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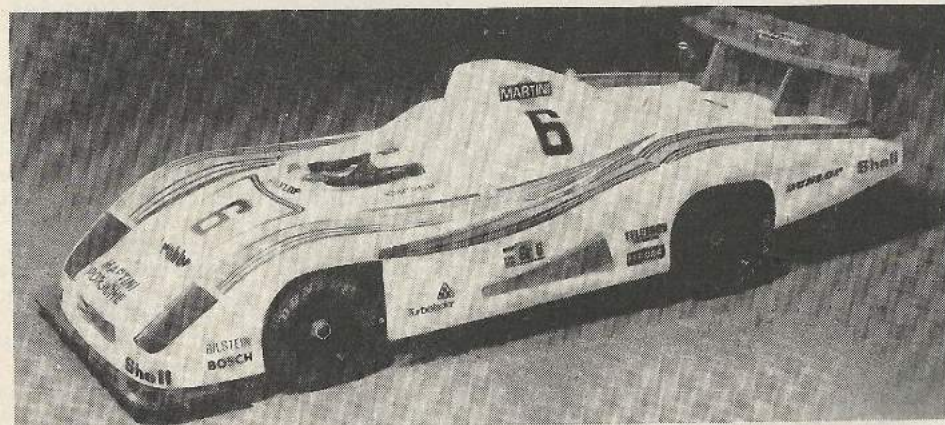
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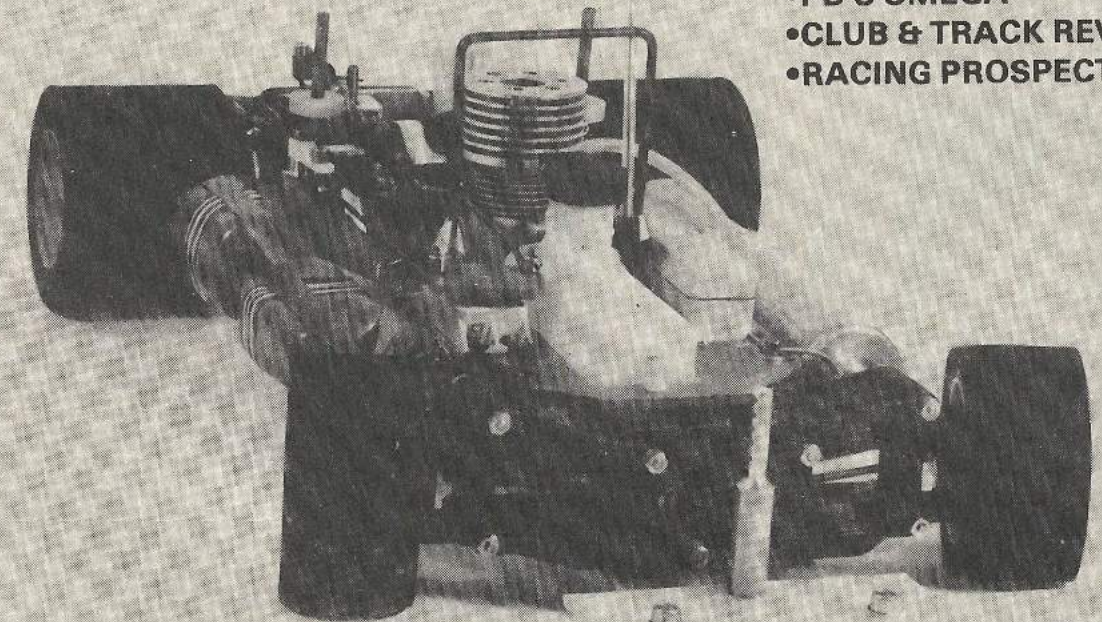
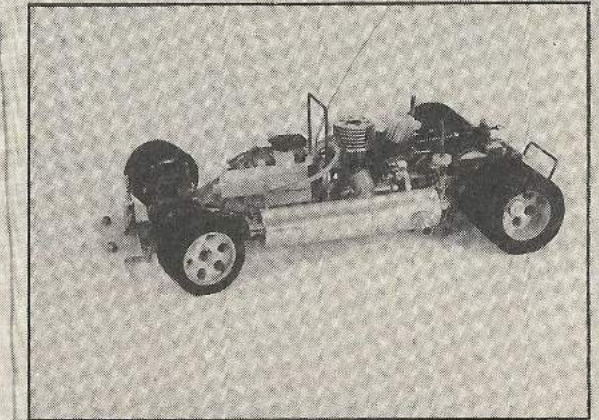
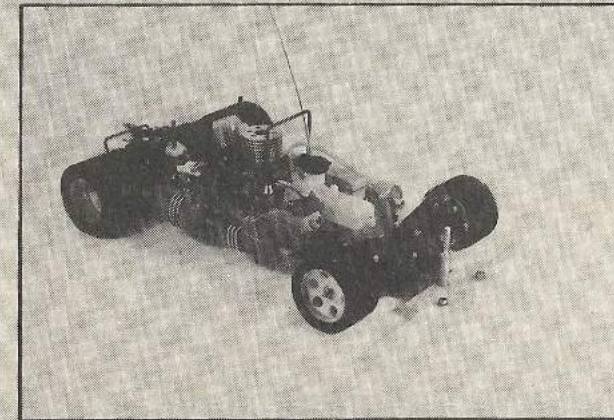
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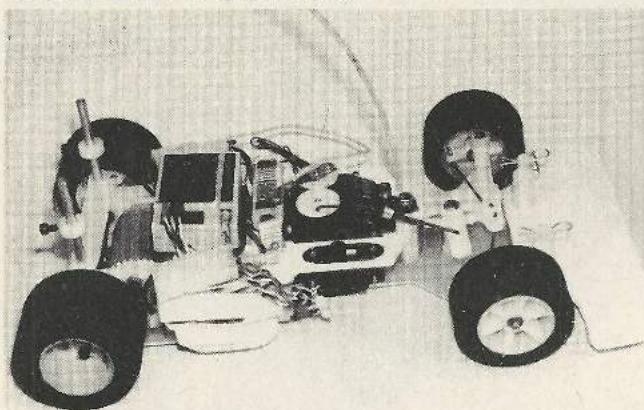


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- PB'S OMEGA
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- RACING PROSPECTS, '81

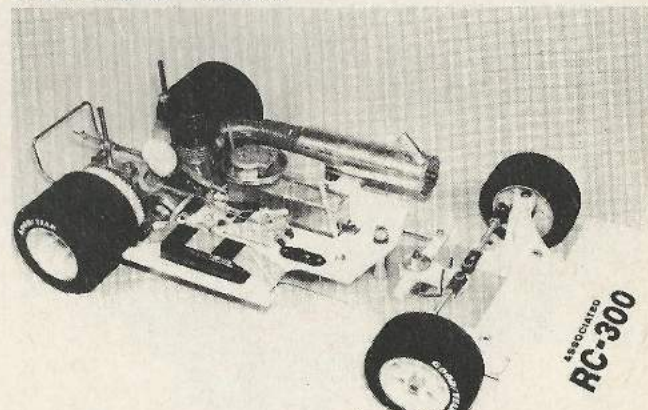
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7. Arturo Carbonell	Delta	USA
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4. Fujio Sasuga	AAT	Japan
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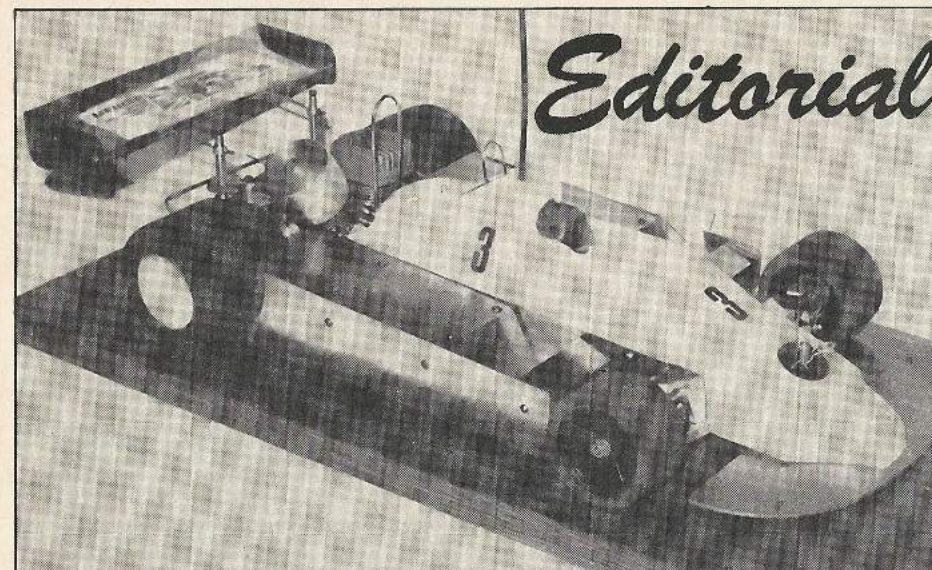
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At the WINTERNATIONALS race, BILL JIANAS qualified 1st with 32.8 laps, RICK DAVIS 2nd — 32.0 and JACK JACKOBS 3rd — 31.9. BILL JIANAS was in the lead at 65 laps when he lost a front tyre. At the WORLD'S CHAMPIONSHIPS, Ishihara from Japan qualified first, CURTIS HUSTUNG 2nd, JEFF ROLD 3rd, BILL JIANAS 5th and CHUCK PHELPS 6th. At 38 laps, CURTIS was leading with JIANAS 2nd and PHELPS 3rd. CURTIS's engine locked up, JIANAS's engine died twice and PHELPS ran out of fuel giving the lead to BOOTH. At WEISBADEN, CURTIS HUSTUNG was TOP QUALIFIER and the only car to turn 21 laps. JIANAS lowered the individual lap record to 14.0 seconds and DEBBIE PRESTON was TOP QUALIFIER from the Semi's.

radio control

John Hale's appropriately named 'Halo 1980' a fine original design Formula 1 1/8th scale car ... virtually all parts except diff and tyres made by the entrant.



The 1981 Season

BOTH EFRA AND BRCA have had their Annual General Meetings and the way is clear for a most exciting season. I have already mentioned the new Porsche series of meetings for ic cars during the summer. Other interesting main events are of course the British Grand Prix which will be held this year on the Mendip club's circuit at Bleadon near Weston-Super-Mare and the British National Championship at West Burton which is near Retford, Notts. Thus we have the two main events nicely spaced; one in the North Midlands and the other, for the first time, in the West Country.

On the 1/12th scale front a very nearly clean sweep of officers has taken place with a host of new brooms eager to show what can be done. What is more they have the background experience to do just that. I welcome in particular Dennis Trowbridge as Chairman of the 1/12th Section (who masterminded the successful Cleveland Grand Prix last season) and Nick Adams as Section Secretary. Nick is the designer of the Demon proportional speed control, a founder member of the number one 1/12th scale club Ally Pally, and editor of the famous Ally Pally Newsletter.

A revised list of Association officers both 1/8th scale (very few changes here) and 1/12th (virtually all change) appears in this issue. I also include highlights of both EFRA and BRCA AGM's — if you want everything, rules and all, then you must as indeed you should! join the Association (Sub still £5.00 a year and half price juniors).

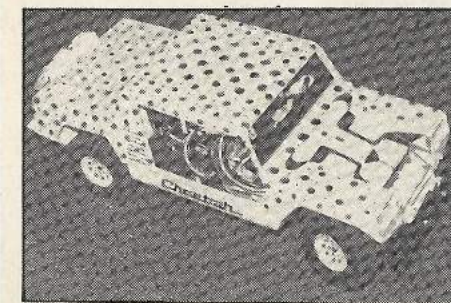
Cars at the Model Engineer Exhibition

A small class of only nine cars in the working model cars class (made up in part by some 30 in the non-working class) was nevertheless of high quality. Winner was a marvel of beautiful work in the shape of an Aston Martin Lagonda by B. Gray appropriately from Newport Pagnell. Unfortunately, his car was in a glass case and not easily accessible for photography. Builder had been able to get hold of the fullsize

drawings and had made a wooden mould of the car, encased it in glass fibre, split it down the middle lengthways and thus procured female moulds from which the actual working model body was prepared. Scale was perhaps unusual at 1/10th, but he could hardly wish to race such an elegant structure.

Second was a kit built Cheetah with a difference from G.D. Lavda of Palmers Green. The difference was in the electrics. All lights, including hazard lights, worked. Flashers came on when turning left or right. Sidelights and headlights also worked, as did the brake lights. All operated as the car ran, using current from the power Ni-cads as did the receiver. When at a standstill these functions could also be operated by careful (small) fingers switching a miniature console on the driver's lap. These two entries earned Bronze Medals.

Number 3 was a freelance 1/8th scale Formula 1 car by John Hale (named 'Halo 1980') with immaculately finished body in white with polished metal side panels. With exception of differential and tyres it was all made by the entrant. Alas, those metal panels, beautiful to behold, lost marks on 'fitness for purpose' as neither my co-judge (Alec Gee, who will be remembered from slot racing days) nor I, could see it standing up to racing's rough and tumble.



G.D. Lavda's colourful Cheetah with all-working lights operated from Nicads driving the car on the run, or from a miniature console when car at a standstill

A very highly commended certificate was its reward. I saw the original 'Halo' in operation some time ago in more workaday bodyshell, with, I think, John's own differential as well, in one of Mendip's traditional team events.

Another Bingley Hall Show

I heard the first news of another Bingley Hall Show at Birmingham from John Bishop, MAP's Exhibition Manager, when I was at the 50th Anniversary Exhibition. This will be taking place in May and be a 'Family Show' designed to have something for all members of the family in the hobbies, crafts and leisure fields. It will be an all trade show, that is, without a competitive entry of models but with a continuous array of demonstrations of everything the mind can think up within its terms of reference. High spot — to our minds — will be a scale model of Donington Circuit, with banked corners, for electric car racing. No, sit down Bill Maisey and Neal, not a competition, but an opportunity for the general public to try their hands on the Tx... though all and sundry, very good, bad or indifferent will be welcome to have a go... for money of course.

Show will be open from 2.00pm to 10.00pm as at present visualised. But I expect the literature will all be out by now. Birmingham's Evening Mail will be co-sponsoring with MAP.

The Monthly Mixture

How many readers will be tempted to build the AMPS Rapier from our feature this month I do not know. Certainly some thousand enthusiasts from all over the world have jumped in at the deep end! I have enjoyed building up the kit immensely — more fun and real excitement than I have had since rebuilding my old BNC cyclecar (reputedly a competitor in a 1923 Grand Prix) from a soap-box of parts and a rolling chassis more years ago than I care to acknowledge. It will take a lot of what you save on tyre wear to make up the price, but what a lovely challenge...

Month by month I hope we can continue to provide an exciting construction opportunity. You may be only an armchair builder at the moment but the time will come when you will burst out... A young friend of mine has just bought his first lathe after steadily saving for it for the five years since he left school. As Rat says in Wind in the Willows "There's just nothing to beat messing about with boats" I nearly agree and would just substitute 'cars'.

All Editorial Enquiries,
Publicity Material and
Review samples should be
addressed to:

Dickie Dickson,
Editor, RC Model Cars
P.O. Box 30,
Hemel Hempstead,
Herts, HP1 1NL.

Club & Track Review

Beaverlac R/C Car Club

Secretary: A. Maulson,
1 Scrubwood Lane,
Molescroft (Hull 882329)
Beverley, E. Yorks

This club is one of the oldest in the country and had one of the earliest permanent circuits to be built — many a northerner has worn out his first set of tyres on the old Catfoss Track, alas now overtaken by the surge of industrial development. Alas, thinking, no track no club, I omitted the group from my original club list when I should have known that this would not long be an impediment. I am happy to say that the club is still going strong with the same sec. at the heart of things, and the boys are now racing on a neighbouring Army camp. If this is your part of the country and you need a bit of racing, get in touch with the secretary and learn all about it.

Yorkshire R/C Model Car Racing Club

That hardworking handicapper for the BRCA Jeff Lindstrom in addition to rolling off literally yards of handicaps per computer is also producing the club's regular Newsletter, the January issue which is now before me. Jeff reminds readers that 1981 is their 10th Anniversary Year. It was formed in 1971 to promote 1/8th scale ic powered car racing, and was venue of first ever British National Champs at Mintex in 1973. In 1975 their own purpose built circuit was opened at Queensbury by the Deputy Lord Mayor of Bradford, prior to running of the 1975 British National Champs. Since then the club has broadened its interest to include 1/12th scale racing, and held the first 1/12th Scale British National Championships at the Richard Dunne Sports Centre in Bradford. Current promotion is the development of a section for Buggy Racing, be it either 1/8th or 1/12th scale, electric or ic.

Also in the wind has been a club contest to design a suitable club badge. Who has won it; what it will be like I don't know, but what an excellent idea for other clubs to follow. An emblem to go on the aerofoil, on the kit box, on the blazer pocket (posh!) or on nylon jacket sleeve ... what about it? I'd love to see some existing club badges for illustration here.

Pendle & District Model Car Club

Secretary: Mrs W. Smith,
41 Manor Street,
Nelson (691665)
Lancs. BB9 OTS

The club has a year through programme with ic stock cars raced from April to November and then 1/12th electric stock cars November back to April. Fixtures are fortnightly with electrics racing now to April 5th at St. Mary's Church Hall, Maurice Street, Nelson, book in by 1.30pm. I should add the programme is set out on a neat wall poster 12 x 9 ins for shop or noticeboard.

North Kensington R/C Model Racing Car Club

Secretary: J. Barnett,
23 Camborne Mews,
Cornwall Crescent,
London. W11.

Hooray! A nice London club for 1/12th scale. Regular meeting every Monday evening from 6.30 pm at the Ladbroke Lower School, Lancaster Road, W11. Racing to BRCA rules. For further particulars contact secretary as above or at the school any Monday evening.

Carlisle Radio Model Car Club

Secretary: Bob Bond,
25 Corporation Road,
Carlisle, (Carlisle 28954)
Cumbria.

The club has been in existence for two very successful years with organised racing for 1/8th scale cars. Membership now stands at 73 with about 30 of these active in the club championship. Racing takes place fortnightly on the club circuit on Sunday afternoons. Monthly social meetings also are arranged at Carrow House Hotel, situated at the A6/M6 interchange (M6 42) on the first Tuesday of the month, starting 7.30 pm. Prospective members are invited to go along. Now that the 'Off Road' vehicle has arrived and here to stay any enthusiasts are welcome. If interest warrants a Rally Cross section will be started. New members very welcome via the Sec. or at Carrow House.

Sussex Adders

This enterprising club will be running a Sussex Championship meeting in March restricted to Sussex drivers or club members (presumably if you live over the county border but your club is in Sussex you are qualified). Details from Gerry Hooper, 12 Bramble Crescent, Durrington, Worthing, W. Sussex. Incidentally, Gerry remarks "we are getting to like *Auto Modeller* as it broadens the spectrum more". Thanks!

New Clubs

BEDFORDSHIRE

Bedfordshire Model Car Club
Secretary: H.G. Moulam,
1 Castle Close, (IC) (S)
Wilstead, (Bedford 740 139)
Beds.

CAMBRIDGESHIRE

Cambridge Racing Electric Car Club
Secretary: Ian Wilson,
206 High Street, (Newmarket 68965)
Newmarket. (E)

Exning R/C Motor Racing Club
Secretary: J.D. Allbone,
18 Garden Close,
Sutton, (Ely 77157) (E)
Camb. CB6 2RF

Lilford Model Car Club
Secretary: Steve Taylor,
Hill Farm Cottage, (IC) (S)
Over,
Cambridge.

CHEESHIRE

Macclesfield R/C Model Car Club
Secretary: Alan Moss,
7 Toll Bar Avenue,
Off Black Rd. (Macclesfield 20810)
Macclesfield. (E)

North Cheshire MCC
Secretary: P. Hatton,
12 South Dale,
Penketh, (Penketh 5883)
Warrington. (E)

CUMBRIA

West Cumberland Radio Modellers
Secretary: Cal Long,
124 Windsor Road,
Westfield, (E)
Workington,
Cumbria CA14 5BS.

Carlisle Radio Model Car Club
Secretary: Bob Bond,
25 Corporation Road,
Carlisle, (Carlisle 28954) (IC)
Cumbria.

DERBYSHIRE

Chesterfield Auto Racing Society
Secretary: Malcolm Webb,
23 Oak Tree Crescent,
Mansfield Woodhouse, (Mansfield 640796)
Notts. (E)

ESSEX

Redbridge Racers Electric Car Club
Secretary: George Land,
18 Manor Farm Drive,
Chingford, (01 524 3611) (E)
Essex.

HAMPSHIRE

Southampton R/C Model Car Club
Secretary: Dave Farndale, (IC) (E)
19 Oxford Street,
Southampton.
(Days 0703 617849, Evenings 0703 38229)

Note:
(IC) 1/8th scale glow plug powered cars
(S) 1/8th scale glow plug powered stock cars
(E) 1/12th 1/10th scale electrics, electric powered cars
(EIS) 1/12th electric stock cars only

KENT

Maidstone & Medway R/C Car Club
Secretary: Peter Wedlake,
51 Gladstone Road,
Maidstone, (Maidstone 61849)
Kent ME14 2AV (E)

LANCASHIRE

Blackpool Radio Electric Car Club
Secretary: Mike Allen,
23 Colwyn Avenue,
Blackpool FY4 4ET (E)

Pendle & District Model Car Club
Secretary: Mrs Wendy Smith,
41 Manor Street,
Nelson,
Lancs. BB9 OTS (S)(E)

LONDON

North Kensington R/C Model Racing Car Club
Secretary: J. Barnett,
23 Camborne Mews,
Cornwall Crescent,
London W11 (E)

STAFFORDSHIRE

Potteries Area 1/12th Scale Electric R/C Club (PATS)
Secretary: J. Barnett,
61 High Street,
Knutton,
Newcastle,
Staffs. ST5 6DD (E)

SURREY

Chessington Radio Car Club
Secretary: Linda Woodgate,
10 Northcote Avenue, (S)(IC)
Tolworth, (01 399 2635)
Surrey.
Surrey.

SUSSEX

Westham Electric Stock Car Club
Secretary: Bill Owen,
16 Bridgemere Road,
Eastbourne (0323 29028)
East Sussex BN22 8UB (E)(S)

Southern Radio Car Club
Secretary: Phil Burden,
7 Harting close,
Goring by Sea (Worthing 503776) (S)(E)
West Sussex.

YORKSHIRE

Beverlac R/C Car Club
Secretary: A. Maulson,
1 Scrubwood Lane,
Molescroft (Hull 882329)
Beverley, E. Yorks

WALES

Cardiff Red Dragons R/C Car Club
Secretary: Chairman: Alistair Graham,
1 Llandennis Avenue,
Cyncoed (751507) (IC)(E)
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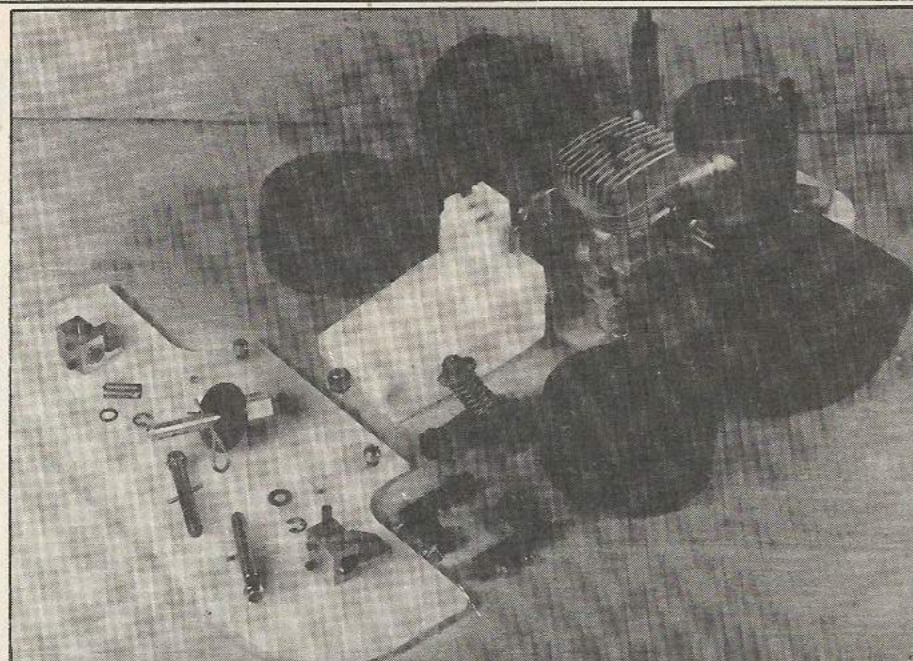
PB's OMEGA

We take a look at PB's new Conversion Kit

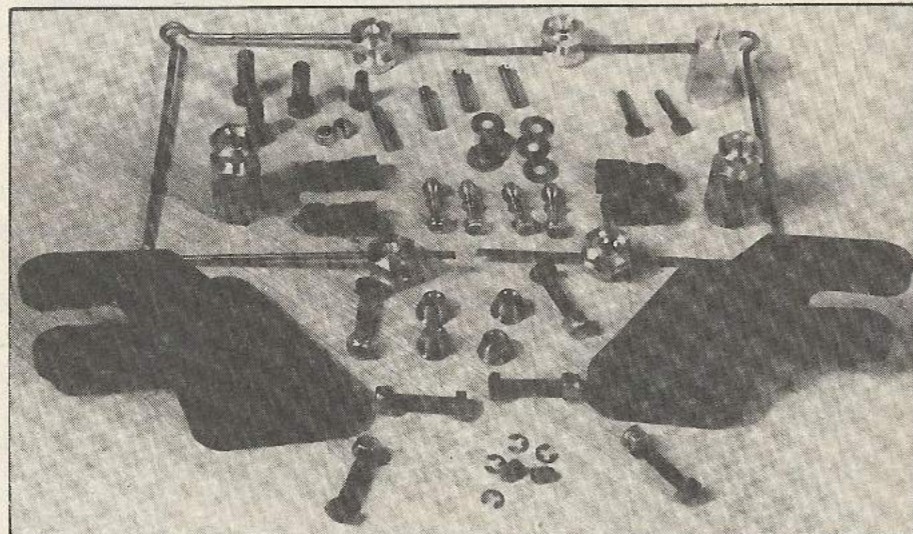
PB RACING PRODUCTS' claim that any PB kit could be updated to meet the specification of a more advanced car in the range is speedily confirmed by the introduction of the Omega (PB9S) conversion kit. Race goers will have seen that on their various versions, either experimental or proven, in 1980 the split front axle has been in evidence (I saw it as early as the first Tubary Park outing of the season). Advent of a growing interest in pipe type silencers mounted alongside the radio plate has prompted the introduction of a lightweight pair of radio gear 'hangers' to facilitate this, or retain the established rear-mounted silencer at will.

Although billed as the upgrading unit for the PB9, it can indeed be used with any of the PB kits, although in the case of the Colt (PB 10) it will also be necessary to acquire a power pod to which the GRP chassis can be attached. The simpler steering parts of the Colt can be fitted to the front axle mouldings without alteration. It should be emphasised that the contents lists enclosed with the conversion kit do **not** relate to the parts contained in the conversion kit as many parts can be transferred from the existing kit being converted.

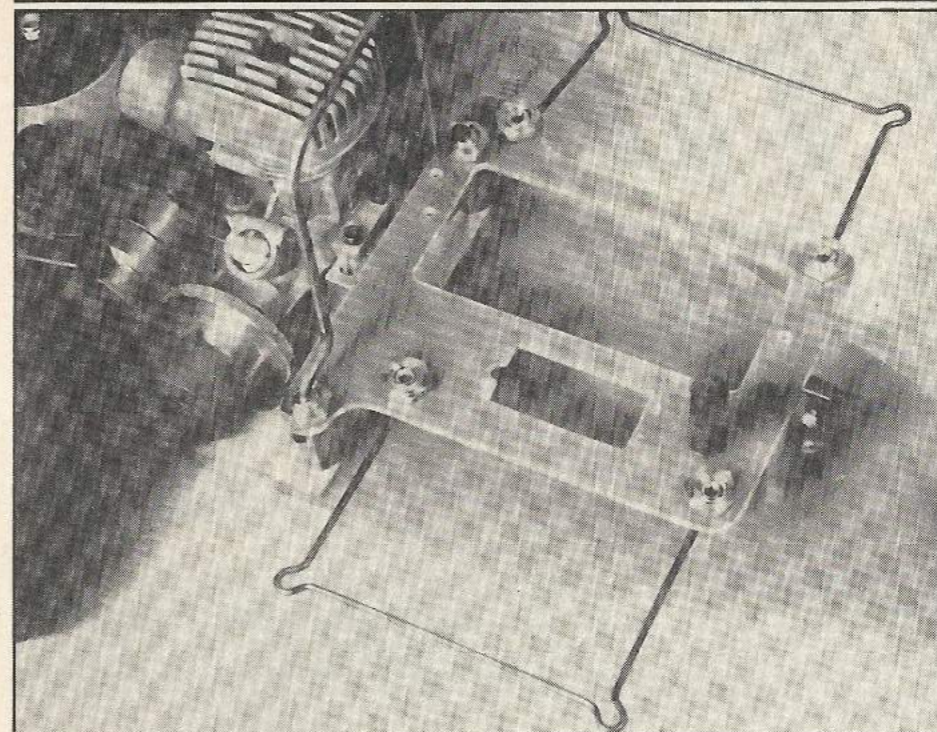
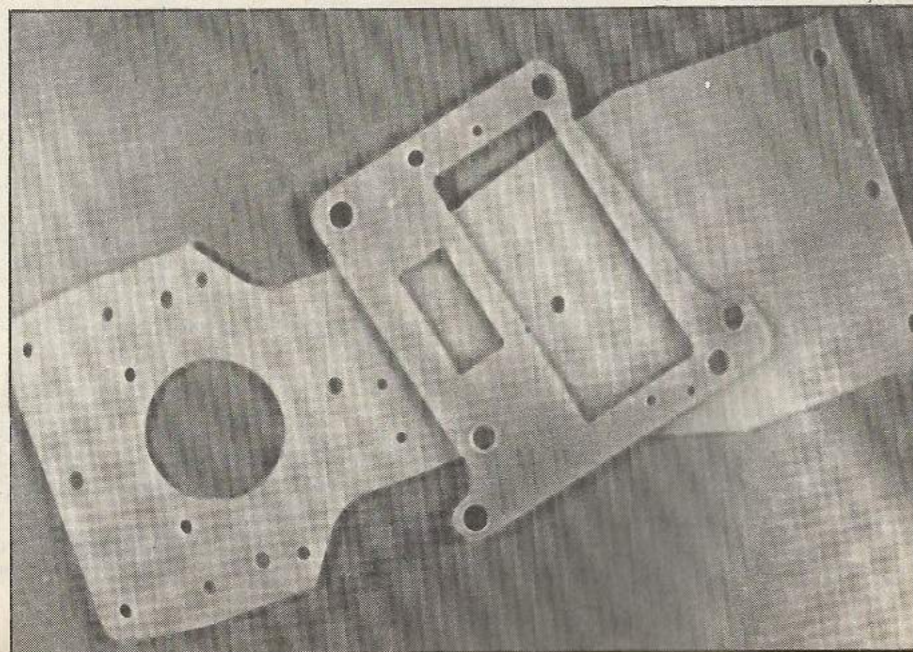
First stage of the conversion is to check the parts provided and see that they are all there as needed; indeed there may be some nuts and bolts etc., surplus to your needs. With a GRP chassis PB everything on the power pod will be required. Forward of the power pod you will need to retain fuel tank, servo saver, front bumper and bodyshell mount, steering servo fixing brackets,



These are the bits you need to carry over for re-use on the conversion kit — plus the rollover bar which seems to have evaded the camera.



The conversion kit parts, lacking only the GRP chassis and radio plate. ▲ GRP chassis and radio plate.

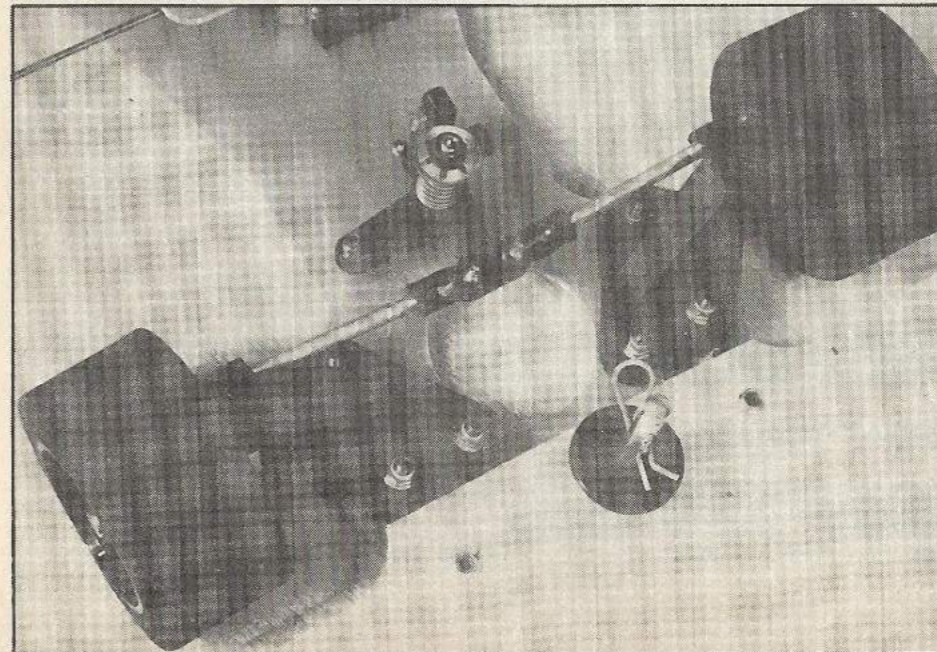


▲ Radio plate installed with wire outriggers to carry receiver and battery. Servo recess is to take the smaller Futaba and has been nicked to let the lead through.



◀ Servosaver with old and new type balls. Apart from being larger note the circlip indentations to make the ball caps additionally secure.

The split front axle mouldings in place. Addition of washers under either or both the two front fixing nuts on each side can alter the steering to the driver's choice.



front wheels and tyres, axles and axle blocks with their circlips and washers. I think this about covers it. You can of course splash out and treat yourself to a roll bar if so inclined if you have an earlier marque.

Construction is simple enough for anyone who has already put a PB kit together, but you may miss out on some of the advantages inherent in the split front axles. By inserting washers between the mouldings and the chassis it is simple to change the steering geometry. You will notice that the two front holes have tapered drillings so that a degree of elevation can be given without risk of distortion. Washers are provided for the nuts here, whilst the rear nut is recessed. A very small amount of change will make a significant difference to camber (washers under inboard nuts) or to castor (both nuts each side). Increasing camber may improve steering, and is recommended in preference to increasing castor.

Conversely, you may wish to reduce the amount of flex in your steering and this can be effected by bolting a bridge between the two front mouldings to stiffen it. By using different materials, varying degrees of stiffness can be obtained.

Next in the useful things provided must be the new style ball joints and ball joint mouldings. Basically, they are very much the same as the original balls and mouldings but larger and more robust, and will require balls to be pushed into mouldings more vigorously. It is essential that the moulding be pushed onto the balls chamfered side first. The mouldings are indeed so stout that you may find it necessary to ease them on by opening the slot a little with a small screwdriver.

A further novelty is that the balls are finally secured in place with small circlips. This was something that I almost overlooked (indeed my photo shows them omitted! Don't you do it too!)

Radio plate is small neat and simple. The outriggers to hold Rx and battery are fixed with the purpose built nuts and bolts. That on the silencer side can be omitted if a forward silencer is installed. Cut out for fuel tank is precise; that for the servo is intended for the smaller size and needs only to be drilled for fixing screws and a small indentation filed to allow the lead to go through. Otherwise, if using larger servo here, hole must be suitably enlarged. Where you fit your RX on/off switch will depend on location of radio gear. There is not really a great deal of spare space. A hole for aerial mast has been ready drilled just behind the tank, though I have placed one forward as I usually have it. This leaves room for the switch at the front, preferably on top of plate so that a gloved marshall's finger can switch off easily without fumbling.

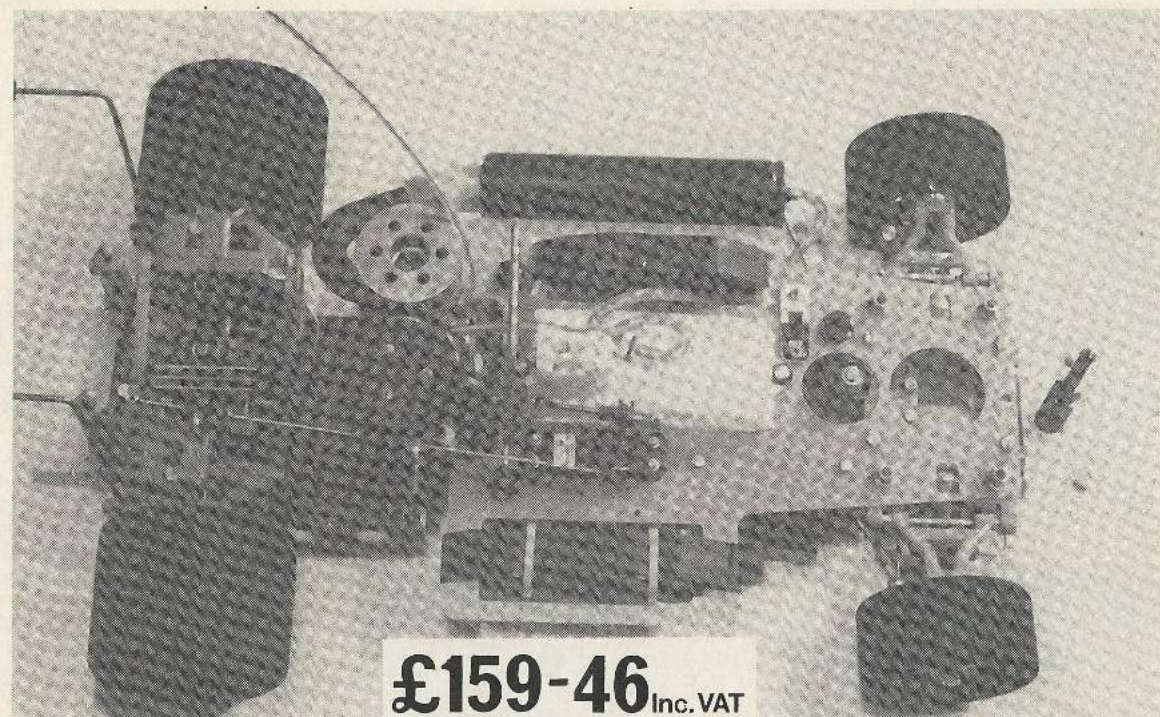
Altogether a neat conversion package which should bring your car up to the best possible PB specification. In case you wonder why the Omega is a little cheaper than the PB9 it is because the slight simplification permits savings in several directions, and these are passed on to the buyer.

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radio control

RACING PROSPECTS 1981

A Resume of EFRA and BRCA Annual General Meetings and Conferences

Nitro!

It was agreed at the previous AGM in Paris that use of nitro as an additive would be banned from January 1st 1981 provided the other two international groups ROAR (USA) and the Japanese ruling body also agreed to do likewise.

Three hours were spent on discussion of what steps to take as neither of these groups had done more than express pious hopes and report some experimental events run nitro-less. It seemed hopeless to go it alone especially with a World Champs in the summer and it was eventually agreed that any future move in this direction would ban *all additives* except lubricants and would, in fact, go it alone without waiting for other bodies, after further efforts to ban nitro use from 1982 had failed to be carried.

GB, Ireland and Italy were opposed absolutely to any banning whatever. So Nitro can continue to be used officially, though pity some of the countries where it is very nearly unobtainable.

Those "Nearly" Bodies

During the 1980 season there was quite a lot of hassle about bodyshells in use which did not seem to comply with the rule requiring that they be within 10% of scale. Some were stand-off scale and that only at a great distance! A much more elaborate proposal was presented to the EFRA meeting which required that each and every bodyshell should be approved by a committee with presentation of prototype drawings and what have you, with months of waiting to get it passed.

Eventually it was agreed that existing bodyshells should be passed 'en bloc' but that new bodies would go through the procedure. This was passed with Britain and Italy strongly protesting. It rather means that new bodies will hardly be passed until they have gone out of date!

Although not raised, I see the fate of the

poor man who has an own-design body to scale being disqualified from top class events for not going through the mill! But, for the present, your body is approved.

European Championships

Belgium had the first option of running the 1981 Euro Champs but declined, thus letting in Austria who will stage the event on their splendid new circuit at Sollenau near Vienna in August. Last year's Austrian Grand Prix took place there, and all reports describe it as amongst the finest in Europe. This is deep in the wine country and there should be chances of a wine-tasting for the new season, or *Heurige* in local terms. Vienna is only twenty minutes away with wonderful museums, fantastic shopping and the food — yum-yum!

Buggies

No rules would be laid down this year, but national bodies were invited to submit suggestions to be incorporated next year. It was noted that preliminary construction rules have already been proposed and are in use in France which has pioneered buggy racing over the past two seasons at least.

French International Series

The French governing body has generously put up trophies for a series of 10 events in two sections of four and six meetings to count cumulatively on a points systems down to 80th place covering events in most European member countries. It will include both Formula and Sports/GT and trophies for the 10 'firsts' will be awarded after the last events.

1/12th scale at BRCA

Marathon 1/12th conference meeting resulted in an almost clean sweep and election of a new committee, proceedings lasting until after 9.0 pm with a 2.0 pm start!

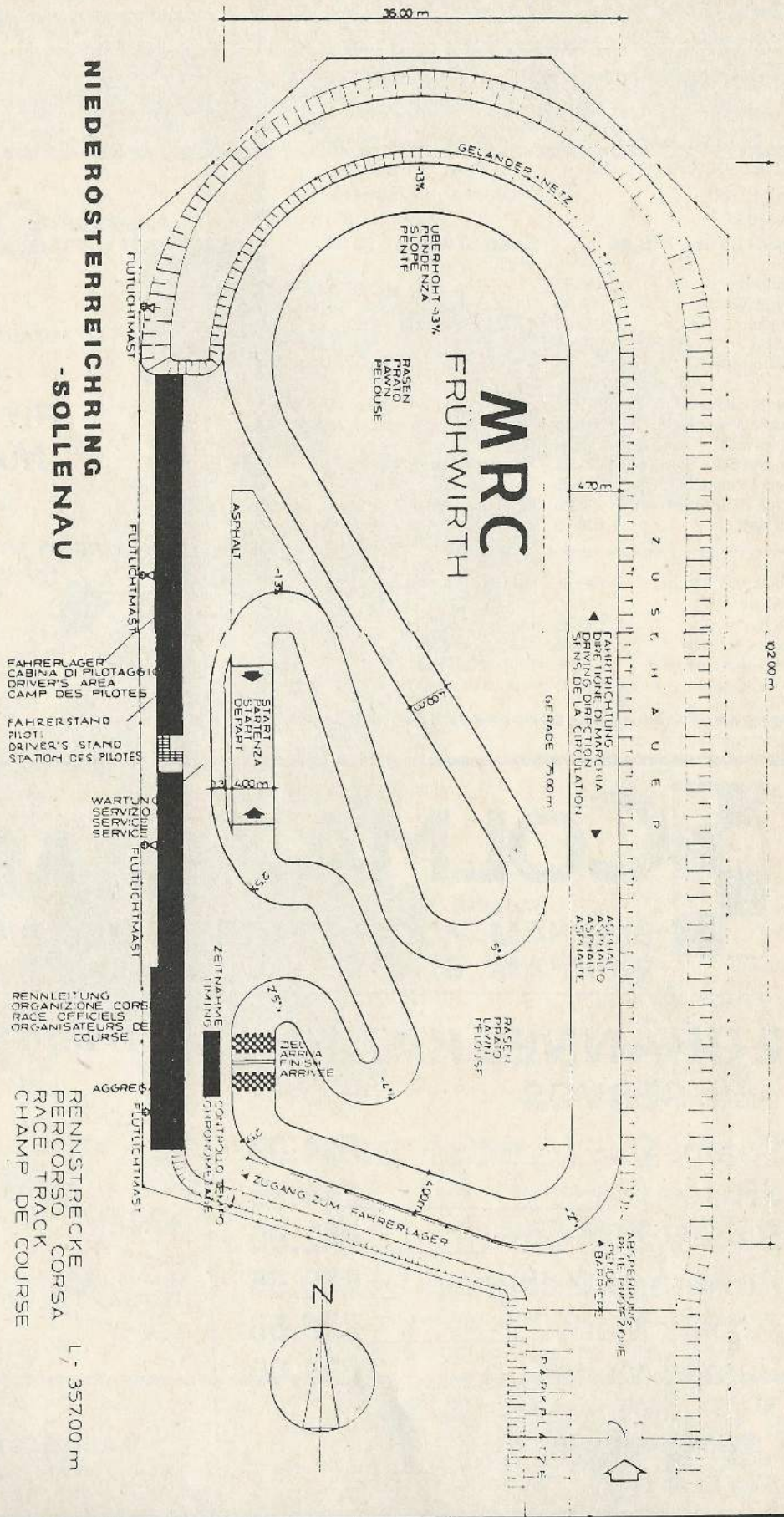
All possible ambiguities in the 1/12th scale rules were effectively ironed out, main changes being as follows:

- (1) Weight limit reduced by 30zs to a minimum of 310zs.
- (2) Rule on Ni-cads clarified to specify only 6 cells to be carried to drive car. This permits carrying of other cells for Rx and any other desired function.
- (3) A new rule limits cars to a single drive motor thus specifically banning dual drive motors (If you want 4-wheel drive you must drive them all from the one motor).
- (4) "Standard" motors must be "unopened" — this is now a specific rule.
- (5) Igarashi motor (which often has factory made balance drilling in the armature) now acceptable.

Champion of the year will now be decided on a series of meetings rather than a single "Nationals" with a point count. Analysing the 1980 results finds the winner unchanged if this system had applied to the past season's racing. A 1/12th scale Racing Calendar gives fixtures to date: no doubt more will be squeezed in later.

1/8th scale at BRCA

Committee and regional reps returned almost unchanged — two new reps for Areas 4 and 5 only being appointed. Membership had grown during 1980 by some 47% bringing total to over the 1,000 mark. This has meant that handicaps and other administrative work now demands computers. Suitable equipment will be acquired, and made available for use at meetings for instant (almost) printouts of results where clubs do not have their own (a surprisingly large number do). With computer membership numbers, race organisers will be saved a lot of trouble checking valid BRCA membership.



Plan of the Austrian Circuit to be scene of Euro Champs 1981. Length is 357 metres with a 75 metres straight, banked corners and many extra features such as flood lights.

RACING PROSPECTS, 1981

BRCA

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Racing Calendars 1981

1/8th Scale

Racing Calendar 1981

Month	Day	Country	Event	Location	Notes
March	1	BRCA	Open	P. Porsche Ro	
March	8		Invitation (Two days)	Alzira (Sp)	
March	15		Invitation (One day)	Bournemouth	
March	22		Invitation (One day)	Aldershot	
March	29		Invitation (One day)	Aldershot	
April	5		Invitation (Two days)	Bournemouth	
April	12		Invitation (One day)	Aldershot	
April	19		Invitation (One day)	Aldershot	
April	26		Invitation (One day)	Aldershot	
May	3		Invitation (One day)	Aldershot	
May	10		Invitation (One day)	Aldershot	
May	17		Invitation (One day)	Aldershot	
May	24		Invitation (One day)	Aldershot	
May	31		Invitation (One day)	Aldershot	
June	7		Invitation (One day)	Aldershot	
June	14		Invitation (One day)	Aldershot	
June	21		Invitation (One day)	Aldershot	
June	28		Invitation (One day)	Aldershot	
July	5		Invitation (One day)	Aldershot	
July	12		Invitation (One day)	Aldershot	
July	19		Invitation (One day)	Aldershot	
July	26		Invitation (One day)	Aldershot	
Aug	2		Invitation (One day)	Aldershot	
Aug	9		Invitation (One day)	Aldershot	
Aug	16		Invitation (One day)	Aldershot	
Aug	23		Invitation (One day)	Aldershot	
Aug	30		Invitation (One day)	Aldershot	
Sept	6		Invitation (One day)	Aldershot	
Sept	13		Invitation (One day)	Aldershot	
Sept	20		Invitation (One day)	Aldershot	
Sept	27		Invitation (One day)	Aldershot	
Oct	4		Invitation (One day)	Aldershot	
Oct	11		Invitation (One day)	Aldershot	
Oct	18		Invitation (One day)	Aldershot	
Oct	25		Invitation (One day)	Aldershot	

BRCA - 1/12th CALENDAR 1981

(as on 11/12/80)

DATE	LOCATION	PROPOSED CATEGORY
FEBRUARY 9	CHESTERFIELD	3 Hour Endurance Race (INVITE)
MARCH 14	EXETER	3 Hour Endurance Race
MARCH 15	MAIDENHEAD	Standard National Pts. Scoring
MARCH 22	BIRMINGHAM	Standard National Pts. Scoring
APRIL 5	STAFFORD	Standard National Pts. Scoring
APRIL 26	CLEVELAND	Standard National Pts. Scoring
MAY 9	CLEVELAND	Standard National Pts. Scoring
MAY 10	CLEVELAND	Standard National Pts. Scoring
JUNE 7	CHESTERFIELD	Standard National Pts. Scoring (OUTDR)
JUNE 20	MALVERN	Standard National Pts. Scoring
JUNE 21	MALVERN	Standard National Pts. Scoring
JUNE 28	MALVERN	Standard National Pts. Scoring
JULY 5	MALVERN	Standard National Pts. Scoring
JULY 18	MALVERN	Standard National Pts. Scoring
AUGUST 19	MALVERN	Standard National Pts. Scoring
AUGUST 15	MALVERN	Standard National Pts. Scoring
SEPTEMBER 12	MALVERN	Standard National Pts. Scoring
SEPTEMBER 13	MALVERN	Standard National Pts. Scoring
OCTOBER 11	MALVERN	Standard National Pts. Scoring
OCTOBER 24	MALVERN	Standard National Pts. Scoring
NOVEMBER 25	MALVERN	Standard National Pts. Scoring
NOVEMBER 27	MALVERN	Standard National Pts. Scoring
FEBRUARY 27/28	BRUGG (near Zurich)	8 MINS Modified (on carpet)
MARCH 1	SWITZERLAND	(27/28 for practice only)
MARCH 1	BOLDENA, ITALY	8 MINS Standard
APRIL 27	ITALY	8 MINS Standard
MARCH 15	CHESTERFIELD	OFF ROAD RACING 1981
MAY 17	CHESTERFIELD	1/12, 1/10
JUNE 20, 21	MALVERN	1/12, 1/10
JULY 26, 27, 28	ROTHERHAM	BUGGY, BUGGY UFFH ONLY
SEPTEMBER 20	CHESTERFIELD	1/12, 1/10, 1/8 OFF ROAD
SEPTEMBER 20	CHESTERFIELD	1/12, 1/10

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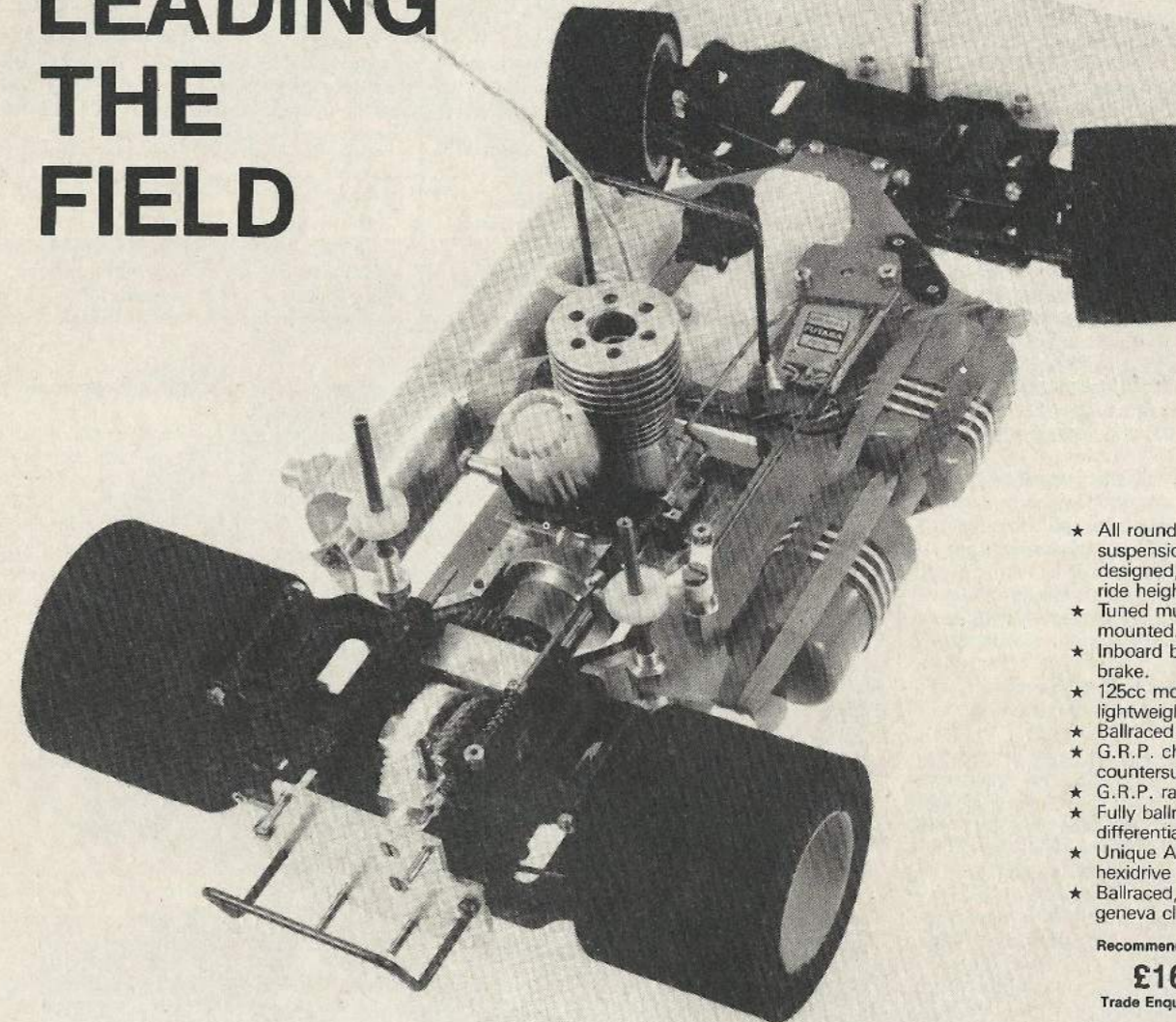
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AMPS RAPIER

WHATEVER ELSE can be said of the AMPS Rapier one thing is certain, the company has secured a world 'beat' in being the first such car ever to be offered as a construction kit!

The Rapier story is really remarkable in that from its first public appearance it looked a winner in the hands of its team drivers. One was the experienced and already successful Dave Martin, appearing during his last year at university and likely to be oppressed with exam results and job opportunities; the other Gary Culver a far less experienced driver who had never been in the limelight before. Between them, on a strictly equal basis (rather than a team leader and a follower situation), they can be said to have been in the running for a win on every occasion, defeated only by engine failures or other problems outside the sheer excellence of the car.

Others are following the same lines. As so often happens, a good idea springs into being in a number of places without any aspect of copying at about the same time. Thus, the year will see a real independently sprung battle between the world's leading manufacturers. AMPS have a season's lead and well deserved it is.

I very much hope that I too have something of a lead in offering the first

Completed Car.

comprehensive feature on building up one of their kits. It has certainly given me immense pleasure and will, I hope, tip the scales for some drivers hovering on the brink of joining the spring-heeled fraternity.

Like all good kits the parts are separately packed in numbered parcels. Assembly should follow in strict rotation since early sub-assemblies are required for later main assemblies. So first task must be — and this is very important — to read the 25-page instructions through quietly, looking at the separate illustrated sheet (numbered pictures do not relate to numbered packages) and getting some idea of the detail work involved.

Next stage, and this again I think is essential work, is to open each package and check and tick off each item against the list provided, getting some idea of what it is all about. Since many parts will be quite new to the modeller or to anybody else a number of new descriptions appear. It may take a little time to identify each item. Put the bits carefully back and seal the package with sellotape to ensure contents do not get mixed up between numbered lots. A list at the very beginning gives descriptions of all abbreviations used.

Three thread systems are used BSF, Whitworth and BA. I trust builders have some of these taps and dies as sometimes, with series produced items, it helps to be able to run a tap through or clean up a bolt

with a die. It must be emphasised that any production run will need such minor attentions by the user, or he must expect to pay very much more for the goods if it has all been done for him.

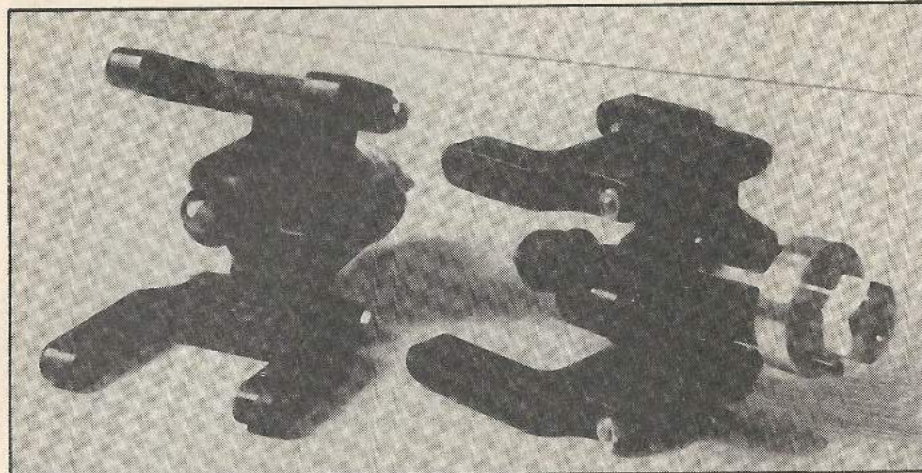
My old friend 'Curly' Lawrence made model locomotive building within the grasp of almost everyone by insisting that work be brought down into very small steps and encouraged the builder by saying in effect, "Surely you can do a little job like that!" Here the instructions proceed very much on those lines.

Before starting real work you can, as I like to do, get the tyres on the wheels and a dirty sticky job over. No problems here. Rear wheels are in three segments and will be stuck together before putting on the hubs.

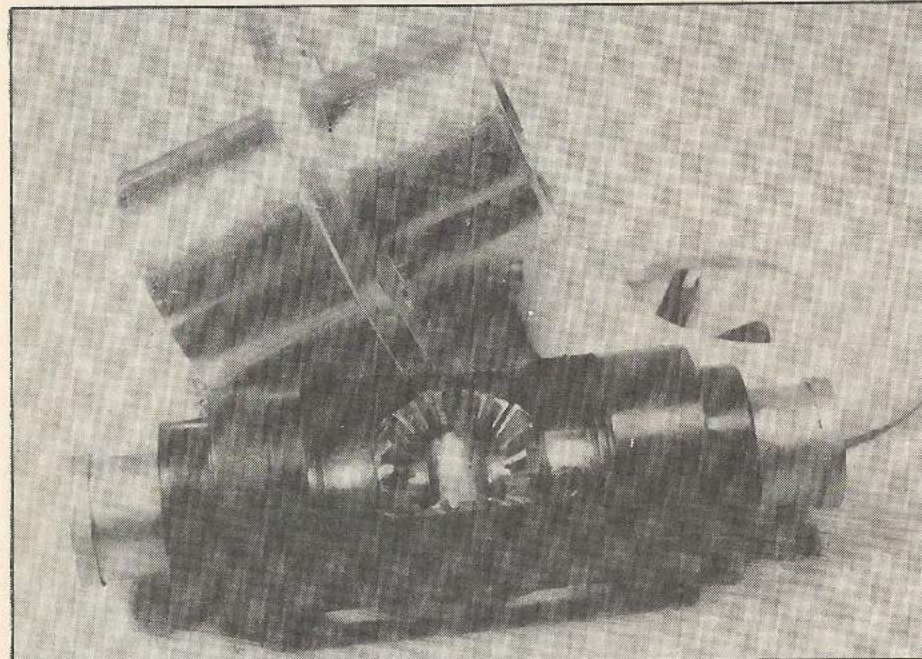
Section 2. Rear hub axle sub-assemblies:

Pictures show plastic parts as white, as they were in the prototype cars, but here they are all black and very elegant. This is a nice easy put-together for starters. Main parts are the two suspension uprights through which the two rear stub axles go, and four wishbones, two upper and two lower, which are assembled for right and left hand.

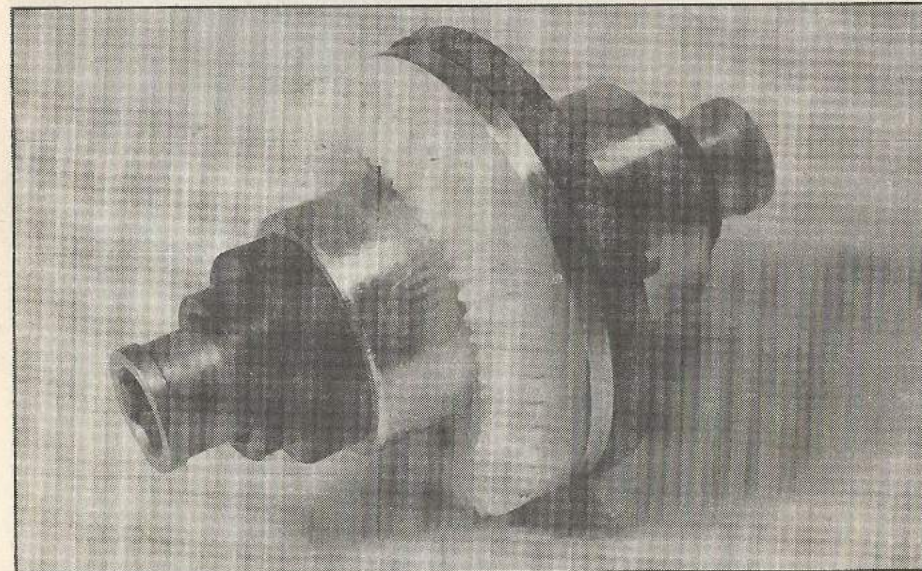
The wishbone pins, which form the hinges, are held in place with small hex nuts. A tube of Loctite 'Lock & Seal' is provided and should be used straightaway



Rear hub axle sub-assemblies and rear wishbones.



Differential bevel gears with output shafts in diff. case, with drive flange & bevel gear in rear.



Differential in case with drive flange outer case bevel and fibre brake disc.

radio control

to fix these nuts in place. Otherwise during building operations some will become detached and a nuisance to find or replace.

Final job here is to slip the rubber coupling boots on the stub axle ends.

Section 3. Differential sub-assembly:

This the crux of the whole operation! Start fresh and full of patience. First the four ballraces are pressed into place (two outer and two inner) in the differential casing. They need a little more than finger pressure, or my fingers are very weak, and I tapped the outer ones in with a very light hammer using a small block of wood protecting the race. The inner ones are more of a problem, but I used a thin rod through each end to press again on a small wooden pad to tap them home. Do not belt them directly with the hammer, be gentle and have wood or similar in-between.

Now comes the 'patience-needed' bit! You take an output shaft gear on the hand and place neatly meshing the two cross shaft gears and slip the fingers on which they rest into the plastic diff. casing. You next push on with them through the casing to slip the other output gear in place making a rectangle of the four bevel gears. Carefully withdraw the fingers so that the four gears now rest within the casing.

Did you manage? Of course not! So try again, and again. My time for the job was 45 minutes. I don't know par for the course — perhaps builders will give me some honest times. It is not possible to get the gears in any other way — but the little beasts will topple over just when you think you are there. I am going to have a session trying to do this bit using plasticine or similar to hold the first three in place until I slip the fourth in. Simpler suggestions welcome.

With the gears encased, slip the short cross shaft through the cross shaft gears. It should go exactly through and be flush with the case outside (it must be flush or the drive flange won't slide over it). Then add the output shafts from each side. They are fixed in place with allen screws bedding on dimples, and secured with some Loctite 648, (also provided in the kit). Twist the shaft all the way round when you add the 648 to obtain maximum grip and then screw in the allen screws.

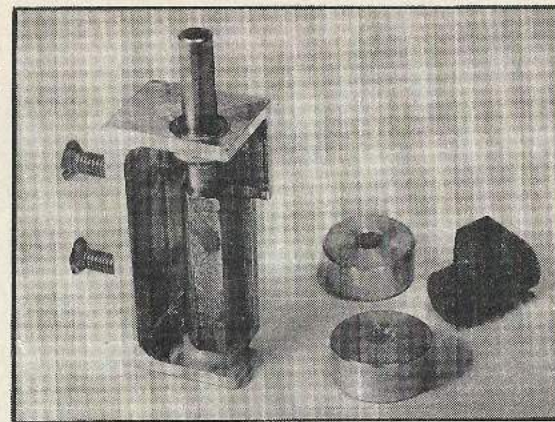
Three brake pins must be pressed into the flange of the outer case. Before slipping it in place over the diff. casing pack the gears with a good heavy graphited grease. Casing is then secured with two self tapping screws into the holes provided. My outer case lacked holes for this and they had to be drilled — they come on the longer side of the flange and are approx 3mm in from the edge, lying opposite each other (180°). Main drive bevel gear goes on one side of flange and fibre brake disc on the other. You may find the holes in the brake disc need a little easing to get the prescribed 'free floating fit'.

Final job is to seal the case against grease seepage using a little silicone rubber bath sealant. (You won't need much, so cadge a scrape from any 1/12th scale driver who uses it for his racing tyres.

Section 4, Brake Caliper sub-assembly:

This is an easy one. Only problem is getting the pressure on to fit the ballrace for the brake cam top bearing. I used a little glass paper to enlarge the opening for the ballrace so that it slipped in with minimum finger pressure, securing it with that valuable Loctite. Note that brake cam operating arm; steel (Part 4140) is NOT included in package — you cut it from one of the three lengths of steel wire in the kit and bend it up yourself.

Brake caliper with cam in ballrace at top and nylon bottom bearing. Note also the spacers and servo angle block.

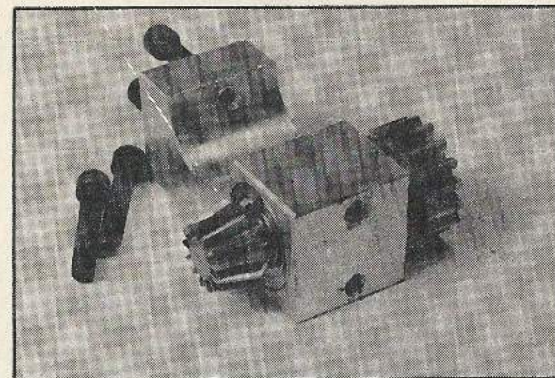


Section 5, Lay-shaft sub-assembly:

Another nice easy one. Fit the two ballraces one at a time in the block in usual way with pressure and a little help from the block of wood and the light hammer. Note again that you will not find two spurgears one of 15 teeth and one of 16 teeth, but just a single spur gear of either 15 or 16 teeth. They have proved equally effective so choice is not necessary.

Don't, whatever you do, lose the tiny little metal key which is small enough to be overlooked but vital for locking the spurgear in place. I found that by filing it very slightly to a wedge shape I could get it started and then drove it down with a small plug and the light hammer.

Layshaft sub assembly showing bearing block with bevel gear and spur gear in place.



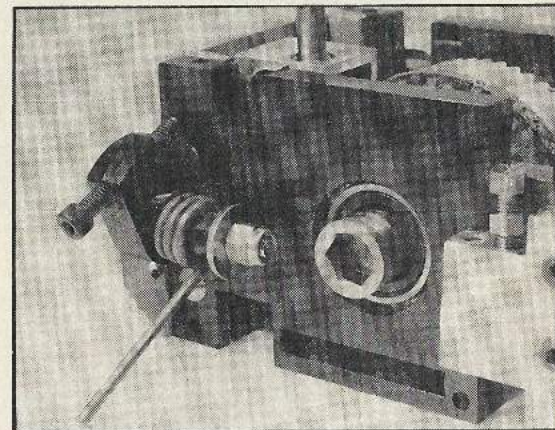
Section 6, Rear transmission & suspension assembly:

This is the first main assembly and calls, first, for the four previously put together sub-assemblies. We now bring together the rear axle sub-assembly (Section 2) to attach to the plastic side pods, fit the extruded aluminium back plate. Round this assembly the aluminium engine bearers go. In this sandwich we must install the differential sub-assembly (Section 3), the brake caliper sub-assembly (Section 4) and the lay-shaft sub-assembly (Section 5).

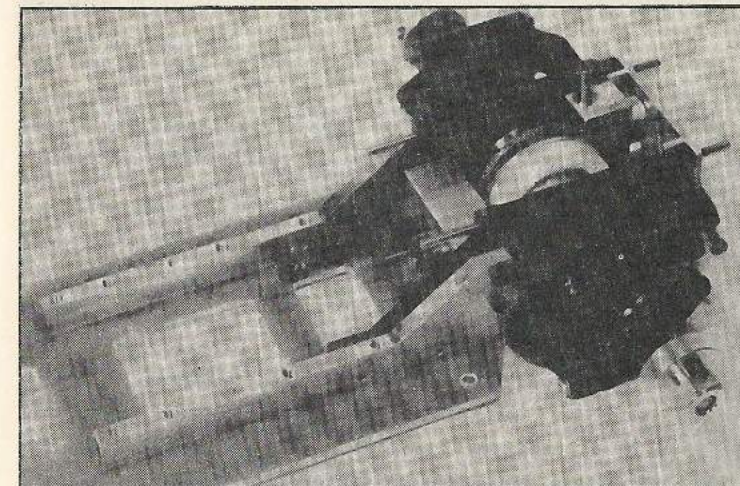
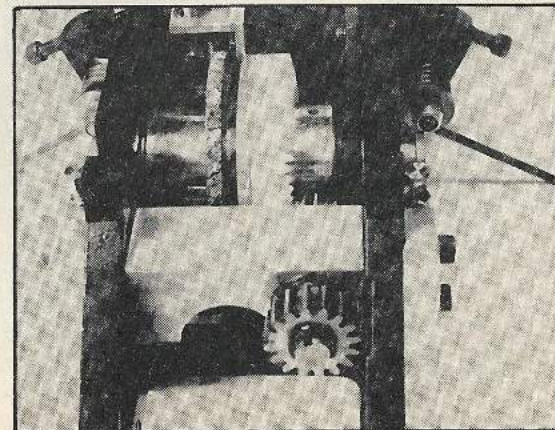
These are fairly straightforward add-ons but the details that go with them require developing. We must fit the drop-stops to adjust the suspension angle with their lock-nuts. They go on the rearmost ears of the aluminium engine bearers. Then come the rear suspension left and right hand springs with their adjuster blocks in plastic. At this stage it is not necessary to make any final adjustments to these two items — just get them in place.

Before attaching the aluminium back-plate, the brake caliper unit is screwed on with its stand-off round blocks. This, and the two plastic sidepods, must be assembled with bottom ends flush with each other. There is a hint that the side-pods may swell a little with the screws in when they must be trimmed. It did not happen with me, but some time was spent getting the appropriate holes in line, necessitating that a small part of the back plate extrusion had to be filed away to give clearance — just one of those little things that, in a perfect world, would not have been necessary and to be expected, as noted at the very beginning.

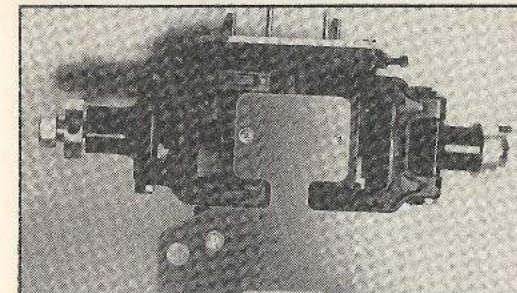
Rear transmission and suspension assembly, showing side pods joined by extruded aluminium back plate with brake caliper in position. Note also suspension spring on left and suspension drop-stop on right.



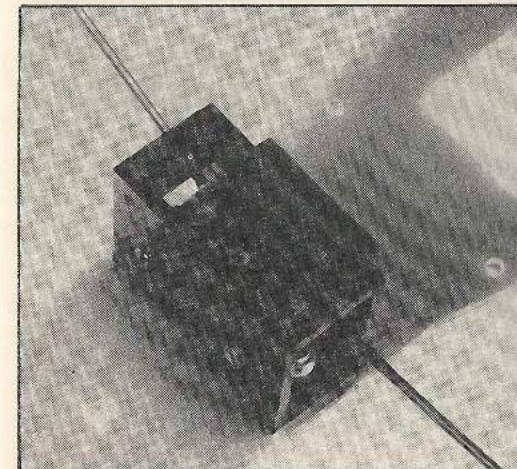
A view looking down diff assembly and the two suspension springs. Forward is the layshaft assembly, where the woodruff type key holding spur gear in place can be seen.



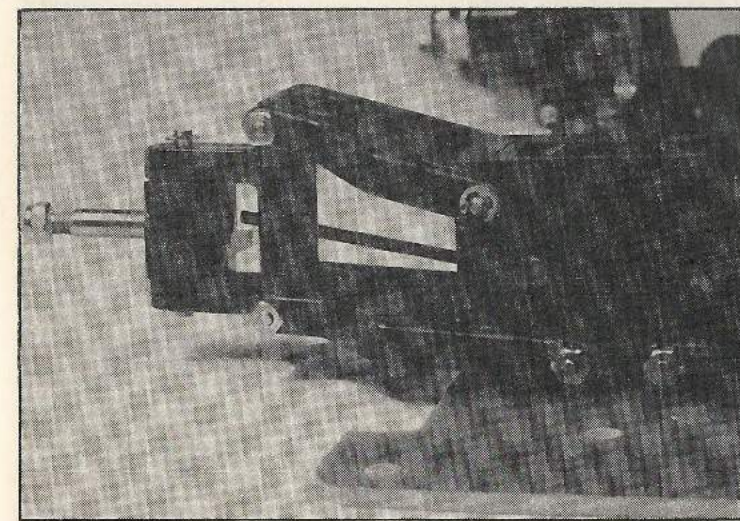
△ A general view of rear suspension unit and engine bearers in place on GRP chassis.



◁ Underneath view of rear suspension assembly attached to chassis.



◁ Suspension front box with suspension springs in place.



Front suspension assembled with suspension upright steering block, front axle and suspension spring.

A careful job is required getting the layshaft bevel to mesh in exactly with the large plastic bevel. Some thin shims are provided for final delicate adjustment, but should be on stand-by until the final rear unit assembly is complete.

You will have slipped the big ballraces in the side pods, and now the suspension can be added. Bottom wishbones are added first. The hinge pins here will be found to protrude at each end. This is to facilitate taking them apart as may be necessary during the life of the car. The stub axles are now mated to the drive, not forgetting those funny little coupling end buttons, and the grease tin again. The other ends of the rubber boots are drawn over the joint making all neat and shipshape. Do be sure the assembly is good and free turning. The top wishbone connection is duly made, again with sticking out pins, and the coil springs are slipped through their respective holes in the suspension upright.

The assembly can now be attached to the GRP chassis. Start with the two 2BA screws nearest the front. They may be specially valuable in adjusting any slight inaccuracy in fitting the rear end in pulling it into line. Proceed then to insert remaining screws into chassis to hold engine bearers in place, giving them a little Loctite to keep firm. Re-check meshing of pinion gear with main drive bevel. If there is minimal backlash and no tight spots all is well and Loctite can be added to securing ACS holding layshaft sub-assembly in place. If not so then strip down this unit and re-assemble making adjustments with the shims on standby.

Section 7, Front suspension sub-assembly:

This brings us to the front of the car. The stub axles are already imbedded in the steering block — the ballraces go in the wheel hubs. The kingpins slip through the suspension uprights to secure the stub axle/steering blocks and are held in place with circlips. The front suspension block is screwed onto the chassis, narrow edge of hole facing forwards, so that the little ledge at the back can eventually support the radio plate.

The springs slip onto the suspension adjuster blocks — left and right hand — and the blocks are slipped into the suspension box. The adjuster screws face upwards and are accessible (at need) through the hole in the box.

There is a choice of three holes for the spring ends to go into which will alter the exact angle of the adjuster screws. It is a good idea to choose a different hole for them so that on springing action they do not knock against each other. It will not affect the springing balance. With this job done the wishbones can be fitted, a process very much like the rear unit with the hinges retained by small nuts to be Loctited. Note that the two upper inboard hinges have circlips at one end. The springs go through central holes in the suspension uprights as the suspension is folded into place.

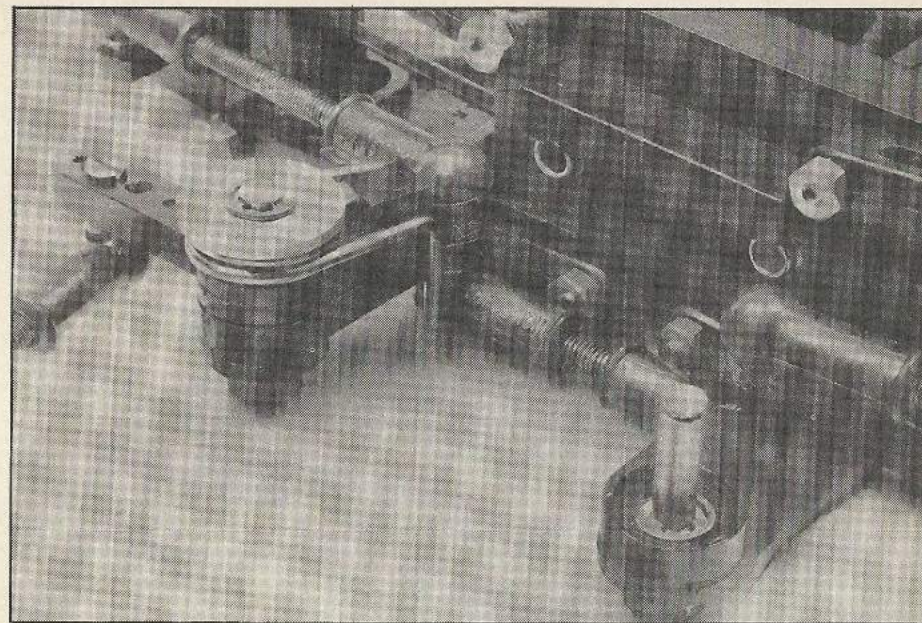
Section 8, Front suspension and steering assembly:

The unusual thing here is that there are two servo savers! I have not encountered this before but can only say that from the moment of assembly it was quite the smoothest steering unit I have yet put together without any running-in period!

Main servo saver follows the American pattern of having a bent-up spring slipped with its legs each side of the upper and lower servo arms. Secondary servo has only the lower arm and its servo post is slotted for a low down circlip to retain. Otherwise the rod and ball joints are put together in the usual way. They are more robust than usual — though this robustness is becoming general now.

One difference is that a further short ball jointed length joins the two servo track rod joints together. Ball caps must be slightly shaved to fit in place.

As if the smooth movement of the steering assembly were not enough there is an instructional note advising how to ball race the servo saver arms! I cannot believe that this could be necessary.



Robust steering linkage and double servo savers. Note short length of rod joining the two track rods.

Section 9, Engine & Clutch Mounting:



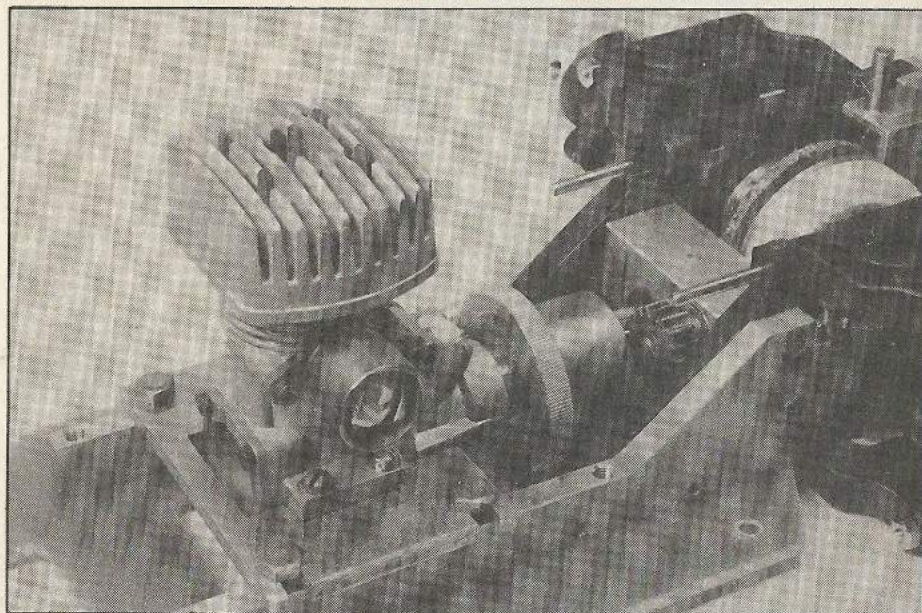
Clutch bell, flywheel, clutch nut and shoe.

Note that engine plate bolt washers (Part 4170) are not included as it has been found they do not make the engine any more secure, rather the contrary.

Clutch assembly offers no special problems but the OPS crankshaft will certainly have to be shortened down to about 6/7 threads left. It hurts to do this, but I have hardly ever had an engine that went in without shortening so I don't know why this one should. Engine plate is flat alloy slotted to be fixed across the engine bearers (model aircraft fashion). If you are a little wary of the four post clutch shoes, a 2-post version is available from AMPS. But give the recommended set-up a trial first!

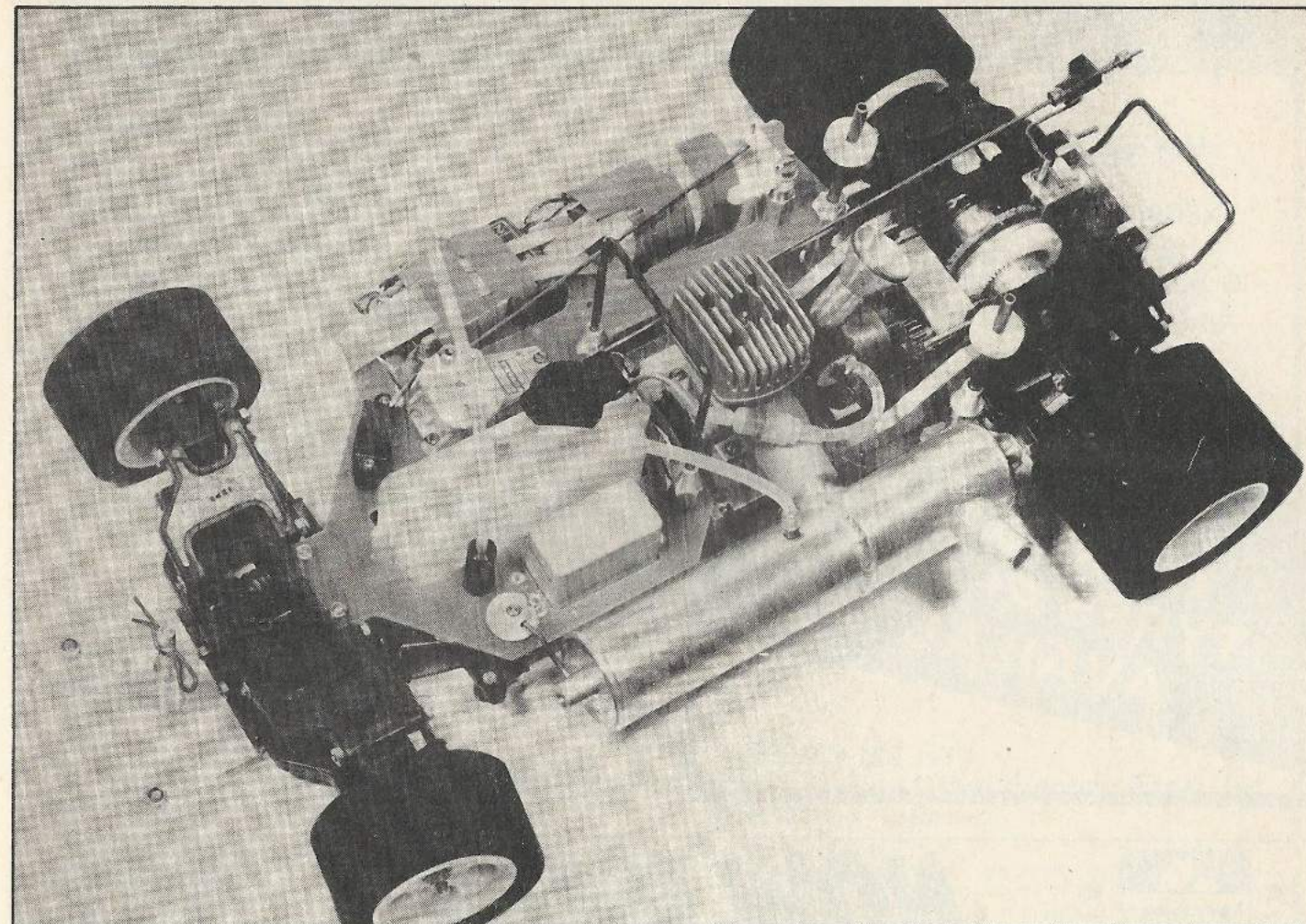
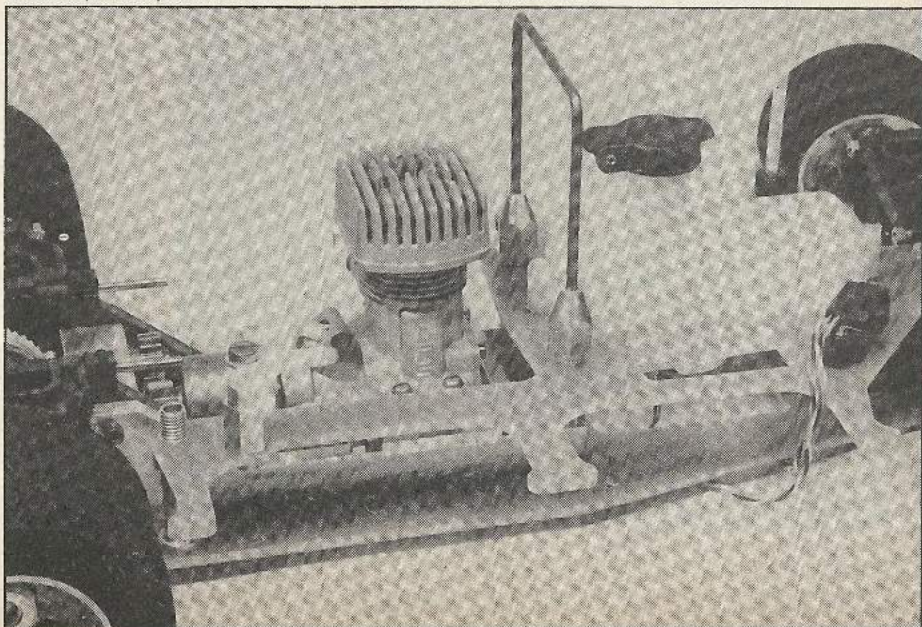
With clutch fitted and tightened down, the engine is tried against the layshaft spur gear for accurate mesh. When satisfied mark the location of holes to be drilled in the plate for securing bolts. With a flat plate (unlike an engine block where holes must be tapped) it is better to drill through, slightly enlarge the engine mounting holes on the casting and attach with nuts and bolts.

The PFTE ring is cut in accordance with instructions. Locating holes may require to be eased a little and shoes slightly



△ OPS engine installed on engine plate.

▽ Radio plate in place with fuel tank fitted & on/off Rx switch.



Completed car

trimmed. This done, put the bits together again and fasten securely, noting the slight amount of side play in the plate, so as not to lose the good gear mesh previously established.

You will see in photo that manifold has been stuffed with a screw of paper, as indeed, has carb intake to avoid any odd dirt or swarf getting inside.

Section 10, Radio Plate and Radio Installation:

If you have already stuck the tyres on the hubs it is a good time to fit the wheels and see the car looking decently carlike. Radio plate is cut out to take Futaba servos and these go in place without any need to file out a nick to let the lead through. Steering servo goes in upside down throttle servo right way up. Plate must be drilled to take the fixing screws. Fuel tank fits in its designed hole and is screwed in, after cutting back the lugs, from the underside of plate.

Plate itself is dual purpose in that it forms part of a box structure to ensure true rigidity of the parts which must be firm. There are therefore a couple of special washers to secure radio plate firmly at the rear. The front also is fixed to the front suspension box as an important part of the box structure.

Note that I have fitted on/off switch on top of plate so that it is switched off from underneath. I think this is easier for marshalls sensibly wearing stout gloves.

Other fittings such as rollbar and radio aerial should provide no problems. You will need some good strong elastic bands to attach receiver and battery in the designed holes tandem fashion.

Section 11, Assembly Completion:

The odds and ends remain: A rear bumper — a wire ready bent piece which slots into place and is secured with allen screws; A front bumper which must be drilled to match two bolts and front body attachment post. Leads to brake and throttle are cut from the stout wire supplied and used with the numerous collets included. I have not made the final connection from throttle bellcrank to engine as it depends on whether Perry type carb or slide carb is your choice as to fitting.

Note that my brake connection goes in-board of rollbar. I am not sure this is the better way — adjustment of the brake arm can bring it the other side of rollbar.

Last and important task is fitting the pipe type silencer. This is very ingenious. A short length of wire goes through the front (like a ring on a boar's nose) and is

held by an allen screw. Other end of wire goes through a special screw supplied and a flat washerlike plate which is then screwed to the radio plate. The usual length of silicon tube connects manifold to silencer in the middle.

We then come to fixing at the rear. Here a flat strip of alloy must be bent up to turn through 180° degrees to enable a screw to secure the back to the GRP chassis. Bending that strip may be a problem if yours is not marked (as promised in instructions) with the bend angles. I spoilt mine! But making up another strip and testing the bends with a cardboard stand-in I got it right second time. A very good fix.

Final Thoughts:

A long section is devoted to trimming the car for racing, but I hope to be able to get one of the team drivers to cover this part more expertly than I could. Meanwhile the manufacturers do recommend construction of a 'tweak board' from heavy flat wood which I will describe next issue.

Any reasonable capable driver should find it hard NOT to win races with a Rapier. Less experienced enthusiasts should by no means feel it is an 'experts only' car. Built carefully they may well find it is the ideal tool to get them swiftly on the tails of these experts. Good building and racing!

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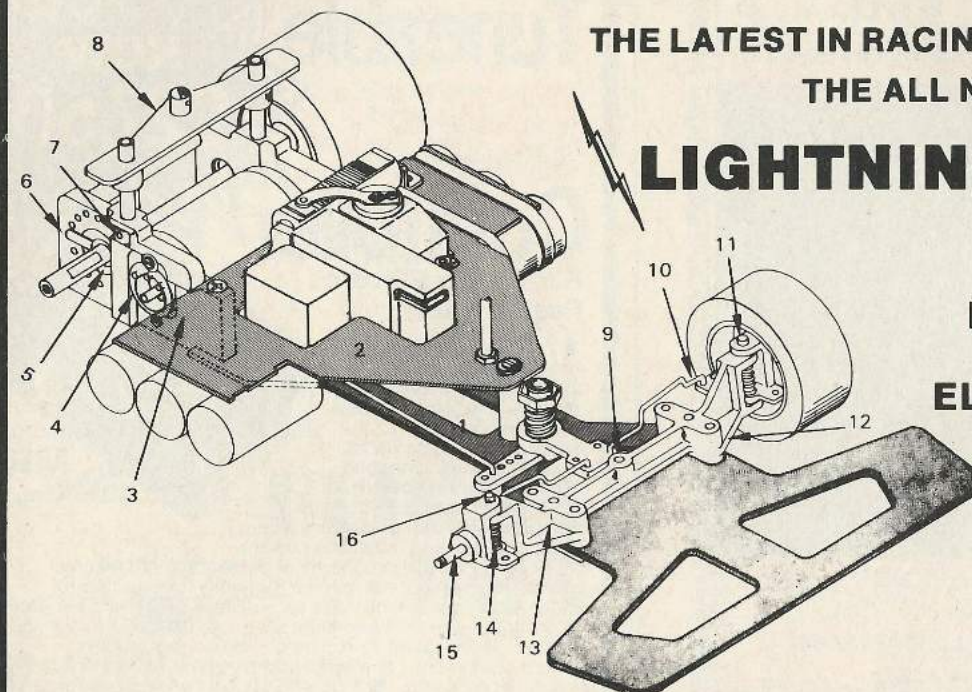
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- 4 * Adjustable motor cam for proper gear mesh
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- 6 * Adjustable center of gravity rear axle cams
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- 8 * Wing tube tie bar for added strength

FRONT END ASSEMBLY

- 9 * Adjustable camber
- 10 * Adjustable Ackerman steering
- 11 * Offset kingpin inside wheel on wide wheels
- 12 * Adjustable caster with shims
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- 16 * Replaceable steel kingpins

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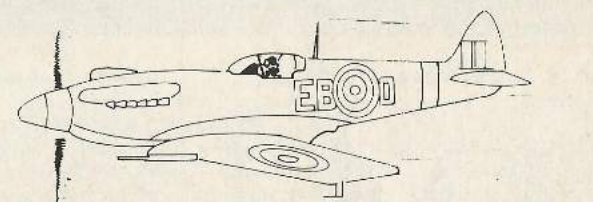
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