

Model **CARS** Monthly



MODEL PUBLICATION

**MODEL MOTOR
RACING NEWS**

**Start of Season
Race Meetings**



EXCITING

Xi2

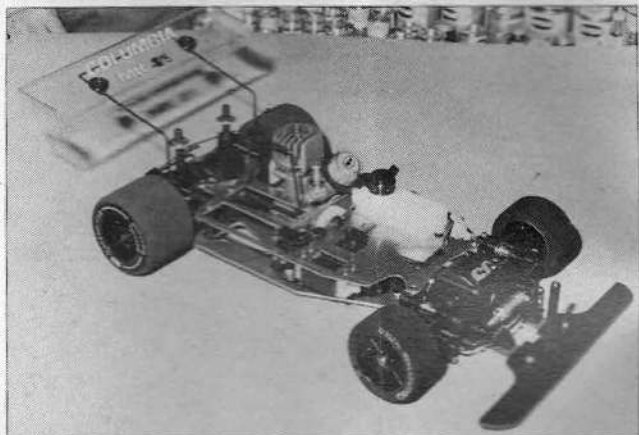
**4-Wheel Drive
4-Wheel Steering
1/8th IC Buggy tested**



SG RACING CAR

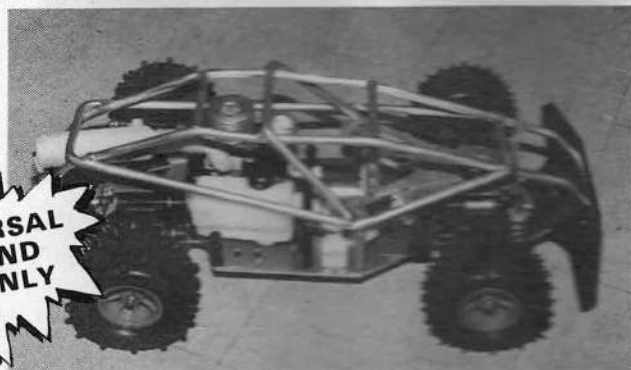
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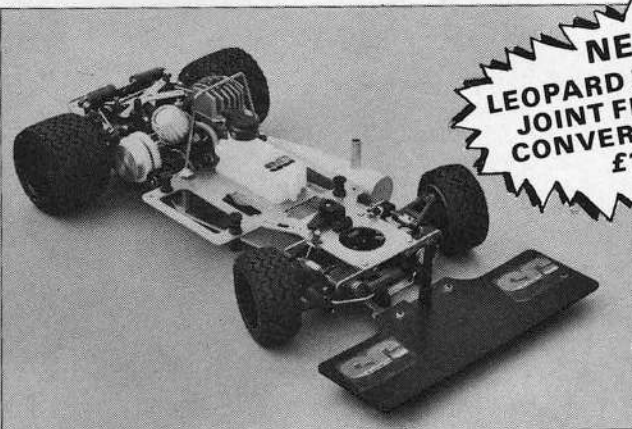


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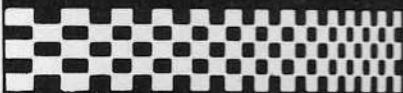
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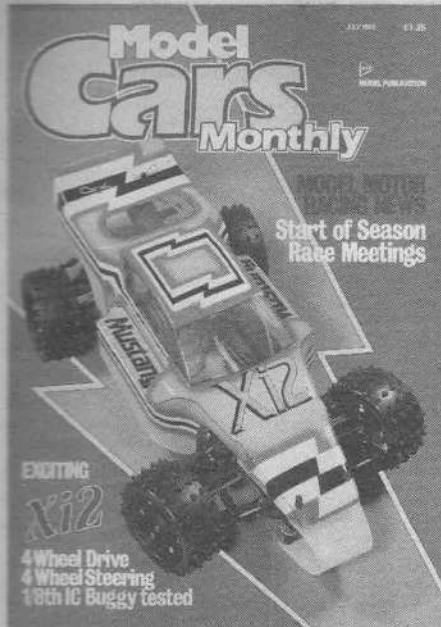
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The innovation of PB Racing Products and the brushwork of Gary Cannell has conspired to produce a cover subject that we simply couldn't refuse. The 'Mustang Xi2' is the subject for our main Track Test this month.
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Model Cars Monthly

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Editorial

Since launching our Clubs Directory Scheme some three months ago we have had a reasonable response. All the entries have been faithfully recorded onto computer disc and pretty soon we will be able to access the information.

It is very pleasing to see that we are receiving entries from clubs outside of our knowledge. On the other hand it is particularly galling to note that many of the long established clubs have not bothered to reply. It doesn't take much effort to fill out the form which helps us enter the information quickly and easily. The same format of entry allows us easy access to the relevant data.

The reasons for having a comprehensive clubs listing are simple. Firstly it allows us to gauge accurately the depth of interest in the various aspects of the hobby.

Secondly it will allow us to show any outside concern, be it government, sponsors or individuals how much active participation there is in the R/C car hobby.

We must have every club's support in this venture to make it a success.



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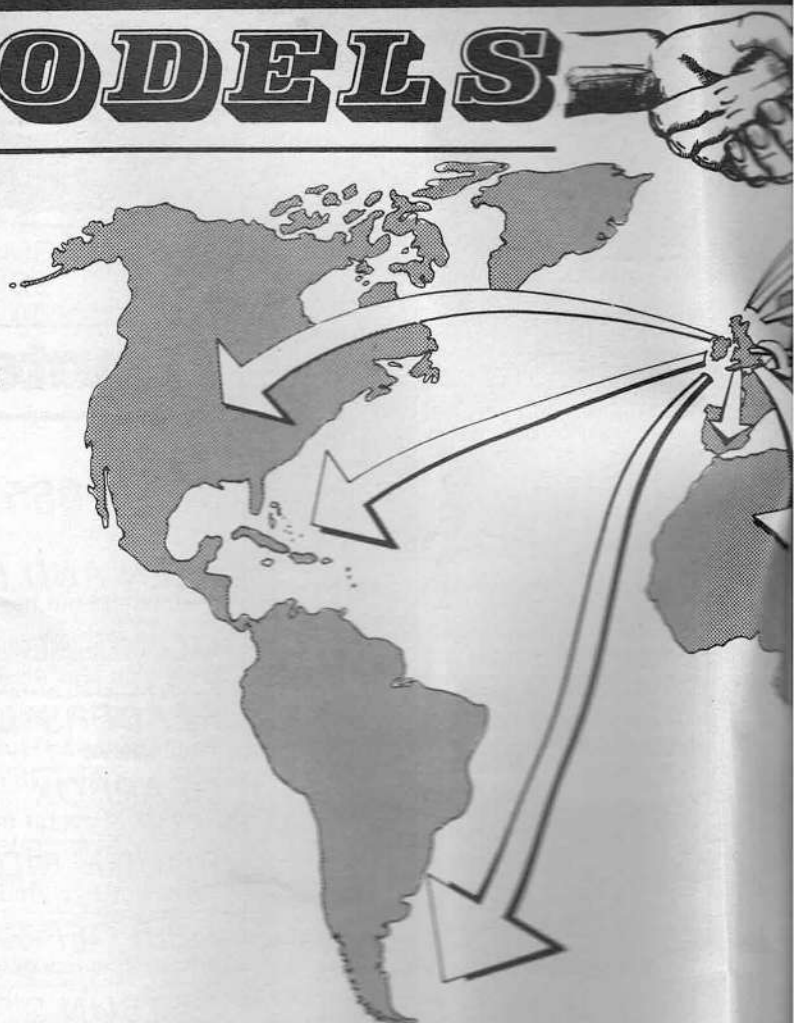
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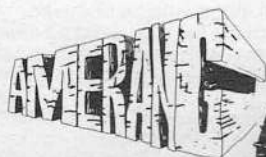
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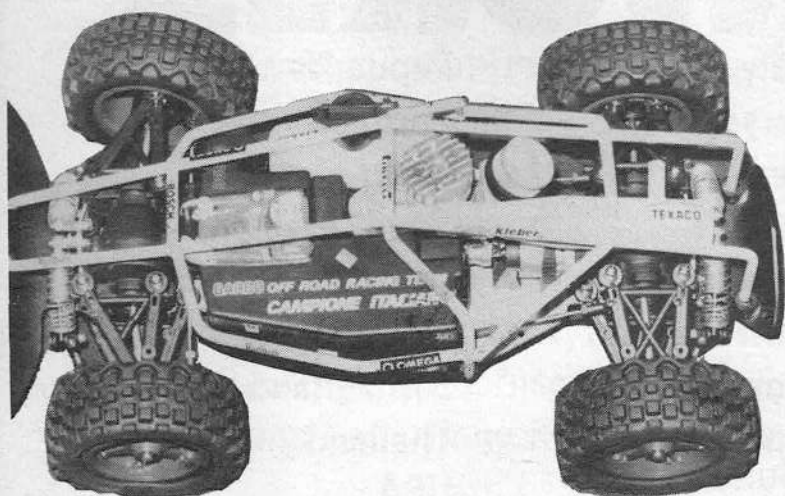
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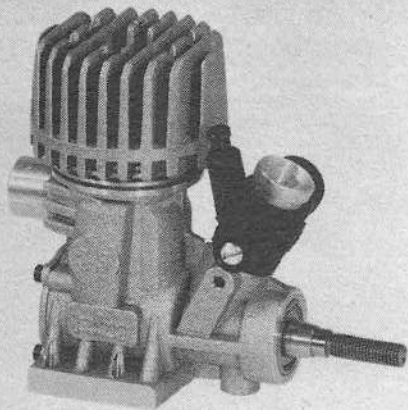


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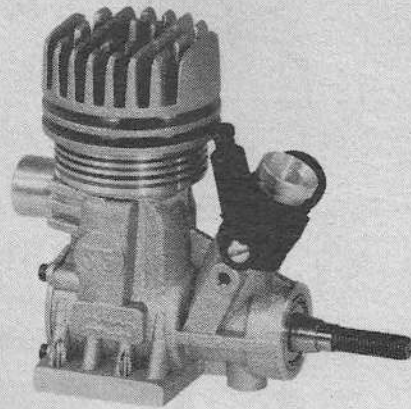
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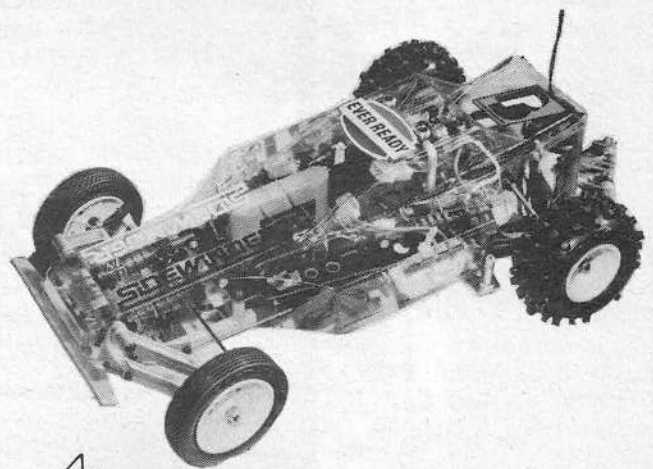
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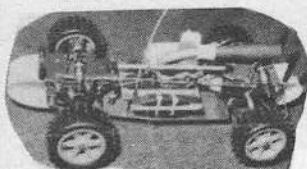
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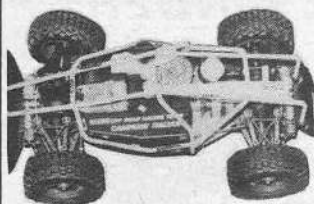
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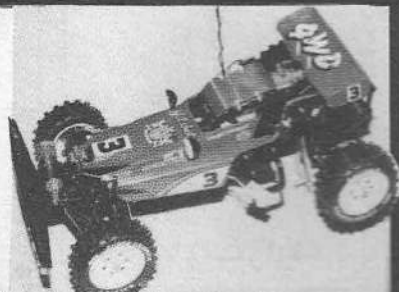
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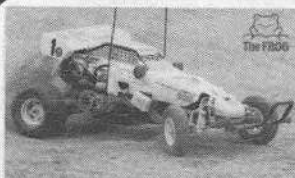
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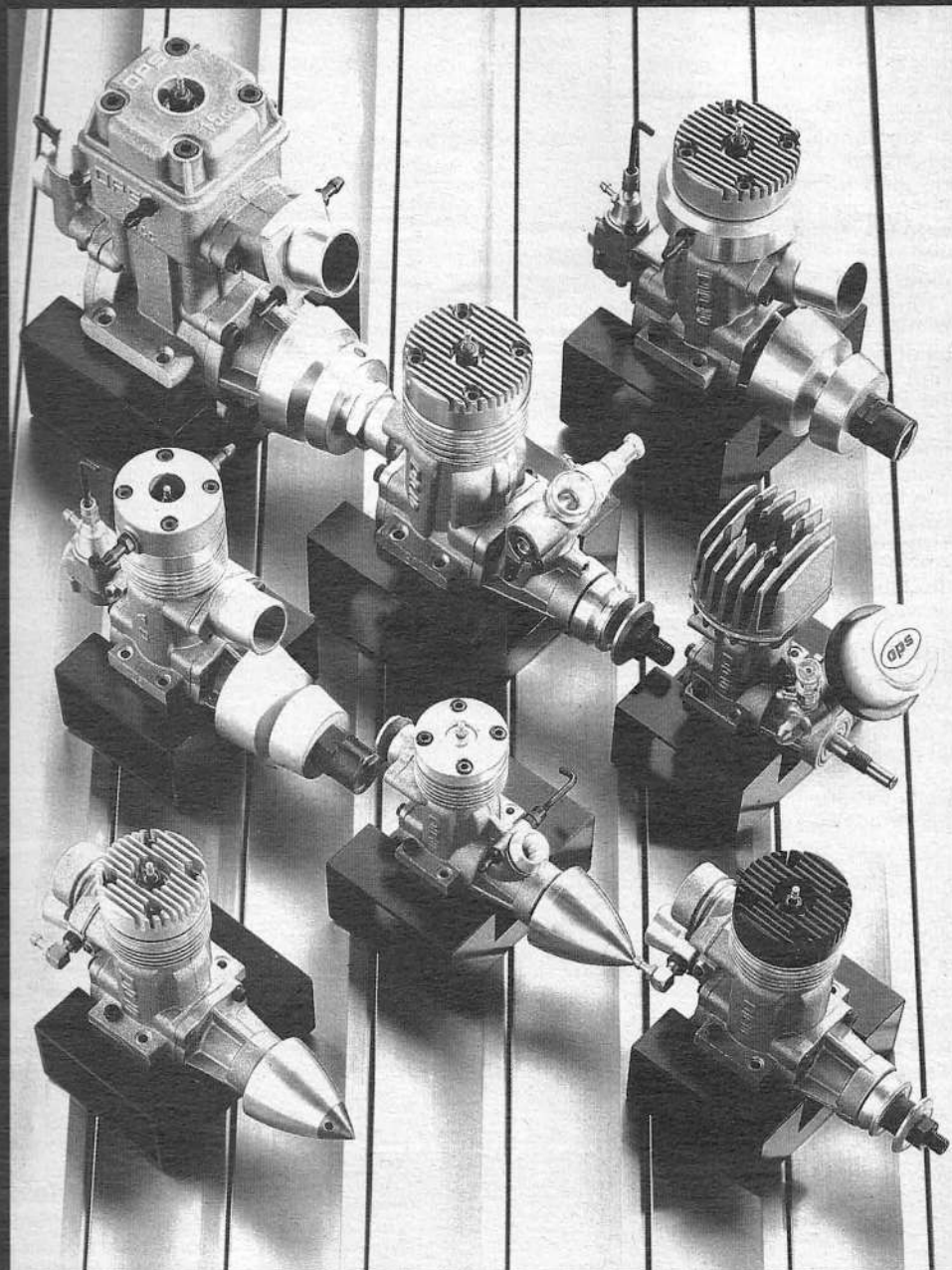


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Seen & Heard

Photo-Action Gripes

Despite the fact that our Photo-Action Competition is immensely popular (you should see our post bag) we do hear the odd complaint.

"Why is it always full of the electric buggies?" is the most common.

Well, it's simple, with few exceptions, that's all we ever get pictures of. It's really quite surprising when you see some of the people at race meetings carrying *Dixons* annual turnover around their necks. They must actually take pictures and presumably know how to use their equipment.

We never see it though. The competition has been running for well over a year and in that time we have seen two pictures of 1/12th scale racing, seven 1/8th Scale circuit racing shots and about a dozen 1/8th Off-Road.

There is no discrimination involved, we just pick the nine best, action evoking shots out of the large batches we receive every month.

If you want variety; then send it.

Big Bikes

Yes we have managed to find out the manufacturer of the R/C 1/4-scale motorbike pictured in our Nuremburg report, May issue.

The manufacturer is:

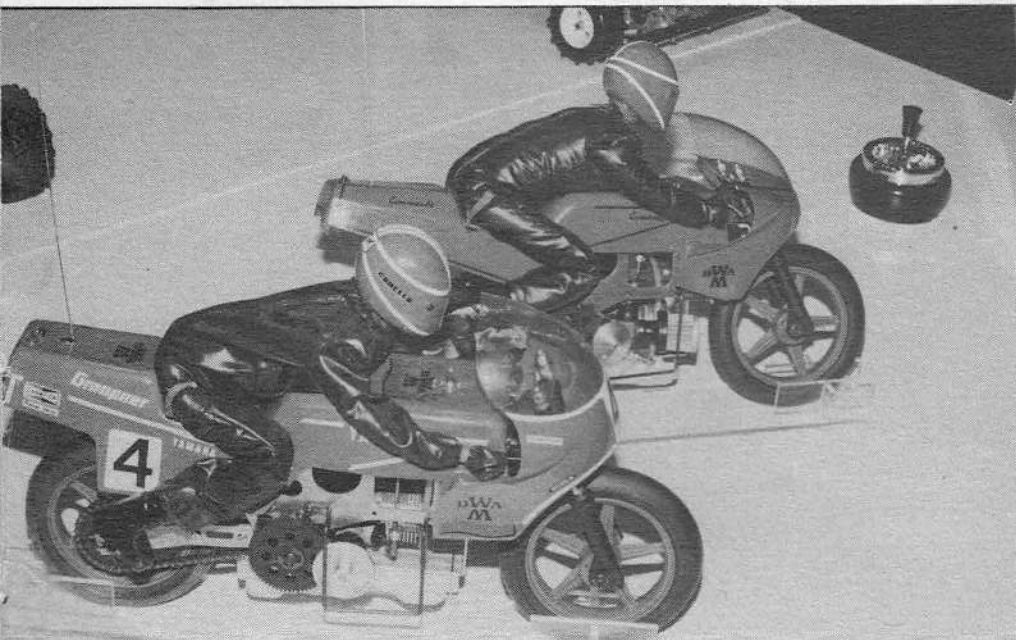
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37059 Zevio (Verona) Italy.

Outside of Italy this product is being handled by Graupner. Ripmax Models are the Graupner importer in the UK and they say a batch of kits is on order. The cost however will be expensive, well over £200.00.

Below; two of the DWA 1/4 scale motorbikes on show at the Nuremburg Toy and Hobby Fair. The bikes are designed for 3.5cc size motor and two function radio control.



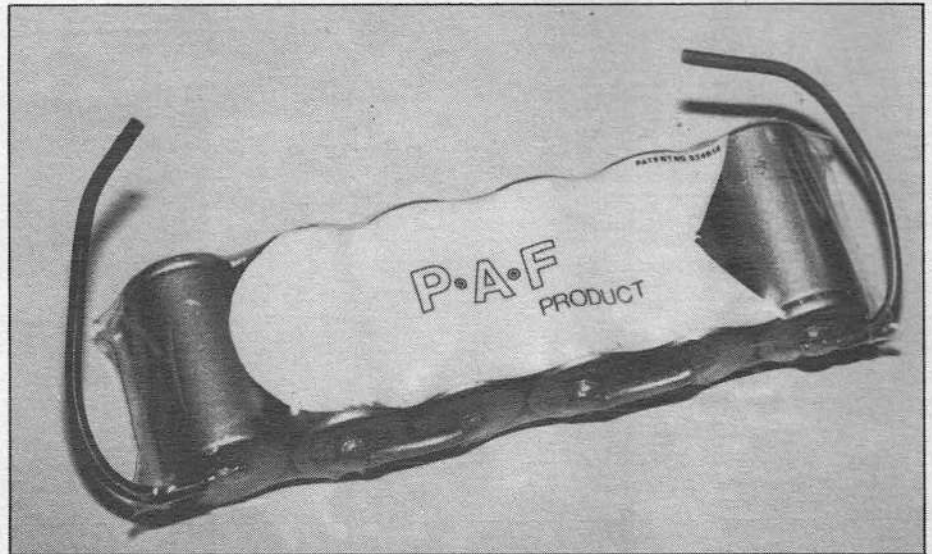
Pro-Al-Foil Batteries

It would seem our little 'April Fools' jape in the April issue was just a little too convincing for some. And we thought it was so obvious!

Still, letters arrived, phone calls were made and model shops contacted by readers in a search for the wonder batteries.

The Chesham Model Car club convinced their secretary, Mick Childs, of the validity of the story and set up an elaborate hoax to play him along. Unfortunately (not for Mick) he 'twigged it' before the plan could be put into operation. Nevertheless they went ahead and produced a bogus set of cells. All we can say is it's a good job Mick's got a sense of humour.

Below; the Chesham Club's little joke on their club secretary Mick Childs. A nice piece of artwork was produced, the cells sprayed Silver and all incased in clear heatshrink. The cells however were absolute trash.



Big Car Racing

On a recent visit to the 'Toledo R/C Show' Ron Moulton and Tony Dowdeswell from MAP managed to pick up some more information concerning 1/4-scale car racing stateside. Many of the car exhibits on show were of 1/4-scale 'Outlaw Sprints', 'Midget Racers' and Off-Road cars.

As you can see from the photo these are weird-looking machines particularly with their huge, lop-sided wings. These are apparently, absolutely necessary to get the cars to handle. Racing takes place on scale 1/4 mile oval tracks. The inside circumference is 330 foot and the inside radius of the corners is 25 foot.

If you need more information on the cars then contact the following:

*Winners Circle Mfg. Co.,
Route 2, Box 207A, Buffalo,
Tx. 75831 USA.*

*Pacesetter Products
Garner Valley, Box 257
Mountain Center, Ca. 92361
USA.*

Verulam Model Car Club

Verulam was the Roman name for what is now known as St. Albans in Hertfordshire. This is where the club meets, at the Marlborough School, Watling Street on Sunday mornings between 10am and 1pm.

Racing takes place indoors during the winter on 120 square metres of Primafelt Carpet. During the summer months racing takes place outside. After three years of racing the club has grown to forty members of all ages and experience.

The Club would now like to hear from any other club within reasonable distance with a view to organising a race meeting during the summer. The person to contact is John Worsley, 54 Roe Green Lane, Hatfield, Herts AL10 0RZ. Tel: (902) 67241.



Below, Garry Bell of Pacesetter Products proudly holds his 1/4 scale 'Spring Car' at the Toledo R/C Show. Photo: R. G. Moulton.



Batley Buggy Club

The town of Batley sits a few miles South East of Leeds and is the site for an enthusiastic bunch of electric buggy racers.

In Spring and Winter racing takes place on alternate Sundays, indoors at the Batley Sports Centre where, out of roughly a 100 members 65 people race. These meetings carry points towards one of the four regular Championship Series as well as trophies.

Computerised lap scoring and instant print-outs of heat times and finals provided by Mike Foster is a great asset to the Club.

The BBC's outdoor track is situated at West Ardsley, North of Wakefield. A purpose-built circuit is under way and incorporates all the design features necessary for a top class circuit.

For more details talk to Tim Fountain 'Hare and Hounds', Batley Road, West Ardsley, Nr. Wakefield, W. Yorks. Tel: (0532) 533901.

Edinburgh Buggy Club

Although the EBC has only been operating for just under a year a healthy following of some forty drivers has been achieved and the club is looking to attract a few more.

Racing takes place every Sunday at the Sighthill Hotel (near Belmont Datsun and in front of the Colleges) from 10am onwards. Ample car

Above, Roy Yuval's articles on American autosport are based on first hand experience. Roy (in pain above) has driven the impressive 'Big Foot' truck at shows and competitions in the USA. Trouble is Roy has trouble making the step up into the cab.

parking; a bar; a family room and toilets are all available.

Several 'special' events are planned for the coming season, including Round 4 of the Scottish Nationals on August 25th.

For more information or help contact Colin Balderstone 33e John Russell Court, Leith, Edinburgh EH6 6JU. Tel: 031-544-8477.

Aldershot Model Car Club

The Aldershot racing scene is better known for 1/8th IC and 1/12th Electric Circuit racing. However this is all set to change with the establishment of an Off-Road section. A purpose-built track has been established next to the Badshot Lea 1/8th Circuit and new members will be most welcome.

Further details are available from the appropriate section secretaries Jeff Stokes (1/8th and 1/12th), 76 Sand Hill, Farnborough, Hants. Tel: (0252) 546980.

Paul Grant (1/8th and 1/10th Off-Road), 12 Busk Crescent, Cove, Farnborough, Hants. Tel: (0252) 546980.

Derby Model Car Club

The Derby MCC has recently experienced a change of Secretary when Terry Dutton stepped down to make way for Richard Pollard.

The club meets every Tuesday evening throughout the year, at the Queens Hall in Derby. They race 1/12th electrics and 1/10th buggies on carpet with full computer lap counting and results print-out services. A club championship is run with results from seven monthly rounds counting towards an end of year championship with trophies being presented at a dinner and dance evening. The club is also a co-promoter of the 1/12th Rolls Royce Grand Prix National, which has become a favourite round of the British Championships.

A decline in membership and the realisation that new members were no longer appearing saw the introduction of a buggy section. This section is now thriving with its own championship series.

The Derby club has a very friendly atmosphere and will help and give information to any new member.

Talk to Richard Pollard, Bon Accord, Mileash Lane, Darley Abbey, Derby DE3 1DD for more details.

Sussex Radio Auto Club

The Sussex RAC has established its Off-Road section with racing now taking place at their Adur Recreation Ground Circuit. At present only 'standard' class electric buggies are raced and BRCA rules apply. Future developments include Modified Class electric buggy racing and 1/8th Off-Road. Contact R. P. Finch, 24 Mill Hill, Shoreham by Sea, Sussex BN4 5TH.



Contest Calendar

June 16

1/8th Off-Road

BRCA National Championship. Round 6. Southampton.

Unrestricted A-Final. Restricted A&B Final. Fee £4.00.

SAE to: Tony Knightley, 2 Manor Farm Grove, Bishopstoke, Eastleigh, Hants SO5 6LY.

June 16

1/10th Buggies

Scarborough RCMC. Radio Race Car Series. Round 5.

BRCA Rules. A-Z Finals. Fee £3.50.

SAE to: Dave Webb, 60 Newlands Park Grove, Scarborough.

Tel: (0723) 36642

June 22

1/12th Circuit

Ally Pally Carpet League, Woodside Leisure Centre, Garston, Watford.

Mod. Class. A-Z Finals. Tel: N. Adams 01-866-5945.

June 22/23

1/8th Circuit

London Radio Car Club. BRCA National Championship. Round 5.

Formula and Sports/GT Class.

June 23

1/10th Buggies

BRCA/Ever Ready Series. Round 3. Bradford MCC. 540 Std. Class.

SAE to: Tony Marsden, 91 Wrenthorpe Road, Wrenthorpe, Wakefield,

West Yorks. Tel: (0924) 361337.

July 6

1/10th Buggies

Eden Park Overlanders, Bromley, Kent. Coney Hall Junior Cup, Juniors

only. Entry free.

Contact Jim Paffett, 124 Chestnut Avenue, West Wickham, Kent. Tel. 01-

462-4866.

July 6/7

1/10th Buggies

Tamiya Off-Road Championship. Milton Keynes Bowl, Bucks.

SAE to CRS Promotions, 63 Wantage Road, Northampton, Northants.

(0604) 844943.

July 7

1/10th Buggies

Eden Park Overlanders London Transport Gala.

Contact Jim Paffett, 124 Chestnut Avenue, West Wickham, Kent. Tel. 01-

462-4866.

July 7

1/10th Buggies

Norwich Rough Riders. Bell Fruit Rally-Cross Champs Round 4. BRCA

Rules, 540 Class, fee £2.00.

SAE to Graham Crisp, 70 Hillcrest Avenue, Toftwood, East Dereham,

Norfolk. NR19 1LP. Tel. (0362) 67538.

July 7

1/8th Circuit

London RCC, London Sportscar Championships Round 4.

Contact John Daniels, 18 Brooklyn Road, South Norwood, London, SE25

4NH. Tel. 01-656-8804.

July 13/14

1/8th Circuit

Yorkshire RCRMCC. Halifax. Formula, Sports/GT Class.

SAE to Ian Briggs, 29 Littlefield Walk, Wibsey, Bradford, W. Yorks. BD6

1UU. Tel. (0274) 600333.

July 14

1/10th Buggies

Chesham Off-Road Club, Bucks. BRCA Modified Class Championship

Round.

Contact, Mick Childs, 61 Darvell Drive, Chesham, Bucks, HP5 20N. Tel.

Chesham 782212.

July 21

1/10th Buggies

Eden Park Overlanders, Bromley, Kent. Radio Race Car Round.

Contact: Jim Paffett, 124 Chestnut Avenue, West Wickham, Kent. Tel. 01-

462-4866.

July 21

1/10th Buggies

World's End ORC Inter-Club Challenge, Northants. SAE to CRS

Promotions, 63 Wantage Road, Northampton, Northants. Tel. (0604)

844943.

July 21

1/10th Buggies

Donisthorpe MWMCC, Staffs. 'Summer Nationals' BRCA Rules, 540, 380

STD.

SAE to Roy Statham, 5 School Street, Oakthorpe, Burton-on-Trent. DE12

7RE. Tel. (0530) 71285.

July 27/28

1/8th Circuit

Wrexham MCC, N. Wales. Formula, Sports/GT classes.

Contact: Chris Meyer, 28 Liys-y-Wern, Sychdyn, Mold, Clwyd. CH7 6BJ.

July 27/28

1/10th Buggies

European Championship Meeting. Halifax, W. Yorks. Modified Class —

EFFA Rules.

Contact Ian Briggs, 29 Littlefield Walk, Wibsey, Bradford, W. Yorks. BD6

1UU. Tel. (0274) 600333.

July 28

1/10th Buggies

Chesham Off-Road Club, Bucks. STD Tamiya Class and Open STD 540.

Royal Oak pub, Gt. Missenden, Bucks.

SAE to Jim Duncombe, 5 Rickmansworth Road, Amersham, Bucks. HP6

5JN. Tel. (9383) 22422. Entry £4.00.

July 28

1/10th Buggies

Tamiya Off-Road Championship. Northampton Town Show, Northants.

SAE to CRS Promotions, 63 Wantage Road, Northampton, Northants.

(0604) 844943.

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MODEL CARS

Letters

Letters to the Editor are published on the understanding that views expressed are not necessarily those of the Editorial Staff or publishers of Model Cars magazine. All correspondence requiring a reply should be accompanied by a stamped addressed envelope.

Get out your pen and paper. This is your chance to write in on any model car racing subject you wish

Radio regulations

Dear Sir,
The May issue was interesting as usual and the Associated review I thought was well set out using all those photo's, much better than a lot of text. (A picture is worth a thousand words!) The cover was stunning. A beautiful paint job I wish I could use a brush like that.

I agree with George Land on the subject of 2WD - 4WD separation. I think the two classes should be run together even though I don't own a 4WD car. I run practically standard Tamiya Cars and usually manage to make a final along with other 2WD machines and I haven't yet seen a final dominated by 4WD.

I think 4WD is a good idea for Off-Road, use better traction etc., but at this time I see no reason for separation. After all, most of the skill needed to race competitively comes from the driver. I think a skilful driver can do well with any reasonable car.

In the March issue you printed a letter concerning voltage regulation. The writer was unhappy using diodes (I found them very fragile and unsatisfactory). You advised him to try a regulator costing around £3. I've used a 5 volt regulator for some time and it costs only 70p. These should be available from most electrical component retailers.

The item is numbered 7805, is small about 25mm long, including legs, 10mm wide and a couple of mm's deep. Very easy to wire up and I've had no complaints - provided the unit is fixed

securely there should be no trouble.
John Hill
Watford, Herts

Thanks for the kind comments John, and well done on the voltage regulation tip.

Slim-line sand scorcher

Dear Sir,
I own a Tamiya 'Sand Scorcher' which I got for Christmas. I really enjoy driving it and I would like to start racing with a local club. However there is one problem, my car is a bit too heavy for my liking, it weighs 4lbs 12ozs. Could you give me any tips on how to lighten it?
Stuart Wallington
Bishops Stortford, Herts.

As far as lightening your car is concerned there are a few areas where this is possible. The first is the radio crate. This item is particularly heavy and can either be dispensed with totally or can be replaced with a lightweight item. Whatever you do you must make sure that the radio gear is protected from the wet and dirt.

For a supplier of lightweight radio crate I would suggest you contact Trade Model Supplies. Secondly the body shell is also quite heavy and this too can be replaced with a lightweight lexan version also available from Trade Model Supplies. Apart from the two examples already given I can only say that if

you wish to start drilling holes in your car to make it lighter that is up to you. There really isn't much else you can do.
Trade Model Supplies
c/o Morley Models,
10/12 Morley Bottoms,
Morley, W. Yorks.

Battery bombshell

Dear Sir,
One of the unknown dangers of model car racing has just come to light in the most dramatic way. My son Paul, who was preparing his car in our garden shed/workshop, wanted to charge up his Ni-Cad batteries for testing his car. He had to disconnect the 12 volt battery which had been on charge for about three days. When he took off the crocodile clips from the charger, the 12 volt battery exploded! He immediately rinsed his hands and face in cold water where the acid from the exploded battery had splashed over him. I cleaned up the mess and washed down the bench.

Until I told Mike my battery supplier what had happened, I did not realise how lucky Paul had been. He explained:
"Have you ever noticed a smell when you are charging up or indeed discharging a 12 volt battery? This smell is Hydrogen gas coming out of the top-up holes. He said what had happened was that when Paul disconnected the 12 volt battery from the charger, he

had not turned off the charger at the mains. This caused a small spark at the battery terminal and ignited the gases which were coming out of and trapped within the 12 volt battery itself. At this time the battery was literally a small hydrogen bomb!"

I said to Mike that I thought my son was lucky not to have been hurt because I found bits of battery all over the work shop. He then told me of similar accidents where he had to pull pieces of splintered battery case out of his workmates arms and that Paul could easily have been blinded, maimed or killed.

Since telling this story to other friends and colleagues, many similar tales have come to light of accidents caused with batteries.

To wind up here are a few DO'S and DON'TS when charging a 12 volt battery.

- DO: 1. Remove filler caps to let gases escape.
2. Always charge in a well ventilated area.
3. Always turn off charger before connecting or disconnecting to battery terminals.
4. Keep battery topped up to correct level with distilled water.

DO NOT: Smoke, make any sparks or have a naked flame around the battery which is being charged.
Terry Davis
Chingford, London

Thanks for the advice. Everyone out there take notice of the DO'S and DON'TS. We don't need any accidents.

Gearbox

On Show - new items for the model car racing hobby

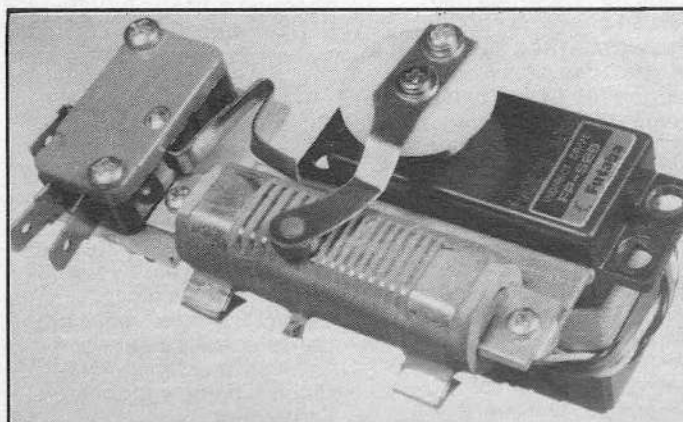


Robbe oil and grease squirts

These handy little items are just ideal for the racer who needs a choice of damper oils to suit all track conditions. Three grades of oil are available plus a precision grease incorporating Teflon. The oils are coloured according to grade; orange (S70 — low viscosity), blue (S140 — medium) red (S280 — high viscosity). All three can be mixed to provide intermediate grades.

The oil and grease squirts have nozzles fitted to allow access to all parts of the car and regulate flow.

Robbe products are imported by *Cougarcraft*, Woodhead Road, Holmbridge, Huddersfield, W. Yorks. HD7 2UX. Price £2.75 each.



Parma Speed Controller

For those 1/10th Scale buggy racers who prefer resistor speed controllers this heavy duty item from *Parma* will prove ideal. The unit just needs to be taped to the servo and the wiper arm reversed to the servo output disc for the unit to be operational. Reverse operation is provided by the micro-switch. Not as sophisticated as an electronic controller but a lot easier to repair track-side.

Parma Products are available through *Helgar Racing*, 18 Manor Farm Drive, Chingford, London E4 6HJ.



Futaba 'Brick' Servo

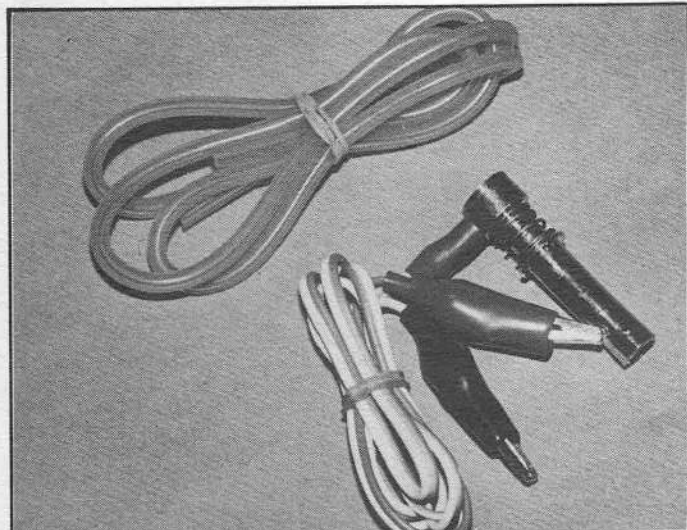
No need for double steering servo's on 1/8th scale buggies with this giant Futaba servo the 'FP S134.' The 'Brick' as it has been dubbed. Available through Ripmax stockists price £35.00.



JR 'Beat 2' radio

This latest 'car' system from Japanese manufacturers *JR* has all the features necessary for the discerning R/C car racer. Servo reversing; throttle end point adjustment; steering throw rate trim and an unusual throttle/braking facility. Through a switch on top of the transmitter (left hand side) the throttle servo can be deflected to a pre-set position whilst overriding the stick command. Thus you can hold the stick on full power and 'pulse' the brake through the switch. Left foot braking perhaps?

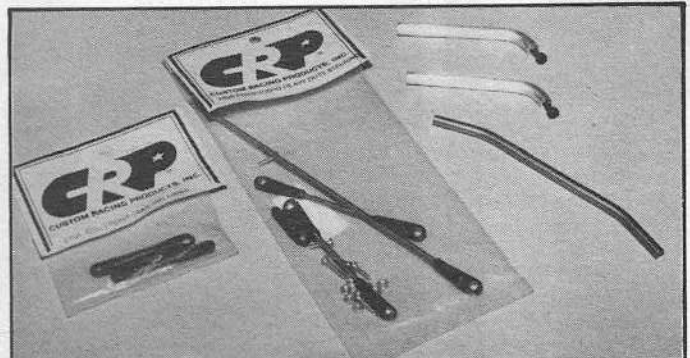
JR radio is available through *MacGregor Industries*, Canal Estate, Langley, Berks. Price £79.95 (dry cell with two '505' servos).



Powermax glow clip

Ever had a glow clip fall off? Well now you won't with this lock-on item from Powermax. The clip is a very nice fit and is supplied with a cable and crocodile clips for connecting up. The silicone fuel tubing also shown is the thick walled variety and is pink in colour (very nice).

Powermax Ltd., Millett Street, Bury, Lancs. Prices (glow clip) £1.98 (fuel tubing) £1.00 per metre.



CRP tune up goodies

Kyosho 'Scorpion' owners will be glad to hear that CRP of America are producing a range of items to add onto the standard kit. These include the items shown above left to right. Front trailing arm links, heavy duty steering track rod set, front heavy duty axle shaft and front chassis stiffener.

All these items and more are available through SRM Racing, 140 West Street, Fareham, Hants.

Tamiya 'Hot-Shot'

The latest 1/10th scale electric, four-wheel drive buggy to hit the racetracks should be now widely available through model shops and high street stores.

The 'Hot-Shot' has all the features necessary for competition off-road racing and will be track tested in next month's issue. Price £120 (approximately).



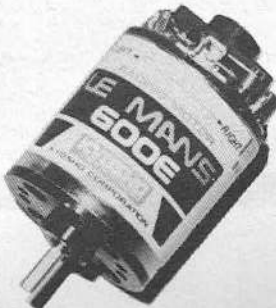
Kyosho Motors

The 'Le Mans' range of electric motors from Kyosho has been added to with the addition of the '360PT' and '600E.' The former is a six minute (360 seconds) modified 550 motor which is slightly longer than the normal 540.

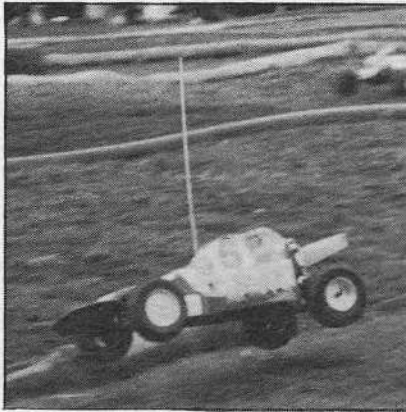
The 600E is an economy (E) standard class motor which should give a running time towards ten minutes (600 seconds).

Both motors feature adjustable timing and can be dismantled for cleaning purposes.

Kyosho Products are imported by Ripmax Models, Ripmax Corner, Green Street, Enfield, EN3 7SJ. Prices (36PT) £29.95 (600E). £12.95.



The Rough Stuff



Buggies

Steve Newey gets down to grass roots for the best in electric Off-Road info.

Interesting Battle

Already this season two interesting battles are beginning to develop on our race-tracks. Firstly the new generation 4WD's taking on the more common 2WD's. Secondly the established buggy drivers showing some of the top 1/12th scale drivers that we really can drive and

should never have been classed as 'failed twelfth scale drivers'.

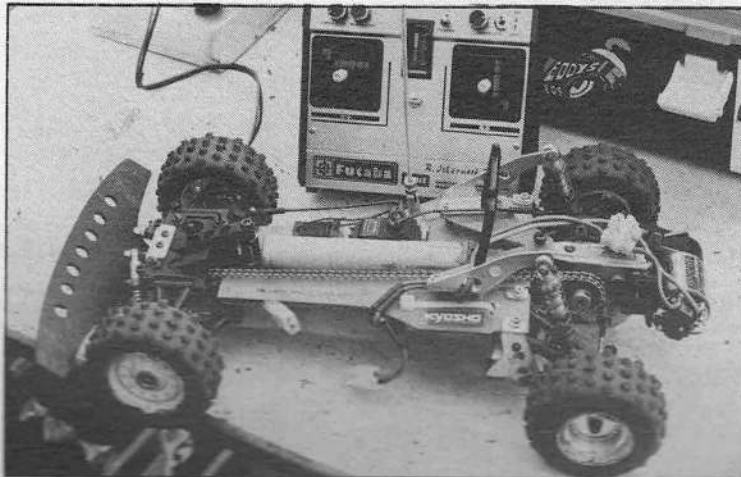
I know of five or six 'invaders' planning on doing the full standard class BRCA series. I am sure there will be plenty of friendly rivalry at all these events and some top class racing to watch. Being a dedicated buggy driver I'm

hoping we can put one across the 'invaders' and show them that there is more to electric Off-Road racing than meets the eye.

The 1/12th scale lads won't have any problem making the cars go fast, knowing all there is to know about Ni-Cads and motors but things should be evened up with the buggy drivers having more experience in the suspension and handling department.

Anyway back to the cars and which car will come out on top in this 4WD versus 2WD clash? My guess is that the latter will still have the edge, partly through sheer weight in numbers but also

Top of page; racing action from the Cheadle Northern League meeting and Batley. Left; Richard Isherwood's heavily modified Kyosho 'Progress' features new chassis and radio plate to allow lower mounting of the Ni-Cads and radio gear. The suspension is virtually unchanged except for the front suspension which features double coil-spring dampers. These replace the mono-shock and torsion bars. Richard has another, faster, lighter, stronger 'Progress' on the way.



because of a further years development. Many 2WD cars now feature a shorter wheel base and spiked front tyres to beat the dreaded understeer. The only problem with using spiked front tyres is that they make the steering very sensitive and the car becomes 'twitchy' to drive, so unless you are a competent driver, stick to ordinary ribbed fronts.

Secondly, this type of track surface drags more amps out of the Ni-Cads, particularly if there is the extra load of a 4WD system. Subsequently these cars have to be geared down, more so than the 2WD's to last the race distance. This of course means a lower top speed along the straights. However, if we have a long, hot, dry summer (some chance of that!) track

tendency for wheelspin under acceleration.

Firmer ground also means less drag on the car which in turn lessens the power drain allowing the car to be geared to give a higher top speed, indeed, almost identical to the 2WD's.

Another deciding factor could be the way that different clubs build their tracks, hopefully, common sense will prevail with all the

moving part on the car.

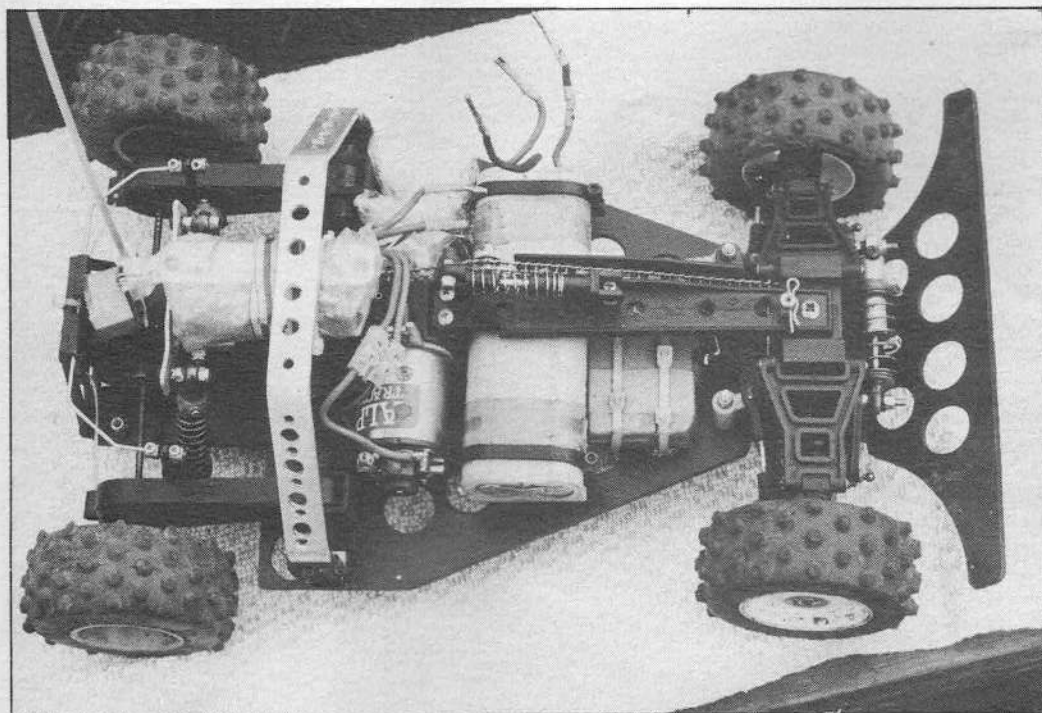
Two Classes . . . Again!

Whilst on the subject of 2WD versus 4WD I would like to add to my comments made in last months 'Readers Letters' section concerning separate racing classes for 2WD and 4WD cars. By now, you should have realised that I agree we should have both types of car competing together. What does bother me is the possibility that people could turn their backs on buggy racing because they may feel they need both to be competitive.

However, if clubs build tracks sensibly with the emphasis firmly placed on driver skill I can foresee very few instances where it would be advantageous to have two cars. Maybe the BRCA could lay down some guide-lines on track construction and encourage clubs to use them.

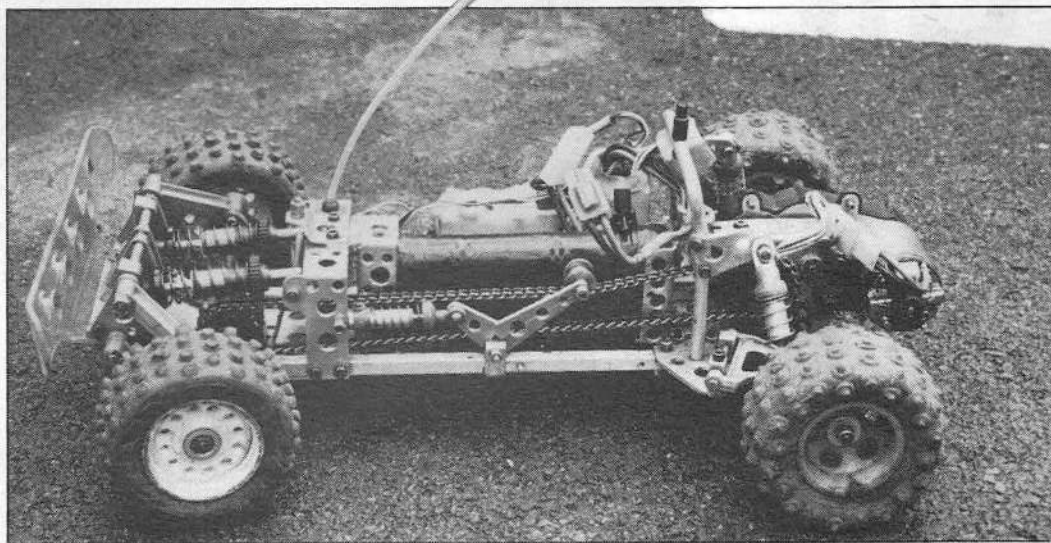
Regarding the point about running costs, some cars do cost more than others to run for a variety of reasons. I will

Left: Kevin Blears 'Dogfighter' substantially modified to decrease the weight. The original 'Kevlar' chassis is retained but drilled out. Twin dampers on the rear replace the original mono-shock. The centrecoil-over shock looks to be some sort of chain tensioning device. Below; Sam Oddies 4WD car featuring 'Progress' mechanics, AYK front-end and again chain tension dampers.



The 4WD's will always be slightly down on top speed and acceleration, but they do enjoy a tremendous advantage on the twisty bits, especially tight hairpin corners. With a little more development, reliability being the main concern, I'm sure it won't be long before we see 4WD cars in even greater numbers around our race-tracks.

The type and condition of the track surface will often be a deciding factor and can favour one type of car over the other. At this time of year (April) the circuits are quite soft and grassy. This type of surface tends to suit the 2WD's for two reasons. Firstly, there is plenty of grip and the 2WD buggies can make good use of their power to weight advantage. Providing the car steers well it should be able to lap faster than the 4WD's.



conditions will change quite dramatically to hard, dusty and less grippy surfaces. This of course will favour the 4WD's as they will be able to transmit more power onto the track without the

circuits built on grass which is by far the kindest surface to race on, with grip for everyone and dust kept down to a minimum. Dust ruins bearings, gearboxes, dampers and any other

still maintain that 4WD cars cost more to run because they have twice as many drive-shafts, output shafts, diffs or one-way bearings, more gears and extra ballraces, all of which have

The Rough Stuff

to be periodically renewed to maintain top performance.

Regardless of my views though, it is the views of the ordinary drivers that count. If the majority of buggy drivers want two classes of racing, then the BRCA should organise a separate class for 4WD's. It is the policy of the BRCA to give the drivers the type of racing they wish, but it is up to those drivers to tell the BRCA what they want.

If no views are forthcoming, we can only presume that people are happy with things as they are.

Custom Builts

A few months ago the Editor sent me some film which I presumed was to be

standard wheel base.

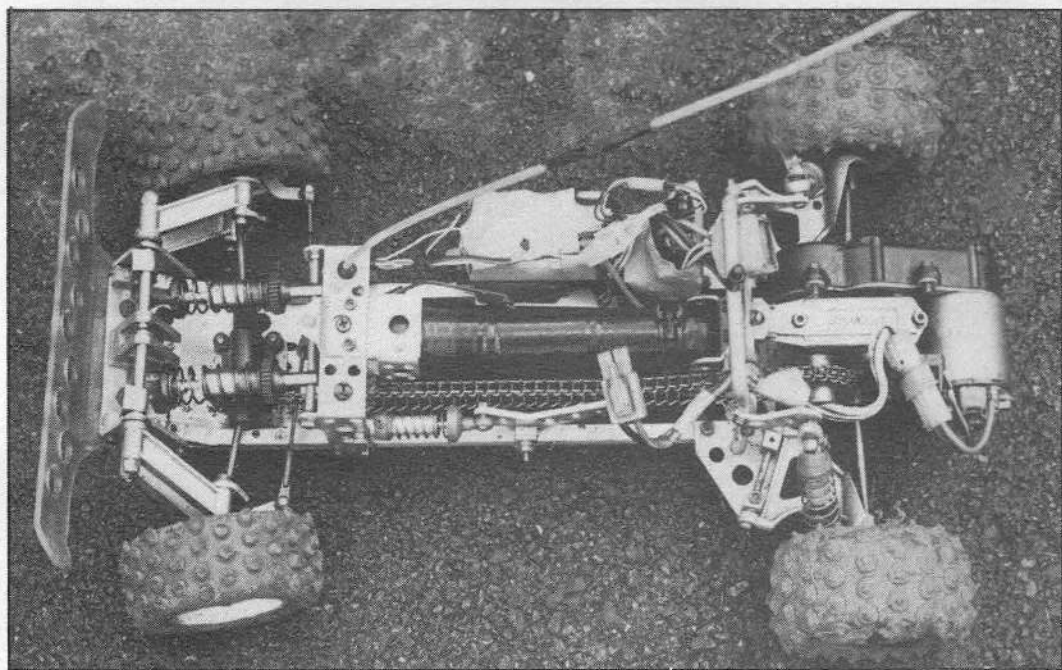
Sam Oddie's 4WD car was the most impressive on show and also performed very well on the track. The car started life as a *Kyosho* 'Progress' but now looks like something out of 'Star Wars' and uses an AYK trailing arm front-end.

Modified 'Progress' were the most popular 4WD's. The highest placed being Rickie Isherwood's; just failing to take FTD and proving that these machines can be made competitive. The car uses standard suspension except for independent front dampers and springs.

The home-made glass reinforced plastic chassis and radio plate replace the standard items and make the car look very neat and



Above; close up of the new Nippo 'Ishy'. The revised front end now features 'go faster' hair perm for improved pulling power.



Above; an overhead shot of Sam Oddie's 4WD car. The combination of AYK, 'Progress' and 'Scorpion' components seems to work well on the track to prove that there is an alternative to kit builts.

used for photographing the fairer sex. But as I couldn't find any, I decided to use it at a Batley race meeting, and our first Northern League meeting at Cheadle where some very interesting machinery was on view.

Tony Wells turned up at Batley to give the new *Associated* car an airing taking FTD and second place in the A-final. The car was standard except for ballraces, knobby front tyres and even shorter than

tidy which is more than can be said for his hair perm which looks like coming in for some comment.

The Kevin Blears pit was a hive of activity with what looked like ninety of the competitors housed in there. Kevin had with him a very rapid 'Scorpion' with 'Progress' gears replacing the unfavoured standard kit items. With the aid of a *Star Electronics* radio box the car weighed in at the minimum weight (3lbs) and

really looked a handful out on the track. The biggest bang of the day was his set of Ni-Cads, note there are only five left, looks like a good way of removing the heat-shrink though.

Whilst writing about Cheadle, I would like to thank the lads of Dumfries for the 'Model Cars' tee-shirt they had printed for me. They obviously want something in the magazine and quickly realised that I can be bribed and

corrupted. But seriously lads, thank's very much, I just hope for a hot summer, so muscleman Newey can show it off. (*Where's mine? Ed.*)

BRCA News

I attended the BRCA committee meeting held at the Park Hall Hotel, Wolverhampton, on 3rd

meeting was the BRCA price limits for motors and Ni-Cads. Due to the drop in value of the pound against the dollar and the Yen, it was felt that a price increase on these items was inevitable to keep Messrs. *Demon*, *Parma* and *MG* interested in importing these much sought after goodies. However, prices have not

Al Foil anagram to me and then proceeded to needle me for not spotting it.

WHAT A WALLIE! Oh well, can't win them all, I'll just have to beat him to the BRCA standard class championship to shut him up.

Nice one Ed., revenge will be sought next April.

turned into a complete quagmire.

By the time the expert drivers heats were run, the track surface was deep mud and a miracle was needed just to last the five minutes. In fact, many drivers didn't, and with the track becoming slower as the day went on, many 'stars' found themselves a long way down the qualifying list.

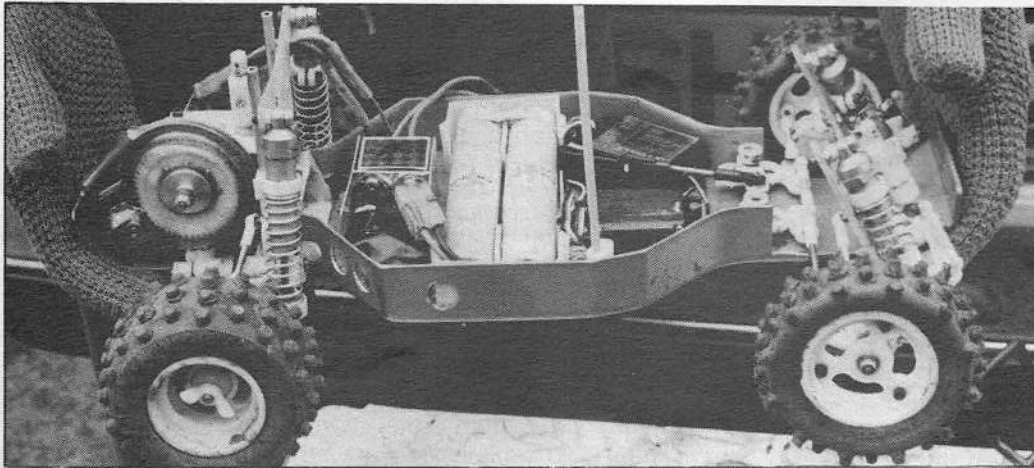
Anyway, to look on the bright side, the meeting was run in very good spirit with not too much blood spilt in the first buggy drivers versus twelfth scale clash. The former coming out on top in this one (hooray) with a win for Jamie Booth and seven regular buggy drivers in the A-final.

Full credit must go to the organising club, the Eden Park Overlanders, even with the dubious distinction of having Pete Stevens as a member, they put on a really first-class event under the worst possible conditions. Race organiser Jim Paffet was a real hero, keeping everything moving along smoothly, standing out in the rain all day shouting car numbers to race control and remaining calm and approachable throughout the day.

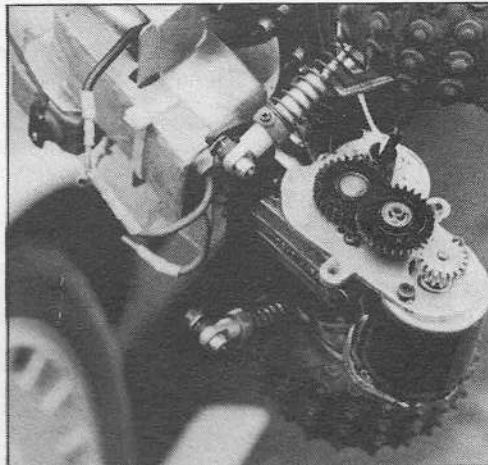
Trick Tip

If you are using a battery eliminator or an electronic speed controller, and you find that the car goes out of range when only a short distance away, try fitting a .1 microfarad suppressor to the motor the following way (see Fig. 1). Ideally the car should run perfectly obeying all stick movement at least 150 yards from where you stand, before any radio control is lost. □

Below: Tony Wells 'Sawn off' Associated. The front of the chassis has had 3/4in. removed from it to shorten the wheelbase and so increase steering. Holes have been drilled in the chassis side walls to decrease the weight. Note the essential MRC spiked front tyres. No Associated driver should be without them.



Above: the wrong way to treat a set of Ni-Cads. Readers should be aware that re-charging batteries should be done with great care. Over-charged batteries can cause serious accidents.



Above: Kevin Blears 'Scorpion' fitted with 'Progress' gears for greater efficiency. The centre gear is ball-raced.

March. The purpose of this meeting was mainly to discuss the European championship event to be held at Halifax in July. Anyway, muggins here was put in charge of sorting out Britain's entry allocation, fifteen places in total, the drivers being selected from last season's BRCA standard and modified championship positions. More places may become available at a later date.

Also discussed at this

gone through the roof, a standard motor will cost £12.00 and a set of Ni-Cads about £20, with a modified motor price now raised to £40.00.

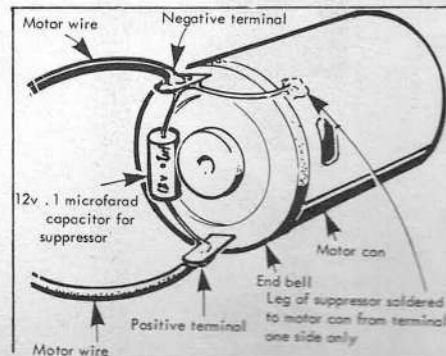
Pro Al Foil Batteries

Well, were you fooled by the article about those major batteries in the April edition? O.K. I'll come clean, yes, I'll have to admit it, I was ready to send off for a set until that nice man Mr. Blears pointed out the *Pro*

Eden Park Opener

Just time to write a few lines about the first round of the B.R.C.A. Standard Class meeting on 7th April.

Just as last year (at Northampton) the meeting was run in typical buggy racing weather — heavy, non-stop rain. This rather spoilt the day as a spectacle, and made a mockery of qualifying for finals with the novice drivers benefiting from good runs in the early heats before the track



What's New?

A brief look at some of the new 1/10th scale Off-Road racing developments from the Far East, across the Atlantic and at home.

FOUR-WHEEL DRIVE cars are obviously going to be the thing for 1985 with Japanese manufacturers producing hardly anything else (so far) and more cars finding their way onto circuits up and down the Country.

The update version of the **Hirobo** Rock'n'City' the 'Zerda' is now available through *Dave Nieman Models* and proving very popular with previous *Hirobo* owners and newcomers alike. I hear



Above: the two new cars from Playtron the 'Lynx' (foreground) and 'Dobermann'.

from the Milton Keynes Club that at least three cars have appeared in very short time.

The **Tamiya** 'Hot Shot' is already available and competing well against the established 4WD competition. Suffice it to say that these cars will appear in great numbers (*Tamiya* cars always do) so let's hope the concept, design and manufacturing is up to the increasingly competitive rigours of electric Off-Road racing. *Tamiya* claim to have designed the car as a pure competition 4WD race car, and will look forward to testing it in the next issue.

Two new cars are currently on sale in Japan, but are at present unavailable here in the U.K. **Playtron** and **Mugen** have no distributor for the British Isles so their new 4WD cars will remain an unknown quantity.

The *Playtron* 'Lynx' was the first car to feature full shaft drive throughout, even before the announcement of the 'Hot Shot'. The 'Lynx' features a moulded plastic 'space frame' chassis, this and the

rear suspension are very similar to that of the *Tamiya* 'Frog'. All the other features are there, rear differential, front one-way roller bearings, coil spring shock absorbers and lexan body. *Playtron* also produce a 2WD version of the 'Lynx' known as the 'Doberman' (let's hope it isn't a dog!)

The *Mugen* 'Bulldog' (not again!) is the second 4-wheel drive, 4-wheel steering car after the 'Progress'. *Mugen* are better known for producing 1/12th scale cars and this is their first attempt at buggy manufacture. The mouldings are certainly not as intricate as *Kyosho* but the layout is less complex. Mono-shock damping with anti-roll bars front and rear features, with the suspicion of three differentials with a central item to minimise transmission shocks between front and rear.

Kyosho are also planning to release an updated version of 'Progress' entitled 'Gallop'. No details on modifications, price or availability yet.

'Dogfighters' from **Yokomo** are going down a storm over in the USA on their hard-packed clay racing surfaces. The top competition 'Dogfighters' are extensively modified with parts produced by *Custom Racing Products* (CRP) and *Delta Manufacturing*.

Also in the USA there could be a chance that the **Associated** 4-wheel drive conversion kit for the 'RC10' could be a little closer than expected. The U.K. Team situation is now resolved with Tony Wells

and Nick Adams both definite. The third driver is Jamie Booth who will take over from Micky Booth (no relation). The latter has received a car, but does not intend to race in the National Series.

Lastly on the 4-wheel drive front I understand from Cecil Schumacher that his 'proper' Off-Road car will be 4WD, probably belt drive. Cecil hopes to release it toward the end of summer.

Moving onto 2-wheel drive cars and **AYK** have produced two revised versions of the 'Sidewinder' called 'Buffalo' and 'Bobcat'. The two are identical excepting bodysells. The revisions basically turn the original car into a lighter very 'Tomahawk-ish' looking car. Alloy chassis rails replace the original flat plate item and single wishbone front suspension replaces the trailing arms. The Gearbox is much simpler and once again looks to have been 'Kyosho-ed'. *PB Racing Products* hope to have cars in stock soon.



Above: the Mugen 'Bulldog' four wheel drive and four wheel steering.



Above the AYK 'Bobcat' or 'Buffalo' two-wheel drive Off-Roader.

Electronic speed controllers are not just for the technically minded. Lewis Eckett looks at a new, no-fuss unit from Downsway Electronics.

THESE DAYS you would be hard put to find any self-respecting 1/12th scale racer who does not use an electronic speed controller of some make or design. This fact is rapidly becoming mirrored in the 1/10th Off-Road activity with a sizeable after sales market already becoming apparent.

The advantages of electronic speed controllers are; the loss of the throttle servo and linkage; a regulated power supply from the Ni-Cad pack to the receiver (which cuts out the battery pack), easier installation and if treated properly less maintenance.

Now onto the burgeoning market arrives a speed controller from a Surrey based firm, *Downsway Electronics*, which incorporates all the features you could want plus a few more.

The innocuous looking box is almost totally sealed which in itself is a good thing as it protects the components from damp and prying fingers!

Features

- Large (16 amp) continuous rating.
- Massive (50 amp) short term surge capability.
- Fully proportional forward and reverse control.
- Turbo relay on forwards and reverse.
- Regulated receiver and servo power supply.
- Adjustable dynamic braking.
- Thermal overload protection.
- Deep discharge battery Protection.
- Turbo power indicator.
- Suitable for 6-8 cell packs.
- Small size (only 63 x 34 x 43mm).
- Compatible with all +ve pulse radio systems. (ACOMS, FUTABA, IRVINE, SANWA, SKYLEADERS, FLEET, etc.)
- Reading from the list of

features we find that this controller has identical turbo relay assisted operations in both forwards and reverse. This makes it compatible with all modern makes of radio gear. Other available speed controllers may require the application of a hot soldering iron to ensure correct forwards operation with a specific set of radio.

The ability to use the controller with 6-8 cell packs will be a blessing for those racers entering European Modified class events this year whilst the deep discharge battery protection will ensure that the car stops before the receiver stops accepting your transmitter signal!

Actual installation of the controller doesn't seem to be a problem and in fact the acid test of this is whether or not you can slip it into a *Tamiya* 'Frog' chassis. Suffice it to say there was no problem whatsoever here.

Our test vehicle in this instance was the *Associated* 'RC10' Track Test vehicle and once again no installation problems were encountered.

The controller is supplied minus connectors to allow

the purchaser choice of their own. It is a good idea here to use mate 'n' lock connectors for the battery pack as reverse connection will result in instant damage to the controller which is not covered under the guarantee.

The instruction sheet details the actual setting up and providing this is followed there should be no problems. A red LED lights up when the turbo relay is switched in as full power is applied.

The dynamic braking facility can be adjusted from the transmitter by moving the throttle trim up and down.

On the Track

One of the features of electronic speed controllers is instant throttle response and this *Downsway* product is no exception.

At full speed the car thunders along quite nicely, but it is the braking aspect that is most interesting. Adjustment of the throttle trim can produce free-wheeling in neutral or else dead stick braking that is just plain vicious — if that's what you want.

Performing hand-brake turns by throwing the car into reverse and applying full steering didn't seem to give the controller any problems either.

After a thorough bashing around the circuit the controller was warm to the touch, but certainly no more so than expected.

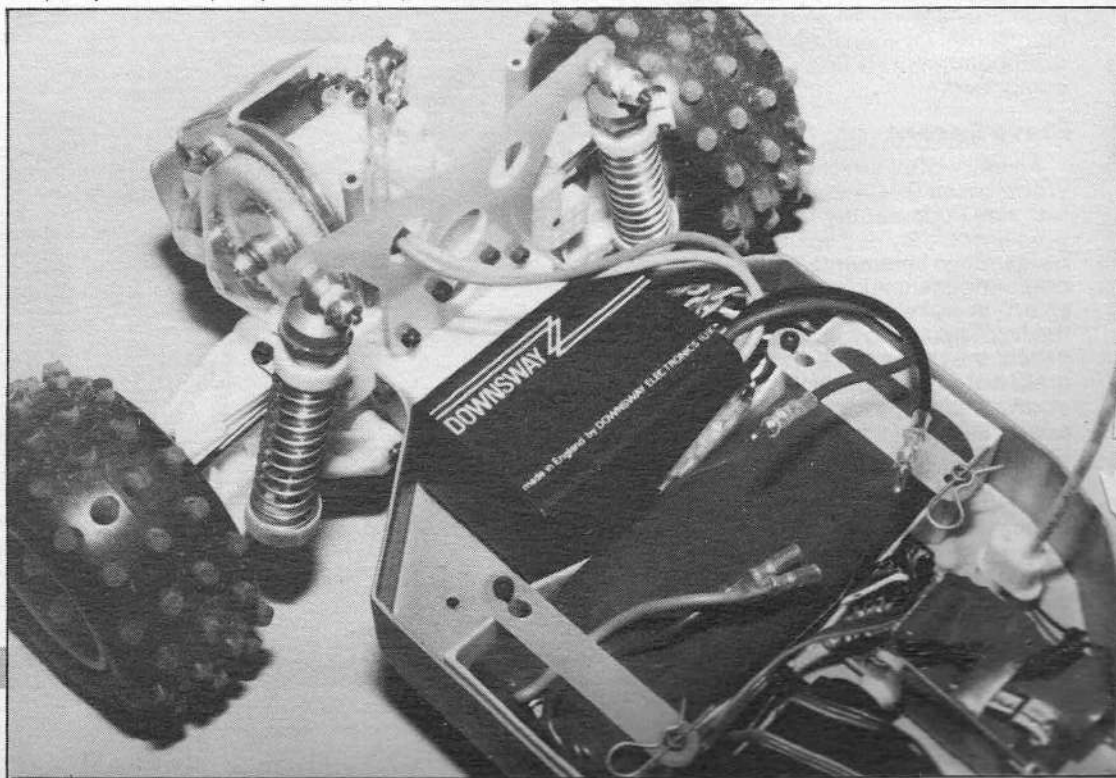
Conclusion

An extremely well made, robust unit which should find much favour, particularly at the attractive price of £34.95. The ease of installation and operation is another plus along with its compatibility with all makes of R/C gear. The only minus point is the slightly higher weight in comparison with other products.

The guarantee runs for six months and covers defects in manufacture or workmanship. If you connect it up wrong way round or try and get inside the unit then you void the guarantee.

The *Downsway* Electronic Speed Controller is available from Downsway Electronics Ltd., Depot Road, Epsom, Surrey. KT17 4RJ.

Below; the Downsway Electronic Speed Controller fits snugly into the Associated 'RC10' channel chassis. The unit is completely sealed except for power output/input and holes for potentiometer adjustment.



Mustang on the Loose

It was really great to see several examples of the new British made *PB Racing* "Mustang Xi2" on the track at Remote world for the Easter weekend 1/8th Off-Road Nationals. Those that did appear in the hands of 1984 Champion Gary Marsden, Richard Stitson, John Glazbrook and 'Yours Truly' looked good, but it was probably inevitable that lack of experience with the cars would deprive them of final placings. Problems were minor, almost inevitably revolving (sic) around the drive shafts. My own self-induced clutch melt job was a little different and was caused by parking my car against a tyre whilst I sorted out a problem over racing numbers meanwhile "blipping" the throttle steadily. The resultant heat build-up melted the clutch-bell into the main drive gear effectively! Just one of the perils of running a race meeting and taking part.

I was in fact delighted with the cars showing, a single steady run, really trying to get the feel of the car in racing conditions, put me into the



1/8th Off-Road

Bill Burkinshaw gets into top gear as the 1/8th IC buggy racing season gets underway.

semi-finals reasonably comfortably and I was looking forward to my 20 minute run. Of such little disappointments is life's rich pageant comprised.

Brave Racers

An entry of 62 drivers for the Remote World based BRCA Easter Nationals was very encouraging for the organisers, they had spent a tremendous amount of effort in preparing the track, members having spent several weekends camping at the trackside so as to be better able to devote the necessary time. The track looked great, a real tribute to their efforts. Lets hope that the depredations of the 4WD cars on the wet surface does not prove too long lasting.

When the heavens opened on Easter Sunday morning things looked grim, but surprisingly some 52 drivers stayed on to compete at the delayed start, an amazing testament to enthusiasm and in spite of the poor conditions most seemed to be enjoying themselves.



It is very easy to criticise the people that put on such events but in financial terms alone clubs such as Remote World really do take quite a risk. By the time trophies have to be ordered and mobile toilets booked, the public address system hired and the caterers tee'd up it is far too early to really know what the final entry list is going to look like. Club treasurers can be forgiven for getting a little edgy as the day looms!

A word of advice to all race organisers, don't be optimistic, err on the side of conservatism in all your budgeting and if all goes wrong you will have minimised your losses. If on the other hand things go well then you could well have some cash in hand to use as a cushion for your next race meeting.

Cleaning Bearings

Many people are put off running their Buggies in mud and rain because of the problems of cleaning the grime off after the days racing. Not for the first time the subject of cleaning bearings finds a place in 'Rough Riders', as I have just cleaned my own car and found that the grit had found its way into the smallest of gaps. In spite of carefully installing the single shielded bearings on my car with the shields facing outwards, grit had still found its way into the bearings. In these circumstances there is no alternative but to press the bearings out of the housings and clean them very thoroughly.

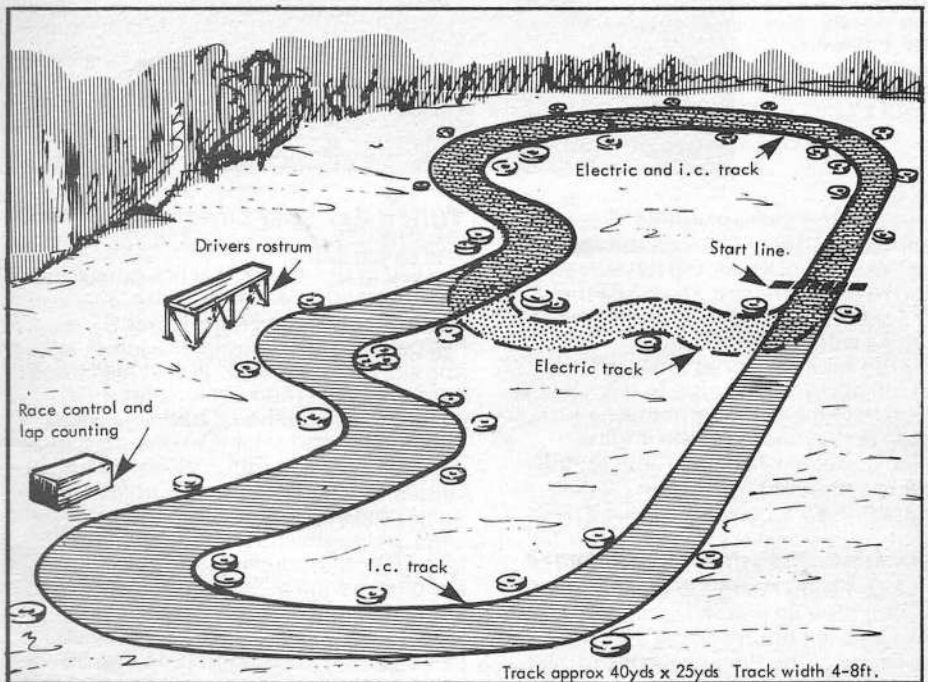
My method is very simple, a strong solution of washing — up liquid and water is brushed into the races which

are then sluiced beneath a high pressure hot water tap. Continue repeating this operation until the bearings are totally free from any grittiness and then dry carefully. The steel parts of the bearings will corrode fairly quickly if left in this state so I use a small amount of good quality oil to protect the races. The bearings can then be pressed back into place. The detergent and hot water method works well with all parts of the car removing synthetic oil from engine parts very effectively.

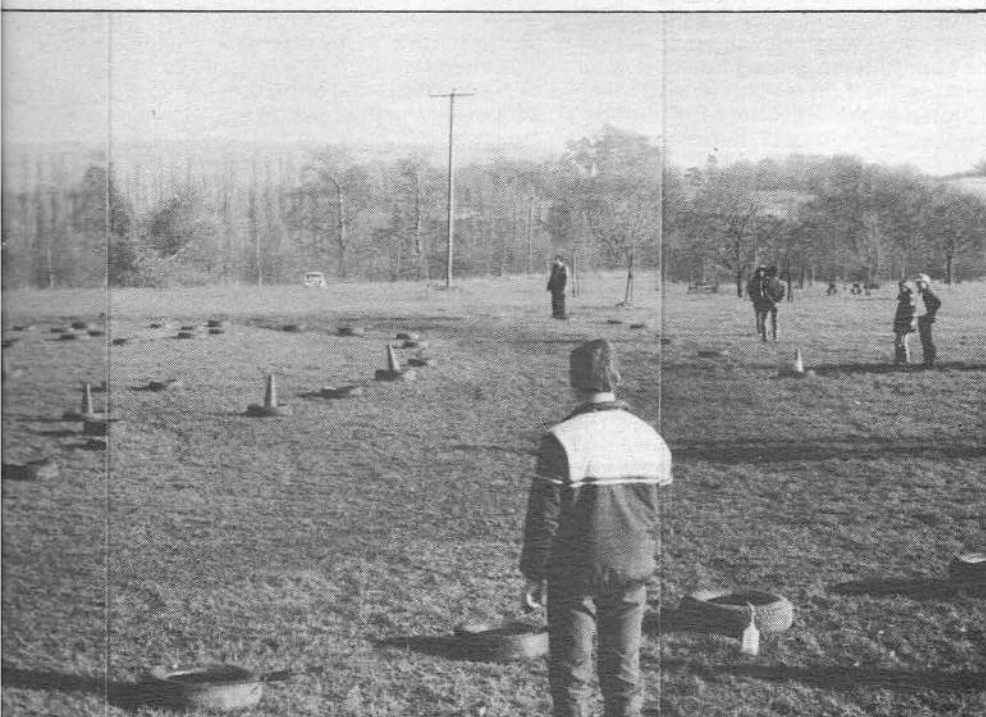
Picco Problems

It really isn't fair to lay the blame for the problems I encountered during last years racing season at the door of *Picco*. True it was the engine that was giving trouble, but only because of what I had done to it.

The following sorry saga only goes to show that we can all be blinded by our own mistakes and causes are not always as obvious as they seem. It all goes back to when I first assembled the *Serpent* "Cobra" for a 'Track Test' last year. I bought a brand new *Picco*



Track approx 40yds x 25yds Track width 4-8ft.



Left; a panoramic shot of the Maidstone Model Racing Club track situated at Allington Open Space, Maidstone in Kent. Two tracks are incorporated for 1/10th and 1/8th buggies. The diagram above gives a clearer view. Photo from Andy Everett.

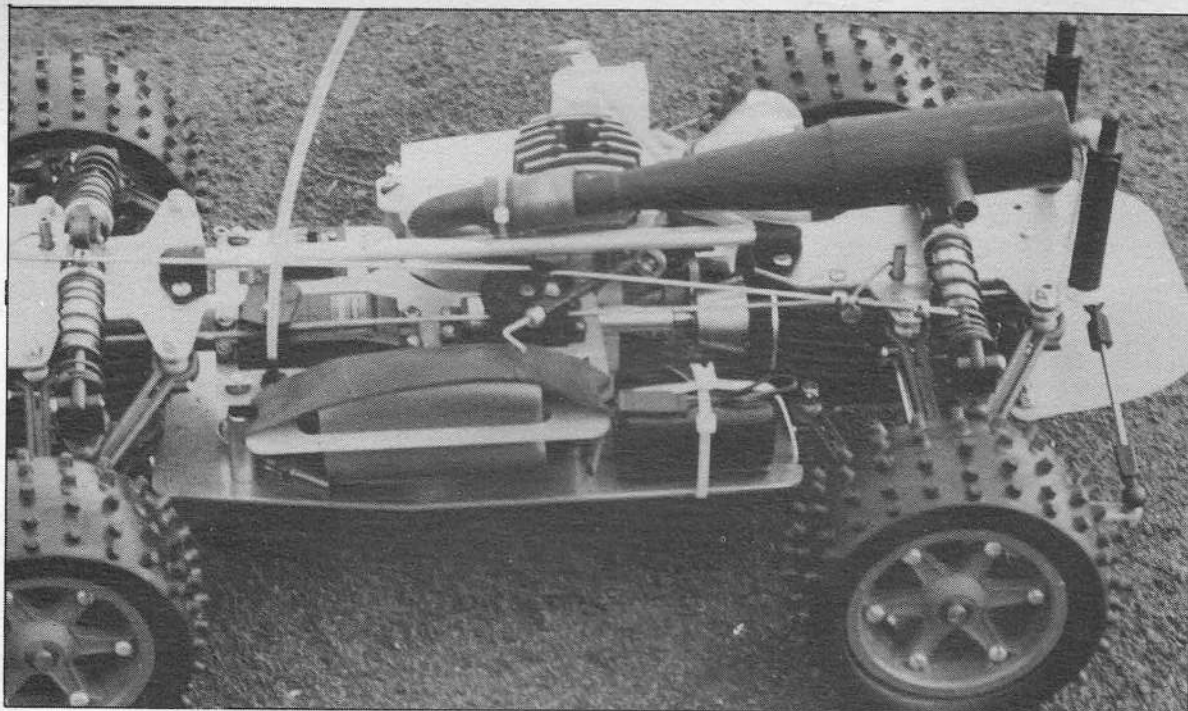
"Buggy" engine to suit and all the necessary accessories.

When it came to assembling the silencer supplied I found a short length of aluminium tube in the bag. At the time I suppose I must have given it some little bit of thought, certainly enough to make a decision to do nothing with it! That was the fundamental mistake that cost a season of frustration, for that little tube was the adjustable insert that set up the pipe to match the engine RPM and gear ratio chosen. Without it the engine would be forced to try and operate at far too high an RPM.

My attempts to make it do so in fact ruined the piston/cylinder fit as a result of overheating in the first few short runs.

Having unwittingly destroyed the engine I proceeded to try and find a cause, blaming in succession *Picco's* engineering quality, the fuel, the glow-

Right; the tuned pipe exhaust system on the PB 'Mustang' allows the tuned pipe to be adjusted in length to give optimum engine performance. Remember, the length of the manifold has to be taken into account when making calculations.



plugs and the *Serpent* clutch. Even the discovery half way through the season that the short pipe should have been fitted to the silencer didn't force the connection for I knew that both my engines were new and that they had only run for a very brief time.

A full and final solution to the problem came in the form of a new piston and cylinder for the engine which coupled with the proper length pipe has restored my faith in *Picco* engineering.

Troublesome Idle Adjustment?

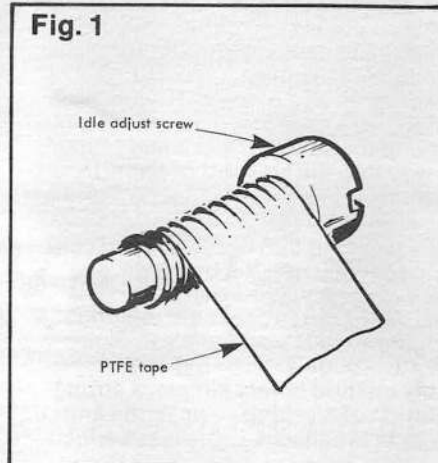
Whilst fitting the *Picco* back into the *Serpent* after its piston transplant, I had a sudden brainwave to do with the idle screw of the *Picco* carburettor, largely, or to be fair totally as a result of a readers hint a few issues back. These screws are a little troublesome, they tend to vibrate undone, slowing down the tick-over of the engine until it eventually stops. Just wrap a little PTFE tape around the threads of the screw before assembly and you have a complete cure. Simple, eh? (See Fig. 1).

Tuned Exhaust Length

There is a definite lesson to be learned in the above, it is not generally good enough to fit an exhaust manifold of any old length that happens to be convenient to your buggy. The nearer the silencer is to a full tuned pipe (and a mini-pipe such as the *PB* is an exhaust tuning device) the more important it is to ensure that it is the correct length. Take a look at a couple of Mike Billinton's 'Engine Tests' and you will see that there are exhaust lengths quoted for all the tests. If you use a complete system as supplied by the manufacturer of your chosen engine intended for the exact Mark of motor you are using, then you can expect it to be right. (See Fig. 2.)

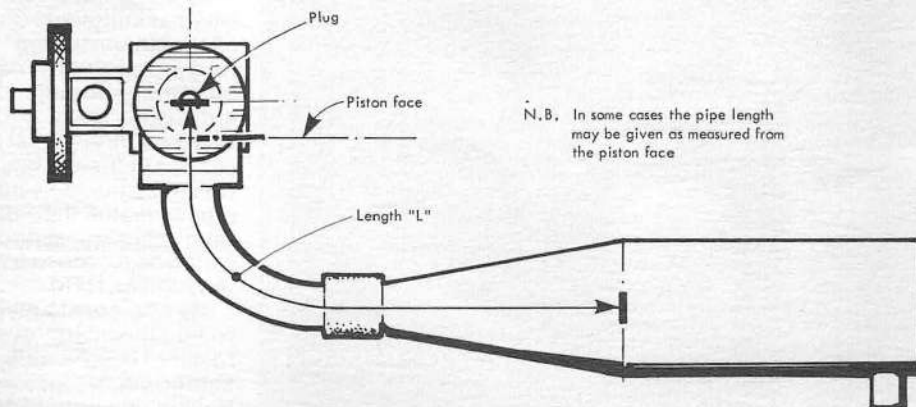
However, if you use something from another manufacturer or modify it in some way then you are on your own, particularly if you shorten the length. There is very little harm, and probably some benefit to be gained from using a system longer than recommended but too short a system results in an engine that doesn't sound right and doesn't

Fig. 1



perform right. In my own case steadily leaning out the mixture in an attempt to get the motor on song quickly destroyed the fit of piston and cylinder. □

Fig. 2



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Frog	£79.00
New! Hotshot 4 x 4	£110.00
KYOSHO	
Scorpion	£78.95
Beetle	£78.95
Tomahawk	£84.95
AYK Sidewinder	£89.95
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Mardave 1/12th Stock Car	£37.00
New! Progress 4 x 4	£99.50
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SG Samba 2WD Off Road	£99.95
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Serpent Cobra 4 x 4 Off-Road ...	£225.00
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SG Columbia Circuit	£169.95
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OPS Rear Exhaust	£73.00
OPS Side Exhaust	£73.00
Also OPS with SG crank same price	
Picco 21 Side Exhaust	£58.50
Picco 21 Rear Exhaust	£58.50
Picco 21 rear exhaust Delta Buggy	£70.00
Also Picco's with SG crank same price.	
Any above Picco's with Buggy Head or Std.	
Picco 9mm Carburettor	£15.79
Picco 7mm Carburettor	£14.69
OPS 8mm Carburettor	£18.50
OPS Gold Plugs (10)	£17.50
MacGregor Glo-Clips	£5.45
MacGregor Plug Spanner	£2.75

ACCESSORIES

OPS Air Filters	£2.50
SG Wet Weather Filter	£3.50
SG Ordinary Filter	£3.50
SG Special Double Filter	£7.95
Picco Air Filters	£1.70
WMS Air Filters	£2.48
SG Quick Fill	£2.99
SG Starter Wheel	£3.99
SG Starter Box	£34.95
Nova Starter Wheel	£1.50
Nova Starter Motor	£30.00
Sullivan Starter Motor	£32.95
Delta Fuel Filter	£1.95
WMS Double Fuel Filter	99p
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SG Flip Top Tank	£4.95
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Sanwa Dash 2	£46.95
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Mabuchi 380S	£3.99
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Demon Buggy Speed Controller ..	£39.95
Lazer Buggys/Controller	£39.95
Yokomo Resistor Speed Controller	£14.95

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Pencells	99p
Sub C Saft	£1.85
Saft 7.2v Tamiya	£16.95
Saft 7.2v Tamiya	£16.95
Saft 7.2v Flat	£16.95
Sanyo 7.2v Flat Selected	£19.50
Ever-Ready 7.2v Flat Selected ...	£17.95
Receiver Packs Flat only	£4.40
Sanyo Receiver Packs, Dumpy 450mAh	
4 cell packs	£7.95
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MFA 5-6-7-8 Cell Fast Charger ...	£16.95
MFA Field Charger (Pencells)	£11.95
MFA Mains Transformer	£11.95
Jester 5.6 cell Fast Charger	£15.95
Jester Pencil Charger up to 16 ...	£8.80
TMS 5.6 cell Fast Auto Charger ...	£16.95
TMS 6 cell Mains Fast Charger ...	£23.95
Lazer Pulse Charger 7.2v	£25.00

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MRC Slimline C/lug	£7.94
MRC Slimline Studded	£7.94
MRC Super Single Studded	£8.45
MRC Slimline	£7.94
SG Wide Studded	£7.95
Bajoma Studded/Padal	pair £7.95
Bajoma Studded	pair £7.95
Garbo Studded	pair £5.41
Mardave Marauder	£6.00
In stock wide hubs Garbo	£4.37

1/8TH CIRCUIT TYRES

Bajoma	£6.95
Arrows Red	£5.95
Arrows Yellow	£5.95
Associated Yellow	£7.95
PB QL Eco	pair £3.85
UFRA Eco	£5.25
UFRA Specials	£5.95

1/10TH OFF ROAD

Mardave 4 x Spiked	pair £3.50
Mardave 3 x 2 Spiked	pair £3.50
Mardave Square Pattern	pair £3.50
Tamiya Rough Rider	pair £3.99
Tamiya Frog	pair £5.50
Tamiya Lancia Fronts	pair £5.50
Tamiya Lancia Rears	pair £6.60

BODYS

Rough Rider 1/10th Lexan	£7.95
Beetle 1/10th Lexan	£9.95
Audi Quattro 1/10th Lexan	£9.95
Frog 1/10th Lexan	£12.99
Garbo Devil 1/8th Lexan	£13.20
Ford Granada 1/8th Lexan	£8.95
Opel Commodore 1/8th Lexan	£8.95
Corvette 1/8th Lexan	£9.95
+ Sports Catah Formula 1/8th Lexan.	
Mustang body 1/8	£10.70

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Bat Eliminator	£2.85
3 Speed Board fit Tamiya	£3.30
7.2v Connectors Male for Two	66p
7.2v Connectors Female for Two	66p
6v Connectors Male	each 35p
6v Connectors Female	each 35p
Flexan Spray	£2.25
Humbrol Lexan Paint Tin	£1.55
Tamiya Lexan Paint	£1.65
Frog Diff.	£4.50
Scorpion Diff.	£7.95
Frog Shocks	pair £9.50
SG Shock 1/8th	pair £10.65
Scorpion Shocks	pair £7.00
SG Mono Shocks 1/8th	each £7.50
Coil Conversion Tamiya	£5.95
Brass Collets for Shocks Scorpion	£1.60
H/Duty Kydek Bumper R/Rider ...	£2.95
H/Duty Kydek Bumper R/Rider ...	£2.95
H/Duty Kydek Bumper Frog	£2.95
H/Duty Kydek Bumper Scorpion ...	£3.45
Bail Races Tamiya	£1.75
Bail Races Scorpion	£1.95
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12T 13T 14T 15T 16T 18T 19T each	£1.30
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RACING IMPROVES THE BREED Kyosho have developed their 1/10th off road buggies on the tough race circuit producing models to win the '84 World Champs, 6 Hour Endurance Race and more comps than any other manufacturer. Tomahawk (above) has rapidly proved itself a top competitor on all tracks and in all conditions. At approx 51 ozs, ready to race, it is phenomenally light and features a pre-assembled and sealed gearbox with a built in differential, a strong alloy chassis with oil filled dampers all round, roller bearings on rear drive shafts, a quick change R/C plate, special speed controller with ally heat sink. The RS540 motor is supplied with the car as is the polycarbonate body. There won't be many meets during '85 when Tomahawk doesn't prove its a hatchet job on the competition.

Scorpion is the most successful buggy ever. MCM said it was the best buggy they had tested, in fact this fantastic car has dominated off road electric racing for years. The kit is supplied with four oil filled dampers and ready installed RS40S motor, close ratio gearbox, lexan body, lightweight tyres and hubs etc.



HONDA ATC This electric powered three-wheeler is a real fun machine and opens up a whole new radio control sport for all to enjoy. Supplied almost ready to run, the Honda ATC is the perfect introduction to radiocontrolled vehicles. Capable of jumps, wheelies and off-road running on rough or muddy ground, the trike will give endless hours of fun. A realistic driver doll and a pump for tyre pressure adjustment is included with the model. The trike is approx 15" long and very realistic in appearance, make for ideal holiday fun for all the family.

THE LATEST KYOSHO CATALOGUE IS NOW AVAILABLE. This superbly coloured fully illustrated catalogue contains a host of radio controlled models, aircraft, cars, boats etc. Available from your local model shop or direct from RIPMAX MODELS, GREEN STREET, ENFIELD EN3 7PS. Please print your name, address and postcode and enclose 50p. to include p & p.



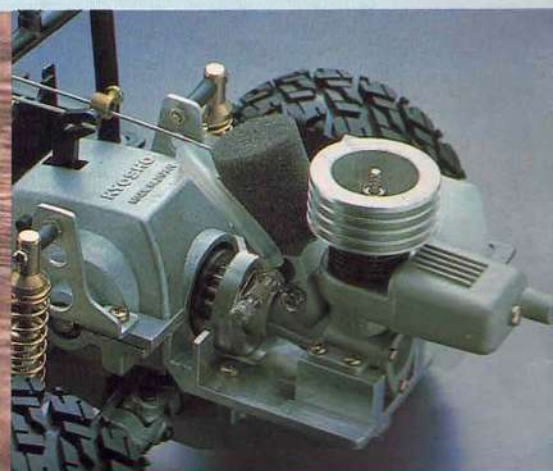
INTEGRA 4WD A real rough, tough, 1/8 scale off road buggy. Developed from the famous Land Jumo, Integra is designed for 19-21 cu.in. motors & 2 channel R/C and top competition racing, or if you prefer - just plain fun in the rough. Integra's strong roller-chain 4 wheel drive system powers it through the worst conditions from oozing mud to the driest sand. Its long trailing arm suspension and 4 oil filled shocks eat up the bounce and rebound of the roughest terrain. The Integra is thoroughly engineered to handle the meanest conditions with front differential fitted as standard and all friction points in the drive train are either roller or ball raced; Integra is even fitted with disc brakes.

YOU DRIVE THE INTEGRA - ANYWHERE !



DATSUN STEP SIDE There can't be many off-road vehicles as complete or as easy to assemble as the Step Side. The factory fitted G-MARK 06 motor is simply and reliably started via the 'ZIP' pull start, saving the cost of an electric starter, in fact, the buggy is expressly designed to get you up and running with the minimum of fuss and effort. Motor, clutch, gearbox and other mechanical parts are all pre-assembled and ready mounted in the chassis (see detail pic). The swing arm suspension and oil filled shocks keep StepSide racing over the rough ground while the fluted hubs, treaded tyres and functional body give realistic appearance.

STEP SIDE - SIMPLE TO BUILD, EASY TO RUN !



THERE SEEMS TO be something of an unending stream of similar vehicles appearing over recent months, so what is different about this one? Well, its IC powered by a .06cu.in. engine (1cc), which gives quite an exciting performance in a 1/12th scale off-roader.

First Look

The box is the usual multi-coloured substantial package that we have come to expect from the Japanese manufacturer *Kyosho*, with all small items in plastic bags and the body in a separate box to prevent scratching.

The car comes practically built mechanically, and all that has to be done is installation of the radio control equipment and finishing of the body. In view of the harsher life that befalls an I.C. car as opposed to an electric powered vehicle, the body is moulded in Lexan.

The engine is mounted on a substantial alloy casting which includes an integral gearbox, clutch and brake mechanism. The casting bolts to a box shaped nylon plastic moulding, terminating at the front-end with a metal bumper which doubles as the forward body mounting post. The suspension arms are substantial alloy castings damped with oil-filled sprung shockers.

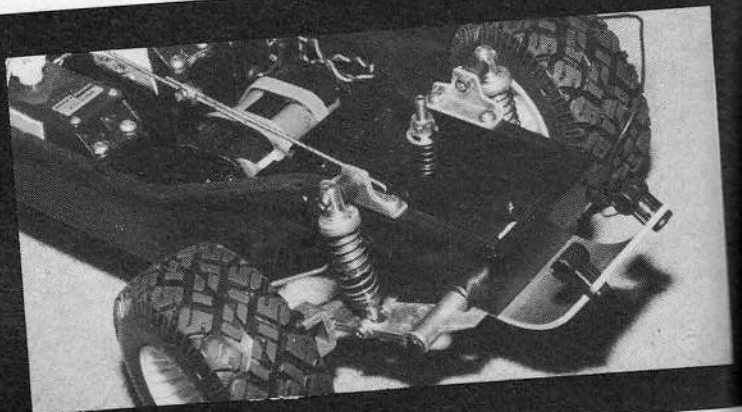
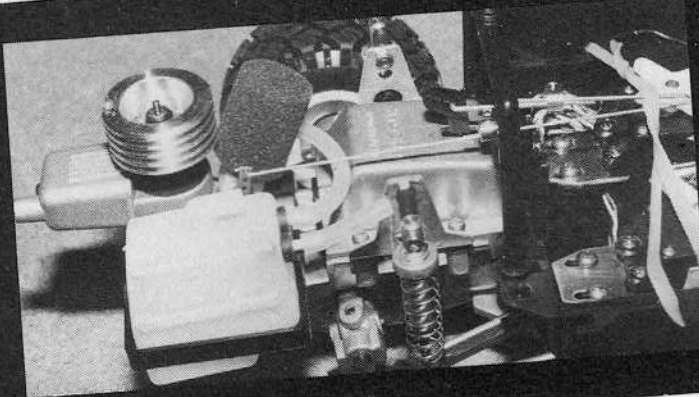


Another nylon moulding forms the main compartment hatch which efficiently protects the radio gear from fuel, oil, dust, water, etc. This is simply but effectively secured with a rubber band. The Lexan formed driver is stuck to the top of this moulding.

Kyosho/Datsun step-side

Try 1/12th Scale IC Powered Off-Road racing for a change. John Cundell did and found it great fun.

Below: close up of the front suspension showing the cast alloy suspension trailing arms coupled to oil filled coil springs damper units. Note also the body clips attached to the front bumper. Below right: engine, gearbox and fuel system. The gearbox is supplied factory assembled with enclosed brake operating through a lever out of the top of the gearbox casing. Fuel tank must be retained in its holder with a tie wrap or elastic bands. Opposite page left: underside of the rear suspension/gearbox assembly. Cast alloy Universal Joints transmit power to the rear wheels. Opposite page right: general view of the R/C crate and linkages. Servo's are mounted on adjustable alloy clips to allow fitting of all types of servo.



The Radio

Moulded nylon blocks on the bottom of the radio compartment together with adjustable metal clips allow for all sizes of servos to be accommodated with ease. Servo links are supplied already bent to shape and are secured with screwed collars. Adjustment is straightforward and the instructions quite clear. The throttle servo requires two links, one for the carburettor throttle, the other for the brake.

The Fuel System

The filler and feed pipes need to be inserted through rubber grommets and the tank is then dropped into a nylon tray bolted alongside the engine. A length of silicone tube is fitted between the tank and the carburettor and a foam air filter slid over a spring which screws over the carburettor air intake. This area is the one weak point of the car. The filter needs securing much better without a strategically placed tie-wrap, the fuel tank jumps out of the tray at the first bump.

Finishing Off

The Lexan body needs a little trimming, masking and painting,

followed by drilling a number of pre-marked holes to accept the wing mirrors, silencers, front mounting bracket and light bar. The instructions advise the use of cyanoacrylate adhesive (superglue) to attach these nylon mouldings to the body — but Lexan is prone to attack by cyano over a period of time — however no alternative adhesive could be found that would work with nylon. Just use the smallest amount of cyano that you can get away with.

The whip aerial is fitted and connected up and the car is ready for the off.

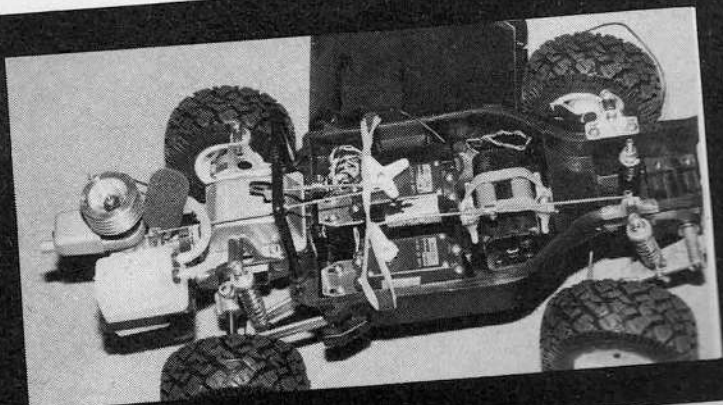
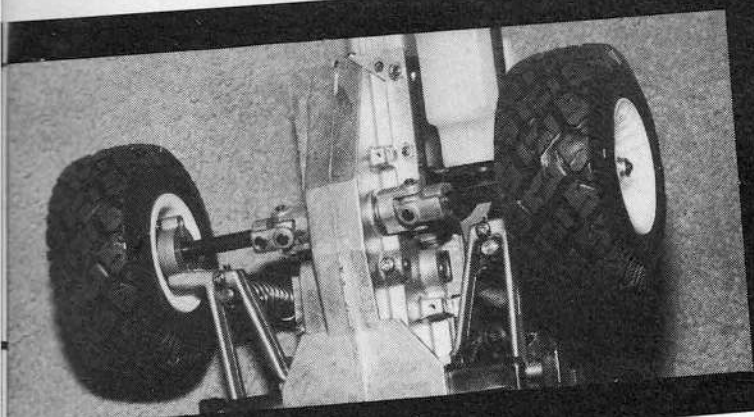
On the Track

One of the most difficult tasks for any writer of instruction manuals is explaining how to successfully start and run an I.C. engine. Despite the occasional lapses into 'Jenglish' the instructions are excellent. Initially the engine was quite difficult to start, but after a few minutes running-in it started first pull on the toothed plastic starter on most occasions. The starter is inserted through a specially shaped slot under the toothed flywheel and is easy to use. The engine was flexible, especially on a low nitro content fuel, the braking excellent and steering

precise. The silencer works reasonably well and the noise level will be quite acceptable at the local Off-Road track, but will soon upset the neighbours if you carry out prolonged running in the garden. The length of run from the small tank was well over 10 minutes.

The only problem was that no power could be obtained at the wheels for the first run. On dismantling the gearbox, the work of a few minutes, it was discovered that the friction medium around the inside of the clutch bell housing was not fitted at the factory and that which was considered to be a spare needed to be fitted. The instructions mention that it might be necessary to fit the band if slippage occurs, but do not state that there is none fitted on factory assembly. Use cyanoacrylate and reassemble. Following which excellent throttle response will be obtained.

The car is fast, certainly faster than its electrically propelled brothers and should provide many hours of fun racing. The price is £119.00 including VAT, distributed by Ripmax Models, Ripmax Corner, Green Street, Enfield, Essex. □





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**4 WHEEL DRIVE
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THE MOST ADVANCED ELECTRIC BUGGY IN THE WORLD

- 4 WHEEL DRIVE FOR MAXIMUM TRACTION
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- TRUE DIFFERENTIAL ON REAR DRIVE
- MABUCHI RS 540S MOTOR SUPPLIED

***WHEN THE GOING GETS TOUGH
THE TOUGH GET GOING***





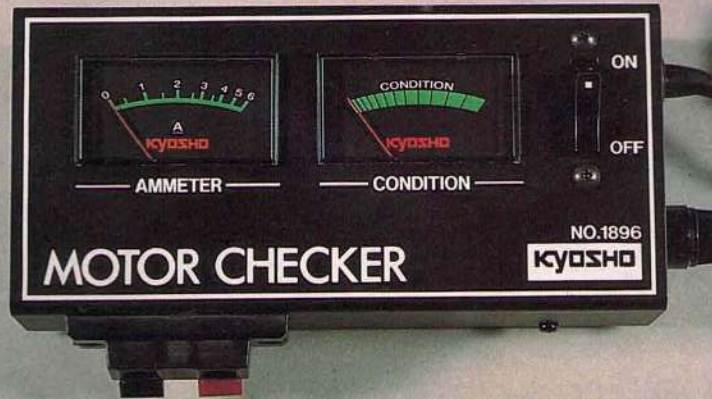
Le MANS MOTORS This range of superior motors has been developed through hard competition racing. Although described in car terms, they are of course excellent performers for electric boating and aircraft. All Le Mans motors feature 1mm thick outer case for maximum rigidity and minimum leakage of magnetic field. Non ferrous metal front plate concentrates magnetic flux into the rotor, reducing loss of magnetic force. Rotor is dynamically balanced for minimum vibration. Resin bonded coil eliminates shifting of windings at high rpm. Skewed armature* for high torque and speed plus stainless steel shaft and precision ball races* at both ends.
*Not 600E motor.



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600 E A modified Mabuchi 540 type. An economy bronze bushed motor for 8 minute racers and off road vehicles.
PRICE £12.95



MULTI CHARGER This variable rate unit will charge all fast charge nicad packs of 42 mAh capacity or more. Via the variable current rate and 0-30 minute timer, transmitter and receiver nicads as well as 6v & 7.2v power packs can be charged in the field from a 12 volt source. An invaluable charging system for any active modeller or club.
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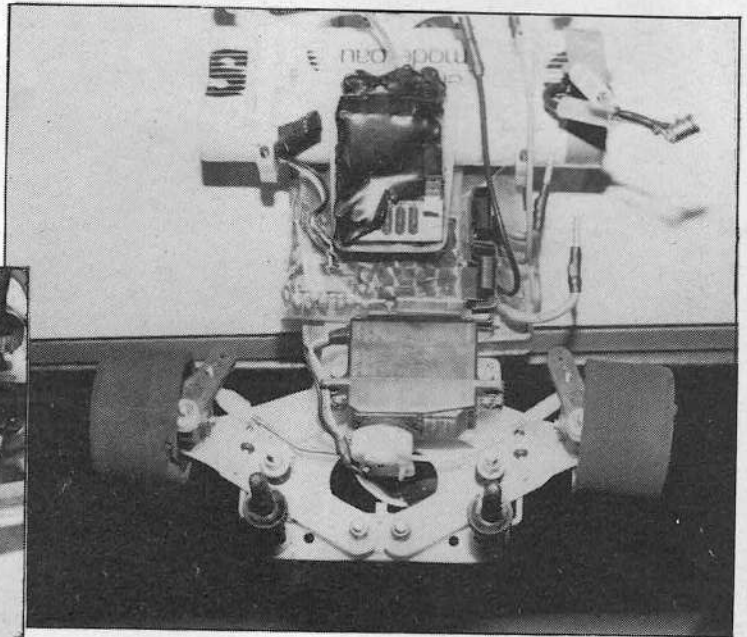
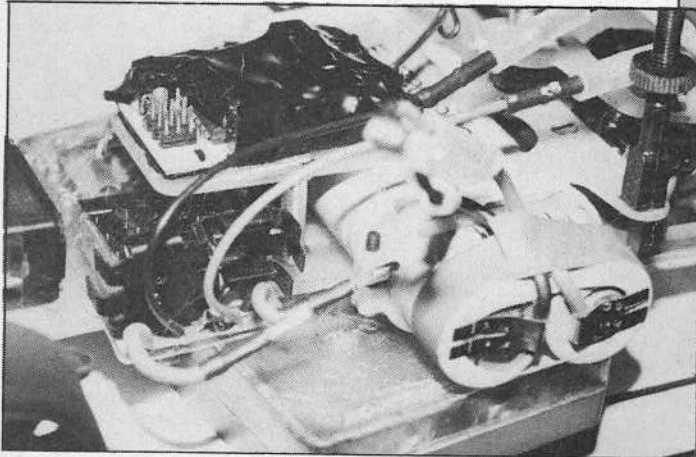


240 S Modified Mabuchi 540 type for 4 minute races and sprint events, top speed and acceleration motor.
PRICE £18.95

THE ADVOCATES of carpet racing tried to persuade others to join them and spend large fortunes buying *Primafelt*. It would, they said, be cheaper because tyres would last longer. Two years on this claim holds less water than a sieve.

Several 1/12th scale racing component traders are very conscious that the cost of tyres and

Below; Mark Brown's Schumacher 'C-Car' with Demon 'Little Devil' stowed amidships viewed from this end the black anodised heat sinks for the MOSFET'S can be seen.



Above; Mark Brown's 'C'-Car from above showing the 'Little Devil' in position low down on the chassis. This item is a full ounce lighter than the old Demon '2D'.

Tyring Exercises

Some more 1/12th scale circuit racing hints and tips from Pete Winton.

treatment is too high and are trying to do something about it. Thus it is that several of the popular tyre grades available at present are lower in price but require more work to get them glued and trued.

There are two categories. Thin rings which need to be glued together and blanks which must be sliced in two to provide full width tyres.

The examples used here were taken from *Cecil Schumacher* ('Greens') and *Supercharge Models*.

Ring System

The *Schumacher* rear tyres come as two 3/4 in. wide rings which must be glued together first. To do this find a rod which will pass through the centre hole with little effort. The idea

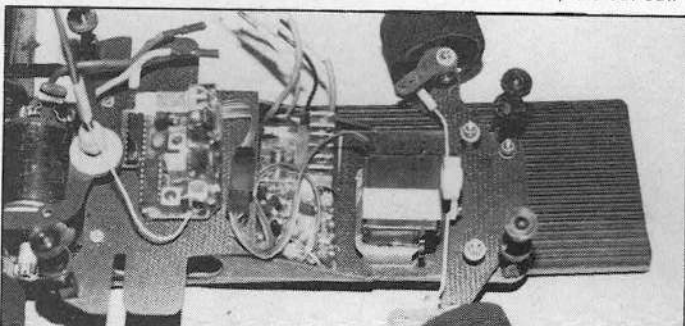
is to locate the tyre ring square to its axis and allow the other ring to butt up square and concentric. Using the hubs for this purpose is unsatisfactory since the tyre expands and tends to splay out at the top edges, causing the joint to be poor.

Using a contact adhesive, smear one face of each ring with a thin layer of glue. Make sure the face you use is open rubber and not the sealed skin face. Leave to dry for 10 minutes. Mount one ring onto your rod and make sure it is square to the

axis. Carefully mount the other ring and push the two together. They will stick immediately, so great care must be taken with positioning. Do not try to do this if the glue is not dry, since the edges will not stay together. If there are any gaps the tyre treatment will get into them and dissolve the glue. Should there be any gaps, then remove the tyre from the rod and place under a heavy weight whilst the glue dries. Leave the tyre to dry for at least 24 hours.

This basic principle applies to all

Below; Pete Jones Alpha Track Parts chassis with Demon 'Big Devil.' Right; Keith Helmkes Demonish derivative with a 'Big Devil' just visible through the shaker plate cut-out.



requirements for gluing tyre rings together. Whether it is for making a tyre up to full width or joining two rings, the most successful method is to glue the rings together first, and then mount the complete tyre.

Tyre Splitting

When you buy rear tyres only, they must be split to be made into fronts. To do this you will need a hacksaw and steady hands. Our hacksaw cut will not be straight enough for this purpose. Leave over 1in. width for the front tyre.

Now place the tyre on a worktop (not any valuable table), compress the tyre with your left hand until flat and saw the end off! Practice makes perfect so go easy.

If you own a lathe then this job is very simple since the tyre can be mounted dry on the hub, parted off and removed.

Tyre Mounting

Before trying to mount tyres a clean set of hubs and a pot/tube of glue must be available. Another useful aid (cheap tool) is a tyre horn.

The *Kimbrogh* item is favourite and available from *Ted Longshaw* and others for about £1.00. This really does make life easy, but don't forget to specify a 1/12th size!

Smear contact adhesive around the inside of the tyre so that the whole inside surface is liberally coated with glue. Put a thin layer of glue on the hub, stand it upright, place the tyre horn on top and push the tyre over the horn and onto the hub. Remove the horn and adjust the hub in the tyre so that the tyre overhangs at least one end. This allows that end to be trued square to the hub and should preferably be the outer edge.

In the absence of a tyre horn, place the tyre on the bench and just push the hub into it.

Once mounted leave to dry for 24 hours and then true them up. Even if you can't true them yourself then mounting them will cost only time and allow you a free choice of tyre material.

A Devilish Problem

Nick Adams of *Demon Products* took me to task recently for not featuring any of his new products.

"Why do you only discuss *Lazer products*?" he cried.

Well it's simple, Glyn Peglar of *Lazer Products* and many other manufacturers I might add have come to the far-sighted conclusion that there is more chance of me reviewing a new item if I can get to see one.

Obviously Nick is playing "hard to get" on the subject of his latest MOSFET (MOS Field Effect Transistor) speed controllers as I

have not seen hide nor hair of them. Which is a shame, because I'm sure they are very good.

Nevertheless in the absence of a test sample I solicited some comments from some very competent 1/12th scale drivers. Of the two new items, I asked about the all-MOSFET 'Big Devil', first.

Pete Jones

"Well up to Nick's high standards. Although a 'prototype' unit it performs well and gives much improved performance off the line out of corners. I once shortened it out for a time, but no damage occurred. Very pleased."

David Gale

"Very good, but I feel it tends to make the car go flat earlier than a relay based device. Small for low-down mounting and light."

Two satisfied customers. The only fear they both expressed was how would they know whether one or two of the six MOSFET had failed. MOSFET speed controllers are here, but don't buy just for the sake of it.

The more interesting development from *Demon* is a revised version of the '2D' controller, the 'Little Devil'. Using a new (and much smaller) magnet assisted relay, together with a single MOSFET to replace the power transistor (similar relay and MOSFET for reverse) Nick has reduced the weight of the controller to just over 1 ounce, a complete ounce lighter than the old '2D'. Again, no sample from *Demon*, but I found **Mark Brown** with one in his possession and asked him what he thought:

"Great, good performance and duration and brought my car down to 1/2 ounce over the limit (31ozs) without any other modifications (Mark uses a Schumacher 'C' car with Futaba FP132S servo and average Receiver) Quicker off the line than a '2D', and no duration problems so far. Reliable and very easy to install almost anywhere on the car."

This is a very nice piece of engineering. At a cost of £39.95 this represents 'state-of-the-art' speed controller technology for the clubman. Mark reports 100% reliability in the last two months. Mounting low down on the chassis is easy and the low weight means that anyone can get down to the minimum 31 ounce weight limit without any difficulty. In the race between the devil and the bright white light the devil has got his fork in front on the relay based devices.

Available from *Demon Products*, 79 Northumberland Road, North Harrow, Middlesex HA2 7RA.

'Little Devil' £39.95.

'Big Devil' (MOSFET version) £49.95.

MOSFETing Around

I have been using a MOSFET controller for a short while and like it very much. Not because it makes the car easier to drive (it makes it different) and not because it is frighteningly efficient giving huge increases in duration (it doesn't). Its main attribute is reliability and low weight.

The reason we use relays for full power is that a transistor has a higher operating resistance which causes a voltage drop. Even a relay has a resistance, but less so depending on make. MOSFETS need even less power to drive them than a relay. Using six, as in the *Demon* further reduces the voltage drop.

The first thing you notice about a MOSFET controller is that it does behave very different to a relay based device. Further use reveals that the car is quicker onto the power, out of corners or off the line. The power comes in cleaner as well. By adjusting the gain potentiometer, it is possible to have a lot of power come in very quickly, which makes acceleration on a slightly slippery track a delicate affair.

Electronic speed controllers are biased towards providing all available power to the motor as the battery pack voltage drops.



Caption contest

We couldn't resist using this picture for a little lighthearted fun and games. We hope George Land (seated left), Nick Adams (standing) and Gerry Goldberg don't mind too much.

All you have to do is tell us what each of them is saying in as witty and funny way as possible. Write it down on the back of the postcard and send it to: Caption Contest, Model Cars P.O. Box 35, Wolsey House, Wolsey Road, Hemel Hempstead, Herts. HP2 4SS.

No telephone entries and no correspondence will be entered into. Our judgment is final.

The best entry will be printed and the sender might find a little something winging its way toward them.

On The Carpet

Relay based controllers need some power to drive the relay coil and thus close the contact on the forward relay. If the operating voltage is too low (end of the race) then the contact remains open and the car stops.

Because MOSFETs have a lower voltage drop than conventional relays the car appears to have more duration because all available power is being passed to the motor for longer. Ultimately there is not enough voltage to power the R/C gear or move the car.

In both cases if the car is travelling slowly at the end of the race then a good heat time is out of the question anyway.

If you are an expert driver capable of mixing it with the best then a MOSFET may be useful. If not, then stick to a relay device which is cheaper to run and repair. The *Demon* 'Little Devil' is as good as any MOSFET for a club driver and weighs less. One last point now that the BRCA have instigated a £50 price limit will the people who run specially built MOSFET controllers be allowed to compete? I say again, that the rule is daft and counter-productive, why is it that no-one can see what I'm getting at.

A Body Blow

And lo, it came to pass that King Nicholas XIX of Adams, ruler of all the Watford League, sent forth a decree (nisi) for he was the power and all would obey.

"Thou shalt race Saloon Bodies at the next League meeting" sayeth the royal scroll. For he had got fed up with Saloon Bodies cluttering up the palace and wished rid of them.

Now there lived in Watford a young traveller who was most phased at these tidings. If he desireth

continued worship at the alter of King Nick a Saloon Body must be possessed. So the young traveller harnessed 105 horses to his 'Orion' and went into the town for provisions. He would undertake a great journey which leads to the Holy Palace of Saloon Bodies. He bade farewell to his wife, promising he would keep safe and return with some of their bank balance intact.

By reference to the *Alpha* to *Zeus* on the outskirts of Northern Londinium he found his way to the A405, there upon he came across a fellow traveller in a *Morris* 'Oxford'. This man was clothed in tweed with a pipe and hat, and travelled slowly so as not to miss the events of the journey. Our traveller was distressed since time could not be wasted and his horses were straining at the reins. After some time our traveller remembered an ancient tribal sign which the fellow in the *Morris* 'Oxford' took to mean he was wanted elsewhere!

After the A405 and the A6 were behind him, he came by a large roundabout. There were many travellers here and some came so close to our hero that he was forced to speak to them through two panes of glass in French!

On the third day he passed from the roundabout to the M25. He had been warned that there lurked devils in disguise who would follow, stop and talk to him. They sometimes gave gifts of paper and offered hospitality in the comfort of their 'Granada', which has many more than 105 horses. The traveller was wary, but saw only men dressed in blue watching him from a 'Range Rover' of many colours.

And so it happened that the traveller came upon *Red Baron Models* in Enfield hard by the A10 which was the Palace of Saloon Bodies (today).

He was tired, hungry and most put out that the keeper of the *Red Baron Inn* has now only got a '2CV' *Citroen* which has less useful horses than a knackers yard. On his last desperate lunge for the palace, his dishevelled form pushed open the door and he lay gasping on the floor.

"Oi! Shut the door, its cold."

"Got any Saloon Bodies?" croaked the traveller.

"Nope . . . sold out!"

Will our traveller buy his body at Greeno's?

Will Nick approve of the body chosen?

Will any of you believe I'm at all sane?

The answers to none of these questions, but hopefully future reports of the Saloon Car rounds of the Watford League.

Schumacher front wishbones

The *Schumacher* 'C' car is now almost universal wear for those who wish to compete in the 1/12th arena using an 'out of the box' winner.

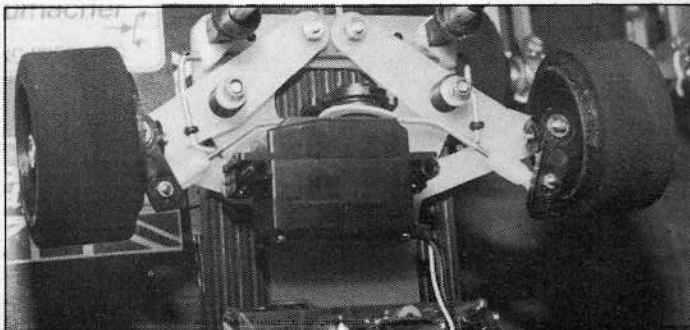
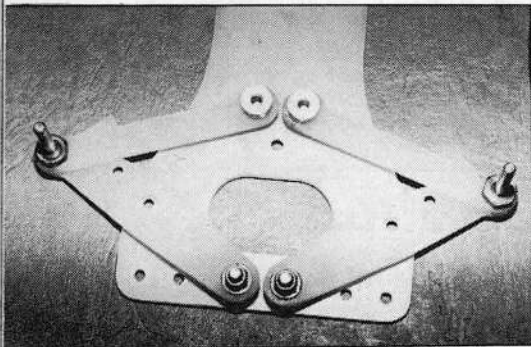
Despite many claims to the contrary by the unknowing, the Team cars are identical to the kit cars. The reason for this is simple, if there is a modification which improves the car, the lads do not want to have to make the bit every time they build a new race car. Even doing this will not always produce the same result since without sophisticated machine tools it is not easy to exactly reproduce the special component. So the developments are made gradually, and the parts always go into production so that each race car is the same as the last. Not unreasonably *Schumacher* make some money from their research. Sometimes, the changes are made for reasons other than improvement of the car. There have been a number of subtle changes to the parts due to changes in production methods, and materials. These normally result in the car being the same as it was before (but not worse!).

The photos show the wishbones as they are now produced. To save on material, production is now in two pieces, not one. Mounting is very similar, except that the rearward mounted half must be bolted ON TOP of the forward half. This maintains the correct castor angle. People using beam cars ('B') will need extra O-rings for the rear mounting, and people with 'C' cars will need two rear pivots, and four 1mm washers to replace the current front pivots. Specify these when ordering, or ring to confirm. The build-up is the same as the 'C' car, with the exception of the overlapping of the two halves mentioned earlier.

The sting in the tail is that this apparently simple change has brought with it a marked improvement in handling due (it is felt) to the greater stiffness of the new 'design'.

One of Cecil's more desirable modifications, and at the reasonable cost of £3.20 for the 'bones' plus around 60p for the extra pivots or O-rings if required.

Green folding stuff to Cecil at 'Rudge', Church Brampton, Northampton, or your local Model Shop.



Above left: the new *Schumacher* 'Bones' available as replacements for the one-piece 'C'-car wishbones. Left: the completed 'C'-car front end with the new wishbones in place.

Schumacher

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European championships winner Schumacher 'C' car wins 1985 Euro-champs. Andy Dobson takes FTD by one clear lap and wins all three finals. Phil Davies (3rd) and Phil Olson (5th) also driving 'C'-cars.

'C' car — Fastest car at 1984 World Championships. Winner of 1985 Dutch + Danish Internationals. Incorporates front and rear adjustable ride height to maximise tyre life.
Conversion kit £45.00 Rolling chassis £87.50

FORGET ABOUT THE REST - RACE WITH THE BEST!

Clubmans 'B' with beam axle
Conversion kit £39.90
Rolling chassis £79.90

MkIII Differential
Ball raced and glass fibre axle £13.99
Diff. gears 44 to 55 teeth .. £1.06

Front Wheels
1/8", 3/16" or 5/16" bore each 50p
Nicad Clamps (pair)
Secure fitting & quick change £1.50

Motor Pinions
Plated steel 7 to 16 teeth .. £2.00

Anti Roll Mast
In taper ground glass fibre .. £2.60

Servo Saver
Extra strong spring and 4 fitting options £2.00

CS Charger — with DVM and full auto charge and discharge facility £59.00

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Yokomo Motors
28 turn Buggy or 35 turn Std. £9.99
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The fastest in the world .. £18.00

Live Axle Unit
Ball raced. Gives quick change facility to Std. Associated front end.
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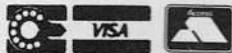
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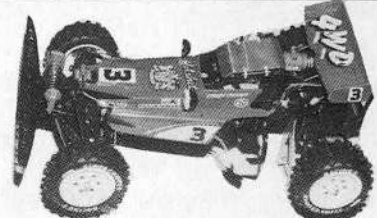
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PB Racing Products

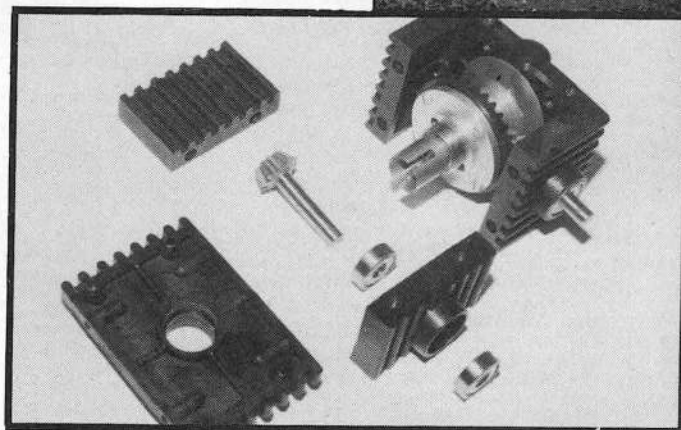
Mustang Xi2

Bill Burkinshaw tests the theory of 4-wheel drive and 4-wheel steering with this 1/8th scale IC buggy

TEMPTING FATE maybe, sticking ones neck out perhaps, but whatever you call it, an in-depth preview has all the ingredients for a backfire. We did hedge our bets a little in one of the picture captions of the *PB Racing* "Mustang Xi2" preview in May 'Model Cars' but even before the magazine was printed we heard that the extensive pre-launch testing of the "Mustang" prototypes had shown that the performance could be significantly improved by an alteration to the front suspension layout. The parts remain the same, its just the positioning that is different, enough to cause some very puzzled looks on the faces of those people who have now seen both our preview and the production version.

This Kit has just got to be the most exciting Buggy of any type to come from a British manufacturer yet. *PB Racing* have a reputation second to none for producing race-winning kits and they must have great expectations of their first venture into the world of Buggies.

The Kit is innovative in several areas where innovation can be of benefit and uses well proven parts where reliability is essential. Four wheel steering is 1/8th scale Buggy innovation number 1, even though there is an electric Buggy on the track with such a feature. The timing of *PB's* on-track experiments is a strong indication that the innovation was arrived at as a result of independant, original thinking on the part of Keith Plested the cars designer. Keith claims to



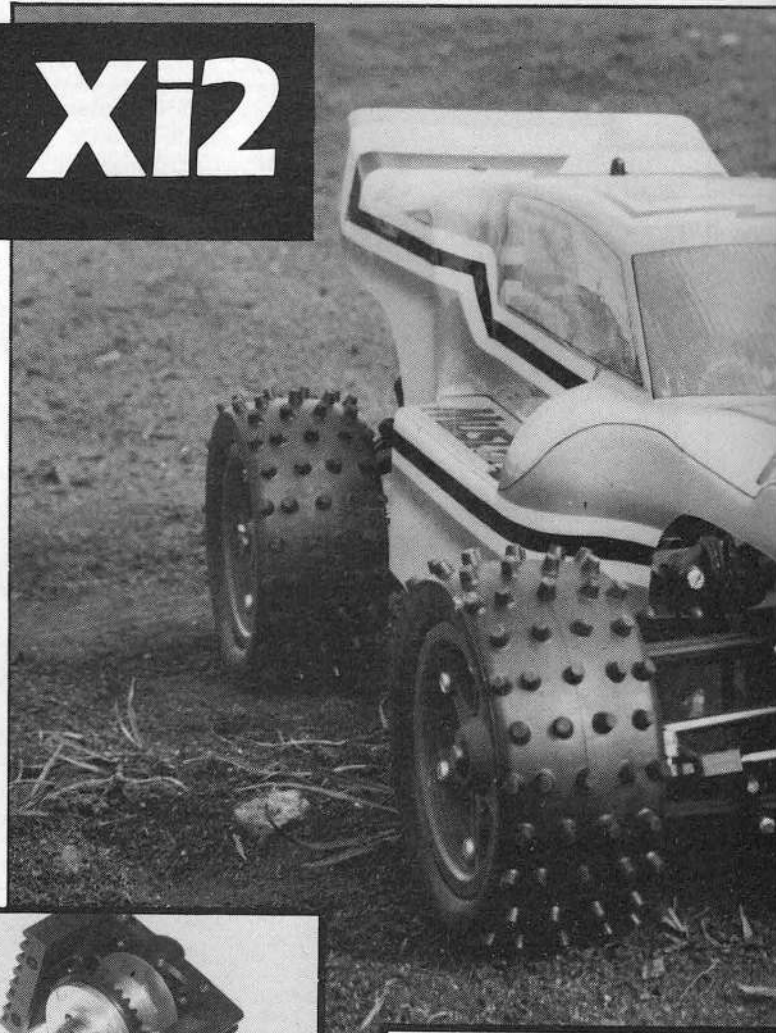
Above; the two gearboxes are moulded in four heavily ribbed plastic mouldings, both are fitted with a disc brake unit well protected from dust.

have been inspired by film of an experimental Japanese city car.

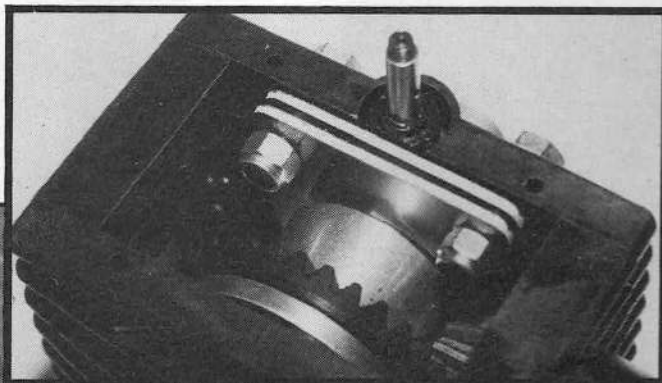
Braking on both front and rear differentials is also a unique feature, the more normal single transmission brake with all the parts out in the open has been

dispensed with in favour of the fully enclosed unit within the gearbox casings.

As for the well established parts of the car, the *PB* spur gear differential is widely renowned for its general toughness and longevity, differentials with steel gears



Right; the steel disc and aluminium pad disc brake is operated by a steel cam which needs some shaping with a file and emery cloth.

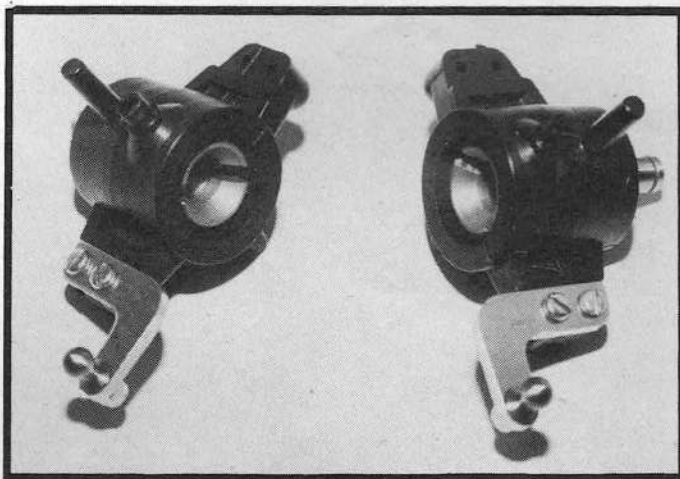


drive shafts to the individual wheels with a hefty aluminium alloy shaft between front and rear gearboxes. Gears are a glass filled engineering grade nylon material, the small pinions in front and rear boxes are of steel, the centre gear is once again glass filled nylon. Ball races are fitted wherever they are needed, in practice each wheel is supported on 2 ball races, the differential runs on 2 ball races as do the bevel pinions in the gearboxes.

Putting it All Together

Lots and lots of polythene bags! there is also a vacuum formed polycarbonate bodyshell, a set of knobby tyres and various sheets of paper. The latter include an "exploded" view drawing

rules to produce the best possible suspension travel and ground clearance under all conditions. A fair degree of negative camber is featured on the rear suspension which uses the mechanically advantageous twin wishbone set-up. With the generous dimensions of



Above; front wheel spindles are carried on ball-races in substantial moulded housings, the vertical pegs are steering limit stops.

the "Mustang" (right out to the maximum permissible) the small suspension movement so often characteristic of the double wishbone system is not a limitation that this car suffers from.

There are other problems, but careful design has at least ensured that the drive shafts do not adopt extreme angles during suspension movement and thus do not generate unacceptable feedback loads on the steering servo.

A flat plate chassis has been chosen with a stiffening brace between the gearboxes, a fairly wide chassis provides its own torsional stiffness without need of additional bracing. All drive is by shafts, steel

with no less than 38 photographs and a closely printed 2 page instruction leaflet plus self-adhesive decals.

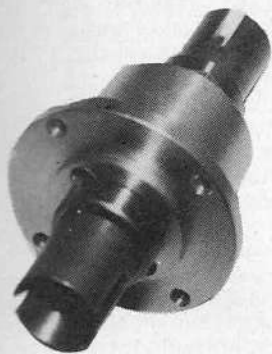
By careful attention to the drawing, photographs and words the actual assembly of the various parts into a rolling chassis should not prove overly difficult for even the inexperienced. With only very minor exceptions, and they are noted on the instruction sheet, the parts are packaged in the order required with little need to open any pack other than the exact one required for the sub-assembly being worked upon. Nor will the builder find he has a large box of unidentifiable screws, springs washers,

being fitted to both front and rear. No centre differential has been deemed necessary even though the use of a centre differential has been felt to give other elements of the transmission an easier time. However handling without the centre unit is so much better, that it is worth taking the time to produce a system that works without one fitted.

Overall Concept

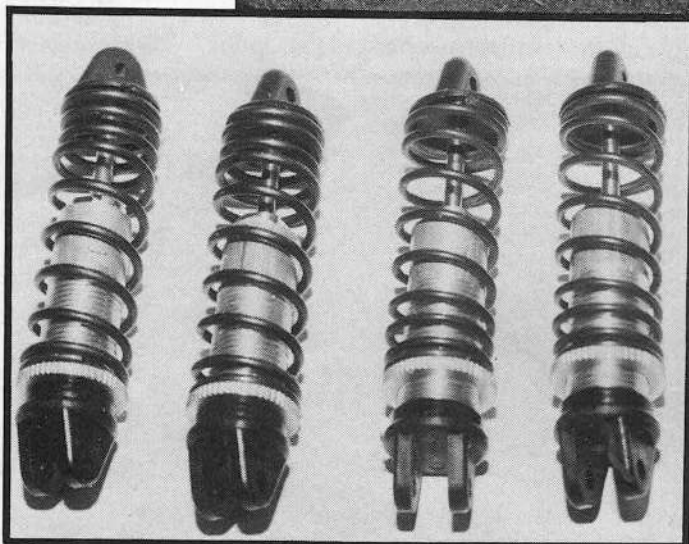
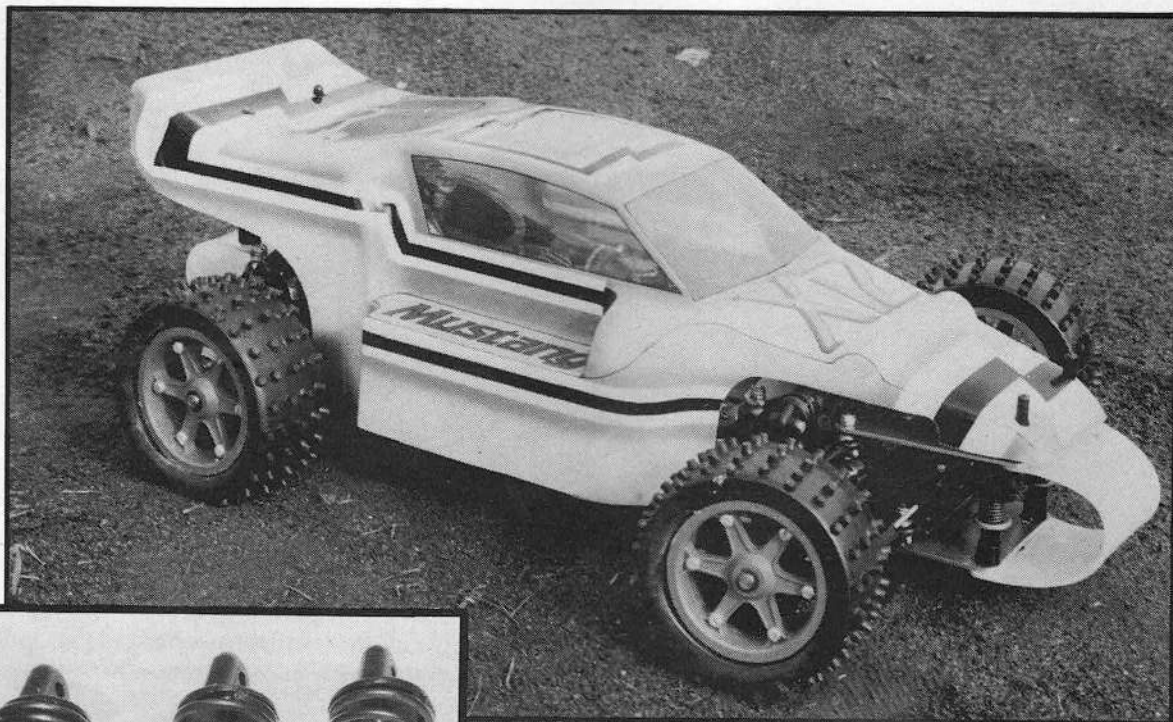
The "Mustang" follows the trend set by the Garbo "Gepard" in using the largest wheels allowable under international racing

Above; PBs differentials are metal cased, metal geared units of simple and robust design, front and rear are identical.

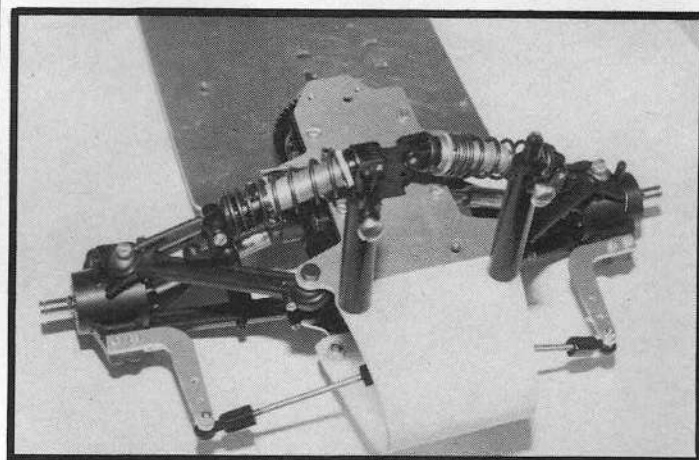


Track Test

Below; all four dampers are the same but rear springs are of stiffer rate than front.



Right; long steering arms are essential to limit the amount of rear wheel steering, not a lot, but very effective.



etc. accumulating as work progresses. Lengths and sizes of screws are sensibly quoted wherever necessary as is the need to apply thread locking compound wherever appropriate. The "Mustang" instructions represent a significant step forward in the continued growth in professionalism in this demanding area of kit production on PB's part. The result compares favourably with similar products currently available.

First stages involve the assembly of a set of dampers, a pair of differentials and a trio of servo savers. Differentials in particular were a delight to assemble, it is hard to imagine how anyone could make a bad job of putting

together parts that fit so well! The finished differential works so sweetly, no feeling here that "a few laps on the track and it'll be alright!"

PB's servo savers I must confess to finding tricky to put together, the "star" nuts always seem to tip over for me just as I apply the pressure to squeeze them on. Do make sure they are really well pushed home, there should only be a small amount of servo-saver action otherwise they will be too soft and steering will be poor.

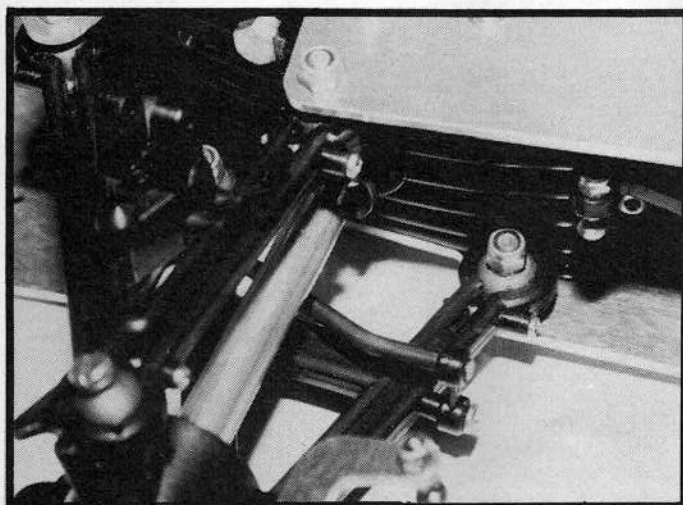
Gearbox mouldings are very stiff and they may require a couple of loosening and tightening attempts to settle the 4 components down relative

to one another before you are satisfied with the assembled units. Once they are together be prepared to take them apart again for the small steel bevel must be checked for end-float and if necessary one of the shim washers provided fitted. The steel brake discs were a good fit on the carriers, needing no "fitting" to float nicely.

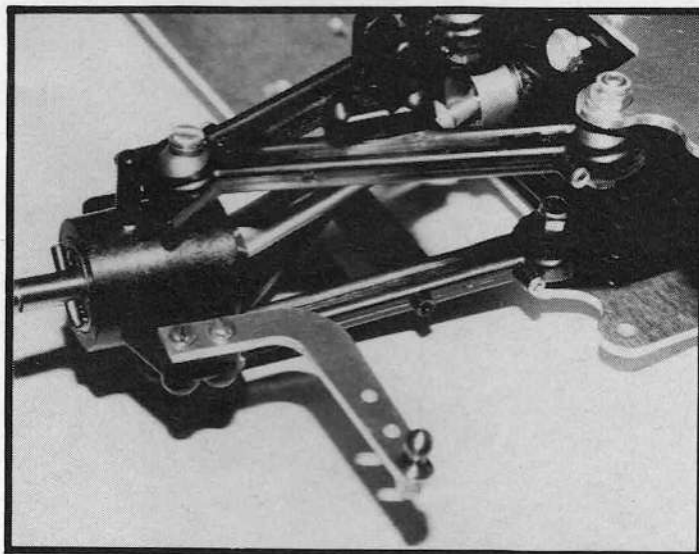
Inserting the steel pivot balls into the wishbones is a very satisfying business, they snick into place so nicely. Do read the instructions carefully and examine the photos closely to make certain you have assembled them correctly, they are not symmetrical. The balls are a tight fit in the wishbones, a gentle squeeze

in the vice works wonders however and unless you do this the suspension will be rather stiff. With wishbones fitted to the chassis things start to look interesting and the pace of building starts to hot up!

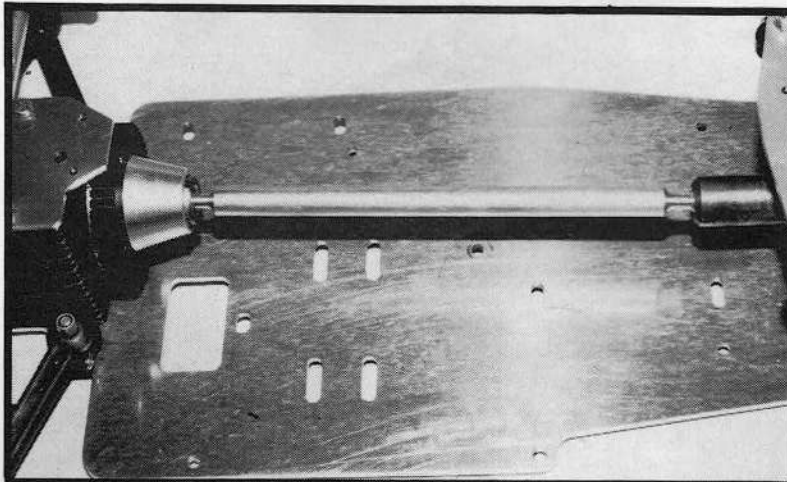
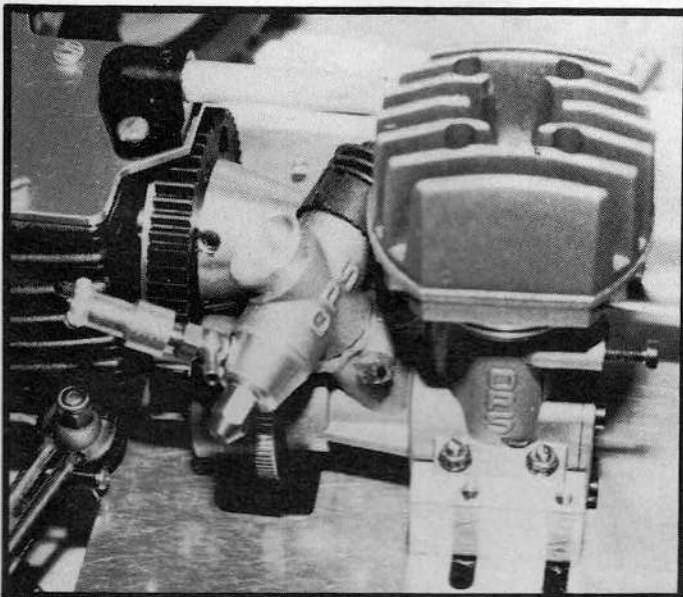
Wheel hub carriers are soon assembled and the drive shafts dropped into position prior to final fitting of the hub carriers to the wishbones with the ingenious use of a single self-tapping screw. At this stage a careful check of the drive shaft end float must be made. It is important that this is set as stated and shims are provided for adjustment if necessary. In the case of my kit no shims were needed, it was just right without. It should be



Above; an anti-roll bar is supplied for the front suspension which nestles behind the front gearbox. Below; with the carburettor angled, the rear exhaust OPS 21 fits into the 'Mustang' without problems.



Above; a single servo saver at the rear operates both the rear steering wheels, a polypropylene bumper bends round to protect this otherwise vulnerable area.



Above; no centre differential is fitted to the 'Mustang', drive is transmitted front to back by this solid aluminium alloy shaft. A spring allows the shaft to be pressed forwards into the front cup for easy removal without dismantling too much of the car.

pointed out that the drive shafts supplied in the kit are not as shown in the illustrations, those supplied are of steel and are smaller diameter.

Although the kit is designed around the PB recommended Picco 'Series 3' Buggy engine with an SG series crankshaft, the OPS chosen fitted with no problems at all. It is unlikely that there will be a problem with any of the popular engines, nearly all are available with an SG type crank. If you should want to fit an alternative engine, PB can supply the parts required.

The wheels are a clever feature, no glue is needed, the 3 part hub clamps the moulded tyre between a

centre sleeve and the outer parts all held together with 6 self-tapping screws. Wheels are fixed to the spindles with an "E" clip and driven by a roll pin.

R/C Equipment

An epoxy/glass radio plate is supplied that sits down onto three posts retained by small body pins. The plate is fretted out for a double steering servo and throttle/brake servo, the switch plus receiver. An aerial base and tube is supplied but in the basic kit, nothing else. You will need over-rides for brakes and throttle, 2 of PB Racings own kits of parts, plus piano wire for steering and brake rods. I found that the 14swg suggested was not to my

mind stiff enough for the front steering, I used 12swg for this and 14 for the rear steering with 14swg for both brake rods. The more expensive kit versions will have all the required materials in them for the R/C linkages. I decided to use the new Futaba 'S134' servo for steering feeling that I would rather have a simple, single linkage than risk damage to servos through inadequacies of any system I might devise. The instructions show both single and double servo set up and as space is not at a premium, installation is not difficult.

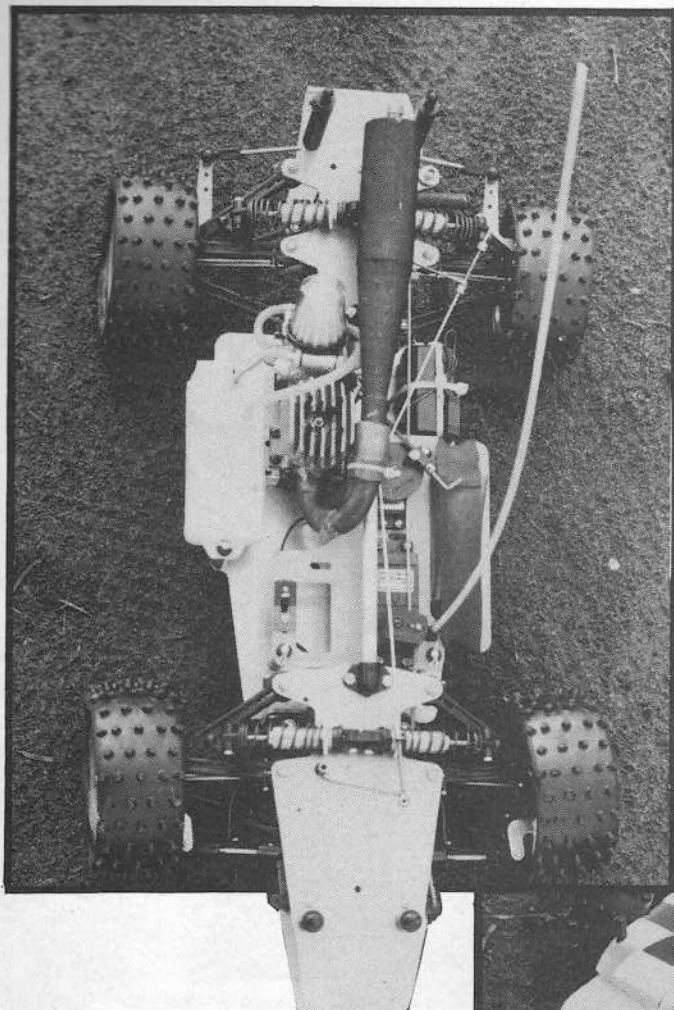
Finally, hooking up the exhaust system. I found that none of the manifolds I had to hand would suit so set to

and made one from a couple of copper plumbing fittings and a small piece of brass strip shaped to suit the OPS exhaust stub. PB can supply a suitable manifold for the Picco which is probably adaptable to other motors, maybe even the OPS, I just wanted to do it the hard way! With bumpers fitted, bodyshell trimmed and painted the car looked an absolute treat. Now to the track.

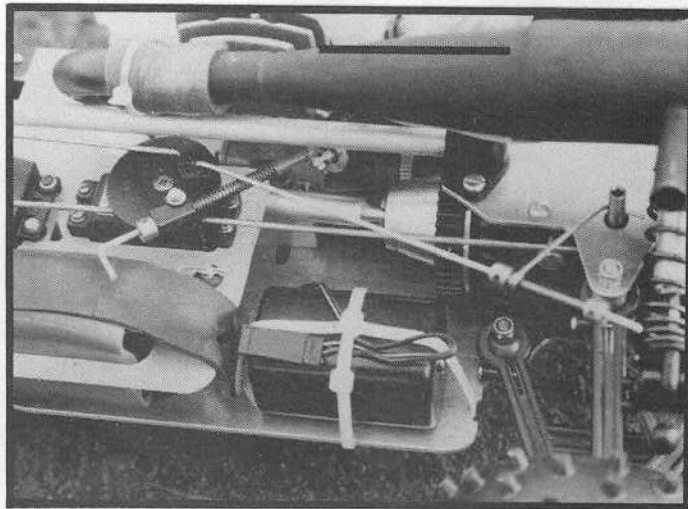
Running Wild!

The "Mustang" had to wait for the Saturday before the Easter weekend Nationals meeting for its first airing and once the track had dried out, I was raring to go. The OPS fired up straight away and after a few minutes

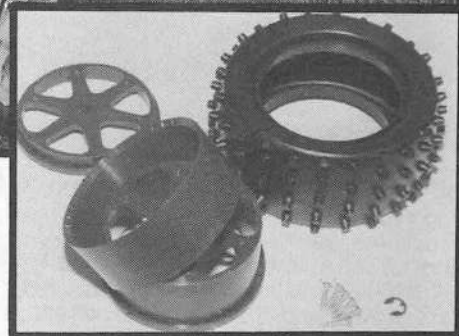
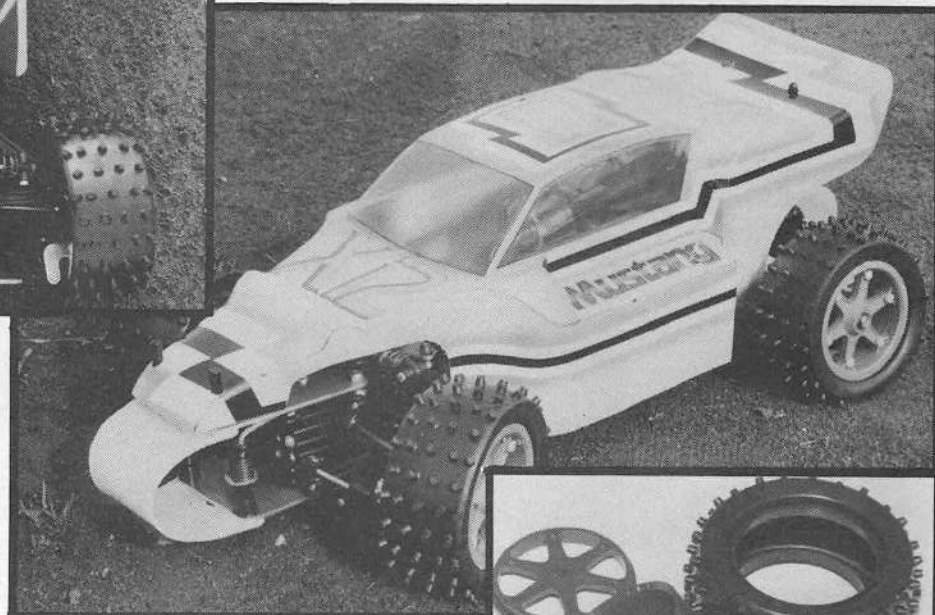
Track Test



Above; in this overall view the unused provision for the double steering servo can be seen. There is plenty of space for installing the R/C equipment in this Buggy, as space is often a problem it makes a change to be able to select positions for components.



Above; linkages are of necessity more than ordinarily complex but even so, with space available not difficult to arrange tidily.



Right; three part plastic wheel grips the tyre without need for glue. Below; fuel tank is PB standard moulded item.

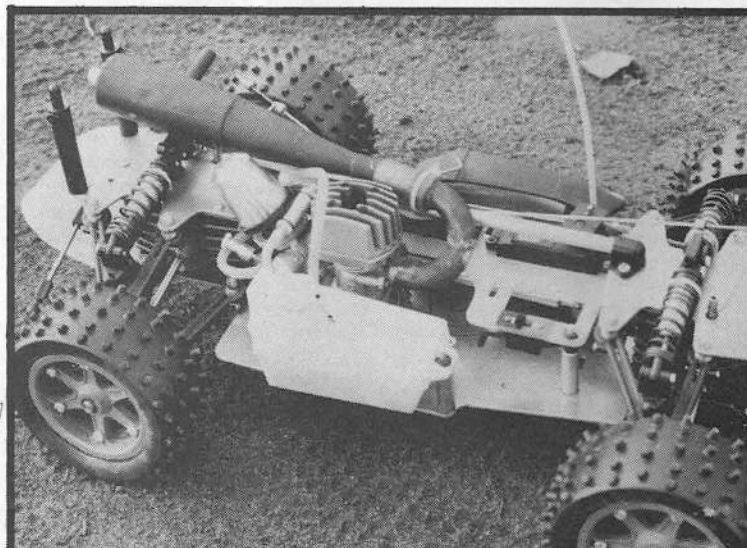
running up on blocks to allow the engine to warm up and allow me to fine tune the carburettor, we were away.

What a revelation! This was the easiest car to drive yet, just like taking that step from 2-wheel drive to 4-wheel drive all over again. Steering was very positive and the long travel suspension seemed to absorb the bumps totally. After a few laps it seemed appropriate to try the effect of the alternative suspension settings. With the dampers fitted to the top location I found the "Mustang" a bit too high and it seemed more to my liking with the units on the lower setting. Like this, the tail end was dragging on the ground rather often so a jack up of

the ride height seemed in order. This did seem to work but for my driving style, I think either double dampers on the rear or a thicker damper oil would improve things.

It is all a matter of personal choice, but come what may, the car handles very well. On its first actual race the car qualified for the semi-finals of the Nationals, more of a tribute to the car than the driver.

This is a car to watch, there may well be a few irritating minor problems to iron out but the world beating potential is evident. Would that I were the driver to take it there, but I am confident that this is one car that can make good use of whatever talent I might have!



Clubs... Clubs... Clubs

HERE AT THE 'Model Cars' office we receive regular enquiries from individuals wishing to know where their nearest racing club is.

Most of the time we can help or else know somebody else who can. However there are times when we just have to give up and write back suggesting that the person contact their nearest Model Shop for information.

Often the information we do have is wrong. The Secretary has changed, the club race somewhere else, on a different night and so on.

We know of great many clubs up and down the country, but we also know that there are an awful lot more besides. Subsequently if someone writes in and we don't have the info we can't help them.

Now, once and for all, we are going to try and get as comprehensive a club listing as we can with **your** help. Below we have printed a form which will give us all the necessary information to produce a complete listing. All you have to do is make sure your club secretary sees it, fills it in and sends it to us as soon as possible.

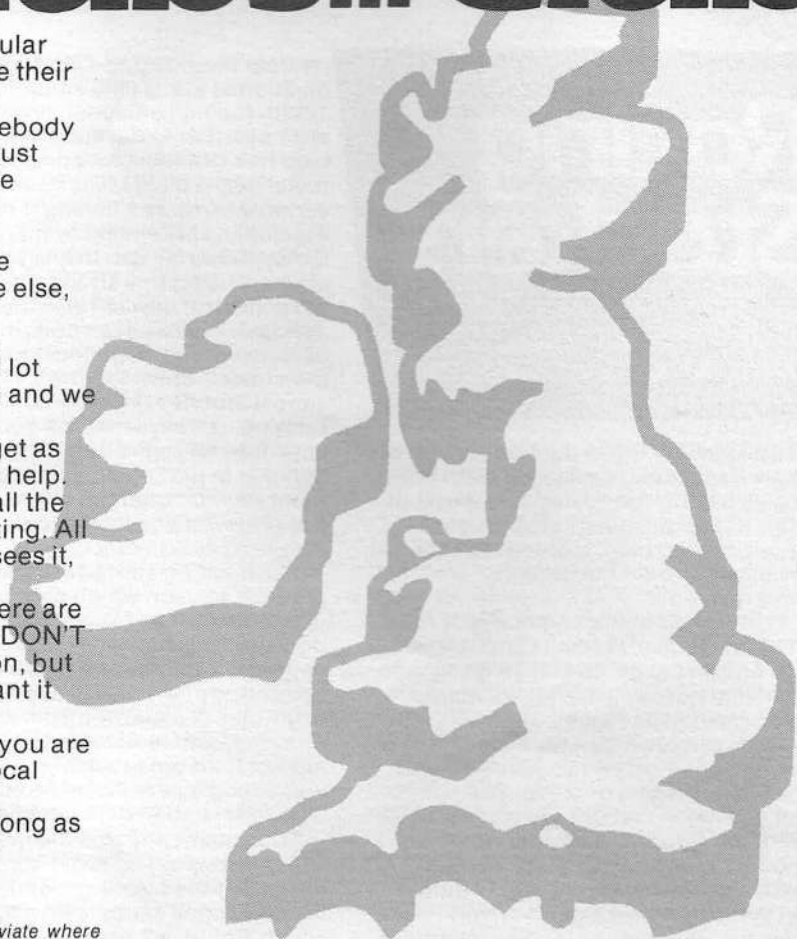
Obviously a great many club secretaries out there are saying: "but you know all about our club" Please **DON'T** assume this, we probably have got the information, but to make the whole operation much simpler we want it again — on this form.

No club, large or small, must be left out even if you are only a small group of people racing around the local park fill in the form — please.

We will keep updating our computer listing as long as the information keeps coming in.

Thanks.

Use only the allotted number of squares for each section. Abbreviate where necessary. Please tick appropriate box for type of racing. Include STD telephone code. Please write clearly in ink using block capitals. Send to Model Cars Clubs, PO Box 35, Wolsey House, Wolsey Road, Hemel Hempstead, Herts., HP2 4SS.



Club name

Location

Street

Town

County

Region

Type of Racing

1/8 circuit

1/12 circuit

1/8 Stox

1/12 Stox

1/10 Buggy

1/8 Buggy

Contact

Secretary

Address

Town

County

Code

Tel.

Racing Stockers

Stockcar racing news from Mike Chilvers

THIS MONTH SEES the first reports of stock car action this season, with both scales having completed one round of their National Championship, and racing having been resumed at club level to really get the season underway.

Writing this at the beginning of April the May issue of "Model Cars" arrived just as I was about to start, a good time to reflect how well my 'Mk III' *Mardave* performed in its first meeting. At club level, last weekend, it took me to second spot just two seconds behind the winner Ivan Congreve. The point I'm making is that this car was straight from the *Mardave* box, with no modifications to it at all, so if it can perform like that for me what could it do in the hands of a good driver! Power came from an *Irvine* in standard form, with radio control from a new unit from *Futaba* supplied by *Ripmax*.

Have as yet not heard a lot about the racing scene in the Midlands and North, where the racing tends to be a little later in getting underway, but from what I hear in the south the man to beat down there seems to be young Russ Kearne who has won five of the six meetings he has entered at the time of writing — with a *Puma* I should add.

1/12th National. Buntingford. March 3rd

It is with great thanks once again to Chris Loughran that I enclose this report of the first National of the '85 season, and what a National of 'firsts' it was. The first time that the top three drivers would have their motors stripped after the Final. The first time 77 drivers had arrived for a National, and it was the first time a National had been held at the Buntingford circuit. This could have caused a few problems for the organising club but all credit goes to Roy Jones and his crew for running the meeting so smoothly and with 50 heats to get through that was no easy task.

Chris started off by taking a walk through the pits, (being a nosey sort of bloke) to see what was new in the way of car design, and there were some interesting developments which caught his eye. Dave Clark, the defending National Champion, had a

new car featuring Ni-Cad sticks positioned across the car's chassis, à la 1/12th racing car layout, and as they stick out near to the ends of the nerf bars he's got them well protected with metal guard plates. The back end of the car now features a flexing motor pod assembly, very similar to the *Schumacher* 'C' car. In fact several cars are now using this arrangement. The most striking new car was that of Ian Johnson as the Lexan undertray has been extended on all four sides and then folded down to form a 'skirt' which almost touches the track as the car is running. Ian says that the grip has improved all round but the front-end benefits in particular, and to prove the point he was to set the FTD later in the day (*Ground effect stockcars, eh?*) — Ed.)

The meeting started with the usual practice session which was quite uneventful for all except Chris who had only done about a dozen laps when he caught the barrier and broke the chassis into two pieces across the front-end. A piece of Lexan was bolted onto the front to act as a brace but he did not hold out much hope, but felt it was a long way to travel for just twelve laps so he had to do something.

So to the racing and the first heat, which was stopped short, and re-run at the end of the meeting. John Cutts was the early pace setter, with a heat of 51 which Chris then managed to equal whilst finishing second to Martin Higham's 52. That 52 looked pretty good until Phil Smith went and did a 57, mainly by keeping out of all the trouble in what turned out to be a scrappy heat. Dave Clark then showed what his new car could do with a 61 in Round 2 beating Ian Johnson and John Cutts into equal second place with 58s. Ian followed that up with another 58, which earned him 10 points for a first place proving that the skirt was really working. Meanwhile Tim Walker set a 55 to take first place in his heat, beating Martin Higham into second with a 53. In fact Martin's car seems to have lost a little of the edge that it had last year, and he never managed more than 53 all day, and only just made the consolation. Fellow clubmate Steve Hubbard was going well enough, tying with Dave for second in Round 3 with 59, and then getting into joint second again in Round 4 this time with Roy Jones on 60. Roy was going well, in between rushing around organising things, setting a 56 and then a 57 to take two consecutive first places. Roy's car also features a flexing motor pod set-up, this one off a buggy complete with oil filled damper. Dave tied with Tim Walker in his next run, both on 55, being beaten by Gregg Lloyd on 57.

Whilst Dave had been making sure of another final place, sister Shirley had been struggling a bit. Her car seemed to be going all right, but every time



Above: Tim Walker (left) being presented with the Stoke's annual club championship trophy by F1 stockcar driver Bert Finnikin.

something happened on the track her car seemed to be in the middle of it, or hit by it, and so she had to settle for a consolation place. Shirley is now being sponsored by *Minolta Copiers*, so if you want anything copied, see Shirley.

Gregg was having a good day's racing as he and Ian Johnson were the only two drivers to have maximum points from their heats, and then Ian set the FTD mentioned earlier. He got off to a good start in his heat, and after a couple of cars dropped out he had a slightly clearer track to record a 65 lapper which no-one could better.

At the finish there were no fewer than four CESCA drivers in the Consolation, Shirley, Martin, Terry Linacre and Gary Hubbard. They were joined by Paul Culverwell and Chris (despite his chassis problems) from Leicester, Pete Storer from Rugby and Paul Hague from the home club. The race was a bit hectic as all tried to take advantage of the numerous pile ups. But it all proved too much for Chris' chassis as he just managed to creep home in 6th place ahead of Pete whose Ni-Cad wiring could not take the strain and broke. In the end it was Gary Hubbard who won through to the Final, to take his place alongside his brother Steve. He was the only yellow top in the race which all goes to show that you don't have to stay away from Nationals because you are not red top standard.

Between the Consolation and the Final there was a race for the top ten non-qualifying white tops, which encourages the lower grades to attend Nationals. The race was good to watch and ended in a tie between Mick Andrews and Andy Baker.

So to the Final. The qualifiers were Dave Clarke (243 laps); Ian Johnson (239); Tim Walker (229); Steve Hubbard (229); Roy Jones (229); Gregg Lloyd (227); John Cutts (225), and Gary Hubbard from the Consolation. As you can see the qualifying scores were very close, and set the pattern for a close Final. Gregg went into an early lead, and he looked like holding onto it, but Steve then started to pull him in. Then Steve,

Gregg, Roy and John all got tangled with each other, which let Tim squeeze through the gap into the lead. Dave was going well till he got caught up in the trouble on a few occasions, in fact at one point his car was literally buried under four others, and that caused him to lose a lot of time. Roy, John and Gary were having their own little battle at the back of the field, and all the time Tim was consolidating his lead, although he was now being chased by Gregg who had made up a lot of time and ground after his pile up. Ian was going well too, until he got dumped into the inner track and then found that he could not get out because the skirt on his car was too low and fouled on the lip of the exit ramp. He lost at least two laps and in the end had to be helped out by a marshal, a rare happening in 1/12th scale racing! Still despite all that he managed to finish in third place, albeit three laps down on Tim who ran out the winner with 61. Gregg took second place, making it a one two for Biddulph, with 59.

Chris has asked me to thank once again Roy and company for the meeting organisation, and to *Red Baron Models* of Enfield for donating and presenting the trophies, which included some for the best driver in each grade, again a nice touch that encourages more people to take part.

At this point I should point out that the National Championship is worked out on a points basis, and that these points are awarded for a driver's positions in his qualifying heats as well as in the Final of each National Meeting, so although Tim won the meeting the National points chart is headed at the moment by Gregg, followed by Ian with Tim in third place and defending champion Dave in fourth place.

1/8th Series Round 1. Hastings. March 24th

History books tell us that it was on October 14th, 1066 that the battle of Hastings was fought, but in the 1/8th scale diary it was to be March 24th, 1985 that battle lines were to be drawn for the first round of the National Series Championship. The portable Hastings track had been moved to a new spot on the car park so that visitors and home drivers were on quite new ground on a day that dawned wet and windy. The sun did come through, but it was still very cold as a total of 24 drivers began their practice.

I suppose the rather low turn out of drivers was to be expected as this meeting was held so early in the season that many of the northern clubs — north of the Thames in this case, had not started their season of racing, in fact only Trevor Heasman and defending Champion Steve Talbot were visitors to the south.

Anyway back to the racing. Practice complete it was down to the serious stuff in round one of the heats, a round that most drivers treated with a certain amount of caution, exceptions being Steve Talbot who set the pace with a 44 lapper, followed by Russ Kearne and Trevor Heasman with 42s, and John Elliott on 40. Graham Lawrence was having his first run with a *Puma* recording a 33 as he tried to master the handling of the new machine, Graham of course is the southern distributor for *Puma* so it was about time he actually raced one! Dave Perou encountered problems in this round which put him out for the rest of the meeting.

Round 2 once again saw Steve Talbot setting the pace, this time with a blistering 46 laps, warning all present that he was going to do his best to hold onto his title.

The third round of heats saw a mass of 40 plus laps being recorded, with Steve, Russ and Tony Bunn all recording 44s, followed by Mark on 43, Graham on 42, followed by Dave Mawson on 41, and John Elliott and Fred Emson on 40s.

As is often the case the final qualifying round of heats did not produce the same high lap scores.

At the end of the qualifying heats all the work was then done in the time keeper's van to sort out the results. As the usual practice of a driver's best three heat scores had to be added together to see which four would qualify straight through to the Final, with the next six drivers fighting for the two remaining places via the Semi Final or Consolation. The outcome was that the drivers straight through were Steve Talbot (134), Russ Kearne (128), Trevor Heasman (127) and Graham Lawrence (124). The six to fight again were Tony Bunn (123), John Elliott (123), Dave Mawson (118), Fred Emson (116), Steve Bell (111) and the luckless Mark Ticehurst (109), but because he could not race his place was given to the next in line who was M. White (107).

So the Semi got underway in a frenzied struggle for the last two places. Had it not been for a spell

caught in the centre hoses, Tony Bunn would have been there, but he saw his one lap lead turn into a 20ft. third place, with M. White and John Elliott filling the remaining two places, all three drivers finishing with 39 laps, followed by Fred on 38, Steve Bell on 36 and Dave on 35.

So after a suitable delay to let engines cool down and crystals to be changed it was the Final, described as a lap scorer's nightmare, with the cars flying around so fast. Would Steve start the year as he left off the last, would Graham get his first win with his new *Puma*, or would Russ continue his winning streak? It turned out to be a great battle at the front between Russ and Steve, with the final verdict going to Russ with a six foot win over Steve, both clocking up 55 laps in the five minutes, followed by Trevor in third place on 52 laps, with Graham in fourth on 49, then John with 48 and M. White on 30.

The trophies were presented by Alan Speer, and thanks to all the drivers for a good meeting, to the Hastings Club for staging the meeting and to Club Secretary Nick Whittle for supplying me with all the details and race sheet.

Roll on Round Two at Lilford, and let's hope all the leading contenders from this round join up with all the Midlands and northern drivers for a really good meeting.

Racing Round and About

Depending upon how early you get this month's issue you may be in time to go along to the third Round of the 1/8th Series Championship at Keighley on June 9th and see how this six round Championship is shaping up. Coventry is the meeting point on June 30th for the British Championship, a title held at the moment by Coventry driver Cliff Emms who picked it up in Bournemouth last year. Chief rival to Cliff is Steve Talbot but a good outside bet could be Coventry's own Trevor Heasman. Moving into July the main meeting is at the Chessington Club's track at Leatherhead with Round 4 of the Series Championship.

Tech Chart

Pos. & Name	Car Type	Cells	Gears	F. Tyres	R. Tyres	Speed
1. T. Walker	Modified Lectricar	Sanyo	13:54	L'car out Med. D in	Med. soft 'D'	Bolink
2. G. Lloyd	Modified Lectricar	Sanyo	13:54	Med. Hard	Med. soft 'B'	Parma
3. I. Johnson	Modified Mardave	Enduro 1200	12:50	Hard in 12/005	Prowler 12/005	Bolink
4. D. Clarke	Modified Mardave	Enduro 1200	13:53	12/002	Prowler 12/001	Bolink
5. S. Hubbard	Modified Mardave	Enduro 1200	13:53	Std Mardave	Prowler 12/001	Bolink
6. R. Jones	Scratchbuilt Mardave	Demon Sanyo	11:50	Prowler 12/006	Med. soft Neoprene	H'made
7. G. Hubbard	Modified Mardave	Saft	13:53	Mardave Hard	Med. soft 'D'	Bolink
8. J. Cutts	Mardave	Sanyo	12:50	Hard in	Soft Soft out	Mardave

FTD: I. Johnson (65) Junior Trophy: Mark Johnson Concoors: S. Moor (180)

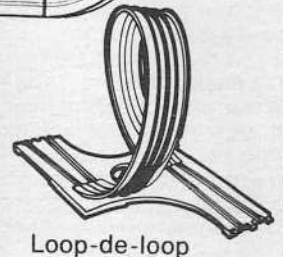
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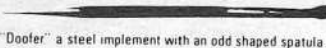
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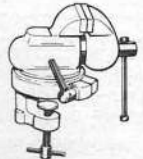
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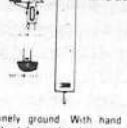
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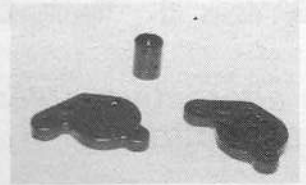


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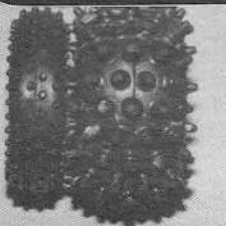
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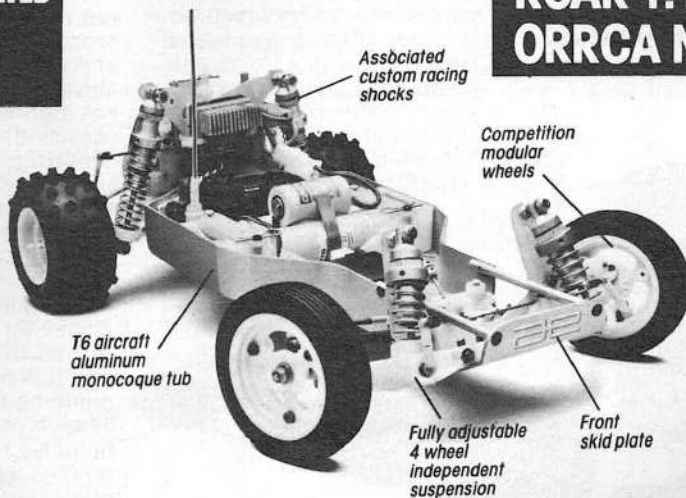
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NovaRossi R 21 car

The alternative "Italian Job" tested by Mike Billinton.

IN REVIEWING THIS 'alternative' Rossi Open Car 3.5cc engine it is tempting to see conflict and personal idiosyncrasy in every detail design difference.

What strong convictions, for example, lie behind Ugo Rossi's continuing preference for the single Boost port, whilst Cesare found it necessary to build his 'own' Rossi with twin Boosts to pursue the point? Beyond that the differences abound. The temptation also is to arrive at a Solomon-like judgement in the unique and human dilemma of the Rossi split.

However, trying to maintain a grasp on the near-reality that engines are 'just' mechanical devices, the 'NovaRossi 21' has several interesting features which, taken together with the good performance figures, will make the coming season's car competitions that much more an 'open' and varied affair. The entry last year of the 'Rossi 21' (oil-cooled) would of itself have ensured that, but now there are two quite different Rossi's — with all the complications of loyalties and sympathies implicit in that situation.

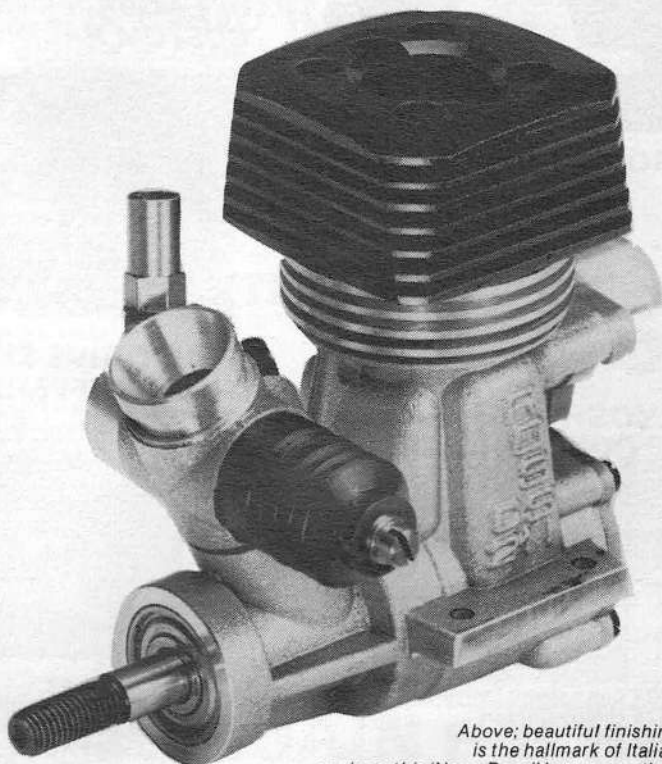
Right; the internal components of the NovaRossi.

Overall, the 'NovaRossi' reverts to a more orthodox layout, whilst maintaining the high quality fit and finish which is a Rossi hallmark.

The one-piece **Crankcase** continues with the relieved area in the crank bore (opposite the induction opening), a feature which now has three separate suggested reasons to justify the extra production work involved:

1. It provides a lubrication reservoir to ensure a good oil seal of the Induction opening.
2. Reduces wear at the vital timing edges of port in crankshaft.
3. If the crankcase or shaft bends, the case cannot be 'gouged-out' at that point by the sharp edge of the crank port.

The **Crankshaft** itself is an unusually large 13mm O.D. item (normal maximum size in this engine class is 12mm) and this has necessitated a special main bearing size to accommodate it. This has a high-speed plastic cage though the front race retains a standard brass cage.



Above; beautiful finishing is the hallmark of Italian engines; this 'Nova-Rossi' is no exception.

The **Crankpin** is diagonally drilled to allow oil to pass centrifugally from the Induction bore to big-end bearing.

The **Crankshaft bore** is now the largest yet, 9.6mm (i.e. equivalent to the largest current carburettor bores).

The **Slide carburettor** is actually 9mm bore, though the largish adjustable secondary needle and protruding jet then reduces the effective cross-section area by 10sq.mm to provide an unobstructed 8.2mm bore carburettor. The main jet adjustment is by screwdriver only, which on this test at least, was made easier by fixing a 1in. length of rubber tubing over the brass needle body to prevent motor vibrations throwing screwdriver off — a problem unlikely to occur in car operation.

The **bore and stroke** measurements are unusual in being almost identical . . . the 'square' engine; and the fine judgements required to arrive so close to the 3.5cc mark means that we now have a better idea of what causes Rossi engines to often skirt so near to class capacity limits. Any capacity checking on a very hot day might be a little 'tricky'. The aluminium alloy **connecting-rod** in this 'competition' version has received extra shaping and polishing for greater fatigue resistance. Two lubrication holes are provided at each rod end, with a phosphor-bronze bushing in the big-end only. Timing of the chromed brass **Cylinder** is not high at 164°, and so for car use this must be a conscious decision to forego the ultimate pipe HP at elevated RPM's in favour of higher torque at lower, more reliable, more useable RPM's.

There are rumours of HP claims for the 'NovaRossi' of 2.05 (RPM unknown) and it is possible that this could be for a 'Marine' version (which frequently employs higher exhaust timings leading often to higher HP) or else the 'Redhead' competition model. However, tied in with this is the fact that the



question of which tuned pipe design would lead to superior results on the 'NovaRossi' was unresolved during this test.

The matt-black finish aluminium alloy **Cylinder head** is a distinctive squat angular heat-sink design. It is sensibly milled away to allow any cooling air access to the glow-plug area. This particular engine arrived with a moderate **squish clearance** of .013in. but a high effective compression ratio of 9.7/1. On the top power/high nitromethane test runs this was probably the cause of some erosion of the combustion chamber and piston crown. It is understood that more recently the squish clearance is being increased to around .020in.

The deep, plug-in, aluminium **backplate** relies on an 'O' ring for sealing.

Power Test 1:

Open exhaust/5% nitro. 10% castor & 6% ML70 synthetic oils/'NovaRossi' plug/9mm carburettor.

In this undemanding test format (used as much as anything as a familiarisation and running-in period prior to the later, high-power runs), the 'NovaRossi' produced the highest torque figure of this

test series, and a virtually equal top BHP), i.e. 50oz.ins. and 1.23 BHP.

Test 2:

50% nitro/OPS pipe set at 295mm from the end of rubber can to plug/Carburettor and glowplug as Test 1.

The difficulty of obtaining a 'NovaRossi' tuned pipe enforced the use of the 'standard equipment' OPS car pipe — no bad thing for comparative reasons, though it can leave unanswered questions. The 'Nova' pipe is understood to be a little noisy in any case, and so might find difficulty in passing occasional sound meter

scrutiny at race meetings. At the relatively long OPS pipe length chosen here, the resultant torque figure was again the highest recorded in this series (67oz.in.) with a final HP figure of 1.70.

Test 3:

Pipe length now shortened to 250mm. Rest of equipment as Test 2.

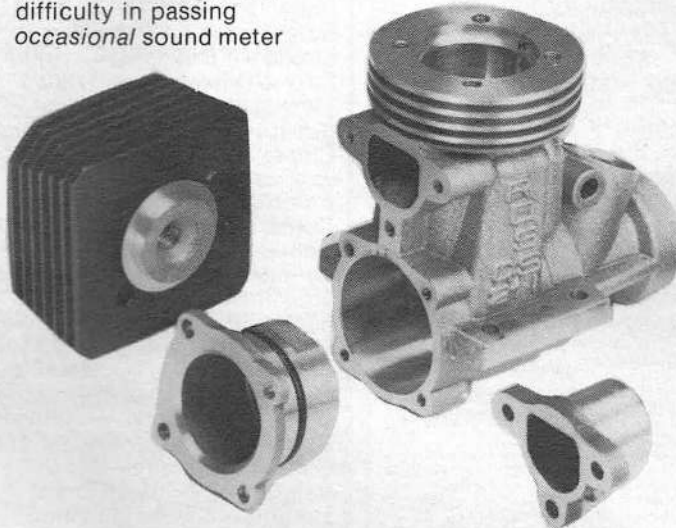
This change of pipe length was in the usual pursuit of maximum HP by the raising of RPM levels. Contrary to all expectations (and certainly unlike the oil-cooled 'Rossi 21' tested

recently), this did not result in an automatic HP rise, and furthermore caused a large decline in torque just in the most needed area of 19,000 to 25,000 RPM. The low exhaust timing of 164° may well be inhibiting such a result, though it must be said against this that the 'other' 'Rossi 21's' even lower 157° exhaust period did allow power to maximise at just past 31,000 RPM, using a pipe length of 250mm.

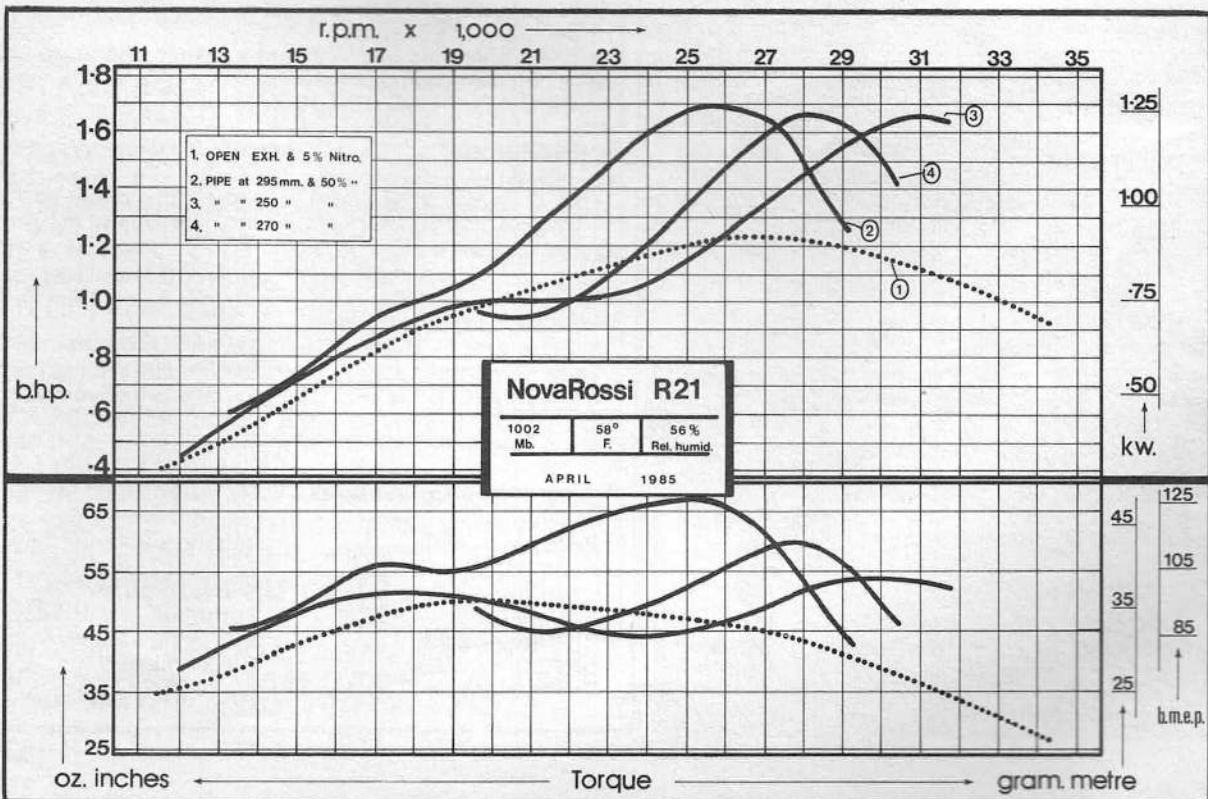
Test 4:

Pipe length now fixed at 270mm. Rest of equipment as Test 2.

The use of a pipe length set halfway between those of Tests 2 and 3 was mainly just as an information gathering exercise, though there was some hope that the engine/pipe combination would be more effective in the 27,000



Above: the external components of the NovaRossi.



to 28,000 RPM area. The graph indicates a lack of success, and if anything suggests that a pipe length even longer than the longest used in Test 2 (say around 305mm), might well provide interesting results. Unfortunately lack of time prevented this.

Carburettor size change

Eagle-eyed readers will have noted that the customary large bore 9.5mm Bailey carburettor was not used throughout this test (due to mounting difficulties). Of course this raised the further question of whether the power levels were being fairly equated between earlier engines (which did use that 9.5mm item) and this 'NovaRossi'. In the event, the only carburettor to hand which could sensibly fit, was a control-line speed, open choke, O.S. 12mm bore unit from the 61VR engine, and which at the very least would show how much of a restriction the 'NovaRossi' 9mm carburettor had been.

As used briefly at the end of Test 4, and in retracing RPM steps from 20,000 to 29,150, it revealed virtually no change to the torque or RPM figures on given loads.

So, the implication seems to be that the 'Nova-Rossi's' standard carburettor and large crankshaft bore are already at some kind of optimum sizing. Of greater interest was that the lock-nut needle valve style gave much more precise control of fuel settings, and served to confirm to this writer that the majority of car engine carburettors continue to extract some price in rigidity in exchange for the easy accessibility of their needle valves. In the 'Nova-Rossi's' case, were the main fuel needle to receive the same degree of 'engineering' as has the secondary needle there would be absolutely nothing to comment on.

In other respects the slide carburettor was most effective, with smooth progressive idling, and just as importantly, remained a

good tight fit in the crankcase at maximum power points.

Summary

Under trying circumstances Cesare Rossi has produced a fine engine, and its future on the car circuits will be watched, almost with bated

breath, by those who hold that human motivations are a very important aspect of I.C. engine development. On the solely technical side, no failures occurred, nor were any threatened — so reliability appears high, and helping towards this, one is happy to note again the continuing high quality of construction. □

NovaRossi R21 Car. ABC Glowplug 2-stroke

Dimensions & Weights:

Capacity — .2134cu.in. (3.497cc)
 Bore — .6472in. (16.44mm)
 Stroke — .6487in. (16.47mm)
 Stroke/Bore ratio — 1.002/1
 Timing Periods — Exhaust — 164°; Transfer — 126°; Boost — 126°; Front Induction — Opens 35° ABDC; Closes 62° ATDC; Total 207°
 Exhaust port height — .230in. (5.84mm)
 Combustion chamber volume — .26cc
 Compression ratios — Geometric — 14.45/1 — Effective — 9.68/1
 Cylinder head squish — .0124in. (.31mm)
 Squish band angle — 4°
 Squish band width — .13in. (3.3mm)
 Crankshaft diameter — .5114in. (13mm)
 Crankshaft bore — .378in. (9.6mm)
 Crankshaft Nose thread — .248in. x 28 TPI (1/4 UNF)
 Crankpin diameter — .1963in. (5mm)
 Gudgeon pin diameter — .1576in. (4mm)
 Con-rod centres — 30mm
 Height — 3.37in. (85.7mm)
 Length — 2.51in. (63.7mm) — (Backplate to front bearing)
 Width — 1.77in. (44.9mm)
 Frontal area — 4.71sq.in.
 Mounting hole spacing — 21mm x 37mm with 3mm holes.
 Width between bearers — 30mm
 Overall weight — 9.3ozs. (.26 Kilo)

Performance:

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Max Torque

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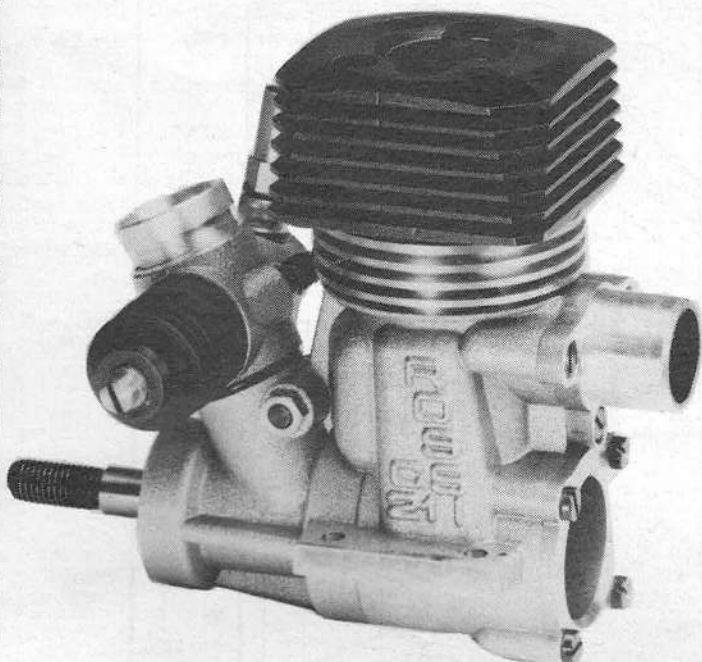
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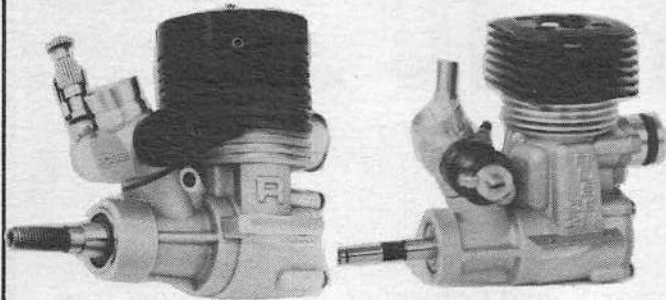
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Model Motor Racing News



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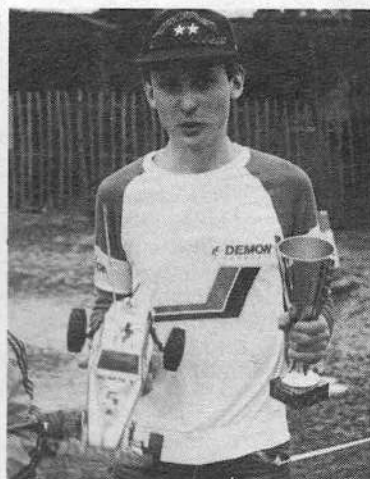
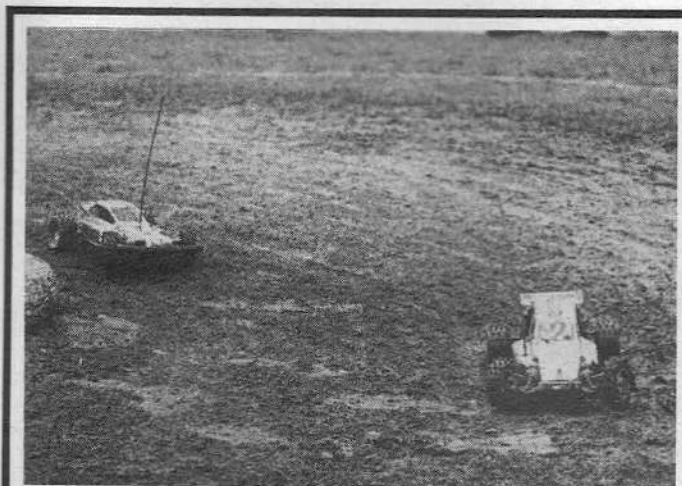
Booth Wins it

Lewis Eckett reports on the first meeting of the 1985 BRCA 1/10th Off-Road championship held at Eden Park, South London on April 7th. Additional material from Jim Paffett and Charlie Formby.

The ever-fast Jamie Booth gave some consolation to his sponsor, Nick Adams of *Demon Products*, by winning the EPO/BRCA Championship Round 1.

Jamie qualified second fastest but showed his experience and race-craft by taking the lead from FTD holder, Kevin Moore, after the second lap. Jamie ably proved that 2WD machinery is totally competitive (dare we say it — better) against 4WD drive cars in the right hands.

Jamie is now looking for a manufacturer to supply a car to compliment the motors and Ni-Cads he receives from *Demon*. Now that Nick Adams has nailed his colours to the *Associated* wall we might see him join the growing band of 'RC10'-ers.



Weather K.O.'s EPO

For once, unfortunately, the weather-man was right, continuous rain changing to heavy showers did lash the South of England on Easter Sunday to almost wash out the first round of the BRCA Championship.

Despite its South London location the Eden Park Overlanders club attracted a record entry for the meeting. It must have been particularly gratifying for race organiser Jim Paffett to see many of the 'Northern' drivers make the trip despite the weather forecast.

The all-grass circuit retained its green covering for

only a very short while. The combination of cars and rain ripped away the top surface to provide a mud slide. Clean, pristine looking cars started the heats resembling Off-Road race cars, five minutes later these 'mobile mud-pies' were indistinguishable. Drivers were forced to shout their numbers as their cars passed race control!

Nevertheless racing took place, finals were run and trophies presented (in the bar, thank goodness) all in an atmosphere of good humour and determination to make the best of the conditions.

Four-Warned?

The atrocious track and weather conditions at Eden Park seemed ripe for the dominance of 4-wheel drive machines during qualifying and through the finals. Despite the fact that 4WD cars were present in large numbers this never occurred and in fact only two machines made the 'A'. Obviously the sticky, muddy track drew just as many Amps out of the *Hirobo's*, 'Progress' and 'Dogfighters' as all the rest and things became very equal.

Most eyes were turned toward the Team

Parma/Hirobo tent for the 4-wheel challenge but this never materialised. Both Pete Stevens and George Land suffered from lack of testing with their new 'Zerda' cars and could only qualify in the 'D' and 'C' finals respectively. George was perhaps the most unlucky, having to rush a complete strip down and rebuild of his car before his last heat. The problem was seized bearings and George managed the job in little over an hour, but still six minutes too late for his final run.

To add insult to injury Pete and George ran away

with their finals both scoring very fast times against tough track conditions and good opposition. Had the 'Zerda's' performed so well a little earlier, qualifying would have been markedly different.

Highest placed *Hirobo* driver from the *Parma* tent turned out to be Jane Adams eclipsing both husband Nick and 1/12th Eurochamp Phil Olsen to qualify for the B final.

Miles Howard in the 'B' spearheaded the *Hirobo* charge using the car featured last month in MCM. Miles out-dragged

the other B-finalists to win in fine style. Obviously the mid-engine, gear system works.

Richard Isherwood (he of the curly hair) drove his modified 'Progress' into fourth place on the A-final starting grid. As usual Rich's car was fast (suspiciously so) and cornered impressively. Also into the 'A' came Phil Thomason with the 'Dogfighter'.

Four-wheel drive cars were immensely popular amongst the drivers at Eden Park and their competitiveness will expand their appeal.



Left; the muddy, power sapping, banked section of the course. Below, line-up for the 380 class final.



Qualifying

Racing did start on time at 10 o'clock and despite the rain the track was quite passable. This only lasted for the early part of Round 1 before the mud appeared.

Drivers seeded into early heats had the best opportunity to score good times and in fact their times made qualifying fairly unrepresentative. The classic example was Phil Thomason driving his *Yokomo* 'Dogfighter' who made no mistakes in his first round heat to jump straight into the 'A'. Phil was the first to admit that this wasn't at all normal for him, but confessed to being 'quite pleased' all the same.

Nevertheless, the big names all did their job and produced their best times toward the end of Round 1. Kevin Moore of the EPO Club took FTD followed by Jamie Booth, then Tony Wells, all three driving 2WD cars.

Round 2 turned out to be

a battle for most drivers to last the race duration as the Amps were sucked out of the Ni-Cads on the muddy banked section of the circuit.

Lap counting was difficult (nobody could see the numbers through the filth) and Jim Paffett was kept busy relaying the calls from drivers to race control.

The air compressor provided for the use of cleaning cars was discarded by most drivers in favour of the hose-pipe. Cleaned-up, rebuilt cars were placed back on the circuit and five minutes later were sodden shapes of mud once again. Nobody complained of radio interference — there wasn't any point.

Into the Third round and yes the steady rain had turned into intermittent (but frequent) showers. Claims that the track was drying out were soon choked off

as the heavens opened and dumped another load of water onto the saturated circuit.

Up at the top end of Round 3 Tony Wells decided not to run in his final heat.

"There's no point, nobody will put me out of the 'A' now."

He was right and the extra time was spent preparing the car. Kevin

Moore also didn't race, but only because his speed controller gave up the ghost. Tony was disappointed since he had wanted to watch Kevin race and calculate how he would keep up with him in the final.

So ended qualifying and drivers made a bee-line for cover to await the Finals sort.

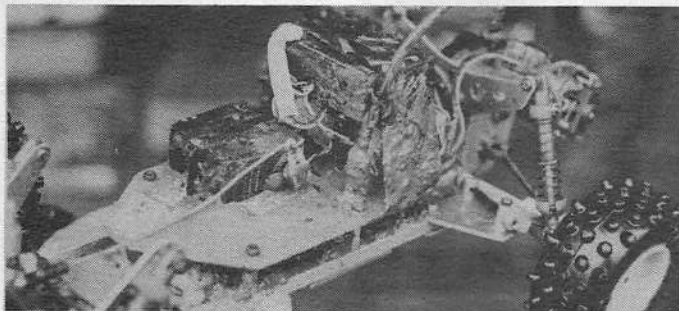


Above; A-final line-up L. to R. Kevin Moore: Mel Bettison: Jon Charles: Jamie Booth: Tony Wells: Richard Isherwood: Phil Thomason and Lawrence Harris' did not start.

MRC's all round

MRC tyres turned out to be standard wear for all the serious contenders and in particular their spiked fronts went like the proverbial 'hot cakes' from the *Ted Longshaw* trade stand.

Local EPO driver Kevin Moore obviously had the situation sized up as he went out in the first round using MRC tyres all round on his AYK 'Sidewinder'. The result was FTD for Kevin and a flood of requests at TLMC. Ted himself was eventually forced to rush off and collect another batch to satisfy demands.



Above top; one very muddy set of R/C gear still functioning after five minutes on the track. Above left; hose pipe for cleaning the mud off the cars. Above right; Phil Thomson from Round 1. to A final in one troublefree race.

Associated 'Over here'

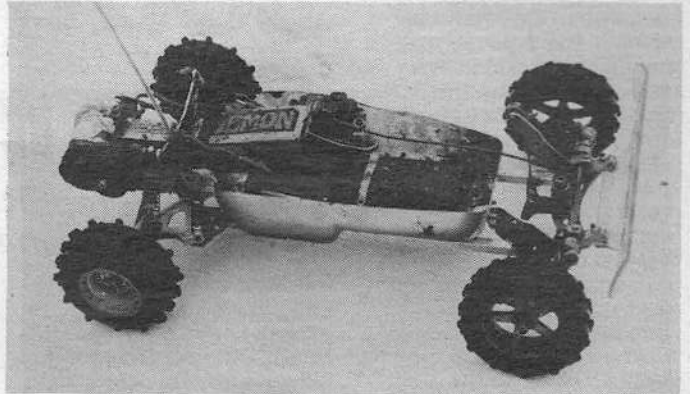
Model Car racing pundits were once again proved wrong as drivers turned up at EPO with 'RC10's' in the boots of their cars.

Tony Wells, U.K. *Associated* Team driver and perpetual student produced his 'sawn-off' version and qualified third fastest for the A-final. Tony's short-wheel based car had $\frac{3}{4}$ in. removed from the front of the chassis to increase the turn-in and it worked.

Former *BoLink* 'Digger' drivers Glyn Peglar and Mel Bettison from the Chesham Club also appeared with 'RC10's', along with Simon McRae of *SRM Racing*.

Unfortunately the 'RC10' seemed unable to rise above the muck on the track with the mud locking up the suspension. Getting round the corners also posed problems, partly alleviated by 'dialling in' negative camber on the front wheels and fitting the ubiquitous MRC spiked front tyres.

Below; Jamie Booth's race winning 2WD Kyosho 'Scorpion' featuring Star Electronics lightweight radio crate and Demon Speed Control.



Finals

Finals were run for everybody and the tribulations of qualifying were evident in the line-up of many of the finals.

Kevin Blears down in the E-final along with Keith Funnell (7th and 8th respectively). Then the D-final featuring the 1/12th scale 'all stars' Glyn Peglar, Phil Olsen, Martin Allen, Bill Jones with Pete Stevens leading them all home.

Nick Adams ended up at the wrong end of the C-Final whilst George Land (too late again) beat Derek McLarney by twenty seconds to win it, scoring an A-final qualifying time in the process.

The B-Final was a very close thing with the first four at the end separated by only 21 seconds.

From the start the initial leader was Andy Benson who was very closely followed by Miles Howard, third place was being fought over between Steve Newey from Chris Price and fifth place by Jane Adams and Steve Brace. Chris House was at the back on his own and Nigel Brown was a non-starter. On lap five Miles took the lead and gradually pulled away to an advantage he would never lose. Steve Newey had also secured third, but any mistake would have seen the closely following Chris Price through, we lost Jane Adams after 7 laps and Chris House after 9. Miles had an eleven second lead at the end over Andy but Steve had only a second to spare over Chris Price, who finished fourth.

For the A-final Jamie Booth lead from the second lap to the end in a very well driven race keeping just far enough in front to avoid incidents and loss of concentration. Richard Isherwood initially led the battle for second until letting first Kevin Moore and then Tony Wells through, these three circulated very closely together trying to catch Jamie in front. But by keeping their eyes on each others tactics they let him slip away. John Charles in fifth gradually pulled away from Mel Bettison who we lost on lap 9, seventh and eighth went to Phil Thomason and Lawrence Harris, neither of whom completed a lap.

RESULTS

'A' Final

	laps
1 Jamie Booth	12
2 Kevin Moore	12
3 Tony Wells	12
4 Richard Isherwood	11
5 Jon Charles	11
6 Mel Bettison	9
7 Phil Thomason	0
8 Lawrence Harris	0

'B' Final

	laps
1 Miles Howard	11
2 Andy Benson	11
3 Steve Newey	11
4 Chris Price	11
5 Steve Brace	10
6 Chris House	9
7 Jane Adams	7
8 Nigel Brown	0

'C' Final

	laps
1 George Land	17
2 Derek McLarney	12
3 Darren Sansum	12
4 Barry Ward	10
5 Paul Pichel	9
6 Pete Wedlake	9
7 Ian Diboll	8
8 Nick Adams	3

'D' Final

	laps
1 Pete Stevens	12
2 M. Allen	11
3 Glyn Peglar	11
4 Bill Jones	11
5 Phil Olson	11
6 Darren Harris	10
7 David Taylor	10
8 David Johnson	3

WE WILL IGNORE the fact that most teams spent Friday practising and that we spent all the afternoon racing in the dry only to get soaked to the skin in the evening putting up the tent (next time the tent goes up first) and move on to race day itself. Eight o'clock sharp was heralded by the rasp of racing motors being fired up as drivers sought that last bit of practice. The atmosphere in the pits was electric. The works teams were keyed up to do well with everyone else itching to get the day's events underway to see how the battle would be resolved. Saloon bodies were the order of the day, the weather was wet and the forecast was that it would remain wet and windy.

Saloon

The race organisers did their best to even things out for everybody but the weather made it impossible. Sudden showers followed by sun coupled with high winds provided track conditions that varied rapidly from wet to dry. In the end we saw Steve White start what was to be a very successful weekend for him with FTD.

Conditions were improved for the B Final with B. Davis driving to a fine win. Behind him, and all on 38 laps, were T. Wareham, S. Leake and F. Price who swapped places throughout the race with a very close finish between second and third place.

The A-Final was as expected led by Phil Greeno who had failed to qualify for the Open. Phil's car cut out at the first refueling stop allowing Roland Leonard through into the lead. By the eight minute mark Phil had worked his way up to third spot and by ten minutes into the race was back into first place. Despite a fine drive there was little Roland could do against a driver of Phil's class and he had to be content with second place.

The Open Final saw the cars take off at a fantastic pace. There has to be casualties and Bob Errington was to be first. A collision on the straight saw Bob fly off airborne and out of control straight into the metal drivers' rostrum. The car was a total wreck. (You can bend 'em Phil).

In the meantime Dave Dixon moved into the lead

Southampton Stunner

Colin Leake reports on the 4WD battle at the Southampton BRCA meeting on April 6/7/8.

followed by Steve White. Only Steve's fantastic driving ability kept him in touch. Dave was enjoying himself proving the ability we all knew he had, now that he has his hands on a competitive car. The *Serpent* looked very good, handling smoothly and very flat all round the circuit making Dave's job look easy. By contrast Steve was pressing the SG as only he knows how, right to the limits of its performance.

It was fascinating to see how Steve could lift a back wheel in the corners yet still pour all the power in early. The first fuel stop saw Dave extend his lead. Steve's fuel stop was not helped by his car being caught on Phil Greeno's foot. Phil seemingly unaware of what had happened.

Charlie Dudfield was looking very good in third spot driving faster than I have ever seen him drive before. At around 20 minutes into the race Steve moved into the lead. According to Phil Greeno watching with me in the pits Dave spun. According to Bob Errington also with us they simply touched and Dave came off worse.

The cars remained in this position but Dave never gave up, finishing less than two seconds behind Steve after half an hour's racing. A fantastic race between two fine drivers racing evenly matched cars. Both drivers really showing their class. Steve won but Dave can be rightly proud of a fine drive and no doubt Walt Bailey will be well pleased with the *Serpent's* debut. P. Cook brought another *Serpent* into third place after a spate of retirements by other cars.

Formula

Day two for FI bodies dawned with even worse conditions. A series of delays for the weather made it only possible to hold two rounds of heats and even



these ran late. Finally the race director just had to decide that time and the weather had beaten him and that positions would be

awarded on qualifying times. FTD and hence also first place in the Open Final went once again to Steve White.

Sunday night was wild. Howling winds blasted the site. At least two tents were torn to shreds as were many of the advertisement hoardings round the site. Competitors staying in caravans had to turn out in the middle of the night to face their vans into the wind to prevent them being blown over. The wind blew through our tent so strongly that it even went down the neck of sleeping bag. Thank goodness the wife packed my longjohns.

Sports/GT

Day three and sports/GT bodies. The wind and rain once again played havoc with the heats providing very varied conditions all day. The race officials did their best to ensure that all enjoyed equal conditions but it was an impossible task. At future meetings race officials please note that drivers should be seeded into heats according to their handicap. I know that it was just bad luck but at least two 40%+ drivers were most unhappy at having to run in

heat five in the wet trying to gain A Final places against drivers in heats eight and nine which happened to be dry. Had the drivers been seeded as suggested at least the chance of drivers in each group enjoying equal conditions would have been increased.

Steve White continued on his merry way with FTD.

The A Final was to produce one of the most exciting races of the day. Charlie Dudfield drove an inspired race, despite losing over a lap when his engine cut he drove through the field to catch Tim Long who was flying round with his *Serpent*. The latter half of the race saw both these drivers displaying an extraordinary degree of skill constantly swapping places in the last few laps. Charlie's last ditch attempt at the last corner saw his car fly straight on past the lap counters' caravan. I did not actually see where it finished up but several people claim it was never seen again. Walt Bailey was jumping up and down with excitement during the last

few laps. When Tim crossed the line first Walt let out a yell of joy whilst leaping into the air. There's a man who was enjoying himself.

In the Open Final Steve White rounded off a successful weekend's racing with yet another win. A fine

effort by Gary Culver in the dry saw the two-wheel drive *PB 'Nova'* in second place followed by Phil Hauge driving the new *Serpent* with its variable ratio geared drive. Phil and Walt Bailey being well pleased with that result. □

Roundup

Overall there was an abundance of four-wheel drive cars, most people were happy with them. The extra traction and ease with which they can be driven did much to improve the standard of racing in the lower heats. It was particularly noticeable that the advent of the four-wheel drive cars and the new compound *MRC* tyres made it actually possible to race in the wet without the cars spinning all over the place. A situation we would not have dreamed possible only last year.

There were one or two of the new five-port *Rossi* engines in use. They looked fast and sounded very smooth especially down the straight where they sounded as if they could rev on for ever. Linked to the *Serpent* two-speed gearboxes they were capable of producing remarkable results in terms of acceleration and top speed. Particularly out of the hairpin that leads into the main straight. (I wonder if they do a manifold that enables the *Rossi* to be fitted into the SG cars).

The *PB* four-wheel drive car made a brief series of appearances in both belt driven and shaft driven form. It looked, as expected, fast and stable and will obviously soon be providing stiff competition for the SG and *Serpent* cars.

Best pit work was carried out by Debbie Preston pitting for Gary Culver. Debbie put all the men to shame with her efficient, calm and rapid fuel stops.

Must have been taking lessons from Dad. Worst pit work was by xxx who actually managed to drop ...'s car from a great height before trying to refuel the engine via the air filter.

A special trophy that now does the rounds of the National champs for the most gentlemanly driving went to a driver from Mendip. His name I regret to say escapes me. Sufficient to say that he overcame the handicap of having only one hand using the throttle and steering on one stick. He still managed to drive cleanly enough to take the award and was obviously enjoying his driving. Well done indeed sir.

Finally a word to all of you readers who are interested in model cars. One eighth scale circuit racing may not be your chosen branch of the sport but it is exciting. The top drivers will visit a track near you at least once a year. It's well worth watching the dates in 'Model Cars' calendar and going along as a spectator. You will get the chance to talk to some of the top drivers and I promise you the right sound and smell of the cars being hurled round the circuit at incredible speeds coupled with the excitement that the close racing generates will be well worth the effort.

Some of the races over this last weekend have been more stimulating than any full size car racing I have ever seen. It may even encourage some of you to have a go for yourselves. □

Saloon

A Final	B Final	C Final	D Final
1. P. Greeno	1. B. Davis	1. D. Lovie	1. S. Hart
2. R. Leonard	2. T. Wareham	2. C. Baldry	2. J. Richens
3. P. Booth	3. S. Leake	3. E. Didsbury	3. I. Briggs
4. M. Smith	4. J. Price	4. D. Jones	4. M. Green
5. N. Wright	5. D. Swift	5. M. Hooper	5. K. Britton
6. N. Sales	6. S. Shaw	6. P. Silvey	6. J. Riddell
7. M. Stockford	7. M. Collins	7. V. Mulgrew	7. P. Britton
8. J. Chamberlain	8. J. Ward	8. P. Lewis	8. I. Stewart

Formula

A Final	B Final	C Final	D Final
1. P. Booth	1. B. Davis	1. M. Hooper	1. M. Green
2. P. Cook	2. S. Shaw	2. P. Lewis	2. A. Mathews
3. C. White	3. F. Chung	3. E. Didsbury	3. S. Riddell
4. N. Sayles	4. S. Leake	4. D. Hill	4. K. Smith
5. J. Chamberlain	5. D. Withall	5. P. Silvey	5. I. Briggs
6. T. Wilson	6. R. Major	6. K. Drinkwater	6. I. Stewart
7. M. Stockford	7. M. Collins	7. C. Baldry	7. W. Ashton
8. R. Leonard	8. D. Swift	8. D. Edwards	8. S. Hart

Sports/GT

A Final	B Final	C Final	D Final
1. T. Long	1. J. Russell	1. P. Rouse	1. S. Hart
2. C. Dudfield	2. J. Ward	2. K. Drinkwater	2. M. Green
3. S. Fagg	3. M. Hooper	3. I. Briggs	3. M. Rimron
4. F. Chung	4. R. Doran	4. R. Hamblin	4. S. Rimron
5. J. Price	5. M. Brooker	5. W. Ashton	5. D. Stongham
6. D. Dixon	6. D. Jones	6. I. Stewart	6. S. Riddell
7. M. Stockford	7. D. Cotton	7. P. Edwards	7. I. Thompson
8. C. Straus	8. R. Major	8. P. Silvey	8. A. Mathews

Saloon Open

Position/Driver	Car	Motor	Servos	Tx/Rx	Front tyres	Rear tyres	Nitro's	Laps	4WD
1. S. White	SG	OPS	Sanwa	Sanwa	SG Japs	Bajoma 110	25%	87	Yes
2. D. Dixon	Serpent	OPS	Futaba	Futaba	Serpent Gold	Arrow Yellow	25%	87	Yes
3. P. Cook	Serpent	OPS	JR	JR	Serpent Gold	Arrow Reds	30%	76	Yes
4. C. White	PB	Picco	Futaba	Futaba	PB202 Soft	Bajoma 110	25%	69	No
5. C. Dudfield	SG	OPS	Futaba	Futaba	PG Golds	Ass. Meds	25%	57	Yes
6. C. Straus	SG	OPS	Sanwa	Sanwa	PG Golds	QL	25%	47	Yes
7. S. Fagg	SG	OPS	Sanwa	Sanwa	PG Golds	Bajoma 110	25%	35	Yes
8. B. Errington	SG	OPS	Sanwa	Sanwa	PG Golds	SG02	25%	1	Yes

FTD Steve White

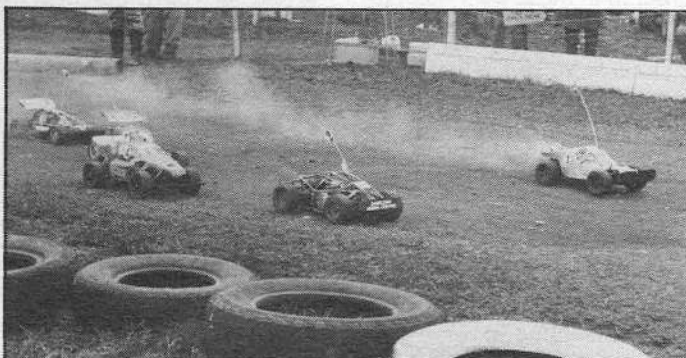
Sports/GT Open

Position/Driver	Car	Motor	Servos	Tx/Rx	Front tyres	Rear tyres	Nitros	Laps	4WD
1. S. White	SG	OPS	Sanwa	Sanwa	PG Gold	Bajoma 110	25%	88	Yes
2. G. Culver	PB	Picco	Futaba	Futaba	Bajoma 311	Gandini	40%	87	No
3. P. Hauge	Serpent	OPS	Futaba	Futaba	Serpent Gold	Assoc. Yellows	30%	84	Yes
4. J. Chamberlain	SG	OPS	Sanwa	Sanwa	PG Golds	Bajoma 110	25%	80	Yes
5. C. White	PB	Picco	Futaba	Futaba	Bajoma 311	Bajoma 110	25%	72	No
6. B. Errington	SG	OPS	Sanwa	Sanwa	PG Golds	Bajoma 110	25%	69	Yes
7. P. Greeno	SG	OPS	Sanwa	Sanwa	PG Golds	SG02	25%	57	Yes
8. P. Hague	Serpent	OPS	Futaba	Futaba	Serpent Golds	Assoc. Yellows	30%	38	Yes

FTD S. White

Remote World Winner

Bill Burkinshaw details the start of the BRCA 1/8th Off-Road racing season at the remote world nationals.



IF ANYONE IN Britain bothered to take into account the possibility of bad weather before planning an outdoor event, then nothing would ever be done outdoors! Members of the Remote World Model Car Club worked long and hard during the weeks running up to the Easter holiday BRCA National Championships for 1/8th scale Buggies. Then faced the prospect of their event being washed out before it had even begun on Easter Sunday morning.

Sixty-two competitors signed on for two days of racing to be run to the EFRA 'Christmas Tree' format of one day qualification followed by a finals day. In addition to the 'Open' top of the tree final, B Finals and a 2WD class final was planned. As the rain continued to descend steadily, it looked at first as though the patience of the drivers would not outlast the weatherman's predictions for a dryer afternoon. But at the delayed briefing 52 hardy types listened to what the race director had in store for them.

An abbreviated three-round qualification series was decided upon with 42

drivers to qualify for the second days Finals. Early heats were to contend with a puddled track, but by the time that the last heat took to the circuit, signs of dust were apparent, evidence that the clubs supposedly extravagant claims as to the drying rate of the ground in fact — were fact!

The heats

A fair amount of attention was focused on the handful of drivers who had brought examples of the new PB 'Mustang X12'. Last years Champion Gary Marsden, John Glazbrook, Richard Stitson and Bill Burkinshaw all ran these cars and in practice the previous day all had looked good. Unhappily both the PB 'Works' drivers Keith Plested and Ted Longshaw had given the weather 'best' and called it a day leaving the 'privateers' to campaign the car. Bill Burkinshaw immediately showed the cars potential by putting in 4th fastest time of the round on the cars first ever competitive outing with Greg Fairlie, taking the top

spot with June Hawkes and Tony Marsden following.

Round 2 on a much drier track saw an overall improvement in lap times with several 14 lap scores appearing and it was already looking as though a very fast 13 laps or 14 laps were to be the pattern of the day. David Chung captured what was to prove top qualifying time in heat 5 nearly taking the score to a full 15 laps pushing Greg Fairlie down into 2nd qualifiers position. Round three remained dry, but the pattern had been set, David Chung and Greg Fairlie were to qualify straight through to the final with the rest distributed through the 1/8, 1/4, and semi-finals.

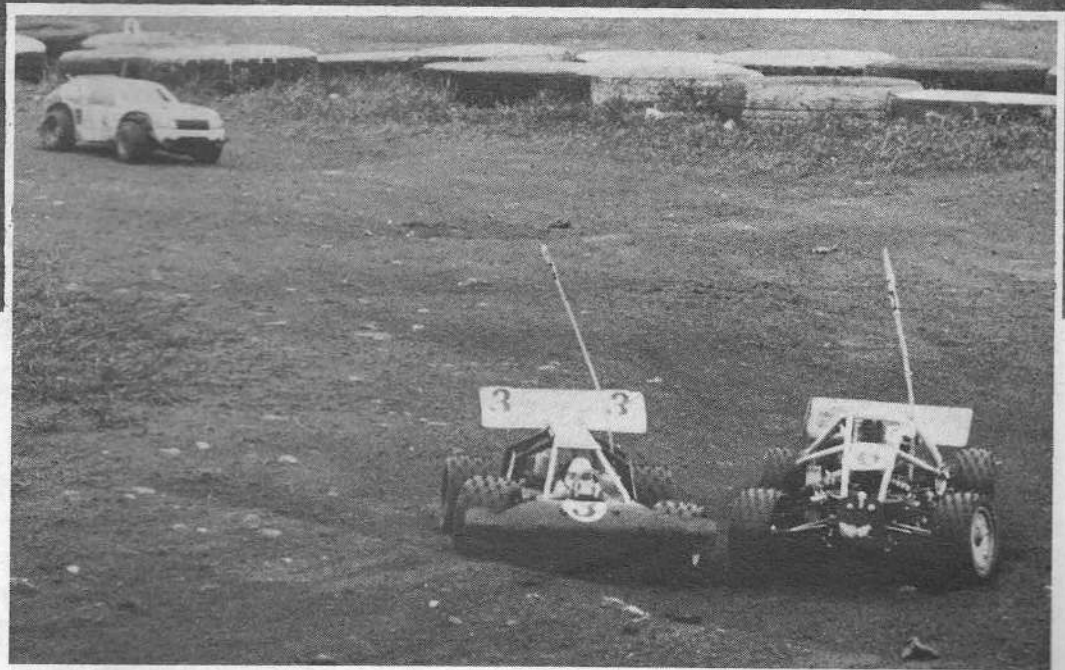
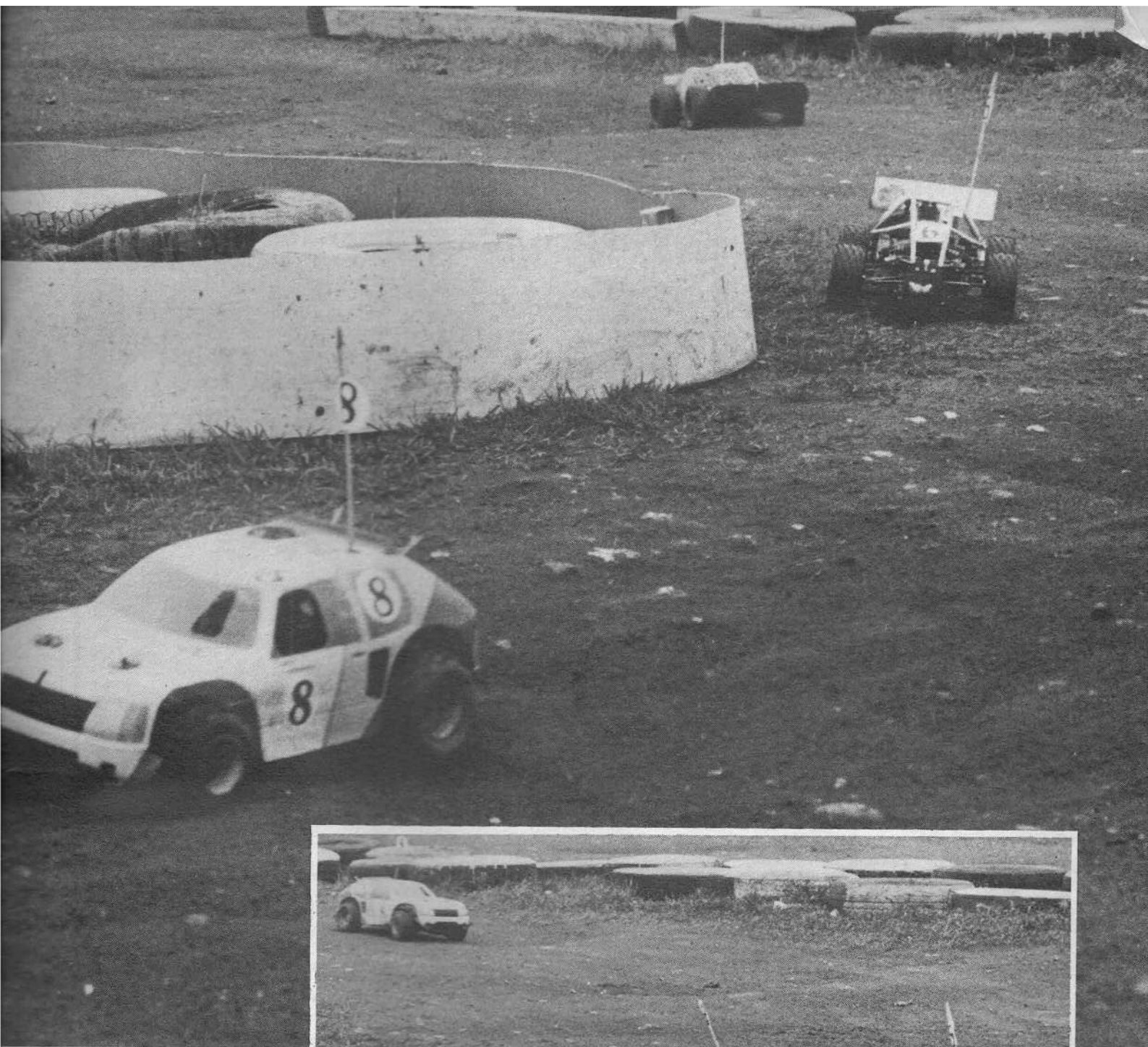
Finals day

Easter Monday started no better than had Sunday, but the forecaster promised an earlier improvement which enabled a start to be made at 11.00am with the first 15 minute 1/8th final. In both the 1/8th and 1/4 finals the first two cars across the line were to progress up the 'tree'. The races tended to become contests of early establishment followed by entrenchment rather than attempts to break records for it didn't matter if only second place was achieved. The track once again dried quickly and the series progressed towards the Semi-Finals steadily. No drivers made it through to the Semis from the 1/8th finals, those progressing from the 1/4 finals were A. Harman, R. Krusznski, N. Carr and P. Hill. Both Semis were good races with frequent

leadership changes and slow starters making their way through the fields to come good at the end!

And so to the Final which followed a closely fought B-Final and a depleted field of 6 cars for the 2WD final. Top qualifier David Chung fully justified his pole position on the 'Le Mans' style start by forging away from the field to take a full laps lead within the first 10 minutes of the race. After a slow start, Mick Harney started to move up through the field pursuing David and Greg Fairlie. The wet weather had taken its toll of the track and now that it was fully dry it was obvious that speeds were well down on the previous days racing. The smooth lines were found and used

Semi-Final A	
Name	Laps
M. HARNEY	47
J. WEEDON	45
D. MACKEY	44
P. HILL	40
G. MARSDEN	36
P. WILLIS	27
N. CARR	15
J. HAWKES	3
Semi-Final B	
Name	Laps
T. MARSDEN	17
A. HARMAN	15
R. KRUSZNSKI	15
T. KERSEY	14
M. BRINKWORTH	14
R. STITSON	14
T. CHUNG	14
B. BURKINSHAW	0



with benefit by the leading trio. At about the halfway stage it looked as if nothing could catch David Chung, but as his *Garbo* 'Gepard' passed the pits the engine was definitely sounding breathless. In spite of a remedial adjustment during his next fuel stop, it seemed the damage was done for the engine was too hot to continue and stopped soon after. This allowed Greg Fairlie to take the lead that he was to hold unchallenged for the remainder of the race, Mick Harney with the *Serpent* 'Cobra', the 2nd place driver finished 3 laps behind followed by Dave Mackey another 5 laps down with a sick sounding *Robbe* 'Presto', rather an unusual car in this country.

Final		2WD Final		B-Final	
Name	Laps	Name	Laps	Name	Laps
G. FAIRLIE	70	J. MACKEY	33	T. KERSEY	43
M. HARNEY	67	T. LAWLESS	29	R. STITSON	43
D. MACKEY	62	S. BOND	26	T. CHUNG	39
T. MARSDEN	60	P. BURNS	24	P. HILL	28
J. WEEDON	52	S. HEAP	13	M. BRINKWORTH	13
D. CHUNG	47	S. HONEYSETT	3	G. MARSDEN	12
R. KRUSKYNSKI	21			N. CARR	7
A. HARMAN	20			P. WILLIS	6
FTD D. CHUNG					

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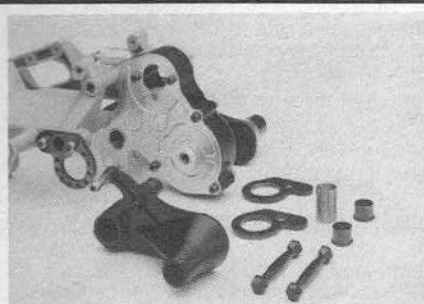
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WANTED - Ready build model aircraft boats, yachts, cars, steam driven models, also engines, kits, radio control equipment, etc. If you are selling up. Tel. Godalming 21425.

TAMIYA SUPER CHAMP. Good condition. Two batteries. Quick charger. Acoms transmitter plus spares £85. Tel: (03477) 340. The Lodge, Lilling, York YO6 1RR.

LAND JUMP 4-wheel drive OS2 engine, Sanwa radio control will servos. Starter 2 and 12 volt batteries, charger. Little used £180. Liphook 723043.

WANTED - Shop/Bankrupt stock, ready built model aircraft, boats, yachts, cars, steam driven models, also engines, kits, radio control equipment, etc. If you are selling up. Tel: Godalming 21425.

TEAM ASSOCIATED RC10

ROAR 1:10 NATIONAL CHAMPION ORRCA NATIONAL CHAMPION



THE TEAM DOES IT IN THE DIRT.

Race the car that beat the imports in the toughest kind of off-road competition.

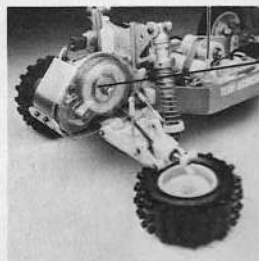
The All-American Associated RC10 took home the gold in both the ROAR and ORRCA National Championships.

Our RC10 turned back the foreign car invasion with the same racecar technology that has kept Team Associated on top of the RC car racing world for over 15 years.

A RACE CAR, NOT A TOY.

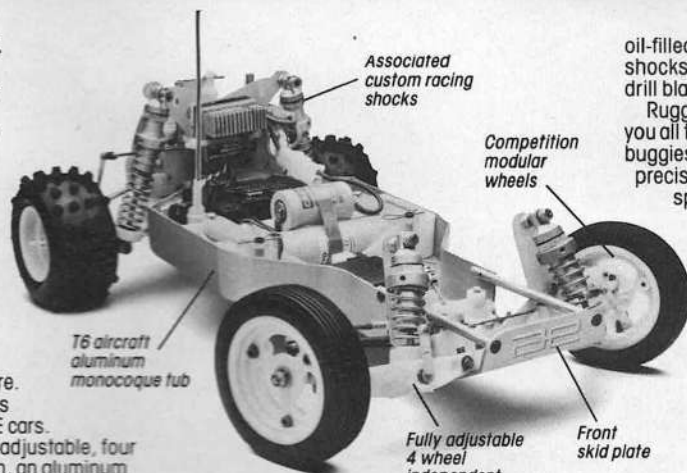
Sure, you've heard that before. But Team Associated designs and engineers only model RACE cars.

The new RC10 features fully adjustable, four wheel independent suspension, an aluminum alloy monocoque tub and race-proven hardware throughout.



Sealed gearbox
VariLok
differential

Full race rear suspension includes bulletproof half shaft and u-joints with tapered and keyed modular wheels. Quick release knock off design for fast pit work and tuning.



T6 aircraft
aluminum
monocoque tub

Associated
custom racing
shocks

Competition
modular
wheels

Fully adjustable
4 wheel
independent
suspension

Front
skid plate

And the RC10 doesn't need expensive accessories and modifications to handle the roughest tracks. The strength and durability is standard equipment.

RACE-WINNING ENGINEERING.

For maximum traction the RC10 suspension is damped by long throw,

oil-filled racing shocks. These custom shocks use machined alloy cylinders and drill blank shafts for silky smooth action.

Rugged, yet light, the suspension gives you all the adjustability of full size, full race buggies. The A-arm/Ball joint design allows precise camber, caster, ride height and spring rate tuning. Even anti-roll bars and a VariLok dif are included.

Exceptional ground clearance and low center of gravity also contribute to the superb balance and performance of the RC10 over all types of terrain.

GET THE JUMP ON THE COMPETITION.

Go RC off-road racing with the leaders. The National Champion RC10 is available now and legal for ROAR and ORRCA nationally sanctioned competition.

Complete RC10 kits, replacement parts and spares are readily available through model car racing's most extensive dealer network.

Take the challenge and build yourself a winner. Team Associated's RC10.

Smooth undercarriage
maximum ground clearance



Model cars for Real racers.

Associated Electrics
1928 East Edinger
Santa Ana, CA 92705
(714) 547-4986

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TED LONGSHAW
7 Warren Road
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BORN TO WIN!

MARUI



THE

HUNTER

1-10 SCALE RADIO CONTROL RACING BUGGY

- TOUGH POLYCARBONATE BODY
- PRE-ASSEMBLED CONTROLLER
- 7.2V RACING PACK (NOT INCLUDED) PROVIDES POWERFUL RACING OPERATION
- HIGH PERFORMANCE DIFFERENTIAL GEAR AND EXCELLENT HIGH-SPEED CORNERING
- RESPONSIVE STEERING FEATURE MINIMIZES HIGH-SPEED UNDER STEERING
- MONO-SHOCK REAR SUSPENSION WITH FINE-TUNE ADJUSTMENT MECHANISM
- LARGE CAPACITY OIL DAMPENED SUSPENSION
- LIGHT-WEIGHT AND HIGH-TRACTION KNOBBLY TYRE
- 3-STAGE LOW, REGULAR AND HIGH SPEED CONTROL
-

MARUI
The
HOTTEST
NEW NAME IN
RADIO
CONTROL



Be quickest
off the mark