



MODEL PUBLICATION

Model Cars Monthly

**TAMIYA
FROG**
-be one jump ahead

**CARPET
RACERS**
-better handling

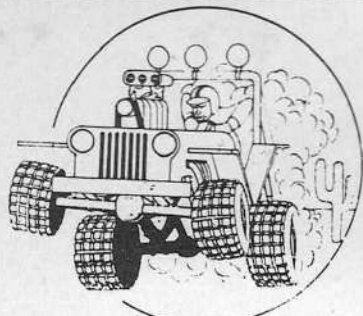
STARTING POINT
1/8th scale
Off-Road
-the way to go
...Fast!



RS...BUGGIES...CIRCUIT RACERS...STOCKCARS...BU

G.K. MODELS

BOURNEMOUTH



THINK TAMIYA — THINK G.K. MODELS

Great prices on Tamiya package deals . . .
DEAL INCLUDES:
Tamiya kit as listed, Acoms Mk11 r/c unit, trickle charger, ni-cad battery for the engine, and now includes a set of HP7 size batteries for the transmitter and receiver.

KIT	Price	KIT	Price
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HOLIDAY BUGGY	£102.50	SAND ROVER	£102.50
FORD RANGER	Special Price	SUPER CHAMP	£152.95
WILD WILLY	£132.95	WILLYS WHEELER	£132.95
AUDI QUATTRO	£129.95	SUBARU BRAT	£110.50
LANCIA RALLY	£110.50	OPEL ASCONA	£129.95
FROG	£128.95		

PLEASE NOTE POST & PACKING ON ABOVE DEALS £3.50 PER DEAL, PRICE INCLUDES INSURANCE COVER.

FOR SINGLE KIT PRICES PLEASE RING FOR OUR LOW, LOW PRICE . . . SPECIAL DEALS AVAILABLE ON THE FOUR WHEEL DRIVE RANGE ALSO.

OUR NEW UPDATED CATALOGUE IS NOW READY . . . SEE DETAILS ELSEWHERE IN THIS ADVERT FOR YOUR COPY . . .

OUR STOCK OF SPARES FOR THE TAMIYA RANGE IS NOW £17,500 IT IS VERY RARE WE ARE OUT OF STOCK OF ANY PARTS.

A small selection from our catalogue . . .

SUPER CHAMP	WILD WILLY/AUDI QUATTRO
5121 F/wheels, tyres pr. £6.60	SPWE7 Long axle tube .. £2.20
SPCS1 Chassis £7.20	SPW1 Diff. Gear Bag £2.75
SPCK9 Rear arm £3.20	SPWE19 Resistors ... pr. £1.65
SP1155 Servo saver £3.50	SPW14 Parts G W/Willy £3.90
SPC7 Switch Arm Bag ... £3.75	SPB1 Bumper A/Quattro £3.30
SPCD8 R. Bumper Stay . £3.40	SPP13 Mech./Box A/Quat £9.99
SPCD9 R. Bumper £2.20	SPQ5 Pressed parts bag
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LOW, LOW PRICES ON KYOSHO CARS

SCORPION	£67.96
BEETLE	£67.96
CACTUS OFF ROADER	£39.96
TOMAHAWK	£78.00
JEET INDIANA 4WD	£103.96
POST & PACKING ON ABOVE KITS	£2.25 PER KIT.

SPECIAL PACKAGE DEAL PRICES AVAILABLE ON KYOSHO RANGE . . .

DEAL INCLUDES:

FUTABA RADIO UNIT FP-2MR (with servo reverse) NI-CAD BATTERY FOR THE ENGINE, TRICKLE CHARGER, HP7 SIZE BATTERIES FOR THE TRANSMITTER & RECEIVER, PLUS THE KIT AS LISTED.

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CACTUS	£95.70	JEET INDIANA 4WD	£159.70

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FUTABA

FUTABA 2 CHANNEL RADIO SET MODEL FP-2MR (with servo reverse) £39.95 price includes P&P

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WE CAN QUOTE FOR ANY OF THE FUTABA RANGE OF RADIO UNITS. PLEASE PHONE FOR YOUR REQUIREMENTS. WE ALSO CARRY STOCKS OF SPARES FOR THE KYOSHO RANGE . . . WHICH ARE ALL INCLUDED IN OUR NEW CATALOGUE.

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Please Note:

P&P on above range £1.00 per order.

SPECIAL PARTS . . . MOTORS . . . ETC . . . ETC . . .

A small selection of our range taken from our catalogue.

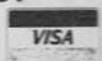
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Model Cars Monthly

(I.R. £1.48½)

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Cover

Our thanks this month go to our intrepid photographic personnel, Manny and Niel for perfecting and producing this shot of the Tamiya 'Frog' 1/10th scale buggy. Subject for our track test on page 32. Thanks a lot fellas!

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Editorial

Competitive racing by its very nature is an emotional affair, tensions run high as individual drivers battle it out on the circuit. Inevitably, 'heat of the moment' exchanges take place as drivers react (or over-react) to circumstances beyond theirs (and others) control. At this point tact, foresight, manners and even self-control are thrown out of the window with sometimes irreparable results.

Unfortunately this is not always the end of it and bad feeling is carried off the circuit spoiling the fun for everyone. Amazingly organising officials take much of the brunt of complaint and abuse. A lap has been missed and suddenly what was a simple mistake on the part of the lap-counter is turned into a conspiracy against the driver in question! On the other hand a great many drivers will question lap-times as a *matter of course* after each race, wasting both time and effort. Organisers, lap-counters and officials are human beings too, capable of making mistakes and capable of amending them if approached in the proper manner. Without exception organising personnel are there simply because they are involved with and enjoy model car racing, they are giving something to the hobby whereas those who criticise are only taking.

Remember what we are involved in is a sport, something to be enjoyed!

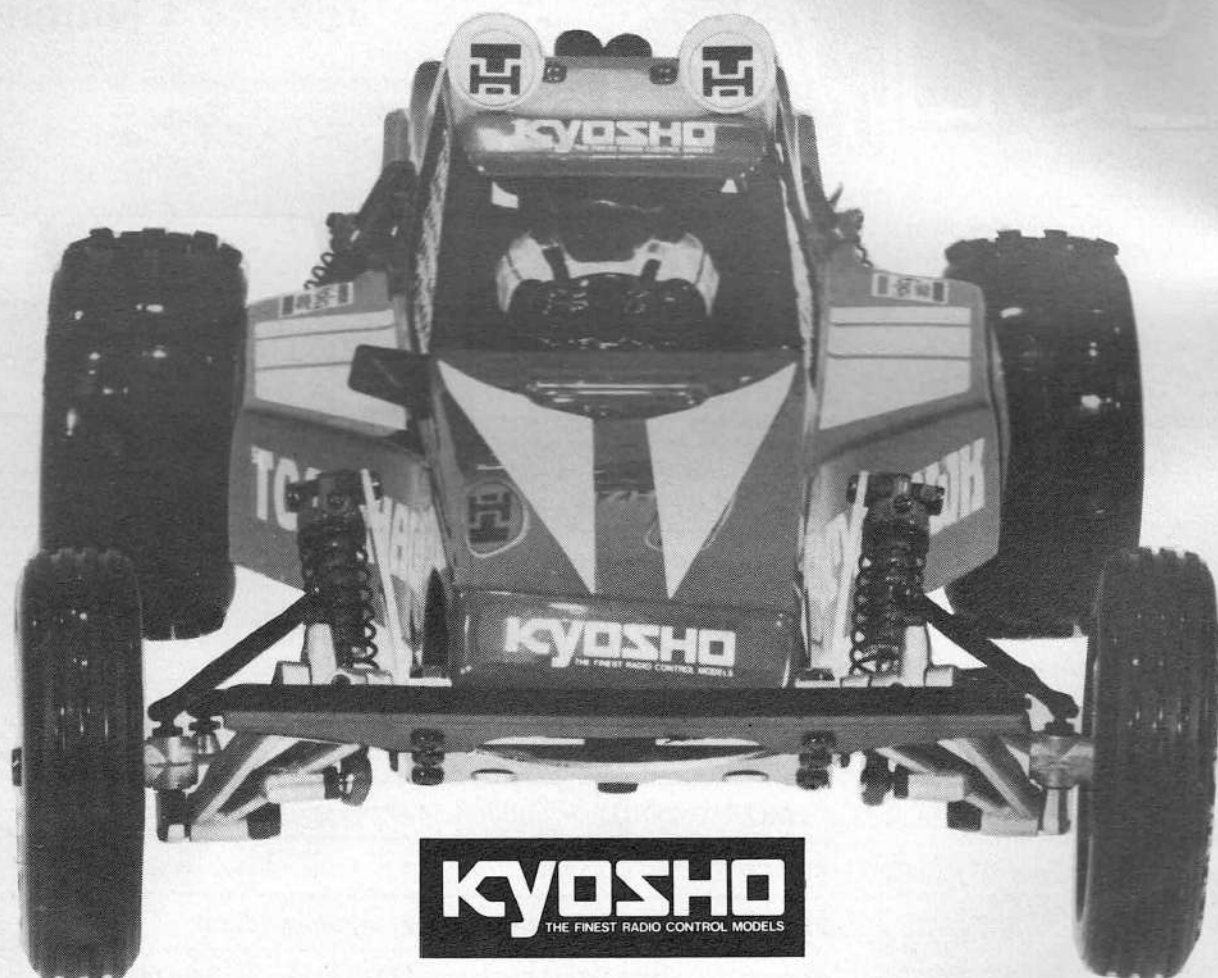
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STOP PRESS
SCORPION wins
World Champs '84



For further details of the extensive range of Kyosho R/C cars and accessories plus suitable Futaba Radio Control Systems, study the NEW RIPMAX MODELLERS HANDBOOK available from all good model shops
Price £2.50.



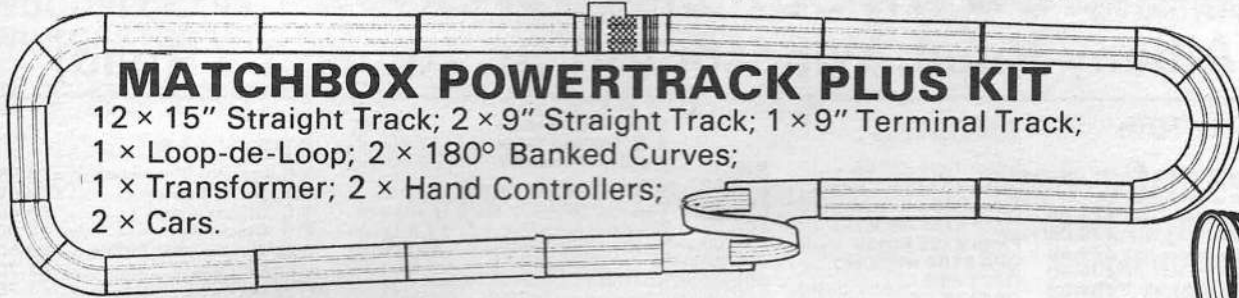
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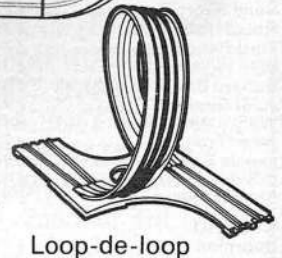
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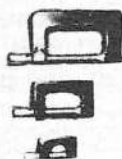
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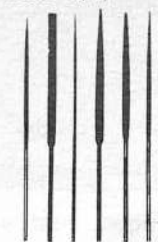
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H/Duty Bumper Kydek	£2.99
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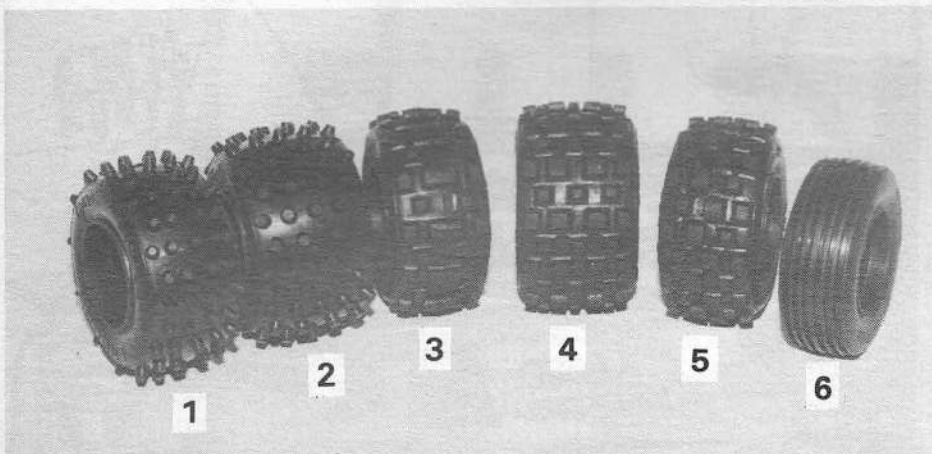
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Club chat

Kicking off this month's club chat section is news of the **Southampton Off-Road R/C Car Club** from club secretary Tim Reynolds. The club has recently split away from the 'other' Southampton club (1/8th circuit racing) and are currently situated at the Lords Hill Outdoor Sports centre, Rebridge Lane, Lords Hill, Southampton. The track consists of short grass and bare earth, marked out with sand-filled hoses, plastic cones and tyres. The club is currently enjoying the full support of Southampton City Council who are at present discussing the idea of producing a permanent, landscaped circuit. Club championship rounds are run on alternate Sundays and usually attract 30-plus members. Non-championship racing takes place on an impromptu basis. The club races both 1/8th i.c. and 1/10th scale buggies and all enquiries should be directed to Tim at 23 Baddesley Close, North Baddesley, Southampton SO5 9DR.

At last! News of Scottish R/C car clubs has arrived — so they do exist after all.

The Strathkelvin Radio Car Club race 1/10th scale buggies on a piece of land provided by the Strathkelvin District Council in Station Road, Millerston, in the Glasgow area. 1/12th scale stock car action also takes place one night a week at a local, covered, venue. The club is interested in attracting new members to race either or both classes of car. Spectators are also welcome. For further details contact Eric Brawley, 571 Alexandra Parade, Glasgow G31 3DE. Tel: 041-554 2360.

The Stonehaven and District Radio Car Club is more commonly known as 'Aberdeen' and is situated in Perthshire, Scotland. The club is mainly concerned with 1/8th scale i.c. circuit racing which takes place at the Mineralwall Park purpose-built circuit in Stonehaven. The circuit has recently been re-surfaced in readiness for the new season and the BRCA national meeting on May 27th. Unfortunately, the number of actual racing members is down to below 30, mainly due to the majority of leading drivers involvement with North Sea Oil. With this in mind race meetings are timed to coincide with members' shore leave. New members, therefore are badly needed and anyone slightly interested is urged to contact the club secretary, Ian Stewart at Lochay, Crieff, Perthshire PH7 3NU. Tel. (0764) 2202.

The Bo'ness Recreation Centre Model Car Club race 1/12th scale cars at the above venue in West Lothian, near Edinburgh. They race



on Primafelt carpet (18 x 12 M) on Monday nights. This summer will hopefully see the formation of a buggy section which will probably race on Sunday mornings.

For more details contact Gordon Price, 36 Main Street, Kirkliston, W. Lothian EH29 9AE. Tel. 031-333 3352.

Moving back into England, Derbyshire to be exact, we bring the **Buxton Buggy Club** to the fore. David Mirtle, the club secretary describes Buxton as "the town which is cut off every time it snows". Nevertheless, the club has acquired the use of some land, kindly donated by the licensee of the Railway Hotel in the town centre. Even though the club has only been in existence since Christmas, an enthusiastic bunch of racers have got together and built a circuit. This includes a jump, 2 humps and a water splash. Club member, Pat Wright, has provided the computer back-up to operate starting lights and race programme to keep track of the championship points system. Club meetings are at the Railway Hotel on Wednesday evenings and race meetings are held on Sunday at 2.00pm. The club is anxious to recruit new members and also to make contact with other clubs with a view to arranging exchange visits. Contact should be made with David at 21 Green Lane, Buxton, Derbyshire for more details.

Finally, Brian Hull has written to inform us of the **Dagenham Off-Road**

Club which is flourishing. The club decline in Ford's standing. The club is still very new but have organised regular racing at Parsloe Park on Saturdays at about 2.30pm onwards. At present they only race 1/10th scale buggies although their race venue is large enough to accommodate 1/8th scale buggies if the interest is there. Brian is keen to attract new members and they should contact him at 342 Parsloe Avenue, Dagenham, Essex RM9 5QL.

Lectricar — back on line

Windmill Models of 156 St. James Street, Burnley, Lancs., has incorporated the **Lectricar** and **Raydio Tyres** businesses into its already established operations. This is good news for 1/12th scale stockcar enthusiasts and particularly, owners of **Lectricars**. R. T. Tyler of **Windmill Models** is a qualified jig and tool draughtsman and a qualified lecturer in advanced engineering design to boot! So the quality of all the products will be maintained and even improved where possible. For further details contact **Windmill Models**.

Plumpton Racecourse model show

August 18-19 is the date set for this, one of the largest model shows in the country. The list of attractions include flying demonstrations of R/C aircraft, helicopters, rockets and micro-light aircraft along with cars, boats,

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parachutists, steam trains, traction engines, helicopter rides, and 300mph Dutch pulse jets. The list of exhibitors and demonstrators reads like a who's who of British modelling. All the amenities are available to visitors, camper and caravanners.

Plumpton Racecourse is situated ten miles from Brighton in Sussex and further details can be obtained from the organisers *DB Sound*, 17 The Square, Tatsfield, near Westerham, Kent, TN16 2AS. Tel. (095 98) 550.

Computer cars

The incredible rise in popularity of the home computer has no doubt wiggled its way into the affections of a great many R/C car enthusiasts. Combining the two 'pastimes' is a natural progression and must have resulted in a fair few programs being produced.

Here at 'Model Cars' we are interested in the fruits of your long labours over a flickering TV screen with a view to possible publication.

Any program for use with the Sinclair 'Spectrum' or Commodore 64 is suitable as long as it related to the model car racing hobby (slot or R/C). Race programs are the obvious example but gear ratio/tyre diameter charts, pit-stop schedules, are just a couple that we can think of.

Program listings should be sent to us on tape with a brief description to tell us what it is all about. We will of course return the tape if we do not intend to use it.

Model Cars Event Coupon

Name of Club.....

Competition Secretary.....

Address.....

Tel. No.

Track Location.....

Class of Racing.....

Entry Fee.....Date(s) of Event.....

Event Specification.....

Facilities available.....

Ted Longshaw Model Cars

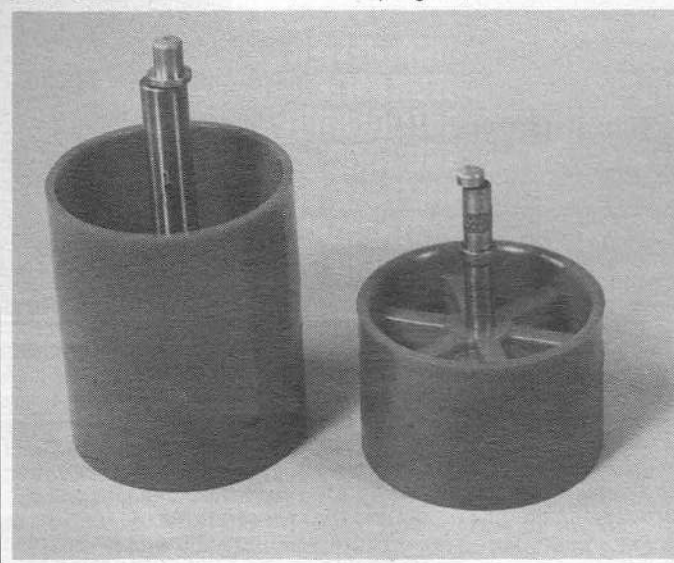
Not content with being one of *PB Racing Products* major distributors *Ted Longshaw Model Cars* are currently producing some tune-up parts for the 'Nova' 1/8th scale circuit racer.

At present these take the form of quick release front and rear hubs. The rear items differ only slightly to the kit sets and have been pro-

duced as direct replacements. The machined stud is connected to a spring inside the drive axle which places the stud in an off-centre position. By centralising this stud with the axle the wheel can be removed.

The front system works in the same manner and can be used with standard *PB* wheels. Prices, rear £8.85; front £5.95.

Available from *TLMC*, 7 Warren Road, Chelsfield, Orpington, Kent.



Trinity Products

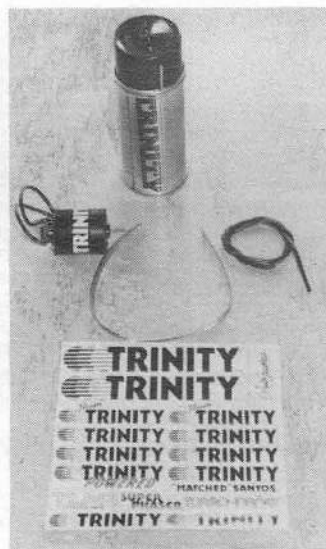
Fortunately for UK 1/12th scale electric racers *Trinity USA* products are now becoming generally available through *Cecil Schumacher* and *Ted Longshaw Model Cars*.

These include the *Trinity* modified and standard motors which are now BRCA legal for National events. The modified motor is the latest in *Trinity* motor development, a version of which powered Andy Dobson's 'C-Car' to a win in the Danish International race. This motor features slotcar size brushgear, copper brush heatsinks and insulated brush springs. Prices: standard, £9.99; modified, £34.99.

Other items finding their way into our pit boxes are *Trinity* commutator cleanant, commutator coolant known as 'Turbo Drops', electrical contact braid for connecting Ni-Cads and lastly 14swg copper hook-up

wire for motor and Ni-Cad connections.

Further details and prices can be obtained from *Cecil Schumacher*, 'Rudge', Church Brampton, Northants NN6 8AU and *Ted Longshaw Model Cars*, 7 Warren Road, Chelsfield, Orpington, Kent.



Mardave Buggy Accessories

The astounding success of the 'Apache' 1/10th scale electric buggy has prompted *Mardave* to produce some optional 'goodies' for lucky owners.

First off is a Lexan bodyshell to replace the injection moulded kit item which will lessen the weight for competition use. Price £5.50.

New, wider track, rear wheels and tyres are now available and can also be fitted to the front by fitting longer stub axles. These tyres fitted to the front will of course cure understeer and will enhance the stability of the car on the track. Prices: wheels, £1.70 pair; tyres, £3.20 pair; stub axles, 22p a pair.

All the above should be available from most good model shops.



Trade Model Supplies Buggy Extras

Trade Model Supplies of 40 Bank Street, Morley, West Yorks., have been producing a wide range of R/C car accessories for some time now and these items are new additions principally for buggy enthusiasts.

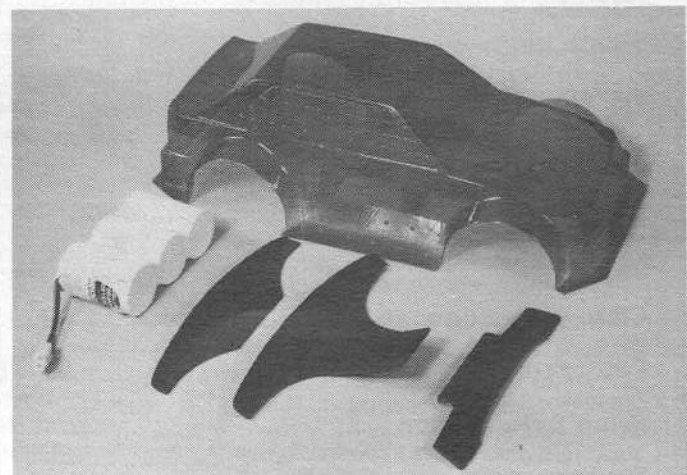
TMS are producing Kydex bumpers for most makes of 1/10th scale electric buggies. The three pictured here are for the *Tamiya* range of cars namely, 'Subaru Brat', 'Lancia Rally', 'Frog' and 'Superchamp'. All these bumpers are produced as direct replacement parts

without any modification needed. Prices: 'Superchamp' rear £3.30. 'Subaru Brat' front £2.95; rear £3.95.

Moulded polycarbonate bodyshells from New Zealand manufacturer, Kevin Frewer, are also being distributed by *TMS* and the range includes the ubiquitous *Ford 'Escort'*. This bodyshell not only looks like an 'Escort' but also includes some fine detail moulding. Price, £10.90.

Finally a 6v x 5Ah lead/acid rechargeable battery pack, suitable for the *Tamiya*, 4-wheel drive 'Hilux' and 'Blazing Blazer' is now available. Price, £18.95.

All the above are available from most good model shops.

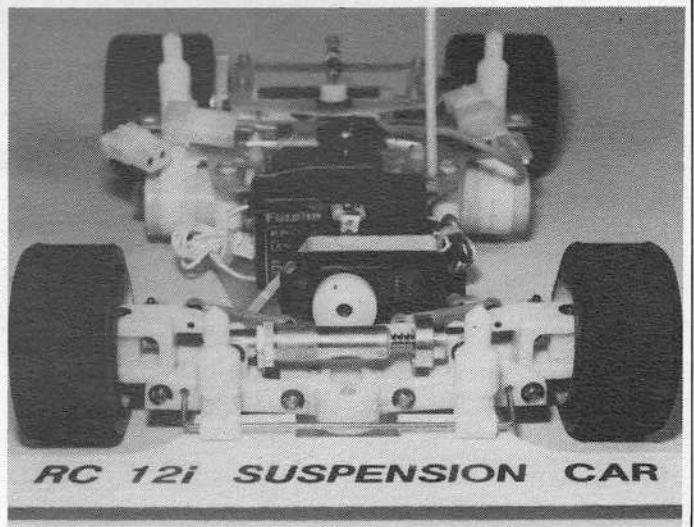
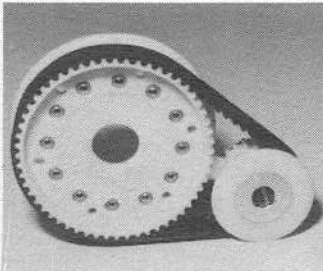


Associated Competition Components

These include the new independent suspension front-end for their 1/12th scale '12i' featured last month. This suspension system features a fully adjustable coil-over shock absorber, adjustable ride-height, castor, camber and toe-in as well as an anti-roll bar.

For 1/8th scale circuit

racers *Associated* have produced a differential belt drive system for their 'RC500' suspension car.

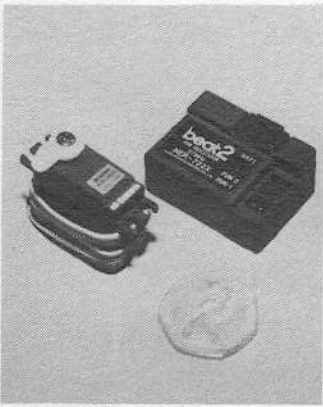


MacGregor/JR R/C Equipment

MacGregor Industries, UK distributors of *JR* radio control equipment are now able to supply their latest 27MHz AM micro receiver, the 'beat 2'. This little item measures only $1\frac{3}{4} \times 1\frac{1}{4} \times \frac{3}{4}$ in. and so is ideal for electric R/C car applications where weight (or the lack of it) is a favourable aspect. The 'beat 2' receiver can be supplied singularly or with any other *JR* AM R/C system. To complement the 'beat 2' *MacGregor* can also supply the complete range of *JR* servos for a wide range of R/C car applications, pictured below is the '3001' high performance micro servo.

JR radio is well known for its reliability, technical excellence and performance, the above products are simply examples of their expertise.

Available from good model shops.



Rossi 21 Car Engine

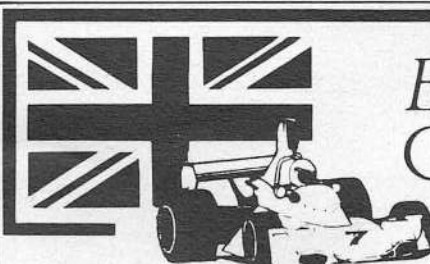
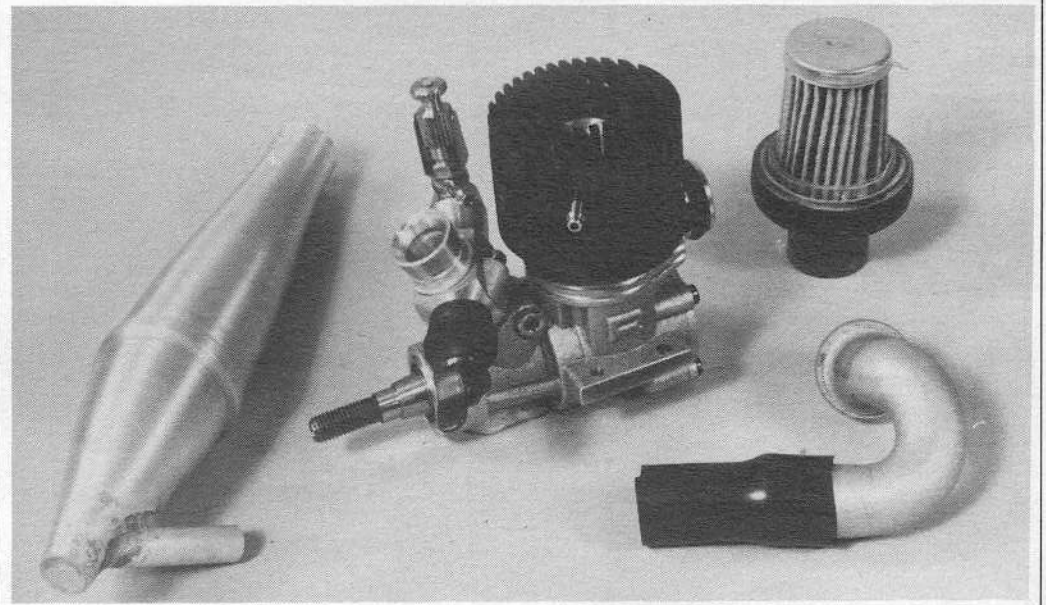
This latest combatant in the 3.5cc open car class power game was unveiled at this year's Nuremberg Toy and Hobby Fair. What separated the *Rossi* from the rest of the engines on show

was the novel, patented, oil-cooling system incorporated into this engine. *Rossi* claim that this system will greatly enhance the running efficiency of their engine by reducing excessive heat build-up in the crankcase and cylinder head.

Apart from this feature the *Rossi* .21 car engine is manufactured to the usual

high standards we have come to expect from this manufacturer. A 9mm slide carburettor, exhaust manifold and tuned pipe is also available to complete the package. Model Cars will be conducting a full, in-depth test on this engine.

UK distributor: *Turbofan*, 5 St. John's Road, Clevedon, Avon, BS21 7TG.



British Radio
Car Association



The National organising body for R/C Racing

The British Radio Car Association (BRCA) is affiliated to European Federation Radio Autos (EFRA) and the International Federation Model Auto Racing (FMAR).

Family membership for 1984

Full members may now enrol any additional members of their immediate families for the attractive fee of £1 per head. Family membership benefits include insurance and the right to enter BRCA race meetings. Only one copy of the newsletter and handbook will be sent to each family. Family membership does not include voting rights.

How to join Contact the Membership Secretary, 6 Park Way, Queensbury, Bradford, W. Yorks. BD13 2HJ.

Fees — Full membership £7.00 per annum. Family membership £1.00 per head.

Photo-Action Competition

PHOTO 1: Adam Brunstall of Crosby, Liverpool wins this month's set of radio control equipment for this impactful shot of his standard Kyosho Beetle (what about that bumper, eh Adam?). A Nikon camera was used with what seems like a wide angle lens. Anyway, congratulations Adam.



PHOTO 2: This Tamiya 'Superchamp' looks to have been passing under too many low bridges. Malcolm Mitchell of Bury St. Edmonds, Suffolk, took this shot at the Bury Buggy Club track using a Canon AE1 camera with Tamron 80-120 lens.



How to win a set of radio control equipment

- (1) Send Model Cars an action photo that you have taken.
 - (2) The photo may be of any type of R/C Model Car, the theme is ACTION.
 - (3) You may send black and white or colour prints (not negatives) or colour transparencies. Maximum size of 'Half Plate' please. Colour transparencies may be either 35mm or 120 size.
 - (4) Any number of photos may be submitted but please mark the back of the photos clearly with your name and address plus details of the models, the site and the camera used.
 - (5) If you wish us to return the photographs please include a stamped addressed envelope.
 - (6) The photographs must be your own work — commercial processing is allowed.
 - (7) Entries will be judged by staff of MAP. No correspondence or telephone conversation can be entered into about entries.
 - (8) The judges' decision is final.
 - (9) Model Cars retains the right to publish winning entries plus selected runners-up in any form it sees fit. All photographs will be paid for at our usual rates.
 - (10) The publishers, MAP Ltd., can accept no responsibility for photographic material submitted but every care will be taken to ensure its safe return when requested.
- SEND YOUR ALL-ACTION PHOTOS TO: MODEL CARS PHOTO PRIZE, PO BOX 35, WOLSEY HOUSE, WOLSEY ROAD, HEMEL HEMPSTEAD HP2 4SS.



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Sandoz
PHOTO
Trip

3: A nicely 'panned' action shot is the result of Dominic Palmeri's efforts who
 m Guernsey. A Nikon FM with Vivitar 70-210 lens was used to capture this
 orcher at speed.
 4: Andrew Nelson of Houghton-la-Spring, Tyne and Wear, used an Olympus
 take this shot of the ubiquitous 'Wild Willy.'



PHOTO 5: Looking very scale-like in appearance, this Tamiya 'Lancia-Rally' was photographed by Tony Fletcher of Newcastle upon Tyne using a Pentax 'ME Super.'



PHOTO 6: A homebuilt ramp can provide plenty of backgarden entertainment as shown by Neil Smith of Coterave, Notts. Neil used a Pentax ME to shoot this Tamiya 'Super-Champ.'



PHOTO 7: An unusual but nonetheless interesting shot of a Seiwa Texas Baja laying the power down. M. O. Tosun of Abertawr, Scotland, took his picture in Gesme, Turkey using a Minox SRT-101.

COMPETITION 1/8TH SCALE circuit racing is undoubtedly *the* prestige sport of the R/C car hobby although by no means the most popular. Nevertheless, this type of racing is virtually a direct reflection of full-size Formula 1 Grand Prix racing, top drivers are sponsored to drive a particular make of car, chassis design technology is every bit as complicated and 'works' backup for the 'team' is almost as comprehensive.

So it is that the introduction of a new chassis design onto the R/C car Market is afforded the same sort of reception in our world as the unveiling of the latest *Brabham*, *Lotus* or *Ferrari* does in Formula 1. Even more so when that product is backed up by a racing pedigree second to none and a list of major wins as long as the Southampton straight. The 'Nova', *PB Racing Products* latest creation, can lay claim to such a boast and on past reputation alone looks set to be a winner, still the proof of the pudding may be sometime coming as the racing season is still in its early stages.

The 'Nova' chassis uses many of the components featured on the 'Alpha 82' and 'GP' models. Suspension bulkheads wishbones and many other

PB racing products

Nova

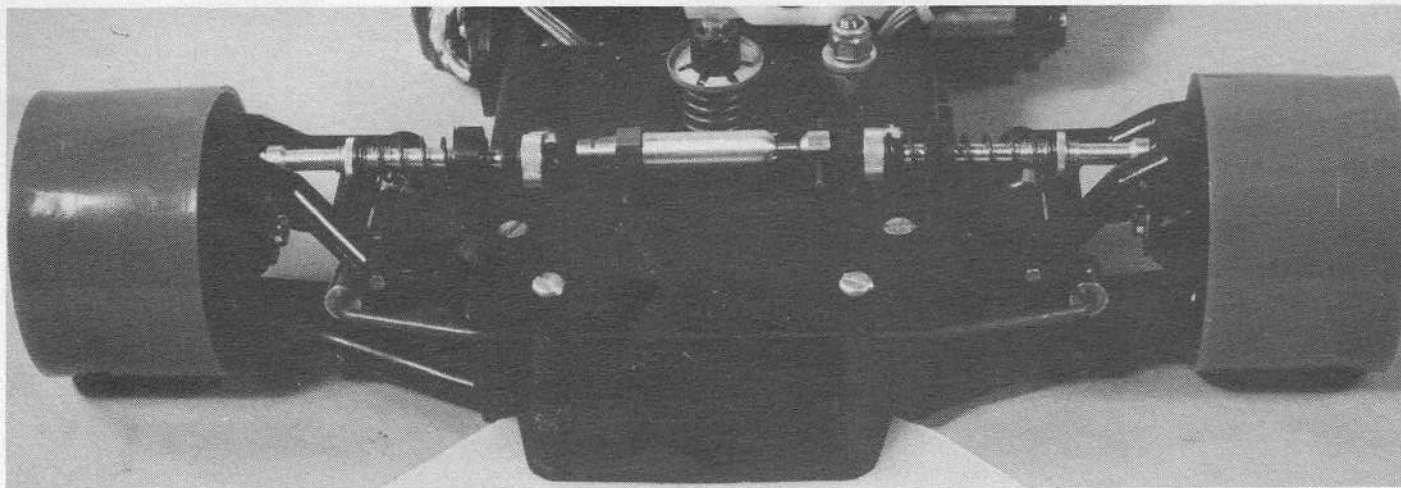
'Model Cars' takes a look at the hottest property in 1/8th scale circuit racing

moulded parts are the same but are dyed black instead of red, only the wheel hubs have remained scarlet, the impression of red wheels around the circuit is something *PB* would like to retain.

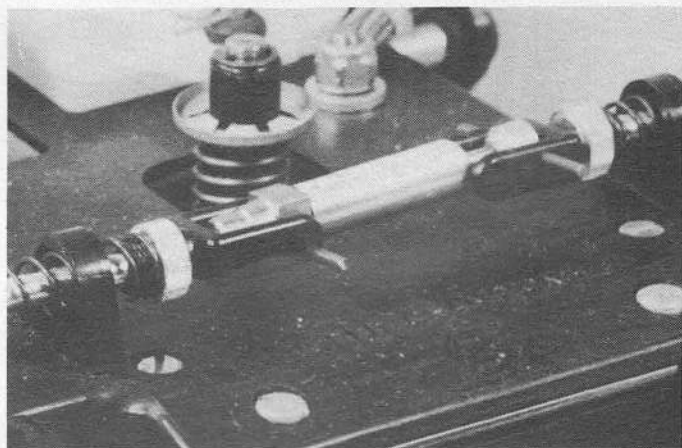
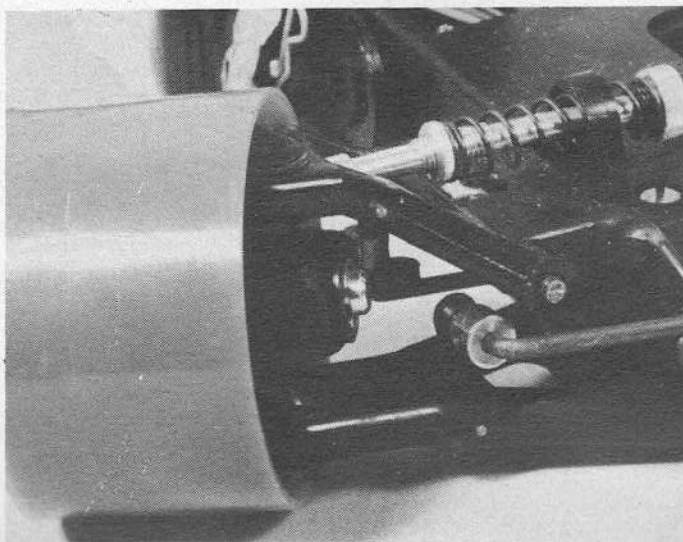
In contrast the main chassis and front end are total departures from *PB's* previous cars as the conventional chassis and shaker plate layout has been discarded in favour of a one piece alloy tube. This tube (or

monocoque as it is wrongly described) forms the centre chassis section onto and into which the front and rear ends are fixed. What this type of layout gives you is total chassis rigidity and a firm base from which the suspension can work.

The only drawback to this is that, 'give' or 'flex' under impact is not allowed for and if a hefty wallop is encountered the chassis could bend and remain bent. Having said that the

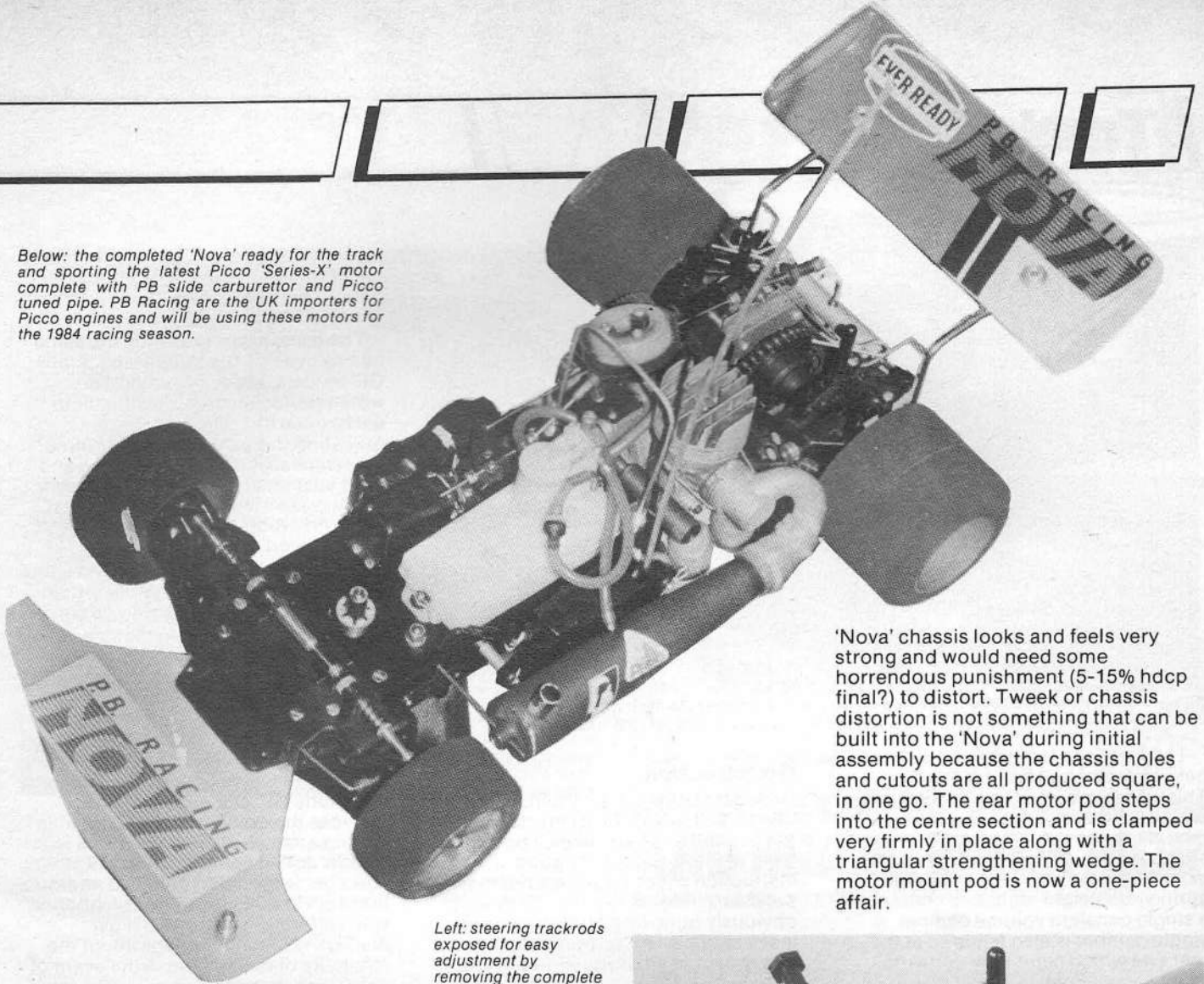


Above: the 'Nova' front-end features a 'plug-in' bulkhead moulding with built-in wishbone suspension mountings and front damper guides. The front, anti-roll bar can be adjusted to give stiffer or more flexible operation. The monoshock damper is a constant volume unit coupled to coil-spring ride height adjusters.



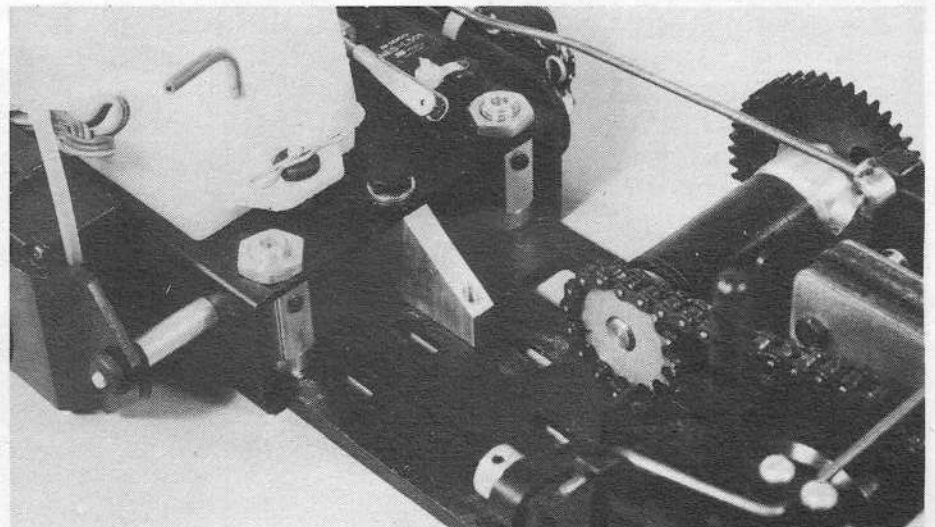
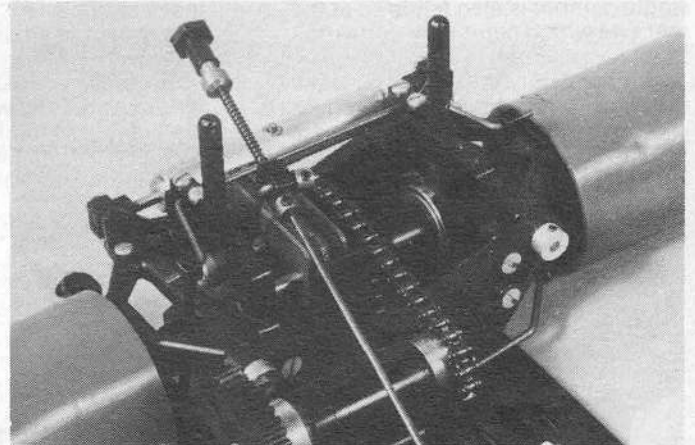
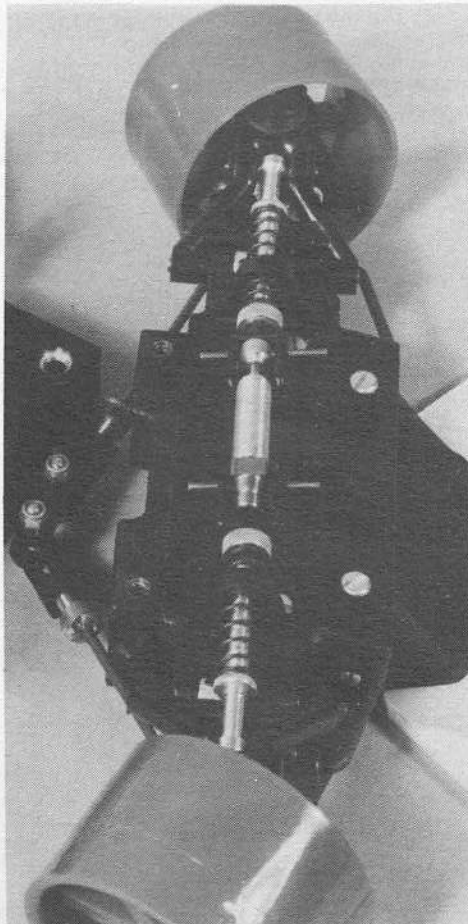
Left: close-up of the coil-springing system the outboard springs provide the ride height, the inboard springs the suspension return. Above: close-up of the front mono-shock. Easy to remove and maintain with very direct and linear action.

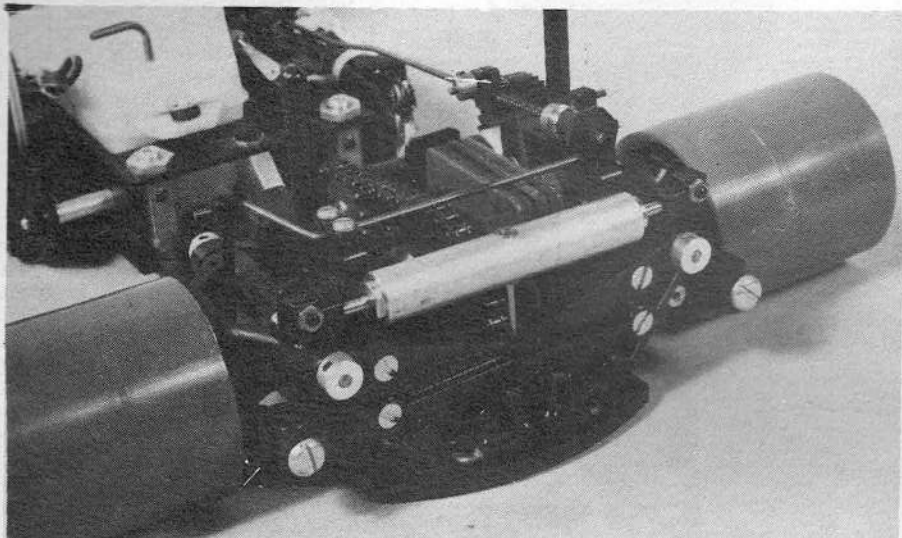
Below: the completed 'Nova' ready for the track and sporting the latest Picco 'Series-X' motor complete with PB slide carburettor and Picco tuned pipe. PB Racing are the UK importers for Picco engines and will be using these motors for the 1984 racing season.



'Nova' chassis looks and feels very strong and would need some horrendous punishment (5-15% hdcp final?) to distort. Tweek or chassis distortion is not something that can be built into the 'Nova' during initial assembly because the chassis holes and cutouts are all produced square, in one go. The rear motor pod steps into the centre section and is clamped very firmly in place along with a triangular strengthening wedge. The motor mount pod is now a one-piece affair.

Left: steering trackrods exposed for easy adjustment by removing the complete front-end system. Four screws retain the moulding into the chassis tube. Right: the completed rear end features a twin-disc style brake to give smoother and more positive braking action. Below right: the rear motor pod also steps into the main chassis tube to be retained by two support pillars and an alloy strengthening wedge. The motor pod is drilled to accept the usual style engine mountings plus the latest Picco base-mounting motor.





Above: the 'Nova' rear-end showing dual-action damper. By removing the central locking pin the shock is changed to mono-shock operation. Single shock action is accomplished by re-installing the pin.

The front end features a completely new, two-part bulkhead moulding. This also plugs into the chassis tube and can almost be described as a modular front end. The front suspension system is also changed, exit the torsion bars and enter coil spring ride height adjusters coupled to a single constant volume damper. A single damper is also featured at the rear end which cunningly converts from mono-shock to single shock action by simply removing the locking rod. The double action damper gives you two choices of configuration to suit your driving characteristics on different circuits.

Construction

I must confess to a certain amount of trepidation as I thrust my hand into the box full of plastic bags. I need not have worried as the very good instruction sheet smoothed out most problems. A lot of hard work has obviously gone into producing these instructions and it is gratifying to see this aspect of kit production becoming improved.

For those who have built PB cars before, very little will seem different in the actual assembly. As mentioned earlier producing a square 'untweaked' chassis is not a problem

as everything bolts together true. As construction progressed various points came to light giving different impressions.

The servo saver is exactly the same unit as used by the 'Alpha' and 'Alpha GP' models. This unit is a proven worker but to my mind is difficult to get to once installed into the car. Adjusting the servo linkage requires the removal of the steering servo and front suspension mounting. However if you make sure it is right in the first place no problems should be encountered.

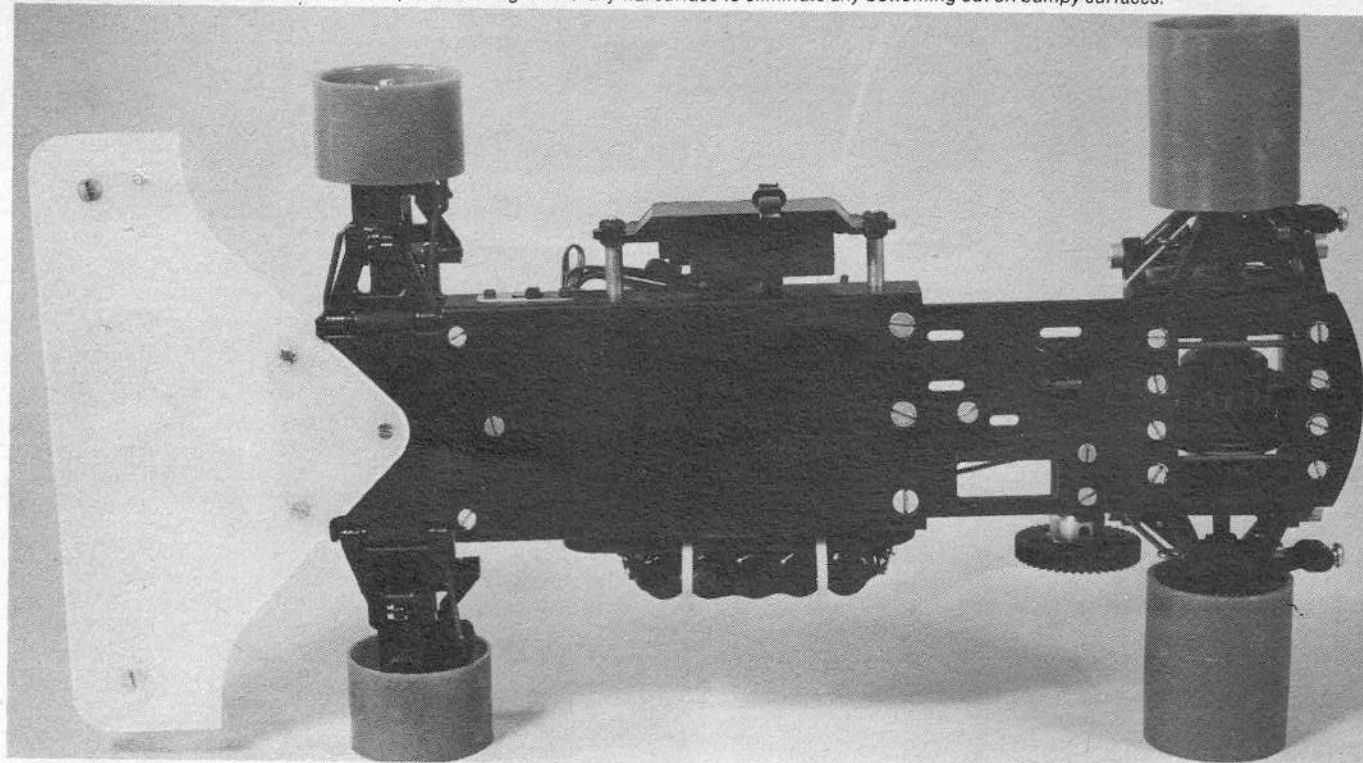
The front bumper steps into a wedge shaped groove in the chassis bottom, producing a totally smooth bottom.

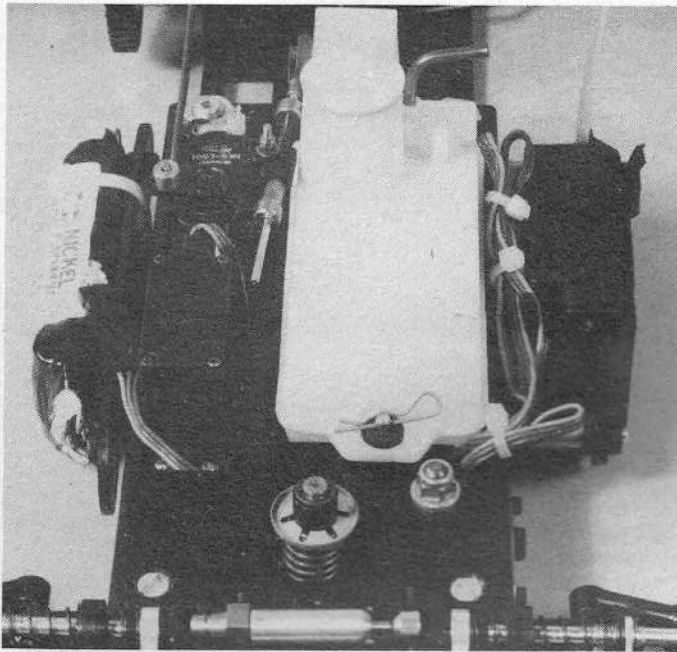
Radio installation is in my view an excellently produced system. Both receiver and receiver Ni-Cad are flexibly mounted onto the main chassis and are easy to get to for removal and maintenance.

Moving onto the rear-end, this is basically the same unit as featured on the 'Alpha GP' car, although now includes the quick-wheel change system and twin disc brake as standard. The convertible shock absorber is mounted onto two angle brackets fixed to the upper wishbones with self-tapping screws. I must confess to feeling dubious about the reliability of this system in the event of a rear-end shunt.

I found the basic construction of the 'Nova' very straightforward and involving. PB also supply a setting-up sheet full of methods to get the best from the car in a variety of situations.

The chassis underside of the 'Nova' has been produced to give a totally flat surface to eliminate any bottoming out on bumpy surfaces.



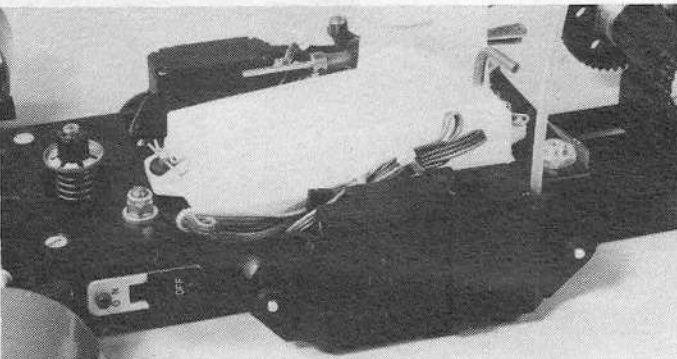


Taking the view that the designer/racer knows best I followed these points to the letter ready for the first outing.

Conclusion

Producing accurate 'Track Tests' of R/C cars and sophisticated 1/8th scale suspension cars in particular, is an almost impossible task. Quite simply it is impossible to quantify the performance of an R/C model car in accurate, technical terms. However if proof of the pudding is needed then results gained and opinions expressed by actual drivers should point the way. In this respect the PB 'Nova' is already coming out tops. Wins in National BRCA competition include Saloon and Sports/GT at Southampton and Saloon at Tibshelf, not bad for a first outing against established opposition. At lesser levels the 'Nova' has also been warmly received. The cars handling characteristics and tuning adjustments are sufficiently different to cause initial consternation, although experience has reversed the effect. The only bad comments we have heard have come from those who don't actually race 'Nova's'. How strange!

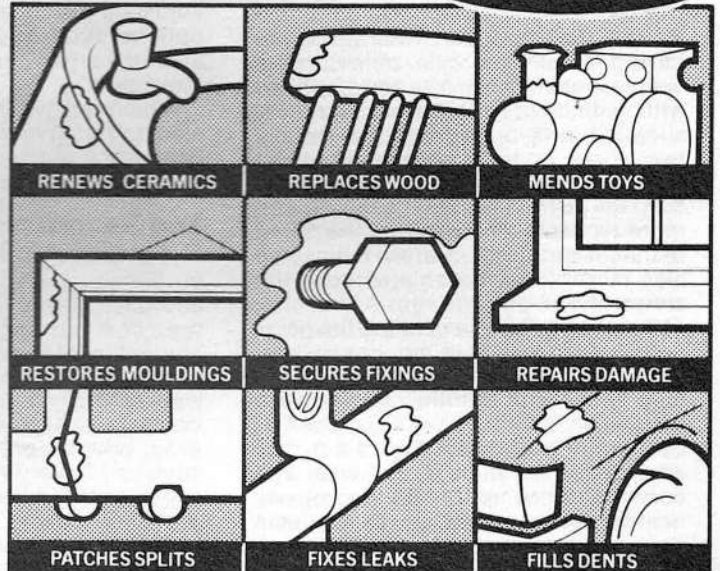
Price £179.50. Manufacturer PB Racing Products, Downley Road, Havant, Hampshire PO9 2NS, England.



Above: the central chassis tube provides the mounting point for all the ancillary equipment. Servo's receiver, Ni-Cad pack and fuel tank. Below: Ever Ready 6V Ni-Cad pack is intended for use with the 'Nova' retention system although other battery packs will fit. If 6v is too much remove one of the cells. Note throttle servo fixed in with tie-wraps. Bottom: receiver fits snugly into a specially moulded carrier which also includes the aerial tube for easy maintenance and crystal changing. Note cut-out for radio switch.

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THERE ARE TWO ways of controlling the speed of an electric 1/10th scale buggy — a resistor controller or an electronic controller. Both styles have their adherents and detractors but it is true to say that most newcomers' introduction to the sport will be made having a resistor style of controller simply because all kits are supplied with such devices. Resistor controllers supplied with buggy kits are usually two, three or four stage units, servo operated to select various resistors to drop the current flow to the motor. The more resistors, or the higher the rating of the resistor (ratings are in Ohms) the less current will be able to flow, the slower the buggy will run.

Simplicity and low cost are the paramount features of such controllers, although the actual circuits involved may be difficult to follow for the non-technically minded, they are produced commonly as shown in Figs. 1 & 2. Disadvantages are high rate of wear and current consumption if improperly maintained and wastage of available power by conversion into heat in the resistors. Although the actual current does go down as the resistors are put into the circuit to slow the motor down, a fair percentage of the actual current consumed is lost in the form of

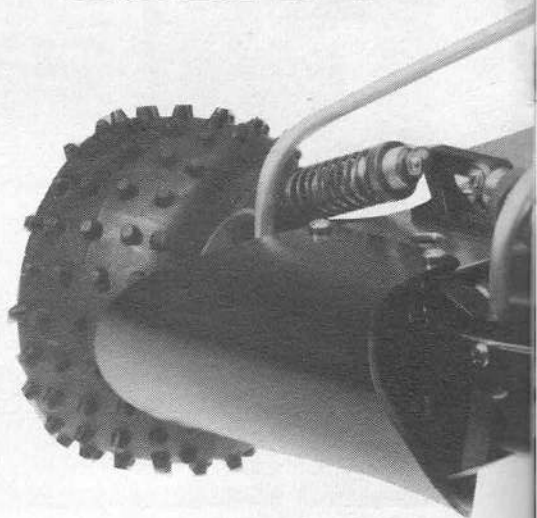
tronic controllers can use quite high currents to drive the power output transistors. This style of controller does score in speed of response, reliability and general ease of setting up and adjusting a range of customising options such as dead band, reverse speed and response to stick movement.

Whichever style of controller you elect to use, there are ways of ensuring best performance and a list of 'dos and don'ts' that should be followed.

Top performing resistors

It is essential that moving contacts on resistor controllers are both clean and have correct contact pressure. In the commercial electronic world, contact pressures are set up using special measuring equipment, but all we have is our experience to go by. The contacts must be smooth, polished and even, otherwise they will wear out the surface of the circuit board that they wipe over. Very fine, well used, 'wet or dry' emery paper is suitable for cleaning these contacts. The actual wiper board or printed circuit board must also be totally clean but do not use emery paper to do so. When both are absolutely spotless, ideally an electronic contact lubricant should be

Serpent COBRA



applied regularly between runs. If there is a good electronics shop in your vicinity you may be able to obtain an aerosol of contact cleaner/lubricant.

The wipers must contact the board evenly. Any minute gaps and the current will spark across and burn into the contact and the board. Once this process starts it will rapidly accelerate until the board is eroded away, this 'spark erosion' forms the basis of actual

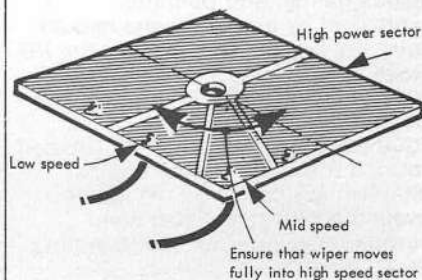
Speeding Ahead!

Speed controllers for off-road electronic or resistor?

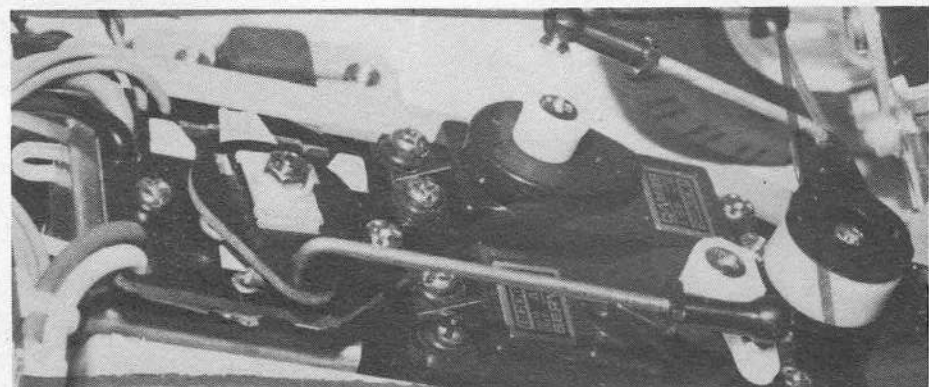
heat. Just think of an electric 'fire,' this is nothing more nor less than a resistor connected up to mains electricity.

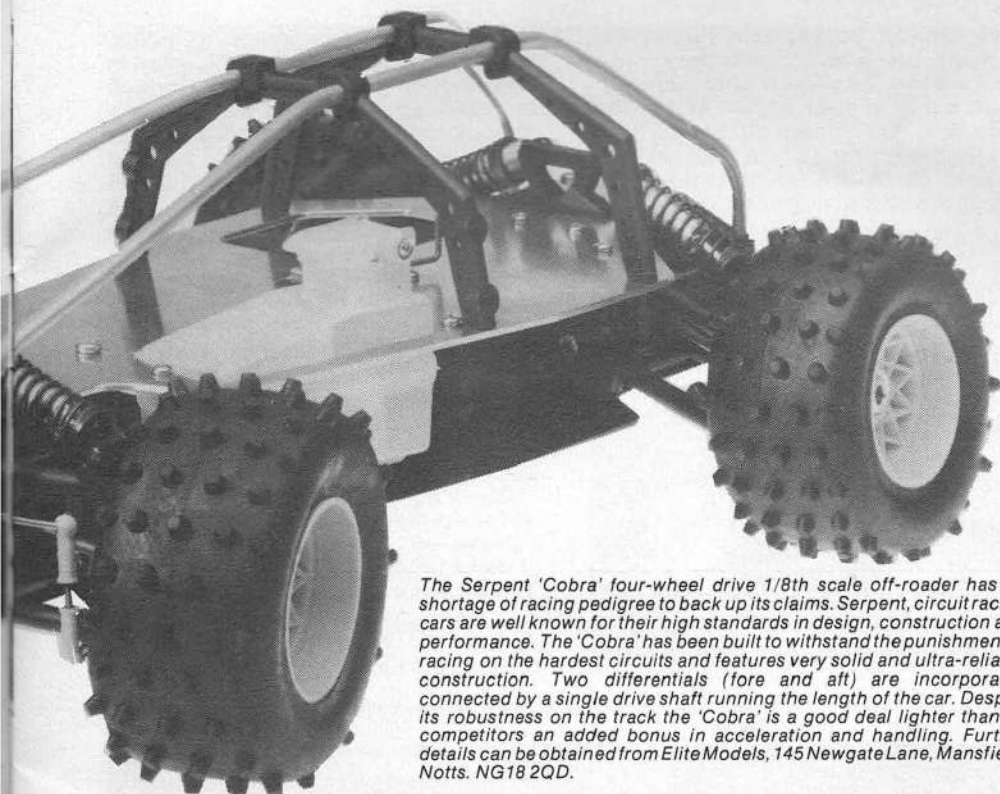
Electronic controllers, although apparently more expensive, do have certain advantages. They replace one servo and because they incorporate a power supply system for the R/C receiver, also enable one to dispense with receiver power battery pack. It is wrong to assume that a speed controller even if fitted with a 'Turbo' relay will consume no power at all. The relay requires current to operate and also the relay contacts become reduced in efficiency during usage and their contacting resistance acts as a load on the drive battery. Non-relay style elec-

Fig. 1



Below: speed control layout featured on the Tamiya 'Subaru Brat.' This control provides three stages of operation, medium, fast and reverse.





The Serpent 'Cobra' four-wheel drive 1/8th scale off-rader has no shortage of racing pedigree to back up its claims. Serpent, circuit racing cars are well known for their high standards in design, construction and performance. The 'Cobra' has been built to withstand the punishment of racing on the hardest circuits and features very solid and ultra-reliable construction. Two differentials (fore and aft) are incorporated connected by a single drive shaft running the length of the car. Despite its robustness on the track the 'Cobra' is a good deal lighter than its competitors an added bonus in acceleration and handling. Further details can be obtained from Elite Models, 145 Newgate Lane, Mansfield, Notts. NG18 2QD.

mance. As well as connecting the controller to motor and battery pack, it will be necessary to connect it to the receiver. The receiver connection carries power from the controller to the receiver and also the signal from the receiver to controller. Many controllers make a virtue out of providing a higher than standard voltage for the receiver so that servos move more rapidly. This can be a mixed blessing particularly with many modern servos which use high speed 'coreless' motors. They are already very fast and higher voltage can destroy servos. I would recommend that if there is an option on output voltage from the controller you choose five volts and rely on the servo basic design to provide the speed, not on over running the servo by application of higher than the manufacturer's recommended voltage.

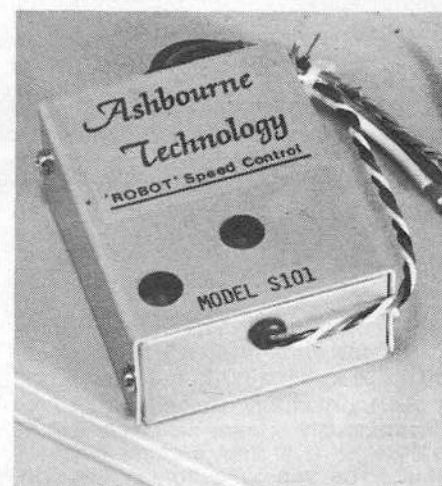
Finally, do read the instructions fully and carefully before attempting the installation particularly with regard to polarity of the power input connections. If you have any doubts at all, consult the person from who you purchased the controller before fitting it.

industrial processes for shaping metal! Check carefully to ensure that the linkage to the servo does not tend to lift the wiper arm as it rotates. If this happens, free off the linkages until the operation of the servo moving the wiper across the board does not break the smooth contact anywhere.

will not reach the full speed position an adjustment of the trim can then be made to improve the situation.

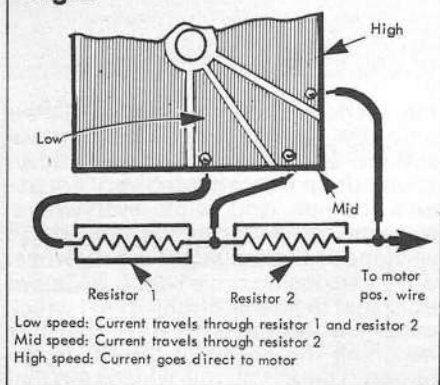
Electronic hints and tips

Electronic controllers generally require the user to have a small degree of knowledge of their R/C equipment and electrical principles. You should at the very least be able to distinguish between positive and negative before attempting to install the controller. Electronics do not take kindly to water so do ensure that the controller is really well protected from the possibility of a ducking! Although some controllers are protected against being connected up the wrong way, others are not. The diodes necessary to achieve the protection can drop the voltage across the controller, a definite drain on perfor-



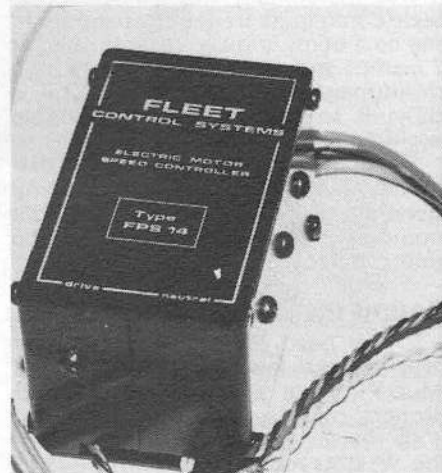
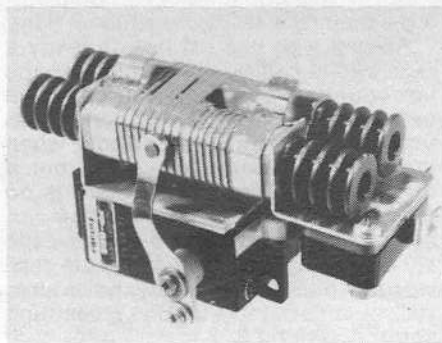
Above: specialist buggy electronic speed controller from Ashbourne Technology featuring three relays (forward, full-power, reverse). Below: the Fleet controller, fully encased in a tough metal case for maximum protection.

Fig. 2



Some controllers e.g. the Kyosho type, have leads connecting the wiper arm to the motor. Such wire must have a very flexible insulation otherwise the wire may be twisted as it rotates, breaking contact. Finally, check that the wiper arm does contact fully onto the 'full speed' area of the board. Adjust the length of the servo arm or the linkage position on the wiper to increase the travel if necessary. Try to adjust the full system so that the wiper arm is truly in the neutral position with the transmitter trim in the central position. If any wear does take place and the wiper arm

Below: a neatly produced resistor unit from Parma International. This allows the servo and speed controller to be incorporated into one unit for easy operation and installation into the car.



Rough Riders

Connections and resistance

It is only part of the story to have properly connected up the motor, controller and well charged batteries when it comes to obtaining top performance from your electric buggy. Sadly, many kits provide connecting cable which is wholly inadequate for the current it is expected to carry along with switches and connectors never designed to carry the currents demanded. Any switch, connector or cable has a resistance to the flow of electricity at normal operating temperature, we don't want to consider the possibilities of super conductivity here. If the connecting wire is over long or too small in size, there will be a voltage drop between battery and motor. Inevitably the very best speed controllers will also cause a voltage drop, but there is no need to add to this by poor attention to the rest of the circuit. Cable used for inter-wiring should be to the specification 30/0.25 (or 50/0.25 for extra heavy duty application). This specification describes the number of individual strands (30) and the gauge or diameter, of the conductor. The conductor should be copper and the cable must be specified as 'flexible.' This cable has an overall diameter of around 3.5mm and the 30/0.25 should carry around 20 amps in free air (for cooling purposes) or 13 amps if bunched.

Avoid a proliferation of connectors, the only one that is necessary is that required for removal of the Ni-Cad pack for charging purposes. Wherever possible solder connections thoroughly, do not use connectors on the motors, when you change motors use a soldering iron. It is quite possible to find low voltage (12v) irons for track-side use in most good model shops.

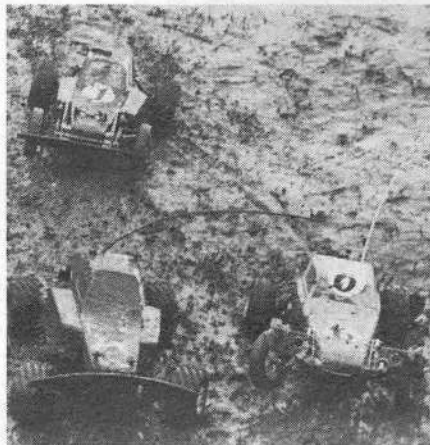
Any connectors used should be kept scrupulously clean, use methylated spirits or a proper contact cleaning fluid. The wiping action of the connectors when being plugged and unplugged should keep them clear of oxide build up. Gold or silver plated connectors may be marginally better than the more usual tinned connectors in use. Incidentally, the 'Mate 'N' Lock' style connectors frequently used are to the best of my knowledge only rated at 7.5 amps, not really adequate for a high performance electric vehicle, but it is difficult to track down any suitable higher current alternatives.

So, if your buggy won't last the distance, take a look at your wiring and general electrical preparation you could be pleasantly surprised with the improvements that can be made.

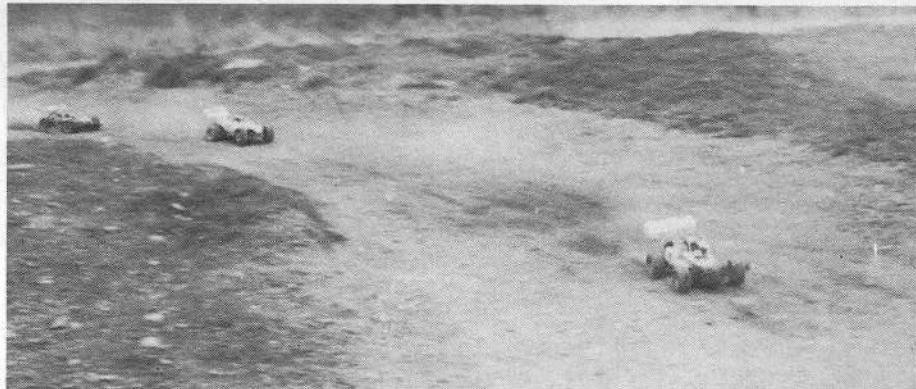
Round the circuits

I have been to two race meetings over the past few weeks, the Bicester 'Mud Pluggers' and the Mendip 'Sand Stoners' one day events. To be fair to both the Bicester and Mendip clubs, the weather conditions were beyond

their control, steady rain turned the carefully prepared Bicester track into a mud wallow, whereas if only there had been a tiny shower of rain at just the right time, the Mendip dust could have made seeing one's car just a little easier. Both these purpose-made tracks are obviously the result of a lot of



Above: lost in the mud! Three cars try and make it across the finishing line, but who won? Below: the Mendip dust, fantailing out from behind the cars.



hard work on the part of members and I for one count it as a privilege to be able to run my car on their circuit.

The Bicester mud, highlighted the problems of lap counting when grime obscures the numbers positioned on the cars. Many drivers are totally oblivious to the importance of correctly positioning the numbers in the first place, then seem to choose not to use those provided by the organiser, preferring to use their own artistically produced masterpieces. They then add insult to the whole mess by complaining if their race scores don't seem right.

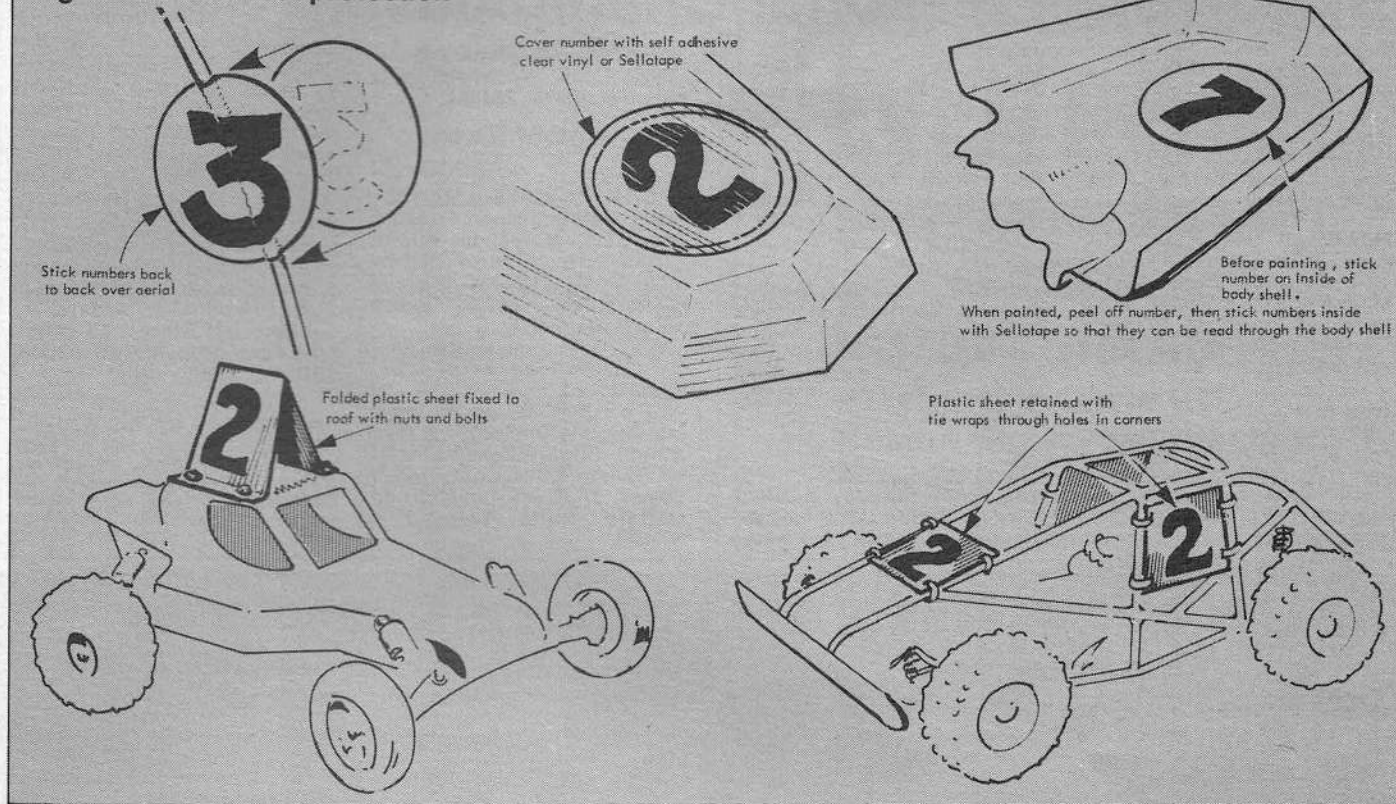
As one who has sat beside many a race circuit calling out numbers to the lap counting officials I can say from experience it requires total concentration to call out numbers correctly when they are all clearly presented, but if they are not, forget it. If there is no proper place for numbers on your car, as sometimes is the case on roll-cage style cars, make a place. If you are at all worried about your bodyshell's provision for numbers, do something about it. See fig 3.

Still on the subject of numbers, during the electric finals at Bicester, in very muddy conditions even though the rain had stopped, it was still very difficult to read the numbers and I had the brainwave (some would argue that it was a momentary instant or relative sanity) of asking the drivers to call out their car numbers as they crossed the timing line which were then relayed to the lap counters by Alec Hudson the race organiser. This worked surprisingly well, cheating being next to impossible as the presence of Alec by the timing line was a check that a car was actually passing and largely served to reinforce what his opinion as to what the number was in the first place.

Dusty conditions at Mendip gave IC drivers problems. Even quite comprehensive air filtering became rapidly choked up causing engine problems. Terry Tawton driving, I believe, someone else's 'Yankee' 4 x 4 had a neat system for keeping the differential bevel gears clean, simply a tapping on

the silencer to duct a blast of oily air onto the gears. The largely gravel surface although packed well down soon cut up badly leaving very noticeable humps and dips everywhere. Nonetheless, few cars were broken, I saw one or two instances of four wheel drive cars losing drive shafts, but apart from that the harsh circuit didn't wreck cars. The secret is to drive sensibly matching the speed of the car to the terrain. There is no rule which says that you have to drive flat-out on the straight although I must admit I do enjoy the chance of a little speed if it is offered. I shall certainly do my best to visit Mendip again, their proper toilets even a towel and soap in the washbasin and clean, sensibly priced catering facilities make it a civilised outing. You can drop the family off at Weston-Super-Mare on the way as well. If you run out to Bicester local family attractions include Waddesdon Manor — country seat of the Rothschilds and the Quanton Railway Centre. There you have it, race report and tourist guide all in one!

Fig. 3. Race number protection



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Contest Calendar

BRCA 1/8th National Championship Series

May 13

BOURNEMOUTH Two-day meeting. Formula; Sports/GT at Turbury Park Circuit, Bournemouth. Contact John Dales, 158 Beamish Road, Canford Heath, Poole, Dorset BH17 7SJ. Tel: (02477) 77163.

May 27

ABERDEEN Three-day meeting. Saloon; Formula; Sports/GT at Mineralwell Park Circuit, Stonehaven, Nr. Aberdeen. Contact I. Cowieson, 26 Newburgh Road, Aberdeen, Scotland.

June 10

LILFORD Two-day meeting. Formula; Sports/GT at Lilford Park Circuit, Northants. Contact Steve Taylor, Blackhorse Lane, Swavsey, Cambridge. Tel: (0954) 31323.

July 15

WOMBWELL Two-day meeting. Formula; Sports/GT at Wombwell Sporting Association Circuit, 7 Park Street, Wombwell, Yorkshire. Contact Phil Hague, 'Field View,' 103 Upper Hoyland Road, Hoyland, Barnsley. Tel: (0226) 745592.

July 22

LONDON Two day meeting. Formula; Sports/GT at Crystal Palace National Recreation Centre Circuit. Contact Steve Fagg, 75 Chislehurst Road, Orpington, Kent BR6 0DQ. Tel: (0689) 77464.

August 12

WREXHAM Two-day meeting. Formula; Sports/GT at Hoseley Circuit. Contact Jonathan

Davies, 20 Windermere Road, Little Acton, Wrexham LL12 8AN. Tel: (0978) 364854.

August 26

BRCA NATIONALS — MENDIP. Three-classes, Saloon; Formula; Sports/GT at Mendip MMRC Circuit, Nr. Weston-Super-Mare. Contact Dennis Jones, 76 Fosse Road, Newport Gwent. Tel: (0633) 278696.

September 2

WEST BURTON Two-day meeting. Formula; Sports/GT at West Burton Power Station Circuit, Nr. Retford, Notts. Contact Keith Davies, 37 Grove Coach Road, Retford, Notts. Tel: (0777) 703527.

September 16

YORKSHIRE Two-day meeting. Formula; Sports/GT at North Bridge Leisure Centre, Halifax. Contact Bryan Denton, 15 Highmoor Lane, Scholers, Cleckheaton, Yorks. Tel: (0274) 877177.

September 30

ALDERSHOT Two-day meeting. Formula; Sports/GT at Badshott Lea Circuit, Nr. Aldershot. Contact Jeff Stokes, 76 Sandhills, Farnborough, Hants. GU14 8ER. Tel: (0252) 46980.

Entries for these meetings are dealt with on a first come - first served basis. Entrants wishing for confirmation of your entry should include a stamped addressed envelope.

BRCA 1/12th National Championships series

May 19/20

CHESTERFIELD Standard and Modified class meeting at Sharley Park Leisure Centre, Claycross, Chesterfield. Contact Sheila Goodyear, 40 Twickenham Crescent, Halfway, Sheffield S19 5HS. Tel: (0742) 483112.

June 9/10

HULL Modified and Standard Class meeting at Haltemprice Sports Centre, Hull. Contact Pete Wragg, 8 Finningley Garth, Bransholme, Hull GU17 4LH. Tel: (0482) 831221.

June 23/24

EAST MIDLANDS. Standard and Modified class meeting at Enderby Leisure Centre, Enderby, Leicestershire. Contact Phil Tatham. Tel: (0530) 412949.

July 28/29

EDINBURGH. Standard and Modified class meeting at Bo'ness Recreation Centre, Bo'ness. Contact Gordon Price, 36 Main Street, Kirkilston, West Lothian, Scotland.

September 8/9

DERBY. Standard and Modified class at Rolls Royce Sports Centre, Derby. Entry closing date 8/8/84. Contact Dave Towell (0332) 771805.

September 29/30

LEICESTER. Standard and Modified class at Loughborough Leisure Centre, Leicestershire. Contact Alan Blakeman, 11 Newark Street, Leicester LE2 5SS. Tel: (0533) 898528.

October 13/14

CLEVELAND. Standard and Modified class at Thornaby Pavilion, Thornaby, Stockton on Tees. Contact Tony Wells, 10 Fawcett Avenue, Stainton, Middlesbrough, Cleveland. Tel: (0642) 591239.

October 27/28

RUNCORN. Standard and Modified class at Brookvale Leisure Centre, Runcorn. Contact Paul Hatton, 12 Southdale, Penketh, Warrington, Cheshire WA5 2AD. Tel: (092572) 5883.

BRCA 1/10th Off-Road Championship Series

May 20

BRADFORD standard class at Littlemoor Park, Queensbury. Contact Tony Marsden, 91 Wrenthorpe Road, Wrenthorpe, Wakefield, Yorks.

May 26/27

EUROPEAN INTERNATIONAL OPEN Royal Agricultural Showground, Stoneleigh, Warwickshire. Contact SAE to 'Model Cars,' PO Box 35, Wolsey House, Wolsey Road, Hemel Hempstead, Herts. HP2 4SS.

June 3

SOUTHEND Standard class. Venue TBA. Contact John Newton, 4 Aylesbere, Thorpe Bay, Southend on Sea, Essex.

June 10

MILTON KEYNES standard class at Elfield Park, Milton Keynes. Contact Dave Meadows, 63 Aylesbury St., Fenney Stratford, Bletchley, Milton Keynes.

June 24

CHINGFORD Standard and Modified class. Venue TBA. Contact Dave Kendall, 16 Springfield Road, Chingford, London E4.

July 7/8

EDEN PARK OVERLANDERS two day meeting standard and modified class at London Transport Sports Gala. Contact Jim Paffett, 2 Hawksbrook Lane, off South Eden Park Road, Beckenham, Kent.

July 22

HARE AND HOUNDS standard class at Hare and Hounds, Batley, Yorks. Contact Tim Fountain, Hare and Hounds, 7 Batley Road, West Ardesley, Nr. Wakefield, Yorks.

August 5

LIVERPOOL Modified class at the Punch Bowl Hotel, Sefton, Merseyside. Contact Steve Newey, 15 Patricia Grove, Bootle, Merseyside.

August 19

SOUTHAMPTON. Modified class. Contact Tim Reynolds, 23 Baddesley Close, North Baddesley, Southampton. (0705) 739734.

August 26

MILTON KEYNES Modified class. Details as above.

September 8/9

LILFORD Modified and Standard class at Lilford Park, Nr. Oundle, Northants. Contact Steve Taylor, 30 Blackhorse Lane, Swavsey, Cambridge.

September 16

SCARBOROUGH: Modified class at McCain International Sports Site. Contact D. Webb, 60 Newlands Park Grove, Newlands Park, Scarborough, N. Yorkshire. YO12 6PT.

September 23

BRADFORD Modified class. Details as above.

September 30

BASILDON. Standard class. Contact: Jim Stone, 121A Collier Row Road, Romford, Essex, RM5 2AT. (0708) 64319.

All drivers are welcome to enter these events and BRCA membership is not necessary although only BRCA members can score points towards the Championship title. The only exception to this is the European International Meeting for which only BRCA members can enter.

International 1/8th Scale Meetings

May 20	Swiss GP Brugg
June 3	Dutch GP, Heemstede
June 17	French GP, Paris
July 1	British GP, Southampton
August 5	European Championships, Brugg
August 26	Italian GP, Sicily
September 9	Belgium GP, Rumst
October 7	Monaco GP
October 21	Portugal GP

1/8th Scale Invitation

June 10	Mendip
June 17	Tibshelf
July 29	Ballymena, N. Ireland
August 15	Bournemouth
September 9	Southampton
September 23	Heemstede 3 hour
October 14	Mendip 4 hour

East Midlands PB League

May 20	Lilford	Saloon
June 3	Wombwell	Sports/GT
June 24	West	Saloon
	Burton	
July 8	Boston	Saloon
August 15	Wombwell	Saloon
September 9	Tibshelf	Sport/GT
September 22/23	W. Burton	Presentation

All drivers are welcome to race at these meetings but the aim of the series is to encourage lower handicap drivers. Works sponsored drivers cannot score points.

International 1/12th Scale Meetings

August 9/18	World Championships, Denmark
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Vauxhall Motors League

12/5/84	Standard
2/6/84	Modified
7/7/84	Standard
4 & 5/8/84	Two day meetings
15/9/84	Modified
20/10/84	Standard

Entry £3.00 12 noon start. Venue Vauxhall Motors Recreation Club, Vauxhall Motors, Luton. Contact Keith Helmke (0582) 864420.

Ally Pally Carpet League

May 26
June 16
July 21
September 1
October 6
November 17
December 8

Entry £3.00. 3 heats. A to F finals. 4.00pm at Watford Leisure Centre, Horseshoe Lane, Watford, Herts. Contact Nick Adams 01 866 5945.

Stafford Carpet League

May 27
June 17
September 16
October 7
November 4
December 16

Entry £3.50, venue GEC Stychfields Social Club, Stafford. Contact John Robson, 0785 662242. Motors will be issued by the organisers for use during the meeting.



BRITISH GRAND PRIX 1/8th Scale IC Weston Shore, Southampton June 30-July 1, 1984

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Directions to circuit



BRCA 1/8th Off-Road Championship Series

May 20
BRADFORD 1/8 Restricted.. 1/8 Unrestricted Entries to A. Marsden, 91 Wrenthorpe Road, Wrenthorpe, Wakefield, Yorks.

May 28
STONELEIGH 1/8 Restricted.. 1/8 Unrestricted Entries SAE to 'Model Cars' Buggy Bonanza, MAP, PO Box 35, Wolsey House, Wolsey Road, Hemel Hempstead, Herts. HP2 4SS. Entry fee £3.00.

June 10
REMOTE WORLD 1/8 Restricted.. 1/8 Unrestricted Entries SAE to R. Cloke, Gatehampton Farm, Goring on Thames, Reading, Berks. Entry fee £3.00.

July 15
SOUTHAMPTON 1/8 Restricted.. 1/8 Unrestricted Entries SAE to Tim Reynolds, 23 Baddesley Close, North Baddesley, Southampton. (0705) 739734.

August 5
MENDIP 1/8 Restricted.. 1/8 Unrestricted Entries SAE to Denis Jones.

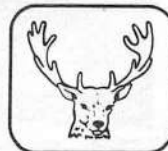
August 12
REMOTE WORLD 1/8 Restricted.. 1/8 Unrestricted Entries SAE to R. Cloke.

August 19
LILFORD PARK 1/8 Restricted.. 1/8 Unrestricted Entries SAE to S. Taylor, 30 Blackhorse Lane, Swavest, Cambridge.

September 9
BASINGSTOKE 1/8 Restricted.. 1/8 Unrestricted Entries SAE S. Pyne.

September 16
BICESTER 1/8 Restricted.. 1/8 Unrestricted Entries SAE to Alec Hudson, Howes of Oxford, 9-10 Broad Street, Oxford. Entry fees £4.00.

September 23
BRADFORD 1/8 Restricted.. 1/8 Unrestricted Entry SAE to A. Marsden, 91 Wrenthorpe Road, Wrenthorpe, Wakefield, Yorks.



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TAMIYA SUBARU		KYOSHO SCORPION	£69.99
BRAT	£52.99	KYOSHO BEETLE	£69.99
FROG BUGGY	£69.99		

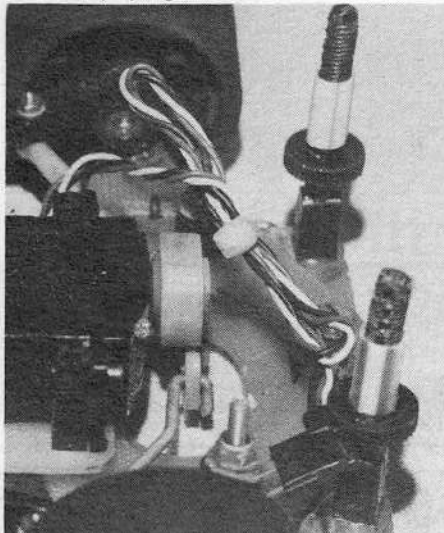
KYOSHO SCORPION SPARES IN STOCK.

TRY AS I MIGHT it is difficult to avoid the odd cliché in writing these articles. By the time you read this (there goes another one!) the budget will be long gone, and you will hardly have noticed that the application of VAT to hot take-away food has left the prices at *McDonalds* unchanged. Yet there is news that can render at least one part of Ronald's lunch useful to the 1/12th racer. The straw!

Let me explain.

Those of you using *Schumacher* body posts may notice that the action of the body moving up and down the threads tends to chafe the nylon and in the worst case can cut into the post. By fitting a short length of straw over the post, and clamping it down with the upper post nut, the body can move up and down without chaffing on the post. To fit these items, proceed as follows:

Cut two lengths of straw about 1/4 in. to 1/2 in. long. Slit one lengthways and coil it inside the other one. Now push these two over the post. Obviously you can make the protectors any length. The idea comes from Team *Schumacher* and was developed (*developed? ... Ed*) to allow the body to 'float' on the posts and thus not affect the chassis. The main advantage to the club racer is of course longer body post and bodyshell life. The trick is to get your *MacDonald's* drinking straws without paying for the meal!



Above: the *McDonald's* drinking straw modification, what will they think of next? Chassis made from polystyrene burger containers.

Handleability

Living in Watford and racing at clubs in Hatfield and Luton is very fortunate for me when it comes to finding material for these articles. Each week I see at least half the works team drivers and many other top UK drivers. Like it or not, it is mostly from these people that new ideas evolve and filter down to club level. For some time now everyone has been trying to lower the centre of gravity of their cars in order that the tendency to roll in corners is reduced.

The largest weight, Ni-Cads, are about as low as they can be, but attention has now been turned to the speed controller. In general (due to the use of relays for full power and reverse) an electronic speed controller weighs around 3oz. Mounted at least 1 1/4 in. above the ground, it can have quite an effect on the roll characteristics of the car. So to counteract this, work has started on lowering the speed controller. First came a version where the circuit board was on the shaker plate

Force Electronics has enabled me to kill two birds with one stone.

Force Electronics have been marketing the 'Laser Turbo' speed controller for some time and now Glynn Pegler has introduced a version which features the relays fitted below the circuit board. It is quite wide, but very short and thin, enabling it to be fitted in the aforementioned position behind the steering servo taped directly to the chassis. Since the relays are the heaviest item above the batteries in a

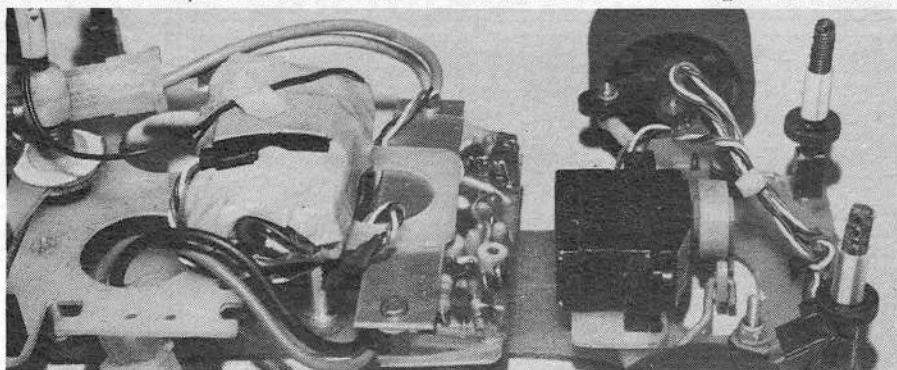
Weight!

The 1/12th scale racers nightmare, how to use it to your advantage

with the relays hanging down between the shaker plate and the chassis, this was said by those who tried it to be a great improvement, but now a new type is available. The relays are below the circuit board, and the whole thing will fit behind the steering servo, servo-taped to the chassis with the receiver now placed on top of the shaker plate. So far, having spoken to people using *Demon*, *Associated* and *Schumacher* chassis' all say that the handling of their cars has improved and is more

normal layout they are now positioned as low as possible. The normal wires for power supply motor leads and receiver connection are slightly longer than normal. Performance-wise the 'Turbo Compact' performed faultlessly throughout as is to be expected from this fine example of the electronic controller art.

However onto the theory. The first thing I noticed was a tendency for my car to oversteer slightly more than normal, due to the weight distribution



Above: the latest specification, 'Laser turbo' speed controller situated as low as possible onto the chassis. The 'Laser' should fit into virtually every manufacturer's chassis' with the same results.

stable in the 'power-off situation during cornering, that is, less inclined to roll if you turn in sharply or shut off power in mid corner for any reason.

I had seen and heard enough to be tempted to try the theory but lacked the funds to invest in a new controller having a perfectly excellent *Demon* which has served me well for years. However, the opportunity to try the latest 'Laser Turbo Compact' from

being more toward the front. Having adjusted the suspension on my 'C'-Car to suit, the handling was certainly different, there is a reduced tendency to roll, the car sliding more when corners are approached too quickly. It is not easy to describe the effect, but there is an improvement. If you want, or need, a new speed controller, then this type of low mounted unit should be seriously considered.

Tx Talk

It is sometimes quite startling how certain products can catch on with almost no publicity. The normal reason that everyone flocks to buy new gear from their model shop is that such and such an item has just been used by Dobson/Davis/Adams/Olson (delete as applicable) to win the last meeting that mattered. But one very important piece of 1/12th equipment is always mentioned in race report tech charts, but never has an influence on the final results. I am speaking of the transmitter. If use by the best racers guaranteed sales, then MacGregor would be swamped with requests for their old style two channel transmitters, "just like Andy Dobson's please," and Futaba for reintroduction of the old brown twin stick M series "so I can drive like Graham Davies." Yet this is not the case, which makes it all



Above: Andy Benson's interesting, re-worked Demon chassis built by father, John Benson. The Shaker plate now projects forwards and is clamped onto the front steering overthrow stops. This gives the chassis an overall stiffening up to give smoother handling. The Benson/Demon car also features a new front-end suspension system.



Left: the Futaba FPT2 LGZ R/S system features all the 'Wistles 'n' bells' that the discerning 1/12th racer could wish for. Including servo reversal servo end point adjustment for both functions, adjustable throw rates and variable length transmitter sticks. This system can be supplied as a combo (transmitter/receiver) or with the servo(s) of your choice, or as a complete system.

the more remarkable that so many people have gone out in the last two months and bought the new Futaba 'FP-T2LGX' combo, despite the fact that only one advert has appeared in the specialist press (MC April). At local meetings they appeared like 1/12th

racers round a timing desk as finals are sorted.

Taking my hard earned money along to Red Baron Models I seem to have joined the herd.

To describe all the features of this transmitter is not practical in the space available, it is better, therefore, to look at the advertised facilities most useful to the 1/12th racer. The ability to set an even throw of the steering servo to each side, being the most obvious. The steering rate switch has 'clicks' to each position thus allowing you to set the rate in exactly the same place each time. The servo reversing facility is another prominent feature. There are numerous adjustments which can be made to the throttle stick positions but these are all more useful for resistor speed controllers than the electronic variety. The transmitter is economic on dry cells, they last about three hours and to date I have suffered no interference that I could not explain. The only drawback is the price. At over £60.00 for the combo (Tx and Rx) this cannot be said to be cheap. However, it is a good unit and I have not yet come across a dissatisfied user.

Available from Ripmax Ltd., Ripmax Corner Green Street, Enfield and leading model shops.

Trinity Motors

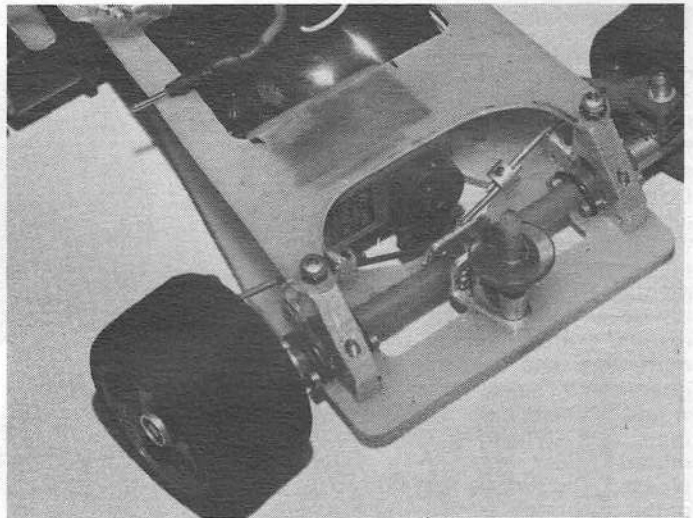
Lewis Eckett's patter has improved. As well as getting me to buy him a drink recently, he obtained one of the aforementioned Trinity motors for review. Used by the team in Denmark for the 'Sizzler' meeting, this one is a triple

On The Carpet

wind Yokomo motor, retailing in America for \$60.00. The motor is fundamentally identical to any other Yokomo modified, except that the brushgear is much smaller, being the '16D' Mura slot race motor type. These brush hoods sit on top of the large copper heatsinks which are glued and screwed to the endbell. The brush springs are insulated to prevent them relaxing under the strain of passing the high current involved; shunt wires are provided for this task.

I used the motor at the club and not at the Stafford National meeting, as you can read elsewhere! It's difficult to say that it is better than any other modified motor because certain tracks suit certain types and our club circuit may not have been ideal for this particular wind. It is certainly smooth and fast but you can't help feeling that the success of Team Schumacher will sell more motors than the actual superiority of the motor itself.

Right: close up of the Benson/Demon front-end. New alloy steering overthrow stops have been produced with large slots incorporated to allow vertical movement of the axle beam. The beam has been split in the centre to give independent movement, O-rings provide the springing and damping. Other variations of this theme are now featured on the other Demon team cars.



The best that money can buy..?

One of the problems in being sponsored by the manufacturer of a product is that you are tied to that product even if it proves to be uncompetitive. Big deal you say, I'd rather get my gear free than worry if I come first or third in the final. Unfortunately that will not satisfy the sponsor. The public only remembers winners (with a few exceptions). Don't believe me? OK. Who came second in the 1981 Eurochamps. Don't know? If I said Dave Tongue driving a *Lightening* many of you would say who? Driving a what? Dave never got a works drive nor did *Lightning* chassis sell as well as *Gemini* or *Associated's*. But the 1981 winner and his chassis fared very well, Neil Francis and the Lexan 'Monocoque.' So consider then Bill Jones who went to the Danish Sizzler in March and was in his own words 'outclassed.' In his opinion this was due to inadequacy of equipment, and so he wasted no time on his return to the UK in seeking the replacements he felt he required. At the Washington National Meeting, he was rewarded with an 'A' final third place, his best ever result. Bill spends a lot of time on his racing but as a privateer he was able to choose the equipment which allowed him to get the best out of his driving ability. Being a works driver can have its drawbacks if your sponsor does not have a winning product available. Good luck Bill, and commiserations to . . .

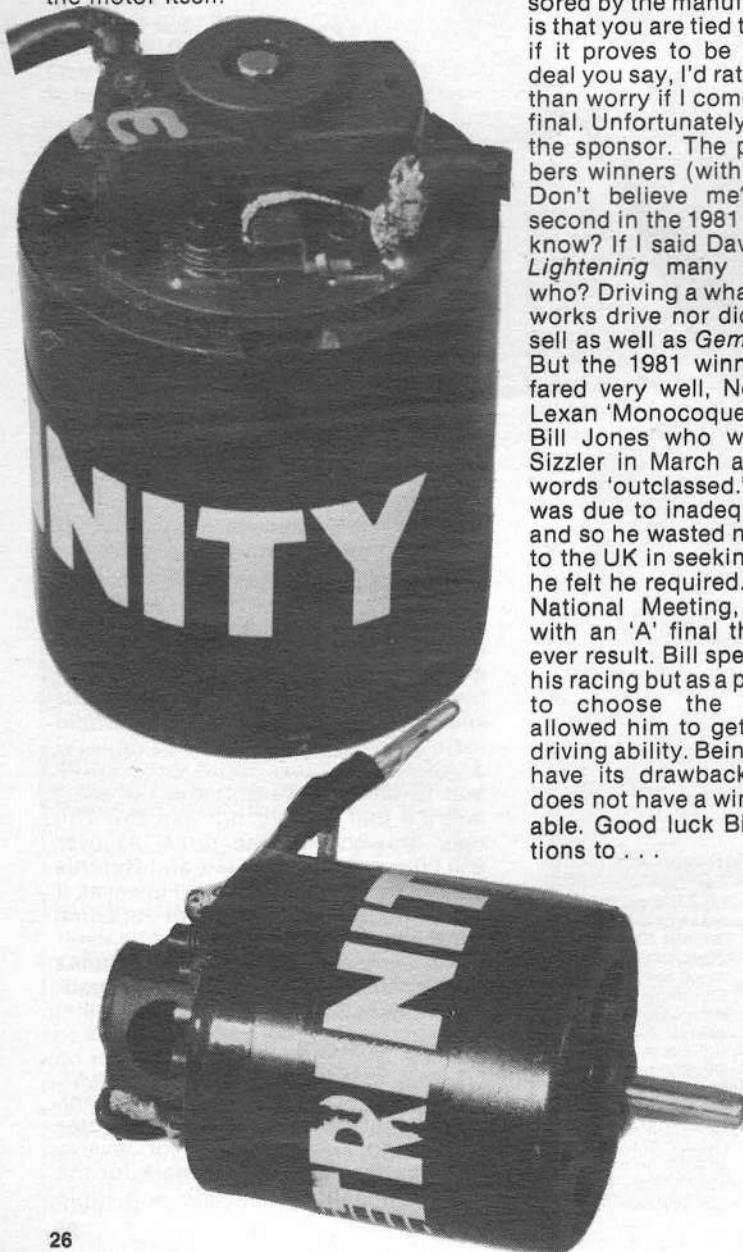
News from the *Schumacher* camp that Andy, Phil and Les are now using *Trinity* motors. Andy has a personal sponsorship deal and *Schumacher* are importing the *Trinity* range of equipment. It is understood that this ends Andy Dobson's previous deal with Mike Goddard of *MG Model Products*, who, one assumes, is probably not very happy about this turn of events. When I spoke to Andy about the situation he did not give details but stressed the importance of cells in getting the best overall performance from the car. Since *Trinity* are supplying him the pick of the 1,500 sets of cells a month they buy, this must be one reason for changing. Funnily enough, Andy has lost two National meeting 'A' finals recently through cells going flat before the end of the race!

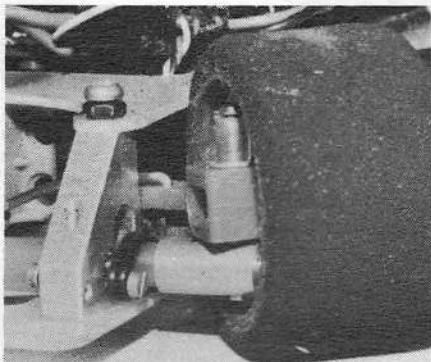
The range of *Demon Products* is expanding all the time. To complement main sales of speed controller, chassis and cells; there is now an excellent range of motors. Nick Adams is very cagey about their origins, but there can be no doubt about their effectiveness. The range consists of a BRCA legal standard motor, *Yokomo* type and various different winds of modified motor, again *Yokomo* based. Quite a few of these black can motors with their distinctive red and black reflective labels have been bought and used recently, and they are very consistent and quick. Notable success so far was Andy Benson using one of the triple winds at the Watford National meeting in February. He was second fastest qualifier. The standard version will not be seen in competition until May 5 (like all other *Yokomo* standards) but there are many examples currently being used at club level. Pester your local model shop or *Demon Products* direct.

Modified motors

All sports eventually suffer from rules which are inadequately worded. Tennis had its 'beaded' racquets (banned), Formula-1 water bottles for 'brake cooling' (banned) and long

Left: the Trinity modified motor has proven to be both powerful in performance and controversial in the legality of its operation (in this country). Even so the Trinity modified is certainly an excellently produced product incorporating a great deal of motor know-how culled from actual racing experience.





Above: close-up of the O-ring suspension and damping system. Front steering blocks remain sprung but with neoprene tubing instead of coil springs.

jumping the 'barrel roll' jump (banned).

Before the start of Saturday's modified meeting at the Stafford BRCA National Meeting, racing organiser John Robson convened a meeting of the BRCA 1/12th reps present to discuss the eligibility of the *Trinity* modified motor and after a brief talk it was agreed that the motors would be allowed. Racing started, but a protest was posted soon after stating that these motors were illegal since they were advertised at a price above the BRCA legal limit of £35.00. This protest was based on Ted Longshaw's advert

in an R/C car magazine stating a price of £49.50. This protest was upheld and it was announced over the PA that anyone running *Trinity's* would have their heat times disallowed.

At this point I should explain the modified motor rules.

A modified motor must be made from any commercially available components, can, magnets, armature end-bell and these can be changed or modified in any way. However, if this motor is sold commercially as a complete unit, it must have a label stating the origin of production and be sold for less than £35.00. As you can deduce, there is no limit to the cost of producing a scratchbuilt, one-off motor, which need bear no label.

Returning to Stafford, Team Schumacher then proceeded to remove the *Trinity* labels from their motors and ran them in the first heat as scratchbuilts from which their times were disallowed.

There is no doubt that the BRCA rules as written were upheld by the organisers *Schumacher* were unprepared in as much as, had there been no labels on their motors then those motors would have been legal scratchbuilts, removal of the labels was enterprising to say the least but not in time to avert protest.

Now that the no-ceiling price limit is established for scratchbuilding motors, the manufacturers can build the best motor possible, give it to one of their team drivers and advertise the winning result so that the 'also-rans' will buy the commercially available BRCA legal derivative.

Finally, at all the National Meetings organised so far, the difference in heat times between the modified and standard classes has been a matter of seconds. The difference, price-wise, between standard and modified motors is £26.00.

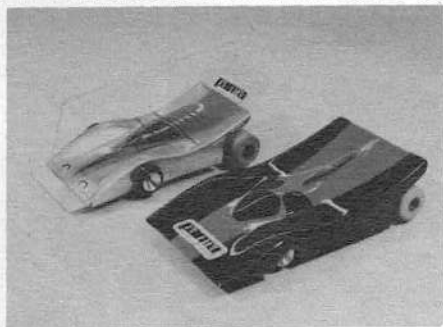
This is definitely a motor section now, so I will also mention *Igarashi Pro-Slot 05* motors, from *One-O-One Models*. These grew rapidly in popularity in 1982, but faded in the face of competition from *Associated* and *Parma*. However, they are back and being marketed by *One-O-One* and Keith Helmke. There are two types, the traditional '05,' and the *Sping* type with slots in the can to allow commutator treatments ('Mr. Cool') etc. to be applied. The '05' is £8.50 and the *Sping* type £8.50. Andy Benson may be using this motor until the *Yokomo* is legal, so this will give some clue as to their effectiveness. Keith Helmke can be contacted on (0582) 864420 for further details.

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Starting Point

DURING THE PAST two years the R/C sport of 1/8th scale Off-Road racing has grown dramatically in the U.K. Initially, all the kits to build suitable cars came from the Far East, but now there are both home produced and Continental European products available in large numbers. Just what do you need to do to take part in this exciting activity, what do you need to buy?

Fast, exciting, spectacular, noisy, challenging, all these adjectives apply to the rapidly growing sport of 1/8th scale off-road racing. If driving a rugged high powered scale model car in competition with others of a like mind, or just running it around on field or garden attracts you, then why not take the plunge and have a go.

R/C cars powered by Internal Combustion (I.C.) engines are most commonly built to a scale of 1/8th of full size, although there are a few kits for 1/10th scale I.C. cars around. Engine size is generally 0.21 cu.in. capacity (3.5cc) although a few engine manufacturers produce 0.25 cu.in. motors for sports use. These larger capacity engines are not eligible for competitions, but will almost certainly fit the cars designed for 0.21 cu.in. motors. Control of the car is by a two-function R/C system operating steering and throttle/brake control. A clever linkage system allows the throttle control stick on the transmitter

to work both brake and throttle. Engines are fitted with a centrifugal clutch which enables the engine to tick over with the car stationary.

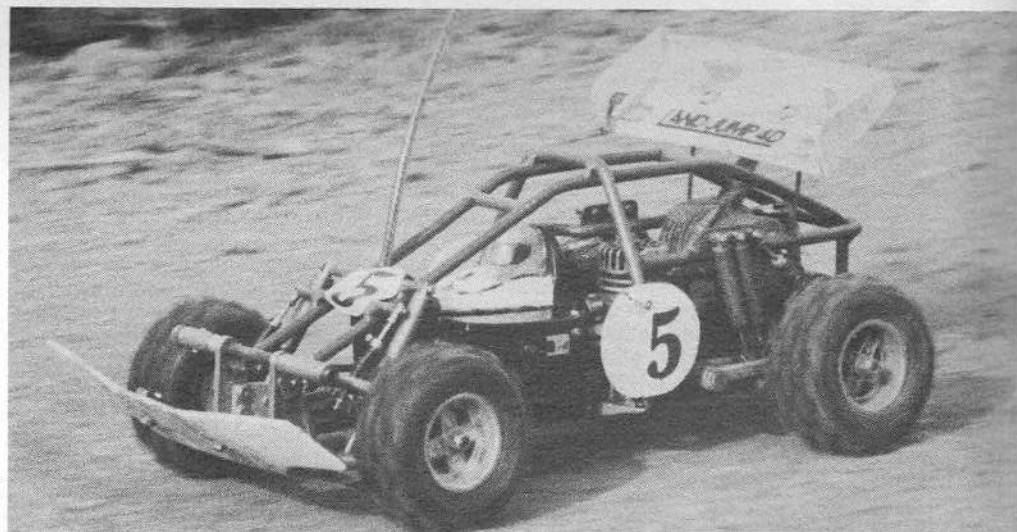
Although the composition of the fuel is not limited, the capacity of the fuel tank is, only 125cc of fuel may be carried for competitions, most kits include a suitable size fuel tank.

Two types of chassis are commonly found on the cars, 'ladder' style or a flat plate which can be either a pressed metal pan or shaped G.R.P. (Glass

Reinforced Plastic) plate. To the chassis are bolted suspension mounting points, engine mounting blocks, a gearbox or some form of reduction gearing between engine and rear axle, fuel tank and R/C equipment.

Suspension falls loosely into two styles, swinging arm or wishbone. Although the swinging arm style of suspension does tend to result in greater suspension movement and thus potentially a bit better road

Below: the Kyosho 'Land-Jump,' one of the most successful and popular 1/8th Off-Roaders to hit the circuits.



1/8th Scale Off-Road

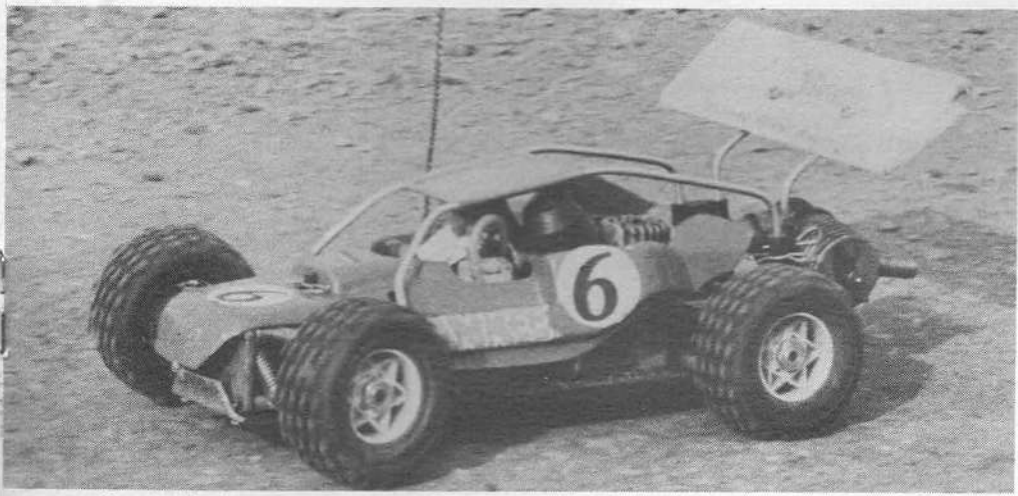
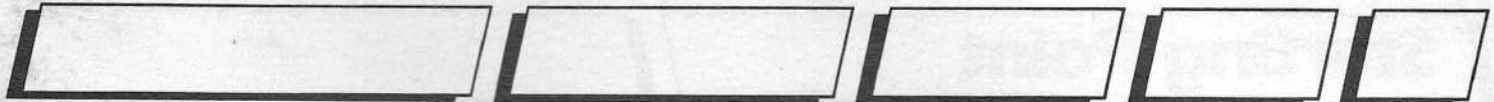
When the going gets tough – the tough get going!

Micro-Racing 'Cross-Racer'

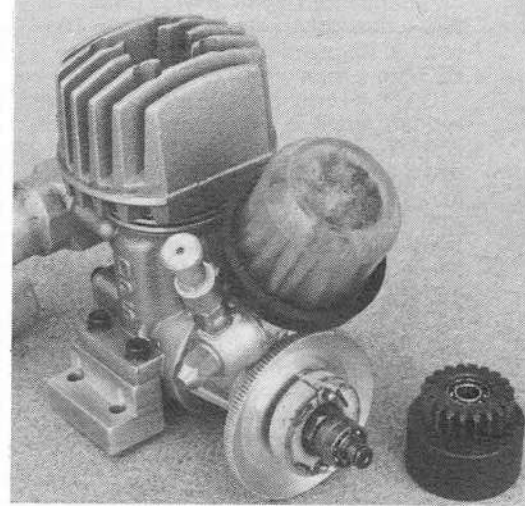


SG Leopard 4WD





outside of the turn to rotate more than that on the inside. Up to three differentials can be fitted into 4-wheel drive cars, on each of the front and rear axles and the 3rd between front and rear in the drive shaft. The 3rd differential is a luxury, particularly when you consider that each extra differential will add around £30 to the cost of the car. Two-wheel drive cars are fitted with just a single differential on the rear axle.



Above right: the SG centrifugal clutch system shown fitted to an OPS engine. PTFE clutch shoes pivot outwards and grip the inside of the clutch bell to produce drive. Below: throttle and brake over-ride system allows both functions to be controlled from the same transmitter stick.

Above: twice European champion in 1982 and 83, the Yankee 84 x 4 Enduro has found favour with a great many drivers in the UK.

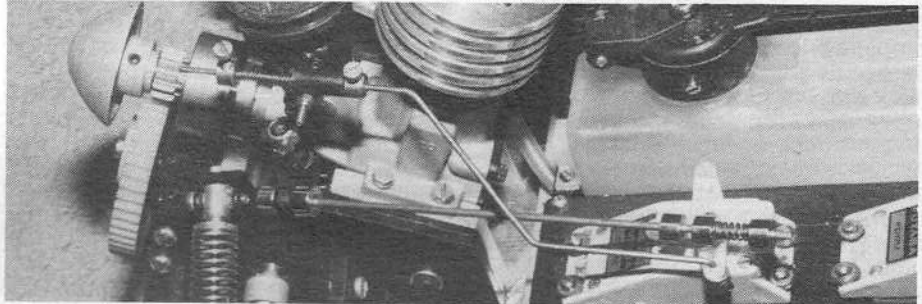
holding, if the suspension arms move a long way then the drive shafts and steering linkages have to also. These larger angular deflections do make problems, drive-shafts come out more easily and steering angles change a lot.

Wishbone suspension tends to keep steering under better control and also presents fewer problems with drive-shafts. Both styles of suspension can be seen on two-wheel and four-wheel drive cars with equal degrees of success. If the designer has got it right, there is little to choose between the two.

The engine, equipped with its centrifugal clutch, drives the wheels through a reduction gearing. This can be a simple two gear system or a more complex arrangement involving chains or further shafts and gears. The best cars will have all the rotating parts of the drive train supported on sealed ball-races to cut down friction losses and wear from grit, etc. A few cars use toothed belts in the transmission,

these should not be thought of as inferior in any way, such drive systems are capable of many hours of continuous use without undue wear or danger of breakage.

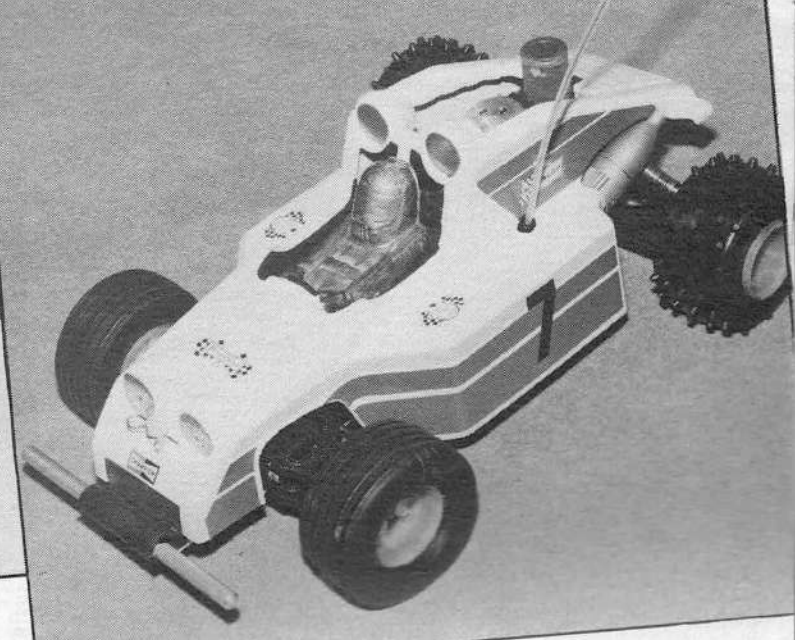
Differentials are just as beneficial to the handling of Off-Road cars as they are to any other form of vehicle. Differentials enable the car to turn more easily without scrubbing tyres because they allow the wheels on the



Serpent Cobra 4WD



Mantua 'Nevada Cross'



Starting Point

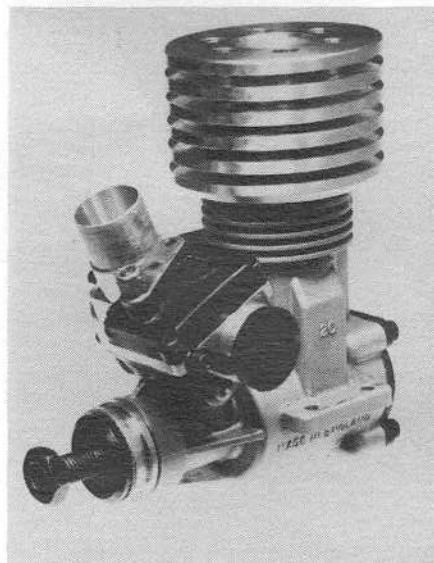
It is important to have an efficient braking system, this can be either a disc brake or a band style of brake operating against the engine clutch bell.

How to choose your Car

You must obviously decide in the first instance how much money you are able to afford. Cost limits can usually divide the possibilities straight down the middle with a wide choice of two-wheel drive cars in a range of £60 to £150 followed by a jump to around £200 for a four-wheel drive car.

Do bear in mind that there may well be hidden costs in what appears at first sight to be a bargain. Check out the kit to see if it includes a differential, flywheel and clutch to suit your engine, silencer, fuel tank, R/C equipment linkages, bodyshell and ball-races on all moving parts. You will probably need thread locking compound and glue for tyre fixing plus a few odds and ends in the way of fuel tubing, wire, the odd extra nut and bolt, etc.

If out and out competition is your aim then take a look at what the top drivers use in the way of cars. If just fun driving is all that you are interested in, you can safely choose almost any of the cars that are available within your chosen price range and enjoy yourself. For competition use, a competitive car on its own is not enough. It needs to remain competitive and it is essential that spare parts are easily obtainable so do check with the supplier that the car comes from a reputable source with adequate back-up facilities. If the basic kit is not supplied with such items as differential etc., do check that these are available and at what cost. You will almost certainly wish to update or uprate your car as time goes by.



Above: Irvine .20 car engine fitted with PB slide carburettor provides an ideal combination for 1/8th scale buggy applications.

Choosing an Engine

There are as many engines to choose from as there are cars, but if the car you have set your heart on is designed around a specific make you would be well advised to purchase that engine. It is possible to fit most engines to most cars, although there are exceptions to this rule, a knowledgeable dealer should be able to put you right here, but do not be misled into choosing an engine specifically for its power output. In Off-Road racing, absolute power is not necessary, if there is a buggy version of your chosen make of engine, choose this in preference to the circuit racing version. Do not buy the largest bore carburettor you can find or the most potent tuned pipe exhaust system. Stick to a 7mm bore carburettor and a standard exhaust

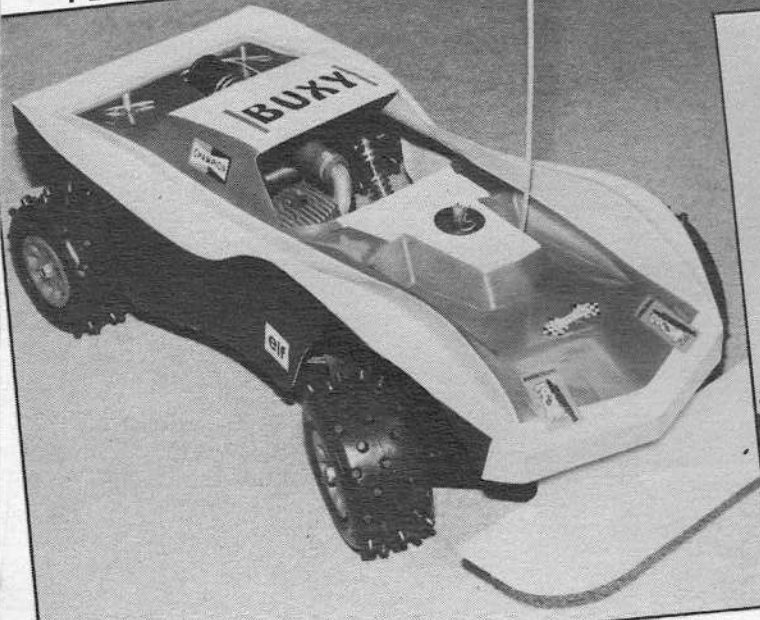
system to start with. The engine will be easier to adjust and the car easier to drive with only a moderately powerful engine. You may find that a specially shaped manifold or exhaust system connector is necessary and as such manifolds are specially matched to the engine, availability of manifolds can also dictate choice of engines. Finally, do choose an engine with ball-race supported crankshaft and preferably with an ABC cylinder. (Aluminium piston, brass cylinder, chrome plated).

Choosing an R/C System

No less bewildering but once again there are definite logical choices to be made. Assuming that you intend to use your buggy a lot, re-chargeable batteries are a must. It can be the case that dry battery R/C systems with separate Ni-Cad batteries added seem to be a good buy. Do beware of buying cheap Ni-Cad batteries. If you only buy the best there may be less price differential between a dry cell system and separate Ni-Cads and a full Ni-Cad system.

There is no real difference in practical terms between A.M. (Amplitude Modulation) and F.M. (Frequency Modulation) systems, they are just different. Not however sufficiently different for A.M. and F.M. systems on the same spot frequency (colour) to operate together! Once the re-chargeable/dry cell question is resolved the only question really remaining is that of servo choice. Choose the best you can afford. The servo is the item that does all the work and in a 1/8th scale I.C. engine powered car, there is plenty to do! Preferably select ball-raced servos with waterproofing already carried out by the manufacturer. Power is important, so you are looking for high power, ball-raced waterproof servos. These are not cheap but the

PB 'Buxy' 4WD



Mardave Marauder





Above: ideal middle price range R/C system from JR/MacGregor Industries. Can be supplied in either dry-cell or Ni-Cad versions with a wide choice of servos to fit the user requirement.

investment is well worth it. Unsuitable servos will not last the distance and will cost dear in repair bills making it more economic to have bought better suited types in the first instance.

Ancillary equipment

Starting the engine really does require a proper starter. This can be hand-held operating from a 12-volt accumulator or built into a purpose-made start box. You will also need a hard rubber ring to fit onto the starter for the friction drive style of engine starting or alternatively most starters

are supplied with a suitable rubber cup for direct cone start systems. The 12-volt battery mentioned will be needed, at least 6Ah, plus a suitable charger (a mains operated trickle charger).

A glow-plug engine needs a booster battery (2 volt) to glow the plug and a suitable connector lead to couple up the battery to the glow-plug.

Finally fuel and a method of filling the fuel tank. Soft polythene bottles or 'quick-fill' bulbs are available specially for the job.

Overall, an extensive shopping list. Cash transactions can often be

accompanied by some discount or of course it is possible to spread the load using one of the various credit schemes operated by many model shops. Whichever way you decide to finance your chosen hobby, you can be sure of an enjoyable time. Finally, do visit your local model shop, he will be the best person to help and advise you on your purchases and in a good position to give you the lowdown on reliability, availability of spare parts and ease of use and assembly of the products he sells.

Good luck and good racing.

Choose your car

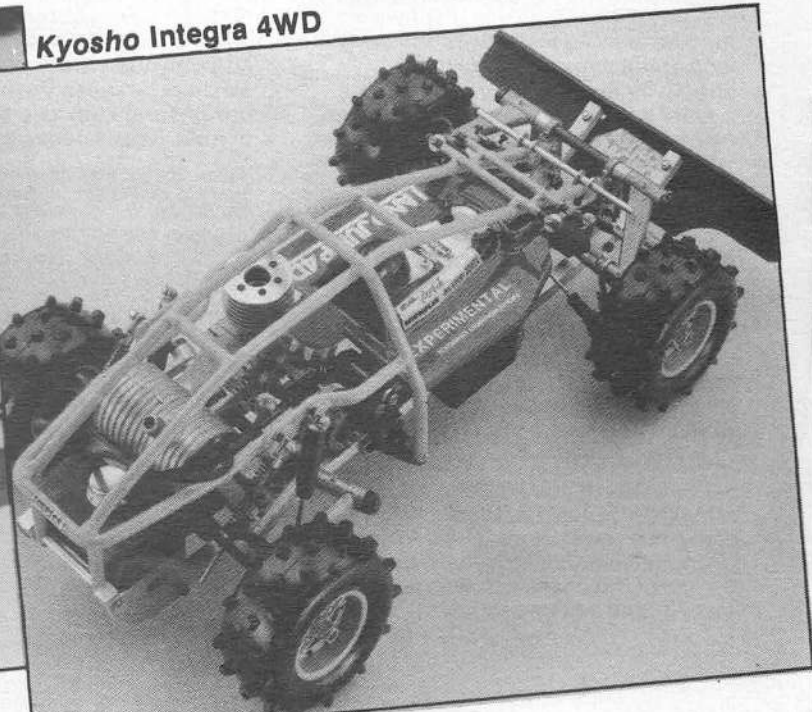
Make & Model	1	2	3	4	5	6	7	8	9	10
2 wheel drive										
4 wheel drive										
Clutch										
Silencer										
R/C accessories										
Engine mountings										
Engine mounting ready drilled										
Dampers										
Bodyshell										
Bumpers										
Instructions										
Fuel tank										
Differential(s)										

Tick the boxes, the more ticks the better!

Thunder Tiger 4WD



Kyosho Integra 4WD





FROG

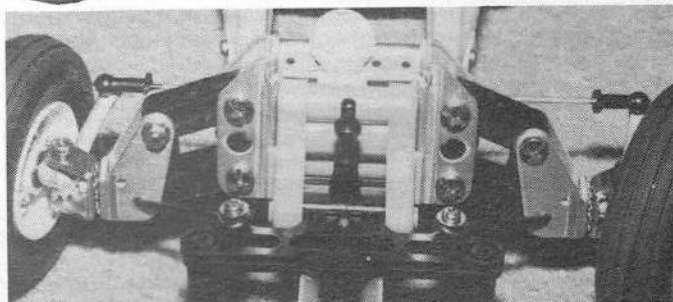
Leap into action with the latest 1/10th Off-Roader

THE 'FROG,' 1/10th scale electric buggy appears on our race tracks as the latest in a long line of Tamiya winners. The 'Frog' also displays a marked leaning toward the competition side of the market, where it has already been gratefully received. As usual Tamiya have improved upon an established theme, the 'Frog' picks up where the 'Subaru Brat' left off. The injection moulded, 'Space-Frame' chassis remains unaltered as does the front suspension system. The major changes have occurred toward the rear of the car with the introduction of oil-filled, coil-over shock absorbers and a differential into the gearbox. The larger 540 size motor is now included as standard and a low-slung polycarbonate bodyshell tops off the effect.

Construction

For those of you who have built either the 'Subaru Brat' or 'Lancia Rally' then constructing the 'Frog' will produce no major surprises, the two halves of the chassis bolt together to form a rigid centre section for the front

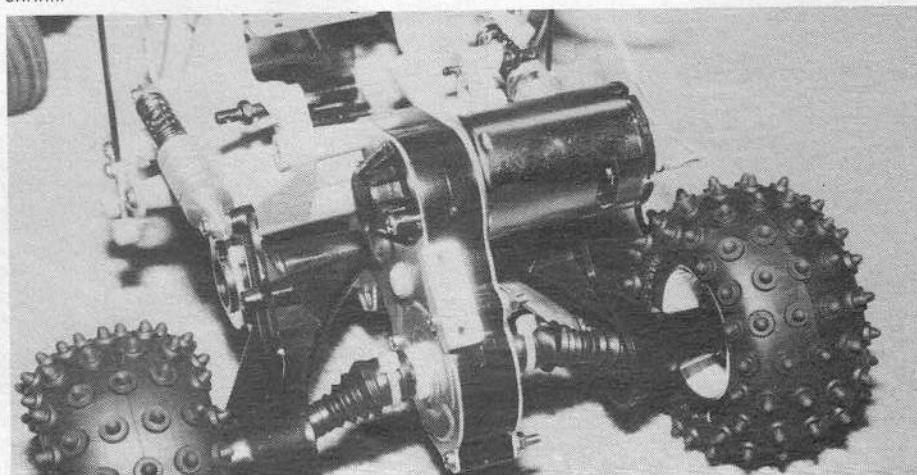
Above: close up of the 'Frog' front suspension, standard ball-joints were later replaced with 'Super Champ' items.



and rear suspension systems to work from. Of the few changes to the front end only the introduction of star washers between the outer wishbone upright and stub axle block are worthy of note. These items lock the stub axle

blocks firmly in place to counteract any slip. At this point it is worthwhile mentioning that all nuts, bolts and screws should be firmly thread-locked in place. Gone are the rubber bushes fitted to the radius arms and

Below: the 'Frog' rear suspension displaying drive shafts protected with rubber boots, many drivers remove these to cancel out any power loss. The 540 motor should also be protected with a rubber boot or heat shrink.





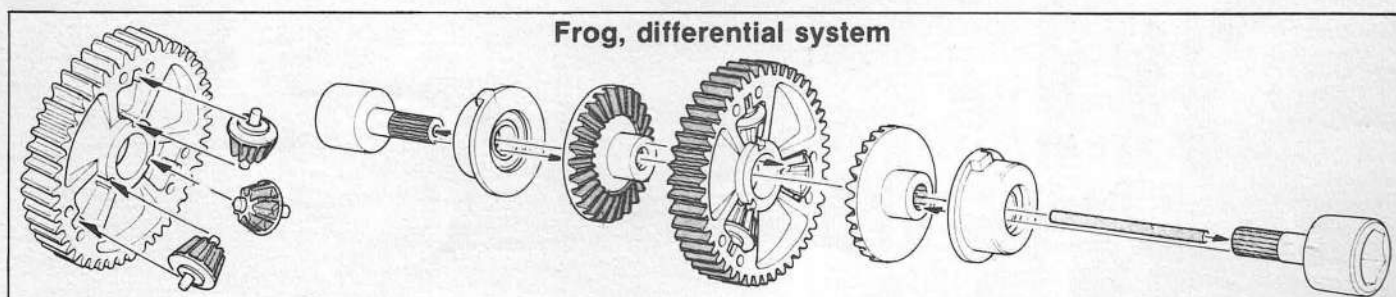
Above: the 'Frog' races in front of the other new additions to the Tamiya range, the 'Lancia Rally' and 'Opel Ascona.' Both kits are basically new bodyshells on existing chassis 'Subara Brat' and 'Audi Quattro' respectively.

subsequently no damping features on the front suspension at all. Fitting dampers to the front-end should provide few problems as shown in the 'Rough Riders' section of 'Model Cars' May issue.

Rear suspension

Proper oil-filled damper units provide the shock absorbing facility for the rear suspension. These units fit as direct replacements to 'Brat' units

and do provide a much smoother and efficient action. Personally, I felt that they are still too hard in operation to allow sufficient suspension movement. However, having spoken to 'Frog' racers this aspect is not



Track Test

considered to be a problem. The differential is by far the greatest improvement made to the 'Frog' as this addition greatly improves the handling on loose track surfaces and aids the steering characteristics. The diff itself is of the geared variety and features cast alloy bevel gears. Once installed the complete gearbox should be kept well oiled with WD-40 or 3-1 oil.

Ancillary parts

The ubiquitous *Tamiya* three-step speed controller is included coupled to a standard *Mabuchi* 540 motor. Three different gear ratios (low, medium and high) are included although changing ratio necessitates the dismantling of the complete gearbox.

Finally the low-profile, racing body gives the 'Frog' the proper image when painted in a striking colour scheme and bedecked with the stickers provided.

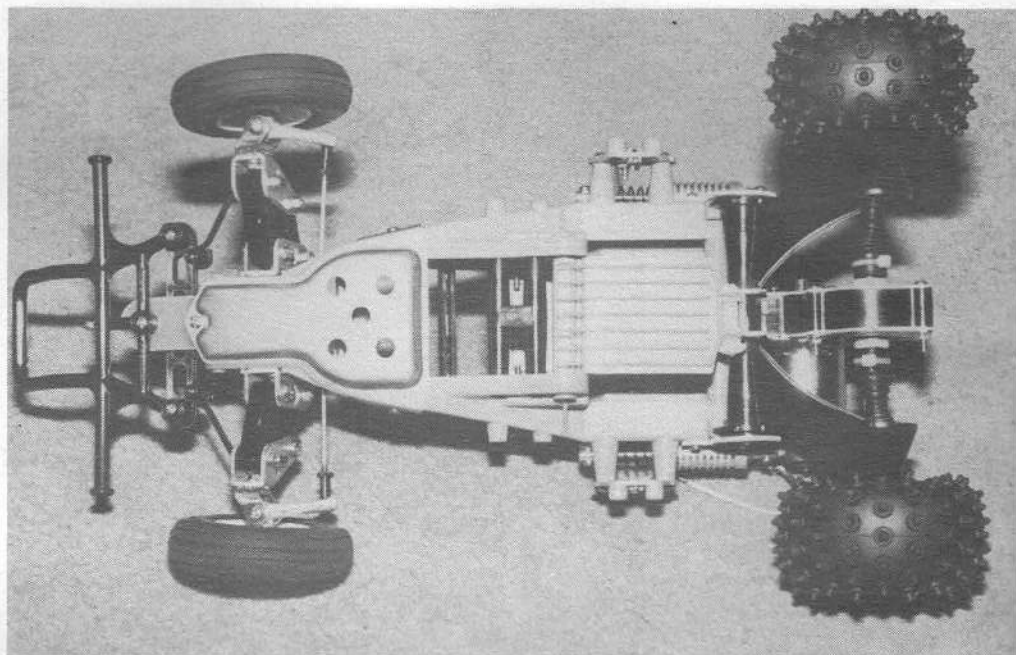
Out to the track

The first indications of the 'Frog's' potential were gleaned at the Chesham, BRCA National points meeting. First impressions showed that the 'Frog' was extremely able to put the power down onto the track resulting in a very lively performance. Most notable was the agile handling, the 'Frog' turning in very smartly as corners were approached. Visually the 'Frog' looks excellent actually resembling an 'Off-Road' racer.

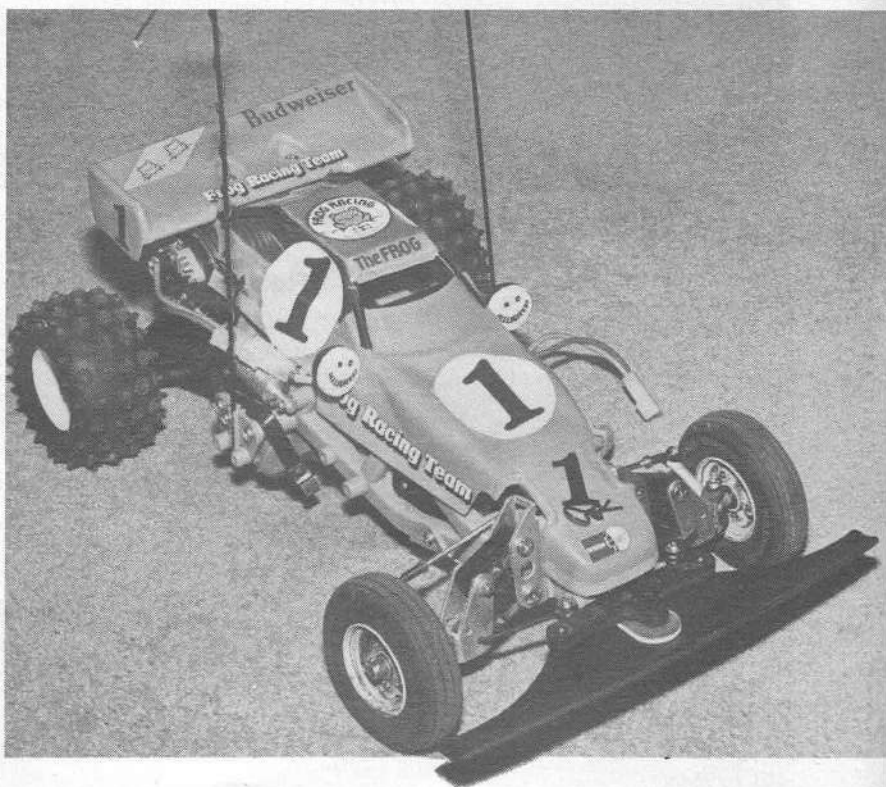
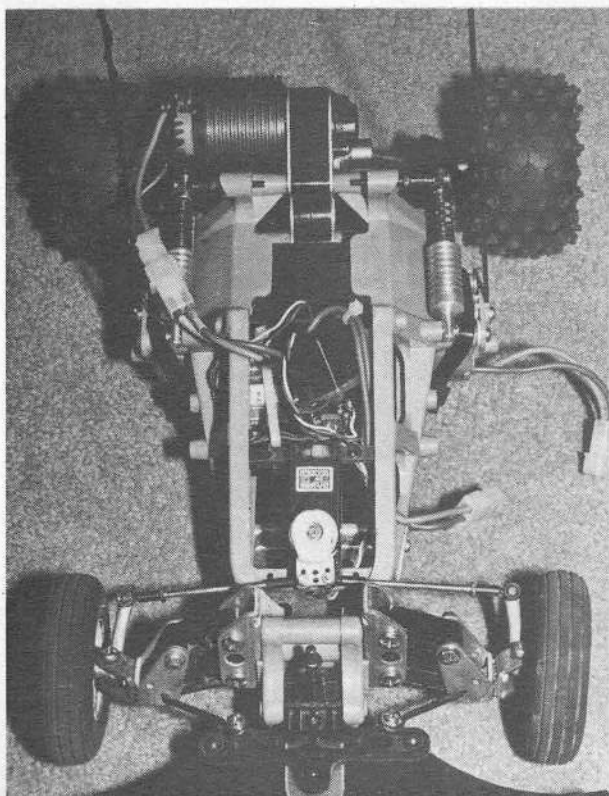
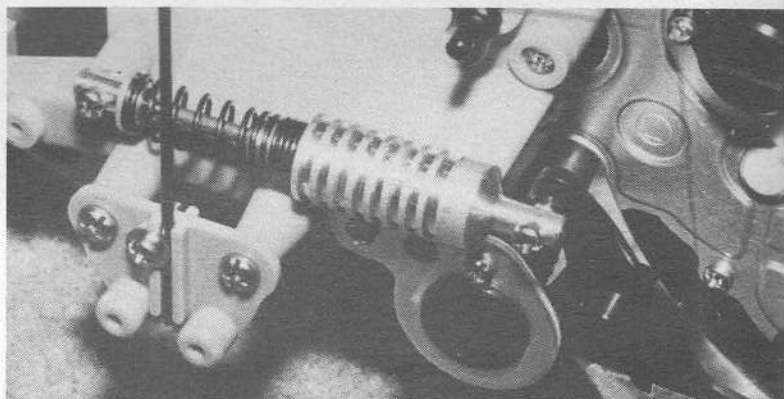
The only flaws are the relatively high wear rate of some moving parts an aspect we shall be dealing with in a future issue.

Price £80.00 approximately.

UK Distributor *Richard Kohnstam*, 13-15a High Street, Hemel Hempstead, Herts.



Above: the chassis underside showing alloy front undertray to protect servo's and speed controller. Right: the adjustable, oil-filled, coil-over shock absorbers. Below: left and right general shots of the 'Frog.'

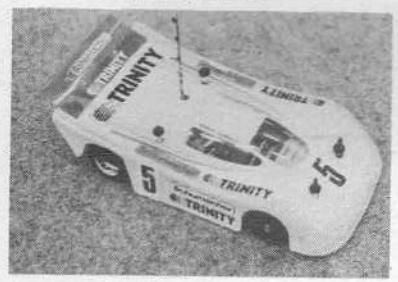


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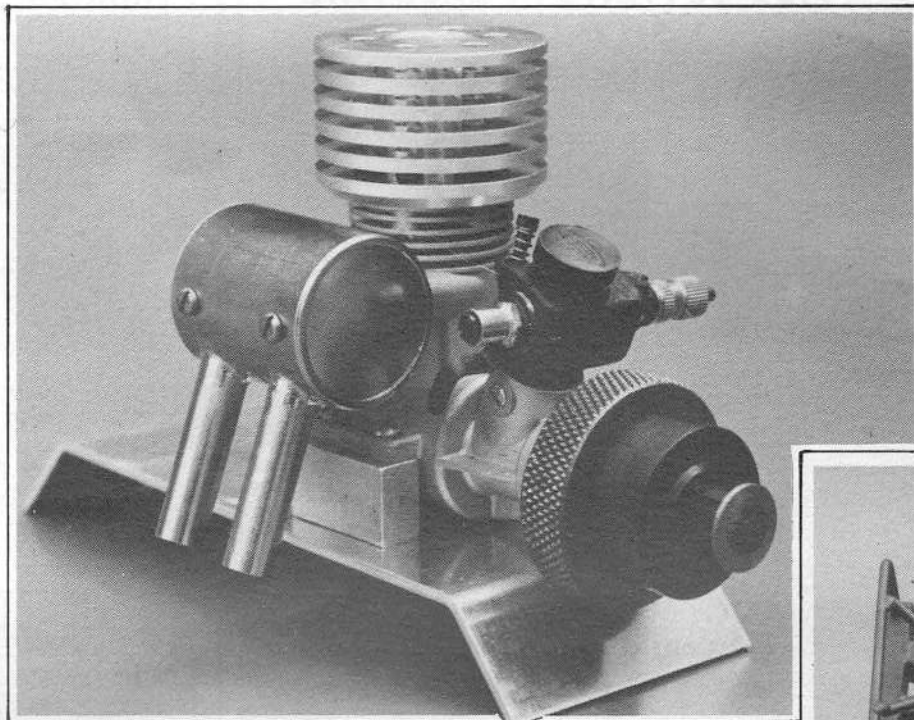
The Stockcar racing world in focus

WHENEVER STARTING out in a sport or hobby such as ours the newcomer is set at a definite disadvantage. Problems such as buying, building, setting up and then driving the car may seem simplicity itself to the initiated but to the newcomer can be insurmountable without practical help.

Where should the help come from? The answer, is of course the Club, that is the place to meet, discuss and race the cars. To gain real enjoyment from your stock-car belonging to a Club is essential, driving round a track in company with other cars is far more exhilarating than being on your own in the open spaces of a car park or playground. The 'fun' of competition makes the purchase of car and accessories more rewarding, particularly as the pooling of knowledge coupled with practical advice results in the overcoming of most problems.

Racing takes place at various 'levels'; beginning with the Club meetings which only drivers belonging to the organising Club can race. Then we have Open meetings to which all members of the RSCA are welcome (these may be limited to members from within the Region), then meetings open to any driver whether a member of the RSCA or not. Finally there are the European Open meetings. Whilst many drivers will limit their racing to local Club events, others will travel to Open meetings to enjoy the challenge of a different track and different drivers. You don't have to be a 'star' driver either to enjoy this variation.

Drivers are 'graded' by their Clubs into the five categories associated with stock-car racing. All new drivers begin as novices with 'white' roofs to their cars, then progress to 'yellow' as points are gained during a grading period. From 'yellow' to 'blue' is the next step towards the coveted 'red' top of a star driver, with the 'super star' being awarded to the very top of the list. The ultimate accolade is denoted by a white star on the red roof. In order to keep a proper balance of different grades, grading is worked out on a percentage of the total Club membership. For example 5% Super Star; next 15% Red top; next 30% Blue; next 30% yellow and bottom 20% White, with perhaps three or four regrading periods throughout the season. Clubs arrive at the points on which grading is based in a variety of ways, although interestingly, Clubs who have compared their different methods of grading over a



Above: Irvine .20 side exhaust car motor fitted with some of the Mardave extras now available. New clutch drum for use with the wider drive belt plus twin-pipe silencer. Both items will be kit standard when the MkIII stockcar becomes available.

seasons racing comment that there is very little difference in the end between the results. Which ever method is used, drivers who fail to attend meetings do not get points, consequently movement up the grades is limited. Incidentally the World Champion sports a Gold Roof and the European Champion a Silver one.

1/12th National Meeting, Leicester, March 18th

A new season, thirteen more drivers than last year's highest driver entry (a total of 73 for this event) which proves that 1/12th Stock-car Racing is definitely on the increase. The only black cloud on the horizon at the moment is that there will be no National Meeting at Coal Aston due to problems within the Club. Still, new drivers from Coventry,

Right: the new Mardave MkIII prototype stockcar chassis soon to be available. Basically the chassis has been widened (by $\frac{3}{16}$ in.) to allow for all types of engine. Engine mounting is now separated from the main chassis to alleviate crankcase stress. The steel undertray is welded on and the chassis as a whole is much lower. Rear axle 'ride-up' slots are now produced as standard. Finally a nylon moulded front axle beam will also feature.

Pendle and Buntingford joined with the rest of the usual gang to make for a very good meeting. About half of the cars being raced had been modified in some way from last year, the majority of which have been made lighter so as to increase top speed, so some fast racing was expected.

As the heats started 50+ laps became the target needed to qualify. Tim

Posn.	Name	Car Type	Gear Ratio	Cells	F. Tyres	R. Tyres	Speed Control
1	S. Riley	Scratch-built	12:54	Sanyo	Prowlers 12/001	Prowlers 12/001	Parma
2	T. Fielden	Mardave	12:52	Sanyo	Standard Mardave	Medium Soft	Parma
3	A. Longrigg	Lectricar	13:54	Std. L'car Pack	Medium Soft	Medium Soft	Lectricar
4	I. Johnson	M'field Mardave	12:50	Saft	Medium Soft 'B'	Medium Soft 'B'	Lectricar
5	J. Cutts	Mardave	12:50	Saft BVV	Inner Hard Outer Soft	Soft	Mardave
6	P. Culverwell	M'field Lectricar	13:53	Enduro 1200	Medium Soft	Medium Soft 'D'	Lectricar
7	M. Higham	M'field Mardave	12:46	Saft	Mardave	Medium Soft 'D'	Parma
8	D. Clarke	M'field Mardave	13:52	Enduro 1200	Hard	Medium Soft 'D'	Parma

CONCOURS: B. JESSOP JUNIOR TROPHY: G. HAWKES
 F.T.D.: S. RILEY 54 (FINAL) M. HIGHAM 54 (CONSOLATION)

Fielden and Debbie Ramshaw were the ones to break the 50 mark in Round 1, with Ian Johnson, Paul Culverwell and Adam Longrigg close behind on 49. In the second round Dave Clarke began going well and set what most thought would be FTD with 53 laps, the only people to get near that were Kelvin, Ian and John Cutts all on 50. Two drivers lost wheels and Ian Cox a stub axle unit to prove that the racing was not only fast but tough as well.

Whether the fact that the bar opened between rounds two and three had anything to do with it is not known, but several drivers were seen to improve during the third round. Paul Culverwell,

nudging going on. Martin finally managed to pull a lap clear while Kelvin just pipped Debbie on the last lap to take second place. This year points are awarded 7 down to 1 for places in the Consolation, its worth having a go for that extra point.

Martin duly took his place in the main Final which also turned out to be a great race, with Shaun, Tim and Adam charging off the start after Dave who managed to miss the customary first lap pile up. However after 12 laps Dave was in trouble, his car going anywhere but where he wanted it to, so he retired. Ian and John were having their own private battle in the middle of the field, leaving

results, notably the green 12/003 type, and suggests you give them a try, but cover them with black silicone first.

Top 10 points scorers, 1984 Nationals

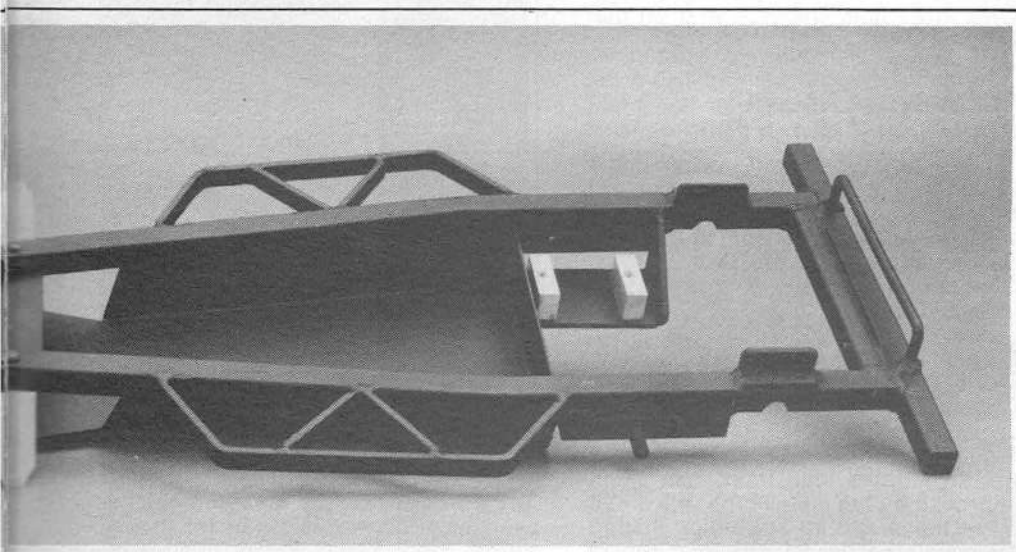
Name	Club	Points
S. Riley	Pendle	53.5
T. Fielden	Pendle	52.5
A. Longrigg	Pendle	50.5
P. Culverwell	Leicester	49.0
M. Higham	Loughborough	47.5
I. Johnson	Loughborough	47.0
D. Clarke	Loughborough	46.5
J. Cutts	Leicester	45.0
D. Ramshaw	Coventry	44.5
K. Hawkes	Pendle	44.0

1/12th News

You may remember 'Taking Stock' featuring a six-wheeled stock-car built by Chris Loughran not so long ago, well Chris did decide to go ahead and race it at Leicester. Unfortunately a knock in practice moved back the rear set of front wheels, so he removed them and ran the car as a normal four-wheeler. However that knock he got in the Consolation, broke the car apart, so he is now building another one, this time using carbon fibre for the chassis, as it is not only stronger but also lighter.

I am also assured by the new owner of *Lectricar* and *Radydio Tyres*, Mr. Tyler of *Windmill Models*, St. James Street, Burnley, that the spares situation should be back to normal, so any problems please contact him.

Mr. Vine, Dave to his friends of 8 Seaton Road, Wallasey on Merseyside (051-639-8306) has written to me (crawling he says) to extol the virtues of the **Wallesey Stock-car Club** who race on Monday nights from 7.30 to 11.00 at the Grosvenor Ballroom, Grosvenor Street, Wallesey. Not only does the Club race 1/12th stock cars but also Slotstox (slot stock-cars) on the same night at the same venue. Membership fee is £2 (£1 under 16) plus a nightly race fee which covers trophies, etc.... Visitors to race or spectate are welcome. The Club became runners-up in the 9th National Slotstox Team Race in February with a team of Dave Vine, Peter Wright and



Kelvin and Chris Loughran all scored 50s, but this was not enough to catch Adam Longrigg who set a 52 lapper, a feat which he repeated in Round 5 to become the top qualifier with 201 laps from 4 runs; Dave put in another 50 to give himself a total of 199 followed by Tim Fielden with 196 after yet another 50. Ian Johnson and Shuan Riley tied for 4th qualifier with 195, chased by Paul Culverwell and John Cutts with 193 and 192 respectively. With scores as close as these it looked good for the closely fought final.

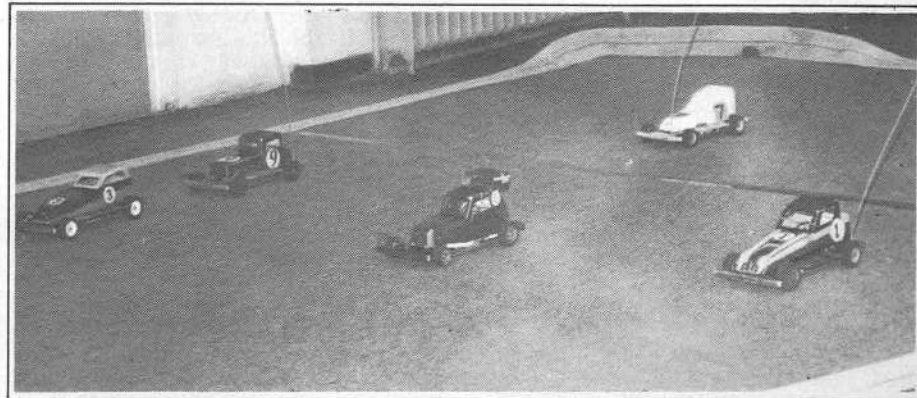
The rest were still fighting for the remaining places in the Consolation final and ultimately a chance to move up into the main final. The full line up for the final being Martin Higham (190), Debbie Ramshaw (190), Kelvin Hawkes (190), Chris Loughran (187), Peter Wright (185) Paul Adams (184), Ian Thompson (182) and Rob Harrod (181).

With scores that close, the Consolation was bound to be a good hard race, and so it was. Chris led from the start but only for a few laps before he was involved in a big crunch with his car coming off worst; exit Chris from the race. Martin, Kelvin and Debbie took over the lead between them, battling it out for the rest of the race with a lot of

Shaun to take the lead which he never lost. Tim followed him home, chased all the way by Adam. Ian Johnson finally beat John to take 4th place.

Thanks should be said to all who took part and especially *Modelcraft* and *Kilby Bridge Motors*, Leicester for their sponsorship. The full results are as usual on the chart. Those tyres of Shaun's are the ones reviewed in 'Model Cars' a few issues back. Chris Loughran has also used them with very good

Below: Milton Keynes Model Society (car section) race 1/12th scale stockcars Wednesday nights on carpet at Manor Road School, Bletchley, Berks. Contact Dave Meadows at Milton Keynes Model and Craft Centre. Tel. (0908) 72721.

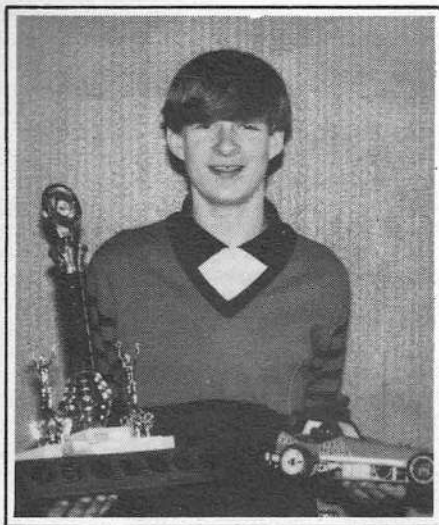


Taking Stock

Mike Stead, and of course are well represented in the RSCA Nationals as mentioned above. If interested give Dave a ring.

Driver Profile: Kelvin Hawkes RSCA No. 534

I'm turning this month to the 1/12th side of racing for our driver profile and up to the northern parts at that; Todmorden Road, Burnley, Lancs. to be exact which is the home of 16-year-old Kelvin Hawkes.



Kelvin Hawkes

Kelvin's interest in stock-cars began, when as a 2½-year-old he sat perched on top of his Dad's shoulders watching the full-sized F1 cars at the old Seedhill Stadium at Nelson. Now he races the 1/12th electric cars with a fair degree of success, and I am sure we shall be hearing more of him during the present season in Chris Loughan's reports on the Nationals.

He started racing in January 1981 and won the Urmston Club Championship from Joe Brown in 1982 and is the current holder of the Pendle Club title for the second successive year.

Like the majority of the Northern drivers Kelvin chose the *Lectricar* stock-car for his venture into the electric racing scene and is still using the original 1981 chassis, although it has been slightly modified. Even so, *Lectricar* will be sponsoring Kelvin for this year's National Championship. Kelvin's car has a *Schumacher* servo-saver, a fabricated radio crate, a standard *Lectricar* speed controller plus the swinging front axle designed by the Pendle Club and later adopted by *Lectricar* as a standard fitting. *Raydio* tyres keep the power down onto the track, the power coming from *Sanyo* Selected Ni-Cad batteries. Radio gear is the standard *Futaba* 'Medallion', with a *Futaba* mini servo for the steering.

All the usual experimenting with tyres, steering geometry, gearing, etc. was undertaken until the car reached its

present 'standard/modified' form which seems to suit Kelvin well. Nevertheless Kelvin is on the lookout for other drivers modifications for possible incorporation into the 534 car.

This summer will see Kelvin not only trying to do well on the indoor ovals, but also in his 'O-Level' examinations, after which he plans either to stay on at school for 'A' levels and a place at University, or to try for an apprenticeship.

Here no doubt is a young man with a bright future ahead of him, and my hope is that this year will bring with it the just rewards for all his efforts both in the classroom and when he has been 'ovalling around' with his friends and rivals at Pendle, Urmston and on the National circuit.

RSCA Series Round 1: Nottingham, March 25th

The 1/8th major racing programme of the season began at Nottingham on March 25th with the first round of the 1984 Series Championship at the new, permanent oval at Basford Hall. A reasonably good entry of 41 drivers was recorded and included the current Series Champion Graham Lawrence, European Champion Paul Dudley, World Champion Les Calder, British Champion Steve Talbot and other notables such as Cliff Emms, Phil Richardson and Roy Crowson. Over the winter months the track has been improved by the installation of a metal outer fence and an egg-timer shaped inner metal barrier, which allows drivers some space to park out of the way of cars still circulating the track. One other welcome addition to track facilities was the covered drivers rostrum, which was quite long enough to give all drivers plenty of room.

As the first meeting of the National Championship it was clearly going to be seen as a performance pointer towards the overall Series, which you will remember is to be held over a total of six rounds this year, two rounds to be held in each Region.

The first round of the heats were led by local drivers J. Wheeler on 42 laps and J. Buckley, C. Bunyard and D. Buckley all on 41 laps, close behind on 40 came Phil Richardson and Les Calder. By the time the second round of heats were underway most drivers had got themselves and the track sorted, with the result that lap scores were improved by most, with Steve Talbot and Cliff Emms setting the pace on 44 laps. Between rounds drivers were frantically working on their cars, as few drivers felt that they were performing to their best. One or two drivers who had been tipped to do well found themselves struggling, and the glances upwards were not just in prayer but for realisation that the skies over Nottingham were getting increasingly darker and rain was on the way. Indeed rain did begin to



fall during the third round of heats but only as a fine drizzle. Under these conditions it was not surprising that it was local man Pete Butlin who set the pace with 43 laps, with Roy Crowson, Norman Wheeler and D. Hutchison all on 41, while John Hall and Graham Lawrence kept in the scene with 40s. There was no doubt that the increasing wetness of the track took its toll in this round, with many drivers unsure of which type of tyre to use.

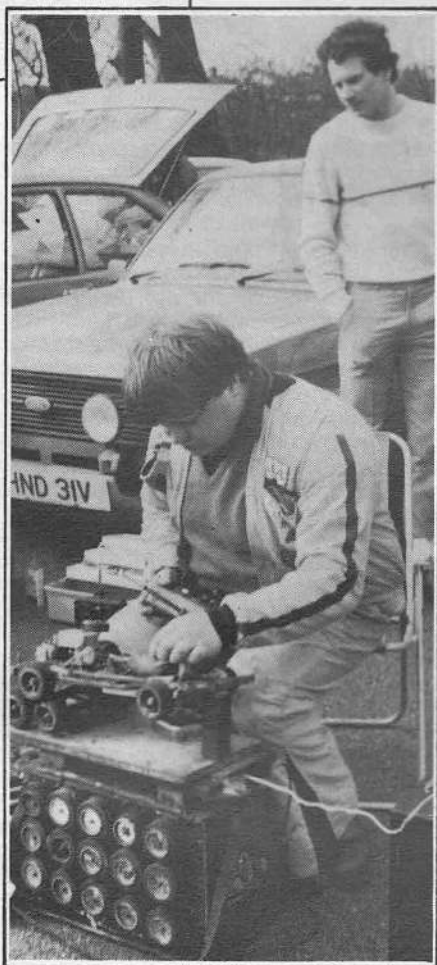
Conditions got even worse for the fourth round of heats and most drivers were glad that only the best three heats were to be used for qualification, as a glance at the race sheet indicated that out of the 41 drivers racing all but 19 had their last heat scores deleted as the lowest of the afternoon, in fact the fourth round was led by J. Wheeler with 36 laps and that was his lowest of the day, Peter Butlin followed him with 35 whilst Steve Talbot and Rob Thorp recorded 34's.

By this time the rain was fair lashing down, and whilst waiting for the organisers to announce the qualifiers most drivers had decided that the lucky ones would be those who had not qualified and could pack up and go home! This of course was said whilst standing huddled in the drivers rostrum! (Who said it only rains at Brighton?).

The four who had made it through to the Final were J. Wheeler with a total of 122, J. Buckley with 121, John Hall also with 121 and defending Series Champion Graham Lawrence with 120. Interesting to note that the top three qualifiers were all from the host Club Nottingham and possibly more worrying to note that John Buckley is only 12 years old and John Hall 14! Those left to



Left: Andy Fulford (left) and Cliff Emms at work in the pits on their cars prior to the inevitable rainstorm. Cliff Emms managed third place in the final.



Above: Phil Richardson works on his car prior to some serious racing.

fight again for the two remaining places in the Final were Pete Butlin, Phil Richardson, J. Watkins, Peter Butterworth, Cliff Emms and Steve Talbot, who had qualified in that order. I must admit it was nice to see Peter Butterworth back on the oval again

following a break enforced by work last year.

The Consolation was, as might be expected quite a fast and furious race on what was a very wet track, the first casualty was Phil Richardson whose drive belt broke on the nineteenth lap, which left him a very unhappy man as it was a new belt. Phil's unhappiness is not something which is restricted to him alone, as many drivers have expressed dissatisfaction with the present drive belts, which do not seem as strong as previous examples. In fact one leading driver refuses to buy the new belts and is racing with other people's old cast-offs as he says they appear stronger. Maybe the new generation of wider belts will be the answer. However, back to the racing, on the track the battle was developing between the two 'terrible twins' Cliff Emms and Steve Talbot, with Steve just gaining the upper hand to finish with 39 laps to Cliff's 38, both drivers went through to the Final. Just out of luck was J. Watkiss with 34 laps, with Peter Butterworth on 32, Pete Butlin on 28 and the luckless Phil on 19.

After the usual delay to allow the two drivers from the Consolation to prepare their cars the drivers came out for the Final. The rain was still falling, although not quite as hard as it had earlier. The race got underway and it was clear that it was going to be both close and exciting. The home crowd had three local drivers to cheer on, and the two local youngsters were well encouraged, especially John Hall whose Dad was leaping up and down every time his sons car passed another. John Buckley, Steve Talbot, Cliff Emms and John Hall were all close together until John Hall had to pull off near the end, leaving Steve Talbot to head the field with 47 laps, the same as second placed twelve-year-old John Buckley but in a faster time. Third place with 46 laps was Cliff Emms, with John Hall fourth on 42 laps and defending Champion Graham Lawrence fifth with 38 laps. When J. Wheeler who finished in sixth place with 32 laps got home and examined his car he discovered that the engine mounting lugs had fractured on the crank-case, which of course had not helped him.

So the meeting was concluded in fine style despite the weather and one or two other minor problems caused by holding such a meeting at such an early stage of the season. Thanks to all members of the organising Nottingham Club.

Bits and Pieces

Even though I've raced at two 1/8th Scale Stock-car meetings so far this season I have as yet been unable to put either the *Kingsway Kar Komponent's* wide belt and clutch unit to the test, or the unit manufactured by *Mardave*. I hope to do so in the near future. In the last issue I was unable to give you the price of the *Mardave* belt or clutch

drum, but I can now tell you that the wider belt costs £1.50 and the drum to take it is £1.80, also the twin pipe silencer for the *Irvine* is £3.75, all of these should be available from your model shop or direct from *Mardave R/C Racing*.

Whilst on the subject of *Mardave*, work is going on to prepare the 'Mk.III' stock-car. This is going to feature a slightly wider chassis at the rear end to enable engines to be bolted in without having to shorten the crankshaft, it also seems probable that a welded undershield will be fitted to help give extra strength, though this is not certain as the manufacturer's sounding of drivers indicate that a number like the undershield to be bolted in place. It seems certain that the chassis will be made stronger by the incorporation of welded in cross-pieces and that engine mounting will be by some form of cradle onto a flat undershield, thus reducing the strain at present placed on the engine by fixing it to the chassis member. Front axle block may well be a nylon moulded unit of *Mardave's* own design, as one has been hinted at for some time. All wheels will be on 1/4 inch axles, thus eliminating the need to carry front and rear wheels. It is probable that radio installation may be offered in two options, the conventional *Mardave* radio crate, or a smaller crate to house battery, receiver and possibly throttle servo, with the steering servo being mounted separately. It is also possible that the piano wire linkages on the steering may disappear in favour of ball joint units. I will endeavour to keep you informed of all that happens.

Racing Round and About

The organisers of the 1/12th scene really have got themselves well sorted out for the time of year, with the National at Wallasey on June 17th as their only major meeting, having labelled the months of July and August as 'Holidays'.

The 1/8th calendar is a little more hectic, with Round Three of the Series Championship at Chessington on June 10th, Open meetings at Bolton on June 17th and Leicester on June 24th with the big meeting being the British Championships at Bournemouth on July 1st. Northern and Midland Regions have Regional Rounds at Bolton and Lilford on July 15th, whilst the Southern Drivers Championships takes place at the Sussex RAC on July 22nd. The drivers participating in the Series Championship head for Coventry and Round 4 on July 29th.

Well that's it for now. Please do drop me a line at 85 Elliott Road, March, Cambs. PE15 8BP if you have any comments to make, or ideas you would like me to mention, remembering to enclose an S.A.E. if you require a reply.

I hope to see you ovalling around in the near future.

Paint your wagon

The inside story of painting slot car bodies, part 1 by Nigel Ritson

I CANNOT RECALL how many times I've been asked the question, "How do you paint a slot car body?" As the answer to this question could be quite long and perhaps confusing, I have decided to write this article to try and explain the basic procedures and also hopefully to provide some tips to those of you who already paint your own bodies. Each procedure is written in an easy to follow sequence, so if you are ready here goes!

Preparation

After choosing your clear bodyshell from the vast range now available, the first thing to do is to mount it on the chassis. When mounting the shell, ensure that it is square on the chassis with the wheels in the correct position relative to the wheel arches and full movement of all chassis pivots is available. To remove waste body material, use a small, sharp pair of scissors and a sharp modelling knife. For cutting out wheel arches and cockpit areas, I find a small pair of curved manicure scissors can be very useful. If the body shell is to be spray painted, the wheel arches and cockpit areas can be cut out after spraying, by doing this, excessive over-spray onto the outside of the body shell is prevented. Any rough edges can be removed by using wet and dry abrasive papers.

When the shell is cut out, the next step is to clean any dirt and grease from the inside surface and to abrade this surface to help the adhesion of the paint to the shell. Run down with very fine grade 'wet and dry' paper (it doesn't matter if it is used 'wet and dry') but take care not to remove any of the actual moulded detail. Small 'difficult to get to' areas can be missed out when sanding down as the next stage will deal with this. To complete the cleaning/sanding down stage, scrub out the inside of the shell using scouring powder and an old toothbrush. The best place to do this is in a sink where the body can be immersed in water and rinsed out during cleaning. After scrubbing down the shell, rinse out thoroughly with warm water and dry off using an absorbent material such as kitchen roll or toilet tissue. When the shell is clean and dry avoid touching the inside surface, as



Above: finished result achieved by methods described by the author. Note that the wheel arches have still to be trimmed out.

any dirt or grease will hinder the detail work to be carried out and eventually effect the adhesion of the paint.

Body Detail/Decoration

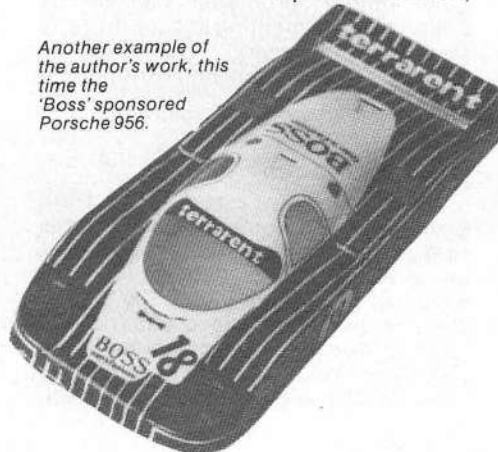
The next thing to do now, is to detail and decorate the body shell, either to a scale paint job or to a colour scheme of your own. The difference between a good realistic body shell and an awful coloured blob of sheet plastic really depends upon the amount of time and effort spent on detail work.

One small point I would like to make here, is that I never use transfers/decals or instant lettering. If you think that your own end product will look better with these than your own detail work, here are a few guidelines to help you apply them:

(i) Apply a thin coat of clear lacquer or varnish to the decal application area. This covers any marks left on the body shell after cleaning.

(ii) After application, seal in the decals with clear lacquer or varnish,

Another example of the author's work, this time the 'Boss' sponsored Porsche 956.



otherwise any paint applied over the decal will attack the base material.

My own reason for not using them are that they usually come off the shell quite easily in the event of an accident and also the range available seems to be directed more towards the American market, thus limiting the detailing available when you want to do a scale Formula 1 paint job or similar.

For all my detail work I use a *Rotring* 0.2mm Variant draughting pen filled with *Rotring* black, non-etching ink, the TT type is particularly good as it is designed for use on plastic draughting film. The pen can be brought from any decent art/graphic materials shop for around £6. I know some people tend to favour the *Rotring* Foliograph pens which can be used with etching ink, but these tend to cost twice as much and also if you make a mistake whilst using etching ink, it can prove very difficult to remove from the body shell.

All the major body details such as air vents, body panel lines, window outlines can be drawn onto the inside of the body shell, following the actual lines and detail moulded into the shell surface. Here a picture of the real car can be rather useful as some detail may not be incorporated onto the body shell.

To replace transfers, I apply the decoration straight onto the body shell using the *Rotring* pen and a fine pointed paint brush (size 0 seems to be the best for this use) for any coloured work. The paint brush should provide a good fine point and supply a constant

supply of paint from its base. It may mean spending about £1 to £2 for a decent brush, but if you look after it, it will last for quite a few years. Avoid brushes which tend to spring apart at the bristles. If you are not confident enough to work directly on the body surface a guide or 'stencil' can be drawn up on tracing paper, which can in turn be placed on the outside of the body and held in position with Sello-tape. As you can see through the body shell and the paper 'stencil', the design can be traced straight onto the inside of the body shell. One advantage of this, is that the correct spacing of letters and the correct proportions of details can be achieved. This is another use for pictures of a real car, as the correct lettering typefaces of sponsors' names, racing numbers, etc., can be copied. If the detailing/lettering is of a particular colour and difficult to produce using just a paint brush, trace the shape of the required design onto the body shell with a draughting pen, and then fill in the blank areas with the correct colour paint.

My personal choice of paint for detail work is *Humbrol* gloss enamel. Not only has it got good covering power, it tends to flow easier than some other brands now available and the adhesion onto the body surface is superior than most other types of paint.

Masking

When all detail work is complete, the next major task is masking off. If brush painting, masking is seldom required, unless you want to produce straight edges, stripes, etc. Masking tape is not very good for this job at all, as paint tends to creep in underneath it. The best tape for this job is *Scotch 3-M* 'pressure sensitive tape', sometimes known as 'Magic tape', as this will stick cleanly and easily to the body shell. If this is not available a good quality Sellotape will do an adequate job.

If spraying the body shell, masking is of great importance, as all windows and specified areas have to be covered. For this I use *Humbrol* 'Maskol', a masking fluid which is brushed on, allowed to dry and then peeled off when the paint job is complete. If using *Lexan* or any type of 'flexi-paint' which actually bites into the body shell surface, then the *Humbrol* 'Maskol' is a must to protect any detail work done with enamel. If the enamel detail work is not protected the flexi-paint will 'eat its way' through, destroying all the carefully done sponsors' names advertising stickers, etc. It is not necessary to mask any plain ink work as this tends to stand up particularly well to the flexi-paints.

Painting the shell

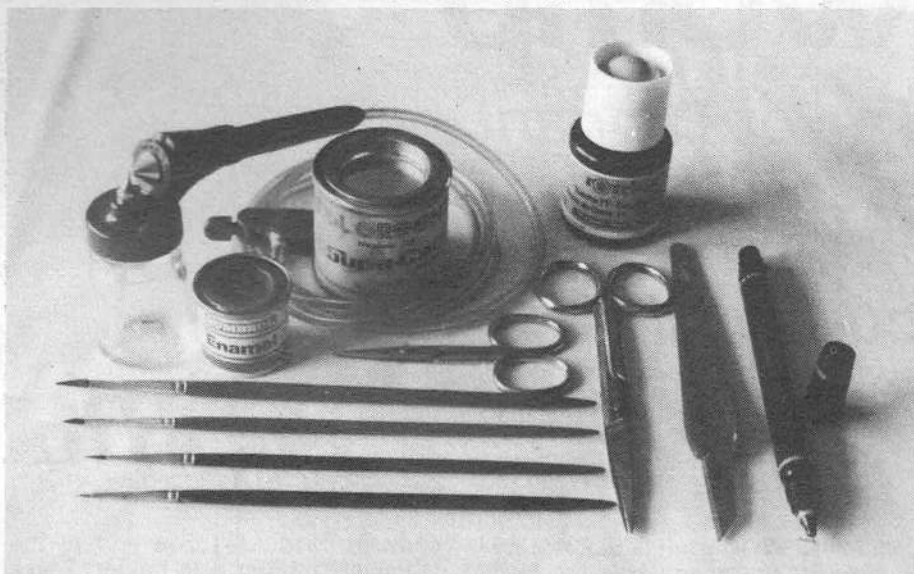
(1) Brush painting

For best results when brush painting use *Humbrol* enamel. Flexi-paints can

be used but they tend to give an uneven coat, and also they have a habit of destroying your best paint brush. If put on too thickly, the bodysell will actually disintegrate. Always use a good quality brush, which will give a good even coat of paint and try to avoid overloading the brush. Not only does

variety of things can be done with an airbrush, such as faded paint jobs, solid blocks of colour, apply a fine tint or haze before the fine top coat is applied, etc. Always remember when spraying that any colour sprayed over the top of another colour will have an adverse effect, e.g., red over white will

Below: tools for the job include Humbrol modelling spray gun, draughtsman's ruling pen and suitable black ink, modeller's knife and scissors plus a range of good quality paint brushes.



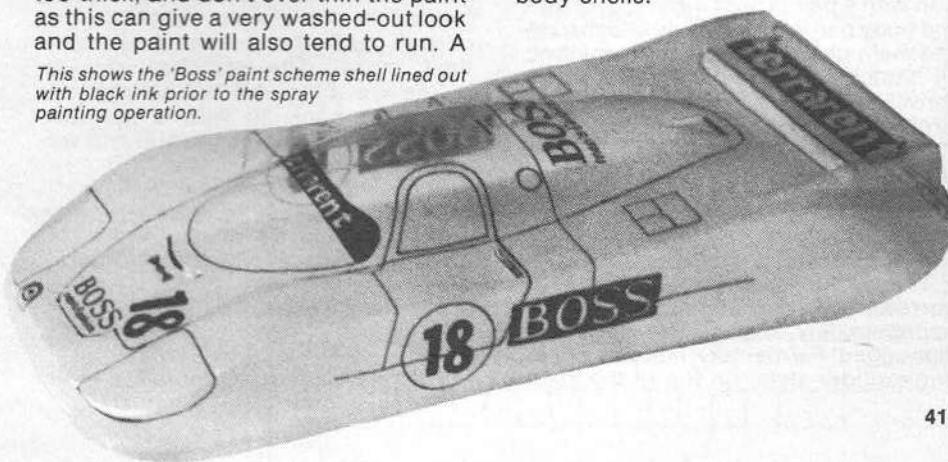
this waste paint but it tends to put too much paint onto the shell, thus reducing its flexibility. If carefully applied, a second coat shouldn't be necessary.

Spray painting

a. Aerosol cans — for cheapness and simplicity, some good results can be achieved by using car touch-up aerosol cans. The major drawbacks here are, uncontrollable paintflow and the adhesion of the paint is sometimes very poor.

b. Airbrushing — If using flexi-paint, then airbrushing is definitely the best way to apply it to the body shell, (flexi-paint has superior adhesion over any other type of paint as it actually 'bites' into the shell surface). Airbrushing, if done correctly, can give a super thin coat of paint yet still have very good covering power. One of the secrets behind airbrushing is the flow or consistency of the paint. Don't use it too thick, and don't over thin the paint as this can give a very washed-out look and the paint will also tend to run. A

This shows the 'Boss' paint scheme shell lined out with black ink prior to the spray painting operation.



give a pink effect; so unless this is actually required always remember to mask off.

The finishing touches

When all paint and detailing is finished and dry, all masking can be removed, overspray and dirty marks on the outside of the shell wiped off with lighter fuel or enamel thinners and finally any remaining excess body shell material can be removed (wheel arches, cockpits, etc.). Your masterpiece is now finished and ready for mounting on the chassis.

Next month, in part two of this article I shall be describing how to complete your body shell with a miniature Nelson Piquet, Derek Warwick, Bob Wolleck or whoever you desire to drive your car. Also how to look after your paint brushes, airbrushes, etc., the dos and don'ts of body painting and finally a few more tips on how to improve your body shells.

Mighty Womp

Trevor Tennant assesses this 1/32nd scale budget slot racer



Below: the Parma 'Mighty Womp' 1/32nd scale slotcar is supplied ready to run with a choice of painted bodyshells.

parma
INTERNATIONAL INC.

ONE THING YOU learn in Slot Racing is never to have any preconceived ideas on how anything will work, or not as the case may be. When I received this model for review I was amazed at how crude the design of the chassis seemed. The way the floating body mount was achieved seemed on first impression to be simply a joke. Furthermore the fact that there is no provision for any flex in the chassis in this day and age is quite extraordinary.

The kit includes a nice, spray painted Lexan body, the scale appearance of which is difficult to determine. I love it, but some years ago it would have been dismissed out of hand as a 'thingy'. However, times have changed and so what if the British Slot Car Association will not let us race it as it stands. Who cares? What is required is a cheap class of racing which is predominantly good fun. The cars must be fast enough not to bore the good drivers but be slow enough not to intimidate the novice.

The body is fixed to the floating body pan with a pair of neat wire clips, in turn the body pan is very loosely attached to the main chassis by the crafty method of punching three prongs upwards through the main chassis. These then protrude through the floating body pan to retain it but they are very loose and the pan has, what seems, an excessive amount of movement.

Construction

The chassis is steel plated to prevent corrosion with a material thickness of approximately 20swg. The now fully 'debugged' Parma '16D' motor is fitted, anglewinder style, on top of the main

chassis, fixed can drive end to the motor mount/rear axle holder. These mounts are an integral part of the chassis, being folded up from the main chassis member. Provision for gear mesh and ratio adjustments are allowed for by the slotted motor mount. Oilite bearings are a light press fit into the axle mounts. An 8 tooth steel pinion is press fitted to the motor shaft, a 34 tooth nylon, *Cobra* spur gear to the axle which is retained to the $\frac{1}{8}$ in. axle with an Allen grub screw. Set screw alloy hubs are fitted to the rear axle and the black sponge tyres are nominally $1\frac{1}{16}$ in. wide and are $\frac{7}{16}$ in. in diameter. The rear width is $3\frac{3}{8}$ in. which is rather wide considering that the wheelbase of the chassis is 3in.! The overall width of the body when mounted is $2\frac{9}{16}$ in., the body shape to cover the tyres reminds me of a Coke bottle! The front O ring tyres are mounted on alloy conical set screw wheels. The $\frac{1}{8}$ in. dia. front axle runs directly in the chassis material without any bushes. The standard *Jet slot* guide is mounted in a depression formed in the chassis to obtain the correct guide height and to provide limit stops. The standard pick-up braids are quite stiff but satisfactory whilst the hook up wire is not very satisfactory I feel it is too stiff and will give trouble in use.

No interior is provided with the body but I have no doubt that a *Betta Bodies* example could be made to fit. The chassis is also sold with a *Lancia* 'GP.C' body.

Track Testing

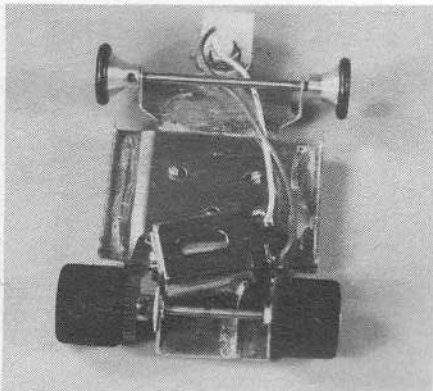
As is my normal procedure I carefully

checked over the car before I attempted to run it. Apart from trimming the braids shorter I ran the car as received. The track used was **Bedworth Slotstox Oval** which is very fast but notoriously unforgiving on bad handling chassis. The tight chicaned corners really test a car's handling attributes and the angle iron retaining walls have been known to find out the weaknesses in people's car construction! The longest straight is 12ft. and the nominal lap length is 40ft. The power supply is a 150amp/hour *Nife* battery and the surface is plywood. The paint finish is grey, one pack polyurethane coach paint. The lane tapes are the new *Parma* self-adhesive copper which I intend to discuss at a later time.

The car when first tried was surprisingly fast in a straight line, although the cornering whilst good gave me the impression that it was bouncing all over the place. Otherwise it was very good indeed. However, the Tennant can never resist the temptation to modify things — so to the workshop.

Modifications

The spacers on the rear axle were removed to reduce the width to a more sensible 3in. The rear axle oilites were too loose and required either soldering or super gluing in place with the axle in position. The motor was flexing about its mounting giving concern regarding the life of the gears. This aspect was solved by soldering a wire brace from the side of the motor can next to the



Left: very simple modifications can be carried out on the 'Mighty Womp' to improve its handling qualities. All that is needed is a good, hot soldering iron is a good, hot iron and some lead.

endbell to the chassis. This brace should run rearwards under the axle and must be well soldered with a good, hot, iron. The body pan should be restricted in movement by soldering a $\frac{1}{16}$ in. wire stop to the main chassis. This stop should be so placed that the body pan will lift at its rear end but the pan will not rotate as much as before. What we are trying to obtain is a sort of reverse-iso effect.

The bouncing is cured by sanding the rear tyres so that they are concentric with the axles. A $\frac{1}{4}$ in. wide strip of lead fitted in the recesses in the pan will be a big help for the cornering, the lead should run the full length of the pan and should be 18swg in thickness. A similar strip of lead fitted under the front axle will prevent the car wheel-standing on acceleration.

To improve the appearance the body can be cut down in height but do this with great care or the wheels will rub on the body. The reinforcing tape fitted to the body can be reused.

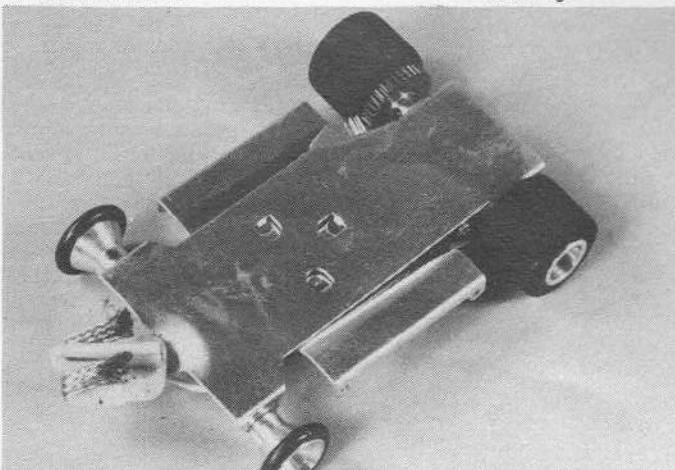
When we tried the car after the work we were amazed at the improvement in performance. The cornering, when thrashed to the limit, was a big surprise. I was trying for the first time a *Parma* Economy Controller of 4ohms rating. The resistor value suited *my* driving style, however I would suggest that a beginner would find a 10ohm resistor less of a handful.

To conclude, an excellent, value for money, introduction to the performance levels unobtainable anywhere else for the price.

UK Distributor: *Helger Racing*, 72 Lauderdale Tower, Barbican, London EC2Y 8BY.

Price: £10.75.

Below: the chassis underside of the 'Mighty Womp'; note the three prongs punched upwards to retain the floating body pan. Side walls of the body pan provide body mounting.



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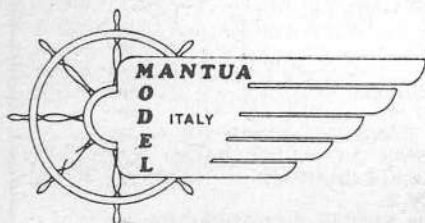


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Mantua-4

Try a different approach with this budget-priced alternative to 1/8th scale circuit racing



MANTUA MODEL of Italy have indeed taken a bold step in producing a competition, 1/8th scale circuit car to compete (on the track and in the model shop) with that other famous Italian manufacturer SG. However, knowing the depth of interest in 1/8th scale racing in Italy no doubt there is room for both. In many respects Mantua have played the kit-production game very cleverly by producing a different style chassis than is the norm, which is both strong and reliable whilst still offering the competition racer plenty of scope.

Naturally a less sophisticated construction makes for a less sophisticated price, a feature which is particularly beneficial for those just entering this branch of the sport or those wishing to tone down their involvement.

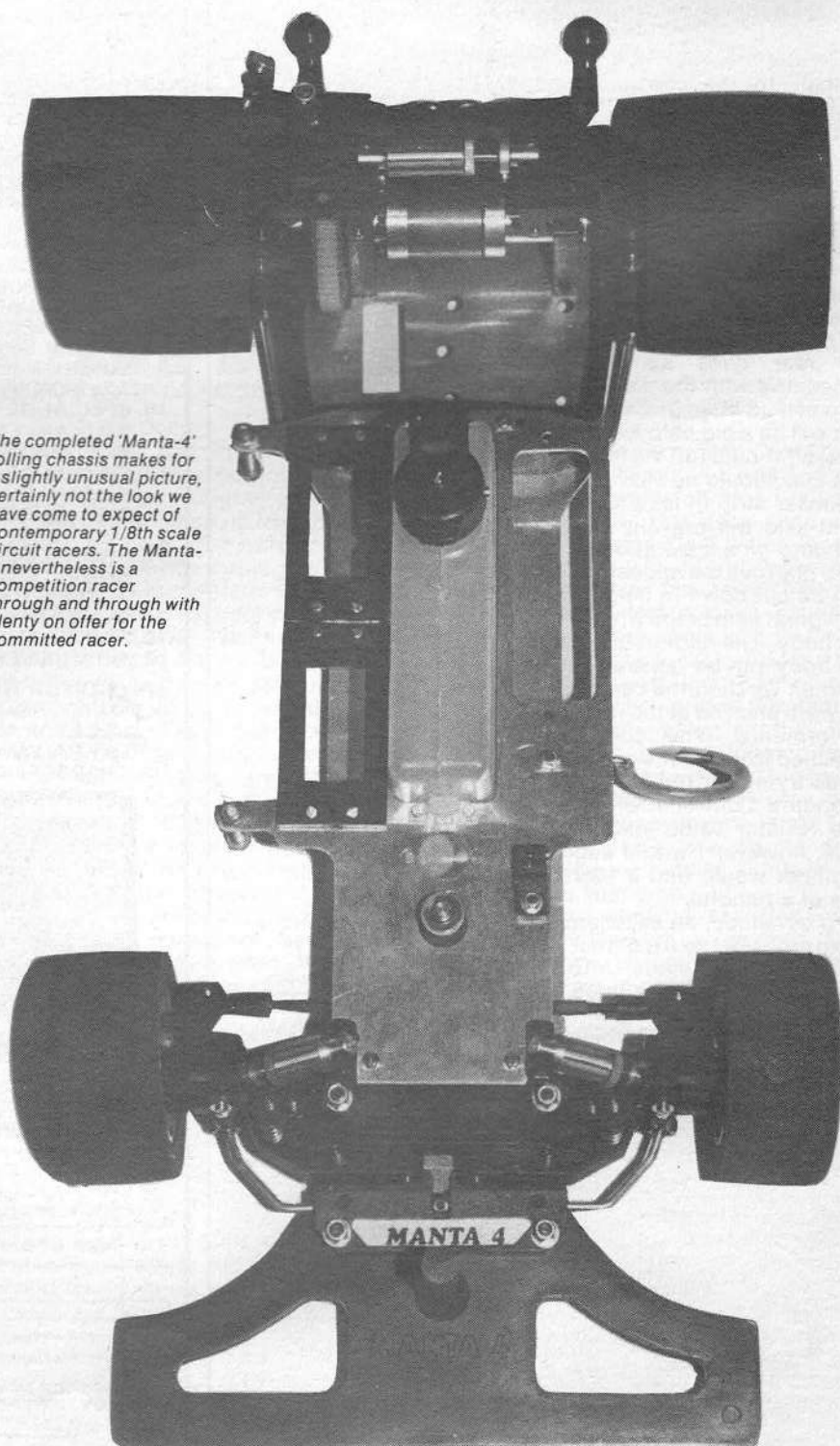
Construction

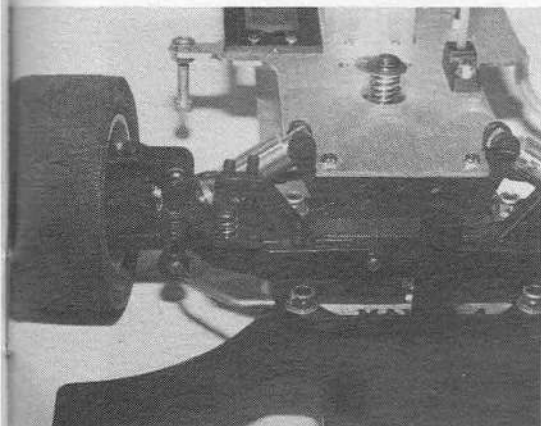
Mantua supply an A4 photo booklet of construction stages to help assemble the 'Mantua-4' and very little else. Unfortunately the photos, in some cases, do not explain fully the constructional procedure. Still a little concentration and commonsense should set you right.

Another A4 sheet gives instructions on setting up complete with measurements for correct ride-height and suspension settings.

Due to its simplified suspension systems front and rear, assembly time on the 'Mantua-4' is kept to reasonable levels. Italian manufacturers seem very adept at producing accurate mouldings and Mantua are no exception.

The completed 'Mantua-4' rolling chassis makes for a slightly unusual picture, certainly not the look we have come to expect of contemporary 1/8th scale circuit racers. The Mantua-4 nevertheless is a competition racer through and through with plenty on offer for the committed racer.





Front suspension

This takes the form of single wishbone suspension pivoting upwards on a main bulkhead which has been machined to give 9° castor. Damping is provided by two, dumpy, oil-filled units which mount between the wishbones and shaker plate. Ride-height and suspension springing is supplied by two coil springs which are adjustable to give suspension stiffness. An anti-roll bar is also incorporated.

Rear suspension

Two, very wide 'bracket' shaped wishbones totally surround the rear axle and engine bay to form the rear suspension. To these are joined the rear hub carriers which in turn couple to two more moulded 'brackets' which pivot on the rear axle bulkheads. The differential is of the geared variety and comes ready assembled. The drive from the engine is transmitted directly to the rear axle via a large glass-filled plastic diff. gear. This gear also doubles as the means for braking as both sides are fitted with 'Ferodo' type brake lining. The brake cam then acts on the diff. gear itself. The completed assembly is topped off with a single mono-shock damper coupled to the upper brackets.

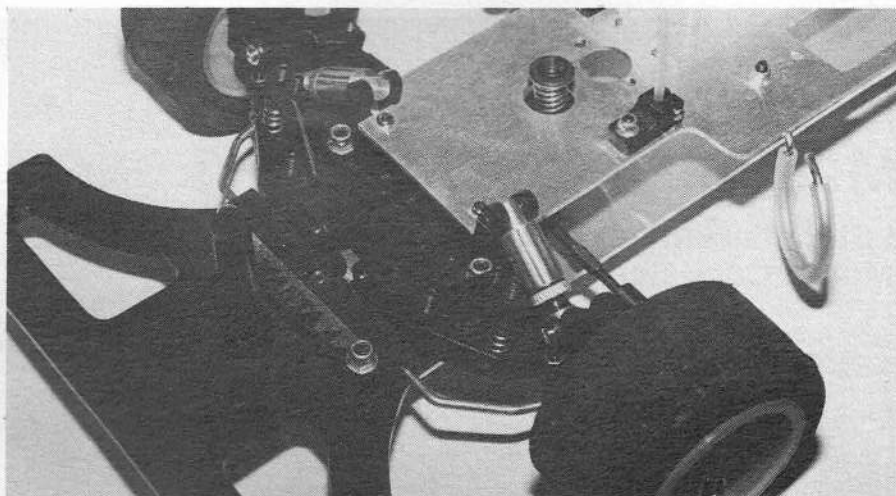
On the track

Despite the relatively unsophisticated suspension the 'Manta-4' displays a very smooth operation although does tend to 'bottom-out' on bumpy sections. By far its greatest attribute is its weight, the lack of it to be exact, in a straight line the 'Manta-4' is extremely quick particularly when coupled to a top performing motor/pipe set-up. On kit tyres the car tends towards understeer particularly with the moulded fronts. However the 'Manta-4' has achieved some major successes in particular a fourth place in the 1984 European Saloon Car Championships final, a higher placing than both PB and Serpent and second only to SG.

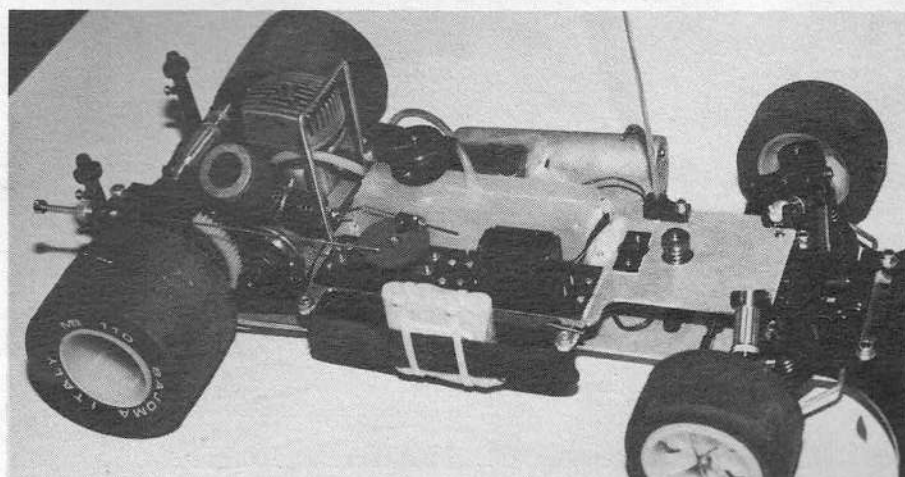
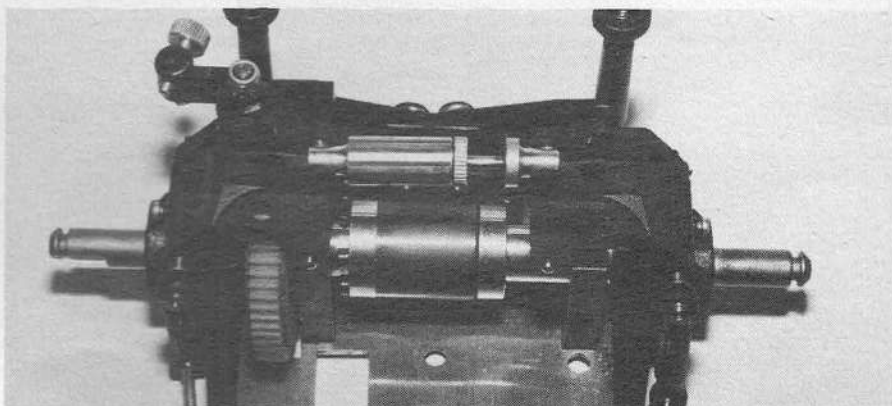
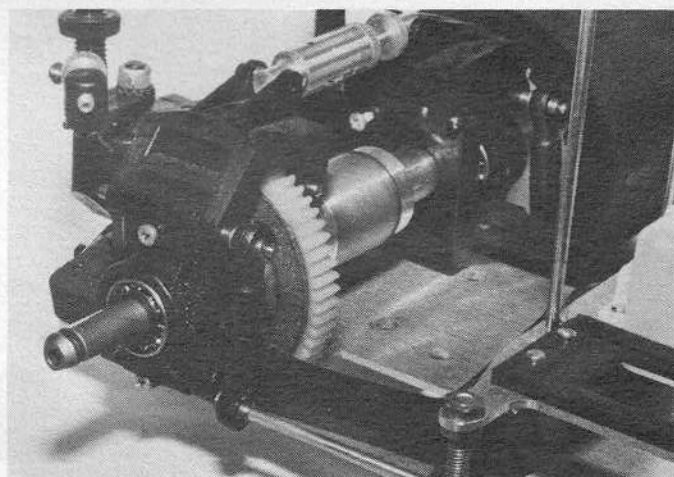
Price: £105.00.

UK Distributor: Jack Williams, Eastwood, Beverley Road, Walkington, North Humberside, England, HU17 8RP.

JULY 1984



Above left: close-up of the front steering and suspension set-up. The lower wishbone provides the mounting points for the damper's anti-roll bar and suspension springs. Stub axle blocks are ball-raced. Above: the completed front suspension system. Right: the interesting drive system incorporating brake and differential gear into one unit. Note, all-embracing suspension wishbones.



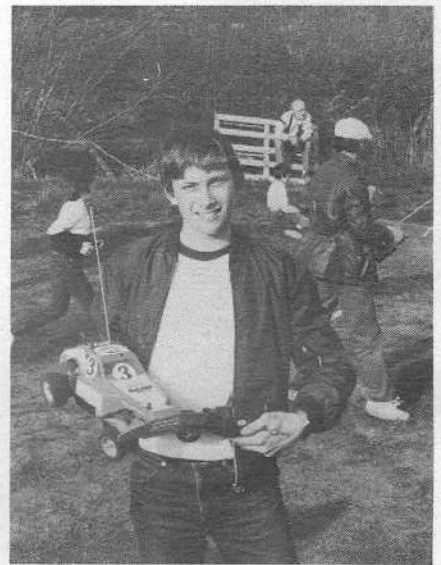
Racing Round-up

Chesham 1/10th Scale Off-Road, BRCA National Meeting. Modified Class

Little Missenden — April 22.
Model Cars staff report



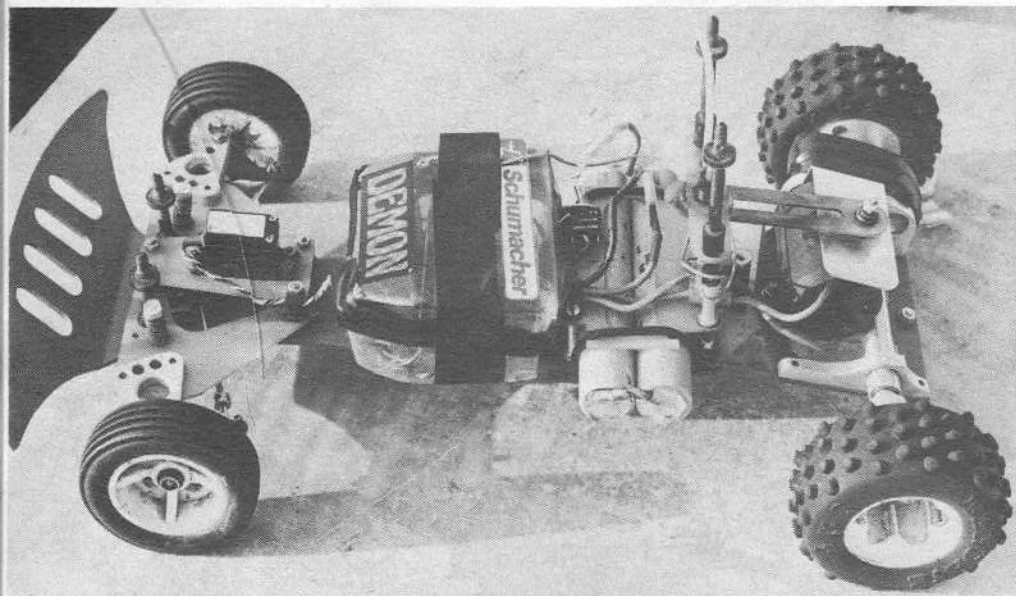
Above: the excellently prepared Chesham 'Hooligans' buggy club circuit situated at the Royal Oak Pub, Little Missenden, Bucks. Club members put in a lot of hard work to prepare this track in readiness for the Off-Road season. Their reward was unanimous approval by all the drivers present. The circuit is not only self marshalling (well almost) but is capable of being changed to give varying circuit shapes. IC buggies can also be run by extending the main straight.



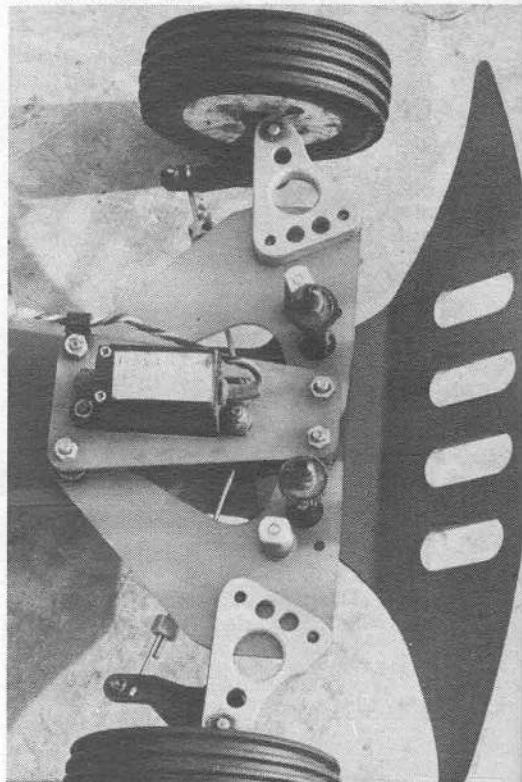
Above: Paul Stallard, eventual winner of the BRCA A-final driving a UK Digger. Paul had to work hard for his trophy by winning a long, close dice for the lead with Glyn Peglar. Glyn complained of having too much horsepower. All right for some!

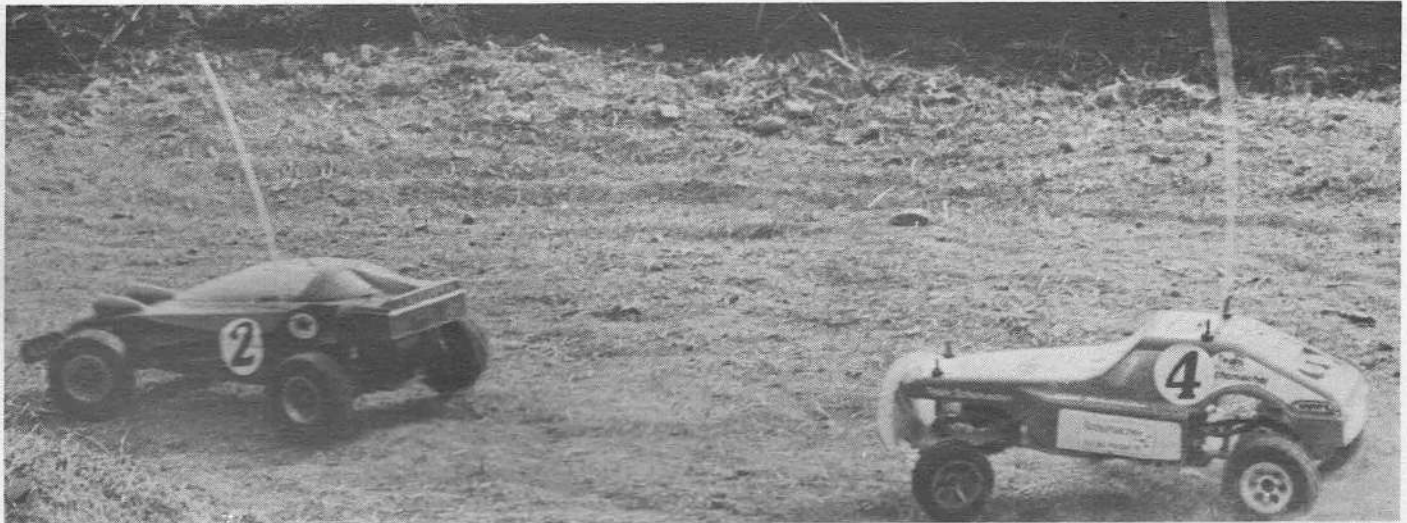


Above: Double 'Diggers' battle it out for the lead. Below: close-up detail of the John Benson modified 'Digger' front-end. More modifications will appear shortly.



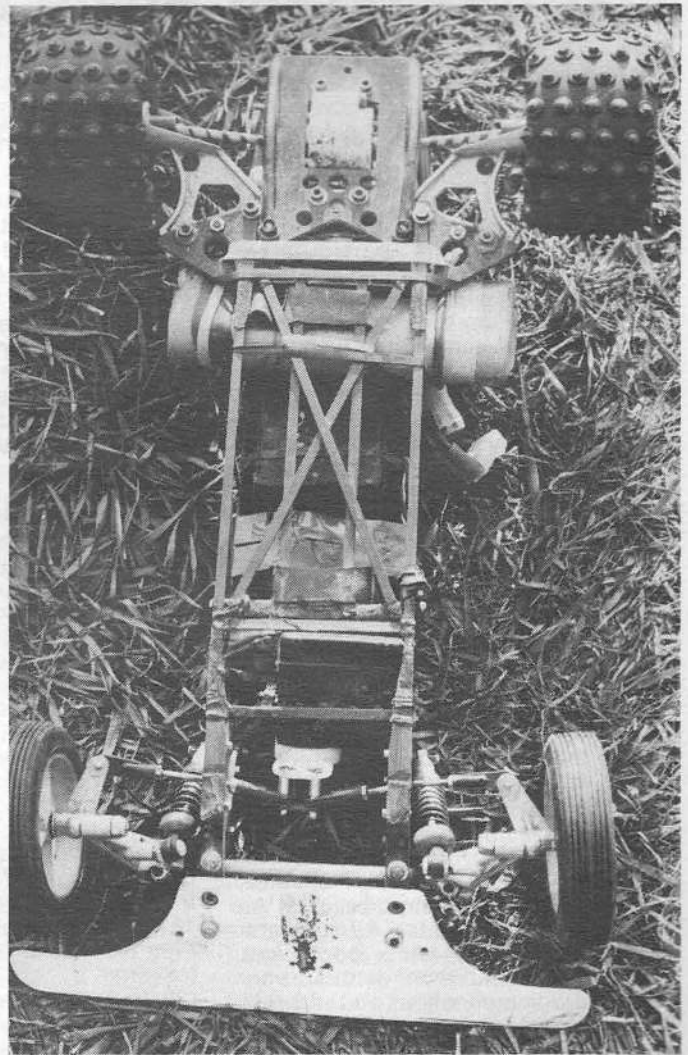
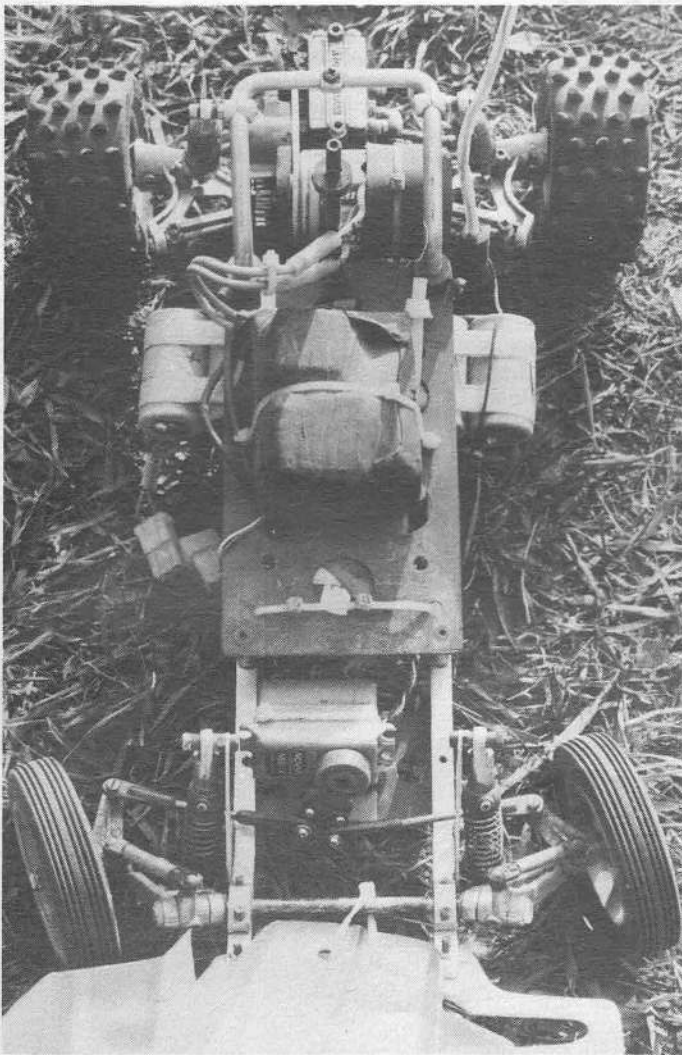
Above: Andy Benson's modified Schumacher/Bolink Digger featuring many tune-up parts custom-built for him by his father, John Benson. Machined alloy motor mounts and axle torque tube coupled to alloy hub carriers are featured at the rear-end. Machined alloy front stub axle stub supports are incorporated onto the front suspension. Andy drove well and qualified fifth fastest, however failure to connect up his Ni-Cads to the receiver put him last in the A-final.





Above: Digger chases Hirobo. Below: George Land's much modified Kyosho 'Scorpion' featuring mid-engine motor layout, revised suspension mounting points and low centre of gravity.

Below: Dave Kendall's carbon-fibre 'Space-frame' chassis puts him into the A-final. The Space-frame 'concept' brings the car's weight down to the barest legal minimum although at the sacrifice of some structural strength.



Results

Open A-Final

1. C. Milthorpe	10	7.7
2. J. Pratley	10	18.7
3. I. Skinner	10	19.3
4. J. Benson	9	1.3
5. C. Reynolds	9	6.5
6. M. Childs	9	9.5
7. G. Timbs	9	15.1
8. P. Middleton	9	15.2

BRCA C-Final

1. P. Stephenson	10	17.6
2. S. Morton	10	27.1
3. C. Willoughby	9	13.6
4. N. Boarder	9	20.5
5. C. Groves	9	23.5
6. M. Whitney	8	26.3
7. L. Custance	8	DNF
8. L. Eckett		

BRCA B-Final

1. T. Calcott	11	18.6
2. P. Pichel	11	24.3
3. P. Stevens	10	26.5
4. D. Taylor	10	DNF
5. A. Nunn	9	5.3
6. M. Francis	9	33.3
7. J. Custance	7	DNF
8. R. Delves	6	DNF

BRCA A-Final

1. P. Stallard	11	12.1
2. A. Hastings	11	17.9
3. G. Peglar	11	20.1
4. D. Kendall	11	23.1
5. G. Land	10	0.9
6. M. Bettison	10	14.1
7. D. Clark	10	19.2
8. A. Benson		

FTD

G. Peglar

Racing Round-up

THE 1984 CHAMPIONSHIP moved to Stafford for round three of the 11 event series. The normal format of Modified motors for Saturday and Standard on Sunday faced competitors who entered. Organiser John Robson closed the entries on time and 100 places were filled on each day. This meant that late entries were not given a place which is as it should be since this maintains the time available to the organisers to complete all their arrangements on schedule. The circuit was new to me, but familiar to Stafford regulars being very similar to the Stafford League track used every month. The much reported 'Toblerone' shaped track markers were in use, causing one ex-model plane flyer to remark that he had left his four-channel Tx at home! Hitting one of these markers causes the car to take off and



Above: superbly laid out circuit at Stafford with the usual 'Toblerone' track markers. Sand-filled fire-hoses and bot-dots viewed from the drivers' rostrum.

Stafford 1/12th Scale BRCA National Meeting

GEC Stychfields: April 7/8 Report by Pete Winton

reach an alarming height and distance. The winner of this particularly damaging pastime performed a double back somersault with pike, landing way off the circuit under the pit tables.

In the *Demon* camp there were few car changes, but Andy Benson was entered in the team at this meeting. Nick was trying a motor spacer to keep the motor in a central position, but reverted to a standard set up for his final. Using *Demon* motors and the *Demon* tyres, Nick, Andy and Grahame had a mixed weekend.

Team *Schumacher* were sporting almost the same cars as seen at Washington with the exception of a new three-point servo plate mounting. Cecil was using a new type of front wishbone, giving extra length to the wheelbase (0.3in.). These wishbones are destined for an American specification chassis, but the team quickly christened it the 'G'-car, due, I'm told, to its forgiving nature being suitable for geriatric drivers! Their motors (*Trinity*) were excluded. (See 'on the carpet' text).

Jimmy and Wayne Davis together with Nigel Hale were entered as *JDM 'A'* but read *Team Associated*. All their cars were the usual '12i's. Micky Booth was using the new independant sprung front-end with monoshock and anti-roll bar and reported a useful improvement in stability and turning into corners. Jimmy forgot the team bodies and had to return to base to fetch them!

In the *Parma* camp there were new chassis' for Phil Olsen and Chris Arnold featuring cells mounted closer to the centre of the car. This modification

improves the handling in their opinion. Team *Parma* performance is improving slowly with each National that passes.

Also seen in the hands of a few competitors were 'Quasar' speed controllers from *Star Electronics*, small in size and therefore suitable for mounting low down on the chassis plate, these units are liked by the drivers and may be seen in larger numbers soon; if they catch on.

Saturday — Modified Class

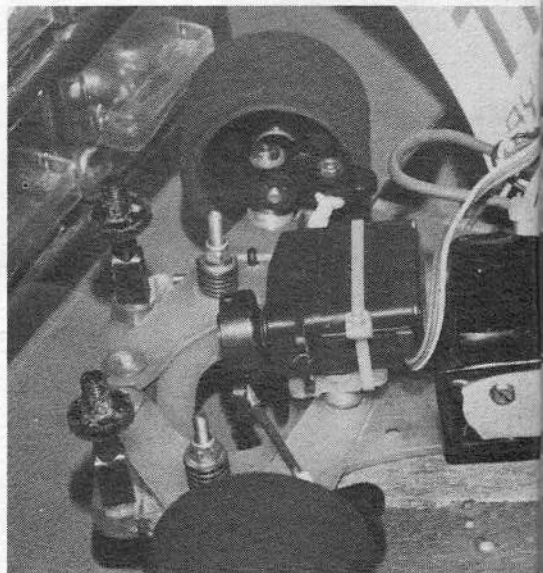
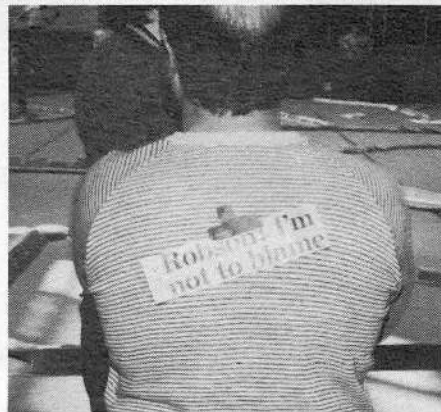
Racing got underway slightly late, and the first round was more interesting due to the discussions about *Trinity* motors than any racing.

Glynn Pegler headed the lists after round one with the only 39 lap score (39-11.5) followed by Jim Spencer (38-1.0) and David Gale (38-8.4). Next up was Terry Dutton (38-11.5), Les Pipe (38-12.12) and Chris Arnold on 38-19.4. Andy Dobson is not one to let things get the better of him, but Round 2 eluded even his tenacity. Not so the inevitable names of Nigel Hale (40-5.9) and Jimmy Davis (40-12.0) at the top. Improvements from David Gale (40-13.4) Glynn Pegler (39-3.1) and Les Pipe (39-4.9) kept them in the top five followed by organiser John Robson (39-11.3). There were no faster times for Nigel and Jimmy, but they were now separated by Fraser Smart (40-7.6) and Andy Dobson (40-8.7) at the end of Round 3. David Gale now fifth on 40-13.4 was ahead of Wayne Davis on 39-0.3.

Finals were efficiently sorted but less efficiently driven. By the time the 'C'

Final was on the line spectating had become a dying art. But a four-way dice for the first place between Andy Benson, Nick Adams, Russ Giles and Pete Angus certainly changed that. This was a real race. Nick leading from both Russ and then Andy, Russ got the lead for short periods but a series of mistakes by him and then Nick left the finishing order Andy, Nick, Russ and Pete. They richly deserved the loud applause that followed the finish. The 'B' final was a procession by comparisons even though Chris Arnold drove hard to hold

Robson: I'm not to blame. The job of race organiser is all too often a hard and thankless one. Thanks John and keep up the good work.



Standard Class Tech chart

Name	Chassis	Motor	Cells	Tyres Front	Tyres Rear	Servo	Radio	Speed Control	Body	mm/rev. Ultimate Ratio
A. Dobson	S'macher 'C'	Trinity	Demon Sanyo	07	07	Novak	Macgregor	Laser Turbo	Alpha Skee	46.2
C. Arnold	Parma Panther	Renault Turbo	Parma Sanyo	Parma Med.	Parma Med.	Novak	Kraft	Parma Resistor	Parma March	43.2
D. Gale	Demon	Pro Slot	Demon Sanyo	Mardave	Med.	Novak	JR FM	Demon 2CeS	Alpha Toj	43.2
L. Pipe	S'macher 'C'	MRP 550	Demon Sanyo	07	07	Bantam	Futaba M	Demon 2D	Alpha Skee	46.8
T. Dutton	S'macher 'C'	Spring	Demon Sanyo	07	07	Futaba	Futaba FD 30M M	Laser Turbo	Alpha 956	43.2
M. Booth	Assoc. Suspension	Reedy 05	Assoc. Sanyo	Assoc. S. Soft	Assoc. Green	Novak	Multiplex	Demon 2CeS	Assoc. Toj	44.3
F. Smart	Assoc. Rig	Reedy 05	Assoc. Sanyo	Assoc. Green	Novak Green	JR	Laser	Assoc. Compact	43.4 Jaguar	
P. Handley	S'macher 'C'	Spring	Demon Sanyo	07	07	FD 30M	Futaba M	Demon 2CeS	Alpha 956	40.0
D. Attenwell	Delta	Spring	Parma Sanyo	07	07	FD 30M	Futaba M	Demon 2CeS	Alpha Toj	42.6
P. Davies	S'macher 'C'	Trinity	Demon Sanyo	07	07	Novak	JR FM	Laser Turbo	Alpha Skee	41.8

off Les Pipe, these two well ahead of the field. Unfortunately Chris's speed was to the sacrifice of duration and as he slowed Les went past to win.

The instrumental music from Fleetwood Mac's 'The Chain' (otherwise known as BBC 2's Grand Prix Theme) heralded the gladiators for the 'A' final. Despite the build up, all that followed was a 'chase the Andy Dobson' race, Andy getting clean away. By lap four Jimmy was the chief pursuer with Glynn Peglar in third. Nigel drove from the back of the field on lap 1 and demoted Glynn to fourth towards the end. That was the finishing order, but the quality of driving is so good and they make it look so easy, that an exciting 'A' final is becoming rare.

Sunday — Standard Class

There were no motor disputes today. The organisers made it quite clear that Yokomo standards were not legal until May and would be excluded from today's event if used. Standard racing is part about 'awzepowa' (Wayne Davis's phrase) and part, neat and economic driving to allow the highest possible gear ratio to be used. The most expensive pastime was protesting, which costs £5.00 for each protest. After yesterday's motor's argument relieved various parties of £10, yet another £10

passed across the table today over an incident involving Bill Jones and Phil Handley. Bill protested Phil's bad driving and had a very heated exchange about Chris Arnolds track behaviour, but it was all resolved amicably in the end, with no penalty's being applied. Young A. Fraser got the fright of his life when he was disqualified from the meeting for practising after a previous warning, but again this was also withdrawn. I hope he learned his lesson; you are not allowed any practice at a National. While these two events were acted out in a very short space of time, it took seven hours for the final qualifying table to take shape.

It was headed by Andy Dobson on 40.8.3 followed by Chris Arnold, 40-11.6 and David Gale 40-12.1. The rest were on 39 laps including Les Pipe (39-4.0) Terry Dutton (39-4.6) Micky Booth (39-10.0) Fraser Smart (39-10.7) and Phil Davies (39-10.9). It was very close at the top.

Once again it was the 'C' final that gave us good value. Martin Baker held the lead with some inspired driving, but he was pushed all the way by first Fred Hatfield and then Glynn Peglar. Fred got into a tangle with team-mate Alan Blakeman after Glynn demoted him to third place and chased Martin. Paul Hatton started to move up and reached

Results MODIFIED

'A' Final	'B' Final	'C' Final
1. A. Dobson	1. L. Pipe	1. A. Benson
2. J. Davis	2. C. Arnold	2. N. Adams
3. N. Hale	3. J. Robson	3. R. Giles
4. G. Peglar	4. S. Chippendale	4. P. Angus
5. D. Gale	5. P. Olson	5. P. Hatton
6. S. Haywood	6. W. Jones	6. A. Hastings
7. P. Davies	7. T. Dakin	7. C. Evans
8. M. Booth	8. T. Dutton	8. F. Hatfield
9. F. Smart	9. J. Spencer	9. A. Wilkinson
10. W. Davis	10. P. Jones	10. T. Biggs

Teams 1. JDM 'A' 2. Schumacher 3. Parma

STANDARD

'A' Final	'B' Final	'C' Final
1. A. Dobson	Lost'em	1. G. Peglar
2. L. Pipe		2. M. Baker
3. D. Gale		3. P. Hatton
4. M. Booth		4. F. Hatfield
5. C. Arnold		5. A. Blakeman
6. T. Dutton		6. P. Farmer
7. P. Davies		7. G. Davies
8. D. Attenwell		8. P. Riley
9. P. Handley		9. N. Adams
10. F. Smart		10. P. Jones

third at about the same time that Glynn passed Martin for the lead and that's how they finished.

The 'B' final looked a very class affair with Nigel Hale and Jimmy Davis heading a field which would be a good 'A' final at any other National. Jimmy won from Nigel who again drove through the field for his placing.

And so to the finale. The race started in a bit of a rush, Les Pipe only just getting to his grid position in time. Andy Dobson led all the way from the pole position and finished the race without going flat. Les Pipe took up station in second and Micky Booth and David Gale fought their own battle for third. David made the final passing manoeuvre and kept third from Micky.

The weekend talking points were of course the motors and the protests. The organisers gave us a very well organised meeting and resolved all the protests to a level of general acceptance with speed and commonsense. The rules governing modified motors have been blown open, it being very easy to prove a motor has been modified, but just what is the definition of a scratchbuilt? If you take off the endbell, clean the motor out, adjust the brush spring pressure and remove the label is it a scratchbuilt? It is certainly built from 'any approved' can, magnets, armature and endbell. Since these must be bought from a shop, what happens if their collective cost exceeds £35.00? As the rules stand there is nothing to stop anyone selling a motor for £35.00 and then selling, say a better armature for another £10.00. As soon as the armature is fitted by you it is a scratchbuilt and is perfectly legal.

Well done Stafford, I'm sorry that this meeting will not be remembered for your hard work.



Left: competitors, Schumacher 'C'-Car fitted with a 'Quasar' speed controller produced by Star Electronics. A very neat, compact device capable of being fitted low-down on the chassis. 'C-Cars' proved to be the most popular chassis marque at the Stafford meeting closely followed by Demon then Associated.

Mendip 1/8th Scale Off-Road BRCA National Championship Meeting

Weston-Super-Mare — April 8
Model Cars Staff report



Above: creatures in the grass! Serpent 'Cobra' (left) and SG Leopard both belonging to John Glazbrook. The Leopard was ultimately chosen for the race. Nice to have a choice though! Below: Mendip circuit owner, John Keay presents Mike Perry with his winner's trophy.



Above: Russel Buckner administers a gentle 'tweek' to his SG Leopard in readiness for the race. Either that is his normal expression or he's got his finger stuck. Below: the youngest racer present, Tommy Chung has trouble seeing his car past the other drivers.



Results

Unrestricted

1. M. Perry	54	SG Leopard
2. J. Weedon	52	
3. B. Heap	49	Yankee
4. J. Glazbrook	46	SG Leopard
5. M. Samuel	46	SG Leopard
6. T. Chung Jr.	45	Yankee
7. D. Chung Snr.	45	SG Leopard
8. T. Tawton	0	Yankee

Restricted

1. K. Napper	54
2. T. Lawless	50
3. P. Wolf	49
4. B. Burkinshaw	45
5. D. Glazbrook	44
6. S. Applegate	42
7. C. Wolf	42
8. M. Stockford	39



Weston Off-Road Models 1/10th scale buggy meeting

March 25 — Report: Roy Atkinson

THE RAIN WHICH fell virtually all day did not seem to dampen the enthusiasm of the 60 drivers who took part in the Weston Off Road Trophy event, the first National meeting to be held on the new track at Weston Football Club's ground, organised by Weston Off Road Models.

The Concours D'Elegance followed the official opening of the track by Geoff Trapnell who cut the tape manually after having had difficulty with his radio-controlled scissors.

Twenty qualifying heats were held during the morning session and although it rained without cease the racing continued without interruption. These heats started the drivers off on their ultimate aim of winning the 20 trophies and many other prizes on offer. The Social Club was put to good use by competitors during the lunch break but these facilities were denied to chief lapscorers, Angela and Keith Luckham who stayed in Race Control to classify the drivers into Expert, Intermediate and Novice categories depending upon their performance in the morning's heats.

Three rounds of class heats were held in the afternoon session and so drivers had three chances of staking

their claims to a place in their respective finals. Drivers were now more closely matched and this resulted in some very exciting and closely fought races.

Mike Till, Jan Tribble and Andrew Gibson went to the front early in the Novice Final and it soon became clear that it was going to be Mike's race until the very last lap when his car lost power and was passed by Andrew and Jan. Fourth, fifth and sixth places were taken by Martin Pepler, John Antoni and Les Coulman.

The lead, in the Intermediate Final, chopped and changed on virtually every lap but it was usually either Ian Moore or Colin Holdom in the lead. Nearing the end of the race Colin just pipped Ian only to be passed again, virtually on the line, by Ian. Jerry Griffin worked his way through the field to finish third followed by John Beament, Matthew Beale and Paul Domini.

The battle in the Expert Final was for the places as the 'Tomahawk' faultlessly driven by Andy Butt went into the lead. Phil Rosser eventually took second place followed very closely by Keven Waite, Phil Pontin, Steve Thomas and Perry Tribble.

All finalists in the Expert, Inter-

mediate and Novice classes were presented with Trophies by Mark Lovell, British Rally Team Driver (*Visa Windows*), Geoff Trapnell (*Trapnell's Models*) and Roy Atkinson, who sponsored the events. The Expert winner also received a *Tamiya* Subaru and *Acoms* radio donated by *Richard Kohnstam Ltd.* Dennis Atkinson (Concourse D'Elegance winner) and Andy Butt (FTD) were presented with trophies by Mike West of *A&M Blinds*. Messrs *Ripmax* very kindly donated prizes and these were presented by Ken Vause of Ripmax to the Intermediate winner, Ian Moore (*Kyosho Beetle*), Andrew Gibson Novice Winner (*Futaba Radio*) and *Futaba Servos* to all other novice finalists.

Weston Off Road Models wishes to thank all our sponsors and all the competitors who made the day, despite the weather, very enjoyable. The next Weston Off Road Trophy meeting will be held on July 15, with another scheduled for September 23. Contact Mark Pope, 'Timberscombe,' Bridgewater Road, Lympsham, Somerset for further details.

Expert Final

1. A. Butt
2. P. Rosser
3. K. Waite
4. P. Pontin
5. S. Thomas
6. P. Tribble

Novice Final

1. A. Gibson
2. J. Tribble
3. M. Till
4. M. Pepler
5. J. Antoni
6. L. Coulman

Intermediate Final

1. I. Moore
2. C. Holdom
3. J. Griffin
4. J. Beament
5. M. Beale
6. P. Domini

FTD Andy Butt.

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Dennis Atkinson.

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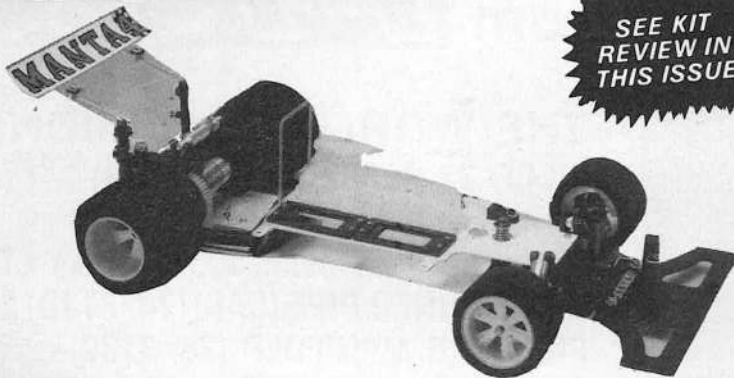
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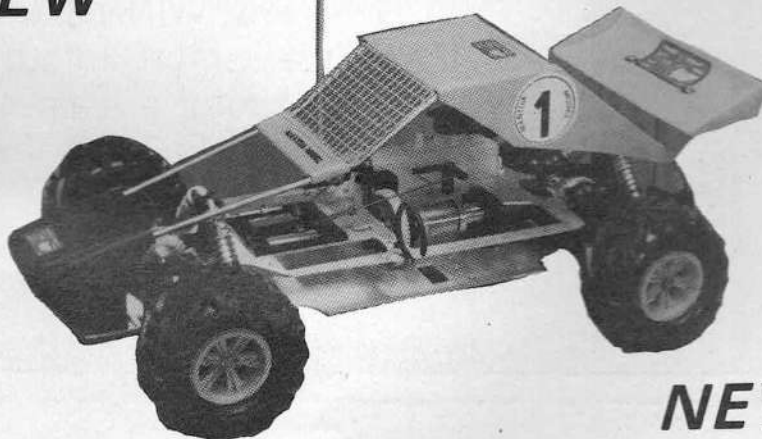


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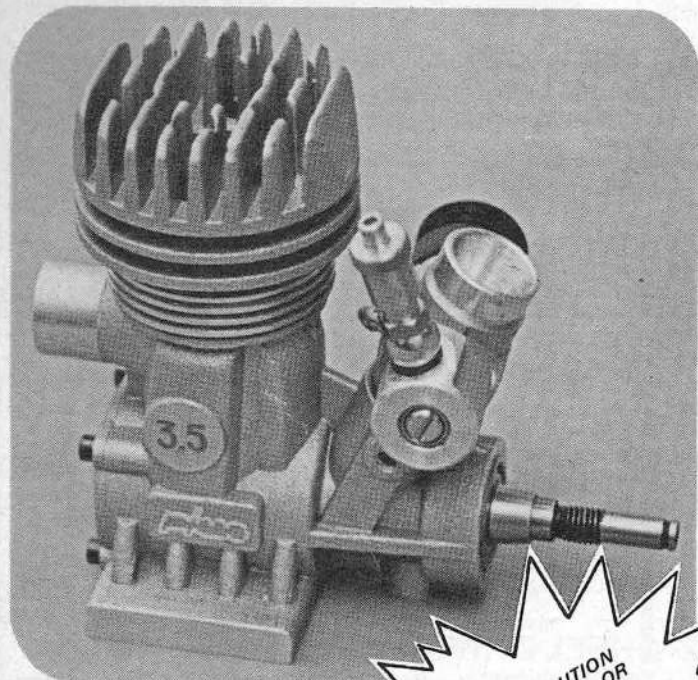
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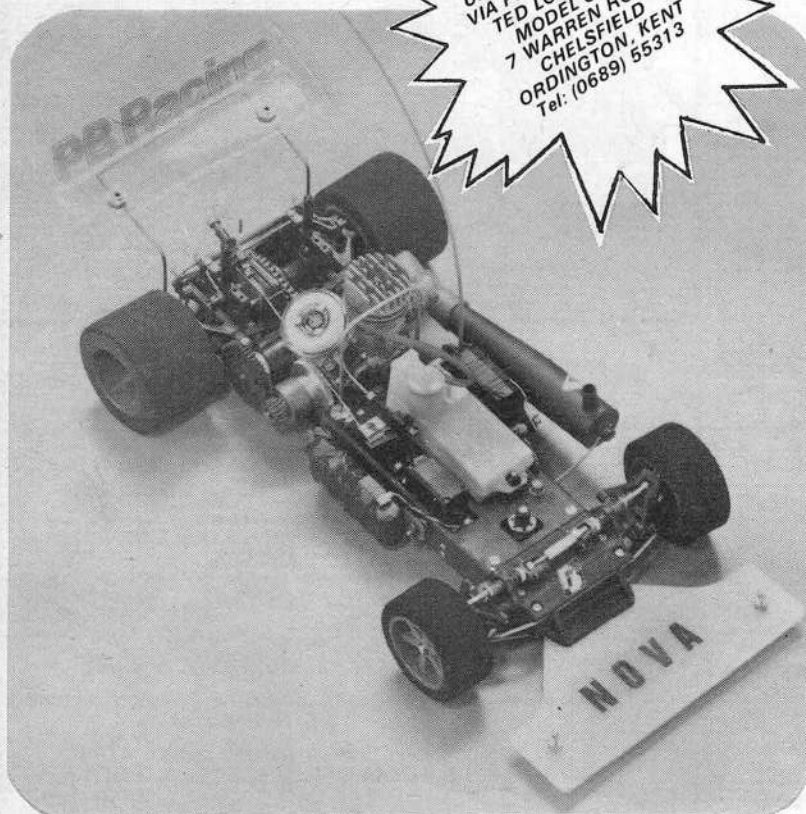
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