WD racers should try the 1700SCR's but if cost is a problem, 1700SCE's or 1400SCR's. We should all remember the example of Ben Sturman who qualified for the Euro Champs in 1990. He was the only driver using 1400SCR's, yet he regularly beat 1700SCE users in the Nationals.

Always remember that every accident you have on the track requires more energy to accelerate the car up to speed. You may think you need the greater capacity of a 1700 cell, but if you didn't have any crashes, you could probably go faster using 1400/1200 cells - and still not go flat!

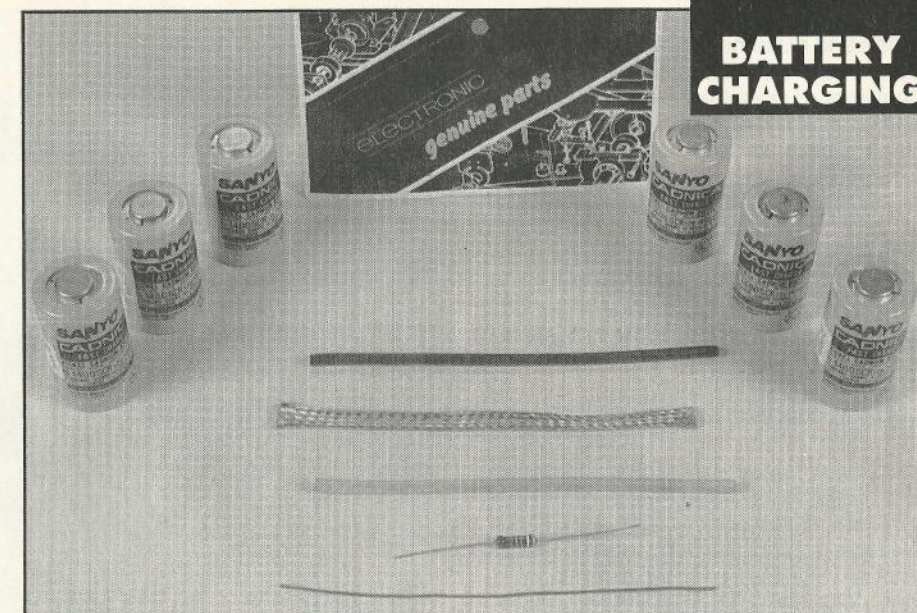
Charging

Charging these cells requires careful thought. The techniques for SC/SCE cells are different to SCR cells. SC/SCE cells require a charge rate about 3 to 4 amps, and should not be allowed to get more than hand-warm by the completion of the charge. SCR cells will live quite happily on charge rates of 4 to 6 amps and should be charged to about 35 degrees C but the completion of the charge.

SCR cells are constructed so that the rise in temperature is directly related to the amount of energy in the cells. As the charge is completed the temperature rises - the higher it gets the more the cell has been overcharged.

SC/SCE cells do not have this design, and so they should be kept cool otherwise damage will result. SCE/SC cells indicate their level of overcharge by the voltage of the cell - it drops as the overcharge builds up.

There are two basic types of charger, the peak voltage detect and the temperature sensor. Clearly, from the information above, a peak voltage detect charger works best with SC/SCE



Just as the LRP batteries come, careful connections and soldering will help their life.

cells, and the temperature sensor suits SCR cells.

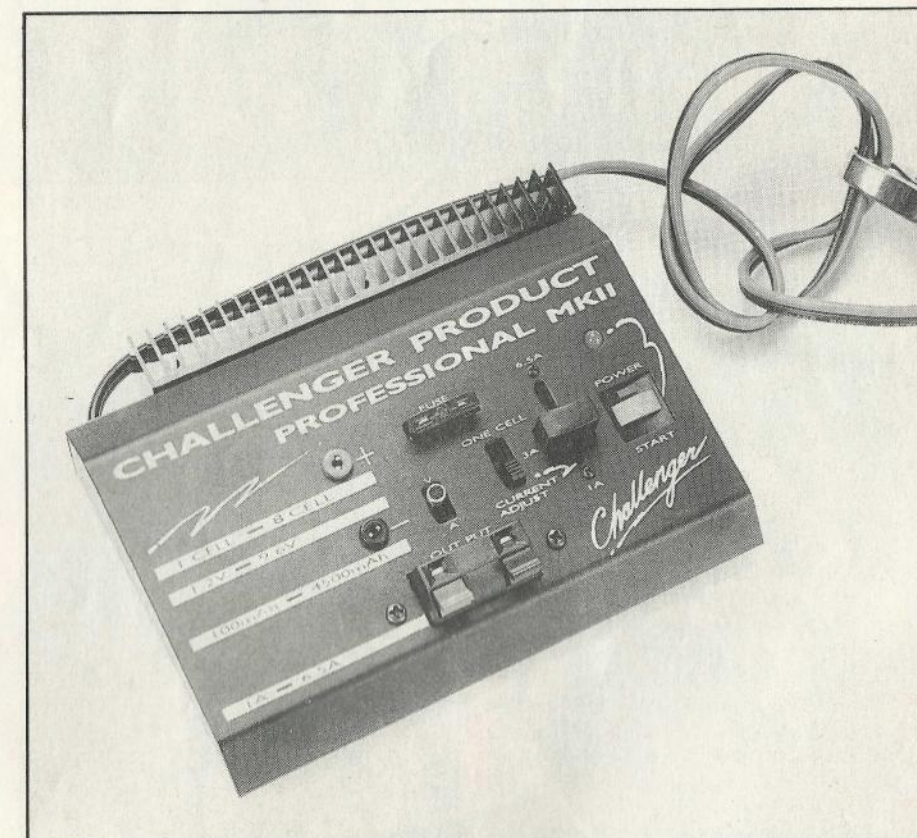
To charge nicads, the power source you connect to your charger must be at least 2 to 3 volts higher than the total voltage of the pack of cells. On charge, our six cell pack rises to about 9.5/10 volts even though its nominal rating is only 7.2volts.

Fortunately a 12 volt lead acid (car type) battery is just what we need in this respect, so this is almost universally used. Your charger will be connected by one set of leads to the 12v battery.

Charger choice

Selecting a charger is difficult only because of the wide choice available. Despite the slight superiority of temperature sensing chargers, the peak detect charger is the safer bet. Leave the temperature sensor out only once, and the charger will not switch off, ruining the ni-cad pack.

When choosing your charger bear in mind reliability, ease of servicing and ease of operation - before price. Go for UK brands with service back-up and simple controls in preference to foreign



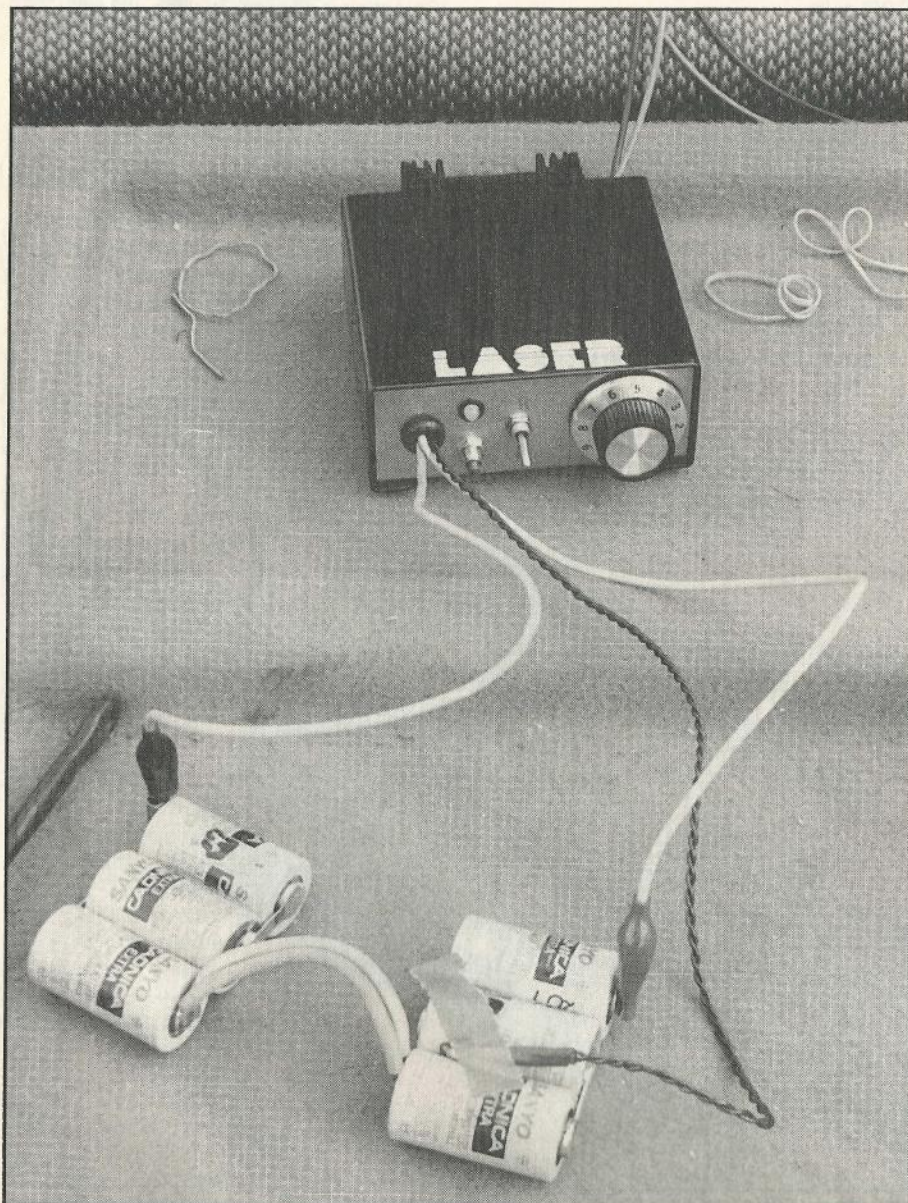
The Challenger range of chargers have proven popular in the UK with their compact design and good reliability.

makes with no back-up and lots of knobs and dials. having said that, brands such as Tekin (USA) and Challenger (Japan) have UK agents who provide excellent service and repair. Check with the model shop before buying, and ring the agent if you feel uncertain.

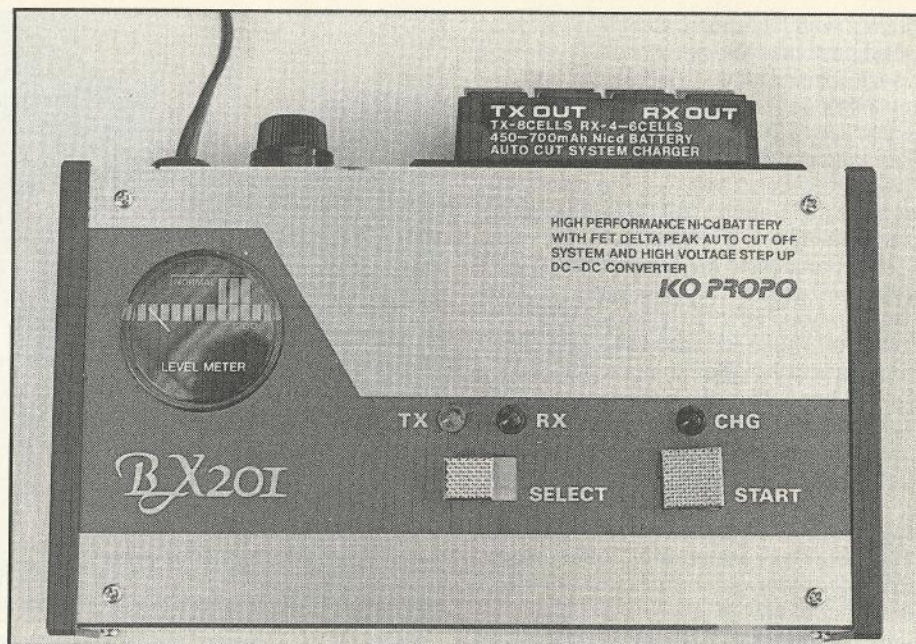
Charging Cells

Using the current ratings given as a guide earlier, start charging your cells about 30 minutes before you need to be on the start line. Allow time to collect transponders, visit scrutineering etc.

Off-road cars benefit marginally from any special methods of charging. In general the best performance will be available if the cells complete their charge within five minutes of the race start. Anything up to a ten minute delay is fine, but if the cells complete their charge longer than 15 minutes before use, they should be switched on again before the race.



Thermal charging means making sure the probe stays near to the cells.



KO famous for their radio systems also make a range of high quality radio chargers that can be used.

This is one area where the peak detect charger is superior to the temperature sensor. If after the first charge there is not enough time for the cells to cool down below the cut-off temperature, they cannot be 'topped-up' before racing. The peak-detect charger will always top-up cells irrespective of temperature.

Ni-cad cells will give back what you give them. Charge them quickly at high current and they will give better acceleration but lower duration. Charge them at lower currents and they will make the car go a bit slower, but for longer. The difference is very slight, but it is noticeable to the sensitive driver.

Hot stuff

Once the car has finished a race, the cells will be quite hot. This is normal, even if they are almost too hot to grasp. It is important that the cells are fully discharged.

Ni-cads have a 'memory'. It is this memory that reflects the different ways you charge on the track. If you do not fully discharge the cells, they will remember that and tend to reduce power and capacity earlier. This process can take sometime depending on the type and frequency of use.

Connect a car bulb of about 20 to 40 watts to the cells, and allow the bulb to remain connected until it goes dim until the filament is a dull red colour. Disconnect the bulb and store the cells as they are.

As the cells get older they obviously lose some of their performance. When using peak-detect chargers an early sign is that the charger shuts down about five minutes into the charge cycle. Older cells have a very high pack voltage in the early stage of charging which reduces quite quickly. Since this

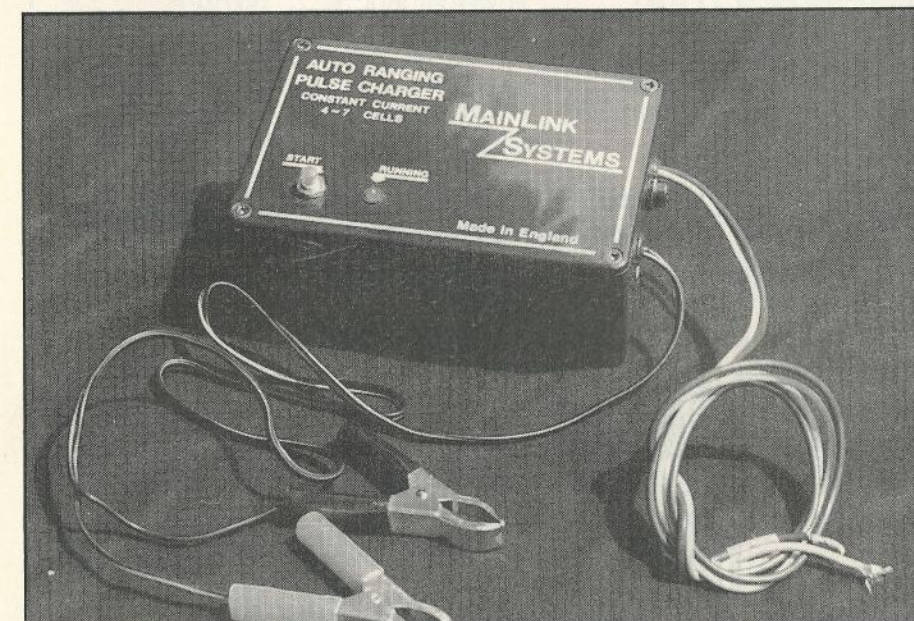
characteristic is the same as when the cells are fully charged (it is this drop in voltage that the charger detects and then switches itself off) the charger will shut off.

Leave the cells for another five minutes, switch on the charger again and all should be well. When you have to repeat this process more than twice for a pack which is old, the pack is beyond its useful life - time to save up for new ones!

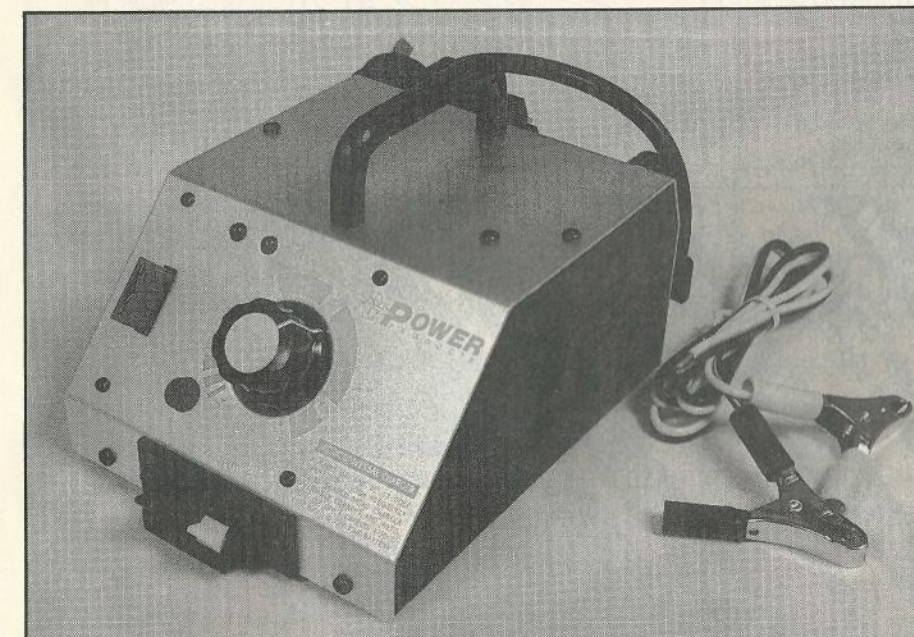
This problem does not arise with temperature sensing chargers. Using a probe which must be inserted next to the manufacturers heat shrink (on the cell, not nay outer covering), this charger shuts off automatically when the temperature reaches a certain level. It is far more difficult to detect failing cells with this charger, performance on the track is the only guide.



Today's high tech chargers at the top of the range are often fitted with LCD panels.



Constant current charging is a feature found on many of today's chargers.



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The BIG CHARGE

Our recommendations

Beginners using standard over-the-counter off-road cars with their original motors:

- * (2) packs 1200SC cells
- * Peak-detect charger or switchable temperature sensing charger (eg, Laser)

Occasional club racer using 27 turn standard motor or 18-20 turn modifieds, racing 3 heats and final at the club:

- * (3) packs 1400SCR cells
- * Peak-detect or temperature sensing charger

Enthusiastic club racer competing regularly in regional series, four rounds and practice and finals:

- * (4-6) packs 1700SCR cells
- * High quality temperature sensing charger

Guidance Rules

- * Charge at the correct rate.
- * Never overcharge cells.
- * Allow 2-3 hours for cells to cool down before re-charging.
- * Connect bulb to cells after racing to run them down to 5 volts (total for pack) to prevent 'memory'.
- * Insulate all connections to and from cells both on the charger and in the car.
- * Time you charge to be completed as close as possible to the start of race.
- * If necessary top-up the cells on the charger before racing for best performance.
- * Store cells in dry containers making certain they cannot touch each other or cause a short circuit.

Safety


- * NEVER leave metal tools near cells.
- * NEVER overcharge cells.
- * NEVER connect cells the wrong way round to the charger or the car.
- * NEVER touch cells which are damaged in anyway.
- * Dispose of old cells with a registered waste contractor. If ANY discharge of chemicals occurs at any time, DO NOT touch the cells, disconnect car/charger IMMEDIATELY and stand well clear. Seek expert advice before proceeding. (See also warning label on cells).


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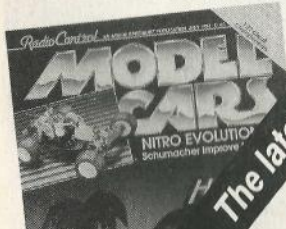
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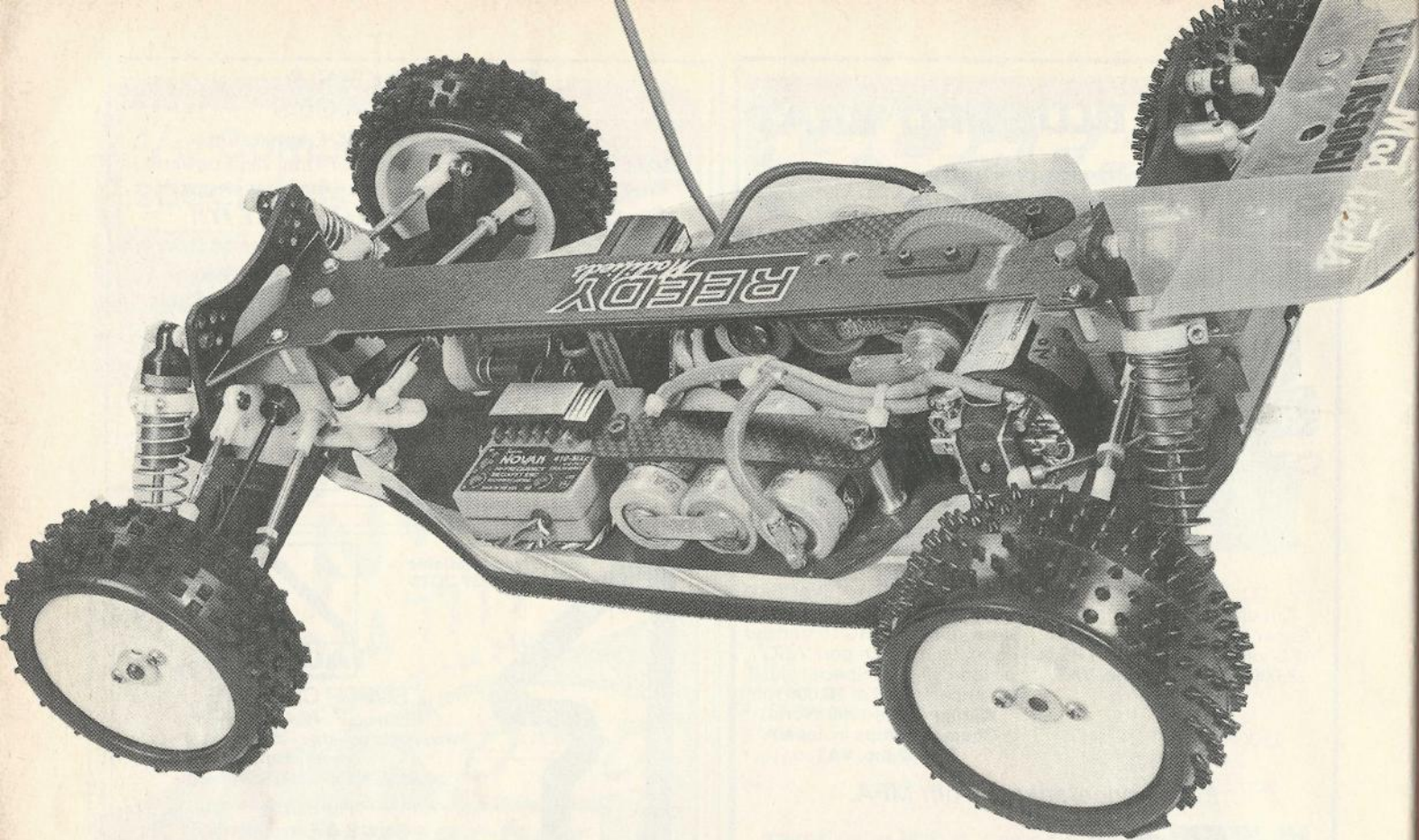
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IT'S A SET-UP!

How you set the dampers, what tyres you choose and how you dial a car to the track make the difference between winning and losing. Pete Winton talks to the UK's top drivers on how they set-up their cars...

Associated RC10

Use silver springs at the front and whatever oil the weather dictates to give a nice springy action to the front end. Vary the bottom mounting to get the right amount of steering – the further out the mounting the less steering you get. Vary the top mounting of the damper for the same reason, but it has about half the effect of the bottom mounting.

The top suspension link at the front should be in the outermost hole, and run about 3 degrees negative camber. The steering pivots are well worth replacing with ballraced items, the standards ones becomes very sloppy causing poor steering accuracy.

At the rear use the second hole out for the bottom damper mount, and adjust the top mount for tuning roll stiffness. RC10s seem to like their dampers as upright as possible. Use a 20wt oil and

green springs. Set the ride height so the wishbones are just level, or at a slightly upward angle.

Set the rear suspension top link in the innermost hole and at about 2 degrees negative camber. Once set, make sure your suspension allows the dogbone driveshaft to be securely in contact with the drive cup at all times, and that it does not foul the cup or kit the bottom of the cup on the extremes of the travel.

Yokomo 4WD

The 'dream' ticket for 4WD this season has been Craig Drescher and his Reedy powered Yokomo. The man himself went through his set-up which has been used to such devastating effect this season and last!

The car is basically the standard kit, but with two changes. Craig uses the CML front wishbones and the Associated shock mounting

plate. With these parts fitted at the front, the choice of upper damper mounting is fixed, and of the holes in the new wishbone. Craig chooses the inside one. Springs are Yokomo Gold and damping oil is 60wt Associated. Camber is set to 2 degrees negative.

Front wheel castor is a combination of 12 degrees on the wishbone (the standard position) and 5 degrees on the castor blocks. Craig prefers the old type Kyosho Optima-Mid uprights to achieve this aim.

The rear of the car is standard kit, utilising the middle hole for the upper damper mounting and the outside hole in the wishbone for the lower mounting.

Associated Green springs are kept in check by 30wt

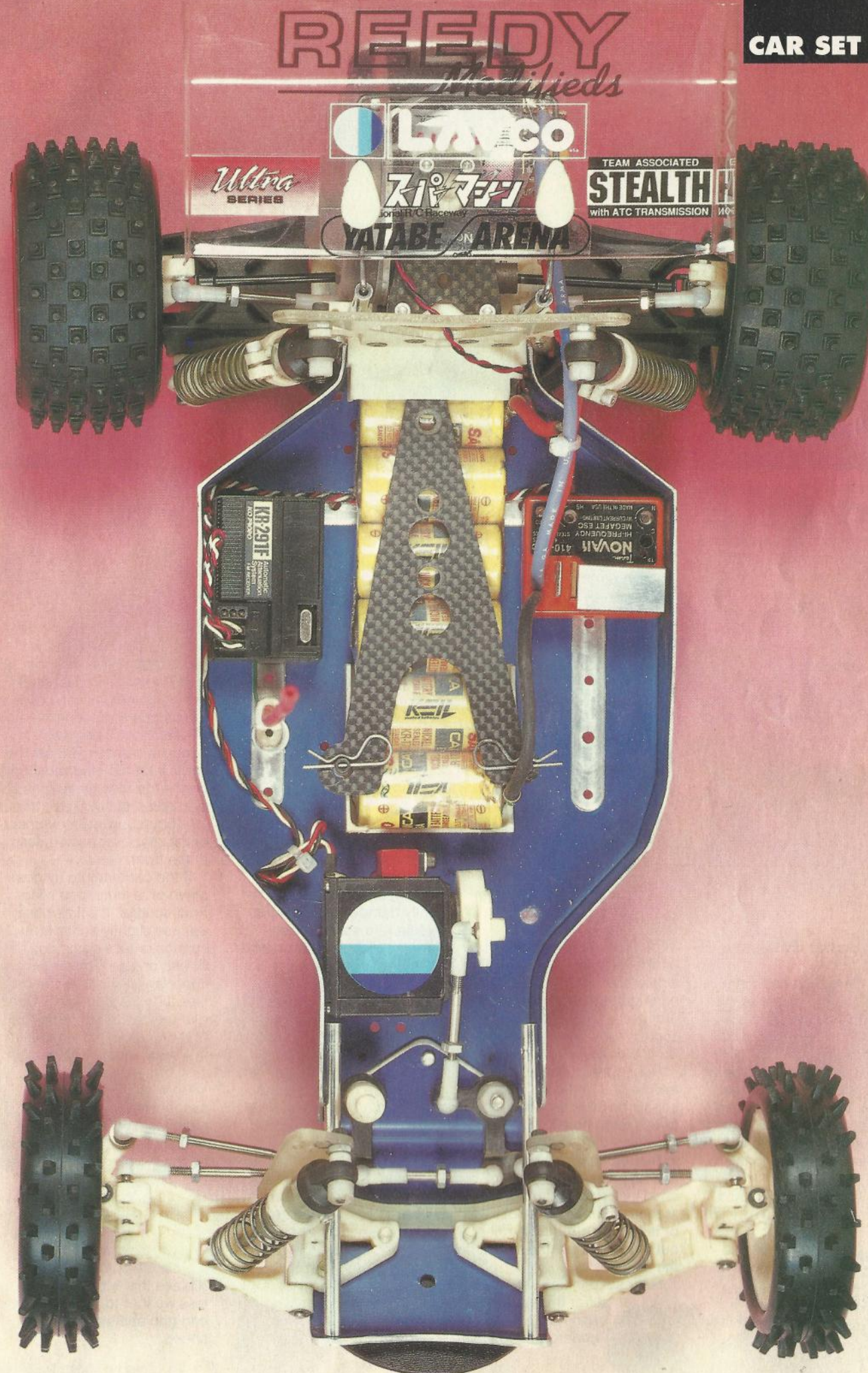
Associated shock oil. The standard castor, or antisquat, is used and the rear camber is 2 degrees negative.

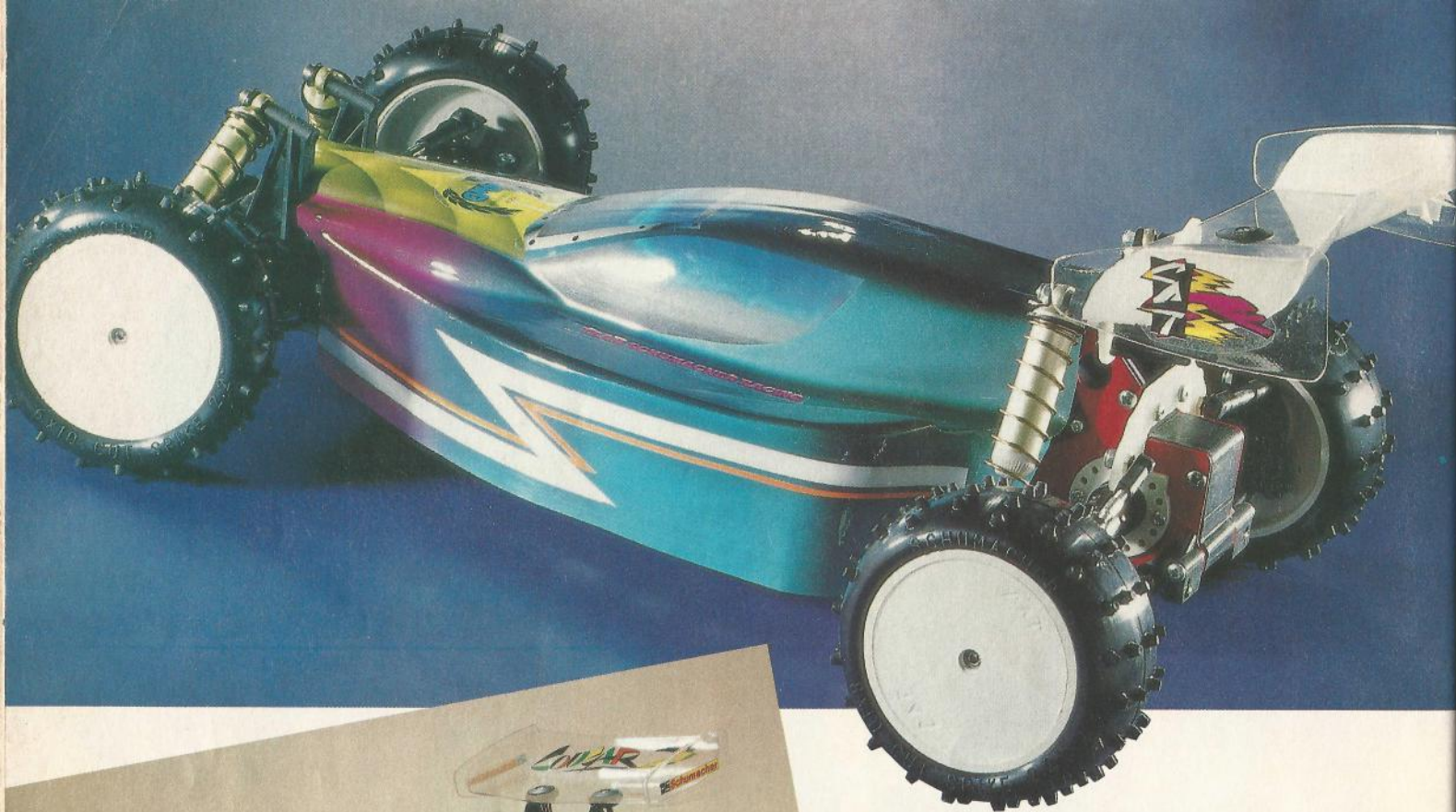
Craig runs his car with the wishbones level at full load, but does vary the upward travel depending on the track. Regretfully Craig could not give any rhyme or reason for his variations, but says it is a useful tuning device to keep the car in tune with the track.

There are no special tips for keeping your Yokomo in peak form, but Craig does recommend a regular check on the wishbone pivot pins as they are inclined to bend rather easily when hit in certain ways. If you're not as accident-free as Craig, a check after each run is a good idea.



CAR SET UP





The Schumacher Bosscat is virtually an all new car over last years Procat, therefore the set-up is all new too.

Schumacher Cougar II

Front suspension should be lightly damped and use the middle rate springs. Use three holes in the piston with a 20wt oil, but check the damping as not every manufacturers 20wt oil is the same. Use the middle position on the wishbone for the bottom damper mounting. The top position is to gain the correct ride height. Set the wheels to a little toe-in, with about 4 degrees negative camber.

The top damper mounting can affect handling, the more upright the damper the more stiffness in roll. New castor blocks are available which improve the steering response, start with 30 degrees rake (no spacers behind the bulkhead) and the 5 degrees castor blocks. Set the top link on the outer hole.

At the rear again use the middle rate springs, 20wt oil and two piston holes. Start on the second hole out for the lower damper mounting, and set the side height so the wishbones are level under full load (motor and cells) by adjusting the position of the top damper mounting.

Use about 2 degrees negative camber and set the top link on the innermost hole on the top row. Once the car is at rest it should have about 10-15mm upward movement of the rear suspension, less at the front.

If the car tends to fly nose down off a jump, use stiffer front springs. If it flies nose up, use slightly softer front springs or less damping. Speed at jumps is more important to the way the car flies than the springing. Don't ruin the handling on the rest of the track just for the sake of a jump, but it is possible to tune for big jumps.

Don't run the rear suspension too stiff for handling as this will reduce the amount of traction. Run as much anti-squat angles as possible.

On slippery tracks use the kit (2mm) washer on the rear wishbone back lower mount to give toe-in at the rear. If the track has lots of grip, replace this with a 1mm or less washer to improve front end grip and straight line speed.

Radio Control Model Cars

Kyosho Lazer 4WD

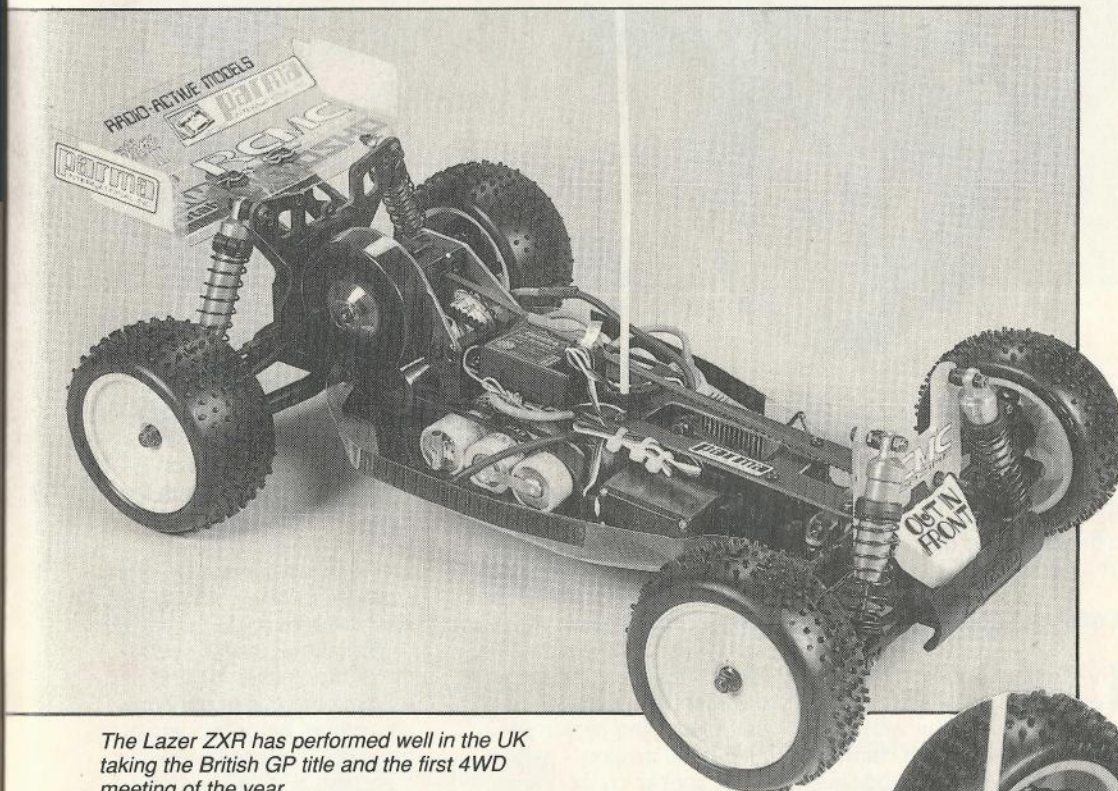
The 1992 Ripmax Kyosho Team managed by Es West scored its first major victory by winning the 1992 British 4WD Grand Prix. Ellis Stafford drove the winning Parma powered Lazer, so we visited his pit to get these details for all you Lazer drivers.

The car is very much standard save only for Teamline 7 1/2 degrees castor on the front uprights. The dampers are fixed to the

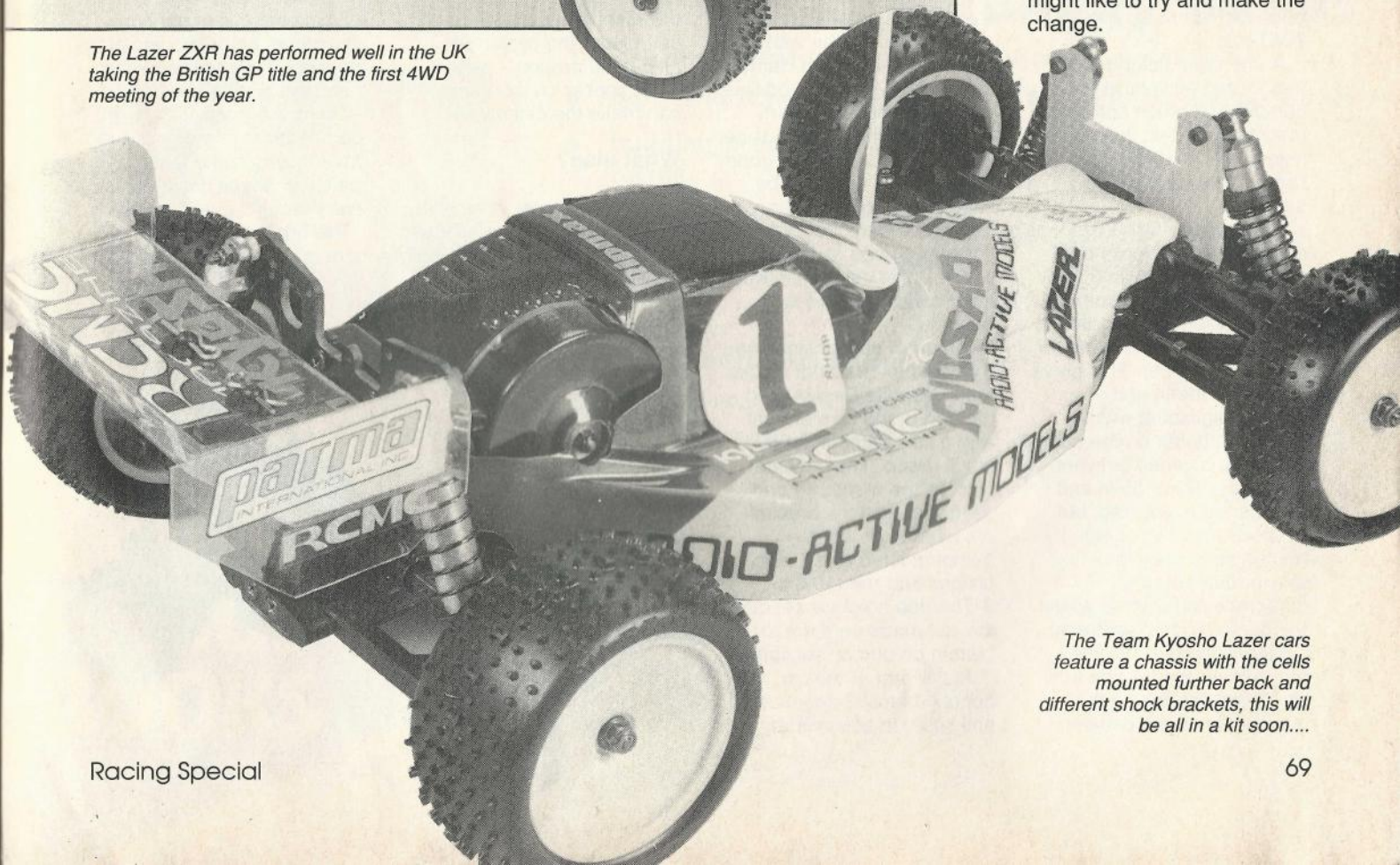
outside hole in the wishbone at the bottom, and to the middle hole in the bottom row of holes in the top mounting plate. The camber Ellis describes as standard and we could not easily measure the actual angle. Standard positions for the upper suspension link mean no change from the kit. Ride height is with wishbones level with the ground at rest, and keeping it that way are kit black springs controlled by two hole damper pistons and

400 oil. Ellis recommends the wheel be set parallel, no toe-in or toe-out.

The same springs and damper pistons are used at the rear kit black and two hole but with 300 oil. The lower damper mounting goes in the outermost hole of the wishbone and the top mount is in the outermost hole of the bottom row. Camber is again kit standard and ride height is correct when the wishbones are parallel to the ground at rest.



The Lazer ZXR has performed well in the UK taking the British GP title and the first 4WD meeting of the year.



Kyosho Triumph 2WD

Since Ellis has been the most successful Triumph driver this season. There seemed time to be saved by asking him for his tips at the same time – and anyway he offered us a drink! The Triumph has not proved as popular as the RC10 and Cougar this year, and this is reflected in various mods being tested on Ellis's car. He gave us the best settings for a kit car.

Using the standard mounting points, fit your dampers with 2 hole pistons and 400wt oil. Black springs should keep the front level with the rear. Camber is kit standard and kick-up is 30 degrees on the wishbones with -5 degrees castor blocks.

At the rear two hole pistons and 300 wt oil are inside the dampers, with gold springs on the outside. Mount the complete unit on the standard points and set the ride height so the rear wishbones are parallel to the ground.

Ellis's major change, which he likes, is to move the gearbox 8mm forward. Probably not for the novice, but the dedicated DIY'er might like to try and make the change.

The Team Kyosho Lazer cars feature a chassis with the cells mounted further back and different shock brackets, this will be all in a kit soon....

Schumacher Bosscat

The new Bosscat has more suspension tuning areas than the old Procat. So here is a guide to how to run it for that first run.

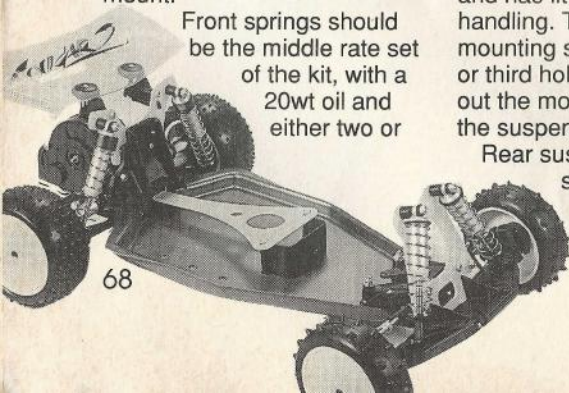
Wheel camber should be 3 degrees front and 1 degree rear, negative in both cases. The top link at the rear runs best in the second hold out on the top row of the inner mount.

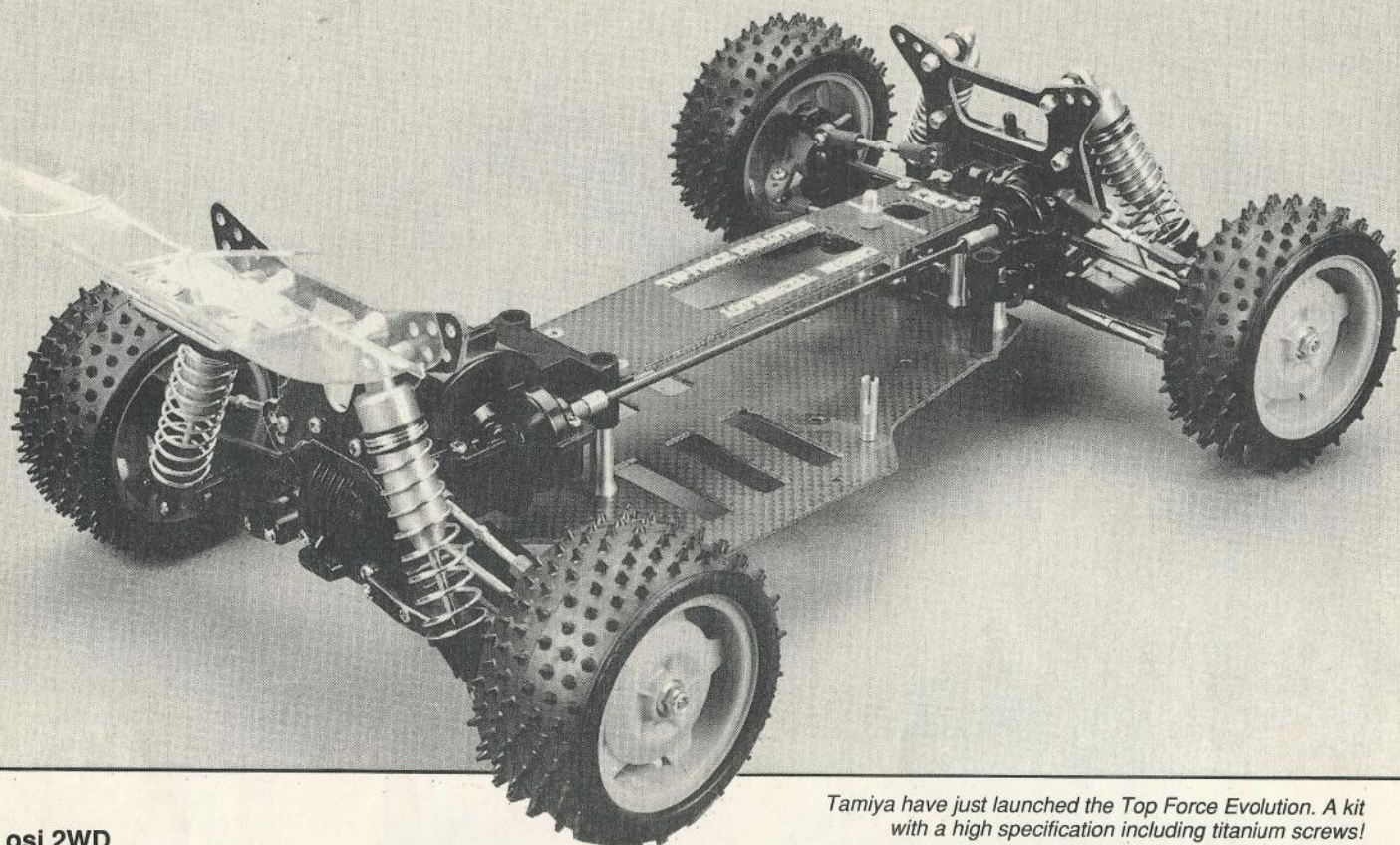
Front springs should be the middle rate set of the kit, with a 20wt oil and either two or

three piston holes depending on the weather. The front works best when it is lightly sprung but a little over-damped – it feels free but slightly soggy when moved up and down.

Rear springs should be the middle rate of the kit, and oil should be 20wt with two or three piston holes. The top mounting of the damper is set to the required ride height and has little effect on handling. The bottom mounting should be second or third hole out. The further out the mounting, the stiffer the suspension.

Rear suspension should be stiffer than the front and not underdamped.





Tamiya have just launched the Top Force Evolution. A kit with a high specification including titanium screws!

Losi 2WD

If there is a north/south divide in 1/10 off-road racing then the epitome is the Losi 2WD car. Very popular in the Midlands and the north, hardly any appear in the south. Quite why remains a mystery, so we pinned down the works CML Losi driver Leigh Edwards to give us the details you need to get the best from your Losi Pro SE 2WD car.

At the front, Leigh uses Associated 40wt oil in the damper and green springs mount the unit on the outside hole of the wishbone and the middle hole for the top mounting.

Leigh uses RC10 25 degrees castor blocks on standard kick-up with the wheels upright – no camber.

At the rear, the standard no1 toe-in bar is changed for the no3 toe-in bar. This gives 5 degrees toe-in and 4 degrees antisquat which Leigh find better on the track. Shock oil is varied between Associated 30 or 35wt and springs are mainly red, but occasionally pinks. Leigh has no particular rules for which to use, but finds the difference sufficient to adjust the car to a particular track.

Mounting points for the damper are the outside hole on the wishbone and the inside hole on the damper

mounting bracket. Camber is set to be 0 degrees, upright on full droop.

Leigh recommends the ballraced centre for the differential and uses white inner drive shafts.

Tamiya Top Force

The Tamiya Top Force Evolution is presently sitting easily in the top ten with both Lee Wright and Alan Harman, the cars have been modified but the changes are fairly minor and when you consider how well the cars have gone this year you may well be interested in their set up.

The standard length chassis is used as is the drive system. The car comes with a roller clutch and this is retained.

The front suspension uses 5 degree extra castor blocks from Graphite Design, and the front of the cars are set with a little camber set even at full droop. The out side hole on the wishbone and centre hole on the bracket are used to mount the dampers fitted with 2 hole pistons and red (100) oil.

The ride height is set quite low but made sure not to bottom on bumpy sections.

At the rear of the car approximately 5 degrees of anti squat in achieved by

cutting the gearbox away and making a set of brackets. This is clearly shown in an article in RCMC Sep 1992. Again the outside hole is used on the suspension arm and the middle in the shock bracket. A mix of either red or orange oil is used in the rear again with the 2 hole piston. Ride height is again set with the wishbones around level but mkeep the back from hitting the ground – even a 1mm spacer on the dampers can make the difference!

What else?

Perhaps the most interesting thing about talking to all these successful drivers about their set-ups is how little they change them from track to track.

Losi just missed the World title last year and will be working hard for their next chance in the UK in 1993.

Most tend to adjust damper oil to suit the weather and adjust the ride height or suspension drop, to suit the track. Their set-ups are honed from many hours racing when items are changed only slightly to gauge their effect.

You almost never see these top drivers making radical changes to springs, oils, mounting points, etc at a meeting. They spend most of their time testing tyres and learning the track. This is in start contrast to many club drivers, who make fairly radical changes between every race!

We hope somewhere in here is your winning set-up.



Radio Control Model Cars

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ARGUS HOUSE,
BOUNDARY WAY,
HEMEL HEMPSTEAD,
HP2 7ST.

All around the World there are model car clubs. Often at the RCMC office we get enquiries as to where these clubs are, and who the contact at a particular club is. At the moment all we can offer is a list of BRCA Affiliated clubs from the BRCA files. This is now going to change!

The form above is aimed at all

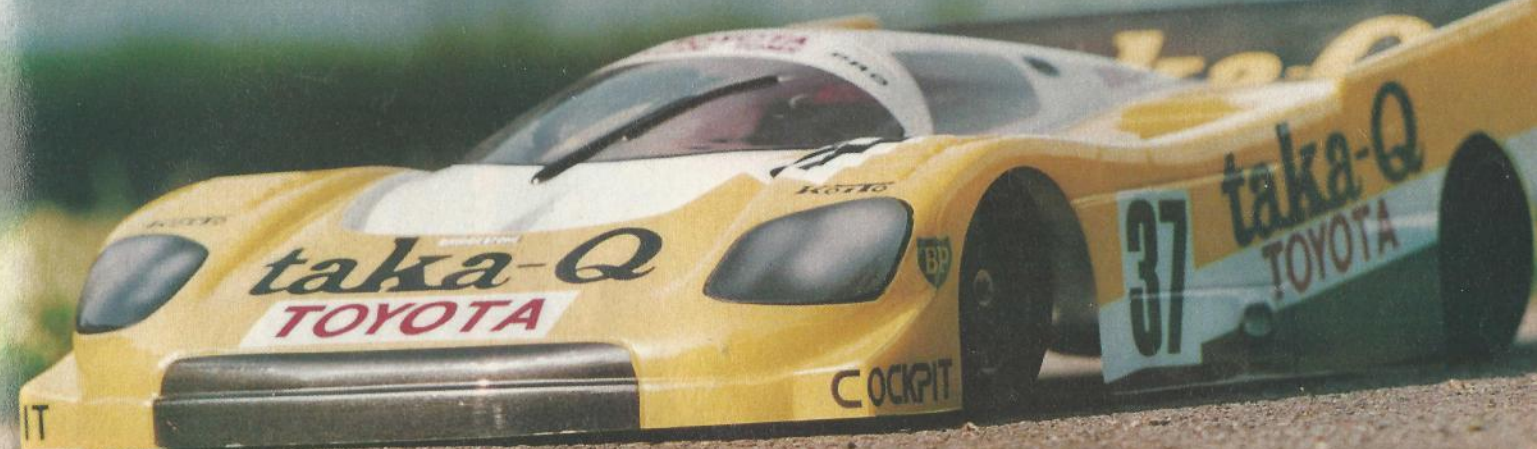
club secretaries or persons involved in running RC Car clubs in the UK or over seas. Whether your club is running the next world championships or has 10 members and races on Tuesday evenings we want to know where you are!

Please either cut out or photocopy the form and send it to us ASAP, if you are a club member

show your secretary this form and get them to send it in. Later in the year RCMC will present the full list to readers in a free booklet attached to our cover - so if you want us and others to know where you are get sending!

Alan Harman
Editor

PRO 10
RACING



SportsCar Selection

The 1:10 on road class gives the ideal chance to make the cars look like the real thing. Graham Creasey takes a look at what can be done with the look of these cars...

1/10th Electric Circuit

Pro-10s are the speed machines of the 1/10th circuit scene. Designed to be raced on flat tarmac surfaces they can reach actual speeds of up to 50 mph with incredible acceleration and superb cornering ability. It is a class of racing that demands a great deal of driving finesse and accuracy; smooth racing lines are the key to success as the margin of error between going very quickly and crashing spectacularly is very slim.

So simple

The cars are fairly simple designs and are therefore easy to build. Most have sprung front wheels and pivoting rear motor pods, usually damped with a single shock absorber. They are rear wheel drive, powered by electric motors and rechargeable nicad batteries and are very quiet to use. Bodyshells resemble the Group C and IMSA sports cars raced in events like the Daytona and Le Mans 24 hour races.

Getting started in Pro-10 need not be expensive. The cheapest route into the sport is with one of Tamiya's excellent scale Group C cars; the Jaguar, Mercedes or Mazda. For a little more you can

buy the Associated RC10L circuit car, while at the top end of the price range are the competition proven TRC/CC Lynx II and Corally SP10G graphite cars.

Wet or dry

With the right tyres, Pro-10s can be raced in both dry and wet weather conditions. Most drivers use the European JAP type rubber in dry conditions (Golds, Silvers, Lilacs, and Reds), American type rubber when the grip is very high (Greens, Blues, and Yellows), MD Super Softs when conditions are damp and Belsport Wets when the track has standing water on it. When racing in the wet, make sure all the electronics are well waterproofed to avoid any expensive repairs to speedcontrollers and receivers.

By using 1700 SCE or SCR batteries and adjusting the gearing of the car, Pro-10s can be made to go extremely quickly and yet still last the full five minute race distance. The top drivers tend to favour fairly 'hot' wind motors that rev highly (12, 13 and 14 doubles), using torque limiting speedcontrollers to tame them under acceleration. Beginners would be well advised to go for something less severe; a 17 double would be a good starting point as this allows the car to be driven quite hard round

corners and yet still last the race distance.

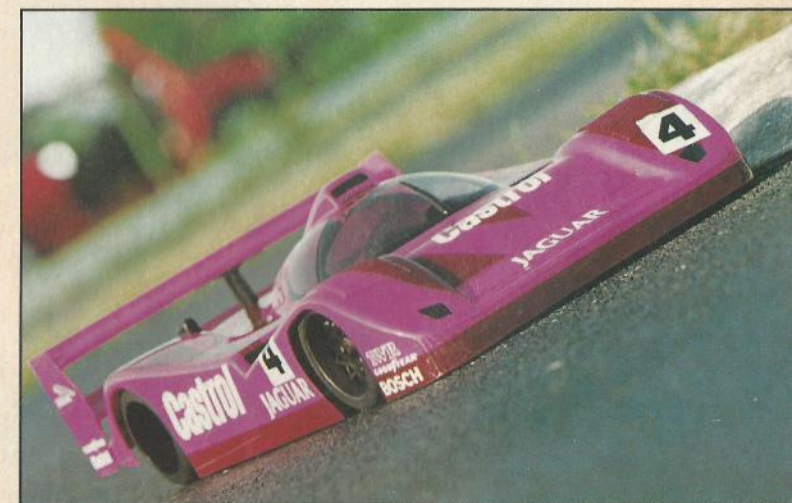
On tarmac

While Pro-10s can be raced on car-parks, they are at their best on purpose built tarmac race circuits. There are a growing number of these around the country ranging from big, open 1/8th scale tracks like Southampton to compact circuits like Ashby and West London. A British championship is run each year by the BRCA which takes drivers to seven of the best circuits in the country. From this,

the top drivers can go on to race at the highly competitive European and World Championship events.

Those who fancy trying something a bit different could have a go at banked oval racing. Pro-10s fitted with Nascar 'Days of Thunder' bodyshells have a huge following in the USA and are now being raced over here on cycling velodromes. Indy car bodyshells are also available for those who fancy emulating the World's richest motor race.

Striking Jaguar shell captures the aggressive looks of the real thing.





SportsCar Selection

Take your buggy...

You don't have to own a Pro-10 to go 10th circuit racing though. For those with a buggy, a new racing class has been set up. Buggies fitted with saloon bodyshells can be raced in the Touring Saloon class, races being held at most of the Pro-10 National meetings. Club support for these cars is also very strong with club saloon championships usually taking place during the Winter months.

If you like your racing to be fast, friendly and fun then 1/10th circuit is for you. It's everything model car racing should be.

● Thanks go to George Land and Richard Delves of Helger Racing (Parma) for providing the superb cars for this article.

Bodies Available

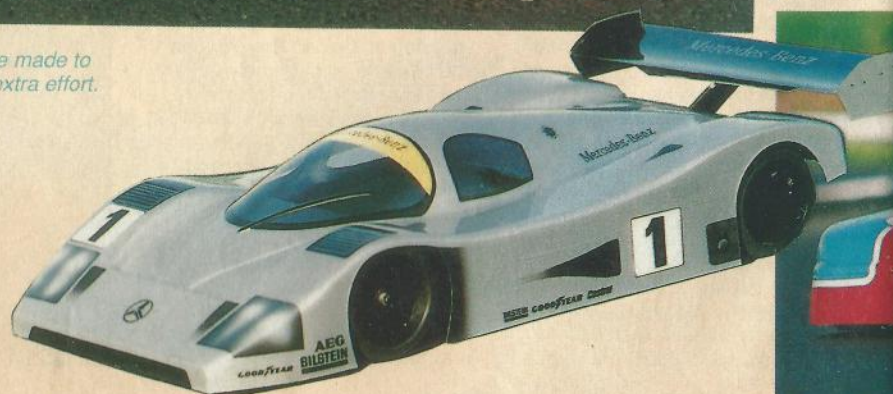
The bodies used in our photos were from the Parma PSE range.

Also available are bodies from Andy's, Frewer, Racecraft, Tamiya, Kyosho, Schumacher, Sarik and others.

A guide to painting these shells can be found elsewhere in RS1992 and articles from past issues on painting can be obtained from the RCMC offices on 0442 66551.



F1 and saloons can be made to look really good with extra effort.



Mounting the bodies properly to the chassis takes time but the correct ride height makes all the difference to the final look.

The latest list of BRCA affiliated clubs - if there is one near you, why not pay them a visit.

Eden Park Overlanders
64 Overcliff Rd
Lewisham
London

Edinburgh BC
31 Mountcastle Bank
Edinburgh

Ellesmere Port ORDR
18 Redville Rd
Bebington
Wirral
Cheshire

Falkirk BC
117 Church Street
Stenhousemuir
Larbert

Frodsham MCC
10 Deansfield Way
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Glasgow

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Halstead
Essex

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91 Potter Street
Harlow
Essex

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North Yorks

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1 Spurgate
Hutton Mount
Brentwood
Essex

Hind RCCRC
2 Hill Close
Brecks
Rotherham
South Yorks

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46 Sycamore Road
Stowupland
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Beds

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Pontefract
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Kent

Marston Palmer RCCC
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Bilbrook
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Staffs

Medina MCC
13 Chambers Drive
Apse Heath
Sandown
Isle of Wright

Medway Off Road Club
4 Pintail Close
Isle of Grain
Rochester
Kent

Milton Keynes RCRC
3 Bramber Close
Bletchley
Milton Keynes

Morcambe MCC
Beetham Cottage
The Green
Over Kellett
Nr Carnforth

Neath MCC
The Bungalow
Tydraw Rd
Bonymaen
Swansea

North Hunberside MBC
141a Newbridge Rd
Hull
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North West NI BC
22 Lislagan Rd
Ballymoney
Co Antrim

North Worcs MCC
10 Blenheim Crescent
Bromgrove
Worcs

Oakdale Radio CCC
35 Lon Isaf
Bondfield Park
Caerphilly
Mid Glamorgan

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Old Drift BC
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86 Felderland Close
Parkwood
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Plymouth MCC
66 Keswick Crescent
Estover
Plymouth
Devon

RC Wheels
Elysium
Amersham Rd
Chalfont St Peter
Bucks

Ramsey MRC
10 Willow Close
Stilton
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Essex

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Stevenage
Herts

Stoneavon & Dist RCC
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Arbroath
Angus
Scotland

Stotfold MRC
34 South Road
Baldock
Herts

Suffolk ORBC
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Bungay
Suffolk

Swansea ERCC
8 Clos-ty-Mawr
Penllergaer
Swansea

Swanwick Hall MCRC
24 Castleton Ave
Ridings
Derbyshire

TRAK 86
27 Albemarle Road
Taunton
Somerset

Tamworth BA
247 Main Street
Glascote
Tamworth
Staffs

Thornton Heath OR
70 Kimberley Road
Beckenham
Kent

Ulster MCC
5 Kingsmere Park
Bangor
N Ireland

Warrington RCCC
6 Firman Close
Westbrook
Warrington

Warsop MCRC
16 Oaktree Close
Mansfield
Notts

Weeting MCC
31 Kestrel Close
The Rookery
Beck Row
Mildenhall
Suffolk

Wem BC
97 Pym's Road
Wem
Shropshire

West Bridgford MCC
6 Beaumont Gardens
West Bridgford
Nottingham

West Cornwall RCCC
133 Polwithen Drive
Carbis Bay
St Ives
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49 Gisburn Road
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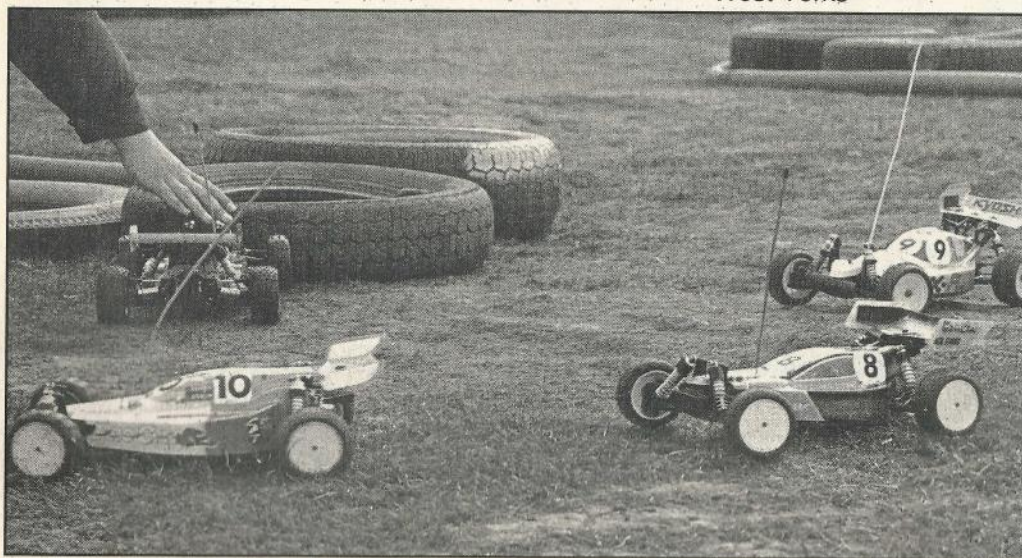
Westland ORM
34 Webbers Way
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Wrexham
Clwyd



Exciting racing action like this takes place every weekend at a club near you!

AT THE TOP

Certain drivers seem to stay at the top of the sport. RCMC reporter Pete Winton puts some questions to four of Europe's top drivers...



The top man in Germany with a European title and Worlds final place is Jurgen Lautenbach.

Jurgen Lautenbach

Jurgen is one of Europe's best drivers and is present at many of the Grand Prix. He has represented his country at every level in 1/10 off road, 1/12 circuit and 1/10 circuit.

Jurgen began racing 14 years ago in the road outside his house with a Tamiya Cheetah Jeep. Today, he drives Schumacher's Boss Cat in 4WD, Cougar II in 2WD. Corally's all conquering SP12 is Jurgen's choice for 1/12 circuit and he switches to a Composite Craft Lynx Elite for the 1/10 circuit class.

At Jurgen's level, sponsors are very keen to sign him up. As co-owner of LRP Electronics the choice of motors, speed controllers and batteries is quite simple – his own. The LRP LR25 AMS speedo and LRP Oberle cells are becoming popular in the UK and Jurgen's results assure their pedigree. One of the few users of a steerwheel transmitter, his choice of

receiver is the Futaba FPR103F, but the servo for off-road is the ubiquitous KO FET 1001. We conducted an interview with Jurgen by fax – this is what he told us.

RCMC: Who was the person who helped your career the most?

JL: There were three. My friend and first sponsor Mr Schafers who took me to all the big races when I was young and introduced me to serious racing and preparation. Stephan Oberle who gives me a great deal of help and co-operation on the cars. He gives me hints on set-up and some special parts we need, as well as all his work with batteries. Lastly, my friend and manager Jules, whose help is invaluable at the company and the races.

RCMC: What is your best result?

JL: Winning the 1/12 circuit, 1/10 circuit and 2WD off-road European Championships all in the same year – 1990.

RCMC: Which single race in your life was the best, and why?

JL: Winning the World Champs warm-up race in Detroit in 1990 because at that race I was able to beat every top driver in the World including Masami Hirotsuka and Cliff Lett.

RCMC: What could you be offered to do which would make you miss a big race?

JL: A ride in a Formula One car or dinner with Julia Roberts.

RCMC: Give one special thing that helps you to be better than the rest?

JL: Total determination.

RCMC: Who do you rate as the five top drivers in the world?

JL: Jamie Booth, Rick Howhart, Masami Hirotsuka, Cliff Lett and Kevin Moore (in alphabetical order).

RCMC: Who or what do you think has changed racing the most over the last few years?

JL: I would say 2 cars. The Associated RC10, which was the first serious off-road car and made off-road the most popular class. It more or less started the RC boom.

Secondly, the Schumacher Cat, the first serious 4WD car introducing us all to mid-engine layout and belt drive.

RCMC: Who was your first sponsor?

JL: Kyosho/Robbe.

RCMC: Who are your current sponsors?

JL: Schumacher, LRP, Corally, TRC-Composite Craft, Multiplex – KO.

RCMC: If you could change one rule in the sport, what would it be?

JL: To find a way of banning hand-made battery packs and cells. Although the rules say that a battery has to be admitted nobody checks if the battery is identical to the admitted (approved) cell. In the case of cars, motors and speedos everyone wants to achieve an advantage but there are rules which are the

same for everybody. For example, you have to build a car within size and weight limits and do the best job you can. Unfortunately, with the battery situation as it is now this is very different. You have to buy a million cells and then you get hand-made stuff. This makes competition very unfair because some people have access to these batteries but most people do not.

RCMC: What, or who, is your definition of sportsmanship?

JL: * Following the rules.

* Assisting young drivers (help with parts and advice).

* Being fair (giving way) when being lapped or passed – no butchering.

Our thanks to Jurgen for his time and courtesy in answering our questions.

Craig Drescher

Unarguably the driver of 1991 and 1992, we caught up with Craig at the Broxtowe BRCA 2WD National. Craig's success is more than the rest of us can even dream about, yet he is still only 17. A double European Champion, multiple World Championships A finalist, multiple British Champion and we were there to watch him add the 1992 BRCA 2WD Championship to his collection.

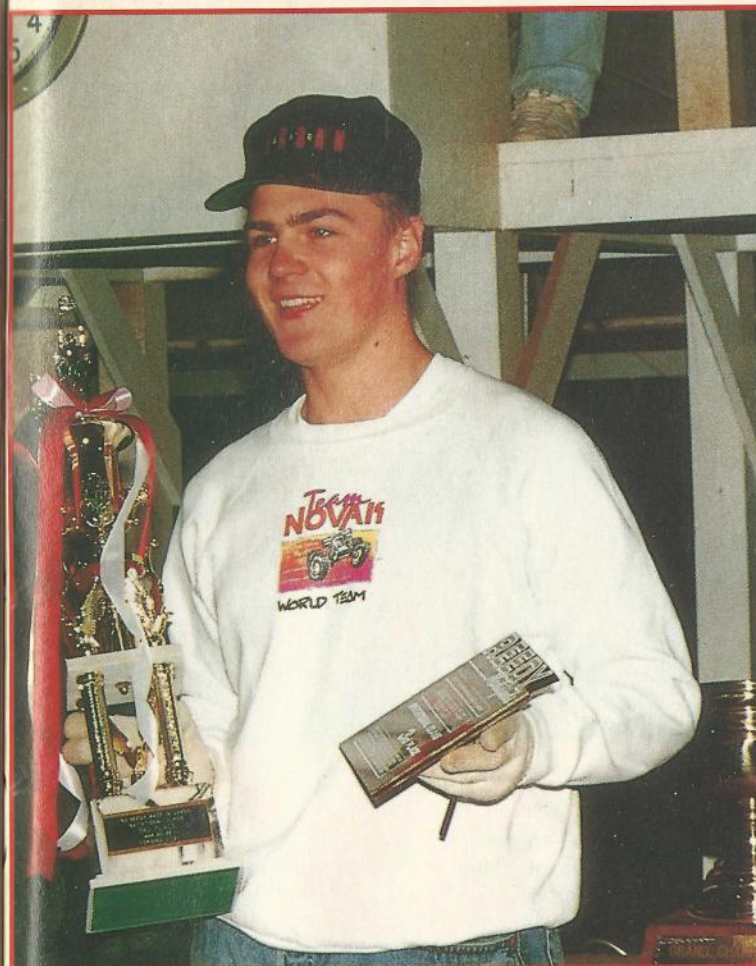
Craig is rarely seen without his father, Mike, and the pair of them have been to many different countries to race their cars.

RCMC: When did you drive an R/C Car?

CD: In 1985, when I was 10 years old.

RCMC: What was that car, and where did you drive it?

CD: We had a Tamiya Frog and went to Bately Buggy Club.



Craig Drescher has proved to be the top in Europe for 1991 - can he hold onto his titles in Denmark?

RCMC: What cars do you drive now?

CD: The Yokomo 4WD, and the Associated RC10 in 2WD.

RCMC: Who was/is the person who helped your career the most?

CD: Without doubt, my Dad.

RCMC: What is your best result?

CD: 7th place in the 1989 2WD World Championship, and my double European Championship (2WD & 4WD) in 1991.

RCMC: Which single race in your life was the best, and why?

CD: The 1989 Reedy Race in Austria, although it was the A final in three legs. I beat Masami Hirotsuka in two legs, but he won the third in a better time so I only finished second overall – but to beat Masami twice was good.

RCMC: What could you be offered to do which would make you miss a big race?

CD: (After a lot of thought – Ed!) A weekend away with a lovely lady.

RCMC: Give one special thing which helps you to be better than the rest?

CD: There isn't one, but dedication and perseverance go me here.

RCMC: Who do you rate as the top 5 drivers in the world?

CD: I don't rate people as such because on the day there are ten great drivers in an A final and we all have a chance. If I must mention people, Masami (Hirotsuka) and Cliff (Lett) are very good all the time.

RCMC: Who do you think has changed racing the most over the last few years?

CD: Masami (Hirotsuka), by raising the level of the game for everyone who wants to beat him. Cliff Lett, for the slipper clutch.

RCMC: Who was your first sponsor?

CD: Penn Models.

RCMC: Who are your current sponsors?

CD: Associated, Reedy, Keil, Yokomo, Novak, KO, Oakley (Sunglasses), Proline, Lavco.

RCMC: If you could change one rule in the sport, what would it be?

CD: I would not change any rules, but make people stick to and officials enforce the rules we have.

RCMC: What, or whom is your definition of sportsmanship?

CD: Enjoying racing, and taking out only what you put in.

Our thanks to Craig, and congratulations on your first title of 1992.

Jamie Booth

Not only is there very little this man has not won, there is very little he has not driven. Jamie's name is so well known in R/C car circles that he is one of the very few people well known to all the other branches of R/C car racing.

The only title left he has not won is the title World Champion. Ask anyone to name you the worlds best and nine out of ten put Jamie on the list. Arguably as talented a driver as Masami Hirotsuka, unarguably the most successful driver this country has ever produced. But where did it all start?

RCMC: When did you first drive an R/C car?

JB: When I was ten years old.

RCMC: What was the car and where did you drive it?

JB: It was a replica of Starsky & Hutch's car (a '70s US cop programme – Ed) and we drove it outside the

house and around the living room.

RCMC: What cars do you drive now?

JB: Kyosho Triumph 2WD and Kyosho Laser 4WD.

RCMC: Who was/is the person who helped your career most?

JB: My father (David Booth) and Nick Adams (owner of Demon Products).

RCMC: What is your best result?

JB: Coming 3rd in the 1987 World 2WD Championships in Romsey.

RCMC: Which single race in your life was best and why?

JB: In the last round of qualifying at the 1989 World 2WD Champs in Australia, I managed to get my Topcat into the A final – it was hard work by immensely satisfying.

RCMC: What could you be offered to do which would make you miss a big race?

JB: Drive a real supercar, like a Ferrari F40.

RCMC: Give one special thing which helps you to be better than the rest?

JB: I always enjoy myself while I am racing.

RCMC: Who do you rate as the top five drivers in the world?

JB: Five is difficult – the top



In typical mood - Jamie Booth seems to be able to compete at top level while having fun!

AT THE TOP

three would be Masami Hirosaka, Cliff Lett and Craig Drescher.

RCMC: Who do you think has change racing the most over the last few years?

JB: So many things have changed it is impossible to find one person responsible for it all.

RCMC: Who was your first sponsor?

JB: Nick Adams of Demon.

RCMC: Who are your current sponsors?

JB: Kyosho and LRP.

RCMC: If you could change one rule in the sport, what would it be?

JB: The starting time of the BRCA Nationals, they start too early!

RCMC: What, or whom is your definition of sportsmanship?

JB: When drivers from other teams help you with set-ups at meetings.

Since 1985 Jamie has held semi, or full works sponsorship from Associated, Schumacher, Tamiya and Kyosho. He is a very approachable person, and in thanking him for his time we wish him good luck at the forthcoming European Championships.

Kevin Moore

Kevin Moore is the quiet man of Off-road R/C car racing. There is nothing loud or ritzy about Kevin, his car, or his driving. Very much a technical driver, his quietness hides a devastating touch on the track. He jointly holds the UK record (with Jamie Booth) for the number of World Championship A finals (four) and is a multiple British Champion.

Now in the sport as a shop owner, the name of Moore's Performance House is rapidly spreading amongst R/C car drivers who look for the best when buying their bits. Kevin and his father, Colin, are inseparable at meetings, and Colin has put the car down at many of the best known tracks in the world.

We were staggered to learn that Kevin was driving cars at such an early age, as we found out when we asked him.

RCMC: When did you first drive an R/C car?

KM: When I was nine years old.

RCMC: What was the car and where did you drive it?

KM: A Tamiya Sand Scorchers which I drove at home and with friends.

RCMC: What cars do you drive now?

KM: Schumacher Bosscat in 4WD and Schumacher Cougar II in 2WD.

...Now in the sport as a shop owner, the name of Moore's Performance House is rapidly spreading...

RCMC: Who was/is the person who helped your career the most?

KM: Ted Longshaw (owner of a very big distributor and retail company).

RCMC: What is your best result?

KM: 4th in the 1991 World 2WD Championship.

RCMC: What single race in your life was best and why?



Kevin Moore is known for his immaculate preparation and now for his business MPH.



KM: Qualifying my Procat for the 4WD final in Detroit at the 1991 World Championships – because on that day the car was not quite up to it so I know my efforts really counted – very satisfying.

RCMC: What could you be offered to do which would make you miss a big race?

KM: Driving a Ferrari.

RCMC: Give one special thing which helps you to be better than the rest.

KM: There is no one thing, but proper preparation and total concentration work very

well for me.

RCMC: Who do you rate as the top five drivers in the world?

KM: Masami Hirosaka, Cliff Lett, Craig Drescher, Brian Kinwald and Rick Vehlou.

RCMC: Who do you think has changed racing the most over the last few years?

KM: Cecil Schumacher, for his seemingly unending innovation.

RCMC: Who was your first sponsor?

KM: Ted Longshaw.

RCMC: Who are your current sponsors?

KM: Schumacher, LRP, KO, MPH (Moore's Performance House).

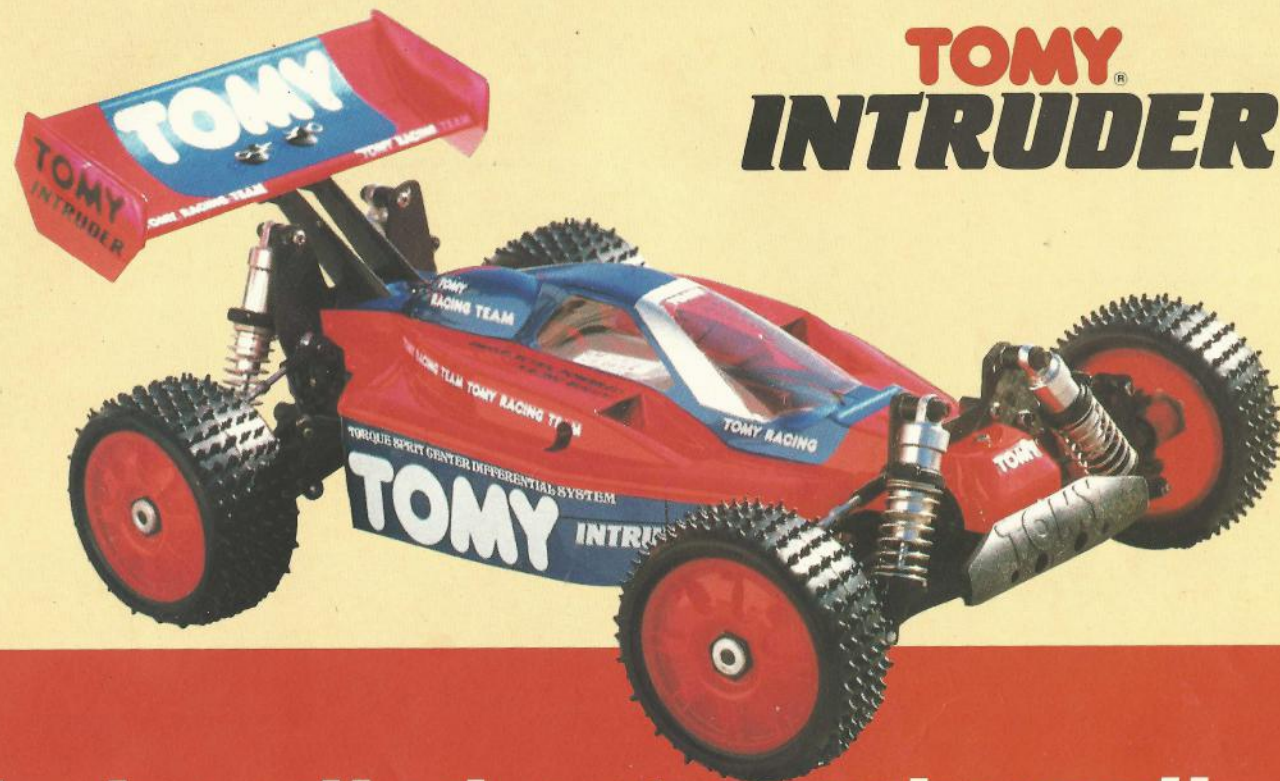
RCMC: If you could change one rule in the sport, what would it be?

KM: The ERFA A finals should have points for positions in each leg to decide the winner, as we have in the BRCA. Their system (best two lap times to count) does not work well in finding the best driver in the race.

Our thanks to Kevin, who we interviewed at the Broxtowe BRCA National during qualifying. We wish him all the best for the rest of this season, and of course, the Worlds in '93.

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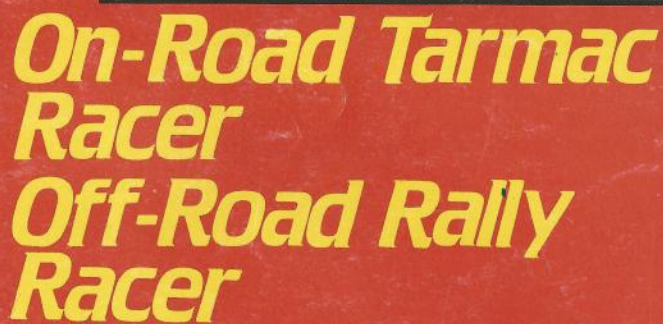


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