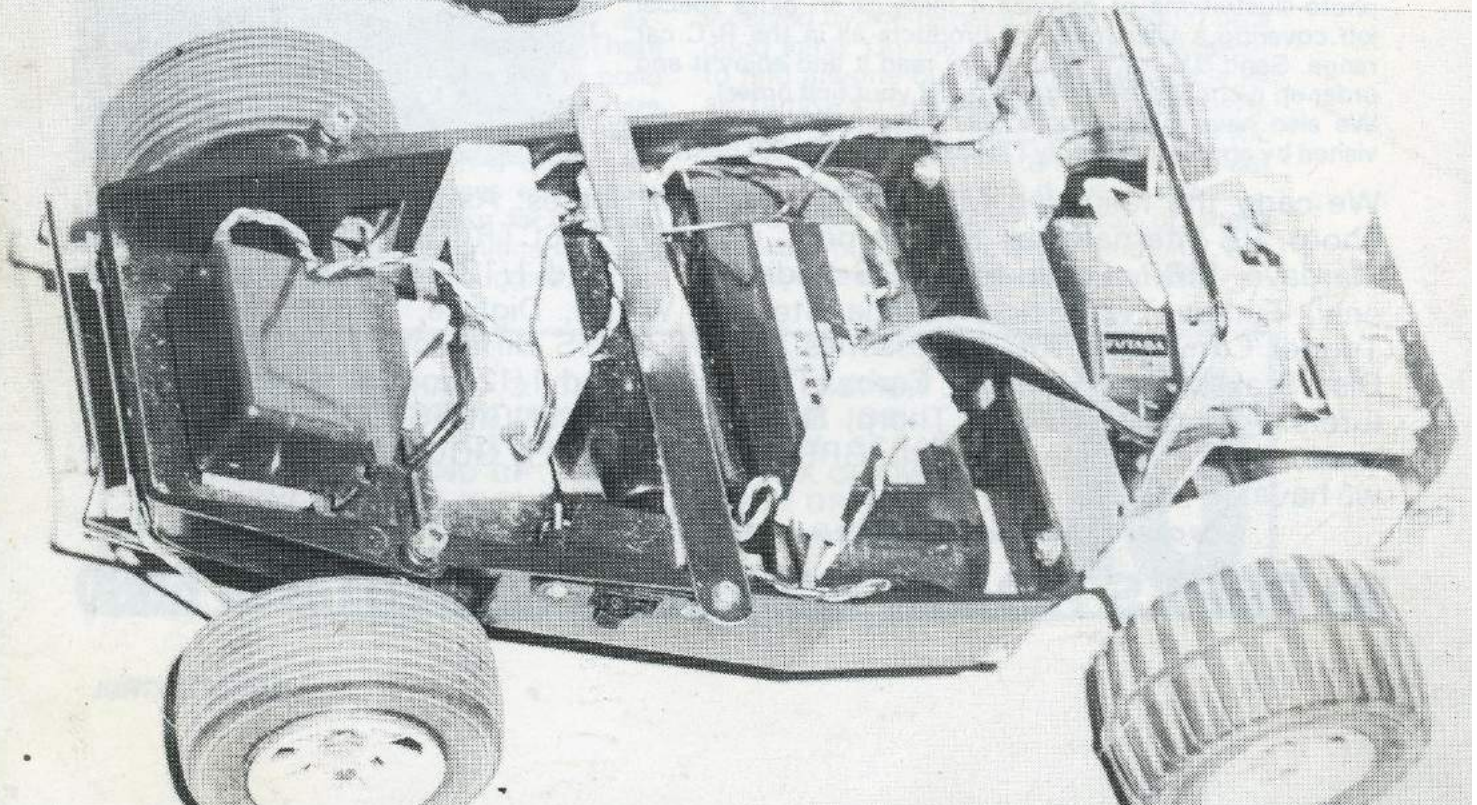


M radio control MODEL CARS

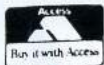
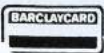
ISSUE No. 10 Price 50p. \$1.50 (US) DM3.50

Fr. G6 Gir.3.50 SwFr.3.00





R/C Ted Longshaw for Service & Experience



**LET TED PUT YOU IN THE
PICTURE TOO. HE DID!**

**8 YEARS INTERNATIONAL RACING
EXPERIENCE IS AVAILABLE TO HELP YOU!**

**BUGGY
£65**



**A SHOWROOM
IN YOUR OWN
HOME!**



Ted's NEW CATALOGUE tells you all! 56-pages with 134 photo-illustrations of goodies it really is an extra special job covering a vast range of products all in the R/C car range. Send 50p for it right away; read it and enjoy it and order up (your 50p is credited against your first order).

We also have a showroom near Biggin Hill that can be visited by appointment only (Tel. 0689 (London 66) 55313).

We carry the following MARQUES, Kits and Spares: Associated, Delta, Marker, Thorp, PB International, SG, Serpent, plus 1/12 ELECTRICS Associated, Bo-Link, Mardave, MRP. Lexan and ABS bodies in 1/8 and 1/12. RADIOS (two channel only) Futaba Twin-Stick, Futaba Steering Wheel, Digiace, Sanwa, MacGregor, Trigger Conversion Kit. Accessories include AMPS Differential, PB Diff, Serpent Disc Brakes, Perry Pumper Carbs. TYRES 1/8 and 1/12 from all major manufacturers: Associated, UFRA Thorp, Delta, PB, etc., ENGINES OPS, K&B, STX21, Veco. And, of course, the PHIL GREENO GO-FASTER GOODIES . . . you name it, we have it!

Mail Order Only: Address (no stock held here) European Export No Problem. Trade Enquiries Welcome

PEPYS ROAD, LONDON SE14 01-639 5080

radio control MODEL CARS

Published by L-D EDITORIAL — TECHNICAL SERVICES LTD., P.O. Box 30, HEMEL HEMPSTEAD, HERTS. HP1 1NL. APRIL 1979.

Editor: "Dickie"
Laidlaw-Dickson

HURRAH FOR THE LEAGUE !

BEST move for a long time and the action most likely to succeed is the formation of the Southern League reported in this issue. For the first time there is a sensible widely acceptable series of contests that appeal to the bottom of the handicap man, the middle-up-and-coming driver and the expert (on those occasions he is not hunting for championship points!). It overcomes a great deal of the expense of long distance travel by confining its influence to a definite manageable area and gives a shot in the arm to the south-west where enthusiasm is high but distance from the prestigious midland and northern centres makes a visit an occasion rather than a regular experience.

I hope that other area groups will watch the progress of this league effort with more than casual interest and consider what can be done in their particular necks of the woods. What a pity this notion had to come up from the bottom, created out of casual discussion rather than the bright idea of management at the top! It is surely the answer to limited cost racing with the added advantage that at inter-club level opportunities to run against the best are offered to the ordinary club man.

FUN RUNNING

Where do all the kits go? From the pleased faces of manufacturers a great many are sold, far, far more than even the hundred plus entries now regularly expected at open meetings wherever. There are a great many people who like to build something that actually works and are content to cruise it gently on some piece of asphalt they know of in a quiet spot away from houses. This goes even more for electrics where the noise factor does not arise. Another very significant group are the people who run buggies, either



electric or i.c. Continental claims of 10,000 or more sold in Europe raise the thought that perhaps an occasional buggy interlude on more serious occasions (buggy half hour at Monaco was very well received by the general public) would be a good thing. On the indoor side, I have yet to find anyone quite so inscrutably clever as Tamiya's demonstrator at Nuremberg, flitting his electrics round and between the legs of visitors on the stand, flat out most of the time, and seldom if ever a falter. . . There were no doubt several of these experts, I publish a picture of one only, but please take this as a tribute to you all.

**CONTENTS: EDITORIAL . . 3: CLUB & TRACK REVIEW . . 5:
SERPENT III . . 9: TYRES II "DESIGNED FOR THE JOB" . . 12:
BUGGIES . . 16: EAST DEVON OPEN . . 21: F/1 SCRATCH
SPECIAL . . 26: MIDLAND GP . . 30: DUTCH STOX CHAMPS . .
36: STAYING AT HOME IN THE CLUB . . 40: PIPE DREAMS . .
44: SHOPPING AROUND . . 48: SOUTHERN LEAGUE . . 51:
LETTERS . . 52: NUREMBERG 79 . . 55.**

10

THAT BOOK

I have just received first copies of my book **RADIO CONTROLLED MODEL CAR RACING**. It sells at £3.75 for 136 pages same page size as this mag on good thick paper and colour cover. Basically it includes most of the meat from the first five issues of *Radio Control Model Cars* plus a little of later material and some new chapters. You can get it from Argus Books Ltd., 14 St. James Road Watford Herts if you send them the money plus 50p postage and packing, but from the advance orders I was allowed to gloat over most of our r/c car stockists should be having some in their shops. . .

STOX PROGRAMME

The new management team of Radio Stock Car Association has issued a very full programme list. There is no reason for any enthusiast to miss a single week-end from now until the autumn, with all club and open meetings set out with who can enter and where.

Details of World Champs to be held in September this year at Keighley also from Secretary Mike Varley, 10 Briarwood Drive, Riddlesden, Keighley, Yorks (SAE please!)



WORLD CHAMPIONSHIPS PROSPECTS

In rather guarded fashion there has been talk of a purpose-built circuit for the champs at Geneva. Our esteemed contemporary *Adept* in the issue before me has taken the plunge in telling all. The Geneva club in association with neighbouring town of Vernier is due to build (or have built by contractors) a 282.85 metres long circuit with 4m. wide track just as soon as the weather has abated enough for the work to go ahead. This is the culmination of discussions that have been

COVER PICTURES

Captivated by Micro Racing's buggy which Ted Longshaw got in for the M. E. Exhibition stand I got a quick snow picture in a fairly unfinished state, plus a picture of the Eleck Peanuts taken at Phil Greeno's to cover the two sides — which I am told was very nearly a sell out at the exhibition.

STOP PRESS! ELECTRIC SPECTACULAR

Jim Davis R/C Racing (Birmingham and Mansfield) have taken over Lilford Park for an all Electric 1/12th scale two-day event on 16th and 17th June! This will be an Open Event run outdoors on the famous Lilford Park Circuit. All the Park will be open, refreshments, mini-zoo, riverside, etc., etc. Prizes to value of £500 plus will be awarded. Entry Individual £1.50. Team (3 matching cars) £4.50. Programme: Saturday: Qualifying heats. Sunday morning quarter and semi and finals Individual. Sunday Afternoon 3-hour Le Mans type Team Race. Details from Jim Davis Models, 311-313 Marsh Lane, Erdington, Birmingham. (Mark Letter Race Entry).

going on since October 1977 and is going to cost a lot of money. The opportunity of getting it ready for the championships is obviously too good to be missed. . . We must wish them all a fair weather spring and no hitches! The contest itself will be by no means an inexpensive affair and *Adept* again is the source of the figures which suggests an overall budget of 85,900 FS (and you don't get many Swiss Francs for a £ sterling!) Naturally some of this can be recovered by programme sales, some poster strips on the trackside, sales of seats for the finals and so on. The City of Geneva is also fully conscious of the value of a world event and will be dipping generously in its coffers and no doubt providing a great deal of help with the administration side, though sensibly the club will be using professional publicity and P.R. services.

With the U.S. Winter Nationals now past which resulted in a 1, 2, 3, 5 win for the Americans (Rick Davis won from Mike Rowland) and British best in shape of Phil Greeno in 4th place in the "A" Main, the U.S. boys are now in fine fettle and raring to go. It is pretty clear that whilst we in Europe have been getting much faster — progress has equally been made over there. . . I wonder what the Japanese challenge is going to be? All good stimulating stuff. . .

CLUB & TRACK REVIEW

Auto Model Club Geneve

Case postale 55
1211 GENEVE 1

As organising hosts of coming World Champs, a little bit about the Geneva club is not out of place. Rex Watson supplies the story: Meetings take place on Saturday and Sunday mornings at one or other of the two car parks used for practice (also monthly at the Tronchin Bar) Active membership stands at twentyeight with a £30 annual sub. Construction of the Geneva permanent circuit will start soon (designed by J-P Ruchat); visitors will be able to use it for £3.50 a day. An electric car section has now been formed. Members will be able to enter three championships this year: Switzerland (6 races) West Switzerland (5 races) and Geneva (6 races) plus assorted 300-lap, 2 hour, 4-hour and other races. The club has even been offered a permanent circuit on the roof of a building. Last: The new circuit when built will have a 1 in 15 downhill — good brakes or scrunch!

Wiesbadener Minicar Club

Secretary: Karlheinz Will
Biebricher Alee 177
62 Wiesbaden West Germany

The new Wiesbaden permanent circuit is finished at last thanks to a lot of hard work. Competitors to the World Champs should take advantage of their invitation Rec for Sports/Proto/CanAm cars which takes place one week (14th/15th July) after the Geneva

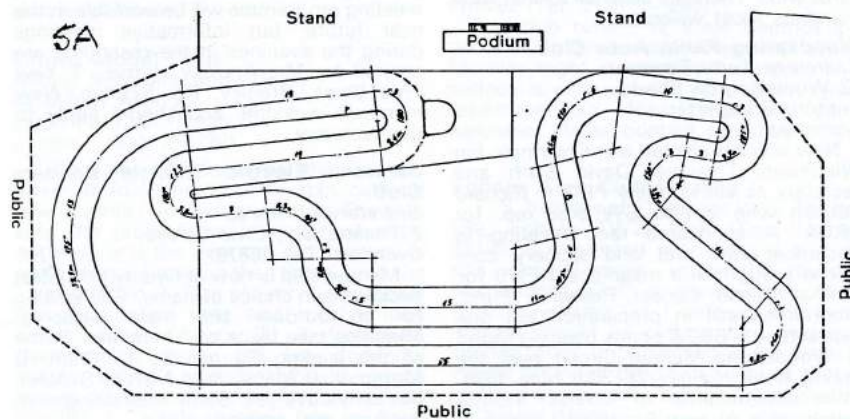
meeting. Circuit is about 230 metres long, and 4.5 to 5m wide, smooth asphalt surface, 15 deg. sloped highspeed curve. Up to 120 cars can be accepted with latest entry day same as World Champs — 15th May. On race day there will be three qualifying heats for each driver, best 16 go into two semi-finals out of which the fastest eight will make the final. There should also be some festivity. Sounds good and the club is really keen to make this a memorable occasion. A second go world-wide too for some perhaps!

Wombwell Model Car Club

Secretary Chris White
56 Wharfedale Drive
Burncross, Chapeltown
(Tel: Sheffield 341288 (day)
Ecclesfield 65547 (evening)
Nr Sheffield
(Tel: Sheffield 341288 (day)

The club is very keen to attract a good overseas entry for the British Grand Prix to be run May 5th/6th/7th and would remind intending visitors of location: between Doncaster and Barnsley. Five miles off M1: good access from East Coast — Hull (M62 motorway which joins M1) Trackside facilities? Camping and caravanning right on site. Running water and toilets. Hotels: 4 star 3 miles away. Cheaper accommodation 6 miles away at Barnsley. Track open for racing a week before the competition. Programme Saturday F/1 Sunday GT Racing, Monday Formula

New Geneva Club Circuit. World Champs venue?



Libre. Special final (if numbers justify) for foreign entrants not reaching an open final. Nine car heats on the Monday. Lots of racing both for home and visiting drivers.

Maidenhead Electrics RCMC

Secretary Roy Price
55 Queen Street
Maidenhead
(Tel Maidenhead 37295)

The club are running an open meeting on Sunday 8th April. If this appears in time get in touch with secretary to see if any entries still available! Lots of racing, lots of novelties including trailer race. Individual and team prizes. All to ROAR rules — unopened motors and sixcell 1.2 packs. Entry £1.50 or £4.50 team. Venue Maidenhead Leisure Centre — just north of the town centre on the main A4 Bath Road. Very smooth floor and very soft siliconed tyres desirable — also gym shoes — it's real slippery! Spectator seating 650, cafeteria. . . a great day, even, if you are too late to race come along and spectate.

Kent Wheel-Spinners RCMC

Secretary D. Sheath
6 Stallisfield Place,
Downe Kent
(Tel: Farnborough 53060)

After five faithful car enthusiasts had been running at Norman Park in Bromley for a number of months, the club was formed to cope with the need in SE London/NW Kent area. Membership has grown so that up to twenty cars run on most Sundays. The club really has got a circuit now! This is smooth asphalt (former hard tennis courts) comprising an area of 63 yards by 38 yards, with grass surround. Circuit will be 266 yards long 4 yards wide. There are also real toilets! New members most welcome.

Woodspring Radio Auto Club

Secretary: Terry Tawton
52 Woolavington Road
Puriton, Bridgwater
Somerset

New officials elected are: Chairman: Ian Wigginton; Treasurer David Swift and secretary as above. New PRO is Richard Beckett who is also SW area rep. for BRCA. A sponsored race meeting in December with wet and slippery conditions brought in a magnificent £170 for Gunnar Nilson Cancer Research Fund. Programme still in preparation but one date settled is BRCA points meeting round at Woodspring Mendip Circuit over the Spring Bank Holiday 26/28th May 1979. Other excitements of course include membership of new Southern League.

Leicester R/C Model Car Club

Secretary: J. Elliott
116 Dominion Road
Glenfield (Leicester 874683)
Leicester

At the recent AGM of the Mardave Owners club it was decided to wind up the club and to form a completely new club to be called as above. Mardave R/C Racing said they would put the Newbridge Circuit at the disposal of the new club jointly with Leicester Radio Stock Car Club, and members will work together to maintain and improve facilities. Membership £1 p.a., juniors 50p. A programme of race meetings will be arranged to a new formula called "Formula 100". This caters for any car to BRCA specification but cost of engine, car and accessories as raced (excluding radio gear) must not exceed £100 as at January 1979 retail prices. Racing will be on first Sunday of the month April through to October: Formula in the morning, Sports/GT in afternoon, or according to entries. Ex-Mardave. O.C. members will be able to race, their membership fees being honoured.

Craven Model Car Club

Secretary: Ian Fearnley
3 Collinge Road
Cowling
Keighley

The Craven Model Car Club is catering for all aspects of model car racing. The club was founded in February 1979 with a membership of thirty five. Meetings take place on the first Wednesday of every month at Aireville School, Gargrave Road, Skipton, starting 7.00 pm until 9.30 pm. Facilities include a double tennis court, covered with fine tarmac as a permanent raceway for cars and stock cars. A full race meeting programme will be available in the near future, but informative meetings during the evenings in the meantime are chaired by Mr. Andrew Horner, 7 Yew Tree Close, Bradley, Nr. Skipton. New members welcome and should apply to the secretary.

Swindon Electric Throttle Benders Club

Secretary: J. Korda
2 Theatre Sq., Civic Centre
Swindon (Tel: 26878)

Membership is now at twenty and latest decision is in choice of name. Still looking for an outdoor site (help welcome) Meetings take place on Thursdays. Some of the leading figures are L. Chan, B Mortimer, R Major, Fred Martin, S John, but early days yet. Some interesting own designs are coming along.

Southampton Radio Control Model Car Club

Secretary: D. G. Farndale
19 Oxford Street, (Tel: (0703) 29223
daytime (Solent Models)
Southampton SO1 1DJ

The club was formed in November 1978, present strength 43 members. Majority interest is in i/c cars but electrics most welcome. Facilities include the use of a local school's tarmac 5-a-side football pitch which is used for i/c racing, and it is hoped to accommodate the electrics soon with their own area. Interested parties should contact secretary — new members very welcome.

Wychavon Radio Car Club

Secretary: Bob Mayhew
Blackmore End Cottage
Hanley Swan (Tel: Hanley Swan 783)
Worcester

Club has been thriving for the past two years. Circuit is on a large car park belonging to a discount food store at Racecourse Lane, Pershore (appropriate?) Meetings are Sunday mornings in winter, or evenings in summer. Circuit is some 180yds long. PB Internationals are main cars in use plus some completely "own design" runners, right down to an o.d. diff. New members very welcome.

Ipswich R/C M.C. (Electric Car Section)

Secretary: S. Ward
269 Main Road
Keogrove, Ipswich.

Established some 1½ years, the club meets Wednesday evenings at Ipswich Airport, starting 7.30 pm. Silicone treated tyres are advisable as racing is indoors on a wooden floor. New members and visitors always welcome.

Lilford Model Club

Acting Secretary Andy Digby
44 Milton Avenue
Eaton Ford, St. Neots
Cambs (Tel: 215736)

Lilford are still keen on their turned down at AGM proposal to split national open events over two weekends. The club sees the problem as a matter of entry numbers and the enormous difference in performance between the "tigers" and the "rabbits." On (1) Size of Entry — numbers reduce practice time and involve long waits between heats (2) Performance: Open racing means the few dominate events. Lilford's proposal should reduce entries and give more time. Club will be running a "pilot" meeting late in April.

This will be a one-off 0-15% weekend in the Invitation Calendar. Get in touch at once with Andy Digby for details.

Bath Radio Controlled Car Club

Secretary K. D. McLaren (Mrs)
12 St Marks Road,
Widcombe, Bath
(Tel: Bath (Std 0225 20121) after 6 pm

This club has been formed recently and is running especially for electrics. They are running on a rather changeable indoor circuit at Percy Boys Club, New King Street, Bath on Sunday afternoons 2.00 to 5.30. Would-be members and visitors welcomed preferably those with cars. Please contact secretary in advance.

Radio Stock Cars Leicester

Secretary Stewart Busby
72 Rosamund Avenue
Braunstone
Leicester
(Tel. 898683)

Following the decision to operate as a controlling association and not run their own meeting by RSCA, a local Leicester club has now been established with Stew Busby as Sec., Dave Wragg as Treasurer and John Orton in the Chair. Mencap will be their main circuit with additional use of Batchelor Bowles Garage whilst Newbridge is also to be used, members agreeing to take their part in upkeep, with certain "stox only" days allocated. A full programme has already been arranged.

Frome and District Electric Car Club

Secretary: David Chedgy
1 Church Street,
Frome. (Tel: 2139 — day)

The club runs 1-12 scale electrics indoors at Chapmanslade Village Hall every Monday night starting at 7 o'clock. The surface is very smooth with silicon tyres recommended. New members very welcome. Please contact secretary.

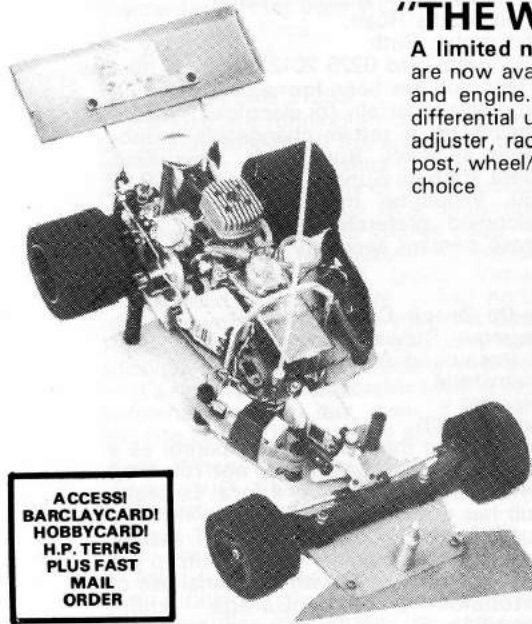
Egham Area Club Wanted

T. S. Richens of 21 Barons Way, Thorpe Lea, Egham TW20 8EA (Tel: Staines 52129) is interested in forming a club in this general area since the nearby Maidenhead Club is already well filled (even a waiting list I believe) and local interest should be sufficient to enable a second group to be formed in the district. Please phone or drop him a line so that a nucleus group can meet and discuss the necessary steps.

9 Village Way East, Rayners Lane, Harrow, Middx. Tel. 01-8667770

"THE WINNING COMBINATION"

A limited number of Phil Greeno Monaco Replica cars are now available ready made and ready to race less radio and engine. Each car includes: G.R.P. chassis, A.M.P.S. differential unit, Delta steering, flip top tank, roll bar, brake adjuster, racing clutch, engine mounts, aerial, alum. body post, wheel/tyres, silencer, all linkages, Lexan body of your choice **£250.00**



ACCESS
BARCLAYCARD!
HOBBYCARD!
H.P. TERMS
PLUS FAST
MAIL
ORDER

SPECIAL ITEMS

G.R.P. Chassis	£8.50
Brake Adjuster	£3.95
Roll Bar	£2.75
Alum. Body Post	£1.50
Comp. Clutch Nut (P.B.)	£2.50
Flip Top Tank	£13.50
Pumper 61 Carb.	£7.95
Perry Pumper 61 carb. (turned to 12mm)	£8.95
S.G. Air Filter	£1.95
P.B. Air Filter	£1.50
Delta Fuel Filters	£1.50
Delta Output Arm	£1.25
Assoc. Fliptop Lid	£3.95
Field Charger	£7.95
Glowpack	£15.95
Machined Engine Blocks	pr. £1.95
Machined Rear Power Pod	£6.95
Machined aluminium Front Beam Mk 2, wider front track	£13.95
NEW Ballraced Disc Brake complete with fibre disc machined steel shoes	£14.95
NEW Ballraced Disc Brake complete with fibre disc machined steel shoes. assembly with Brake Adjuster	£17.95
Veco/McCoy parts always in stock	

ENGINES

O.P.S.21 Car	£48.95
ST. x 21 Car	£48.27
K & B 21 R/C	£47.50
Veco 19 R/C	£25.95
New Veco 21 R/C	£28.95
Irvine 20 R/C	£35.95

NEW! M.R.P.

Jerobee r/c electric, £55.95

Lectricar with prop. speed control **£44.87**

Also large stock of BO-LINK, JOMAC, JEROBEE, ELECTRO CRAFT 1/12th ELECTRIC CAR KITS AND ACCESSORIES

JUST ARRIVED

New A.M.P.S. Differential Unit with bearing blocks and disc unit to fit P.B. International **£53.95**
NEW Mini Diffs to fit PB Int., RC200, Serpent from **£32.00**

REWORKED MOTORS

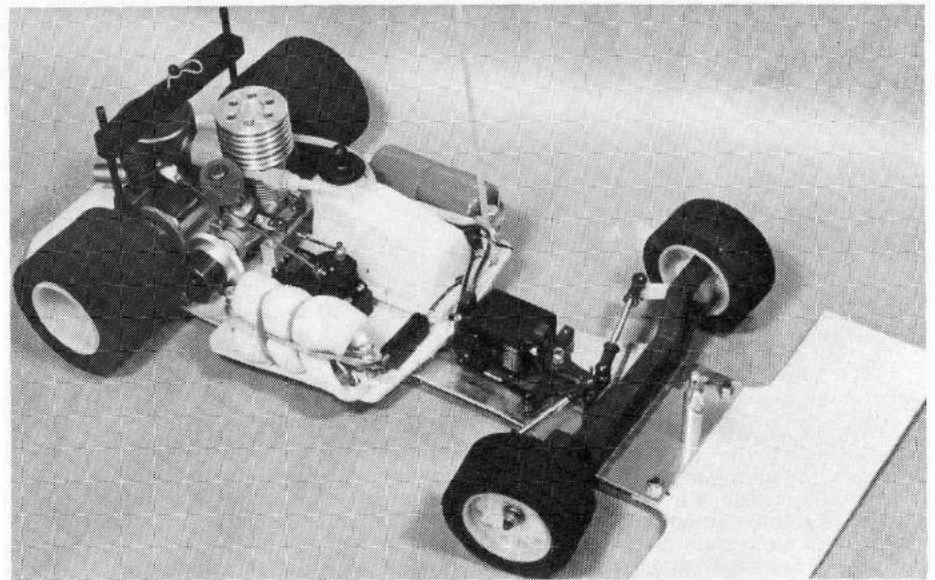
Inc. Pumper Carb. O.P.S.21 **£69.95**
ST. X21 **£69.95**
K & B 21 **£69.95**
Plus parts available separately.

R.C. CARS

P.B. International	£ 75.00
P.B. Expert Comp	61.38
P.B. Expert STD	45.04
P.B. Dual	29.18
S.G. Comp.	66.72
Futura 3	72.00
Associated RC200	119.95
Associated RC1	79.95
Latest Delta 780 Super J	105.00
Mardave Formula	23.75
Mardave Saloon	23.75
Mardave Stock car	23.75
Ke'jon Stock car	29.50

PLUS A large stock of R.C. car spares always in stock including P.B. Associated, S.G., etc.

All prices correct at time of going to press but subject to alteration.



SERPENT III Competition

SERPENT III will be the one to watch this season. It has attracted a splendid team of drivers to back up the faithful Peter Bervoets who long led the company challenge. Now Ronnie Ton has teamed up as well as Dennis Tassaux from Belgium so, with Cromberge they are very strong indeed. Already in the last weeks of 1978 events were beginning to fall to the marque. However, although promises of a kit to play with in September, it was through into the new year before I got it, which shows that the step from prototype to production is no easy one.

What's special about the Serpent? It is almost alone now in still being faithful to an all metal chassis (when glassfibre is taking over nearly everywhere). This is in the usual two parts, a lighter main plate with a stout power pod to carry the works. Power pod is elegant in a satin finish, rebated to take waisted front chassis plate and also at the rear for the bumper. Steering crossbeam is cambered, steering arms moulded in nylon; servo saver of Serpent pattern has simple springing release. Lightweight nylon wheels have an attractive open simulated "wirewheel" design. Radio plate is stamped out to shape but not drilled, so that matching holes for attachment must be made as well as those for the four radio gear attachment posts, holes for fuel tank and servo cut

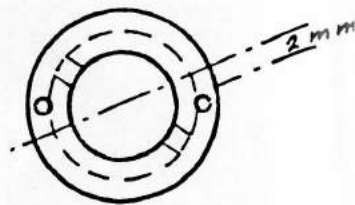
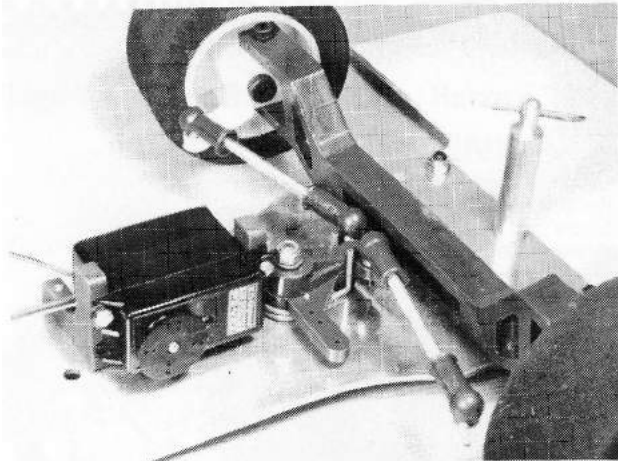
out, plus securing holes for radio on/off switch. Some of these are wisely left to allow choice of radio equipment but I hope later production kits will have at least fuel tank and chassis attachment holes cut out. A very neat disc brake is provided with pivot post bracket in anodised blue. This is secured to power pod with castlenuts through predrilled holes. Fibre disc presses onto robust square locating piece held on to axle with allen screw. A similar pre-cut hole in the crown wheel is a positive fit for the hexagonal block that holds it in place. Plummer blocks are, almost needless to say these days, ballraced. Front and rear bumpers are shaped, but, again not drilled for securing bolts — giving some latitude in precise adjustment. The very popular Serpent silencer is provided as part of the kit in matching blue anodising. A hole is drilled in power pod to secure it in place.

Fuel tank is of nylon in two main parts plus tubing into the sump and a spring loaded quickfiller cap. A rubber seal ensures that the two basic parts are fully sealed, and the units are firmly fixed with eight selftap screws. A further two screws secure the tank to the radio plate. Up front steering links are threaded type with ball-joints of robust size. Servo saver has a wide range of fixing holes for adjustment: the unused half to be cut away before

specialists
in

SKYLEADER FUTABA SANWA MacGREGOR

Opening hours: Mon., Tues., Thurs. 9.30-6.00 Fri., Sat. 9-7.00. Closed all day Wed.



Steering crossbeam, steering arms and fail-safe. Note servo brackets.

Flywheel, clutch, shoes and bellhousing detail.

operation. Small mounts are provided to take servos. These are unthreaded and must be drilled to suit equipment and also to secure to radio plate or chassis. Motor mounts are bored and threaded to attach to power pod, which has a couple of slots each side to allow a degree of longitudinal adjustment. Mounts must be drilled and tapped to suit engine of choice.

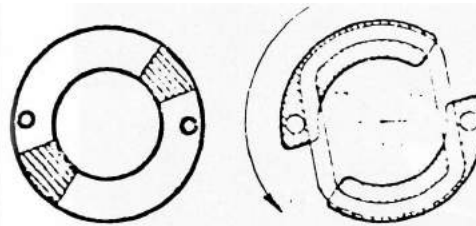
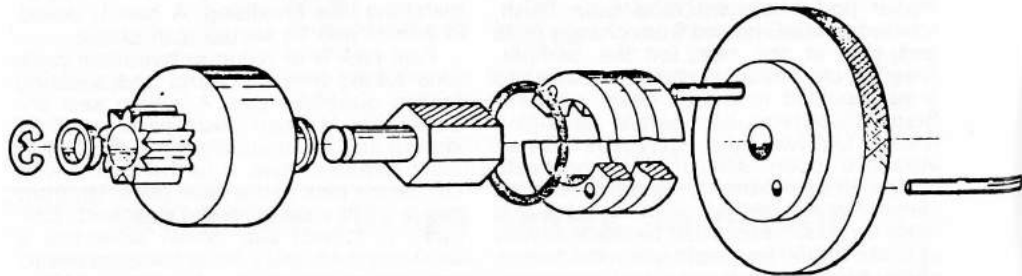
Front bumper is of goodly size and can be trimmed back to suit a variety of bodysells. I had thought to use the popular Porsche 917 body but Ken MacDowell has just sent me his latest Mercedes shell and it seems a good opportunity to use that — it seems with very few liberties that it will prove an equally good fit. Both shells of course are Parma Lexan and worth taking a bit of trouble painting up in style.

This is not one of those kits which need a lot of explanation to build. FWF Engineering provide an exploded drawing with all the parts numbered and named in English; plus photos of the assembled car with four close-ups of special points of interest. Added to this there is a fullsize drawing of the radio plate (but use the chassis as template for drilling fixing holes,

sometimes paper shrinkage is quite remarkable — and you can miss!) and a diagrammatic sketch for fuel tank put-together. Clutch/bell housing merits another little sketch but there is nothing revolutionary here: the usual two shoe clutch with an O-ring round them. Gears are part of the bellhousing and held on with a circlip so that quick change for change of ratio or replacement is easy.

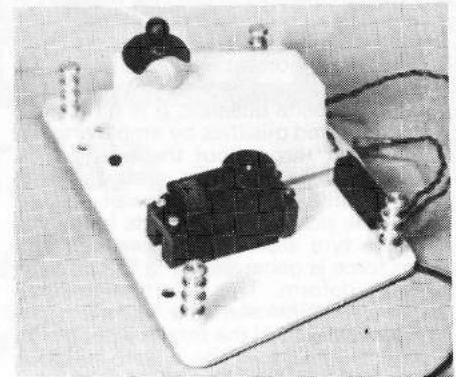
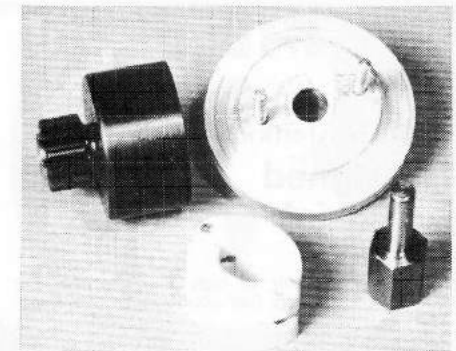
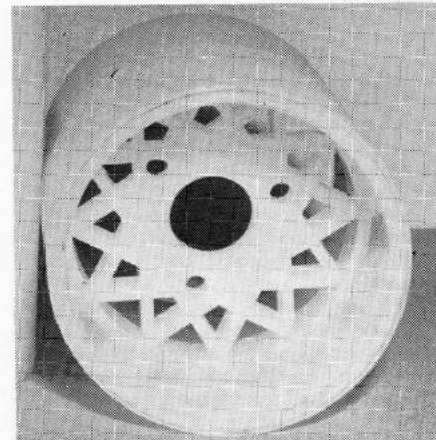
Slight novelty: the shoes come in a single round and require to be sawn in two and some small parts discarded. Sketches show how: the expert will do it his way anyhow!

Having got this far what should we say about the Serpent III? There is a saying in the aircraft industry: "Add some simplicity!" This, essentially is what has been done with this car. It has no gimmicks, no sure fire different bit that is going to revolutionise racing. It is a good simple basic car with very little to go wrong or to go out of kilter. Like a simple camera which never lets you spoil a simple picture by forgetting to do something, this car will do its designed job of going ahead fast. Apart from its team of skilled drivers which will help a lot of course, it is going to win a



Clutch shoes detail.

lot of races — sometimes for Mr. Nobodies who would never have believed it of themselves! It is also going to encourage a lot of people to produce embellishments to go on it to precision limits which are not really necessary but will delight those enthusiasts who look on their cars as male jewellery.



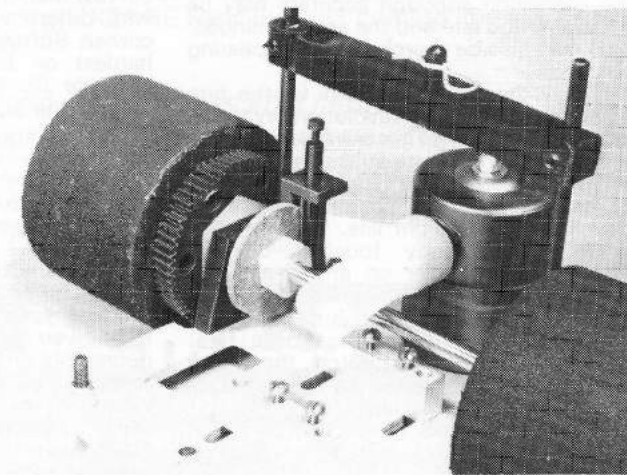
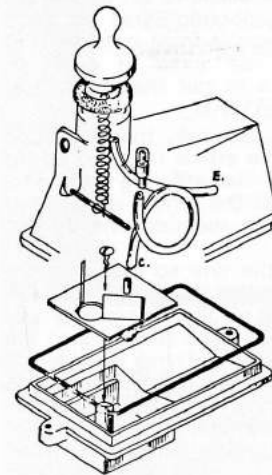
Top: Clutch and bellhousing parts.

Above: Radio plate with fuel tank and throttle servo installed.

Left: Detail of nylon wheel hub.

Below left: Fuel tank detail.

Below: Disc brake, engine mounts and silencer.



TYRES:

Pt. 2

By D. H. Jenkins

"Designed for the job"

Figure 4.

A rubber chosen for its high compliance at the sidewall? Shows very bad chunking on the tread.

We have discussed briefly the physics and the jargon, and noted what compounds are available to the tyre maker. Let us have a closer look at the tyre itself, and what it does.

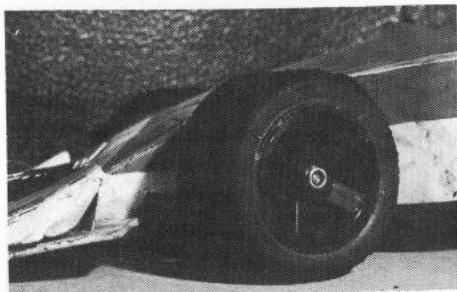
Two very important areas are present in tyres, and in many ways their functions demand opposite qualities. It is difficult to get the required qualities by employing the same rubber throughout the tyre, Fig. 4. The two very important areas are the contact patch, and the sidewall. Let us discuss the sidewall area and its functions.

As the tyre slips (see earlier) the cornering force is generated, and the sidewall starts to deform. The deformation force can be very high and can in certain circumstances exceed the total weight of the car and the ability of the tyre to function satisfactorily. If the sidewall cannot cope with the deformation, the tyre will start to lift from the track surface and not generate cornering force. The breakaway can be rapid and uncontrollable. The measure of the sidewall stiffness is called compliance. If the compliance is too great the tyre response is too slow, and in an oversteer the correction although accurate may be translated too late and the spin continued. This may also be a problem in negotiating chicanes.

Ideally the compliance will let the tyre respond within half a revolution. With lax sidewalls sometimes it is possible to put on a tread pattern to pre-stress the sidewall so as to speed on the tyre response even at zero slip angles when the car is travelling in a straight line.

We have already touched on the contact patch earlier on and dealt with cornering force and pneumatic trail, etc. We will not repeat that but go on to examine the cornering force of a tyre. Through the contact patch the three factors that generate the cornering ability of the tyre act. They are:

1. Tyre softness.
2. Tyre angle.
3. Tyre loading.



1. Softness. The tyres are sensitive to a variety of things ranging from ultra violet light, to oxygen, to petrol and of course to temperature considerations. Durometer harness tests can vary by over ten units depending on the temperature. As Formula 1 drivers will testify, tyres designed to work at 100 degrees centigrade do not grip will if it is a cold day and wet and the tyres do not get up to 100 degrees fahrenheit!

Durometer hardness. A measure of the hardness as a rule of course can be gauged by taking the common pencil eraser as having a hardness of 45. A typewriter eraser would be about 57. This then relates to radio control tyres of Shore durometer range 30-40. Go-Kart tyres range from 60 soft to 70 hard. The scale is not easy to judge accurately and must be taken at 68 degrees fahrenheit room temperature.

Tyre softness we have already discussed in the chapter on rubbers. The radio control car is usually set up with hard front tyres to provide more grip and slightly softer rears to promote the desirable understeer. If the track is essentially composed of constant radii curves, then it is feasible to set up the car with different compound tyres on each corner: Softest on the front outside, and hardest on the rear inner in order to promote slip here to get the rear wheel around the curve.

2. Tyre angle. Basically this is beyond the purpose of the article on tyres as we are getting into the steering geometry discussion, but as the whole is so inter-related we have to mention one or two points.

The tilting of the tyre so that it is not perpendicular to the road surface can produce desirable results. The amount of tilt is given another name and is called the degree of camber. If the tyres are tilted in towards themselves taking the top of the wheel as our guide, then the camber is called negative camber. If the tops are tilted away from each other it is called positive camber. The affect of this tilt is to

308 PIT STOP

FUTABA

SPECIAL OFFER

Futaba Medallion 2 Channel Combo Rx and Tx with two 28 Servos **£49.00**

Special Offers on all Futaba R/C gear
Phone in for details

ENGINES: Veco 19 SM **£24.95**. Veco 21 SM **£28.95**. K & B 3.5. Standard **£39.95**. K & B 3.5cc Car. Special **£47.50**. OPS 3.5cc RC Car **£42.75**. HB 21 PDP Car **£34.95**. Irvine 20RC Car **£35.95**. Super Tigre X21 RE Rear Exhaust coming imminently **approx £52.00**.

LARGE STOCK OF SPARES FOR LEADING MAKES

All makes of R/C equipment stocked and full range of spares

**We accept: ACCESS • AMERICAN EXPRESS • BARCLAYCARD
BANK AMERICARD • HOBBYCARD • QUADBONDS**

WORLD-WIDE MAIL ORDER

HENRY J. NICHOLLS & SON LTD.

The World's Greatest Model Shop for the Enthusiast!

308 HOLLOWAY ROAD, LONDON N7 6NP. Telephone: 01-607 4272.

(2 mins from Holloway Rd. Station on the Piccadilly line)

produce a side force tending to thrust the tyre and the car in the same direction as the top of the wheel is tilted. The side force will therefore help or hinder the cornering force and the ability of the car to get around the corner.

A five degree camber setting can result in a lateral force equivalent to that generated by the tyres at a one degree slip angle. Obviously this can improve the cornering power of the tyres.

Camber is more important to the racer on a high friction surface.

3. Tyre loading. We must just mention loading and chassis adjustment. Normally a radio control car is set up with the centre of gravity not in the geometric centre of the chassis, and this produces a split load of 40:60 approximately between the front and rear tyres. This is also true of the Formula 1 cars. Thus each tyre at the front supports twenty per cent of the car's weight and each rear, thirty per cent. Loading a tyre can increase its ability to corner, front weight addition will induce understeer. Front weight transferred rearward will promote oversteer.

Raising the centre of gravity to promote roll can sometimes load the cornering tyre selectively to get it to handle better, as the radio control car rarely rolls over but preferentially spins. This too is beyond the scope of an article on contact patches.

The setting up of the chassis is another subject but the tyre has to be set up also. Truing and balancing of the tyre are of the utmost importance. Radio control car tyres are glued to the hubs and although this is a messy and sticky (excuse the wording) job, every effort should be made to ensure that the tyre and its sections are aligned properly on the hub. It is often easier to cover the hub after scouring it slightly with a layer or two of tape. The old fashioned type of insulating tape or masking tape are best here. The rubber tyre may then be stuck onto the tape and aligned. When the time comes to renew the worn tyre the tape comes off easily and leaves the hub in good condition. I have a feeling that this tape/rubber joint acts as a sort of clinch area and helps deal with the loading at this junction point, i.e., high stress, moderate strain.

Once glued into place the tyre should be checked as looking true and rolled to detect any asymmetry. Run your tyres in before they are raced, have the same degree of wear on fronts and rears, for if they are out of round then in rotating they will automatically spend some time in the air. This can cost you time, and if the

landing is unfortunate it can cost you a spin.

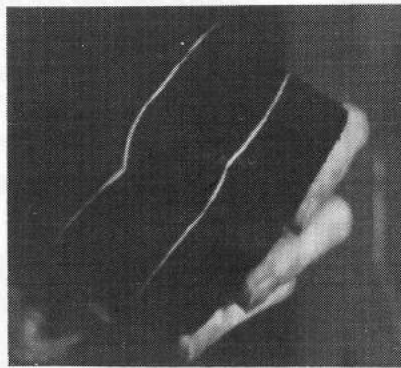
If the car wiggles as the servo puts the power on there is obviously a rear imbalance.

TREAD DESIGN: DRY AND WET

As everyone knows in dry conditions the maximum grip is afforded by the treadless tyre or 'slick'. Here we are dealing with Boy Scout Physics — "The more rubber on the road, the better." The amount of grip will be determined in these conditions by the properties of the type of track surface (see later) and by the construction of the tyre. Should, however, there be any stones, pebbles, grit, dust or damp allowed to get in between the rubber and the road then traction or grip values take a nosedive. A swept track not only increases the adhesion available but makes life uniform for everyone.

Wet conditions however present the hardened R/C racer with a new set of equations. Not only will the rain water affect the R/C driver himself — it is a well known medical fact that soggy drivers perform below par! — but can also mess up the radio gear, the electrical connections and get into the carburettor. Should there be standing water on the track then the conditions will reduce the relative adhesion of slick tyres to eight per cent of their grip value in the dry at approximately 50 m.p.h. If one uses a modest though scientific tread pattern the 50 m.p.h. relative grip will only fall to 40% of its dry slick value. The best one can get from a deep tread is about 60% of dry grip.

The distortion of the markers on the tyre show how little of the rubber is in contact with the wet track. Note that the inside marker is distorting less.



FOR BETTER STEERING TRY OUR NEW ALUMINIUM FRONT AXLE with more Caster angle and it's 12mm thick.

ALUMINIUM ONE PIECE STEERING BLOCKS with Ackerman Geometry. Works well with both RC-100's and RC-200's.

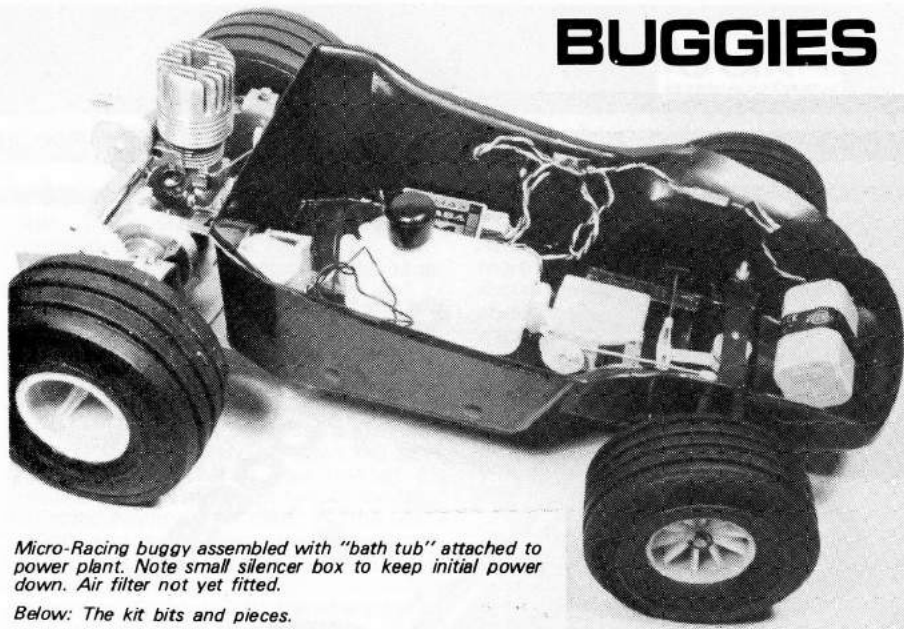
All Parts Machined and race tested

MODELL : CAR : VERTRIEB

Postfach

D — 6842 Buerstadt/West-Germany

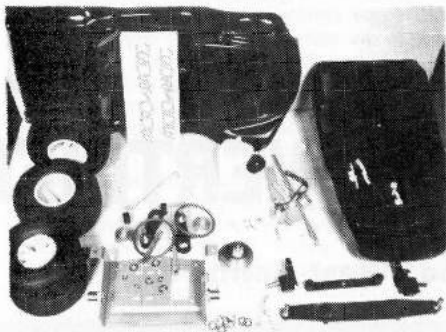
BUGGIES



Micro-Racing buggy assembled with "bath tub" attached to power plant. Note small silencer box to keep initial power down. Air filter not yet fitted.

Below: The kit bits and pieces.

I FIRST saw the big Buggy at Monaco last summer climbing obstacles and Botts dots like mad as an interval diversion at the World Cup meeting. Ted Longshaw got a few over for the Model Engineer Exhibition and I couldn't resist getting one. Made in Switzerland, and therefore not cheap, they follow unorthodox lines in design and have a dedicated following in Europe. Here are some of their special characteristics: (1) Double belt drive with belt running in grooves on the two rear wheels (2) Sprung rear end shock absorber fashion like stock-cars (3) Conventional crown wheel and spur gear drive from engine with crankshaft supported in ballbearings (4) Rigid motor pod pressing attached to



flexible front end. (5) "Bath tub" sub chassis of ABS.

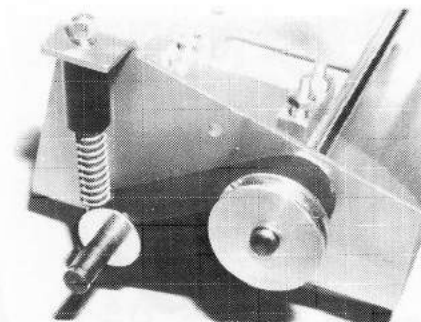
Instructions are in French but so well illustrated that no knowledge of that language is needed. Starting with the "bath tub" (the French call it that — "baignoire") two small holes must be cut to slip in the steering mechanism — holes being indicated by blisters. One part goes under and the other part over the tub sandwiching the failsafe moulding between them. One or two holes require to be drilled in the tub. Steering arms have very simple clip-on connections and are already to size. Fuel tank is provided and fits into a recess in the tub. Steering and throttle/brake servos are fixed with servo tape. Engine mounts are bored right through so that retaining bolts slide in and do double function of holding mounts in place and retaining engine. This means that mounting holes on engine must be opened out to 4mm to take them.

Springing of rear end needs little more than following the pictures — but retaining hex. screw which holds the lot together is a weakness and must be fixed with Loctite (I lost one in the snow and was very lucky to find the little beast again). Wheels are held in place with circlips, drive pulleys being locked on with allen screws. Note that hubs are thicker than tyres so that tyres are glued to their front leaving the belt grooves clear for their belts.

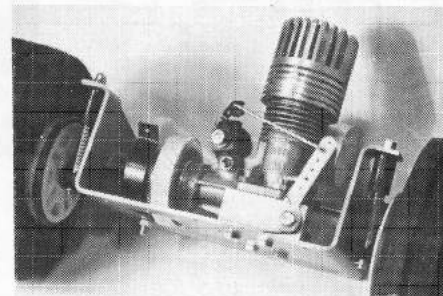
The pressing which houses the engine and rear wheels is attached to the bath tub with a square of glassfibre, which must be cut out a little to take the recessed fuel tank. Do not be afraid of the enormous amount of flexibility of this set-up. It works. With the rear springing as well all four wheels can be operating at different levels. Brake as provided is drum, but a disc brake is available as an extra. Black ABS body looks a bit grim but painted up in bright colours soon becomes attractive. Mine is less than beautiful since a fall of snow made me hurry to get it on the run (little did I know the snow would be there for weeks). Windscreen is provided, but a number of other desirable additions can be made. Most important of these is a roll over bar which should be fixed to the rigid rear end and bent forward rather than to the bathtub where it will just tear out. A nice little "action man" or two to crew the Buggy is also useful, plus a flag on the aerial and perhaps some dashboard decoration.

By the way, my kit has ribbed wheels, alternative wheels have medium sized "town and country" pattern treads, or there is a third real trial type "knobbles" available. Bear in mind that whilst the Buggy will go over quite rough country and thick mud that eighth scale snow at two inches deep represents well over a foot deep, so do not expect miracles.

Regular lubrication of parts is advised,

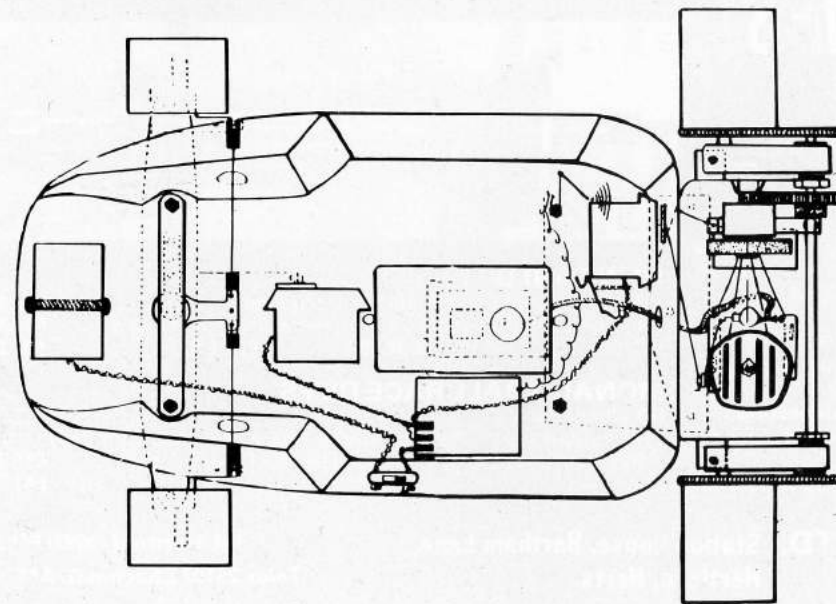


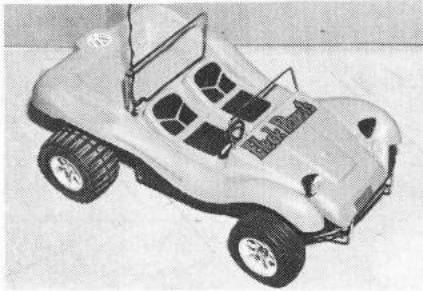
The power pod and rear springing set-up.



Detail of springing and belt drive.

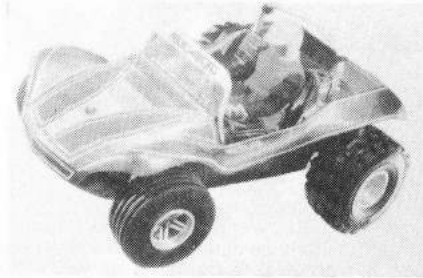
Plan view of buggy ex instruction sheet.





"Elect Peanuts" a popular electric buggy.

Model with rollover bar, added decoration and "action man" type of driver.



though not on the belts — oil should be carefully wiped off if it gets on them. In a recent review in French magazine *Adept* a life-expectation of about ten hours running or two gallons of fuel is suggested as likely which seems pretty fair. Replacements are easily fitted, not wildly dear, and could probably be faked up from other belting if need be. Final good advice from *Adept* was to clean up Buggy and wash out mud accumulating in bath tub being careful to remove radio gear first.

Just as 1/12th scale is running side by side with "big brother" so are little Buggies to be found in electrics — either 1/12 or 1/10th scale. Our cover picture of one "Peanuts" was the last one left in stock at the time from Phil Greeno who had sold a whole lot at the M.E. Exhibition. Not perhaps for wild use in the snow they can put on a very good indoor performance over set-up obstacles and enable trial courses against the clock to be run as a competitive item, or in cross country events indoors like auto-cross.

Whichever sort appeals, be sure and have one in the back of the car for light relief when racing may be impossible, or you just want a little relaxation on the lawn at home.



ANNOUNCING THE NEW MINI DIFF

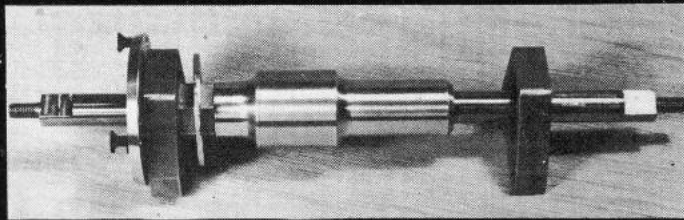
SERPENT
Competition Mk III Car
Kit **£75.79**

AMPS
Sweatshirts **£6.84**
'T' Shirts **£3.95**
(Black with gold 'AMPS' motif)
Sizes — small, medium, large, extra large.

**SAE for Accessories
Price List**

Trade enquiries welcome

**AMPS LTD., Station House, Hartham Lane,
Hertford, Herts.**



NEW MINI DIFFS

PB International — no mods to car required	£33.50
PB International — as above, with metal plummer blocks	£40.50
RC200 £34.70 SERPENT	£32.00

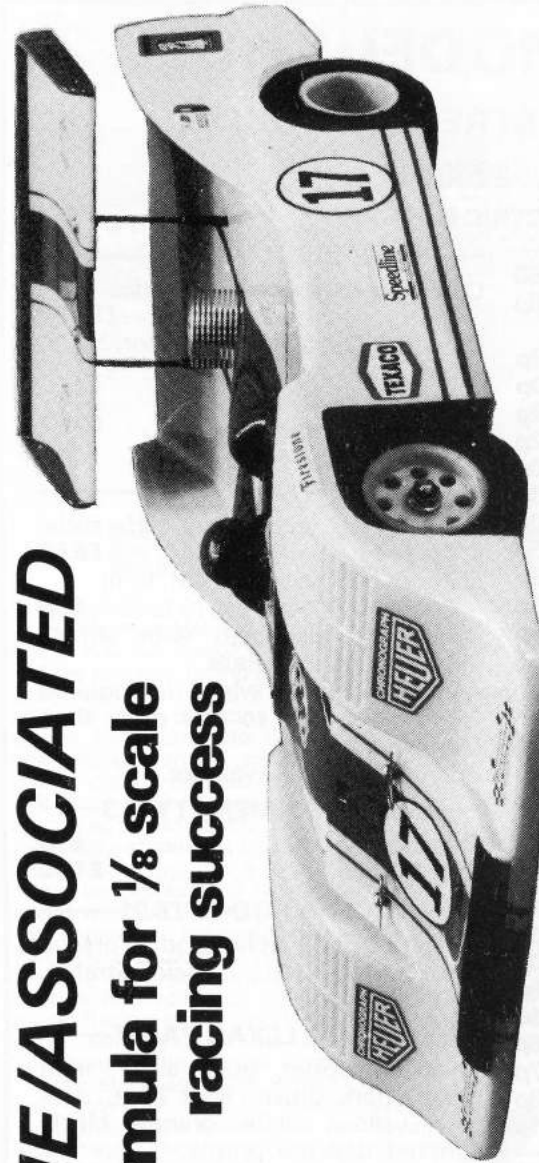
MONACO BALL RACE DIFFS

PB International	£53.95
PB International — Racing Special (Black anodised with easy to fill, modified drive flange — as used by Phil Greeno)	£56.95
SG	£41.75

**Tel. Hertford (0992) 56597
Telex 25102 Chacom G/AMPS**

IRVINE/ASSOCIATED

— formula for 1/8 scale
racing success



Irvine Engines announce
availability of the
championship proven
associated range of 1/8th scale
R/C cars. Competition bred to
design perfection, the

Associated range offers R/C
car operators the very finest
in precision manufactured
racing cars.

KIT RC1 SPORT CAR KIT. An ideal model for the newcomer to the hobby and for those in competition racing at Club level. **£56.95**

KIT RC 100 COMPETITION KIT. Designed to meet requirements of the serious R/C car racing competitor. **£79.95**

KIT RC 200 RACING KIT. Designed for those who demand the highest standards or intend to compete at international level.

Choice of Lotus 79 Formula or Porsche 30 KL GT body. £119.95

IRVINE ENGINES
UNIT 8, ALSTON WORKS
ALSTON ROAD, HIGH BARNET, HERTS: 01-440 0623

HOWES MODEL SHOP

9—10 BROAD STREET, OXFORD

TEL: 42407

1/12th ELECTRIC R/C CAR

MARDAVE

6 cell kit	£37.50
Chassis plate drilled	95p
Front axle beam and steering arms	
King pins	6p
Bellcrank	20p
Bellcrank nut	6p
Front stub axle and nut	12p
Track rod with override springs	70p
Rear axle bearing blocks	70p
Side trays (pair)	70p
Front wheel	25p
Rear wheel with grubs	55p
Front tyre	35p
Rear tyre	70p
Mabuchi RS54 motor	£3.95
Rear axle	15p
Drive gear with grubs	75p
3-speed cont. complete	£2.75
P.C. board	90p
Resistor	30p
Nylon wiper arm	20p
Pivot stud	8p
Brass contact	8p
Coil spring	8p
Aerial/switch plate nylon	30p
Throttle servo/speed control plate	30p
Front bump plate	35p
Charging lead	£2.95
Collars for linkage wires	15p
Allen keys 1.5mm or 2mm	7p
Screws any size	3p
Nuts	1p

ABS BODIES

B.R.M. F.1	£1.45
Renault turbo F.1	£1.45
Lotus 79 F.1	£1.45
Shadow sports	£1.95
Porsche 935	£1.95
B.M.W. S1	£1.95
V.W. Beetle	£1.95

ASSOCIATED

Complete kit less radio, includes motor, ni-cads, body, etc.	£59.95
Chassis kit less ni-cads, motor, body, etc.	£28.95
Front wheels (pair)	£2.20
Rear wheels (pair)	£2.20
Good stock of spares	

DIFFERENTIAL

Schumacher limited slip differential fits Mardave no mods **£6.50**
 55 tooth gear to enable diff. to fit Bolink/MRP. **99p**
 Also fits Associated with simple mods. phone for details
 A Mardave rear wheel is required when fitting diff. to cars other than Mardave.
 Spares for diff. all available.

SOFT NEOPRENE TYRES

Front (pair)	69p
Rear (pair)	£1.10

PARMA BODIES £6.21

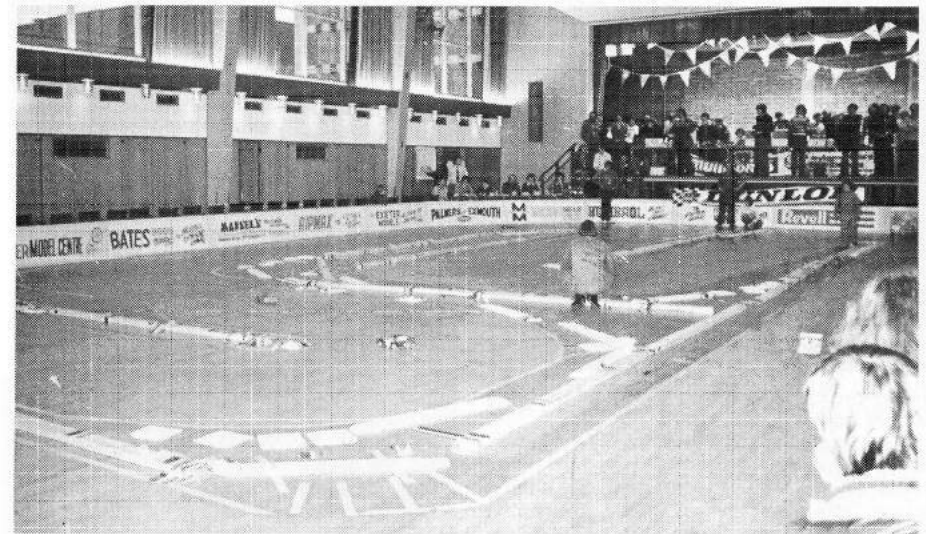
Porsche 936, Gremlin Mod., Porsche 935, B.M.W. M.I., Lancia Stratos, B.M.W. 320.

PARMA LEXAN PAINT

Thinner, copper, gold, silver, light green, dark green, light blue, dark blue, yellow, white, orange, black, light red, dark red, purple.

BARCLAYCARD, ACCESS, HOBBYCARD ALL WELCOME

Order over £2 — post free in U.K.
 Under please add 25p.
 American Race Car World Mag. . **80p**



EAST DEVON OPEN

A FULL field of 84 competitors turned up at St. Georges Hall Exeter to contest the first B.R.E.C.A. event of the year.

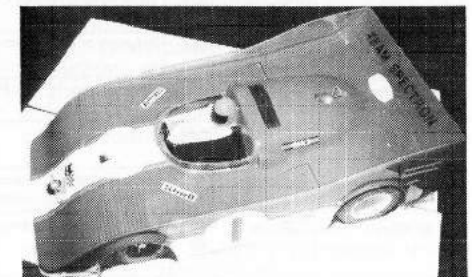
After practice, racing begun at 11.15 am and some nine hours, 3½ thousand laps and 220 miles of racing later we had a winner. Each competitor had four 5 minute heats which ran off smoothly with less than a minute between each heat.

Racing started well with 15 laps becoming the norm until Simon Clark (Ally Pally) did a stunning 17 laps in heat 6. This immediately brought a protest that his motor be checked but it was all in order and it was just a very good drive with a well engineered lightweight car. After the third round of heats it became clear that the Ally Pally 'A' team were the cars to beat as they rolled up consistent 16 lap heats. Racing for the most part was very clean with none of the problems experienced at the Pontins event.

After the heats, both Simon Clark and Les Pipe (M.E.R.C.C.) went straight through into the final on 49 and 48 laps respectively. They were followed into the semis by M. Franklyn N. Adams and J. Chamberlain on 47 laps and a whole host of other competitors on 45.

At this point it all seemed to go wrong for the Ally Pally team. In the first semi Mervyn Franklyn suffered interference on

the main straight and could do no better than 3rd. In this race B. Maisey (Birmingham) took the lead at the start and never put a wheel wrong to win easily with only J. Chamberlain (Maidenhead) on the same lap, both well clear of the rest. In the second semi, the whole field got away cleanly only to have a massive collision on the bottom straight. N. Francis (Birmingham) emerged from this first and was never headed but the rest of the race centred on a massive struggle by Nick Adams to come up from the bottom of the field and take second place. Twice he managed it only to make mistakes and just when it looked as if he was going to make it he hit a marshall's foot which effectively ruined his chances. This was very tough luck but 5 minute sprint races allow few errors and it shouldn't take away the achievement of Kev Leatherland who



*Splendidly laid out and decorated hall.
 Concours winning Team Spectron car by John Chamberlain.*



The winners: Bill Maisey (B'ham) 3rd, Les Pipe (MERC) 1st, 3rd in Team prize, John Chamberlain (Maidenhead) 2nd., 1st Concours, 2nd Team.

Below: Glittering array of trophies.

All the photos were taken by Mrs P. Jackson and the article written by Giles Jackson.



RESULTS: Individual

- 1st L. Pipe (M.E.R.C.C.)
 - 2nd J. L. Chamberlain (Maidenhead and Team Spectron)
 - 3rd B. Maisey (Birmingham)
 - 4th K. Leatherland (M.E.R.C.C.)
 - 5th N. Francis (Birmingham)
 - 6th S. Clark (Ally Pally).
- Concours d'elegance — J. L. Chamberlain.

Team Event

- 1st Ally Pally 'A' 143 laps.
 - S. Clark (49), N. Adams (47), M. Franklyn (47).
- 2nd Team Spectron 130 laps.
 - R. Gammon (38), J. L. Chamberlain (47), D. Scotland (45).
- 3rd M.E.R.C.C. 128 laps.
 - T. Devenport (42), L. Pipe (48), D. Foster (38).

TECHNICAL DETAILS OF FINALISTS

DRIVER	CAR	MOTOR	CHASSIS	SPEED CONTROLLER	DIFF	TYRES	SILICONE
1. L. Pipe	Mardave	RS54	Fibreglass	Les Pipe 6-speed	None	Radiotyres soft	RS?
2. J. Chamberlain	Spectron	RS54	Polycarbonate	Smoothtronic	None	Radiotyres soft	Dow Corning Aquarium
3. B. Maisey	Mardave	Astro 05	Fibreglass	Les Pipe 6-speed	SCHUMACHER	Own	M.F.A. Liquid Rubber
4. K. Leatherland	Mardave	RS54	?	?	Leatherland	?	?
5. N. Francis	Scratch built	RS54	Fibreglass	Associated with micro switches	Own	Own	?
6. S. Clark	Demon	Astro 05	Fibreglass	Demon electronic	Demon	F. Delta 120A R. Radiotyres Soft	Dow Corning House

LOOKING AT THE CARS

DURING the recent meeting at Exeter, it became clear that while the standard kit car remains the mainstay of club racing, considerable development on 1/12th scale electric cars had taken place during the winter resulting in some real speed gains. Improvements can be roughly subdivided as follows:

CHASSIS — There has been a move away from relatively heavy deformable materials like aluminium towards lighter less bendable materials like fibreglass and polycarbonate. Considerable use has been made of plastics to achieve really lightweight cars. As Richard Gammon says "the lightest cars win" since they accelerate and brake better. BRECA should apply the 28oz minimum to prevent this being carried to ridiculous extremes. Very low centres of gravity are common with minimal ground clearance achieved by countersunk bolts and rivets.

MOTORS — Currently the RS54 is the most common motor in either its standard 30-wind form or in the 25-wind form often referred to as the Redspot, with seemingly little difference between the two. More important is to get a "good one" since there are large variations in the region of 10 to 15% between individual motors. Some prefer the Astro 05 and they do seem a little smoother than the RS54.

One driver had a steel clamp around his motor which should theoretically increase the amount of magnetic flux available to the armature. Slot car racers regularly put shims between the can and the magnets to achieve just this effect by reducing the air gap between the magnets and the armature. BRECA should rule on this clamp before too long for the benefit of the poor event organisers who have to rule on this sort of thing. Of course a less detectable method might be to put the motor in a vice and gently squeeze...

DIFFERENTIALS A large number are in use, the most common commercial one being made by Cecil Schumacher in Northampton. Mr. Schumacher is a project engineer with Cosworths, the full size racing engine manufacturers. Others included ones by Mr J. Leatherland in Leicester and the Ally Pally team used ones designed by Mervyn Franklin and built by Simon Clark.

TYRES — The Radio Tyre soft neoprene is currently the most popular as well as a large number of home made tyres. Oversoft tyres are not desirable causing bouncing particularly on straights which then spoils smooth cornering. Size

of stipple is also very critical. If the floor is really clean and smooth then the stipples need to be small and numerous. If the floor is dirty then they should be much larger and more hairy in consistency. Very long stipples cause instability and weaving. Some drivers change their rear hubs between each heat while others wash their tyres instead. Whatever it is essential that the tyre surface is clean at the start of each heat.

BODIES — Lightweight lexan Can-am style bodies are the most popular. Body styles unlike 1/8th don't seem to make a great deal of difference, although obviously heavy ABS saloons do not work as well as the sports cars. No, according to friends the main advantage of the Can-am is to shovel the opposition out of the way when they spin in front of you...

BALANCE OF CAR — The single most important factor. 1. The car should track dead straight with minimum toe-in. Accurate no slop steering is essential, something not necessarily present in kit cars. Some drivers go to considerable lengths to provide true Achermann steering geometry with in-line king pins and axles a la P.B. International. This requires the use of some caster to work effectively.

2. The car should have neutral handling. Super flexy chassis are not desirable for indoor running on smooth surfaces. They cause excessive front end grip leading to oversteer and weaving on the straight. This can be corrected by large amounts of toe-in but this causes understeer and excessive front wheel drag. We may see manufacturers offering indoor and outdoor chassis before too long as options.

Much argument has been devoted to the relative merits of mid and rear-engined cars. They both seem to work pretty well. Having said that it does seem desirable to concentrate the weight towards the rear of the car. You would be surprised at the number of drivers who go to the trouble of constructing a mid-engined car and then hang a huge 500 ma deac or even lumps of lead on the back! Too much weight at the front and we have that over-steer problem again. Ideally the car should drift not slide. Long wheelbase cars tend to track straighter, short wheelbase cars because of their lower polar inertia turn more easily, and spin more easily, but this latter defect can be counteracted by a more rearward c of g.

Overall then the picture is one of increasing sophistication. We should not have too much to worry about as long as we stick to the standard unopened motor rule and 5 minute races.

**THE IDEAL CHOICE FOR ANY CAR
K.O. DIGIACE V2**

Dual Neutral Throttle Stick: High Tx output with excellent Rx response for good interference rejection: 10 Kc/s frequency spacing capability: Available with plain or ball bearing servos and the new waterproof smaller Kovmi Servos: Option of KOV2 with ID Electronics Smoothtronic and 1 Servo.

STILL OUT IN FRONT



See Your Dealer for Budget Prices

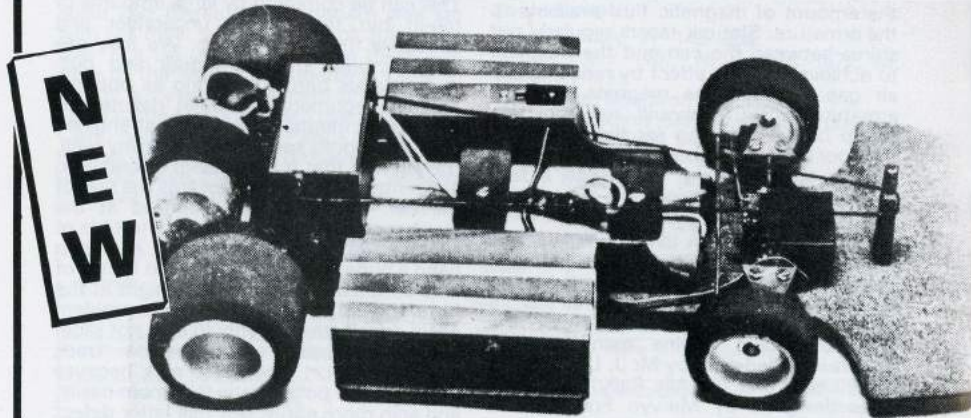
**NEW ADVANCED
CUSH DRIVE
MANTUA CAR 600
DIFFERENTIAL**

Engineered for long life and reliability. Supplied complete with mounting blocks, brake disc and caliper and special lubricant. Can be fitted to most 1/8 scale cars.

**NEW FOR THE 1/12 SCALE
ENTHUSIAST
MANTUA CAR 3000**

Specially developed for electric car racing: Moulded Chassis: Ball-bearing Rear Axle: Low Profile Tyres: Q.D. Front and Rear Wheels: Vacuum Formed Body with Mechanical Speed Controller.

£27.00 Plus VAT (Ex. Nicads)

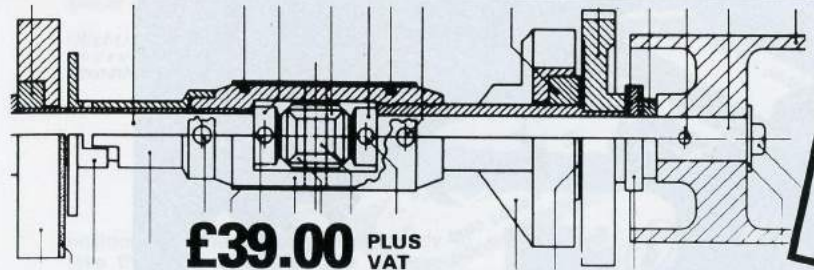


Distributed by

EUROMODELS & C.I. & R. A. THOMPSON

01-891-0342

0484-851433

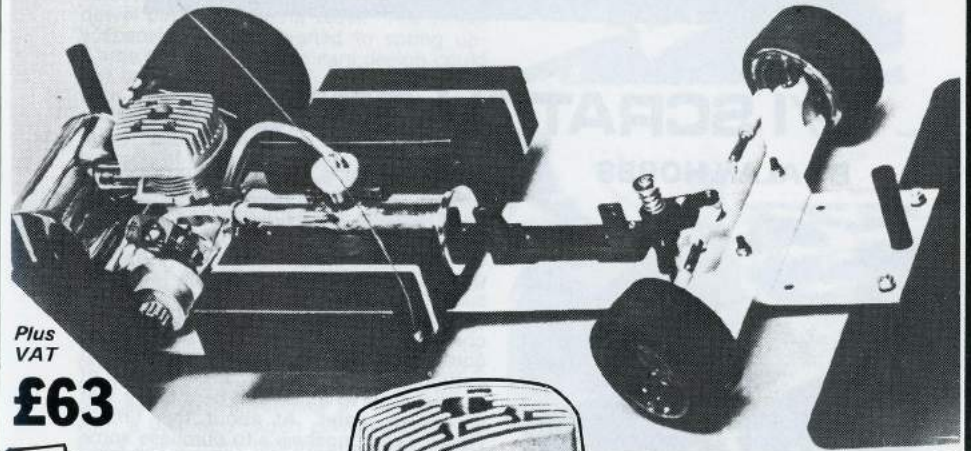


£39.00 PLUS VAT



MANTUA CAR 2000

A highly engineered 1/8 scale car for the more expert driver. Ideal for the Mantua Car 600 Differential.



Plus VAT

£63

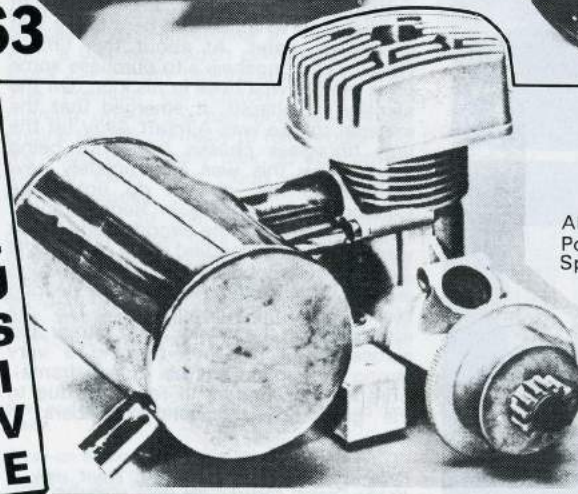


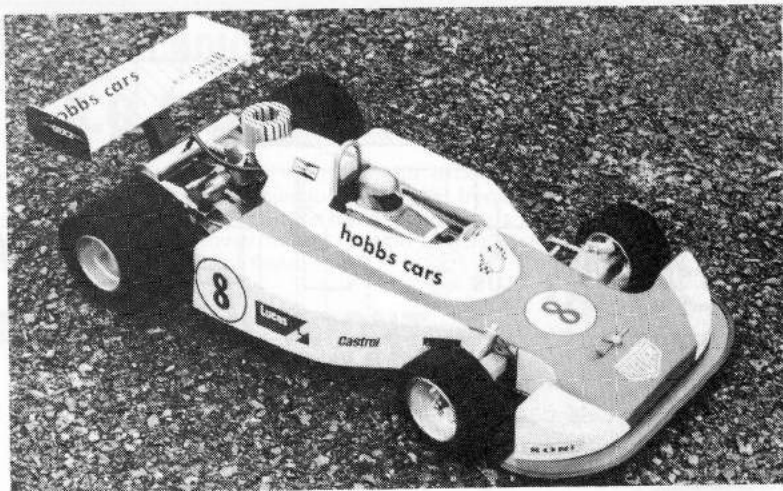
**OPS 21 CAR
SPECIAL**

ABC Piston and Liner: Schnuerle Ported: Strengthened Con-Rod: Special Crankshaft: Complete engine assembly supplied with heatsink, cylinder head, silencer, carb., clutch and flywheel.

£72.00

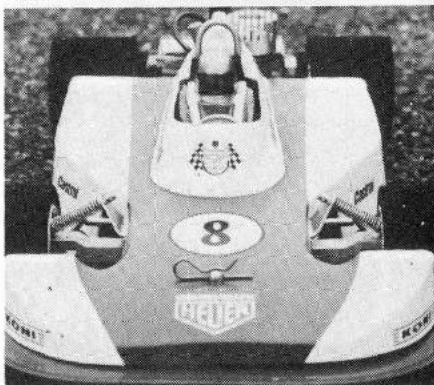
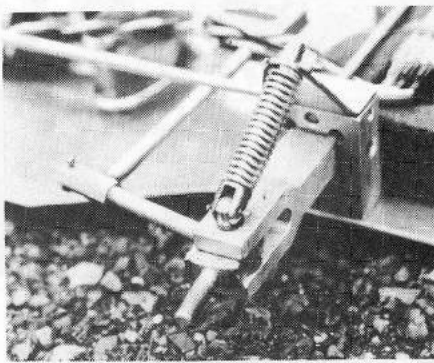
PLUS VAT





F/1 SCRATCH SPECIAL

BY ALAN HOBBS



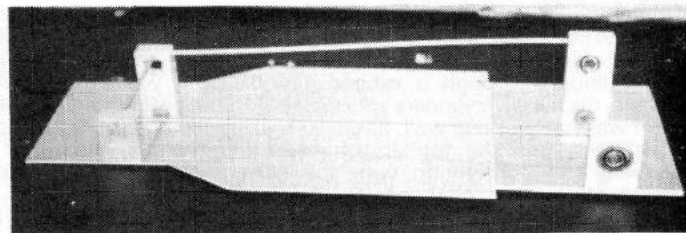
AFTER designing, making and proving out a stock car, as fully described in Issue 8 of this magazine, the natural progression was on to a Formula One car. This presented a new set of problems, to name a few, ground clearance, chassis design, suspension, braking, etc.

Now let's start at the beginning, with the chassis. A lot simpler to make when compared with the stock car, but on cutting out a suitable sized sheet of aluminium it whipped and bent like a wet ice cream wafer. At about this time I visited Ted Longshaw's to purchase some parts (and have a nose in his kits). On the mention of chassis, it emerged that the material to use was Aircraft Alloy (at the time fibreglass chassis were not being used). Now this was a completely new material to me, as we do not make Concorde's down here in Redhill, and I have no friends in the aircraft trade. I just wanted to use a standard sheet of 18 SWG Aluminium, this I used and got the design result by making the front and rear bearing blocks a little higher and running 1/8" dia rods between the blocks, front to rear and across the front, thus forming a very strong box shape chassis (space frame). Collapsing on impact (if required) due to the grub screw locking the bars in

Close-up of sprung front wheel. Front view of Hobbs Special showing the front springing.

(Left) F/1 Hobbs Special ready to go.

(Right) Detail of unusual chassis strengtheners.



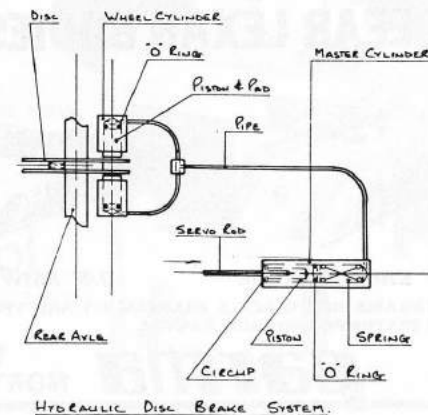
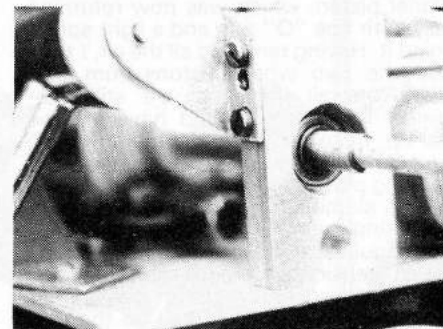
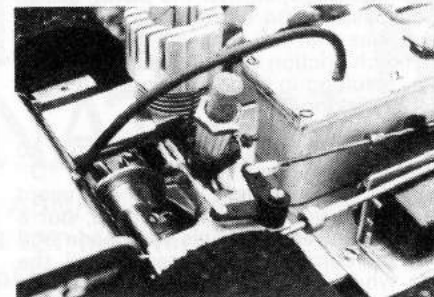
position. The bars also proved handy to take the radio wires to.

With the suspension I opted for conventional solid rear end of two bearing blocks mounted on a 1/8" thick aluminium engine plate (rear chassis). But, with the front end, I preferred the independent suspension design for realism, this was achieved with a swing arm located by a dowel pin in a bearing block. The wheel suspension is so designed to spring upwards only, as I felt the cars design could not take a fully floating front end along with a solid rear end.

The wheels are an area where the model maker, with a lathe at his disposal, can add a touch of class to his car. It takes a fair time to turn and drill a set of four wheels, but it is well worth it, as not only do they look superior, they run truer, plus you have the ease of cleaning them with solvents, i.e. using turps or white spirit, when removing old tyre glue, which is not advisable with some plastic products.

The clutch is a conventional design with an aluminium flywheel and weights, retained by an "O" ring expanding on to a cork lined P.B. housing. The difference is noticeable when running a Formula car with a ball race clutch compared with a stock car's plain bearing and belt drive. The Formula car clutch, being freer running, due to the ball races, allows the engine to pick up freely to full throttle and the weights to really pick up and power the car away in a cloud of dust and exhaust smoke.

Now, on to the brakes, all current production model cars use a mechanical braking system, which presumably works well. This I was not happy with, as full size cars use hydraulic discs. Therefore, I felt I had to follow suit, so out came the workshop manuals for a study. The first



Rear end showing heatsink head, air filter, and disc brake.

Close-up of practical fixing for silencer box.

Hydraulic disc brake system.

design made was a simple system with a master cylinder fitted with an oil reservoir above, pumping hydraulic oil into two wheel cylinders through a rubber tube. Although the wheel cylinders moved, the system was not working well, basically for two reasons, one the rubber tube was expanding and contracting with the oil pressure, this was changed to metal piping, and two, the design of the master cylinder required the piston to have two "O" rings fitted, so that the piston sealed when passing the oil reservoir hole. The result was that the two "O" rings caused too much friction in the master cylinder bore, resulting in the piston not returning freely (sticking).

So back to the drawing board, to redesign the master cylinder with one "O" ring only. This was done, but it now meant the system would not be refillable, but a complete sealed unit. This was made and filled by completely submerging all the units, wheel cylinders, master cylinder and pipework in hydraulic brake oil. I then pumped all the air out with the master cylinder piston, which was now returning freely with one "O" ring and a light spring behind it. Having removed all the air, I then fitted the two wheel pistons cum disc pads. Note all the units are still submerged. Next, remove and have a good clear up, fit to car, test with servo, yes all was now working well. The car was then run using plastic (delrin) disc pads braking on to an aluminium disc and all seemed to be working well as it was braking as and when required, but after a good trial run I noticed considerable signs of wear. The aluminium disc was getting chewed up and the pads were worn out. So the disc

material was changed to steel and the pads to tufnol, the result of which I have yet to check on. To date I have no difficulty with the hydraulics of the system, i.e. no oil leaks, loss of pressure, or bleeding has been required.

The rear air foil is another interesting assembly. Dissatisfied with the various plastic types available, as it looks a natural for aluminium sheet metal construction, but first I made some mock-up in cardboard to get the size, shape and scale correct. I opted at the time for an angled centre post design, as used on the full size Marlboro McLaren a couple of years ago. The modern design of two side plates attached to the rear bearing blocks would be easier to make and be more in line with current full size design. With the centre post angled down at the rear on to the back edge of the engine mounting plate, I found this acted as a rear end bumper overrider.

The exhaust box has been made from 1in. dia. tube and arranged across the car to get a lower line and more realistic effect, this failed, as I have yet to see a full size Formula One car with the exhaust box positioned this way. On my next car I may resort to the upright pot design for ease of fitting.

The whole area of designing Formula cars is an exciting one, there is no limit to what one can dream up, split axles, diffs, hydraulic elastic suspension, but one must avoid spending too much time and effort in one area at the start, otherwise you will finish up with four designs for one area and no car to fit them in. Plus, very important, keep it simple otherwise one crunch and you have a major rebuild on your hands.

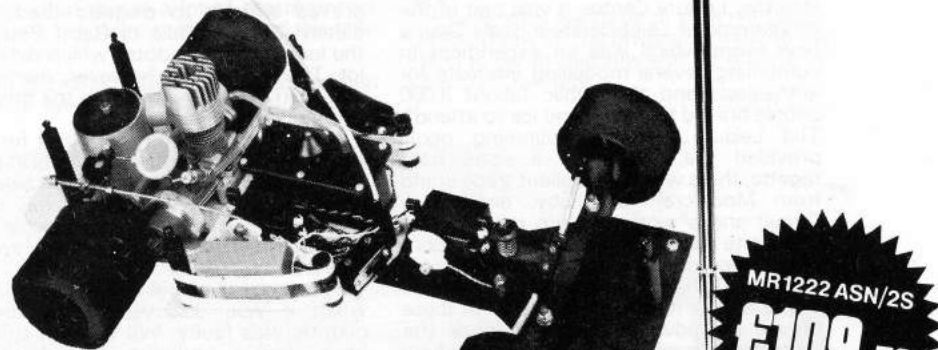
Keith Plested, Managing Director of P. B. Products, Havant, says:

"MacGregor & P. B. Products decided to combine their talents in order to develop a new two channel system for car racing.

The results were most impressive as it allowed an improved driving technique giving a distinct advantage under racing conditions."

A WINNING COMBINATION

The MacGregor MR 1222 ASN/2S special incorporating the new MR 12T high torque servo and the International from P. B. Products.



MR1222 ASN/2S
£109.50

Designed for the improved sensitivity and power necessary for controlling high performance models.

Available in all good model shops now.



MacGregor Radio Control

Canal Estate, Langley, Slough, Berkshire SL3 6EQ
Telephone: Slough 42251

STOP PRESS! To All Retailers: MacGregor are now distributors for P.B. Products



CLEAR LEXAN BODIES

parma
INTERNATIONAL INC.



1/8" KROLL CAN-AM



1/8" BMW 320i



1/8" MERCEDES 500SLC

NOW AVAILABLE IN 1/12 SCALE BRABHAM F/1 AND TYRES. COMING IN 1/12 SCALE: CAPRI - LIGIER F/1 PONTIAC SILVERBIRD AND KROLL CAN-AM.

parma

13927 PROGRESS PARKWAY
NORTH ROYALTON, OHIO 44133, USA



LEICS. SCALE DAY MEETING

THE Midland Electric Radio Car Club organised a Grand Prix for 1/12th scale electric cars on Sunday 18th February at Hinckley Leisure Centre. It was part of the programme of Leicestershire Scale Day, a new event which was an experiment in combining several modelling interests for enthusiasts and the public (about 3,000 people braved the snow and ice to attend). The Leisure Centre's swimming pools provided the venue for a scale boat regatta, there was an excellent trade stand from Modelcraft of Blaby, an Aurora Circuit and a works Allegro rally car.

Despite the appalling weather conditions electric car enthusiasts came from all parts of the country. We originally had 97 pre-entries for the event and 77 of these braved the adverse road conditions (far more than we expected). This proved how keen these drivers are and we were very grateful for their support.

We were fortunate in having some sponsorship for the event . . . Gloy (glues and paints) provided tee-shirts, armbands and some welcome cash to help us finance the event. Roger Wilding of Modelcraft (Blaby) also was one of the organizers of the Scale Day and gave support whenever it was needed.

The Leisure Centre provided an ideal venue for the day. We had the use of the main hall, which enabled us to lay out an interesting circuit and provided ample spectating facilities, with grand stands around the circuit. One of the club members made a hump back bridge and a Dunlop style bridge which added a slightly different aspect to the track. The floor of the hall presented us with a problem as it

was already covered in markings from the volley ball and badminton courts, etc., we covered these with masking tape but it proved difficult to disguise them completely. Many thanks to Geoff Peters for the loan of his 'bot dots', which did help a lot. The drivers did, however, manage to pick *our* markings and ignore the others — eventually!

It was intended to run 4 heats for each driver. We had arranged the heats in a way that the drivers would race with a selection of other drivers. We thought this would give everyone a fair chance, rather than staying in the same heat all day. However, this was not to be . . .

The first set of heats were in progress when it was discovered that the lap counter was faulty. We thought this had been rectified until the same thing happened again in the second set of heats. This meant that there were unavoidable hold-ups and eventually it was decided amongst the organisers and drivers that these two sets of heats would be regarded as practice and to start the qualifying heats again.

Two further sets of heats were run and these scores were totalled to find the semi-finalists. The two top qualifiers of the day went straight into the final and the next 12 drivers went into two semi-finals. The two semi-finals were run off with the four fastest drivers going through to the final.

The final got underway with Phil Davies getting into an early lead. He maintained this position for most of the race but was finally 'pipped at the post' by Tony Devenport, who had made his way through the field to get into a challenging

position. The final results were:—

1. Tony Devenport (M.E.R.C.C.)
2. Phil Davies (M.E.R.C.C.)
3. Simon Clark (Ally Pally)
4. Ken Wright (Sheffield)
5. Alan Blakeman (M.E.R.C.C.)
6. Bill Maisey (M.E.R.C.C.)

The team prize was won by Team Spectron which consisted of Richard Gammon, Derek Scotland and Richard Chamberlain. The second team award went to Barwell 'A' Team and Team Unitrol was third.

A special mention must be made of the Concours d'Elegance award. This was won by Steve Brown who represented Maidenhead Models, second Concours award went to Team Wormall and third concours award went to Robert Kimminau.

There was also a Fastest Time of the Day award which went to Tony Devenport.

We were very fortunate in having Mr Keith Duckworth of Cosworth Engines to come to present the trophies. We appreciate that he has a lot of commitments and were delighted that he found the time to join us.

Our last note of thanks must go to Colin Spinner who had the mammoth task of



Keith Duckworth of Cosworth Engines presents winner Tony Devenport (Sec. BRECA) with his trophy.

Left: All the winners with their cars.
Below: View of the rostrum and the Gloy Bridge.

providing a commentary throughout the day.

Finally, may we through your magazine, Dickie, thank all the drivers for making the effort to get to Hinckley and for putting up with our 'mishaps'.

M.E.R.C.C.



ASSOCIATED RC12E 1/12 SCALE ELECTRIC



**OUR BRAND NEW
RC12E LOOKS LIKE A WINNER.**

IT SHOULD.

**WESTERN REGIONAL CHAMPIONSHIPS
THORP RACEWAY, ROAR SANCTIONED
134 ENTRIES**

Modified Class	Car	Motor
1 Gene Husting	RC12E	Reedy
2 Curtis Husting	RC12E	Reedy
3 Bill Jianas	RC12E	Reedy
4 Mike Rowland	RC12E	Reedy
5 Chuck August		
6 Bill Steele	RC12E	Reedy
7 Frank Killam		
8 Matt Azzara	RC12E	Reedy

Reedy Motors available from Associated



1 GENE HUSTING
TOP QUALIFIER



2 CURTIS HUSTING

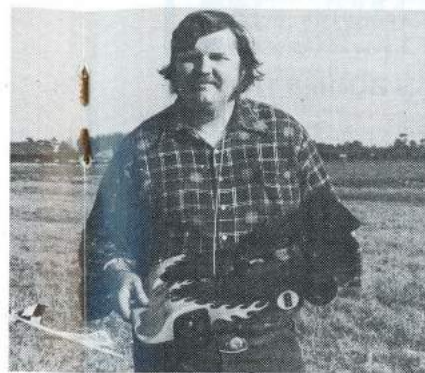


3 BILL JIANAS

ASSOCIATED NEW 1/8 RC300 1979 WINTERNATIONALS — 139 ENTRIES

FEB. 9, 10 & 11 ORLANDO, FLORIDA, USA —

ROAR SANCTIONED



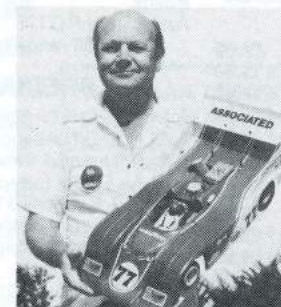
1 RICK DAVIS



2 MIKE ROWLAND

Totally **ALL NEW** RC300
is Breaking Track Records
Everywhere it's Raced

Can-Am Class	Car	Country
1 Rick Davis	RC300	USA
2 Mike Rowland	RC300	USA
3 Gene Husting	RC300	USA
4 Phil Greeno	Greeno-PB	England
5 Bill Jianas	RC300	USA
6 Roger Curtis	RC300	USA
7 Arturo Carbonell	Delta	USA
8 Phil Booth	PB	England
9 Keith Plested	PB	England
10 Jack Jacobs	RC300	USA



3 GENE HUSTING



5 BILL JIANAS
TOP QUALIFIER



6 ROGER CURTIS



10 JACK JACOBS

ASSOCIATED, 1928 East Edinger, Santa Ana, CA.92705, USA

Available from: **IRVINE ENGINES**



JIM DAVIS MODELS

145 NEWGATE LANE, MANSFIELD. NOTTS.
TEL. MANS. 36062



****STOP PRESS****

AMERICAN WINTER MATS 1979
Associated do it again, 1, 2, 3 in 'A' Main Final.
Highest placed British competitor in 'B' Main Final W. Bailey, 4th, driving Associated RC200 fitted with AMPS; differential

R/C CAR KITS

P.B. International	£75.00
P.B. Expert	£61.38
S.G. Futura	£72.00
Associated RC200	£119.95
Mardave	£23.75

100% P.B. and Associated spares and accessories stocked

1/8 SCALE ASSOCIATED LEXAN BODIES

Lotus 79	£8.50
Porsche 917/30KL	£13.50
Elfin Can-AM	£13.50
Porsche 935 Turbo	£13.50
Ligier Maserati	£13.50

1/8 ASSOCIATED TYRES

2402 Ex stock	£3.95
2401 Ex stock	£3.95
835 Ex stock	£3.20
832 Ex stock	£4.09

DELTA TYRES AND ACCESSORIES

Delta 340A	£3.95
Delta 340B	£3.95
Delta Aerials	£2.25
Delta Fuel Filters	£1.50
Delta Servo Savers	£4.55
Delta Servo Arms	£1.25
Delta Linkage Kits	£2.25

NEW Ballraced Servo Tops for Futaba 17M £4.50 each. **NEW** first of a new line of tyres to be manufactured and marketed by J.D.M., code named 201, superb wet weather tyre similar to UFRA in performance. Associated flip-tops and tank kits available again. Full range of radios plus many more items too numerous to list, please ring or call. Only 7 miles from M1 junctions 27, 28 or 29

BARCLAYCARD, ACCESS OR HOBBYCARD — 24 HOUR MAIL ORDER SERVICE

Hours 9.30 — 6 pm. Except Wed. closed all day

JIM DAVIS R/C RACING

R/C CAR ENGINES

Veco 19	£25.95	K & B 21	£39.50
Veco 21	£28.95	O.P.S.21	£48.75
S.T. X21	£44.87	Irvine 20 Car	£39.50

PARMA LEXAN BODIES 1/8

Cheetah Sports	£13.50
Shadow Can-AM	£13.50
Lola T333 Can-AM	£13.50
Schee Can-AM	£13.50
B.M.W. 3.5 CSL	£13.50
Shafer Camero	£13.50
Toyota Silhouette	£13.50

1/12 SCALE ELECTRICS

Mardave	£37.50
Lectricar	£44.50
Bolink	£49.95
Associated RC 12E	£59.95

Full range of 1/12 spares, etc.

SPECIALIST ITEMS

A.M.P.S. Diff for P.B.	£49.95
A.M.P.S. Diff Associated	£49.95
P.B. Differential (new)	£34.00
P.B. Air Filters (new)	£2.75
P.B. G.R.P. Chassis (new)	£8.00
McCoy Special 60 thou. rpm bearing	£10.50
AMPS Wheels Adaptors for P.B. to fit Thorpe or Serpent Wheels	£9.50
A.M.P.S. Heavy Duty Servo Arms (pair)	£1.05
Lexan Paint Aerosols	£2.85
Lexan Paint in Bottles	£1.10
Thorp Wheels (pair)	£2.20
P.B. Ballraced Disc Caliper	£3.58
Ballraced Servo Tops for 17m	£4.50
J.D.M. Super Soft 1/12 Rear Tyres (pair)	£1.75

Red Baron Models Ltd.

1-8 SCALE R/C CARS

P.B. International	£75.00
P.B. Expert Comp	£61.38
Mardave, all types	£23.75
Mantua 1000	£45.36
S.G. Futura III	£69.00
S.G. Comp	£33.00
S.G. Expert	£66.00
Delta Super J	£75.00

ENGINES

K & B latest	£56.00
Veco 19 Car	£25.95
Veco 21 Car	£28.95
Irvine Car	£35.95
S/T X21	£48.00
OPS (No carb)	£38.95
S/T X21 Rear Exhaust approx.	£52.00

SPECIAL ITEMS

Roll Bar	£1.50
Ally. Front post	£1.05
Ally Rear post	£1.35
Ally. International Rear bearing blocks	£5.00
AMPS Int. Diff	£49.95
AMPS S.G. Diff	£49.95
GRP Int. Chassis	£8.00
GRP S.G. Chassis	£8.00
Lexan Paint	£1.10
Lexan Glue	£1.05
Trans. sheets	£1.35

1-12 SCALE R/C CARS

Mardave	£37.50
Graupner	£43.00
Super Sports	£39.75
Bo-Link 144	£58.50
Ass. 3010	£59.95
Ass. 3000	£28.95
Spectron	£76.68
Tamiya Porsche	£37.00
Tamiya 936	£39.50
Tamiya Countach	£44.00
Tamiya Tyrrell	£39.00
Elect. Beach Buggy	£41.75

MAIL ORDER
PHONE YOUR CREDIT CARD No. FOR SAME DAY SERVICE
ACCESS BARCLAYCARD C.O.D.

NEW 2-FUNCTION RADIO
For 1/12 Cars, etc.
£50.00

NEW:
Tamiya Celica Turbo 30 m.p.h. car approx. **£49.00**
Micro Mold Car approx. **£42.30**

FULL RANGE OF SPARES
WHEELS TYRES RADIOS BODYSHELLS, Etc.

TRIFLON OIL
Increase of 10% Power on i.c. motors.
A gain of 15% on Electric Motors **60p**

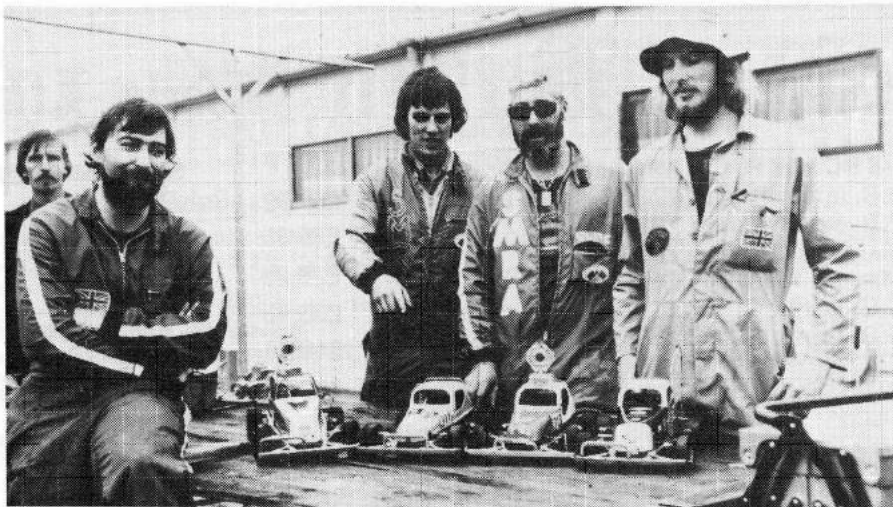
NEW
1/12 Differential Bo-Link **£6.48**
Mardave **£6.48**

Thorp Filter	£3.95
P.B. Filter	£2.74
Graupner Filter	£3.25
Ass. Filter	£2.70
Mardave Filter	80p
Starter rubber	55p
Sullivan Starter	£27.75
Fuel Bulb	£3.90
Flip Tops	£3.65
Flip Top Tank	£13.65

L & M Speed Controllers
The Best Yet
Forward, Reverse and Dynamic Brakes
£29.00

497 HERTFORD ROAD, ENFIELD, MIDDLESEX

Late night Fri. 7 pm. Easy parking
Tel. 01-804 7452



DUTCH STOX CHAMPS

ON LEAVING the Pontins Model Makers Festival, on Friday afternoon, 4 of our members, Brian Williams, Paul Dudley, Clive Walker along with Andy Briggs, who was picked up from his home on our way to Harwich to catch the morning ferry; we drove through the night under very bad foggy conditions. This weather continued right across the channel, and right into Holland, this made us arrive very late on Saturday night at Mr. Alders house, he made us very welcome and found us a place to eat; he was also good enough to allow us to use his workshop at the race track to sleep in that night.

Sunday morning saw all four of us practising and setting up the engines we had fitted on leaving Pontins (we normally use Super Tigre X21s but the Dutch rules do not allow Schnuerle type engines) we had installed modified Veco's and Enya's.

Racing started promptly at 11.00 a.m. There were a total of 69 drivers entered, there would have been more but they were unable to get there, due to such foggy conditions.

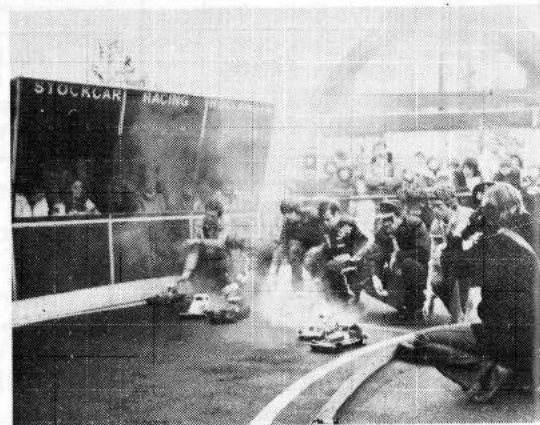
Each driver had two four minute heats in which to qualify for the finals. The highest 27 drivers getting to the finals, Brian Williams was the first English driver to compete, and finished 1st in that heat on 28 laps. Clive Walker, Paul Dudley and Andy Briggs all went on to win their 1st heats, on the second round of heats Brian Williams and Andy Briggs once again won their heats. Unfortunately Paul Dudley and

Studley Club members Paul Dudley, Brian Williams, Clive Walker and Andy Briggs, also wrote the article.

Below: Start of the final.

Clive Walker could not repeat their performance, thus eliminating them from the finals.

Brian Williams and Andy Briggs were both drawn in heat three of the finals along with T. Hooymans, Tv.d. Wildenberg, T.v. Altena and T. Milder. Unfortunately both were plagued with engine problems, Andy Briggs was unable to start his engine until well after the race had started, and did very well to pull back as many laps as he did. Brian Williams who



was using a HB20 with Super-Tigre carb and P.B. racing head, had continual engine cuts which completely ruined any chances of an English driver getting through to the top.

The ¼ and ½ finals saw some extremely fast and skillful driving from the Dutch competitors, battling it out for places in the grand final.

After a short pause the drivers for the grand final were announced and they all lined up on the grid. The line up was as follows:

E. Alders
T. Knijnenburg
A. V. Sliedrecht.
P. Manns
T. Hooymans
C. Kok

The start horn went and all 6 cars tore off the line for a very fast 35 lap final. E. Alders held the lead for the complete race with superb driving and crossed the line to take 1st place with almost ¾ of a lap to spare between the next car.

Results were as follows:

1st Ernest Alders
2nd Ton Knijnenburg
3rd Aart V. Sliedrecht.

An extra prize for the highest scoring foreign driver went to Andy Briggs.

For three of us it was our second visit to the Dutch circuit and we would like to express our thanks to Mr. Alders and Mr. Bekking for making us very welcome indeed.

TYRES 2

from
page 14

Racing tyres vary widely from the requirements of normal car tyres in the wet. The low profile racers have to shift much more water than the thinner (relatively) car tyres, and are only in contact with the ground for the merest fraction of time. So the problems are compounded. Water builds up in front of the tyre and acts as a wedge lifting it off the floor and bringing about aquaplaning. Real racing tyres can be made to stay on the ground by using a higher inflation pressure, but R/C modellers cannot inflate their tyres and so have to fall back more heavily on their tread design. There are two choices; we can either channel the water or sweep it aside. Racing tyres are so wide that there is no possibility of sweeping, the water has to be channelled through the contact patch area.

It is fair to say that the first one third of the contact patch must make an incisive contact through the water to allow the

PLANS PLANS PLANS

of a 1/8" scale Stock Car (Formula One available soon) as featured in Issue 8 of this magazine. These are fully dimensioned engineering drawings for the metal working model maker.

For 10 sheets of drawing with stock list fully detailing almost 100 parts send £5 (post included) to:—

HOBBS MODEL CARS

27 HOLCON COURT
REDHILL, SURREY
Tel. 62190

We acknowledge with thanks the two pictures lent us by our Dutch contemporary "hobby bulletin."

second third to clear the last of the water away before the last third actually does the gripping.

Generous frooving with ample longitudinal drainage is essential, and wide transverse grooving widely angled present the best design. Essentially the design is simple for racing tyres have to grip and work and not sell themselves to a public attracted by pretty tread patterns.

The absence of a recognisable tread of the checkboard nature is deliberate in wet weather tyres; sine wave or herring bone patterns are acceptable, but the more complex the less successful it is likely to be.

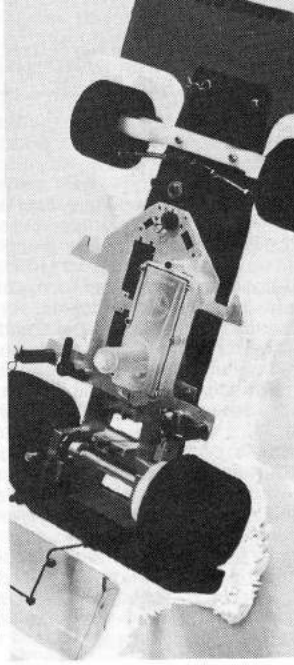
The point is probably academic but a tread pattern for muddy or slushy conditions would consist of isolated tread blocks angled at greater than twenty degrees for self cleansing purposes.

A wet grip rubber of course, must be a high hysteresis compound. If the coefficient of friction falls below 0.5 from a normal of about 0.9 then the conditions are dangerous for slick tyres.

Graber models

15 ABBEY ROAD,
TORQUAY, DEVON.
TEL: 0803 211656

38



THE SG FUTURA III latest R/C car kit from Franco Sabattini. Complete with separate chassis and power pod, ball-raced front hubs and rear axle, clutch, disc brake, nylon fuel tank with built-in sump and spring loaded cap, servo saver adj. Track rods — left and right threads, alloy radio plate, linkages, front and rear bumpers, ABS body £69 post free U.K. Front hub 50p; front hub bearing £1.25; rear hub 85p; rear axle bearing £2.85; clutch shoes (pair) £2.55; clutch spring 30p; engine mounts (pair) £1.30; adjustable track rod £2; nylon fuel tank £4.45; brass fuel tank £8.45; decals (general pack) 95p; fibreglass chassis £8.50; alloy front beam £10.20.

AMPS ACCESSORIES: Differential for P.B. £53.95; for S.G. and Serpent £49.95; diff. oil (light, medium or heavy) 65p; GRP chassis blanks — waist and drill yourself £5.36; alum. bearing blocks for P.B. £3.45 pair; adj. wing clamp £2.88 pair; 11, 12 and 13 teeth clutch bells £5.36; — fits P.B. with Serpent hardened steel clutch nut £1.95; engine main bearing high rpm £6.80; alloy wheel adaptors P.B./Serpent £10.36; heavy duty servo arms (Futaba) 86p pair; triple clutch bearing pack £6.45; ball-raced brake caliper for P.B. £5.55; diff. axle bearing £5.31; bearing circlip 46p pair. **GREENO GOODIES:** GRP chassis £8.50; roll bar £2.75; alum. front body post £1.50; metal flip top tank £13.50; comp. racing brake with Ferodo disc £14.95; machined dural front axle beam £12.95; brake adjuster fits P.B. £3.95. **DELTA BITS:** servo beam moulding £3.66; fuel tank £8.51; set of alloy radio posts and fixing bolts £3.10; hardened steel clutch nut £1.95; heavy duty rubber bands 55p; in-line fuel filter £1.30; air filter £1.25; filter elements (4) 45p.

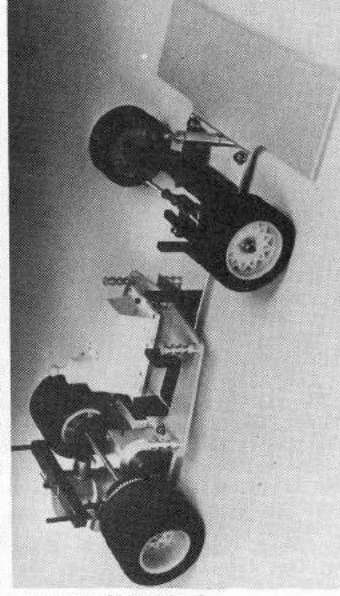
THE AMPS — SERPENT MK III competition R/C car kit features separate chassis and power pod, disc brake, quick change system for gears and hubs, fuel tank (nylon) muffler, complete radio mounting equipment inc. alloy posts, ball-raced clutch, servo saver, adjustable track rods with ball joints, 7mm HSS rear axle, rear ball-races, front and rear bumpers. Kit price £79.95 post free U.K. Spares — rear axle £4.26; silencer £6.75; front beam moulding £3.66; fuel tank £8.51; set of alloy radio posts and fixing bolts £3.10; hardened steel clutch nut £1.95; four (yes four) bearing pack for clutch £8.60.

Mail order (U.K.): Kits post free. Parts 40p min decals 10p.

Exports a pleasure — please write for quote.

List available — send 25p stamps or 5 IRC's (overseas).

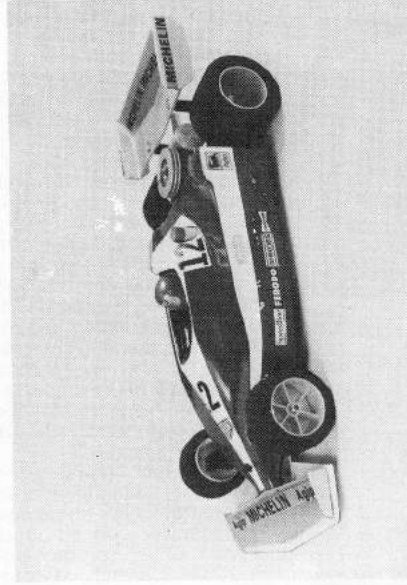
Mail and telephone orders accepted on Access, Barclaycard, Visa, etc.



RADIO CONTROL

NEW KITS ADDRESS TELEPHONE No.

MARDAVE



FERARRI 312 T3 KIT TURBO CAPRI KIT

These new kits include a two part dural chassis with strong rear pod, nylon rear axle bearing blocks, 'shaker plate' radio layout, nylon front axle beam, fully assembled flywheel/clutch unit, 3/4" diam. H.T. steel rear axle, brake unit, fuel tank, engine mounts, overdrive bellcrank for steering servo protection, nylon wheels with integral moulded gears, foam rubber tyres, tough ABS body-shell, etc.

HEAT SINK New 2" diam., press fit to Veco

AIR FILTER for Veco carb

£1.70

80p

STOCK CAR KIT

This 1/8th scale model closely follows full size F.1. Stock Car design and the high ground clearance, narrow tyres and all round suspension enable the model to run and race on grass and other relatively rough surfaces.

The kits feature a super strong welded steel tube chassis, A.B.S. radio box for maximum radio protection, coil spring front and trailing arm rear suspension, and a strong A.B.S. body shell. Transmission is by toothed belt and the kit includes all major items required with the exception of engine silencer and heat sink. Clutch adaptors are threaded 1/4" UNF as standard; a 6mm alternative is available.

SILENCER, Stock Car

Racing Car

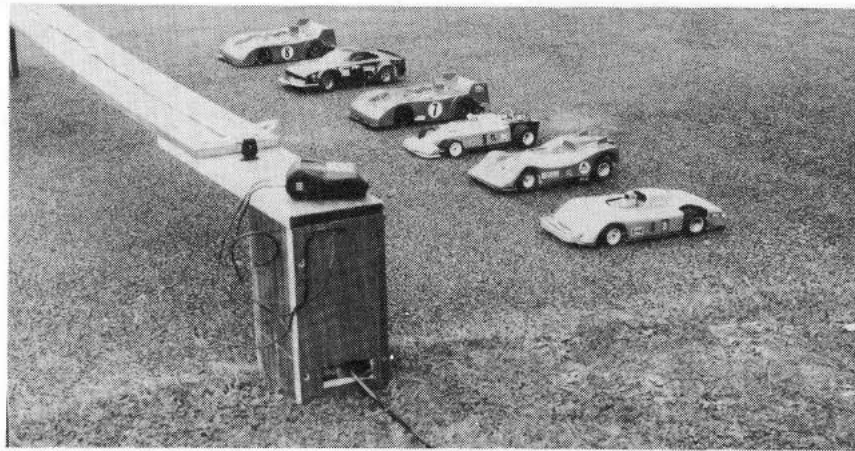
£2.35

£2.35

MARDAVE R/C RACING, 7 HEANOR ST., SANVEY GATE, LEICESTER. Tel. 0533 24701

MODEL CARS

39

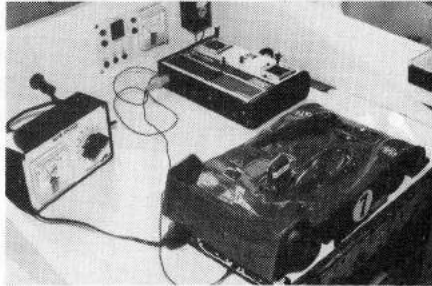


D

STAYING AT HOME - IN THE CLUB

NICHOLAS HARE DESCRIBES HIS GARDEN CIRCUIT

TOO often Hobby Magazines push the merits of Club involvement down ones throat, and it can be that the distances of travel involved, plus the availability of limited time, add up to the non participation of many people in such activities, meritorious though they may be.



B

C

Many people thus stricken find themselves with a type of inferiority modeller's complex, wanting to build and take part oneself, but frightened of finding every available flying field booked by foreign clubs, or having to perform in front of a long queue of experts, if allowed to be 'slotted in', until that was the arrival of 1/12th electric car racing.

Suddenly the arch enemy 'Noise', is no longer a factor, and given a local car park or even a driveway at home of reasonable length, a family can form themselves into a most enjoyable 'private' club of their own, in which there are no rules or restrictions, no membership fees, no travelling, and no waiting.

Thus it has been with me, and my two sons Stephen and Paul, and the enclosed photos will I hope show what can be done with a little time and imagination.

The first thing we decided to do was to divide the car building department in our garden shed away from the recharging department, and for the purposes of recharging we made a special bench split up into three bays, so that there could be no arguing as to who went where! (photo A and B).

Each bay is equipped with a beac charger for transmitter and receiver batteries, and a high amperage twelve volt charging facility working through an Astro clockwork timer, for recharging the car main power batteries. (Photo B).

Each bay is wired with two Unipart

cigarette lighter sockets, connected in parallel via the necessary fuses and heavy duty cable to a twelve volt car battery underneath the bench. This in turn is replenished by its own battery charger, which trickle charges it at night times.

A special series of wiring adaptors has been made up so that the charging sockets on almost any commercially available car can be plugged in to a socket at any of the three bays.

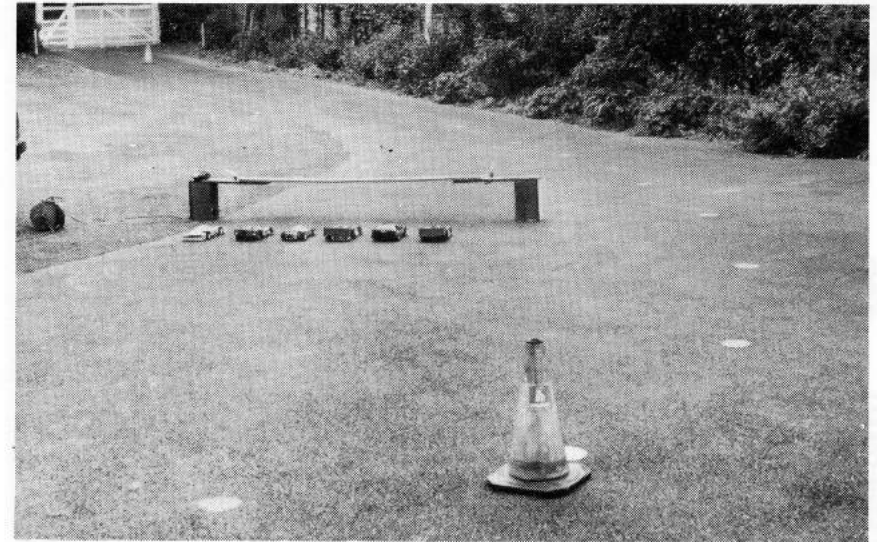
Photo C shows a close up of one of the bays in which a BoLink car is plugged in together with both the transmitter and receiver batteries. On the back wall of the 'Pit' can be seen an emergency charging panel to allow a high speed boost for 'Deacs', in such a case where a transmitter has inadvertently been left switched on.

In Photo D, a line up can be seen waiting for the start beside the electronic eye bridge, which utilising a Tandy electronic eye coupled to a Heathkit Electronic stopwatch, gives lap times to within a one hundredth of a second, and greatly enhances the enjoyment of individual competition.

Photo E shows an overall picture of the circuit, which entails driving down one side and up the other side of our driveway. This calls for extremely accurate driving at high speeds, as the combined aggregate speed must be close to 70 mph when two cars pass one another.

Shortly we plan to extend a pathway right around the lawn, giving ourselves an

E

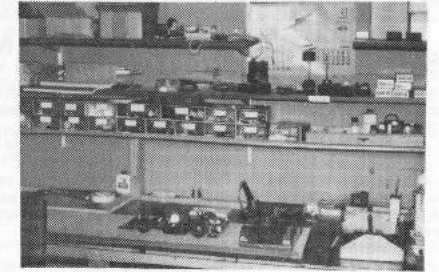


MODEL CARS



F

A



oval circuit with one or two banked corners, and at that time the electronic eye mechanism will be connected under the ground, to eliminate the need for the bridge.

The last photo shows the three of us together, from left to right, Stephen, myself and Paul. I am glad they weren't two daughters!



RADIO CONTROL



MODEL CRAFT
CROSS ST. BLABY
LEICESTERSHIRE
ENGLAND

Tel. No. 0533-771397

NEW FROM LECTRICAR

A really well engineered 1/12 Racer. Look at the Features:

- Ballraced Rear Axle.
- Aluminium Engine Mounts.
- Bushed Front Wheels.
- Changeable Gear Ratios.
- Adjustable Chassis Flex.
- Mid or Rear Engine Location.
- Speed Control with Reverse.

Kit is complete with Nicads, charging leads, Motor, etc. and superlative illustrated assembly instructions. Even the Box is designed to transport and service the finished model. Undoubtedly the car for 1979. KIT **£46.94**. POST FREE. Choice of Bodies — B.M.W. Saloon, Porsche 917/30K GT, McLaren F1. BUY THE BEST — BUY BRITISH. Backed by the usual Modelcraft full range of spares.

FIBREGLASS CHASSIS FOR MARDAVE £1.70 p&p 15p

MARDAVE 1/12 ELECTRIC CAR PARTS

Chassis plate, drilled alloy	95p
Front axle beam moulding with steering arms	70p
Kling pin	6p
Bellcrank	20p
Bellcrank attachment nut	6p
Front stub axle with nut	12p
Track rod, complete with over-ride stud, springs and collars	70p
Rear axle bearing blocks (pack of 2 with 4 screws)	70p
Side trays (pack of 2)	70p
Front wheel	25p
Rear wheel with 2 grub screws	55p
Front tyre	35p

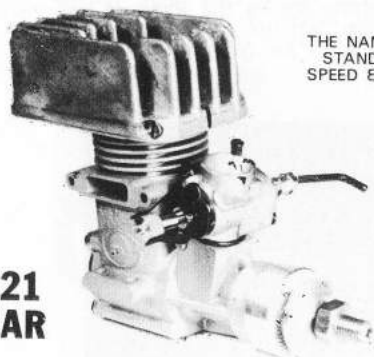
Rear tyre	70p
Rear axle	15p
Drive gear (Hardened steel gear with 2 grub screws)	75p
Speed controller (complete with resistors, wiper arm, etc.)	£2.75
Aerial/switch plate, black nylon	30p
Throttle servo/speed controller mounting plate, black nylon	30p
Front bumper plate	35p
Charging leads	£2.95
Collars, for linkage wires, with grub screw	15p
Keys, for grub screws, 1.5 or 2mm	7p
Screws, any size	3p
Nuts, any size, except nylon	1p

1/12 A.B.S. BODIES

BRABHAM F1	£1.45
LIGIERS F1	£1.45
JPS F1	£1.45
RENAULT F1	£1.45
SHADOW G.T.	£1.95
PORSCHE SALOON	£1.95
B.M.W. SALOON	£1.95
V.W. SALOON	£1.95
TYRELL SIX WHEEL	£3.95

P&P ON BODIES 35p

POSTAGE: Parts 50p. Decals 10p. Kits FREE



THE NAME THAT STANDS FOR SPEED & POWER

SUPER Tigre

Since its arrival last year the Super Tigre X21 has been the pacesetter for other manufacturers to follow. A rugged construction able to cope with the arduous conditions of competitive car racing. Just compare the specification with the opposition. An ABC piston assembly with light-weight piston, bronze bushed big end conrod, heavy duty 12mm dia. crankshaft running in double ball bearings, specially diecast crankcase not a conversion from aircraft motor, large bore carburettor with the superb idling of all MAG series carburettors, deep finned heat sink, squish band head. BHP .75 at 25,000 rpm, weight 9 1/4 oz. Used by most of Europe's leading drivers.

Race-proven to be one of the most reliable motors produced so far. It's the motor that finishes that counts. The long life of all Super Tigres together with easy availability of any spare part for that eventual day when its run "over the hill" makes this motor the popular choice. No Labour Charges on ST repairs: you only pay for parts and postage.

Rear Exhaust SuperTigre X21RE expected early in April.

X21
CAR

£48.53 (inc VAT)

complete with heat sink

SUPER TIGRE MOTORS ARE AVAILABLE FROM THE VERY BEST MODEL SHOPS

WORLD ENGINES LIMITED

97 Tudor Avenue, Watford, Herts. Phone Watford 42859

Visitors by Appointment

S.A.E. with enquiries please



Weston-Super-Mare
26265 (P.M.)

9 THORNBURY ROAD,
UPHILL,
WESTON-SUPER-MARE,
BS23 4YE.



Ring Through Your Access or Barclaycard Number for Fast Mail Order Service on all R/C Car Requirements

FULL RANGE OF P.B. KITS AND ACCESSORIES IN STOCK

THE NEW PB8 & PB9 SHOULD BE IN BY NOW! Now you can drive a PB works car as won with last season! Place your order early to avoid disappointment.

PB8 £89.50 — PB9 £119.50 — International Kit **£75** — Expert Comp. **£61** — Expert Std **£45** — Mardave 1/8th **£23.75** — Mardave 1/12th Electric **£37.50** — New S.G. Futura III Kit inc. body **£69** — S.G. Diff. inc. Ferodo Disc brake and hubs **£62** — Super Tigre X21 RE Air filter 65 carp. heatsink **£51.44** plus manifold, silicon tube and S.G. silencer **£60.68** — Full range of Raydio and P.B. Tyres — K & B, ST, OPS and Veco Engines.

GB MODELS Special! Precision accessories: Ally. axle blocks for PB Intl. Pair **£7.50**. Ally Front body post **£1.50**. Ally rear body/wing posts 1/8th hole for wires, collar, etc. Pair **£5.00**. Rollbar **£2.50**. Brake disc carrier, hex. centre fit hub **£1.90**. Silicon Compound for electrics 100gm tube **£4.45**. More to come.

Boring Service. Want to fit a big carb to your K&B? We can machine inlet for **£5.50** (inc. p & p). Send front housing and carb. 2/3 days service.

WE ARE DISTRIBUTORS FOR P.B. PRODUCTS AND RAYDIO TYRES — TRADE ENQUIRIES WELCOME

MICRO-MOLD FOR ALL THAT IS BEST IN R/C MODELLING

R/C ELECTRIC CARS

1/12th Scale



THE RACE WINNING COMBINATION

A top quality competitive car kit fast enough to get to the front and strong enough to stay there.

Complete Bo-Link kits include one-part moulded chassis with tough protective under-tray. Bo-Link 05 motor with 6 cell nicad pack and wiper type speed controller.

Hubs and tyres fitted and trued. Tough, light, clear lexan body to withstand racing knocks.

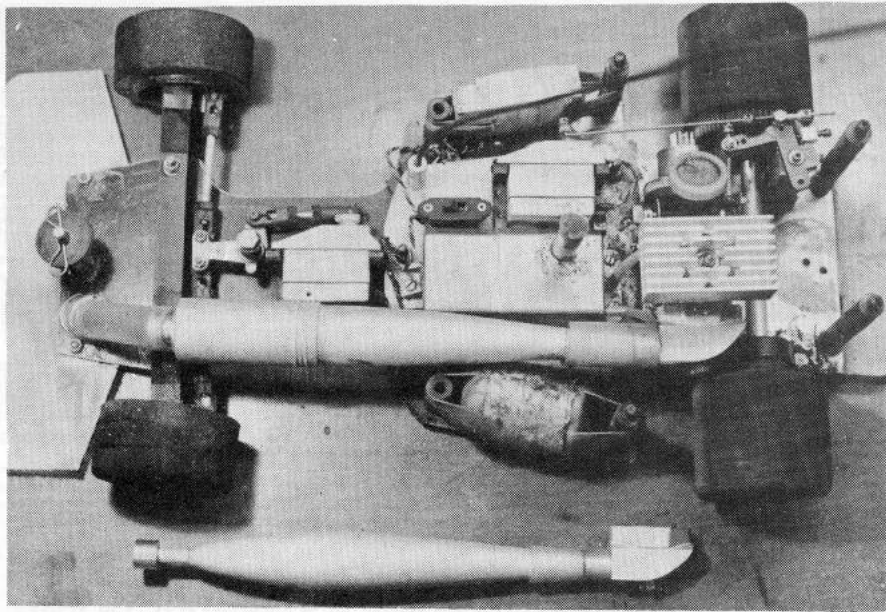
Full spares service available.

Porsch 935 Turbo



MICRO-MOLD Products are available from all leading R/C hobby dealers

MICRO-MOLD
Station Road · East Preston · West Sussex · BN16 3AG



PIPE DREAMS

LAST spring when the first signs of an outbreak of differentials was apparent, jointly from AMPS and the work Phil Booth was doing trying out Thorp and PB prototypes another line of approach was reluctantly put to one side in favour of this more promising angle. Phil Booth had been working with Kevin Lindsey, designer of E. D. Powerpipes to see what benefits their installation might make to r/c racing cars. As motorcycle buffs will know the tuned pipe came out of East Germany soon after the end of the war and has since been adopted in various forms for racing and other motorcycles. It was also an inspiration to Wisniewski of K & B engines fame to develop for model aircraft use. Some fifteen years have been spent using and improving tuned pipes in r/c planes and they are now the very much accepted thing.

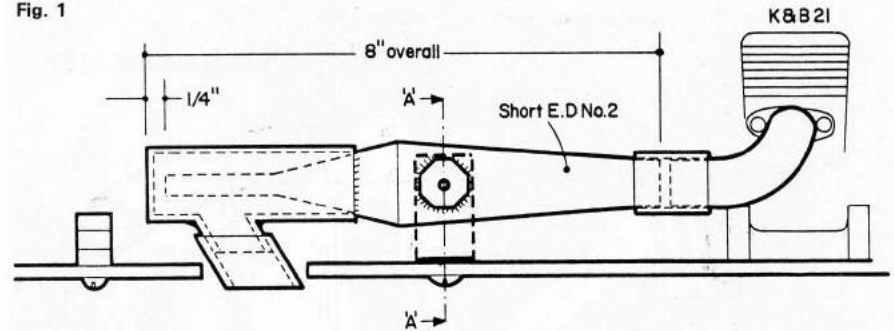
What in fact do these pipes achieve. In a noise-conscious world they have the useful side effect of reducing noise without noticeable power loss. Over a limited rpm range they have a useful power gain, unfortunately at lower rpm they have a compensating power loss. The

general effort is to extend the useful gain band and reduce the loss band. The problem was, and still is to an extent, that with r/c cars there is a constant change of speed with a single geared engine. If it was possible to fit a gearbox (what more complications!) then the optimum rpm range could be held by gear changing. Perhaps with the ever-increasing sophistication of cars a gearbox will come. I have indeed heard of work on a fairly simple design.

In U.S.A. designers have also thought to harness the tuned pipe to cars. Happily there is no need for the exhaust to point rearwards as it so conveniently does along the fuselage of an aircraft. A look at some trials motorbikes will show exhaust exits popping up at all angles. So it is with cars. However, neither in this country, nor except in one small and not very successful instance, has anything been done commercially for i.c. cars. It seems that research must go on in private hands by a few enthusiasts who may come up with the answer. I was therefore specially pleased to hear from Don Faulkner of High Wycombe with results of his highly empiric, even Heath Robinsonian, efforts. So now over to Don:

"I wondered if you might be interested in the following for the mag as so far *nothing* has been said on the subject by anyone yet.

Fig. 1



Phil Booth's experimental tuned piping on PB International (left) Don Faulkner's set-up (below).

FRONT SQUIRTERS

Yes, that's right, Tuned Pipe operating in the forward position! On a purely personal testing basis that is *not* a highly technical "You do it this way and it will work point of view." So these are my own findings after track and race testing.

First, I constructed a manifold from the standard K & B stub. This was welded (Argon) to 3/4 in o/d (old deckchair frame) tubing, removing the counterbore to introduce shake proof washers. Without them the cap-head screws come undone.

Using a cut-down E.D. No. 2 pipe (Fig. 1) my K & B 21 revved quite well but would not peak out. This pipe did in fact *slow* the car down! Hope to be able to try again with a shorter manifold length one day.

It was then that the pipe and E.D. No. 3 (Fig. 2) was tried. It was quite remarkable in fact, proving to be very tractable, with zingy acceleration all the way up the rev range of the K & B (*my* K & B). Several mods had to be made to shoe-horn it under the sports/GT bodies I use without

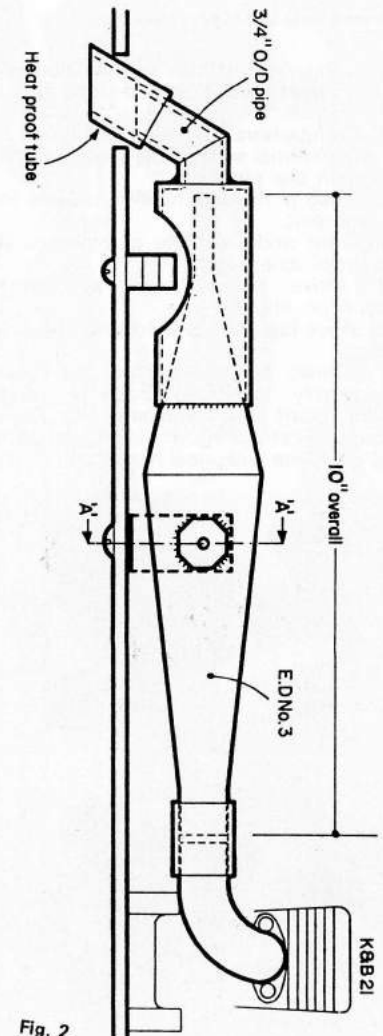
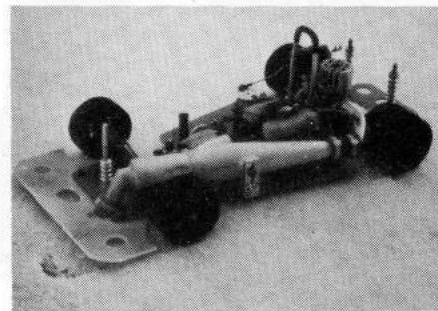
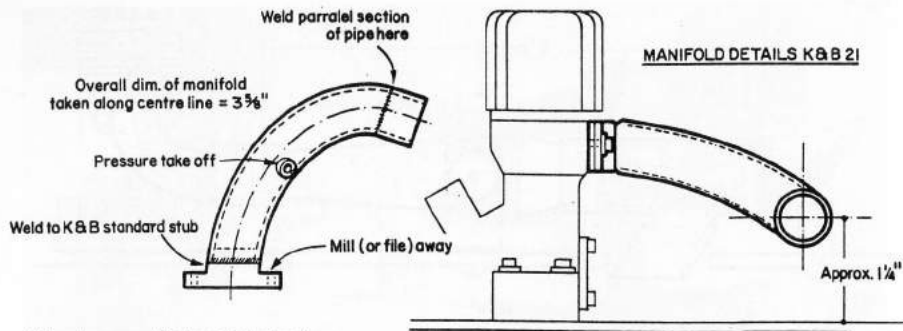


Fig. 2



Note sharp sweep back on pipe to clear tyre

it showing. No! It will not fit Formula bodies! These are the needed steps to fit it in:

- (1) Counterbore the front axle beam of my International so that the fixing nut did not touch the pipe.
- (2) Chop a 1in. dia. hole in chassis for the pipe exit.
- (3) Dent under-surface of pipe-box to clear front axle beam.
- (4) Move battery pack to central position on chassis.
- (5) Move fuel tank and angle along side of pipe.

The basic No. 3 Q Pipe has been considerably improved from a fixing-leaking point (no disregard to Kevin Lindsey!) Firstly, Argon welding an alloy plate complete with steel hank-bush to the

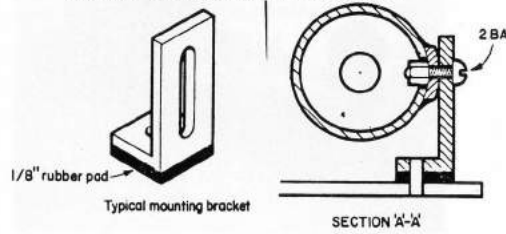
side for strong anchorage, secondly, removing thin gauge from container and replacing with Ronson type which had thicker wall again Argon welding to pipe. Final outlet pipe dia. was 3/4in. (old deck-chair tube again) "we'll be sitting on the grass this summer!" This pipe was angled-down so as to clear body.

Each pipe had the Vacu-Blast treatment to the outer surfaces (looks good) and so far do not leak. The manifold was drilled and tapped for a pressure take-off at about mid way down its length. The heat-proof tubing connection was secured with Nylon cable-ties as used in the electronics world, proving very reliable indeed.

Summing up then, the use of a tuned-pipe on my own set-up has proved a worthwhile project and maybe could become a standard for the future."

Well, there is one man's effort as a start. No figures are given so that real improvement or otherwise cannot be assessed. Nor does Don say anything about benefits from quietness. With Phil Booth's experiments (and similarly with some done in Germany) the swings lost to the roundabouts, in other words the higher speed on the straights was offset by the slower cornering as the car came out of its optimum rev situation. Please let us hear from other readers who have tried tuned pipes.

The two tuned pipe versions described.

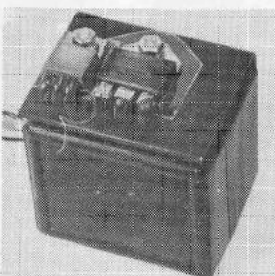
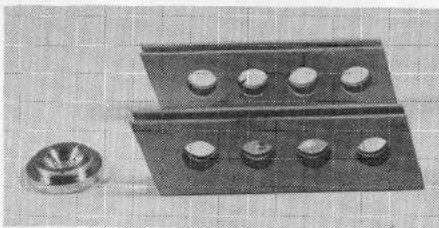
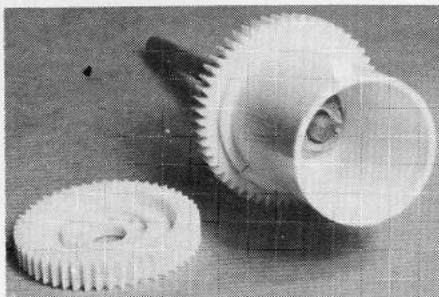


rarin' to go:

... that's you when you get together with Lectricar Racing: makers of the most complete 1-12 scale model car kits going, for two-function proportional radio. Open the box and you'll find all the parts and pieces you need to put your own high-performance show on the road, with a little help from the simple step-by-step assembly instructions. This precision-engineered product incorporates a whole list of quality design features as standard, including ball raced rear axle and servo override, with facilities for mid or rear engine location, four or six cell power and chassis flex adjustment; plus a choice of gear ratios as an optional extra. With no starting problems, no mess and very little noise to worry about, you're now all set to enjoy plenty of good, clean fun on the quiet. For just £46.94. Catch up with the exciting Lectricar range at all good hobby and model shops; or write to us for details of your nearest stockist.

**LECTRICAR RACING,
ROOKERY LANE,
GROBY, LEICESTER.
LE6 0GL**

SHOPPING AROUND



Schumacher differential with spare gear for alternative car.

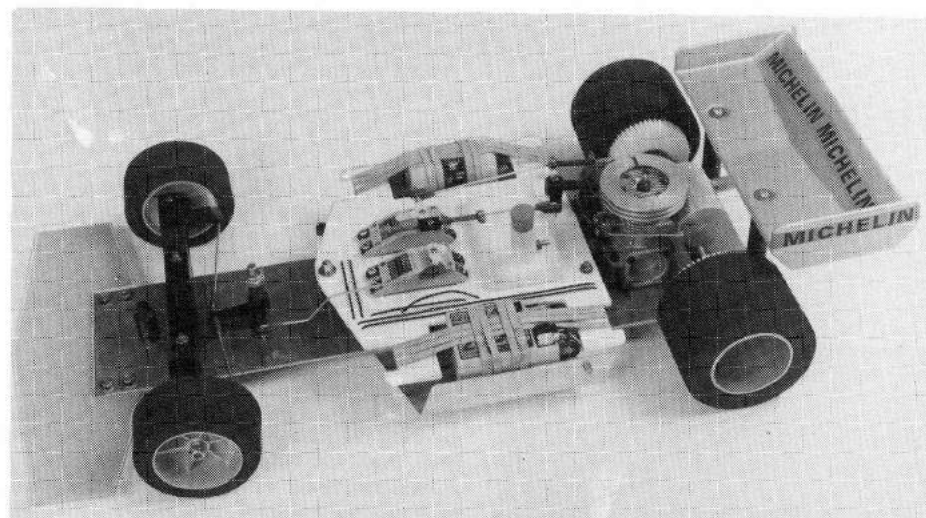
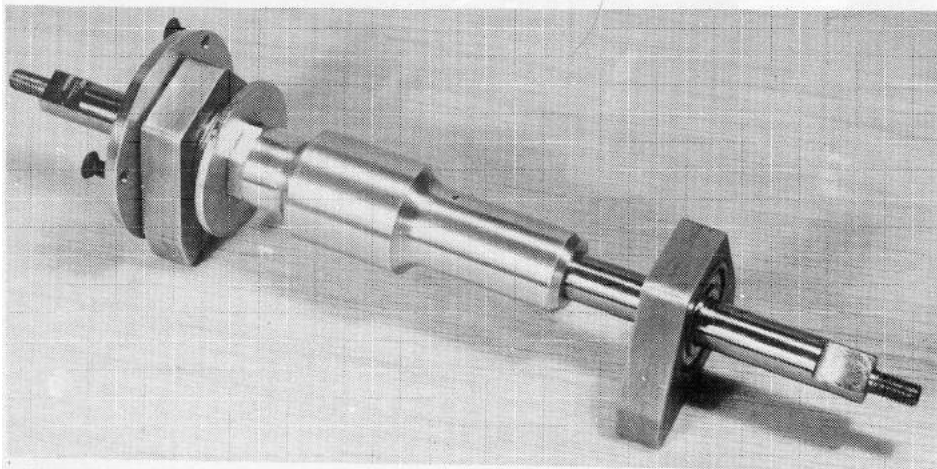
Specially machined head from K & B21 for use with the Delta heat-sink.

DIFFERENTIALS have entered the one-twelfth electrics field! Yes, I know that the Tamiya cars have them fitted, and very elegant they are too, but this is intended for serious racing and is totally enclosed. Designer/manufacturer is Cecil Schumacher (who also works for Cosworth by the way). It all looks very simple and is described as "drive through elastohydrodynamic traction" — I couldn't have put it better myself. There is no slip when correctly adjusted. The 'limited slip' provides a degree of drive even though one wheel may lose grip cornering. Adequate setting up instructions are given and the unit (for virtually all popular makes — state car) cost £6.50.

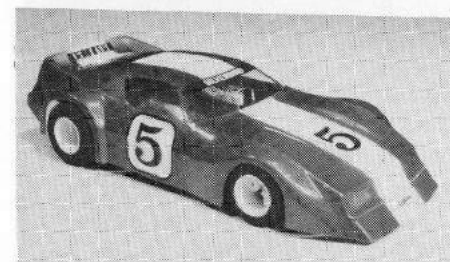
I have also just acquired one of the L & M speed controllers from Red Baron Models of Enfield. This a square chubby unit about $1\frac{3}{4} \times 1\frac{1}{2} \times 1\text{-}5/8$ ins as opposed to the larger area "flatties." It has the specific virtue that it will operate reverse if needed. Bringing stick back provides dynamic braking, if held for more than 3 seconds then reverse operates. Very complete setting up and running operations are provided. It runs around the current going price for this kind of equipment at £29 (don't forget you save a servo).

The march of the "Car Jewellers" proceeds. Phil Greeno's list of goodies, which have been already reported here,

L & M proportional speed control with reverse for 1/12th electric (Red Baron).



now numbers thirty-one items. It is excellent to see that many of the parts are broken down into separate pieces, i.e. you can buy a calliper only, or a ball race only, not have to take on a load of undesired bits you already have. This is good thinking. (Not seen much in fullsize car trade!) Latest of the specialist part makers is GB Models who have sent me their roll bar (£2.50) a pair of ally axle blocks for the International — very pretty these! — at £7.50 a pair and a hexagonal brake disc drive for those who wish to fit a second brake on their PB differential. This costs £1.90. There is also a stout front body post (£1.50) and rear body posts at £5.00 the pair. These are very robustly made, and are drilled to take the thicker wing wires



now in vogue. These are only the first of the list — more to come.

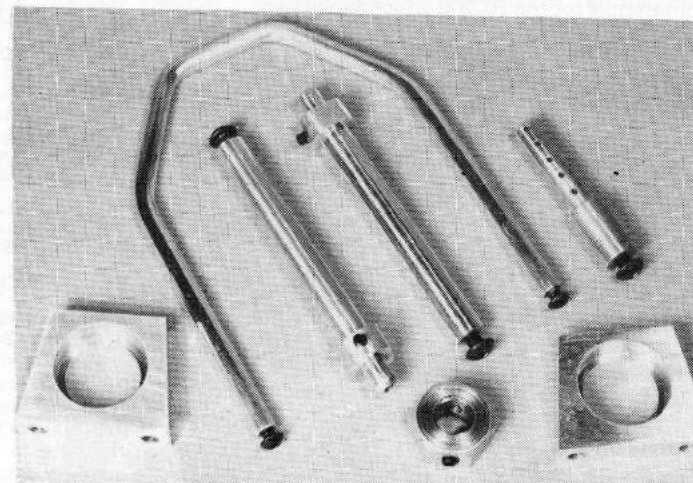
With the Mardave works cars doing so well in competition I have acquired the special Modelcraft speed control panel which they have been using. This sells at

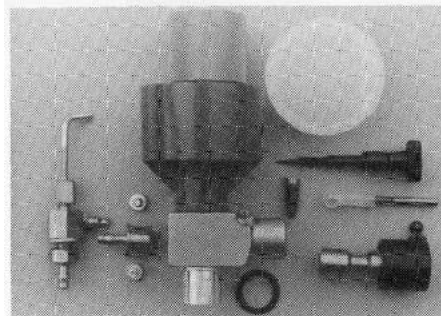
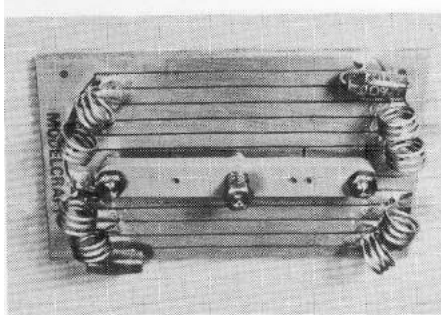
New look Mardave! Note side-by-side servos on radio tray and fixing clips/cum side bumpers for Sports/GT body.

Latest Parma body (sold clear) of Pontiac Silverbird. PB will be handling distribution over here.

GB Models in the "jewellery business" with these fine offerings.

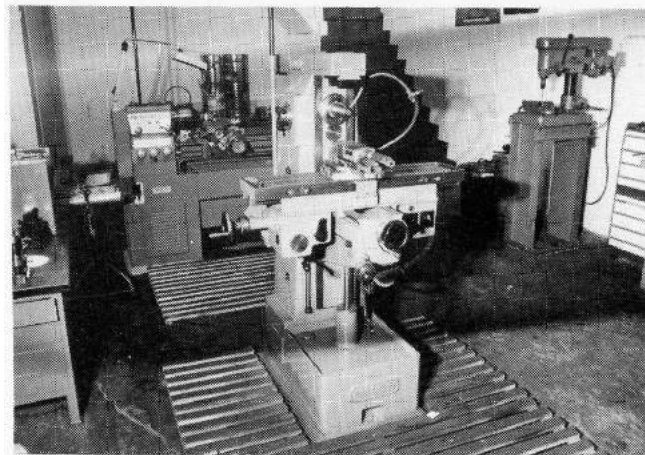
Left: Just in production! AMPS mini diff (this is for the PB International).





£4.50 complete with Mardave wiper arm. It is well made and provides that little extra for those who do not wish to indulge in the more expensive proportional control — it seems to win races too!

Modell-Car-Vertrieb of Buerstadt in West Germany are also producing specialist parts for the Associated range of cars. We have handled their precision made power pod and the machined ally steering beam with its accompanying steering arms. They have also designed a differential for the RC200 which looks very



Special p.c. control panel for Mardave electric offered by Modelcraft (very successful!)

Speedmodels of Bern offer this carburettor/air filter for K & B and other engines.

MCV of Buerstadt show here the jobs are done — a glimpse of their works (during a tea break — surely not?)

promising. Just to show they really mean business they have also sent me some works pictures which give some idea of the equipment at their disposal. Other pics. show their offices and fine stores. In addition MCV make their own range of CorsAir and Cobra kits.

TVHE PROMISED AMPS Mini Diff, which I saw initially a couple of months ago at Hertford, is now coming off the production lines. Prices are competitive for immediate range of PB, RC200 and Serpent, with Delta and Challenger units to follow. Virtues, apart from price, are smaller size and that they can be fitted by the modeller *without any mods at all!* One plastic plunger and bearing comes with the unit or two metal blocks and one bearing. Modeller then uses one standard part from the kit to complete.

Speedmodels of Bern in Switzerland, whose multi-lingual proprietor Antonio dela Zoppa is well known on the circuits of both Europe and U.S.A., is also producing some interesting parts for the serious driver. The jewellery aspect of his slide valve carb., incidentally, is emphasised by the handout description "eyecatching feature". . is the red and cylindrical air filter housing". Be that as it may, it is an attractive and efficient unit. Points to note the separate needle valve assembly to reduce vibration, simple operation, built-in filter, rainproof, and very low fuel consumption. Other Speedmodels goodies include special clutch housing (11 teeth) for PB International to suit all the best engines. The company of course handle the PB Products in Switzerland.

Delta is now releasing a new machined head for the K & B 21 (as seen in last

(more on page 59)

SOUTHERN LEAGUE

FOLLOWING discussions in late '78 between members of the London, Bournemouth and Mendip clubs a letter was sent to all R/C car clubs south of the M4 motorway to gauge their interest in league racing. The thinking behind this was that many less experienced drivers would not consider entering an open meet but would welcome more competition than club level afforded. The format of racing would be angled to include more scratch handicap drivers but not to exclude totally the "top" men.

Of twelve clubs contacted seven attended the formation meeting in Bournemouth on January 21st with two more indicating their desire to be included. As a result of the meeting the Southern League came into being — with **nine** car races as the monthly spectacular! Only two trophies will be awarded at each meeting — one to winning club and one to winner of individual token final. At the end of the season overall winning club will collect the GB Models Southern League Championship Challenge Trophy to hold for one year. No entry fees will be payable at each meeting, but an inclusive affiliation fee of £10 per club will be made to take care of award and secretarial costs during the season.

Mike Lewis of the Taunton club was elected as league secretary/treasurer. Address 3 Longmead Close, Hoveland Park, Taunton, Somerset (Telephone: Tn 85543 — or work 0823 85151 Extension 204).

Participating clubs are: Exmouth, Taunton, Bournemouth, Mendip, London, Aldershot, Southampton, Northavon, Torbay. Racing will be for Sports/GT cars with rules as per BRCA. A series of monthly Sunday events will be held in six rounds at Taunton, London, Bournemouth, Aldershot, Mendip and Northavon. Maximum of six drivers/cars from each club (need not be same drivers at each round — clubs advised to field a full team as all scores count for results at each round). One driver from each club in each race (9 car race). Composition of each team must not exceed 100% ERCA handicap (e.g. if a team has two drivers each with a 50% BRCA handicap then its remaining four drivers would need to be scratch rating). Clubs may amalgamate to provide a joint team — but such amalgamations must be declared at the start of the series of events and will operate throughout the year.

Each club will be allocated one frequency colour for the whole series together with an individual racing number for each team. Three split-frequencies will be necessary but those chosen have best possible gap on the band.

Each driver will have five races and there will be a token final with best driver from each club equated to approx 15 minutes. Heat points will go towards a total and club with most race points gets **10 round** points, with 2nd getting 8, 3rd 7 and so on — thus winner gets a 2 point lead. The token final will not count towards points, only establish best driver of the day. With nine cars running a staggered grid start will be necessary.

First round takes place at Taunton on March 25th and will have been run by now. Second round is on the London club track Leyton Raceway on Sunday May 13th. Practicing from 10 am, heats from 12 noon.

This looks like being the most exciting breakthrough to bring in the "average driver" while still keeping the up and coming handicap man in the picture yet thought of. Basic idea of a "southern" league is to keep travel time and costs within reason and make the one day meeting a practical proposition. There is nothing to prevent a Northern League being perhaps with an ultimate North versus South needle match to finish the season. How about it Northerners? With Lilford worried about entry numbers this should appeal to them too — can they be classed as "honorary" northerners?

Torbay have now dropped out as a separate club and will add their strength to neighbouring club. This makes it an eight car event leaving other details as set out (there may be a slight re-arrangement of channels, numbers etc). By the time the issue appears Round 1 should have been run, with Round 2 excitingly on the immense fast London Circuit.

PROGRAMME

- Round 1: Sunday March 25 — Taunton.
 - Round 2: Sunday May 11th — London.
 - Round 3: Sunday June 17th — Bournemouth.
 - Round 4: Sunday July 8th — Aldershot.
 - Round 5: Sunday August 5th — Mendip.
 - Round 6: Sunday September 9th — Northavon.
- All rounds: Practice from approx. 10.00 a.m. Racing starts at 12 noon.

LETTERS

WHO WANTS "BOTT DOTS"?

Dear Sir,
I am currently trying to negotiate the manufacture of some purpose made "Bott Dots" for use with model cars. Unfortunately the manufacturer is only interested in quantities in excess of one hundred units which is somewhat more than I require. The Bott Dots will be vacuum formed in an ABS type material which is 1-8th in thick and very strong. They are flat conical shape, 20in. diameter and 2in. high in the centre. The units on arrival will need trimming (as they are formed from a flat square sheet) but this is easily done on a bandsaw or similar machine. The 2in. in height does not sound very high but it is just high enough to discourage short cuts at speed.

If anybody is interested in these please drop me a line or 'phone after 6.00 p.m. any night.

Jim Brown
21 Audley Road
South Gosforth
Newcastle (Tel:858178)

WHY ARE THE PRICES GOING UP?

Dear Sir,
A comment that I would very much like to see brought up in your excellent magazine, which I am sure you are well aware of, is the escalating price of Home produced goods. When one thinks back just a little bit the main outcry was that imports by virtue of high transportation cost of the fluctuating exchange rates was putting the hobby more and more out of the reach of the average run of the mill modeller, allowing for production costs and monies set aside for uprating equipment as they evolve, which I am sure many foreign manufacturers were already doing! How come prices in the United Kingdom for such things as tyres now exceed those of most imported ones? Surely these quick profit making firms are turning into lemmings producing their own doom. Maybe more detailed editorials on home construction might put these fly-by-nights in the place.

Still, sorry for bickering but it's a sore point that I would like to get off my chest,

as so many fellow modellers have complained on the same lines but nothing has ever been done. Keep up the good work and thank you once again for the excellent service.

D R F Hull

Huntingdon, Cambs

PAINT & MASKING FOR LEXAN BODIES

Dear Sir,
I would like to take this opportunity to tell you that I enjoy your magazine very much. Despite the great lack of active R/C car racers in Eastern Canada, through my contact with the sport through journals such as your own, plus ROAR'S 'REV-UP', RACING CIRCUITS, and RACE CAR WORLD, I feel that my geographical isolation from the centres of activity is not matched with technical isolation, and one is certainly able to keep up with top-level competition all over the world.

It would be appropriate for me to pass on a couple of tips at this time to UK enthusiasts regarding trimming of lexan bodies. The writer uses both techniques with a very small failure rate, and they save a lot of time. I have never seen them mentioned in any publications, which is a surprise, as they work so well.

The first is regarding choice of paint. **Use acrylic lacquer.** It is fuel proof, dries almost instantly, and is available in at least 1,000 colours in Halifax alone, if one includes all shades of each colour family. In this country, this is one of the standard paints of the auto industry. Most large auto part distributors have a paint department where they will mix any color from hundreds upon hundreds of paint sample chips for you. It takes about 3 minutes and costs about \$8.00 for a 16 oz. can or an 8 oz. spray bomb. (price includes a \$4.00 deposit on the latter's container). It is best when sprayed on. Make sure the surface to be painted is roughed up a bit with fine sandpaper or steel wool or else the paint might not grip same properly and 'slide' when it dries. Such slides (they look like cracks from the outside) can easily be fixed by brush painting over them from the painted inside of the body.

Tip number two concerns masking. Forget masking tape. Complex designs are simple if you mask with SPRA-LAT. (pronounce 'spray-lat') This product is a rubber-like liquid that looks like dirty white latex paint. Some people market it as 'liquid masking film'. The procedure is as follows; brush-paint the inside of the

(more on page 54)

Valerino modells munich

the German R/C-Car Specialist

The Valerino light Racing-Differential (Made in Germany) complete with brake disc, axle blocks and gear bracket in aluminum with 6 ball races.

This differential was specially developed for racing under most gruelling conditions.

Price complete £ 42,50

The new Valerino Slide-Valve-Carburetor for high torque racing engine

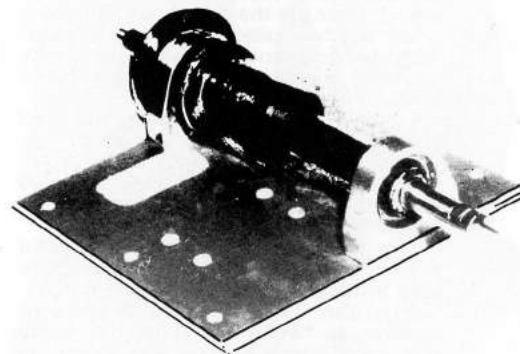
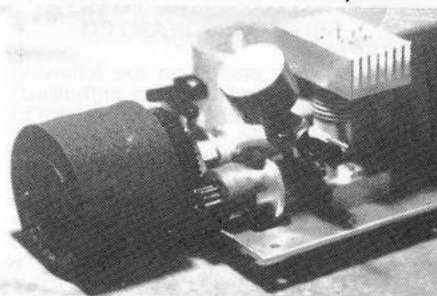
considerably higher performance and low fuel consumption – easily adjustable through separate nozzle support – integrated airfilter, rain proof – suitable for K & B, QPS, Super Tigre (by the way, this slide carburetor is smaller and lighter than other most modern carburetors, its weight incl. of air filter being only 50 g)

Price complete with air filter and adjustable jet needle £ 25,-

Once more available:

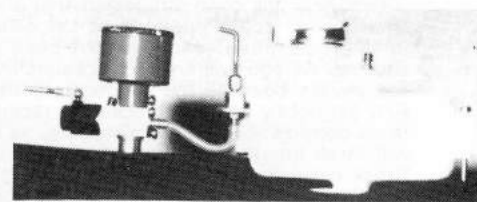
The specially hardened 11 tooth clutch, ventilated for PB Intern.

£ 7,-



The very light (only 40 g) Special Valerino-Fuel-Tank with flip top lid – one piece transparent, unbreakable plastic – ready to race, comes with screws and pressure nipple – 125 ccm – width only 36 mm – suitable for all types of cars

£ 7,-



K & B-Special-Car-Engine
3,5 ccm (without carburetor) £ 34,90

Valerino maintains a most comprehensive stock of spare parts for PB and Mar-dave. All spares are available immediately ex stock.

This is possible through our **WORLD-WIDE MAIL ORDER SERVICE.**

You are invited to make use of our reputedly quick service.

We sell to anyone, anywhere.

Valerino modelle münchen D-8000 München 19, Leonrodstr. 12, Tel. 089-16 94 00, Telex 5 215 987

Write for catalogue and send 50p

LETTERS CONTD.

sanded (maybe even sand-blasted) body with two coats of the material. Allow three or four hours to dry. Get out the X-ACTO knife, and cut the design for the first color, then peel off the rubber SPRA-LAT over the area to be sprayed. Spray it. Then just duplicate the process for each color to be added. Gone are the days of paint running under poorly applied tape. Paint is razor-sharp between colors. Design complexity is limited only by your dexterity with the blade.

To buy SPRA-LAT over here, you need only go to a commercial sign shop.

This product is used to make store-fronts, etc. Most shops have many 45 gallon drums of it and will part with a gallon for about \$20.00.

This is enough for about 35 1/8 scale bodies, and is the perfect item to share with a friend to lower the initial outlay.

It is also useful to dunk a servo or receiver or two in. It forms an easily removable rubber coating that resists the intrusion of oil and surgically clean inside this way.

Best seasonal regards,

Pat Doherty
Halifax, N.S.
Canada.

LIMITED COST RACING DOES WORK!

Dear Dickie,

As a leading advocate on limited or low cost racing for many years, may I make a few comments on this important subject.

Firstly, it has been suggested that the limited cost racing operated at Leicester for the past three years has not been a success. As you will know, Leicestershire has always been at the forefront of the R/C car hobby and 1/8th scale i.c. racing faces considerable competition here, as it will in all areas soon, from limited cost Stock car racing and inexpensive (at the moment) electric car racing, both of which offer the opportunity of winning major national competitions without excessive cost. Local limited cost i.c. racing has not been a great success and will not be so because it cannot offer that bit of fame and glory that we all seek and which can only be gained at national level.

Despite this, however, at the recent AGM of the local club (now reformed as the Leicester R/C Model Car Club, with no connection with Mardave), members voted unanimously to operate only limited cost racing in future. It would therefore

appear that it is in fact open class racing which has failed in this area.

It has also been suggested that limited cost racing favours one make of car. In point of fact, the proposals made at the BRCA AGM recently by Roger Wilding and myself for a national limited cost championship with a guaranteed £500 worth of sponsorship had been carefully conceived to include cars and engines from almost all manufacturers. Unfortunately, we were never allowed time to explain this.

The probable end result of the BRCA's rejection of limited cost racing will be the formation of a new national body aimed at promoting low cost racing for the average club member.

On the subject of limited cost rules, I feel that limited cost racing should be precisely that. I can see no sense in the "fit a small carb and ban diffs" type of proposal. The objectives of this school of thought would seem to be to allow the drivers who are winning most of the open events to make a couple of mods. to their cars and carry on winning. How can it be considered fair to race a £90 car against a £30 just because it has the same carburettor on the engine?

Added to the problem of cost, the club driver now has the growing problem of sponsorship to face. It is becoming increasingly difficult for the private entrant to win anything, which will surely cause many to give up. The sponsorship which we had available for limited cost racing would have gone to the organising clubs to reduce entry fees and therefore benefit everyone instead of just a few. This surely is the way to go.

Yours sincerely,
Wes Raynor.

Leicester.

PEN FRIENDS WANTED IN BUDAPEST

(Ted Longshaw passed on the following plea from a young Hungarian enthusiast) He wrote to Ted: "Mr Longshaw I'd like to ask you something. Would you give me some addresses of those people whose hobby is r/c car racing? Maybe we can change experiences and maybe they have some surplus, shabby models, bodies, or accessories what they would kindly send to me, to a beginner."

"So I ask you please ask your friends about it, I hope they have something for me. Thank you very much. PS This way I can practise my English!"

Gal Laszlo
1118 — Budapest
Buddors 1 ut. 105/6
Hungary

NUREMBURG-1979

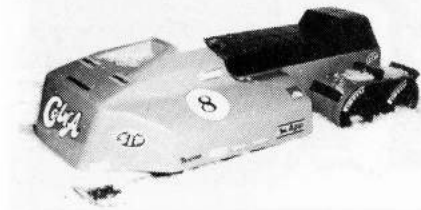
THE Toy Fair tends to operate in two-year cycles, the highlights of last year continue for a second year but with the benefit of a year's trading and a general cleaning up of details to polish up the product. This was the case in the r/c car field in February. Perhaps the most important trend was a firm movement towards electric cars, not, surprisingly, entirely towards 1/12th scale, but with a strong turn towards 1/8th electric, using in some instances the same chassis designed for i.c. cars. Prominent in this trend was Graupner, with an electric 1/8th on the demonstration bench; SG Racing had also the same idea, but played with the usual Franco difference — his cars will be coming along very soon now, plus his 1/12th electrics, again developed from the springboard of 1/12th i.c.

Differentials, of course, are the "in" thing! No manufacturer, large or small, is without either a proposal or an actual production job. SG had already produced their prototype for the Euro meeting at Lilford last summer — now it is refined and in being to help drive the latest Futura V. Modell-Car-Vertrieb of Buerstadt have produced one of their own — they have extensive machine shops — to suit the Associated cars. They have also made a number of special parts for the RC 200, including a very elegant precision machined power pod, and a steering cross beam and steering arms machined from the solid.

Per Gustafsson also showed me his prototype differential which has limited slip adjustment by means of a single allen key which he claims is quicker and more certain than adjustment by oil viscosity.

Turin's Car with crown wheel and pinion plus diff. with inline engine.

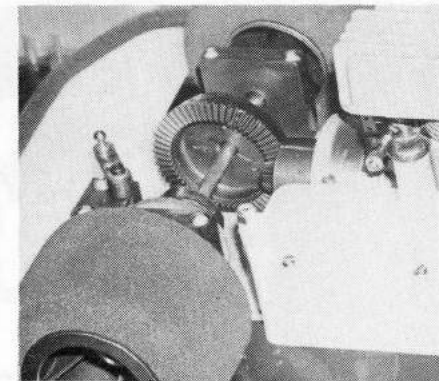
Modell-Car-Vertrieb's Cobra Snow-mobile which still strikes an icy note.

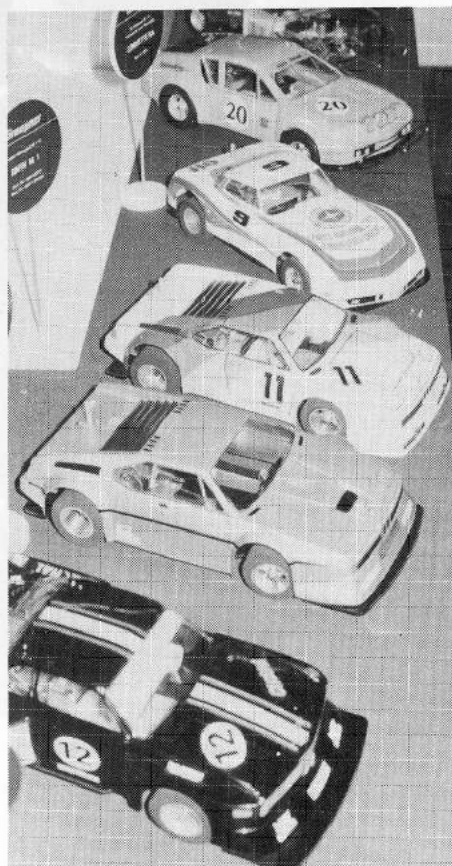


Keith Plested, Mr. PB, with the latest PB9 and an assortment of special goodies now being produced at Downley Road.

Minicars, his company, have considerably refined their Challenger, and are also entering the 1/12th scale electric car field with what seems to be a typical Scandinavian design with a very low c.g.

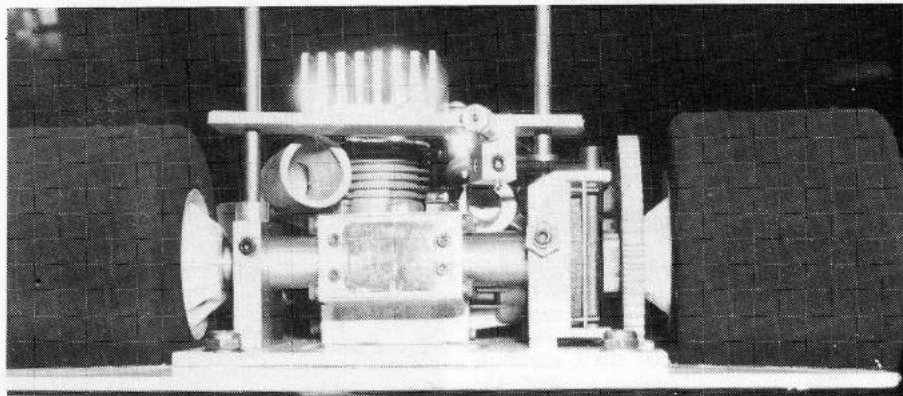
Amongst the electrics Graupner would seem to be the field leader. The company have little to add to their 1/8th i.c. cars and indeed are only just displaying them almost without comment, but making a





Some of the range of 1/12th scale electrics offered by Graupner.

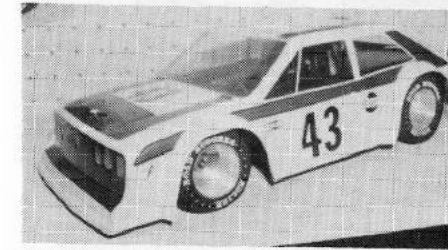
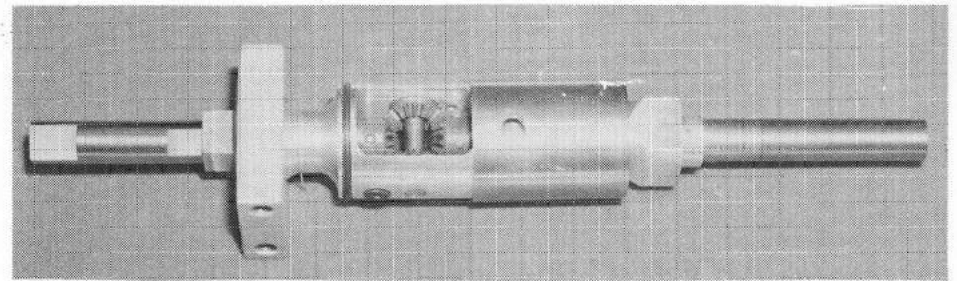
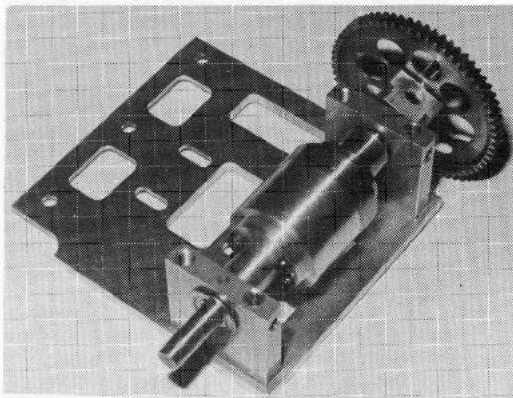
M-C-C's differential fitted to PB International with other goodies.



real go of the range of bodies available in the smaller size. They also show a clever 1/10th scale fully sprung electric car which was an action piece throughout the show. What place it may have, or even if this scale has a future, only time will tell. The smaller 1/16th and 1/20th scale cars look to be returning to the "toy" rather than the model field.

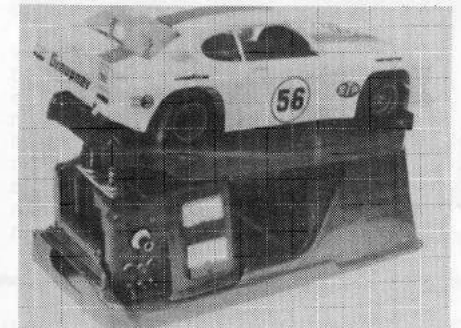
In this connection the Tamiya cars are worthy of serious thought. As last year their electric cars are demonstrated throughout the show with r/c by clever drivers who weave them in and out all round the visitors on their stand. I have seen cars that have survived this sort of treatment after a long show, and they belie any idea that their finely detailed bodies do not stand up to rough treatment.

Seen on Webra stand! Diff on power pod. Webra spokesman: "No comment".

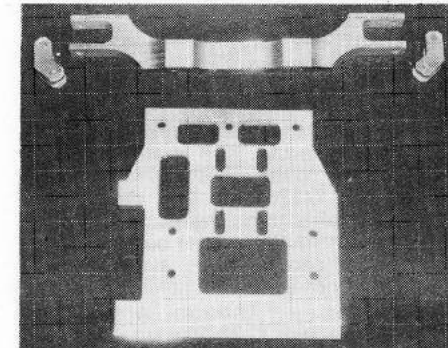


SG Diff. for the latest Futura V, seen on Robbe's stand. Not like the ones seen at Lilford Park in the summer.

Bo-Link VW Scirocco body — one of their latest (they have also just done a Can-Am Spyder).

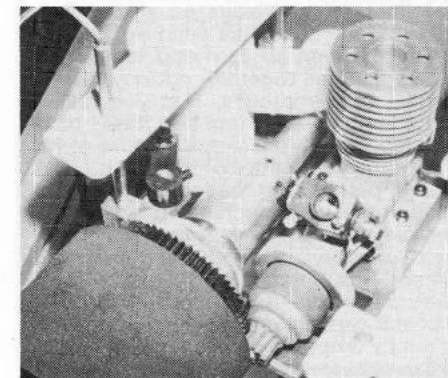


Helfe's car stand and starter — complete with as many add-on extras as you fancy.



Power pod and steering parts for RC200 being made by M-C-V.

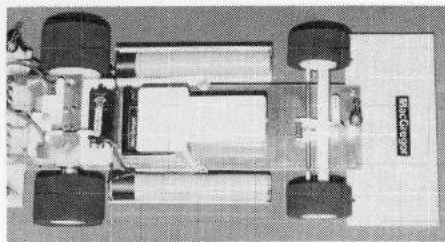
Minicars' diff. This one can be adjusted slipwise via an Allen key.



Turin's Car of Italy had their usual fine display of interesting bodies, and produced the only car I saw with an inline engine operating a crown wheel and pinion and a differential. As an interesting car it is worthy of note — whether it would stand up to hard racing I do not know — certainly there is no racing success to back them up.

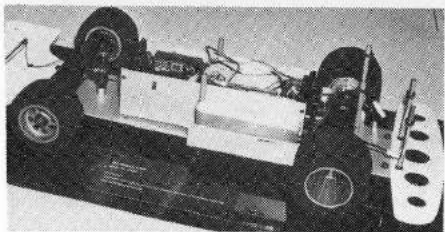
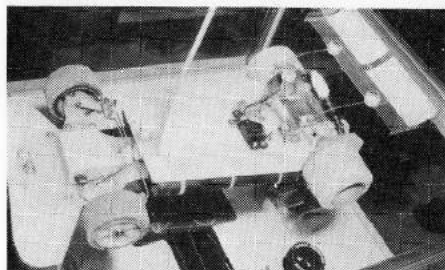
The Mantua cars I liked so much last year were there again, with a number of refinements, and I am happy to say, the prospect of being able to offer some very competitive prices. We can always do with a wider range at the bottom of the price scale.

It was good meeting Bob Rule of Bo-Link again, sharing the Minicars stand. His range of cars and spares have already had a good reception in this country and meet a good middle of the market price demand. Two new bodies of his own were announced and very very good. Meanwhile his wheels and tyres have set the hexagon fashion. Ken MacDowell was



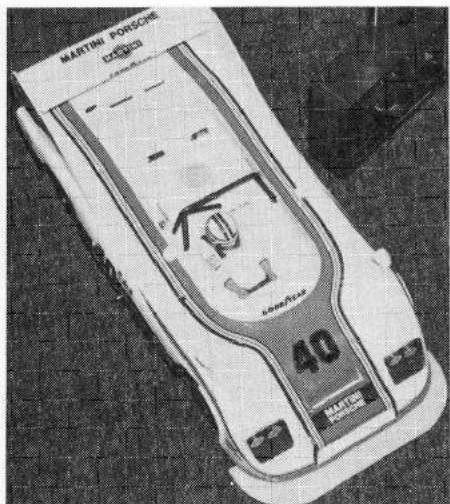
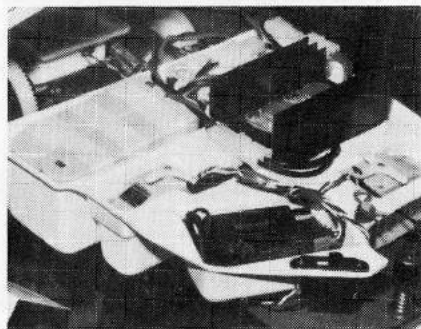
Latest Lectricar with nicads at side and elaborate speed controller set-up.

Swedish style electric. Minicars' 1/12th car using wiper type speed control.



New from Graupner — their 1/8th scale electric car — much in evidence.

This time the SG 1/8th electric! Uses a former i.c. chassis.



Sanwa Porsche complete with Tx/Rx. The best of the "package deals".

also showing, sharing a stand with Twinn-K of Indianapolis, who do the White Dot car tyres and accessories. Ken is going great guns with his Parma bodies, now being imported and distributed in a big way by Keith Plested of PB now PB Racing Products Ltd. Ken is also anxious to popularise over here his range of resistors for 1/12th electric, which are reminiscent of slot-racing days (he still does a big slot racing trade) being wound resistors on a ceramic core, available in a number of ohm-ages to choice.

Newcomer — though previously represented — was Keith Plested who was sharing a stand with MacGregor Radio Control whose gear Keith uses and who are of course his main distributors at home and abroad. Waving my usual Union Jack, I must say that the latest PB cars (now running to PB8 and PB9) were quite the most impressive exhibits on show. Over the past year Keith has been adding improvements item by item and only when you see them all together, not covered by the dust of the circuits, that you realise what an impressive altogether it is! I have restricted myself to a simple picture of Mr PB with the car in front of him — but I look forward, perhaps in time for next issue, to calling at the now much extended factory premises and doing a feature on the new "male jewellery" that top class cars and their add-ons are becoming. For impatient people PBs have a beautifully illustrated full colour catalogue ready now which you can get by dropping them a line, or getting it from one of their suppliers.

SHOPPING AROUND

from page 50

issues Super J write up). It looks the same, but there is real justification for using the head now (rather than machining the original head) since it has a low squish band with a reshaped and raised dome and has been shown on test to produce a few hundred extra rpm for high nitro operators. Use it with the unique Delta heatsink. They also now offer the bits and pieces of their quick fill cap to fit onto a Johnson tank for those who like to make their own.

Mardave's move to new and enlarged factory premises has not been made any easier by the horrible weather, but, fingers crossed, all should be sweet and lively by now. The new i.c. kit looks very impressive, featuring radio plate and two side by side servo spots with tank sited just behind — for those who like symmetry ideal, and very simple, can't go wrong, hook-up so should be very welcome to the newcomer to the hobby. The expert side is also being catered for soon with a slightly

up-priced Competition version, which I hope to be featuring next issue.

Avicraft, now firmly established in their across the road shop in Bromley (from No.6 to No.15 Chatterton Road) have sent a phial of the Tri-Flon lubricant — I dare not call it just "oil" — which contains Teflon to reduce friction. It is claimed to be just the job wherever there is friction, i.e. on model engines, lathe beds, even lawn mowers I suppose. Apply sparingly on any electric motor using a little wire applying rod, otherwise follow the instructions (what!) on the tube. Also from Avicraft is the first of their own bodyshell pulls made from Carbolide. This is a clear shell, rather heavier than Lexan, but very strong, and will take very nearly any paint. Lexan bodies will also be coming from the Avicraft stable. Prices in both cases very competitive from £3.50.

I have also just renewed acquaintance with an old friend of slot-car racing days, the fountain-pen-like "Electrolube". This is an oil specially developed for electric motors with an extensible applicator to get into awkward places and stop you using too much. The pen part is the container and goes clipwise in the pocket. Famous model train people Peco produce it on a neat little display car, price around 80p.

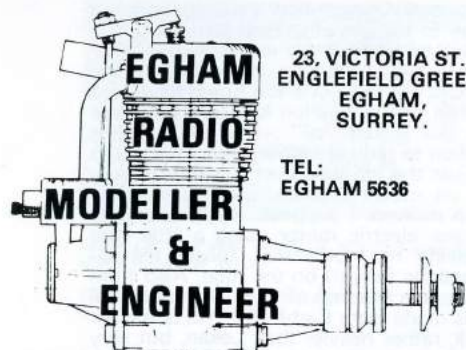
A Specialist Service for the Car Builder

Components made to your sketches or our design.

DHI

Machine Cut Gears, Differentials, Special Glass Fibre Chassis Alloy Wheels, Alloy Front Axles, Exhaust Systems, Tyres Precision Ground on your Hubs, Complete Cars built to your design or Specification.

D.H.I. ENGINEERING CO.
1-8 HORSE YARD, ESSEX ROAD,
LONDON N.1
01-226-2511



23. VICTORIA ST.,
ENGLEFIELD GREEN,
EGHAM,
SURREY.

TEL:
EGHAM 5636

Full Range of P.B. International and Associated car spares — special fuel mixed with Castrol 98 Gas Turbine Oil — Associated Disc Brake conversion for P.B. International

TYRES		
P.B. 371, 372, 373, 542, 543 fronts 374, 540, 541 rears UFRA Yellows fronts	DELTA 340 A & B rears 316 & 315 fronts ULTIMARA RSS 50 & 60 rears*	ASSOCIATED 832, 1223, 1225, 1226 fronts 2402, 2401 rears UFRA Slix & Specials rears

ACCESS, BARCLAYCARD
CHEQUES, EVEN CASH!

* EASY PARKING *

SPECIALS — K & B 21, P.B. Head, PERRY 61 Pumper £57 — Amps diffs, ready to go for P.B. International — £49.50 — Parma March Bodies £8.00

DELTA GOODIES

Tank Quickfill Tops
Super Servo Arms
Override Kit
Sintered Fuel Filter
Servo Saver

**P.B. HEATSINK HEADS
K & B — S.T. —
VECO — VECOY BODIES**

ABS, Lexan
Lexan Paint & Glue

K & B 21 & S.T. X21 SPARES

Piston & Liners
Conn Rods
Crankes
Crankcases
Bearings (welded cage type)

VECO-McCOY SPARES

Rings
Piston & Liners
Heads
Crankes
Rods

CARBURETTORS

Perry 61 Pumper
E.D. Car
E.D. 60 Size
Thorp Slide
Webra Slide
O.P.S. Slide
P.B. Slide?

TANKS

Johnson Metal Tanks
Associated Fillers & Pressure caps
Associated Flip Tops
Big Shot Fuel Bulbs
Sullivan Crap Traps

**OPEN MONDAY-SATURDAY (9.30 — 6.00)
LATE NIGHTS MONDAY & FRIDAY (8.00)**

BRITISH GRAND PRIX '79

AT WOMBWELL MAY 5th, 6th, 7th

Sponsored by



Unit 10, 80 High Street, Wombwell,

A MEETING NOT TO BE MISSED!

Entry forms available from Tom Martin, 7 The Green, Werrington, Peterborough.
For European competitors, practice time and any enquiries:
C. White, 56 Wharfedale Drive, Bumcross, Sheffield. Tel. Ecclesfield 65547

Spectron

The 1/12 car
for the
serious
racer



Competitive features include:

- Mark II Smoothtronic electronic controller with proportional speed/dynamic braking and built-in regulator for RX and steering servo
- Polycarbonate Chassis 3mm thick
- Polypropylene Front Bumper 3mm thick for maximum protection

- Polycarbonate Body, pre-painted in 2 colours (Porsche, Lola, Abarth, Alfa, Can-Am and Indy style)
- Close tolerance Rear Axle assembly
- Self-locking nuts in front suspension and linkages
- Welded battery pack in heatshrunk sleeving
- Motor RS54 with suppressor
- Ackemann steering and servo saver
- Ball and socket linkages

Price £71.00 + VAT £76.68

Send cheque or postal order to:

(Trade enquiries welcomed)

I & D ELECTRONIC CO. 46 Church Road, Barnes, London SW13, England Tel. 01-741 0333.

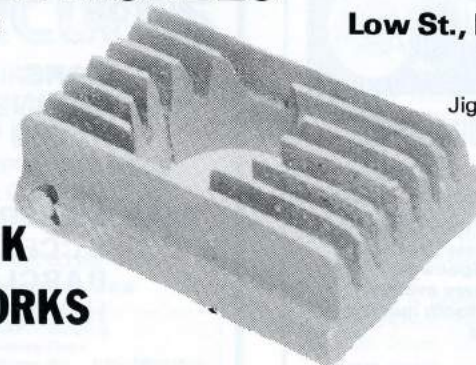
AIREDALE MODELS

5 Royal Arcade

Tel: 65662

Low St., Keighley, Yorks.

**NEW FOR
'79
A HEATSINK
THAT WORKS**



Jig-bored for accurate fitting
High Tensile Clamp Bolt
One piece casting
Matt black finish

**only £4.99
POST FREE**

Suitable for Veco 19:
Veco 21: Fuji 19 —
Fuji 21 — Irvine 20: OS:
Enya: K & B . . . State
engine when ordering . . .
almost universal!

Other car goodies include:

CARS KITS & SPARES BY PB + MARDAVE + LECTRICAR + FUTURA + SPECTRON + GRAUPNER
CARS, ENGINES BY: VECO 19 + 21 K & B OPS IRVINE OS CAR HB CAR FUJI SUPER TIGRE
RADIOS BY: FUTABA DIGIACE SANWA MRC POWERMAX MACGREGOR

Credit by: HOBBYCARD BARCLAYCARD ACCESS PERSONAL LOANS

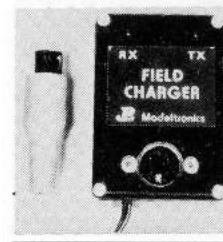
PHIL GREENO MODELS LIMITED
 9 VILLAGE WAY EAST, RAYNERS LANE,
 HARROW, MIDDX.

GLOW PACK

Pocketable power source for 1½ and 2v glowplugs, charged directly from 12v accu. (or car battery while driving)



Price £15.95



FIELD CHARGER

Charges Tx and/or Rx from 12v accu. or car battery when no mains supply available. (Car can be running)

Price £7.95

Trade Enquiries Welcome

MICHAEL'S MODELS

646-648 HIGH ROAD
 N. FINCHLEY N12 0NL
 TELEPHONE 01-445-8531

ELECTRIC CARS

Tamiya XR311 Combat Vehicle R/C **£46.50**
 Tamiya Cheetah Vehicle R/C **£52.00**
 Tamiya 1/12th Porsche 936 R/C **£39.00**
 Eleck Peanuts Buggy Kit R/C **£41.75**
 Associated 3010 1/12th Kit **£59.95**
 Associated 3000 1/12th Kit **£28.95**
 Mardave 1/12th Electric Kit **£37.50**
 Spectron with Speed Controller **£76.68**

We stock spares, fast charge cells — chargers

CAR ENGINES

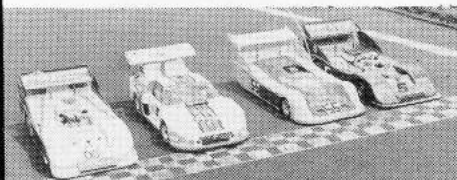
Veco 19 R/C **£26.50**. Veco 21 R/C **£29.95**.
 ST X21 R/C **£48.55**. Irvine 20 R/C **£38.44**.
 OPS21 R/C **£42.75**. KB21 R/C **£47.50**.

¼ KITS BY P.B. — ASSOCIATED — MARDAVE IN STOCK

Phone your credit card number for same day service, Access, Barclaycard, Carte Bleu, Eurocard, Mastercharge, Visa, Bank America Card.

RACE CAR NEWS from AROUND THE WORLD...

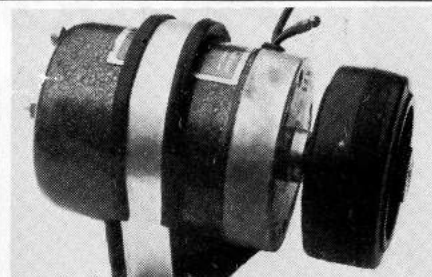
WRITTEN AND EDITED BY THE MOST KNOWLEDGEABLE MODEL AUTOMOTIVE WRITERS. COVERING 1/8 and 1/12 GAS & ELECTRIC RACING CARS



DON'T MISS AN ISSUE, ORDER YOUR SUBSCRIPTION NOW...

PUBLISHED 6 TIMES PER YEAR, ONLY \$6.50 ANNUALLY.

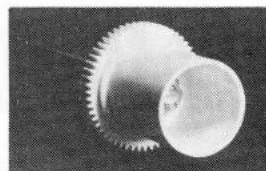
RACE CAR WORLD
 P.O. BOX 11247, RENO, NV 89520



AT LAST — A PURPOSE MADE CAR STARTER

3" dia. x 6" long — supplied with 3" wheel for surface mounting or 4" for box mounting (please state which) **£18 + £1.30 p & p** or **£16** to callers — (Yes! **£16**)
Trade enquiries welcome

Egham Radio Modeller & Engineer, 23 Victoria St., Englefield Green, Egham, Surrey. Tel: Egham 5636.



THE SCHUMACHER DIFFERENTIAL

with adjustable limited slip feature
 For 1/12 electric cars

1/4" DIA 55 TON axle fits: Mardave, Bo-Link, Jerabee, New Lectricar, Associated & Spectron
 50, 53 & 55 Tooth gears available
 State car model and tooth number required

£6.50
 Cash with order

at your MODEL SHOP or plus 30p. post and pkg.

Trade Enquiries Welcome
 Callers by appointment only

Cecil Schumacher 'Rudge'
 Harlestone Road Church Brampton Northampton

THE MODEL AIR-PORT FILTON BRISTOL

R/C CARS
 ENGINES
 RADIO

MAIL ORDER ACCESS
 BARCLAYCARD
 HOBBYCARD

EXIT 16 — M5 Five Minutes
 Closed Wednesday

134 GLOUCESTER ROAD NORTH
 FILTON, BRISTOL TEL: 694541

RACING / CIRCUITS

LEADING JOURNAL OF RADIO CONTROLLED AUTO RACING IN USA

SUBSCRIPTION RATES

\$6.00 First Class, in U.S.
 Canada and Mexico.

\$10.00 Air Mail to all
 (€5.50) Overseas Areas



RACING / CIRCUITS
 289 Quincy Place
 Langhorne/RD 1/Pa/19047 USA

Name _____

Address _____

WANTED!

The Nation's
 FASTEST DRIVERS

A limited number of works tuned SUPER TIGRE RE Motors are available for a works sponsored SUPER TIGRE TEAM

If you think you're in the Championship Class and have a proven track record or local or national wins to your credit write with brief resumé to Mick Wilshere at World Engines for details of contract.

This offer is open to both private individuals or members of the trade. Let's make '79 THE year for Super Tigre — Choice of champions in Cars!



**MICK WILSHERE
 WORLD ENGINES**
 Ltd.

97 Tudor Avenue,
 Watford, Herts.



PB racing products Ltd.



INTRODUCING NEW FOR 1979

PB9

The most complete car kit offered. The specification includes all the well known features of the PB6 plus epoxy chassis, differential rear axle, roll bar, new wing wires, alloy front body posts, open caliper disc brake with twin ball-races, brake adjuster throttle and back spring override devices. New F1 and GT bodyshells (2) and wings (2) in Lexan, and flip top 125cc fuel tank.

£119.50

PB8

A much simplified version of above, but including the epoxy chassis and differential (no bodies or tank etcetera).

£89.50

PB7

As PB6 but without fuel tank, wing wires, bodyshells and wings and including only one chassis and bumper.

£66.10

PB6

The well known kit with two bodies and wings, two chassis plates and now with larger open caliper disc brake, slotted power pod and many detail changes.

£75.00

PB5

The Junior is an economical priced starter car, based on the successful Expert Competition model. It is fitted with stronger drive gears from the International range and also the new PTFE clutch shoes. The kit comes complete with silencer, one bodyshell and wing (F1 or GT) bumper, wheels and tyres.

£35.67

Plus a whole host of new goodies.

Send 25p for fully illustrated colour brochure and price list of cars and spares

PB RACING PRODUCTS LTD. DOWNLEY ROAD, HAVANT, HANTS. 0705 471774