radio control MODEL CARS

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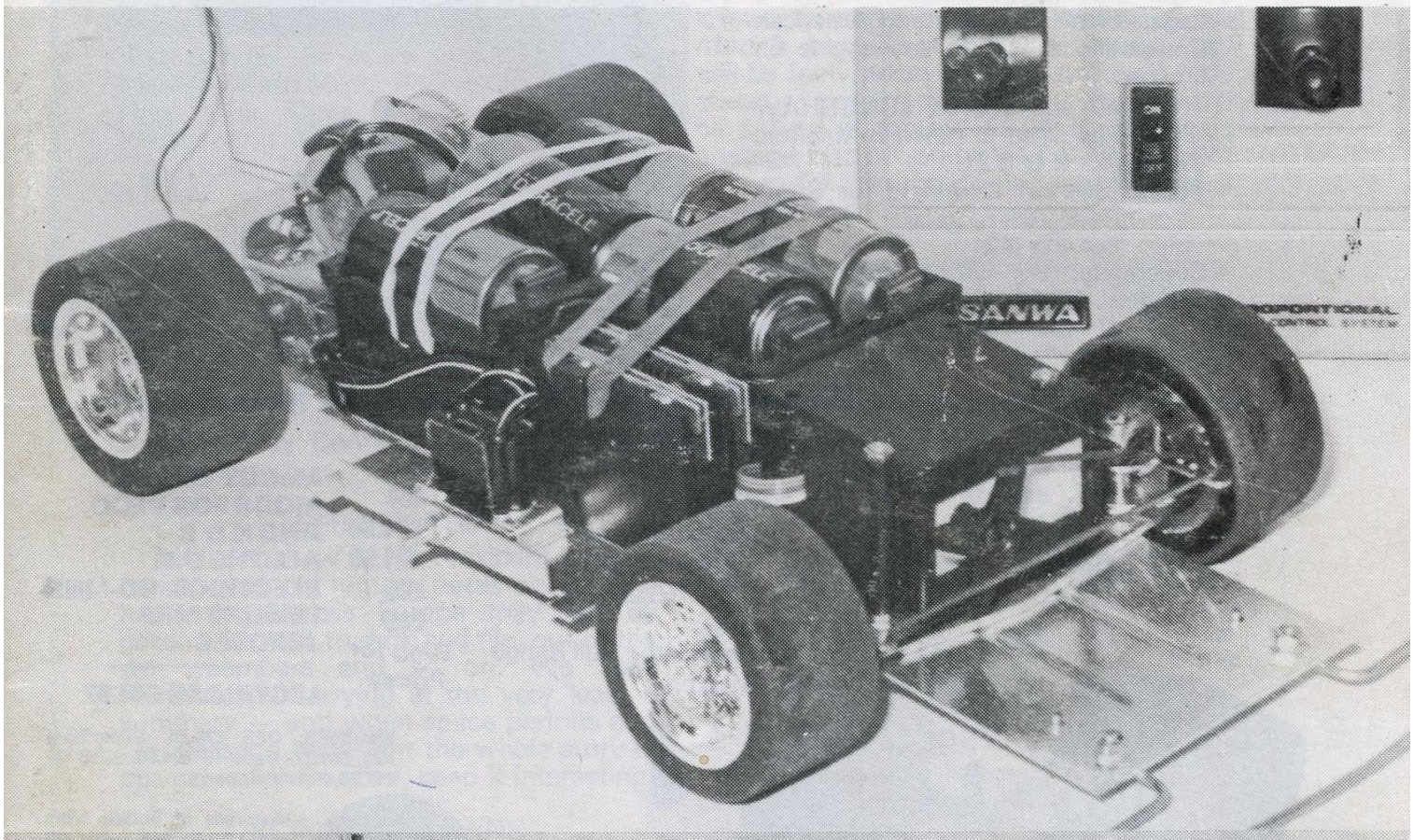

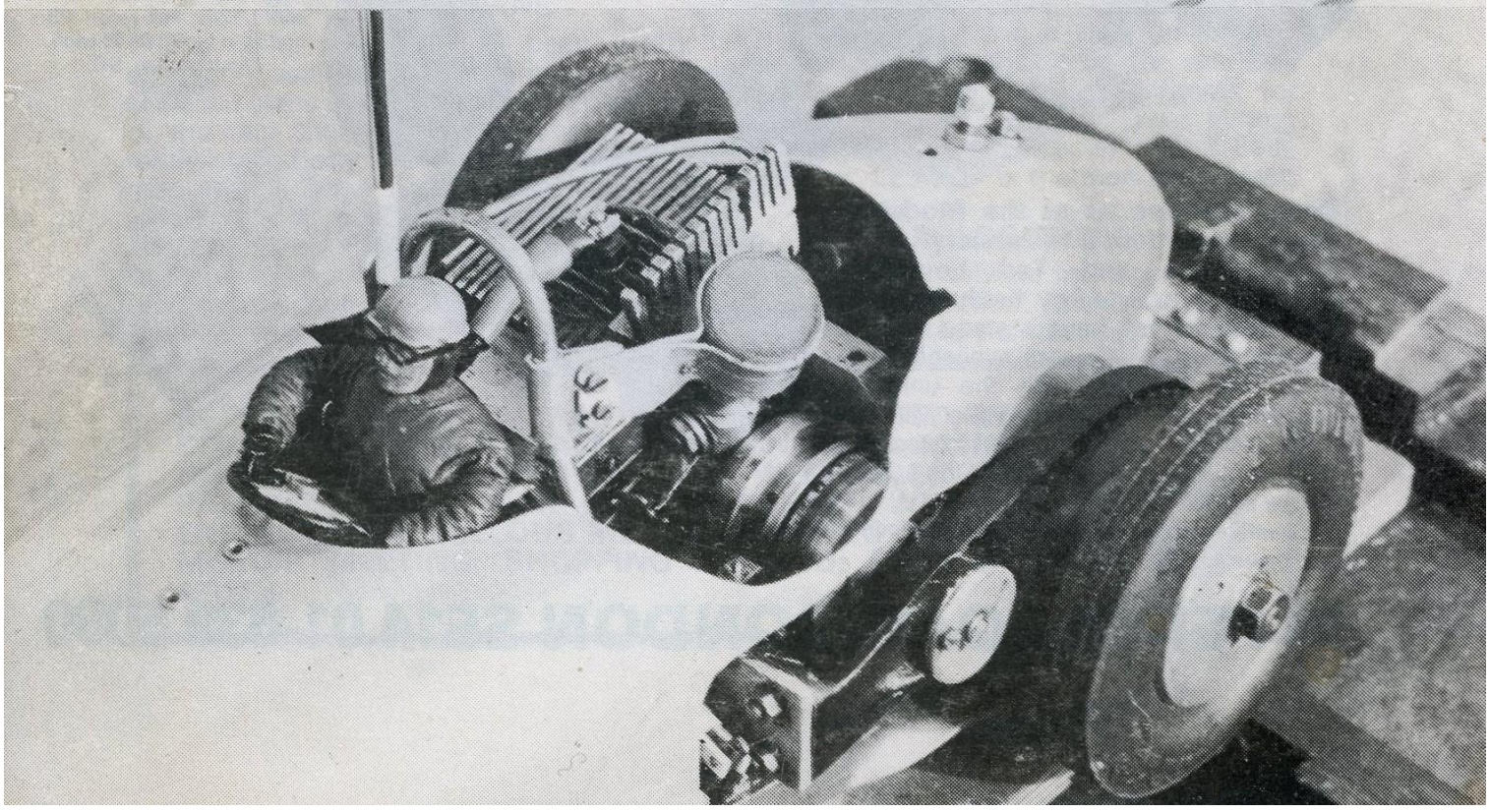

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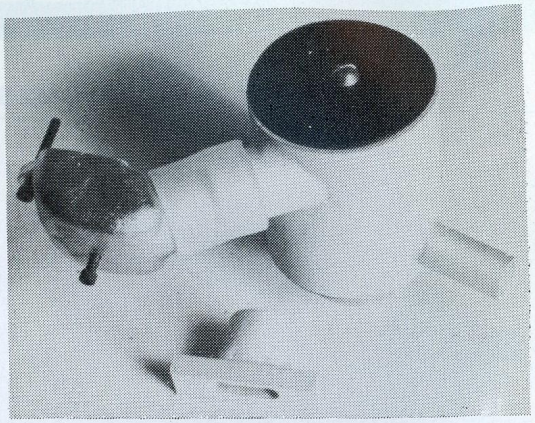

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MODEL CARS

Editor: "Dickie" Laidlaw-Dickson

WINTER ACTIVITIES

IT IS very encouraging to find some of the braver clubs publishing winter programmes and never mind the weather. There is Maidenhead with contests running first Sunday of every month; the new Mendip Model Motor Racing Circuit with a New Year Open Meeting hosted by Woodspring Radio Auto Club; A Stock Car Open Meeting for the Christmas holiday at Newbridge which should already have taken place.

Then there is the Midland Electric Radio Car Club with meetings in the Midlands offering some very nearly every week and even the Model Engineer Exhibition is staging electric car demonstrations, though with rather limited space, during the show January 5th to 14th. This is at the Wembley Conference Centre by the way . . .

EFRA NOTES

Ted Longshaw EFRA President has the feeling that his regular notes on what is happening across Europe may not be getting through to rank and file, out of the way members and so on. We shall therefore be carrying at the very least a summary — and when space permits and the message important the whole story in our columns. So, Ted, keep it interesting!

SCALE CAR PLANS

One thing readers have been pretty steady in asking for is the inclusion of scale car plans in the mag, quite regardless of the fact that nearly everyone uses a ready-made body shell, and that plans in a mag with a page size as small as ours would not get very far. But I have listened very attentively and done something about it. By now I should have the first offerings ready in the shape of dye-line drawings to 1/8th — yes, one eighth scale — of Turbo Porsche Type 935, Ferrari Flat 12 GP as raced this year by Nikki Lauda, and the Alfa Romeo sports car. These are being drawn up by Roger Taylor, who will be known to many for his fine work in *Scale Models,* but, like all specialist items, they will be fairly pricey. This is written a little ahead of precise costing, but they should be selling at around £2.00 a print, plus postage, and of course VAT. This is a pilot run, and if they go down well, additional cars will be added to the range. Try one — and then if you like it, and think it likely to be a useful line, write in with your future demands to give an idea of what we should do next. (I am thinking of GP, Brabham, Alfa Romeo, Shadow, McLaren, Wolf . . . but let's hear what **you** want).

NUREMBERG TOY FAIR

Rumour has it that some fine new cars will be on show at the Toy Fair in February, with a number of continental manufacturers and distributors getting on the bandwaggon. I will be there (I like the town very much anyway) to see what's going on . . . they've built a new hall for the model department as opposed to the toys . . . so it should be a good show.

OTHER PEOPLE'S MAGS

Radio Stock Car Association is now circulating a bi-monthly News Letter to members. In addition to news, results and so on it also carries a few private advertisements for stock cars for sale and services — there may be bargains for some! Treasurer/Secretary Dave Wragg at 1 Bignal Drive, Leicester Forest East, Leicester. LE3 3QF is the man to contact.

APOLOGIES DUE

Sorry Mr. Fiocchi for making you Italian last issue. Correction: Mr. F. is Swiss as Dave Martin has pointed out.

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CLUB & TRACK REVIEW

Maidenhead Model Makers Club (R/C Cars Section)
Secretary: Roy Price
Maidenhead Radio Models,
55 Queen Street, Maidenhead (37295)

The club has a thirty year history, going back to foundation by a cable-racing group (indeed their original track still in existence!) Interests have shifted through boats, control-line, slot-cars (weekly meetings on 6-line 24 x 16ft. circuit at the clubhouse).

R/C car activities now firmly established in second year under guiding hands of model shop man Roy Price and Chris Pettit. Original circuit was on local school playground, but currently using land graciously loaned by the Lord High Sheriff of Berkshire on his White Waltham Airfield Estate.

Circuit is 179 yards long with average width of 12ft. Its L shape is viewed from a six feet high drivers rostrum. On-site Clubhouse. Club meetings every Sunday with organised racing on first Sunday of the month. This programme continues through the winter! Membership enquiries to Roy Price as above, or to Chris Pettit, 20 The Pagoda, Maidenhead.

Strathclyde Model Auto Club
Secretary: Mike Green (Brediland 3806)
35 Greenways Avenue,
Paisley, Renfrewshire. PA2 9NS.

Mike Green reports that the club has been given permission to use the site of an old roller skating rink in Kelvingrove Park, Glasgow, to set up a small circuit and will be using this on Sundays and Wednesday evenings until further notice, weather permitting. Anyone interested should contact Mike, as above.

Keighley & District M.E.S. (Stock Car Section)
Secretary: Peter Humphrey
304 West Lane, Keighley,
West Yorkshire. BD21 2RT

Proposed Race Meeting dates for racing at Marley 1978 season: Sunday, April 16th (First Meeting) Sunday, May 21st, Sunday June 18th, Sunday, July 16th, Sunday August 20th, Saturday/Sunday, September 16th/17th (Yorkshire Drivers Champs), Sunday, October 15th. Race times and entry fees yet to be decided; all meetings to be official RSCA Meetings to RSCA rules. Details from Secretary sending SAE. Note: 80db. noise limit will be in force!

Midland Electric Radio Car Club
Secretary: Tony Devenonport,
200 Windmill Road,
Coventry. CV6 7BE.

The purpose of the club is to promote 1/12th scale indoor electric radio control car racing and provide facilities for race meetings at a number of venues, at as little cost to the competitor as possible. Construction Rules: 1/12th scale representation of a full-size car. Max. width 6¾ins. (or scale) Wheelbase 8in. plus or minus ½in. (or scale) Max. rear tyre width 1½ins., Max. front tyre width 1in. Motor to be Cyclone 15 type, or as supplied in kit by Lectricar or Mardave, and to be left standard. A max. of six cells at 1.2 volts per cell.

Annual membership fee £1.50. A charge of 50p per entrant will also be made at each race meeting.

Formula 12th 77-78 Championship

This championship is to be run through the winter and comprises four meetings at Countesthorpe and five meetings at Wolvey, being one per month at each venue. A minimum of four heats per night, all heats to count. Points awarded will be 9-6-4-3-2-1 and best seven scores to count. A "first place" award will be presented at each championship round (dates below marked C.R.).

Wolvey Village Hall
(Off A46 at Wolvey, between Coventry and Leicester)
Meetings start 7.30pm on the following Thursdays:
(Nov. 3; Nov. 17 (CR) Dec. 1; Dec 15 (CR)) Jan 5; Jan 19 (CR); Feb 2; Feb 16 (CR); Mar 2; Mar 16 (CR).

Countesthorpe College, Countesthorpe, Leicester
Meetings start 7.00pm on the following Mondays.
(Nov 14; Nov 28 (CR); Dec 12; Dec 19 (CR); Jan 16; Jan 30 (CR); Feb 13; Feb 27 (CR); Mar 13.
Practice is available on Monday evenings when there is no meeting.

Rhyl & District Model Club (R/C Car Section)
Secretary: Arthur Jones,
29 Ascot Drive,
Rhyl.
Clwyd. LL18 2RW, North W...

The club has recently f...ed a car

section in the club, and meetings are held every Sunday on a temporary circuit on a local office car park. New members welcome!

Wombwell Sporting Association R.C. Model Car Club
Secretary: Stephen White,
13 Derwent Drive.
Chapeltown,
Nr. Sheffield.
(Tel. 62595).

As part of the larger sporting association this new Sheffield club is already well established with regular meetings in the association's grounds, operating on a former go kart circuit.

Yorkshire R/C Model Racing Car Club
Secretary: Kenneth R. Hilton,
52 Bainfield,
Liversedge,
West Yorkshire. WF15 7PN.
Tel. Heckmondwike 402690.

Note change of secretary: Welcome Ken Hilton; we look forward to a happy continuance of exciting events at Littlemoor Park. This seems a suitable occasion to say thank you to Jeff Lindstrom who vacates the well-worn secretarial chair and should now have a little more time for his own racing. Thank you, Jeff.

Chrysler Sports & Social Club (Model Car Section)
Secretary: Barry Tingay,
24 Brampton Rise,
Dunstable, Beds.
Tel. 604361.

This is primarily a works club but some outside members may be considered. Interests in i.c. cars, stock cars, and one **eighth** scale open air electric. Model Car Section has use of former basketball pitch nicely tarmac-ed to provide a small but interesting circuit on the sports ground which lies on the outskirts of Houghton Regis between Luton and Dunstable.

Torbay Radio Auto Club
Secretary: Bernard Portis,
23 Marldon Avenue,
Paignton.
Devon. TQ3 3NY.

Known by its acronymic initials as TRAC was started three years ago with six members, but numbers now running at about fifteen with eleven cars — four Stock Cars and the balance being F1/FT Mardave, PB and GBs.

The club meets on Sunday afternoons at the car park of nearby Pontin's Holiday Camp (Club Chairman is Phil Pontin). The track is marked-out on good asphalt about 60 yds. by 30 yds. Unfortunately, the car park is fully used during the summer season, so we are anxious to find an alternative site for year-round use.

Wrexham & District Model Club (Model Car Section)
Secretary: John K. Whittaker,
50 Herbert Jennings Avenue,
Acton Park, Wrexham.

The club was briefly reported in our first issue, but is now firmly installed at the new circuit. The secretary writes:— The car section of the club was formed some three years ago and now has twenty members, with a solid core of willing workers. Track is situated at Hoseley, off the main A483 Wrexham to Chester road in a setting much admired by visitors. Over the past year alterations have increased the track length to approximately 205 yards and the average width is 12 feet, apart from an eight foot wide chicane. A new pit area and rostrum have also been built. The concrete surface has been covered with a coating of Mileseal, an asphalt product, and this will have an additional covering in early spring. This is yet another circuit which should be considered suitable for National and International meetings. New members are always welcome and should contact the secretary as above or ring Chairman Ray Moffat at Wrexham 4692.

Derby R/C Model Car Club
Secretary: B. R. Phelan,
18 Chelwood Road,
Chellaston, Derby.

Formed in February the club is affiliated to the Derby Sports Centre and runs every Saturday afternoon on their disused car park. Noise complaints may limit use and arrangements in hand to move. New members welcome.

BRITISH RADIO CAR ASSOCIATION

Chairman: K. G. Plested, P.B. Products, Downley Road, Havant, Hants. Tel. Havant 71774. Evenings Emsworth 2607. *Secretary:* T. H. Martin, 7 The Green, Werrington, Peterborough. PE4 6RT. Telephone (0733) 72114.

YOUR R/C LICENCE!

The Home Office, Radio Regulatory Dept., Waterloo Bridge House, Waterloo Road, London S.E.1. (Send for form: costs £2.40 for five years).

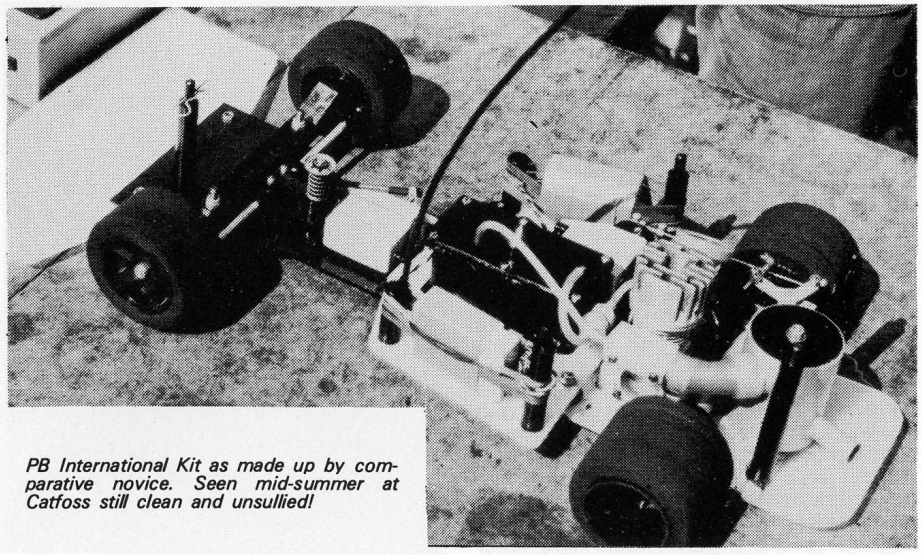
THE KITMASTERS...

TO BE successful in the top ranks of model car racing the driver must rely on one of three great kit manufacturers, alphabetically, Associated from California, PB Products of England, and SG Racing of Italy. These three makes have dominated the contest scene throughout the world for several seasons now, with victory see-sawing from one to the other in a delightfully open way. Who are the people behind the scenes — or on stage for that matter? All three firms are run by designer-driver-maker proprietors, managing directors, or top men. Associated have Gene Husting a name usually found high up on Californian contest reports, who also writes valuable technical articles on engine tuning, chassis design for the U.S. model press (and happily now allows us to quote him!) PB Products who have this season topped their Expert series with the amazing International have Keith Plested at the head of things, ably assisted by son Mark who likes the speed aspect (he runs a superbike!) but is less interested in the mechanics of how and why. Keith could so easily have been champion of Europe this summer but for . . . always a but for . . . you must finish to win! His name too will most times be found amongst the finalists — three times second in the British Championships this season. Then we come to Italy's Franco Sabattini (the S of SG: Garafoli is the G. Father G produces the Super Tigre range of engines, son Leonardo works with Franco) who is the youngest of the three kit masters. He races like a true Italian with every ounce of energy and zest desperate to win to the very last lap. He has been Champion of Europe, and his cars have also been the tools of other champions, Rony Ton and Colonna.

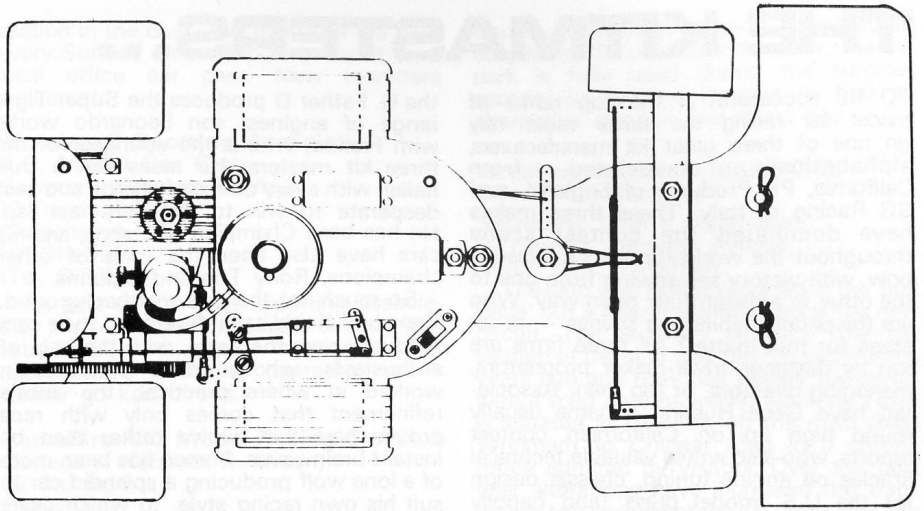
So much for the personal background. Gene and Keith have developed their cars gradually over the years, with the help of enthusiasts whose ideas have been worked in where practical, the subtle refinement that comes only with race proven cars that evolve rather than be instant brainwaves. Franco has been more of a lone wolf producing a splendid car to suit his own racing style, to which users must conform if they are to be successful.

THE CHASSIS

No one of these three can be said to have followed another's lead. Their chassis are all distinctively different. To achieve the desired state of rigid at the back and flexible at the front Associated have a power pod, almost square and ⅛in. thick to house the motor and rear assembly, to which is attached a more flexible front end. Above this is the radio plate which plays a significant part in the transition from rigid to flexible by a designed amount of play in the front



PB International Kit as made up by comparative novice. Seen mid-summer at Catfoss still clean and unsullied!



Line drawing of RC100. This shows layout, radio plate, Johnson Chicken Hopper tank, radio and servo locations. Steering servo has been installed inverted — a quite usual practice.

fixing. I must add here that the power pod is a beautifully prepared piece of work, superbly drilled and slotted, the result of a great deal of on circuit development, and well worth the polishing which the designer urges upon users!

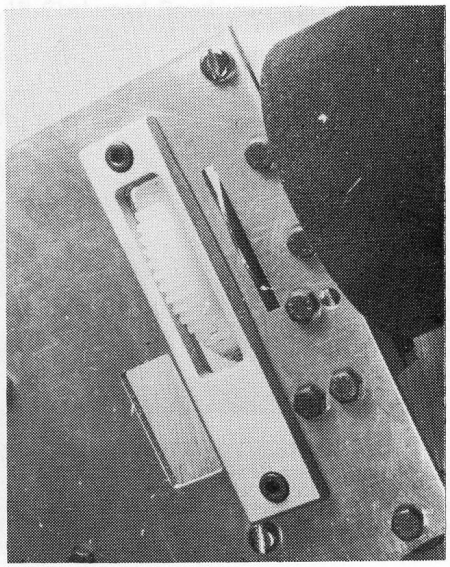
Keith Plested approaches the chassis problem in quite a different way. His Expert chassis features a sandwich of two pieces of alloy, one rectangular the other tapering to point like a gusset of metal. This provides stiff at the back, flexible at the front. Out of this arose the International chassis, which comes as two alternative pieces, one for smooth circuits, which is fairly broad and stiffish, the other a slimmer job altogether for rough circuits. Drivers then waist the front ends to suit their special requirements, coming to a thinnest measurement across of as little as three inches. This seems the concensus width over a number measured — all within an eighth of an inch.

Franco Sabattini is a devotee of the flexible chassis, thinning his own until it is almost too frail to hold together — or so his opponents hope. This ultra flexible approach brings its own special problems. What about the rear end? Here Franco has his own novelty in the shape of a second bearing to take the tip of the engine crankshaft so that it is supported at both ends, by the main holding down bolts of the crankcase and this extra bearing. On the under side of the chassis is a protective strip to save the gear should tyre wear endanger it (Keith could have used one this year at Lyons!) His new Professional kit is less whippy and this extra support for the crankshaft has been dropped, though there is still a stout gear protector underneath.

BRAKES

Disc brakes were first introduced to r/c model cars by the Swiss firm of Brem, as noted in our last issue, but PB were quick

Stout metal gear protector fitted to the latest SG Expert kit. Note also slot for disc of brake — now featured.



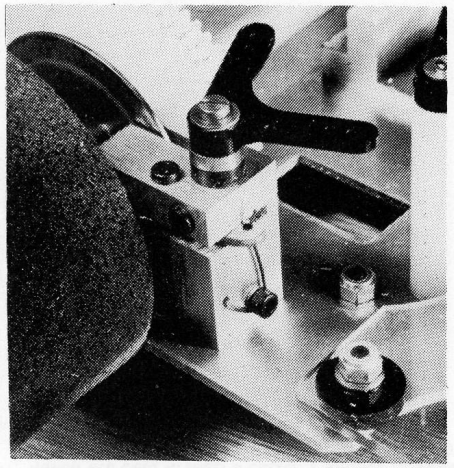
to appreciate their virtues with power output increasing beyond control unless improved braking could permit flat out runs down ever lengthening straights. It has proved immensely successful. Latest SG now includes it on the Professional kit and it is offered as an alternative on the Associated RC100. Indeed, one German accessory firm has been listing it as a special for some time — presumably their own product — to fit the RC100.

CLUTCH

Thirty years ago I was racing cable cars (they were fast with up to 10cc motors, young man, and were tethered to a central pylon — speeds up to 150 mph . . . really!) which used an identical clutch to that, in principle, used today, namely centrifugal in action with shoes that swung out to make contact with the bellhousing when a sufficient speed was attained. Development of the flywheel, clutch and bellhousing assembly is therefore relatively ancient but until recently somewhat stagnant.

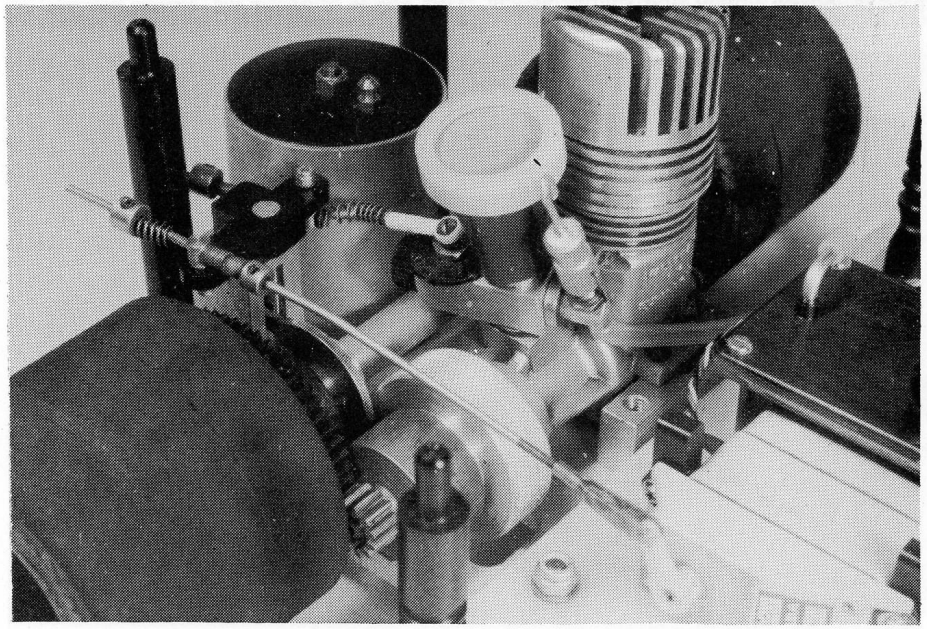
Basic method of two shoes with a horseshoe shaped spring regulating the

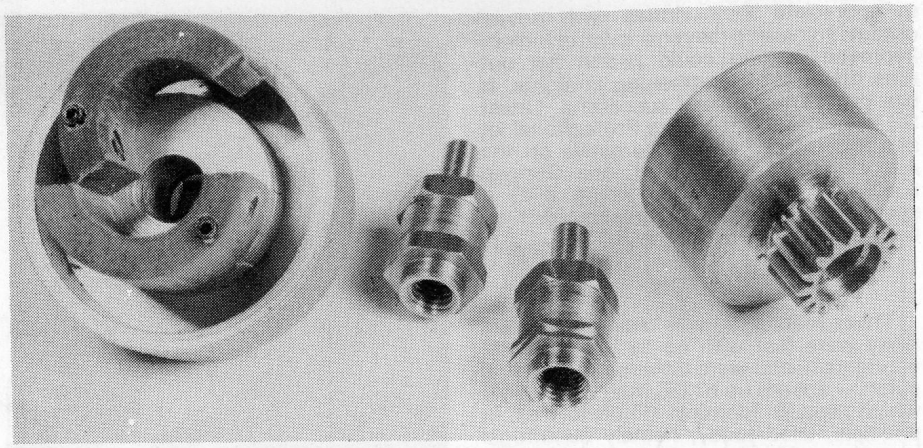
This is the PB disc brake connected to servo for both braking and throttle with a stout rocker movement. Disc is substantially housed and well protected from shunts.



SG disc brake; operation is quite different from that of the PB International.

resistance to throwing out speed is used by both Associated and PB with minor variations. PB have the simpler assembly. Associated has now moved over from specially hardened alloy shoes to bent up metal shoes which make metal to metal contact, omitting the traditional brake lining inside the bellhousing. This is a controversial move that may not stand up to the high speeds now being obtained with a





PB Clutch, shoes, and bellhousing. Note nylon shoe screws. Two crankshaft adaptors are shown, plain bearing and ball bearing being choices, also 6mm or ¼in. U.N.F.

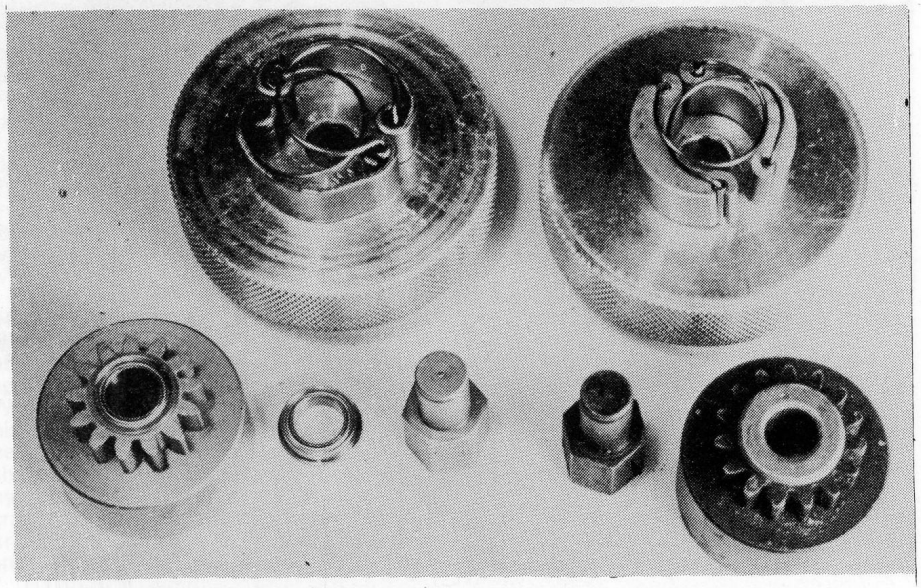
well "breathed upon" K & B, though adequate for "cooking" engines.

Sabattini is now using either hard wood or tufnol type shoes, i.e., not metal at all, held in place with a circlip, which goes right round the shoes, fitting into a shallow groove provided. This is a much simpler solution than the horseshoe springs which always looked untidy and unmechanical. Only a season's racing will prove the merits or otherwise. It should be possible to vary tension very easily with a series of different strength circlips, without the risk of losing vital bits on the pit floor.

STEERING

Here we have a definite breakthrough for PB International which offers the most

Associated Clutch, shoes and bellhousings. On right are hard anodised aluminium; on left the latest steel shoes. These have 3/32in. split-spring pins in place of earlier (and fiddling!) 1/16in. pins. Bellhousing is unlined with metal-to-metal contact in this version.



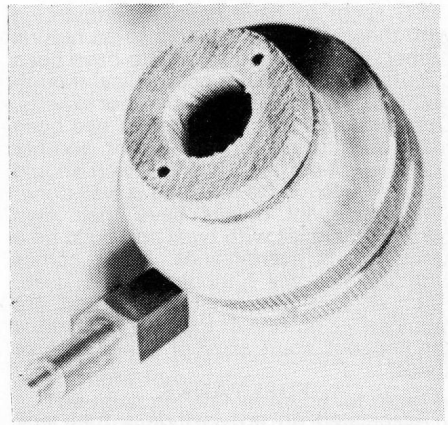
elegant and practical steering unit of all. The Expert series provided a neat system with a slot taking the turns, and adjustable toe-in available with an eccentric connection to the stub-axle assembly, but the International goes one further with full Akermann benefits of differential radii for the inner wheel on a turn. SG have very neat stub-axle-kingpin units and have reintroduced an amount of springing to the front wheels. The very latest offering from Bologna is a centrally fixed unit that pivots centrally and should in theory be able to keep both wheels on the ground at most times.

Finally, the standard RC100 steering assembly which has been identical with all the RC range from RC2 on, is giving place to an alloy cross piece (like the nylon one on the PB Expert or the alloy Marker unit) where the track rod is actuated by prongs touching twin ballbearings to produce a very sweet unit. This I believe was first fitted at Pomona on the occasion of the World Championships when it was noticed how well the PB Internationals were faring . . .

WHEELS AND TYRES

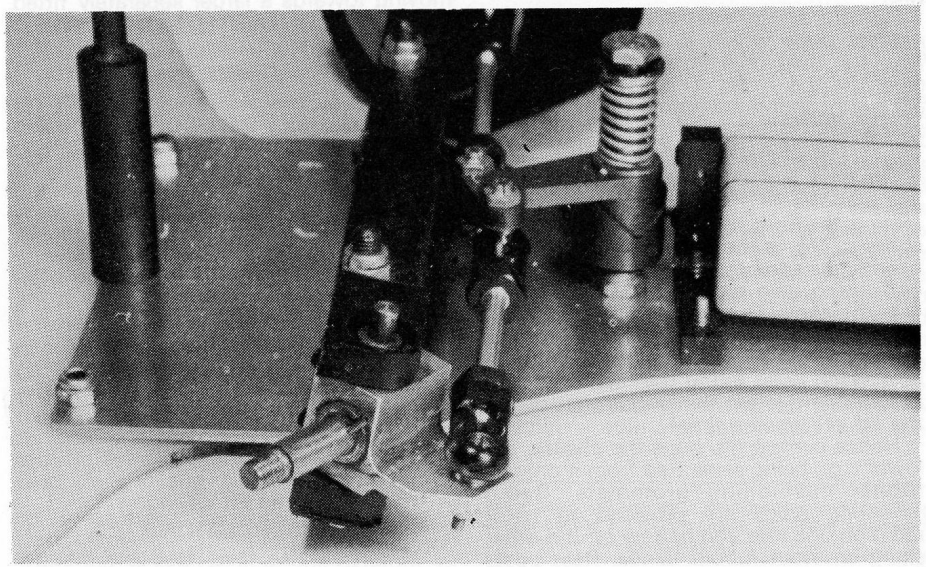
Associated get full marks for offering their wheels and tyres already glued up

PB steering. This is a real bull point! Not only does the ball joint and track rod kit provide true Ackerman steering, but machining of axle blocks provides a really workmanlike assembly.



SG Clutch uses hard wood or tufnol for shoes which are held in with a circlip. Changes in weight and material of flywheel have taken place, with some lightening.

and ready for use. It is a messy job gluing on tyres and can be done badly. As a factory product with balancing facilities all the wheel/tyre units are decently balanced and cleaned up. (They won't last for ever and it is only putting off the evil day of course). In general wheels and tyres are the same for all, with minor fixing variations. I prefer a nice accessible allen screw tightened down on a ground flat rather than fumbling through a tyre edge to find the holes. Again Associated score here.



SG seem to have been experimenting with their tyres. Some seem to be natural rubber: others would appear to have been cut off a tube, which is economical though not too highly regarded by the experts. One pair looks very much as if it had been rolled and stuck at an angled joint, another economy measure, but one which should not be unacceptable if joining is well done.

In any event drivers have their own particular fancies with tyres and build up a stock for all eventualities. What comes with the car will undoubtedly be used. Hubs all look very much alike and are moulded — no one in the kit field here is sending out spun alloy or other de-luxe styles!

FUEL TANKS

Associated do not include a fuel tank with their kits but recommend the Johnson tank for which their radio plate has a suitable slot to fit. This is of stout tinplate chicken hopper style, narrow and deep. Normal rat-race quick filler fuel cap as standard. A very neat spring-loaded cap is on the U.S. market but not so far "standard" for RC100.

SG have a tank peculiar to themselves, being of round section and made of brass painted black. I have heard that some of the paint gets inside and comes off with the fuel — certainly the paint wears off and shows the bare metal on the outside. With the earlier kits tank is angled to one side of the chassis; the latest Professional has it placed angled the other way. I don't know if there is any special significance in this.

PB offer a very neat pressure tank at a modest price which is easily assembled with the help of a little epoxy being of nylon in the main. This is a well tried accessory being common to the Expert series.

RADIO PLATES

We have already mentioned the important part the RC100 Radio Plate plays in mating the firm and flexible parts of the chassis. This is the only one that is significantly raised above the main chassis and cut out to take radio gear.

In the earlier Expert kits (still continuing of course) PB had a similar though lighter gauge plate enclosed in a U-shaped radio box which went round the fuel tank. This is lidded and latest thinking is that taking the lid off wastes time!

Hence current r/p hugs the chassis, for lower c.g., being separated from it only by rubber cushioning grommets. Radio mounting posts are provided to carry radio on one side and battery on the other slung on stout rubber bands. Rear posts double, being taller, as body shell mounting posts. Servo brackets are also provided.

SG follow a very similar procedure, with rather more elaborate servo brackets. Almost the only item where approach is identical!

ANCILLIARY EQUIPMENT

Heatsinks, silencers (mufflers to American readers) and the like are not normally part of the kit, though purpose made units are available from the manufacturers.

The ordinary flat plate heatsink is giving place to the more elegant "big head" type of replacement head for engines. It not only looks better but takes up less space. PB make a very smart unit, machined from the solid, worth every bit of the price charged for it. SG who work hand in hand with Super Tigre enjoy that company's diecast head which comes as part of the complete Super Tigre X21 engine. USA makers again offer a range of heads, though clinging more to the flat head style.

Silencers have assumed considerable importance in Europe with noise level regulations (more severe than in America). Designs now involve no power loss, indeed with pressure fed fuel tanks venting into the silencer, are of practical benefit and no longer necessary evils. The stand up round dustbin type is favoured by PB, and located on a platform just behind the engine. SG have been offering a conventional wrap round type, but are now moving towards a larger separately fitted design, if their latest exhaust extension piece means anything.

BODIES

Little need be said about bodies — or body shells, they seem to be regarded rather like bathing trunks as something which must be worn in public! Some of the finest models are hidden by the scruffiest of bodies for most of the time: a best body coming out for finals. Keith Plested is trying to improve this image with a set of beautifully painted shells from his range to show what can be done. But a few meetings alas soon shows how unkind others are to bodies, which are involved in the most frightful pile-ups and come up unharmed, though battered. At the moment the best bodies moulded in Lexan come from America with prices somewhat on the high side. Perhaps a brave pioneer will start making similar quality shells over here with consequent saving.

INSTRUCTIONS

"When all else fails, read the instructions" used to be the cynical advice given to builders. In the cases of Associated and PB they really are worth reading, not only do they provide screw by screw details, but also a wealth of useful information on tuning, set-up and other whys and wherefores. Associated have the better pictures: PB will be following suit when pressure of production allows, at present clear diagrams and rather smudgy pictures. SG, whose kit is nearly RTR, offer no instructions at all.

WHAT SHOULD YOU BUY?

Financially the price range is from £75 for PB International to £124 for SG Expert with Associated on offer at from about £90. Not an entirely comparative choice since the included items vary slightly — a Johnson tank for the RC100 may cost nearly £12 in the U.K. Prices will also vary according to country. Cheaper nearer home of course.

The experienced driver will already have strong views on what he needs and likes, and be hard to wean from successful equipment. The newcomer will be wise to follow local choice since he can draw on the help of others with similar equipment in the club or vicinity. Style of racing will also influence choice. The greater traction of American tracks would seem to favour the Associated range, though their successes this year at the European Championships might appear to contradict this "horses for courses", until we remember that Lyon-Lentilly is a very good traction circuit (and hard on tyres).

On the other hand the recently (first season) PB International has had an outstanding season at home, clocking up an almost 100% victory roll on major U.K. Open Meetings. With an excellent continental coverage, we can expect a great deal more from the marque in 1978; indeed if qualifying times are studied it is already way ahead of most competitors. SG naturally has a specially strong following in its native Italy. Ideally matched with the Super Tigre it has been getting high placements, particularly in the hands of flexy chassis specialists. With recent improvements to the preferred engine it can be even more formidable.

The most general all round kit must be the PB International. You may never be good enough, or a clever enough tuner, to win many races with anything, but you will probably get the most and soonest pleasure straight from the box with it, and certainly the least grief in learning to drive. For the man who likes the building up of the kit, and wants to put in his own little refinements, then the Associated RC100 would be his ultimate choice. He can start with the stark simplicity of the RC2, and add bits gradually to produce the RC100 when he is capable of handling it. It is really a matter of the driver who wants to enjoy working on improvements as well as racing versus the man who wants to race and never mind why it goes as long as it goes. You can pick out both sorts at any meeting!

Dave Martin comments:

"The steering system on RC100 is way behind PB in design (and Delta) but it really is the most robust and reliable system on any car on the market. I ran RC100 for 1½ years and never had any trouble with it — it is really typical Associated: about twice as big, bulky, and strong than it really needs to be (believe me reliability is the way to win). It is, however, rather limited in performance, the trailing axles slow down the steering response due to high servo load. Also the servo saver itself has a rather undesirable design fault since the sprung piano wire forks, even when set to maximum safe tension, will still always break away from the bell crank by an amount proportional to the side load and this causes valuable steering lock to be lost.

This is due to the fact that the resistance to "break away" increases proportional to the distance the spring fork is forced away from the bellcrank, (i.e. the amount of movement lost). This lost lock manifests itself in a nasty high speed understeer, because at high speed the side forces are the greatest. On the PB steering system the design of the servo-saver means that the servo is directly coupled to the wheels right up to the maximum servo load (about 4½lbs). Therefore there is no loss of lock at all unless the wheels happen to hit a bump etc., which is the reason we have servo savers in the first place. I've always considered this to be the main reason why the PB has better high speed handling — rather than its Ackerman geometry, which obviously helps but I'm sure its effect isn't in the same magnitude as that due to the servo-saver (the in-line kingpin — stub axle set-up also helps the PB system over the RC100)."

Next issue will feature a step-by-step construction article on the RC100 including the latest improved steering as run at Pomona.

Dick Winder Reports on End of Season

CATFOSS OPEN MEETING

A DULL start to the day did not deter 24 entrants from turning out at around 9 o'clock in the morning, for one of the last national meetings of the season. The track quickly dried out, and was more or less dry for the first heat.

Things were looking good for the Century oils team from Bradford, with Paul Padgin setting fastest time in F1 to qualify 3 seconds ahead of his team mate Steve White, and beating Dave Martin who was one second slower than White, on 2 mins. dead for 10 laps. Bob Denton completed the four who qualified straight through, leaving Les Wheldon, Tom Martin, Lou Winter, Ron Bates, Mick Newman and Dave Gilbert to battle it out for the remaining two places in the final.

Lou Winter led away in the semi-final, hotly pursued by Les Wheldon, but when Les Wheldon's motor expired, Tom Martin made a good drive through the field to join Lou Winter in the main final. A few drops of rain fell for the start of the handicap final and on a dampened track, Mike Harbottle of the Catfoss Club, in his first national meeting, drove consistently to take first place off scratch with his Vecoy powered Mardave.

It was raining harder for the F1 Final making the track a bit slippy. Dave Martin dominated this event from the start completing 66 laps, and he was followed home by Dad, Tom Martin, on 56 laps who displayed some fine competent driving using all the power he could muster from his faithful Vecoy. Steve White put up an impressive performance to finish third on 48 laps despite having problems with his motor.

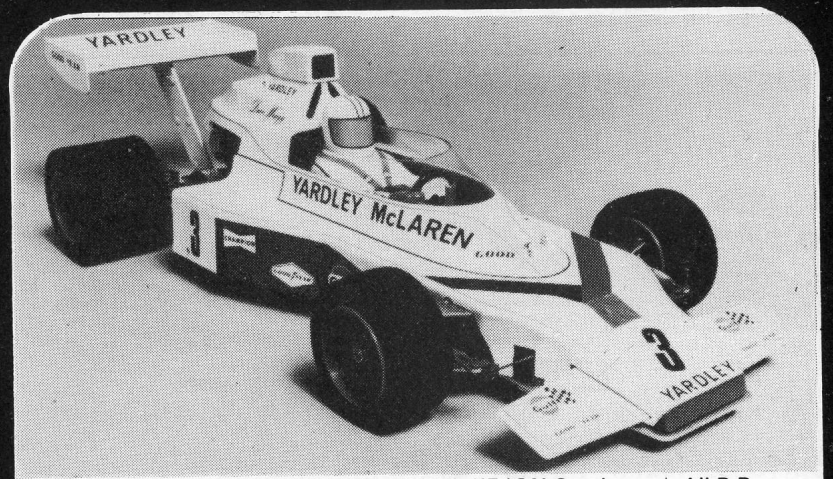
There was a short break for lunch after the F1 final but the GT's were soon in full cry to start the afternoon's GT heats. The first heat was damp but the track dried out for the remainder, and Dave Martin made full use of his tremendously powerful K & B to record fastest heat of the day on 1 min. 46 secs. for the ten lap heat. Bob Denton seems to be following in Dave's footsteps setting second fastest on 1 min. 51 secs. Ken and Les Wheldon showed their suspension cars to the full, to complete the four who went straight through to the final. This left Ron Bates, Tom Martin, Lou Winter, Steve White, Ted Booker, and Mick Newman to do battle in the semi-final. Ron Bates and Mick Newman battled through into the final after a hard race.

In the handicap final Mike Harbottle failed to clinch the double when his motor packed up a few minutes from the end, letting H. Mason through to take first place, the position he had been chasing all day. Mr. Darrington drove into a steady 2nd place followed by Chris White, another newcomer at his first meeting.

The GT final was the best race of the day, Dave Martin getting his K & B powered P.B. International really wound up. Alas a rear cog stripped and there was frantic work on his car to replace it. This let Ron Bates, Bob Denton and Ken Wheldon through to battle for the lead. Ken Wheldon then ran into trouble with his motor stalling causing him to have a few pitstops. Ron Bates and Bob Denton were really battling hard up front and both even had a pitstop about the same time, one not getting away from the other. Meanwhile Dave Martin was back in the fray with a new rear cog, catching the leading pair hand over fist. But time ran out and in the end he failed to catch them by about 5 laps. Still a tremendous effort considering his long pitstop. Ron Bates showed his true aggressive driving style to just pip Bob Denton to the post both on 73 laps. It could have been either ones race, they so deeply engrossed that neither knew which one had won the end. Ken Wheldon on 53 laps further boosted his points tally by overcoming his problems and pushing Mick Newman on 51 laps out of fourth place. Sixth went to Les Wheldon whose car failed in the early stages of the race.

Despite the changes in track condition it was interesting to note that not many competitors changed their tyres but preferred to battle against the elements with the one compound. Mind you at no time did the track become very wet and probably to start changing compounds would have been more trouble than worthwhile. The majority of cars in the winning positions had disc brakes with the big exception of Ron Bares who still prefers his own designed drum brake on the rear axle. It was also interesting to see a wider range of cars in the finals, no type really dominant, and nice to see some names who don't make the finals so often. The results charts give a detailed summary

308 PIT STOP



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of types of car, motor, tyres, etc. and I hope that these will be of interest to readers.

To conclude I am sure I will be joined in offering my warmest thanks to the organisers, Geoff Collins, Collin Stark, Keb Wheldon (and Pauline Wheldon), whose efforts made the meeting a great success.

F1 MAIN FINAL

1st	D. Martin	PB International	K&B 3.5	PB Slide	PB Hard	Delta 340B
2nd	T. Martin	Associated RC100	Vecoy	?	PB 371	Assoc. 2402
3rd	S. White	PB/Ixion	OPS 3.5	Own Slide	PB 371	Assoc. 2402
4th	L. Winter	PB International	K&B 3.5	Peri 61	PB 371	?
5th	P. Padgin	Century	K&B 3.5	Own Slide	PB 371	Delta 340A
6th	R. Denton	PB International	K&B 3.5	PB Slide	PB 371	Delta 340A

GT MAIN FINAL

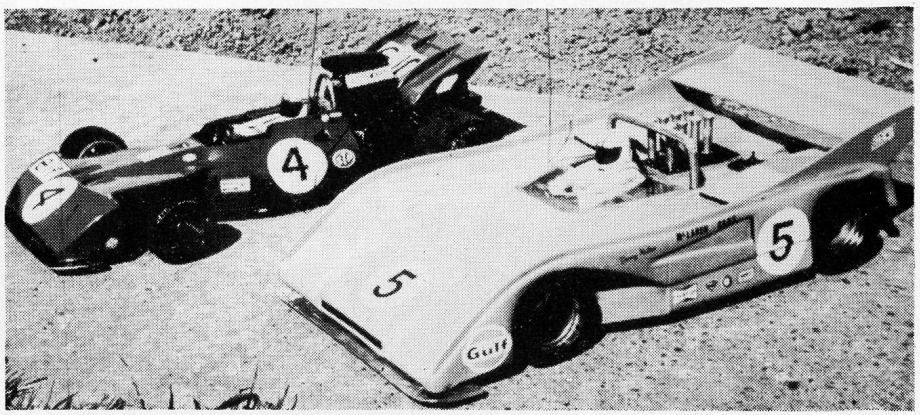
1st	R. Bates	Bates Special	ST X21	PB Slide	PB 371	Assoc. 2402
2nd	R. Denton	PB International	K&B 3.5	PB Slide	PB 371	Delta 340A
3rd	D. Martin	PB International	K&B 3.5	PB Slide	PB 371	Delta 340B
4th	K. Wheldon	Wheldo Suspension	ST X21	ST Barrel	**RADIO BODIES**	
5th	M. Newman	IXION	Vecoy	Own Slide	Med/Hard	Med/Soft
6th	L. Wheldon	Wheldon Suspension	ST X21	ST Barrel	?Radio Bodies? Med/Hard	Med/Soft

F1 HANDICAP FINAL

1st M. Harbottle (Mardave)
2nd H. Mason
3rd N. Heighton

GT HANDICAP FINAL

1st H. Mason
2nd M. Darrington (PB International)
3rd C. White (Mardave)



R/C CARS IN NEW ZEALAND

IN SPITE of stringent import regulations which make it difficult to obtain good engines and local model shop concentration on toys, r/c car racing is making steady progress reports our New Zealand correspondent Rex Ashwell. Rex is a RNZAF engine fitter modelling as far back as he can remember with a main interest in r/c cars over the past five years. He has been very much the guiding spirit in organising sport in the country and hopes the movement will soon be big enough to form a national association. In common with many most of his cars are scratch built and he has been making his own scale bodies in fibreglass, financing his modelling in part by the sale of bodies.

*Two of Rex's scratchbuilt cars **and** bodies.*

A typical race meeting at the moment attracts some ten to twelve, mostly scratch built, with a sprinkling of Mardave and PB cars which have been imported. Most cares are home-modded Veco or OS engined, with a few Schneurle engines likely next season. There is a purpose-built circuit at Marlborough, Rex's home circuit, which has just hosted the 1977 New Zealand Grand Prix. There is another circuit purpose built at Nelson, some 80 miles away, with car park circuits and airfield tarmacs at Christchurch, Wellington and Palmerston North. Very much the situation, as Rex says, that existed in England some four years ago.

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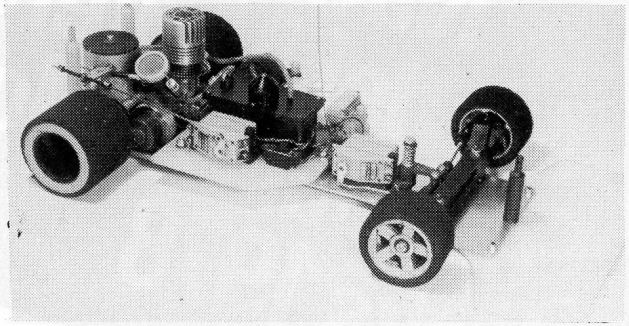

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PONTIN'S

Dear Dickie Dickson,

I would like to thank you and your band of enthusiasts for making such a good show of radio control model car racing during our National Model Makers' Festival week at our Brean Sands Holiday Village in Somerset.

As you know the week proved an outstanding success, and our plans are already made for further Festivals in 1978, when we expect to have even greater success in the light of experience gained of what the modeller wants most, especially as we shall be offering two locations from which to choose.

In sending good wishes to you, may I express the hope of seeing you all again in 1978.

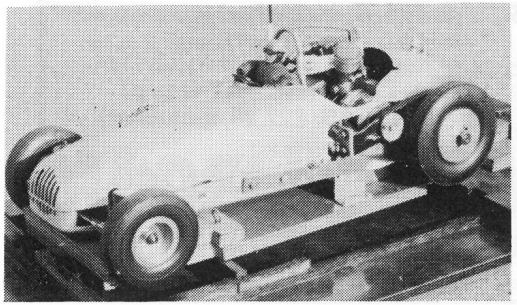
YOURS SINCERELY,

Fred W. Pontin

MODEL WEEK CARS

There is no doubt that the late cancellation of hoped-for first meeting on the Medip Circuit at nearby Bleadon left a hole in the arrangements for model car racing at Brean Sands. However, the well-surfaced Go Kart Circuit a few hundred yards up the road proved an interesting track, though not quite far enough away from the main camp area to avoid some mutual radio interference with boats on the indoor pool. An impromptu daily league table was organised thanks to Jeff Lindstrom of Bradford, who had brought a lap counter, and Andy Rigby, a helicopter pilot from Aldershot who co-ordinated affairs. Cars were mainly of "cooking" variety, with one PB which in the capable hands of Tibshelf's Ken Wright scored a runaway lead. This was rewarded with a generous holiday voucher prize, runners up Andy and Jeff getting large quantities of beer . . One or two stock car operators really did not have much fun, though invited to run in the league.

Meanwhile there was Modelcraft's demonstration team with the new Mardave electrics to try out, Editor Dickie Dickson had a couple of electrics — a Jerobee with Electro Craft Systems "black box" (blue in this case) and Smooth-Tronic "black box" Lectricar which were passed round to a number of interested



Jim Batten's 30-year-old car now fully rejuvenated and running under radio control.

Some of the cars and drivers. On far right Andy Rigby, second man with son next to him, winner Ken Wright, and then Jeff Linstrom, third.

parties (including Bill Birkenshaw of RCM & E having his L-test) who all voted it great fun. Also at Brean Sands was a very old friend from Eaton Bray Modelsportsdrome (where the idea of a modelling holiday week first saw the light of day in immediate postwar years) none other than Jim Batten from Bridport, who brought along some of his cable racing cars now converted to r/c. Quality of workmanship on the 1066 (Hastings was the manufacturer!) car in immaculate beaten aluminium and highly polished was much admired. The car had original hard racing tyres (ZNs for older readers, made by that old sports car racer Zere) belt drive, detailed driver. Jim also had a highly detailed Jeep, where the whole of the chassis became one large heat sink. We did make cars in the old days . . .

Nor must we forget Eddie Crowe with his fleet of 1/16th scale super regen. r/c cars for the youngsters.

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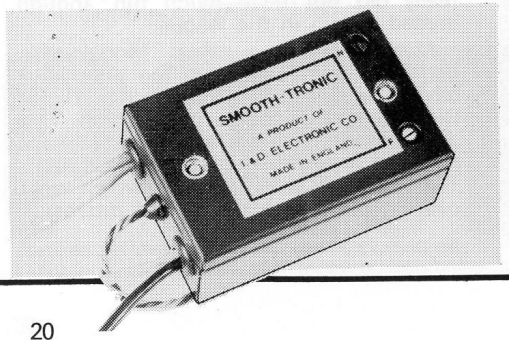

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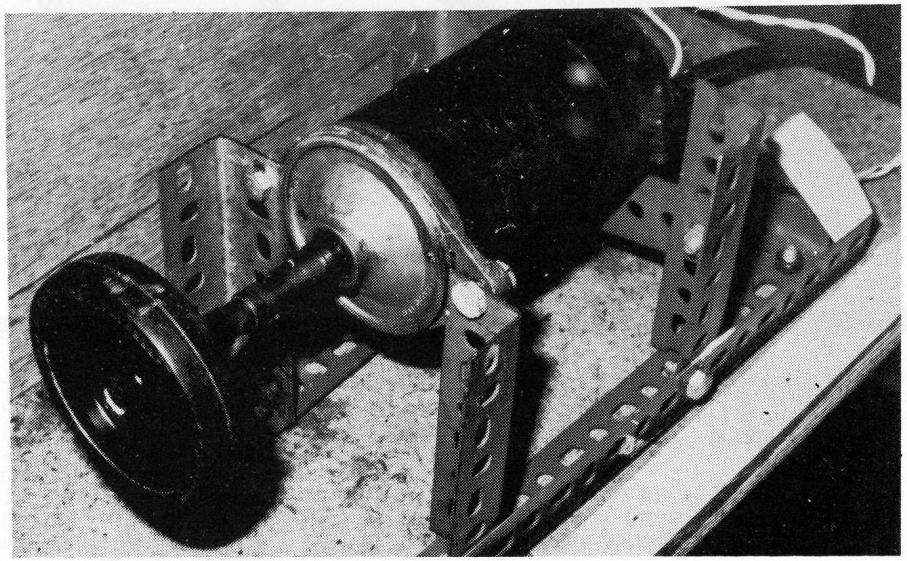


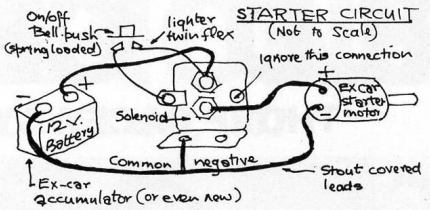
"THE ONE thing most beginners ask is 'How do I make my own starter'". This is a typical model shop's comment when invited to suggest a useful article. So, here goes. Like Mrs. Beeton's famous hare, first get the starter motor; which ought by the way to be the 12-volt kind.

Wearing old clothes, and with a few hefty tools in the boot, go along to the nearest car dump and seek out the man there. He will almost certainly be able to provide one and will charge anything from a mere 50p to £3. If possible also get the starter switch-on button, which in the case of an oldish motor will probably have the starting solenoid integral with it. Later models, since they have been operated by the on/off key on the steering column do not have a springloaded on/off switch like this. In which case you will need a solenoid. Lack of it will quickly pit contacts and is unsatisfactory. Maybe you will have to dismantle your starter with your own tools from the latest banger in . . . hence the old clothes and tools . . . but this should produce the cheapest product.

I expect your starter will have its throw-up gear still in place which operated the car flywheel. If you can persuade the man at the dump to remove it for you so much the better. If not you will have to get it off yourself. If you cannot get it off easily then you will have to saw off a small shaft end to free it. Just behind the retaining circlip the metal will probably not be hardened and will accept a hacksaw cut. Once this is off then a suitable hardened rubber wheel must be fitted.

Wheels used are generally off industrial trolleys and may not be easily obtained as a one-off. However, most model shops catering for r/c cars now carry a stock. A 4in. diameter wheel (ours is a Flexello) will cost between £1.25 and £1.50. Hole in wheel may have to be drilled or filed out a bit to go on shaft. It can be locked in place with a couple of allen screws if the hard rubber or plastic hub is tapped or shaft end tapped. Alternatively, you can try your luck sticking it with Loctite which seems to work marvels of adhesion . . . especially when you want to loosen a bolt . . . mine is Loctite-ed.

You will also need a spring loaded on/off button — you can use a bellpush from Woolworth's, or just look at one and see how simple it is to make up from a bit of springy brass or steel. Add to this a yard or two of stout electric cable, and a similar amount of lighter weight cable, and a pair of bulldog clips. Finally you need a 12 volt



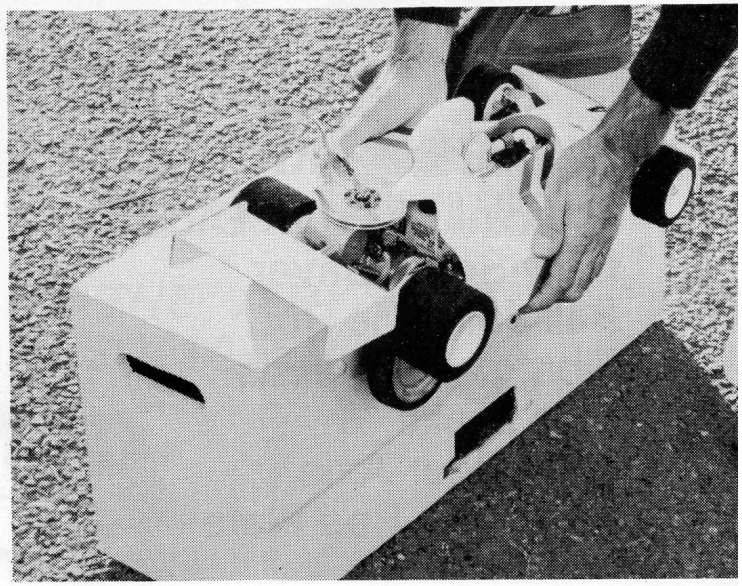
car battery. This is the most expensive part and may set you back some £15. A motor cycle battery is a little cheaper and lighter but will not stand up to the use so well or so long. You can as a makeshift measure use jumper leads from the family car. This is common practice amongst American drivers but is a bit awkward if you cannot get your car near the pits, and have to feed in through the bonnet. With boot located battery it is simpler. I did see one man at Lilford Park this year sitting very happily on his boot ledge and doing just that.

How you house the apparatus when made depends on your talents. If you happen to have some Dexion or Handy-angle, this is the quickest way to make up the starter. It is good also as a beginning since you will probably wish to alter the layout later, either to have it built into your tool/spares everything box, or just peeping through a slit in your pit table, and operated with a foot switch. The Dexion type is primarily for ground level operation. You may prefer to make the container/framework of wood. This can be simple and crude hinged to fold up into small space, or an elegant piece of equipment, such as that being operated by Wes Raynor of Mardave.

My solenoid is described as "suits most Ford cars" and cost £3.24 (shocking price really, so try to get one at the dump). There will be two substantial bolts in the centre with washers beneath. They are the two ends of the solenoid which make a clicking sound as they operate (like the flashers in a car). There will also be a little flat spade like connector to which one end of your bell-push lead will connect. The other end connects to a solenoid bolt, together with the positive (+) lead to the battery. The other solenoid bolt is connected to the positive of the starter motor. There will probably only be one possible threaded bolt connection to the motor and this is it. Negative earths to the motor body and to the Dexion framework you have built. If you use a wooden framework then you will have to provide a stout earth wire back to the solenoid body. The solenoid should be bolted on to the framework, and again has a negative body. Battery negative (—) connection goes from negative post to common negative Dexion framework. With all connections make sure they are good and adequate with bare metal to metal contact.

Press button and motor will operate. You are in business!

Heading: Starter with trolley wheel erected on Dexion framework. This gives excellent earthing properties. With wooden framework be sure earth connections of common neg. are good. See diagram, very much not to scale, above.



Right: The super-elegant version in wooden carrying case with hand holds, battery contained within. The work, the hands, and the car all belong to Wes Raynor of Mardave.

WORLD CHAMPIONSHIP

THORP RACEWAY, USA — JULY 2, 3 & 4, 1977

WORLD CHAMPION

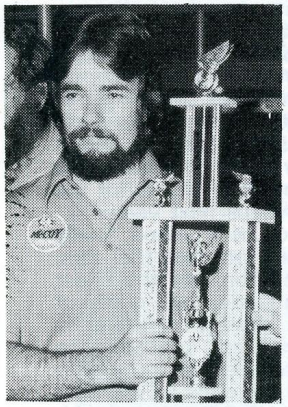
BUTCH KROELLS

BILL JIANAS
2nd Place
TOP QUALIFIER

MIKE ROWLAND
4th Place

RICH LEE
5th Place

MATT AZZARA
6th Place



CHUCK PHELPS
7th Place

GARY BURIANI
9th Place

ROGER CURTIS
1st 'C' Main

GENE HUSTING
3rd Place

NEW RC 200 KIT

Aluminium Front End
New Servo Saver
Ball Joint Tie Rod
Fibreglass Chassis
Disc Brake
8mm Rear Axle
New Rear Pod Plate

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ENGINE TALK...

DAVE MARTIN ON ENGINE R.P.M. AND MATTERS AKIN

Dear Editor,

Never having been one to miss out on a good controversy I feel I have to write in on the question of engine r.p.m., the magnitude of which was the subject of an argument between Richard Hamilton and Fred Livesey in your last issue.

I must admit to being ignorant of a 35,000 r.p.m. rating on R & A rods (I don't know where Mr. H. got this figure) but I do know that the top drivers in this country have all stopped using them because they don't stay together in the highly tuned K & B's that do turn over 40,000 r.p.m. R & A rods are certainly not the best available since the thin bearing shell in the big end either slips or breaks. This phenomenon is well documented by Phil Booth and Co. using synthetic oils which have inferior lubricating properties, and I myself have destroyed a couple of R & A rods on castor oil. The best (and most expensive) rod for the K & B is the Titan rod which is guaranteed unbreakable and will be the rod used in all the fastest cars next year. The K & B rod in the Mark II engines is also practically unbreakable, although I have had one big end bush shatter in a K & B (Mark II) rod (the Titan rod overcomes this problem since it has no bush at all) but the K & B rod in the Mark I engine is an economic liability and if anyone has one I advise him strongly to take it out before it exits the case without waiting for the back plate to be taken off. X-rays of the Mark I rod have shown a fault in all of them just below the little end.

The advance in con-rods this year has been such that Mr. H. is also wrong in saying it is the weakest part of the engine. The engines which I built for Bob Denton and myself, and which appeared at Hull on September 25th 1977, were, I am sure that those who saw them would agree, running as fast as any K & B and both have suffered broken crankshafts just behind the front bearing since. Many ball races have also been shattered or worn out, particularly by those running on synthetic oils.

Coming on to the question of lapping pistons upside down. This obviously prevents the piston from sealing off the exhaust port when on TDC. This would at first sight appear to have an adverse effect on the performance of the engine, but, on the contrary, the air inducted through the exhaust port supplements the fuel/air mixture from the carb and before the introduction of very large bore carbs it was common practice on Vecoys to cut a 0.020in. deep notch in the piston skirt to uncover the exhaust port on TDC across its whole width. With the K & B, even the pumper 61 carb does not appear to "over bore" the motor though it does make the throttle response rather like a delayed-action on/off switch; therefore this "sub-piston induction" is desirable and I am experimenting with piston skirts that are cut away so far round to improve flow up the transfer ports that not more than about 75% of the exhaust port is covered on TDC.

Well, that's about all I've got to say on engines. I hope the present British Sports/GT and Saloon Champion qualifies as someone "experienced in glowplug engine tuning."

I'd like to compliment you on the way your new magazine has started out. You're really doing a fine job but I was a bit disappointed that the last issue didn't contain any mention, report or results on any of the British Open Meetings in August and September. These were particularly interesting as they saw the emergence of some new talent threatening to burst onto the international scene for the European Championships next year.

There was Ken and Les Wheldon, finally getting some reliability into their IRS cars; Paul Pagdin showing some of the finest driving seen from anyone from north of Derby; Ron Bates driving consistently enough to win at Hull and probably the most sensational new talent of all — Bob Denton. He is rated by many as the best driver to emerge since Phil Booth and with the practice he puts in at Lilford (his home circuit) is a likely winner of next year's European Championship. It will be interesting to see if he gets the sponsorship so vital in financing an attempt at such a major prize.

HIGHLIGHTS OF ISSUE No. 4: MAKING UP THE ASSOCIATED RC100 KIT IN DETAIL; ELECTRIC TRAINER FOR 1/8th SCALE; SG'S LITTLE BIG CAR IN 1/12th SCALE REVIEWED AND BUILT; PHIL BOOTH ON RACE PREPARATION; DAVE MARTIN PROVIDES SOME USEFUL GEN.; MORE CALENDAR DATES; CLUB NEWS; TRADE NOTES.

ELECTRICS EXPANDING

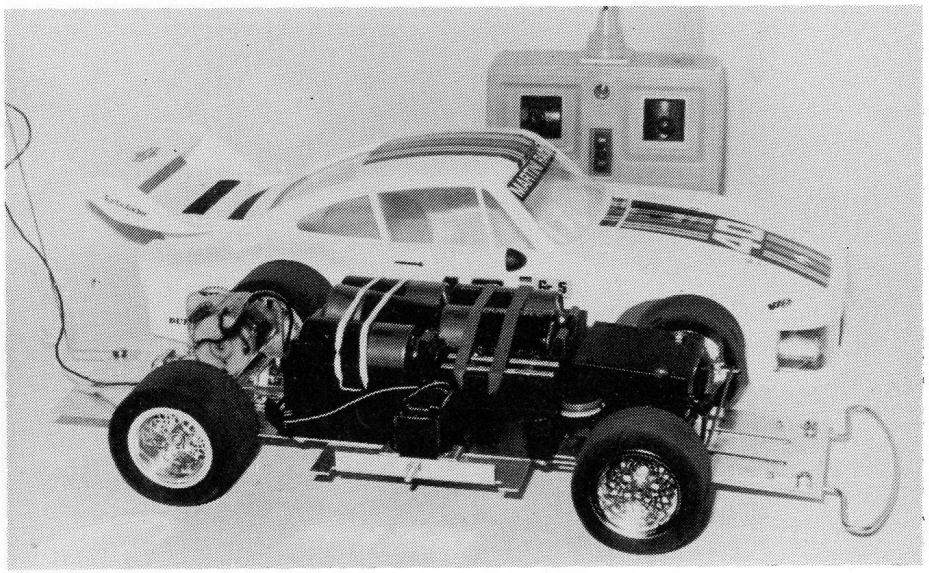
IN SPITE of power cuts, occasional disruption of meeting dates in favour of dog shows, beer fests, and the like, interest is spreading fast, with both new manufacturers coming on song, and a pleasant degree of original thought in the shape of scratch built cars.

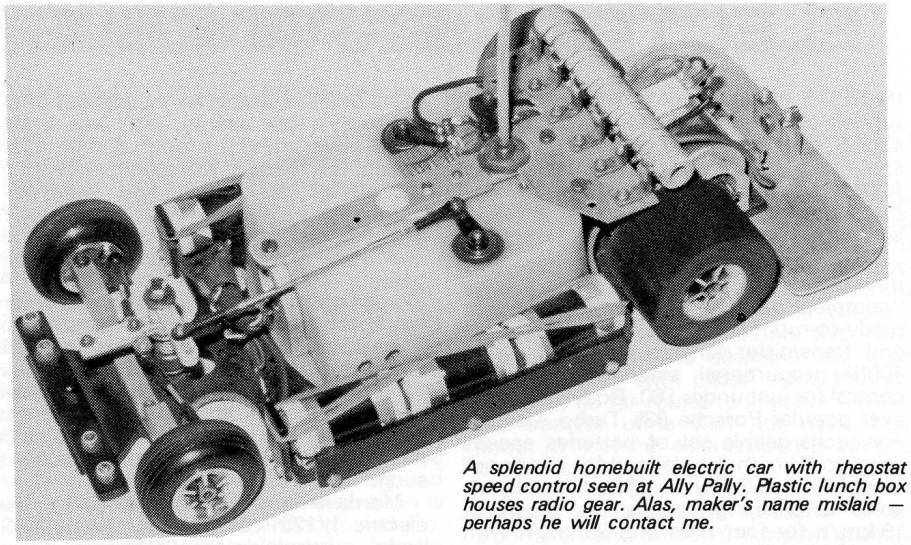
Probably the most intriguing new development must be the Sanwa "complete packet deal" providing a near ready-to-run car complete with receiver and transmitter (limited range of about 100ft) proportional steering and speed control for just under £60. Bodyshell is the ever popular Porsche 935 Turbo. Using a non-rechargeable set of batteries speeds of up to 9 km/h are claimed for a four cell unit; 11½ km/h for 5 cells. With Nicads quite astonishing speeds are given of 19 km/h for four cells and 23 km/h with five. With a little ingenuity drivers will be managing to fit in the more usual six cells, as raced here, to achieve even higher speeds (or burn out the motors?) At this sort of price it can be nearly everyman's car: the shortness of range is not of great consequence for a ground operated model with good ground level spread. It would be quite enough for, say, Alexandra Palace Palm Court, and not many indoor venues will be any larger.

Tamiya have also launched an electric powered 1/12th scale Porsche 935 Turbo described as suitable for installation of r/c. It is really a little beauty, and I was afraid it could never stand the rough and tumble of racing, but Richard Konstahm showed me the earlier car which had survived a number of exhibitions with regular racing in the hands of often unskilled operators and there it was if not as good as new bearing only minimal battle scars. An increasing number of readers are writing to report successful use of these highly finished and detailed for r/c so we will be trying out the Porsche to see what it will take. In any event it can be a lovely "conversation piece" in any household with runs in the hall, the office, the local car park without necessarily actually racing as such.

Mardave are at last releasing their electric 1/12th car in either Formula GP body — based on the BRM first seen at the beginning of the season but hardly raced at all at major meetings — or with a beautiful Porsche body shell, again on the lines of Porsche Turbo. It seems to be very stoutly made, very much the same strength as their Stock Car bodies, and again following their stock car technique, Velcro is used to hold the body on. These cars have had a lot of testing during the

The new Sanwa 1/12th scale electric car complete with body (Porsche) and transmitter, receiver — the lot, just add batteries to choice.



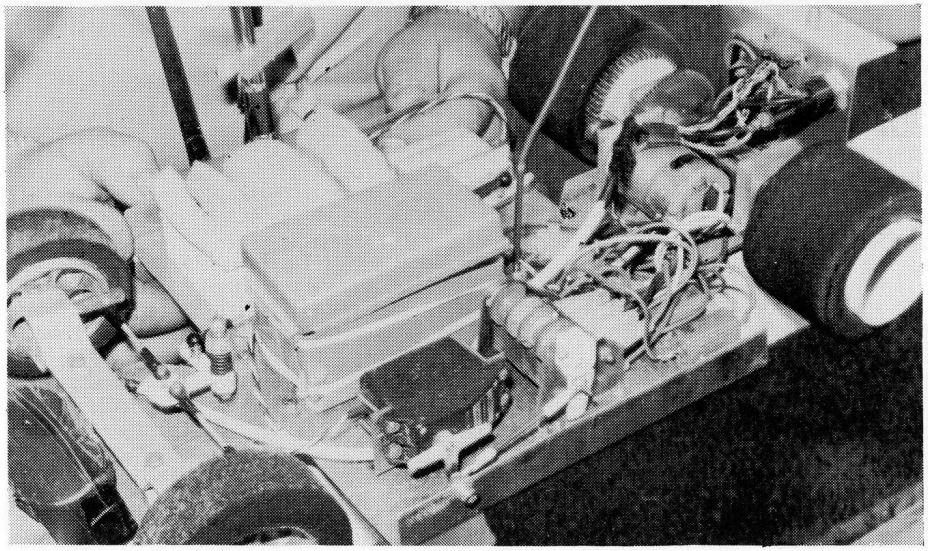


A splendid homebuilt electric car with rheostat speed control seen at Ally Pally. Plastic lunch box houses radio gear. Alas, maker's name mislaid — perhaps he will contact me.

summer at rallies and exhibitions, finally throughout Pontin's Model Week at Brean Sands in the hands of Roger Wilding's Modelcraft demonstration team.

I have just recently sat down with Richard Gammon of I & D Electronic and watched with fascination as he re-worked my Lectricar, discarding the original bank of microswitches in favour of his Smooth-Tronic "Black Box" to provide full proportional speed control and dynamic braking. A point that may be overlooked with this installation is that it enables the steering servo to be dispensed with entirely. This should be set against cost of said black box, when it becomes a quite reasonable investment. With the black box fitted the panel to which charging leads plugged in is also removed and opportunity was taken to rig up new sockets on the underside of the lexan rear bumper I had fitted. This has the advantage that body does not have to be removed to plug in the leads. A great improvement!

Tom Smith's 1/8th scale electric based on Mardave chassis and body. Here Agfacolor slide box houses Nicads. A wonderful "trainer" — think of that reverse!



American units are beginning to come through but must be admitted as rather pricey. This is in part due to the American practice of not offering a complete kit: first you need the power train, consisting of chassis, motor, Electro Craft Systems speed controller, nicads. Then you acquire wheels, tyres, hubs, steering unit. Finally there is a bodyshell needed to finish off. Oh! You may feel that a charging socket with a neat on/off switch a good thing to have . . . but you can dispense with it and plug the charging leads straight into the batteries. It isn't all expense though, the Electro Craft unit also supplies power to the receiver via the nicads, so you do not need a separate receiver battery, and again, of course only the one servo to deal with steering. By mounting this well up to the front very short positive neat steering linkage is possible, using ball and socket connectors, and threading end to rod giving very precise adjustment.

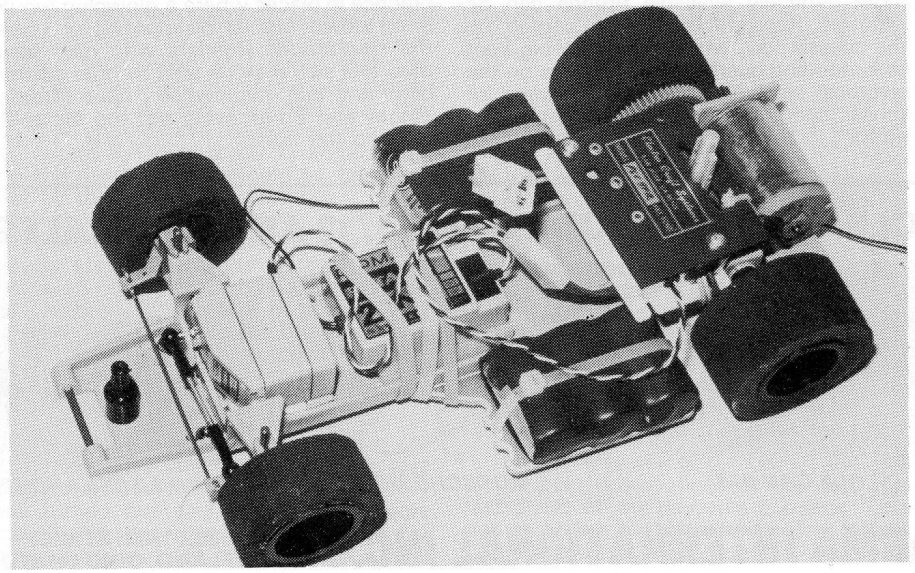
Both Electro Craft and Bo-Link use the Jerobee plastic chassis which also with minor changes is the base for most of the American 1/12th scale i.c. cars using Tee Dee or similar .049 engines. Electrocraft provide a Lexan front bumper, Bo-Link fit an all-under full length sub chassis with side to take the nicads, and going right back to provide a small rear bumper. EC merely add a central plate under the chassis to which Nicads are strapped with rubber bands. I have also seen one of Workrite cars with a quite different approach to rheostat control, but have not tried them or seen them doing any hard work. By the time this appears PB Products should be getting their deliveries of the MRP they are handling.

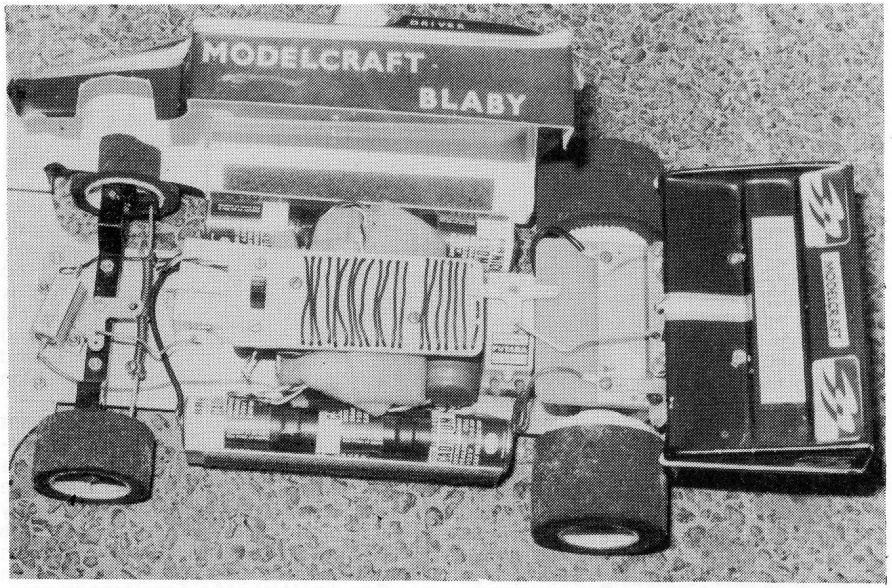
Seen at the Palm Court was also a very neat scratch-built car with long "electric fire" type rheostat giving four forward speeds and reverse. It gets hot, but by no means too hot for comfort. Not as fast as the fastest but a good middle of the field competitive job. Receiver, battery and servos all go into the centrally placed plastic sandwhich box, getting as much weight as possible towards the rear.

Another quite surprising development has been 1/8th scale electric. First encountered at Pontin's this Cyclone powered model was based on a Mardave chassis and body shell, fitted up exactly like the i.c. version, except that it was electric powered. It went very well on an outdoor circuit, getting out of its own troubles thanks to reverse. I have since visited builder Tom Smith's club at Houghton Regis and seen later cars.

Idea was originally developed by fellow clubman Barry Tingay as a birthday present for small son who dearly wanted

Dickie Dickson's Electro Craft Systems car on Jerobee chassis that performed very well on open hard courts at Pontin's. Look only one servo and no receiver battery!



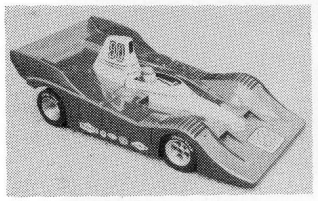


to drive and was proving a bit of a wrecker on Dad's Stock Car. A second car followed and Tom Smith is now on his second. All follow the same scheme, but neatening up is the order of the day. Some useful gimmicks appeal, such as using Kodak or Agfa plastic boxes in which colour slides are returned to house the Nicads. With extra space too, larger and more generally available fittings can be installed. Resistances can be carried on the chassis too, which acts as a big heat sink reducing overheating problems on the electrical side. News is also to hand of similar cars fitted with the larger Bullet motor . . . but still too much of a handful for builder and greedy of current.

Here at last! The well tried and tested Mardave electric car is now coming off the production lines. In Brabham or Porsche body should be very popular. Body retained with Velcro.

I hope to be able to offer this car in plan form as a scratch built job intended as a trainer for new drivers who can use it to practice in places where a glowplug would bring down official disapproval or upset the neighbours. Readers who may have tried this size may be able to offer further hints and tips, meanwhile I have Messrs. Tingay and Smith living not too far away to keep me right.

CLEAR LEXAN BODIES FOR 1/12 AND 1/8 SCALES



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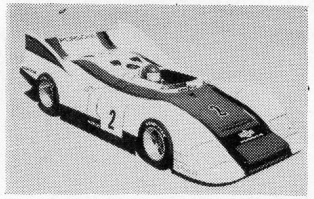
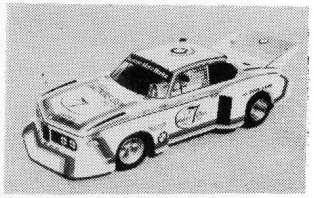


PORSCHE 936



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R/C STOCK CAR CHAMPIONSHIPS '77

REPORTED BY PETER CRAWLEY

Stock car winners: Dave Wragg in the middle with the mostest; left 2nd man Bob Clayfield and on right Londoner Pete Arnaud 3rd.

BEFORE I start the write up on the World Championship let all British drivers put our foot down and agree that the R.S.C.A. has been running much longer than the E.S.A. and so I feel that the R.S.C.A. should have the sole right to run THE world R/C Stock Car Championship and the result of this should be taken as final by the rest of the world.

British World Championship . . . By the time I arrived at the circuit the action had already started with the reigning world champion on the track trying out his car, the pits were also a hive of activity.

The weather was not too bad, the track was damp during the practice sessions which caused the drivers handling trouble, but the track soon dried out.

All cars were called out on to the centre of the circuit, this being the time for scrutineering 36 cars lined up and this was a very spectacular sight, with many very well turned out cars, all the cars were passed and so it was back to the pits for lunch.

After lunch all the drivers were called to the control point, this being the drivers briefing session.

It was now time for the action to start, out of the 36 drivers the officials had to find the 12 fastest drivers, each driver had 3 heats each in which to get as many laps as possible, each heat lasted 4 minutes, from the 12 fastest 2 semi finals were run and the fastest 6 drivers were placed in the final each driver drawing for a good grid position.

The start signal sounded and all hell let loose as the fastest 6 drivers battled it out to become the world champion for 1977.

The final was one of the fastest and one of the best driven races of the day, the fastest lap of the day was 5.2 secs. This had to be set by and was by The World Champion 1977 Dave Wragg.

The results were as follows:

1st Dave Wragg from Leicester (World Champion 1977)
2nd Bob Clayfield from Hinckley.
3rd Pete Arnaud from London.
4th Steve Talbot from Coventry (last years champion).
5th Steve Holmes from Coventry.
6th Dave Woods from London.

THE DUTCH CHAMPIONSHIP

The Dutch World Championship? . . . This was held in Holland, under the E.S.A. rules, and the British boys went over to prove the point that they were the Champions. The Holland World Championship was run on much the same lines as the British World Championships but the only difference was that they had, wait for it, ⅛th finals, ¼ finals and Semi Finals before they even got to the finals, what a waste of time.

The British lads had a lot of radio interference, as they have had before over there, but with this trouble they raced on and put on a very good show.

The World Champion Dave Wragg had a very tough days racing with his radio troubles but kept going, he finished this meeting in third place, this being as the result of a spin out on the tenth lap.

Dave had won the ⅛, ¼ and semi finals with some very fast and hairy driving, but I think he made the point that he, the British Champion should be the world Champion. As a point of interest there were no foreign drivers in the British World Championship.

It is my opinion that this thing about two World Champions has to be sorted out and that the world Championships should be run by the longest running group, this being the R.S.C.A.

Food for thought, why not have qualifying rounds all over this country and the rest of the World and let all the qualifiers get together for THE WORLD CHAMPIONSHIP.

Looking forward to next years World Championships.

Results of the Dutch World Championships are as follows:—

1st Ernst Aalders from Holland.
2nd Rutger Schut from Holland.
3rd Dave Wragg from England (The World Champion this is my opinion).
4th Ron Bekking from Holland.
5th Paul V. Helden from Holland.
6th Fer V. Helden from Holland.

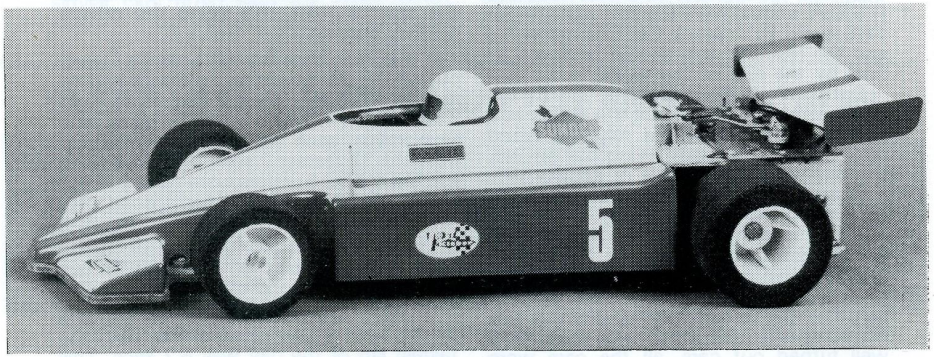
Places our boys came: 8th Barry Rourke, 9th Steve Holmes, 11th Jeff Smith, 17th Chris Cooper. Well done lads!

The Dutch Championship was run by Frits Aalders.

HERE AT LAST! **MARDAVE'S LONG AWAITED 1/12 SCALE ELECTRIC CAR**

Fully proven and unbeaten to date in competition. Winner of the last four meetings at the Midland Electric Car Club's venue at Wolvey.
The kit includes six rechargeable cells, motor, speed controller, charging leads for charging from a 12-volt car battery and virtually everything you need except radio.

BRM F.1 Kit **£37.50** Porsche GT Body **£1.95**



MARDAVE R/C RACING, Woodhouse Eaves, Loughborough, Leics.

WHY MODIFY ENGINES?

A QUESTION TO R/C MODEL CAR DRIVERS

Here is another approach to what engine, how much "breathing on" it should be done, with some very practical thoughts. This little summary is given to new members of the Taunton Radio Auto Klub by Chairman Mike Lewis as first of a series of Information Sheets.

MOST NEWCOMERS to R/C car racing start with a Veco 19 which is a good solid engine and gives more than enough power to begin with. The constant changes of throttle in car racing places a much greater strain and wear rate on engine components than experienced, for example, in model aircraft use. The effect of this is that a standard Veco will lose its compression after a few months and the answer is to replace the piston/liner — either with standard items or the widely available McCOY parts.

The cost of a standard Veco piston/liner set is approximately £12 whereas the McCoy equivalent parts are £23. It has been proved that **one** McCoy piston/liner will normally outlast **five** standard ones and so the answer is clear — you decide to convert your Veco into a VECOY!

The McCoy piston/liner (and connecting rod that goes with it) will therefore give greater reliability but there is another benefit to be gained as the McCoy piston is made of aluminium instead of the normal cast iron material, and the motor will rev higher to give you a performance advantage over the standard product. Two benefits for the price of one!

When fitting the McCoy piston/liner/conn. rod the standard **crankshaft** needs some attention as the crank web has been designed to act as a counterweight to the heavier standard piston. It is essential to grind 30 thou. off the web for use with the new aluminium piston and larger McCoy conn. rod. Your motor modified thus far can be said to be a STAGE 1 TUNE. For further stages of tune read on!

The STAGE 2 TUNE is to fit a larger bore carburettor (Perry 40, Kavan, or the PB, GP or Thorp slide valve types) and to open up the induction port in the standard crankshaft to improve gas flow and take full advantage of the bigger carb.

The STAGE 3 TUNE is to fit a McCoy "stroker" crankshaft which has the enlarged induction port and, because of its crank pin position, gives the piston a longer stroke — thereby increasing the engine capacity from .19 to .214 *i.e.,* the maximum allowed. The fully tuned motors run hotter and so it is advisable to fit one of the commercially available tall heat sink heads which protrude up into the airstream.

Taking into account the cost of the original standard motor, a fully modified VECOY to Stage 3 tune will cost in the region of £75 but the big advantage is that you can modify your motor gradually, when time and your purse permit.

It must be admitted that a 'full house' Vecoy will not develop quite as much power as many of the new breed of R/C car engines such as the Super Tigre X21, OPS 21 or K & B 21 all of which have the more efficient schnurle porting. These motors are all about £40 — £50 and are an attractive proposition as they provide a much higher performance 'out of the box' than a Vecoy. BUT their reliability is suspect in some cases and availability of spares can be poor.

The engine choice is therefore an individaul matter, and what suits one person will not suit another. To get the best out of a car fitted with one of the initially cheaper new breed schnurle motors requires a great deal of skill because everything happens that much faster — and we all know how difficult it is to drive even a standard Veco 19 don't we? The snags of the new breed motors can be summarised as follows:—

OPS 21
The connecting rod is **un-bushed** — very rapid wear rate.

SUPER TIGRE X21
The rear ballrace wears out quickly. This is a result of a large diameter crankshaft which means that the 'balls' in the race itself are very small.

(Manufacturers are now sending out cars with improved ball cage which should help to overcome this weakness. — Ed.)

K & B 21
This is the most powerful engine of the bunch but the soft conical piston wears out quickly.
In comparison, a VECOY goes on, and on, and on because of its proved reliability!

MARVELLOUS MONACO

IT IS not really remarkable that the country which stages the most exciting Grand Prix race in the world through its capital's streets each year should put on a thrilling spectacle in the smaller world of model r/c cars. So it was with this year's event on 19th/20th November — pleasant mild autumn weather in Monaco — when the circuit was arranged opposite the naval stadium right on the harbour front (near where from time,to time full-size cars have shot into the drink!) Ted Longshaw was present, and indeed won through to race in the Sports/GT final, and reports enthusiastically on the incredible organisation. Timekeeping by Longines of Switzerland, instant replay TV camera in case of 'flag jumping' penalties, unlimited marshals in orange overalls for every race. The high speed mini-Fire Engine as used in the full-size race was standing by, just in case, but beautiful showmanship. Drivers stand was a mobile stage owned by Radio Monte Carlo. As Ted says you could go on and on . . .

Racing on Saturday was for Formula cars and commenced right on time at 8.30 am. During the day television from France, Italy and Monaco filmed the action and it was shown nationally later. As a PR exercise to introduce the sport to the masses it was probably the best yet. The Aero Club de Monaco handled everything very professionally, and spectator enthusiasm was terrific (especially, Ted adds, when a driver living just over the border in Italy won on Saturday). Well known Rony Ton was the Sports/Proto winner.

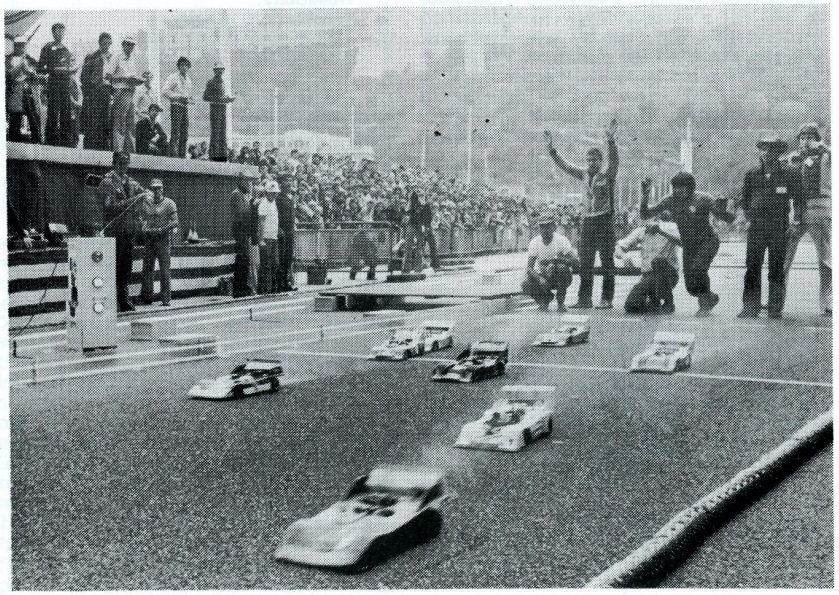
To quote from the local paper: "Albert Quay resounds to the strident howling of motors which animate these multicoloured arrows . . . amongst the seventy entrants are numbered the Swiss Franke, Eurochampion 1977, Rony Ton from Holland, the Italian Sabattini, former champions, with many other drivers from Switzerland, Holland, Germany, Great Britain, France and Monaco . . " Their heading was equally delightful "70 mini-projectiles launched at 100 km/h". In an interview with Franke in answer to the inevitable question: Why do it? he replied: "In the beginning it was a hobby. It has now become a real sport, practically at a level of quasi-professionalism. But above everything it remains a passion . . "

So much for this year's event, which can only be reported like a seaside postcard on a "wish you were here" basis. Happily this is an event which can and will be repeated. Sanction was given at the EFRA Annual General Meeting for Monaco to hold an Invitation Race next year from May 25th to May 28th for a Formula World Cup (Coupe du Monde). It is hoped this event will attract the best drivers in the world to participate. Viewing accommodation for 10,000 people is envisaged. Practice would be on Thursday and Friday with racing on Saturday and Sunday culminating in an eight-car final on Sunday afternoon.

So there remains how does a good driver get his name in front? Be bold! Propose yourself and give some idea of your track record, wins to date, experience, equipment in use and so on. For U.K. would-be entrants Ted Longshaw has kindly offered to be the go-between and pass on names and prowess to the Aero Club de Monaco. But, and this is a most emphatic but, Ted is not going to do any selecting, will not have any say in selecting, and will simply pass on the names. Similar methods will, it is expected, be followed in other countries where governing bodies will pass on names of would-be drivers.

One little note of regret, the date clashes with the British Championship Meeting over the Spring Holiday. So some people may have to make the hard decision between the joys of Monaco in the late spring, and the honour of a good home win. By the way, as it is ***not*** an Open Event, points cannot be gained for Euro championship places.

Fullsize race followers will recognise this scene, certainly the arches to the right background. Below: Start of the Sports/Proto final. Electronic timing on left, with Rony Ton's car nearest the light box. Franco Sabattini's car is the dark one just over the start line, Ted Longshaw's second behind the out-of-focus car in front.



TUNING & BULLET PROOFING THE VECO 19 WITH FRED LIVESEY

TO APPLY the previous article i.e. 'Mysteries of Tuning' to specific engines seems a logical step. As there are probably more Veco 19 engines available, new and s/hand and the Veco is probably the best engine to use when learning to 'drive' model cars — this seems the best engine to begin with.

Various articles about Veco 19s have been written from time to time by different model car contributors to other magazines but as this publication is directed to model car enthusiasts exclusively then perhaps it would be better to start with the basics.

First I should say that if someone is just starting with a model car and is about to buy an engine, then a great deal of thought should be given to the purchase of a later type of schnurle ported engine. They definitely give more power, un and the cost of a new Veco and the modification bits and pieces will come to more than buying a complete schnurle type engine i.e.:- KB3.5cc, OPS3.5cc, STX21 etc. The advantage of a modified Veco is that the cost of repair when it becomes worn (if the chromed liner is not damaged) is the price of a new ring about £1.50 to £2.00. The cost of repairing a Schnurle with A.B.C. (Aluminium Piston in a Bronze Liner which has been Chromed

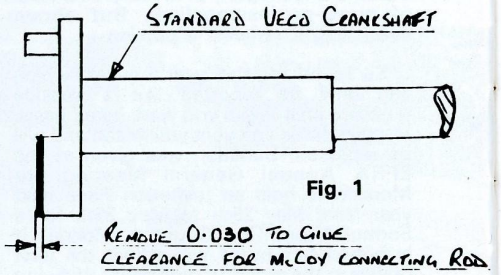


Fig. 1

will be about £8.00 — £12.00). So for the beginner the Veco seems the best engine to start with, especially if a sound second engine can be bought and the McCoy modifications fitted.

Let us now consider the modifications as in my previous article.

i.e.

1. Reliability.
2. Mechanical efficiency.
3. Volumetric efficiency.
4. Combustion efficiency.
5. Thermal efficiency.
6. Increasing R.P.M.

1. Reliability:—The standard liner fitted with a cast iron piston will last about 1 to 4 hours normally, there are always exceptions to the rule and I have heard of very occasional engines which have lasted a great deal longer, please no letters.

The view I take is that a much more efficient air filter fitted to the carb. than we have used over the previous years would help, but it is only now that competitors wearing out expensive ABC

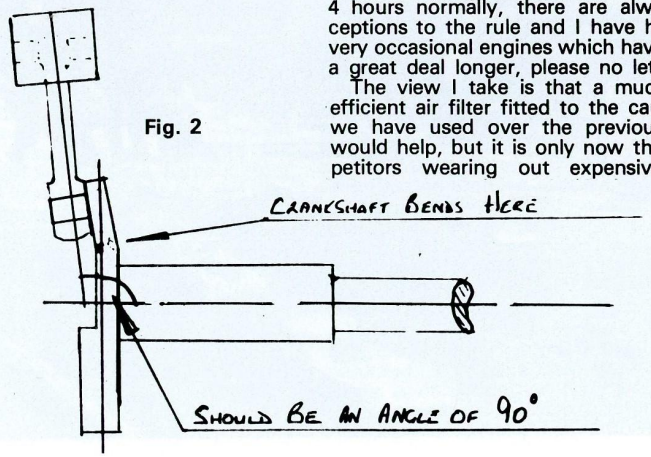


Fig. 2

pistons and liners that more thought is being given to air cleaners. Not before time!

By far the best method of improving the life of a piston-liner assembly is to fit a McCoy Modification as imported by 'Irvine Engines' and Ted Longshaw'. The modification consists of a strengthened connecting rod, with larger gudgeon pin,— a new chromed liner — a duraluminium piston fitted with a Dykes type piston ring (L shaped). At the time of writing this is known as the MCI kit and costs £23.00 (approx.). For the tuned version with parts already modified, known as the 9 part conversion, this costs £28.00 (approx).

These kits will give longer life and all that is needed normally is a new ring as stated earlier, the guide is that when the machining marks have disappeared from the surface which travels in the bore of the liner the ring should be replaced, as against £6.00 approx. for the standard Veco Piston and liner assembly. The

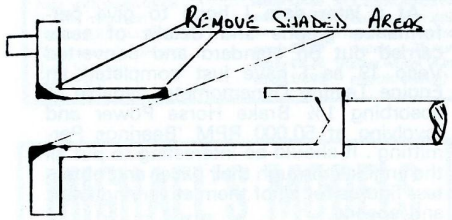
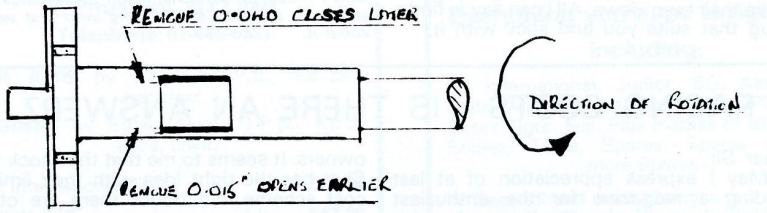


Fig. 3



standard crank needs modifying to fit these kits as in fig 1 to clear the connecting rod and help return the balance of the engine due to the lighter piston. It may be best to fit the Stroker Crank (cost £14.00 approx) but see later in the article. Bearings do not normally give trouble, due to the engine RPM of 25000 to 26000, it is wise to gear the car for these sort of revs.

2. Mechanical efficiency:—(Reducing friction). In the previous article you will find that the American Veco has a relieved piston as standard. The McCoy kit has

running clearance also, so nothing needs to be done in this direction. The connecting rod needs checking using the jigs described in Issue I.

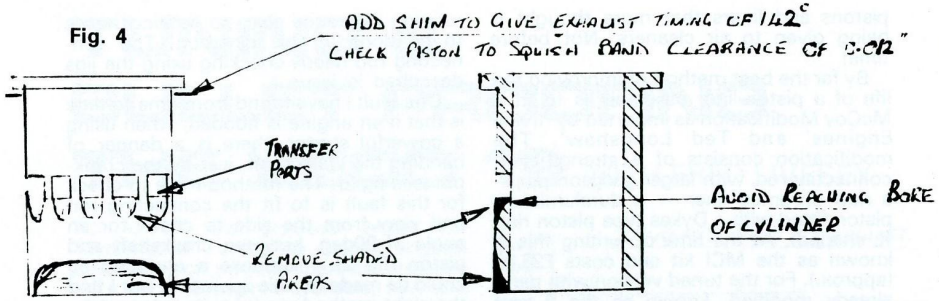
One fault I have found from time to time is that if an engine is flooded, when using a powerful starter, there is a danger of bending the crankshaft, just by the crankpin (see fig 2). The method I use to check for this fault is to fit the connecting rod and view from the side to check for an angle of 90deg. between crankshaft and piston (fig 2). I suppose a checking jig could be made for this operation, but I find the sight method works quite adequately. If the crankshaft is bent a great deal of friction will develop.

The McCoy stroker crank is a good deal stronger in this respect, and if pennies permit, would be a good investment. This also brings the engine to almost 3.5cc. End float should also be checked and corrected if any error (as in Issue I).

3. Volumetric Efficiency:— (Getting more fuel mixture in):— The induction period length can be increased, by removing from the crankshaft window, by the amounts in fig. 3. The carburettor (carb.) bore, which is a compromise between good acceleration and top speed, should have a cross sectional area of 38 sq. mm or a bore of 7 mm, this is without any intrusions in the throat such as spray loss, etc., and the bore will have to be increased to make allowance for these. The carb that seems about right is the Perry 40, to fit this you will have to increase the bore in the crankcase slightly or if finances allow, I find the PB carb works very well. This has a bore of 9/32in. just slightly over 7mm. Consideration must be given to an efficient air filter even though it cuts down the air flow. Silicone sealant is the best material to glue the carb. into the crank case.

The transfer ports on the standard liner should be modified as in fig 4 as also could be the transfer ports on the McCoy MCI but keep away from the chrome on the bore of the liner. A shim may be fitted

Fig. 4



between the cylinder flange and the crankcase (fig 4) to give an exhaust period of 142deg, check with a degree disc (issue I).

An exhaust system, at silencer, should be one of the larger types available for cars to ensure minimum restriction to exhaust gases.

Combusion and Thermal Efficiency:— As both these are directly related I will discuss them under one heading.

A high compression head gives a slight increase in performance but the main advantage is in giving a reliable tickover. These are available ready made, have a wider squish band, which increases turbulence to be fitted with your own heat sink or are available as a heat sink head from PB Products.

The plug type which I found best for the Veco is the Fox 1½ volt idle bar but no doubt others will be just as effective, everyone I speak to regarding plugs do have their own views. All I can say is find a plug that suits you and stick with it.

Fuel mixes also cause a great deal of discussion again, I use 20% caster oil — 10% nitro-methane — 70% methanol.

For the beginner and also the more experienced the Veco 19 with McCoy conversion is probably the best value for money in the long term and will give quite a few hours of reliable practice and competition, which is required by us all to become and also stay competitive with the best drivers in the hobby.

At a later date I hope to give performance graphs and details of tests carried out on standard and converted Veco 19 as I have just completed an Engine Testing Dynamometer capable of absorbing 1½ Brake Horse Power and revolving at 50,000 RPM 'Bearings Permitting'. It should be interesting to put all the engines through their paces and obtain test figures for all of them at varying loads and speeds.

Thanks and acknowledgements to Racing Circuits where much of the information herein originally appeared, and to Gene Husting who first wrote about it.

RACING COSTS : IS THERE AN ANSWER?

Dear Sir,

May I express appreciation of at last finding a magazine for the enthusiast which is entirely uncluttered with references to aeroplanes and boats. I wish the publication every success.

There are two matters — both connected with cost — that you may consider worth airing:—

(1) The cost of being really competitive in the sport is now quite phenomenal, *e.g.*, the cost of a sophisticated kit plus motor approaches the £110 — £115 mark without radio or other ancillary equipment. Such a cost must surely be beyond many enthusiastic but otherwise impoverished car owners. It seems to me that the Stock Car Club has the right idea with their limited cost scheme. No doubt there are other views on this.

(2) (And I accept that this may really be a manufacturers complaint but would like other views). My cars run on standard Veco 19 engines and my experience to date reveals that a piston/liner lasts between 12-15 hours of racing. At almost £8 each piston/liner this is really very expensive and since I race most weekends the cost involved could be something like £80 a year.

Any views or advice would be welcome.

Yours faithfully,

Lenham, Kent — Derek Smith

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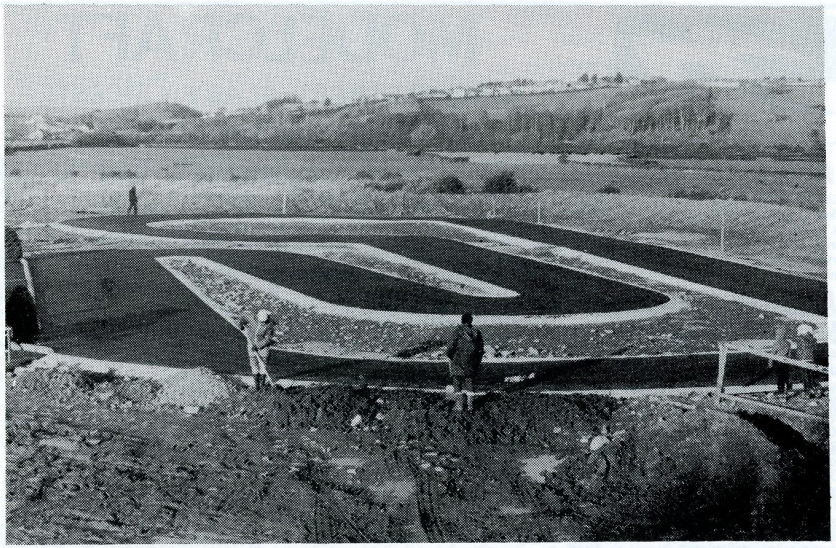

NEW MENDIP CIRCUIT

BRAVING the elements Woodspring Radio Auto Club opened the first purpose built model car circuit in the South-West on Sunday, 20th November, when Volkswagen autocross driver John Button cut the ribbon and sent the initial heat away, with both BBC and ITV cameramen in attendance. Despite alarming weather reports some twenty cars were entered including such stalwarts as Phil Booth, Phil Greeno, Paul Ekins and John Everett.

Top picture photographed from raised excavator bucket shows the circuit. Below: Winners Greeno, Booth, Feven in centre, flanked by other finalists. Organisers Beckett and Johnson on the outside, young marshals in the foreground.

The 220 yards circuit still needs quite a lot of infilling — drivers braved lakelike puddles in a most sporting manner — and the car park needs surfacing, but prime mover in getting the track under way Richard Beckett of GB Models spared no effort to provide comforts appropriate to the season with a double decker bus as a grandstand and shelter should elements require it. As a first taster of what should prove a most sporting track it certainly achieved its purpose. Contest of the day was for Sports/GT which winnowed down to an exciting final with Phil Booth in command from the start, though the "other Phil" Greeno nibbled at him furiously between bouts of slipping clutch. Meanwhile the quiet man Dave Feven running his spare car an SG with HB20 went steadily round at a snail's pace with jammed throttle — "a boring drive" as he put it — but keeping an immaculate line to take second place a few laps ahead of struggling Greeno.

Full results:

	Final	*Laps*		*Handicap Final*
1.	Phil Booth	79	1.	John Turnbull
2.	Dave Feven	70	2.	Jim Moon
3.	Phil Greeno	67	3.	Paul Ekins
4.	Englefield	59	4.	John Everett
5.	Paul Ekins	31	5.	Martin Sims
6.	John Everett	28	6.	Ron Major

Meanwhile work goes on with infilling round the track edges. Roofed pit area to be erected and small clubhouse on roof of which drivers will operate some eight feet above ground level. Should be ready for that January 1st Open Meeting.

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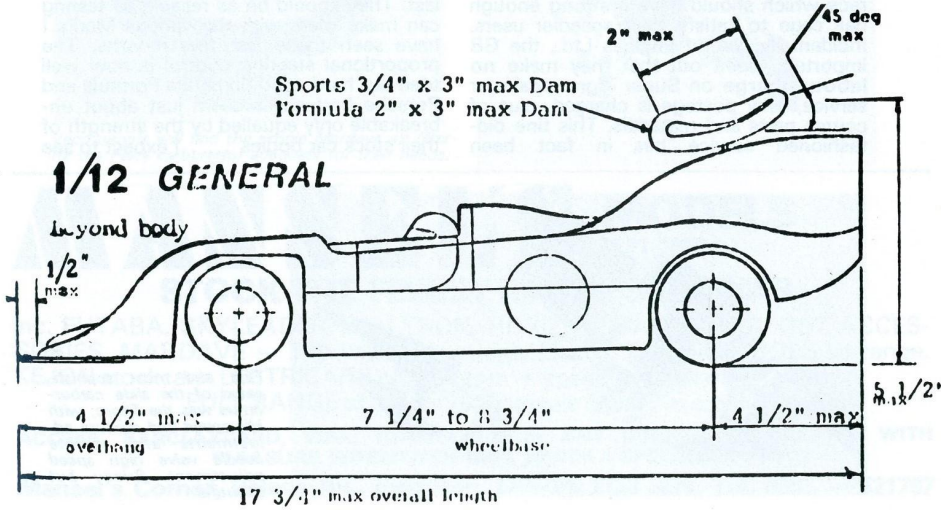
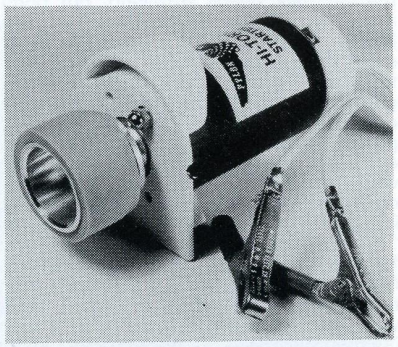


SHOPPING AROUND

IT IS a welcome and healthy sign when we hear of old established model shops branching out with new departments devoted to model car goodies, particularly a firm noted for its very receptive ear to the ground getting advance news of trends . . .Such a one is Henry J. Nicholls and Son Ltd. of 308 Holloway Road . . . just 308 is really enough. Henry has now got the shop next door and is proliferating fast into r/c cars with all the more popular kits and accompanying bits and pieces. Now just back from a long trip to the States he may well have American items to add to his stock list. Another doubling-up firm is Modelcraft of Blaby, Leicester who has just opened a next door shop to handle nothing but the model car trade. Proprietor Roger Wilding was the model shop in residence at the recent Pontins Model Week and was very satisfied with results, opening for a couple of hours each morning, and another hour in the evening — had hardly any stock left to take home. Modelcraft are of course the main Midland retailers for anything Mardave. The two shops specialise very strongly on cars and steam — not of course together . . . did you hear that Mamod?

Good news for Super Tigre X21 users, stocks are coming in fast in much greater numbers so that back order list should be met pretty smartly. A design change will be welcomed in the shape of a new rear race which should have a strong enough ball cage to satisfy their speedier users. Incidentally, World Engines Ltd., the GB importers, point out that they make **no labour charge** on Super Tigre repairs or service, only postage is charged, plus of course parts and materials. This fine old-fashioned service has in fact been operating for years but hasn't been well publicised.

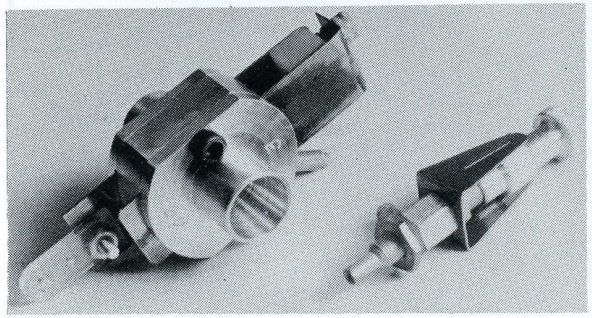


Ready to use starters are available, being adapted from model aircraft use. Also possible to fit to a pit table. This is popular Hi-Tork.

Keith Plested reports that the new MRP 1/12th scale electrics he will be handling from PB Products at Havant have been a bit slow coming in — production run for some parts was delayed until November — but by the time this appears the delivery schedule should be working (always provided present American dock troubles are decently settled without a big backlog).

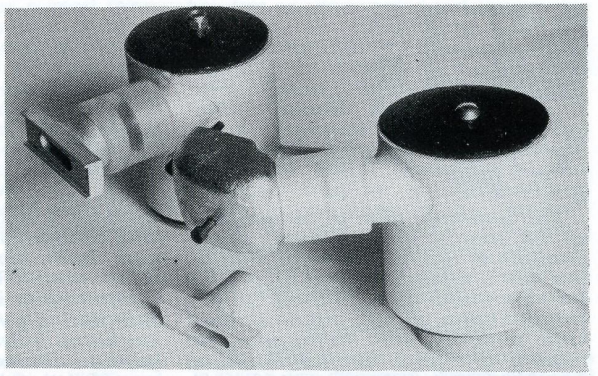
Mardave are away with their electrics at last. They should be as reliable as testing can make them with the various Marks I have seen these last few months. The proportional steering control is now well tried out hard conditions; the Formula and Porsche bodyshells seem just about unbreakable only equalled by the strength of their stock car bodies . . . I expect to see a lot of them about this winter.

Another welcome sign of the times is the growing interest shown by the "big brigade" in that space has been alloted for demonstration at the 1978 Model Engineer Exhibition at Wembley in January.

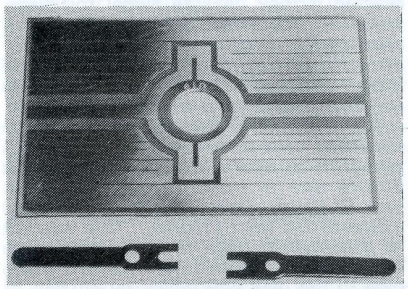


First and most sophisticated of the slide carburettors was the Thorp, with idle speed and mixture adjustments and remote needle valve high speed adjustment. Pricey but beautiful.

Ted Longshaw's dustbin silencers plus Keith Plested's manifolds now serve all the engines currently in use — latest being for the K&B 21.

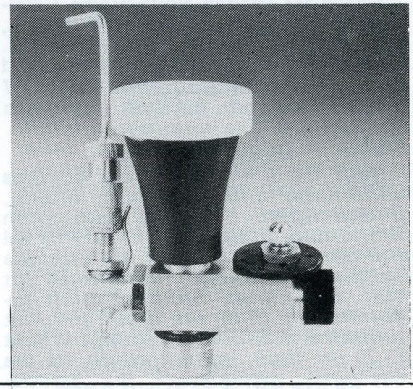


Your own proportional steering for electrics at a modest cost. Modelcraft offer this rheostat type plate for DIY enthusiasts.



Veco people will find the simple Mardave air filter for the Perry carburettor adequate for their needs.

PB slide carb. complete with PB filter. Neat workmanlike and essentially practical.



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BRITISH RADIO CAR ASSOCIATION

The Committee must be congratulated on the splendid venue arranged at The Shoulder of Mutton Inn at Hardstoft for this year's AGM. Only a stone's throw from the recently opened Tibshelf Circuit it provided plenty of room and an excellent lunch for what must be the biggest annual meeting yet. Since Secretary/Treasurer Tom Martin reported an increase in paid-up membership of some 30 per cent this is not really surprising.

Election of Officers

Association Officers were re-elected unchanged for 1978. Regional Committee Representatives with two changes were also re-elected and agreed to serve unchanged. Dave Rogers retired and was replaced for London North/Home Counties by Phil Greeno, 9 Village Way East, Rayners Lane, Harrow (Tel; 01-866-7770). John Elliott of South Midland also stepped down to give place to Peter Clough, 7 Bookhouse Lane, Bucknall, Stoke on Trent, ST2 8NE.

Membership Fees

With more members, more activities and certainty of some continuing inflation, it was agreed that 1978 subscription should move upwards from £3 to £4 for full members and £2 for junior and associate members. In passing it was pointed out that this included insurance which accounted for £1.75 per head, and that Newsletter absorbed with postage at least £1.25 per head, leaving nothing for the day-to-day expenses of the association . . . telephone, travelling, stationery, etc.

Construction and Operating Rules

In an effort to establish acceptable world rules for racing, EFRA had the week before agreed to adopt the basic American ROAR rules with some mutual give and take. It remained up to the meeting to consider the BRCA attitude. First stumbling block was what will be new EFRA minimum tyre sizes of 70mm rear and 65mm front. This in effect increases diameters by approximately one-quarter of an inch and after a somewhat heated discussion new EFRA rule was rejected by the meeting, so that for domestic racing in 1978 minimum diameters remain at 2¼in. front, 2½in. rear. However, EFRA rules obtain when BRCA hosts the European Championships in August.

Reasoning given for this unwillingness to change was the vast stock of tyres members claimed to hold which might be wasted if they became illegal for races. However, rule stated size at *beginning* of race; and since some gears are very nearly of minimum diameter anyway it would have imposed little hardship unless running on gears is to be the in thing!

It was agreed that bumper overhang be reduced from current 1in. to ½in. to comply with new rules. Final change was in tank size to move from current 4ozs. tank to slightly larger US and continental 125gms. (i.e. from 118gms.). This was left as a gradual change since the difference was so slight. Manufacturers would move over to the new size which by erosion of old tanks would come into existence.

This means that, apart from tyre diameter, ROAR rules are universally adopted for 1978. The minimal changes will be welcome and reflect the fact that BRCA rules were substantially founded on the ROAR rules existing at that time. This applies to 1/8th scale racing only. Rules for 1/12th scale, both i.c. and electric, were accepted on a recommendation basis only for the ensuing twelve months, as this new, to us, scale develops.

Team Selection for Eurochampionships

On a Dutch motion EFRA has agreed that teams will be allocated places on a basis of total involvement of the movement. Happily this means that the original seven places allotted to BRCA are increased this year to eleven in each group, that is Formula and Sports/GT, so that a theoretical twenty-two places are open. Considerable discussion, sometimes acrimonious, followed on the subject of points allocation, to which meetings and so on, with particular reference to absence at overseas meetings of drivers who might have been amassing points in this country.

It was felt that showing the flag, often with success, abroad was a good thing, and enhanced our international reputation as well as giving drivers wider experience, and thus the likelihood of doing even better at high levels. Not everyone felt like this — hence the acrimony! At length it was agreed that points should be awarded on a driver's best five open meetings which must be counted from different venues (circuits) to a winner 10 points, 2nd nine and count down to tenth place. This led to re-definition of an open meeting.

Open Meeting

An open meeting was defined as any meeting to which BRCA members were eligible to compete and which had a programme for the two international racing classes of Formula and Sports/GT and which offered at least one other Final than top six in each class, which could take the form of Sub Final (or B Main in American parlance) or a Handicap Final. This means that drivers doing well in overseas events within this framework can count points towards national team selection. UK Open Meetings *must* be promulgated in *BRCA Newsletter.*

British National Meeting

Three applications had been made for this meeting from the new Mendip and Wombwell Circuits and from the recently opened Tibshelf Circuit. Tibshelf asked leave to withdraw on the modest grounds of lack of contest organisation experience, leaving two offers open to the meeting. Suitable presentations were made by both, and whilst some sympathetic feeling was expressed for the notion of a first southern meeting at Mendip, the vote went to Wombwell.

This new circuit is in the grounds of a sporting association and lies near Sheffield. Existing facilities include club house, bar, free on-site camping and caravanning facilities, an experienced team of organisers headed by Paul Padgin. Circuit at present on a former Go Kart track will be considerably enlarged to 266 yards. Existing portable buildings will be re-erected to provide open fronted covered pits (like Lilford Park). It is also proposed, subject to BRCA approval, to have secondary finals for specified handicap grades to give some of the "midfield" drivers an opportunity to take home some hardware. Entry fees £1.50 per class.

Date to be over the Spring Holiday of three days, 27, 28, 29th May.

Saloon Car Racing

The value of retaining a saloon car class in racing was discussed. Whilst in general this is the least supported group at meetings, members from the north, notably Bradford, claimed that their meetings always enjoyed equal support with other classes. Nevertheless the meeting as a whole was vociferously in favour of continuing the class, and shouted down one unfortunate who was against it. Then the question was asked: What is a saloon car? Like truth it was denied an answer but enjoyed a long discussion. Eventually it was agreed to continue as before, but that committeeman Fred Livesey would prepare and circulate the RAC list of approved saloon cars for consideration at a future AGM or "select committee" as might be decided.

At the same time the trade was urged to provide a more extensive range of saloon bodyshells that were aerodynamically suitable for racing but were denied much guidance as to exactly what members would actually buy from them. Saloon Escorts and the like did not enjoy either the success or popularity in model car circles they had in the full-size sphere.

EFRA
EUROPÄISCHE FEDERATION
RADIOGESTEUERTER AUTOMODELLE

EFRA ADOPTS ROAR RULES

EFRA AGM duly took place in Paris with President Ted Longshaw in the chair. Most important discussion was on the adoption of ROAR rules for the EFRA countries as a step towards an internationally agreed set of regulations. It had already been found at the Pomona meetings that there was very little divergence and nothing that could not be agreed in negotiation.

ROAR has less stringent silencing requirements than in Europe, and will be asking its members to accept EFRA noise levels of 80 dB at 10 metres. EFRA will be accepting the smaller bumper extension of

½in. in place of existing 1in., and the 125gm. tank size is already in EFRA regulations, though BRCA still has the 4ozs. size.

EFRA agreed to ROAR minimum tyre diameter of 65mm for front tyres, 70mm for rear tyres. These dimensions shown in metric measurement. All sizes will be shown thus next year, and this is a straight size translation from ROAR 2½in. and 2¾in. give or take a mm.

Construction and operating rules were accepted with very minor changes, mainly on such items as numbers of officials required at meetings, and authority of organising club. This is applicable to all 1/8th scale events, and will enable the introduction of some additional classes such as the ROAR Super Stock Cars in club racing to keep some costs down.

Also adopted, but as a recommendation and not mandatory, were ROAR rules and constructional specification for 1/12th scale i.c. and electric. These rules have been working in USA for several years now and seem a sensible basis on which to operate in the early stages of European interest in this scale.

European Championship

BRCA will be hosts for 1978 European Championships with the enlarged Lilford Park Circuit as the venue. Date is week-end of August 12th/13th, with practice during the week days preceding. In 1979 the event will take place in Germany; in 1980 Sweden will be host. It is not too early for would-be hosts to put in applications.

In connection with team representation Holland put forward a most important proposal, that numbers of drivers from each country should reflect the total commitment of that country. In other words countries with most active and numerous organisations should have more drivers than other less interested member countries. This would be revised in the light of future involvement. This quite revolutionary proposal was accepted by the assembly.

Allotted numbers in each of the two international contest classes for 1978 are: 11 (eleven) drivers in each class from Great Britain, Switzerland, Italy; 8 drivers from Sweden, Germany, Holland, France, Belgium; 6 drivers from Monaco. A further twenty places would be distributed amongst the smaller member countries. Champion of previous year in each class would also qualify as of right.

Monaco Meeting

Approval was given to Monaco to hold an invitation meeting 27th/28th May for GP Formula cars. This is intended to be a biennial event between the successive world championships now coming into the calendar.

World Championship 1979

Five offers had been submitted to stage the 1979 World Championship. Of these Italy withdrew since they could not be sure their circuit would be ready. Applications had also been received from Holland (Utrecht), Great Britain (Lilford Park and Mendip) and Switzerland (Geneva). After discussion preference winnowed down to two, Lilford Park and Geneva. In a close vote the meeting was awarded to Geneva. Event will be held 7/8th July, 1979. Details will be circulated from time to time as the date draws nearer and the Swiss programme takes final shape.

Dimensions 1/12 scale

Maximum overall length, 17¾ins.
Wheelbase, 7¼ to 8¾ins.
Overall width, 6¾ins.
(Includes body, bumper, wing and wheels)
Forward overhang, 4½ins.
(bumper projection beyond body ½in. included)
Rear overhang, 4½ins.
Height of wing, 5½ins.
Angle of Wing, 45deg.
Wing Width, 6¾ins.
Wing chord, 2ins.
Dams — Formula, 2ins x 3ins.
Dams — Sports, ¾in. x 3ins.
Spoilers — Height, 1in.
Spoilers — Length, 1in.
Bumper — may extend to ¼in. beyond side of body
or
6¾ins.whichever is less.
Tyres — Tread Width, 1½ins. (½in. minimum).
Tyres — Diameter (minimum) Front 1¾ins., Rear 2ins.

(See also drawing on page 41.)

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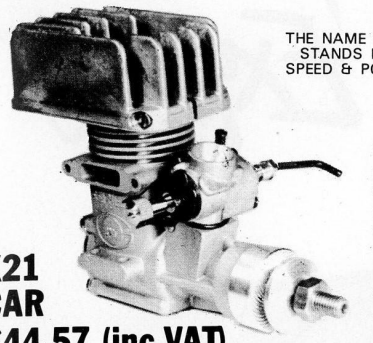

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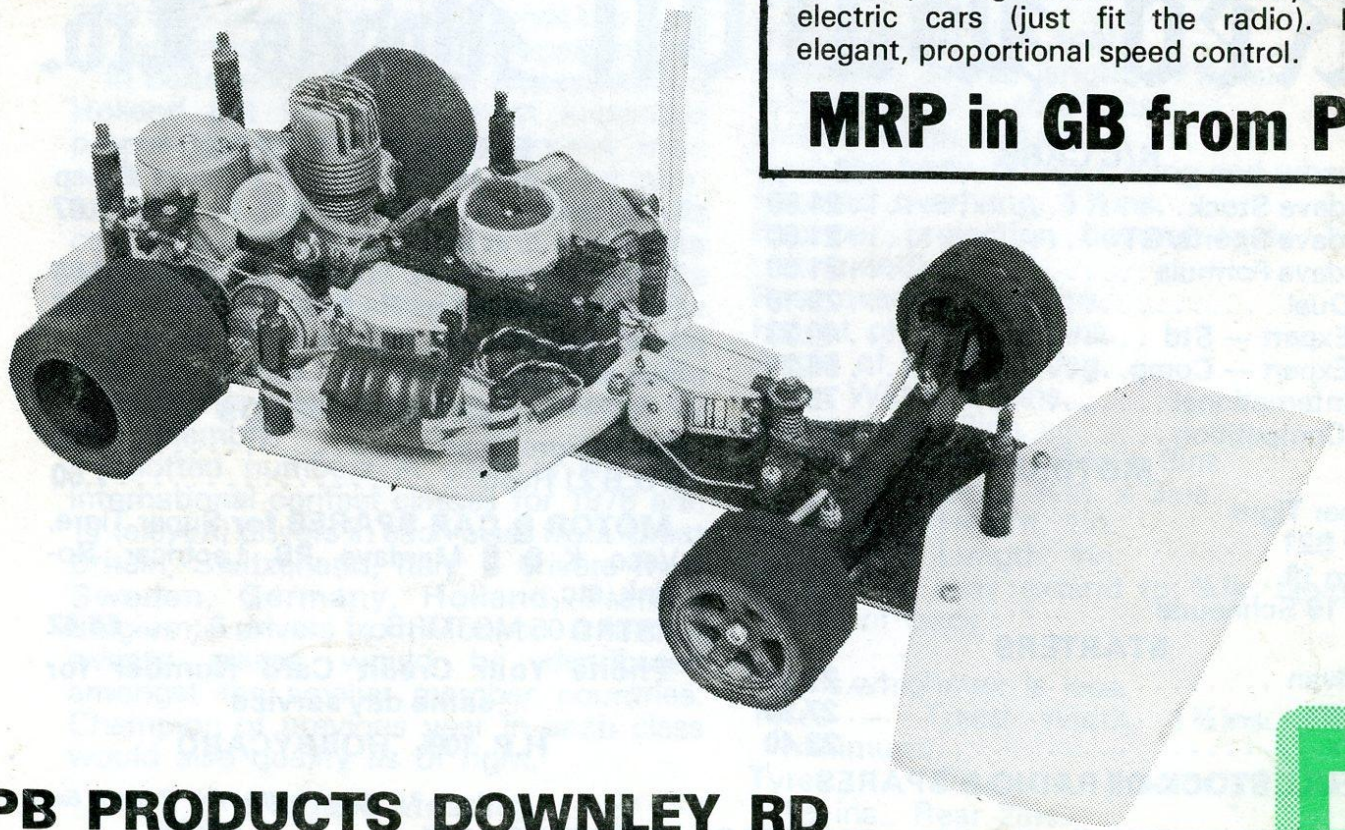

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