

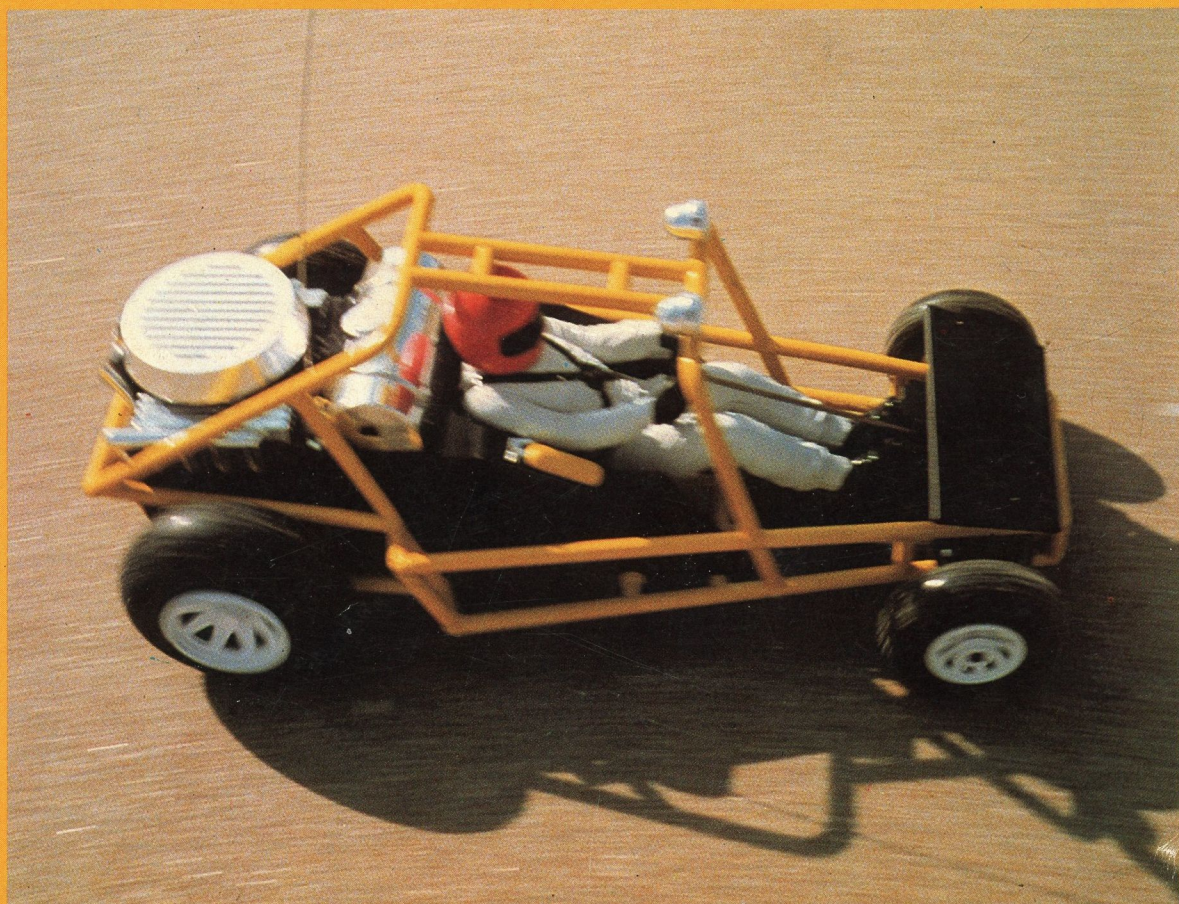
# AUTO

## Modeller

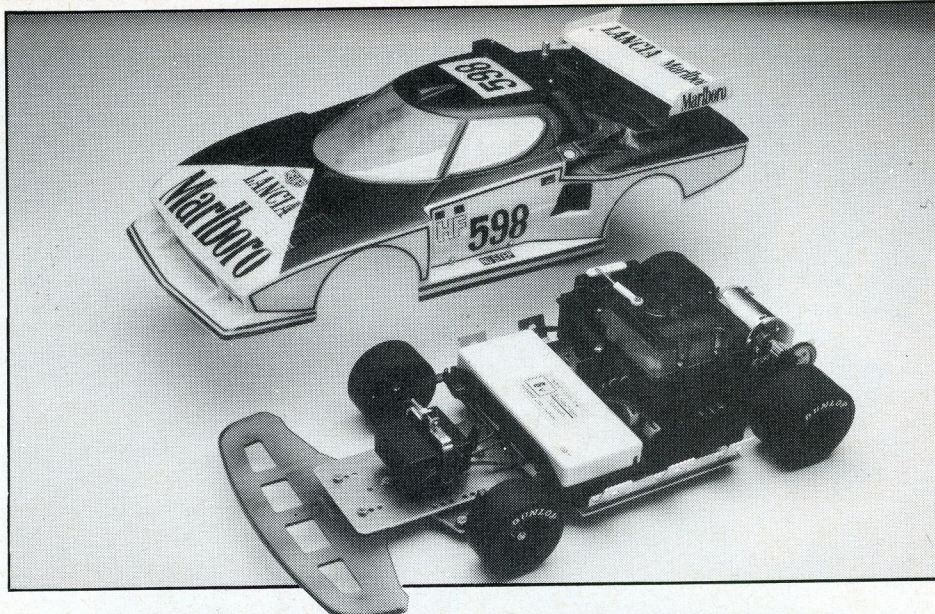
July 1980  
Vol. 2 No. 4

Price 60p

**R/C  
REVIEW**



# R/C REVIEW



## THE R/C DEBATE

Slot-racing, modelling, collecting are all indoor activities, but now there is an opportunity to take the auto-modelling hobby outside into the fresh air where racing really belongs. Moreover, the current range of R/C auto products is of such variety that current slot-racers, modellers and even collectors can find in it a way to broaden and expand their current interest.

Not long ago, this magazine held a poll to find out what readers wanted included in the magazine in future issues. The result seemed to suggest that modellers, collectors and slot-racers are rather set in their ways: the slot-racers wanted 20 pages on their side of the hobby, the collectors and modellers wanted more on their particular interests and indicated that other areas could be forgotten about. The only point of agreement among these various fraternities (we shall not say 'sects') was that radio control could be left out of the picture (or at least given no more than 'token' coverage). We were led to ask, 'why the exclusive approach?'

It is a fact that the R/C side of the hobby has been growing steadily over the last few years, particularly following the introduction of the 1/12th scale electric cars. It is also a fact that increasingly R/C cars are being supplied in kit form which require modelling skills to assemble and to improve upon. Moreover, R/C cars do not require special tracks and slot mechanisms and could even be seen as a logical extension of the slot-racers special interest in realistic racing models capable of high scale speeds. So, why the resistance?

Well, firstly it should be said that many modellers and slot-racers are dipping their big toes into R/C, if not actually taking the plunge. Auto Modeller receives daily letters from such people who want to discover more about R/C but who are put off by the highly technical jargon of the R/C enthusiast magazines.

A second point, allied to the above, is that many keen auto modellers and collectors harbour many misconceptions about R/C. As the following reviews show, R/C racing need

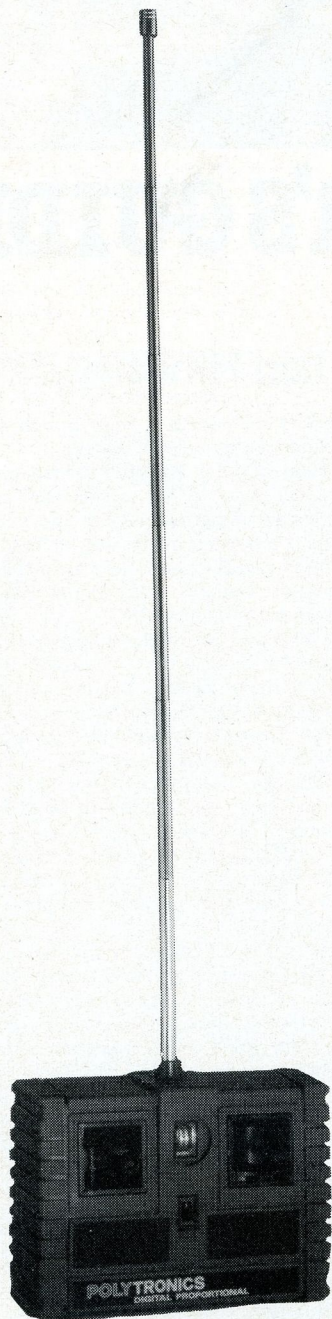
not be an expensive hobby. Moreover, the state of the art is such that cleaner, more efficient electric-powered cars allow R/C racing to be a practical and more appealing proposition, accessible to large numbers of people who were previously put-off by either the technology or by the practical difficulties of transporting and racing the gas-powered vehicles.

It seems that there is a need to bridge the gap, and what better time than in our summer issues. As a novel approach we asked some of our regular writers to test the water and cross-over to R/C for one issue to give a 'beginner's eye' view of the current scene. Like many of our readers, they found the task a little daunting — the range of R/C cars is now extensive but, for this issue at least, we decided it best to concentrate on just some of the electric cars now available.

Even so, there is a limit to the number of models we could reasonably deal with without upsetting readers who tend automatically to switch off their receivers when they read R/C in a headline.

Naturally, in compiling this R/C report thanks must go to the retailers, importers and manufacturers who allowed to 'borrow' their cars for review. Obviously, some of these items are expensive but companies can be assured that their models for these and future reviews will be returned. Our aim is to carry regular R/C product reviews and we will undertake to review every sample forwarded to the Editor for that purpose. Companies wishing to bring their models to the attention of a national audience should forward them to the Editor in the first instance and should state whether they wish them to be returned.

As for all those R/C modellers out there, we want to hear about your cars and your experience of the hobby, the pros and cons as you see them. Similarly, let's hear from those who hold strong views against Auto Modeller's coverage of this side of the hobby ... after all, you can't be in this business if you're afraid of a little criticism.



# R/C REVIEW



## A BEGINNER'S GUIDE

**T**HE EDITOR'S BRIEF was simple, or so it seemed at the time! Summer was fast approaching with, hopefully, its hazy, lazy days; days to be spent mucking about in boats, kite flying, damsel pursuance, sailplane operating or, whatever turns you on ... however, what if you happened to be a 'model car man'? What then?

If, like me, you model and collect throughout the Autumn, Winter and Spring, what's to do when the Summer sun arrives, and it's too hot to loll about inside looking at the latest Yesteryear, Solido or Burago? Can't very well take them outside to run around the garden path, not unless you want to change their description from 'mint and boxed' to 'badly scratched', (though regretfully, as a young lad, I **did** just that!)

But radio control?

It took me a while to see why the Editor, in his infinite wisdom, had chosen me for the job! Though I do know quite a lot about radio control, I am first and foremost a die-cast model collector, not therefore operating radio control regularly, and it was obvious I was going to have to 'mooch' around, to see what it was all about, saving the potential Summer R/C operator from doing it all for himself. Additionally, not being an R/C fanatic I was not going to talk about readers' heads and, with a bit of luck, I could perhaps bring a fresh approach to the subject!

I have, in fact, personally been at a loose end in the Summers past, so the project is pretty close to my heart, and I figure readers wishing to fill that Summer vacuum, will be able to learn quickly, from my first hand experience in picking up the 'gen', necessary to go R/C driving. Perhaps, like me, they will also, at the end of the Summer, have been instrumental in forming an electric radio control car club, for during the project, I have

By Iain Hines

managed to do just that; form a club at the local Feltham Community Association!

I decided also, at the start of the project, that the best way to get to the heart of the matter, as to what the man in the street is buying and operating in the way of R/C cars, would be to casually pop in to a local specialist retail outlet, that of EMA Model Supplies, armed with my faithful Zenith 'E'!

Upon reflection, the modus operandi seems to have worked a treat, and I would like to additionally thank all who put up with me in the shop, especially Norman Hands and Todd Slaughter, General Manager of Plastruct UK and EMA Shop Manager respectively.

I should also like to point out, that there is not 'age limit', or 'experience limit' in the preparation of this article. I have intentionally included vehicles of all types, and degrees of sophistication, from the simple function jobs, which are ideal for the beginner, up to the more complex kits.

But first of all, I think we should take a look at the way the systems work, albeit briefly. With this in mind, we are concentrating this month on the electrically-powered models, being initially more concerned with the relatively easily operated models which can be run without the accompanying noise and smell, associated with glow plug engines! It is indeed the 'convenience aspect' of the electric models, that contribute in no small way to them being allowed to be operated in church and village halls, the homes of many a R/C club, in this fast-developing hobby.

So, without more ado, if you are a beginner read on, and if you are already an expert, then you already know it all, but perhaps some of the cars or kits mentioned, will be new to

you, and perhaps this piece will save your time in explaining the hobby to newcomers at your club. Just leave a copy of this *Auto Modeller* lying around!

## The technics

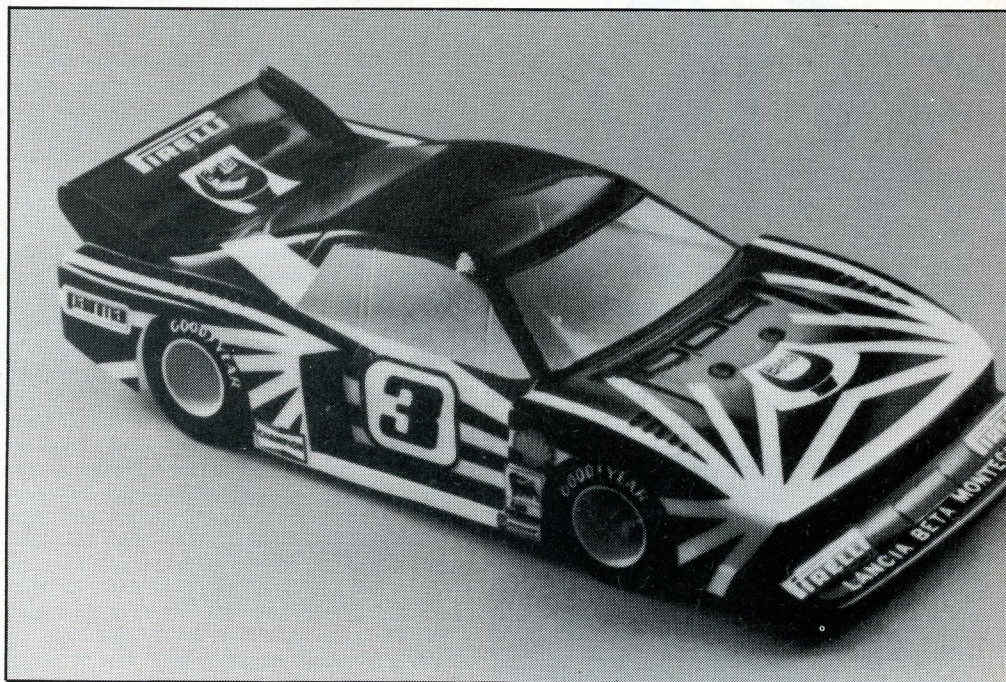
Radio control racing, has been in existence as a sport for approximately 11 years. It is currently numbered as one of the fastest growing leisure-time activities. As one can see from one's neighbourhood model or toy shops, where games, kits and what have you, used to stand on the shelves, there is now the addition of all manner of radio controlled cars ... yes and aircraft and boats, though it must be said that the former are a lot more difficult to control than the cars and boats.

The radio control car is not encumbered in any way by plastic tracking, slots, wires or any other kind of restrictive gear, and can be operated on almost any hard or paved surface, even sometimes on the grass, as watchers of BBC's *Pebble Mill* saw a few months back. Therefore, tracks can be set up in a variety of places, as long as there is a fair degree of space. This makes church, community and village halls ideal meeting places for the radio control racers.

R/C cars powered by internal combustion engines must almost always, except in specialised large arenas, be operated outdoors, but the beauty of 'electrics' is, that they can be



EMA's Todd Slaughter with the T11 by Polytronics.



1:12 scale Lancia Beta — Lexan Parma body.

operated indoors or out, whichever you prefer, weather permitting!

Although being a trifle more expensive than other forms of 'model car' oriented hobbies, (though with the continuing development of electronics costs are tumbling), it does, as a bonus point, allow much more direct enthusiast participation than other branches of the model car hobby.

When one builds a plastic or white-metal kit, OK, one participates by constructing, but then what? The same goes for die-cast collecting; there is the thrill of the chase after a much sought after model, followed by the price or swap 'haggling' and bargaining, but then the treasured item joins its brothers and sisters in the showcase and, though the collector enjoys seeing it there, that is often the end of the matter.

However, with R/C cars, one can race against one's friends, or indeed, other clubs, and enjoy the thrill of full size motor racing, without the accompanying hazard to life, real racing brings, not to mention the cost of putting a 1:1 racing car on the track! Also, as I said at the beginning, these beautiful models are becoming more and more realistic detail-wise, and don't look at all out of place in the collection. I have one or two large models, R/C and remote controlled in my collection, and find that they look particularly good on top of the main showcase.

R/C model car racing also has a great advantage over the operation of R/C aircraft with its comparatively low operating costs. After the initial expense for engine, car and electronic hardware, the cost of operation in terms of fuel consumption is absolutely minimal compared with flying.

Cars can be purchased in ready-to-run form, with very slight assembly required, taking but a few minutes, before they are ready to 'go', and can also be purchased, in kit form, some being so simple in design, that all it requires

to 'get her on the track' is a few hours of work.

As in other branches of modelling, there are also those who prefer to 'scratch build', that is to say start from scratch by designing their cars, then turning and generally tooling the whole kit and caboodle, but this is in no way recommended for the beginner unless he is an electronic professional and/or machine toolist.

Despite the relative ease with which the kits are assembled, or ready-mades prepared for operation, there is no reason for the owner of such cars to think that he is at a disadvantage racing against the scratch-built model. The former, in all cases, are designed by specialised engineers, who have all the engineering qualifications and experience in R/C racing.

## Scale

As all budding R/C Reutemanns, Stewarts and Schechters will soon find out, R/C cars are often built on a scale of 1:8 or 1:12, though there are of course smaller models, especially in the less sophisticated cars, function-wise.

The 1:12 cars, the smaller of the two major scales, have a proportion of one inch to the foot, which means in essence that a 1:12 model of an 18 foot car would be one and a half foot long.

This scale is widely available in preassembled as well as kit form, and the most general dimensions, are about 14 inches long, by about six inches wide, with weight about two pounds; maybe a bit more. I would recommend this scale most strongly for the beginner as stock is less complicated as well as less expensive than its larger 1:8 scale big brother! The cost is, in fact, often about half that of the 1:8 models for engine, radio control system and car.

Cars in the smaller scale can often reach speeds of 35 real miles per hour, which in scale speed is quite fast enough at around the 400 mph mark. The larger scaled vehicles often reach 50, but comparing the scale ratios, that

# R/C REVIEW

is about the same, so one does not lose out scale speed-wise by owning the smaller cars.

The 1:8 scale cars, which are the fastest as well as largest of the R/C models, weigh between five and six pounds on average, and measure about two foot long by 10 inches wide. It is also the scale most favoured by scratch-builders, and there are many components, such as bodies, brake systems, clutches etc., available from a variety of firms all over the world, one of the most famous perhaps being the American Parma International Inc of North Royalton, who manufacture a wide range of accessories, shells and complete cars; I have included some pictures of this well known firm's products alongside, to give readers an idea of their wide range.

The smaller-scaled models, which I have already briefly mentioned, are usually built on scales between the 1/12 and 1/24 marks, and operate differently than their larger brothers. They are also much less expensive, and have impulse-type radios, rather than digitally proportional, meaning they cannot be controlled in terms of speed or 'degree of turn'. In other words, they can respond only to a maximum of "full right" or "full left". This type of model, is usually classified as a 'toy' in racing circles though, as I have already pointed out, some of them are really quite sophisticated, and make an ideal beginner's car, to tune up one's own reflexes before going over the the larger models!

Although, as I said, we are not going to look closely into i/c (internal combustion) R/C racing, I, nevertheless, think that it would be only right to briefly give details of the power units used in these cars, so that readers understand the difference between the two power systems.

The engine used in internal combustion racers, is almost the exact same type used in R/C aircraft, which have been adapted to drive the flywheel and clutch, rather than propeller. The fuel burned, is similar to Kerosene and batteries with auxiliary motor are used to start it up.

Power unit size is measured in cubic inches of displacement, ie the volume of the cylinder, and power output is directly linked to displacement.

1/8 scale car usually requires an engine with a 0.19 to 0.21 displacement, whilst a 1/12 scale car would require a 0.049 or 0.050 cubic inch engine. It is quite amazing to note that the tolerances and performances of these mini engines, are often to a more efficient degree than full size aircraft engines!

1:12 cars are of course, mostly powered by electric motors, using quick charge batteries, these motors being slightly more expensive than glow engines, though as already explained, running costs after this, are much in favour of the electrically powered car.

About 15 minutes is required for a 'charge up', the switch is flipped, and she's 'ready to go', however, glow powered and electrics are **equally** fast!

The two types of motor classified for R/C racing, are the 4 cell and 6 cell sizes, four cells using four Nicad batteries, reaching speeds of around 22 mph, and six cells, usually the selection of the more serious racer, attaining around 30 mph. The former are usually used indoors, and the latter both indoor as well as outdoor.

## Radio systems

Radio equipment for model cars is available in a broad range of capability and styles, some systems for instance being specifically manufactured for model cars, whilst others can be adapted for use with aircraft or cars. The radio hardware is usually purchased separately, except where there is an 'all in' package deal, and can cost about the same as the car and engine. However, once purchased, it can be used for more than one car.

An R/C system basically consists of servo motors, receiver and transmitter, the transmitter being the control consul, which the 'driver' holds to operate the car. This transmits radio signals on either two or three channels usually, meaning that two or three functions can be controlled. With a two channel job, the driver can control steering on one channel, and speed on the other.

This operates in a similar fashion as a radio does. Just as a radio station sends out a signal to one's radio, causing speaker parts to move, thus creating the sound, so the R/C transmitter sends out its signals, causing the servos to move, thus operating the car by way of operating the steering, brakes and accelerator.

Additionally, just as a domestic radio must be tuned into whatever station you wish to listen to, on its personal frequency, so must the R/C transmitter and car be tuned on to their own frequency.

I do not intend to cover the subject of changing frequencies, what with rumours of changing legislation being possible, due to the pressures of Citizens' Band, but I personally don't expect it will affect such a flourishing hobby such as R/C. However, check with your local stockist, who will give you all the information, tell you how to get your licence and other necessary facts.

Radio control equipment, as the cars themselves, is continually developing operation-wise; the cars of today for instance, are far more sophisticated, and responsive than the cars of yesteryear, most now having digital proportional steering, rather than the less exact types of steering on the earlier models, but they of course therefore require a higher degree of skill, on the part of the drivers!

It is necessary to practice manoeuvring and operating in general, before even attempting to enter a race, and the greatest degree of alertness, once one is actually racing, is required! These cars are very fast moving projectiles, and safety precautions must therefore be taken, such as the positioning of boards around the track, to stop the cars from spinning off and perhaps injuring someone.

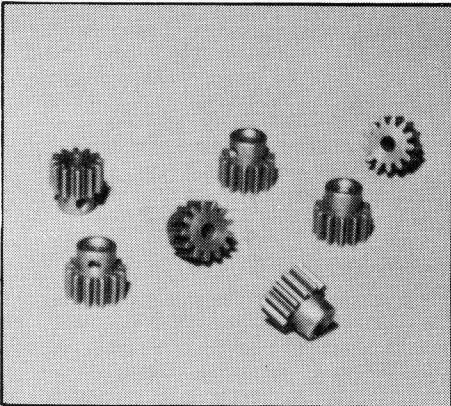
If there isn't a R/C racing club in your area, I'm sure there is a suitable hall, which could be hired, and all that is then left, is to advertise that you are forming a club, consult your local radio control shop as to how the racing should be organised, or alternatively contact the club nearest to where you live, perhaps one that is based in the next town to yours, who will be only too happy to give advice.

However ... all these things will be happening later; even more important **now** is what is there available, in the way of ready-mades, kits for your racing team to purchase!

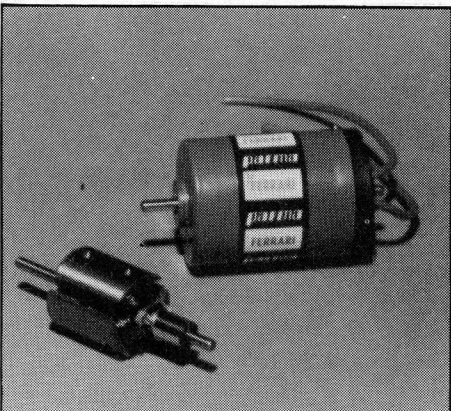
I shall take it, that just as adults will, of course, purchase the more sophisticated



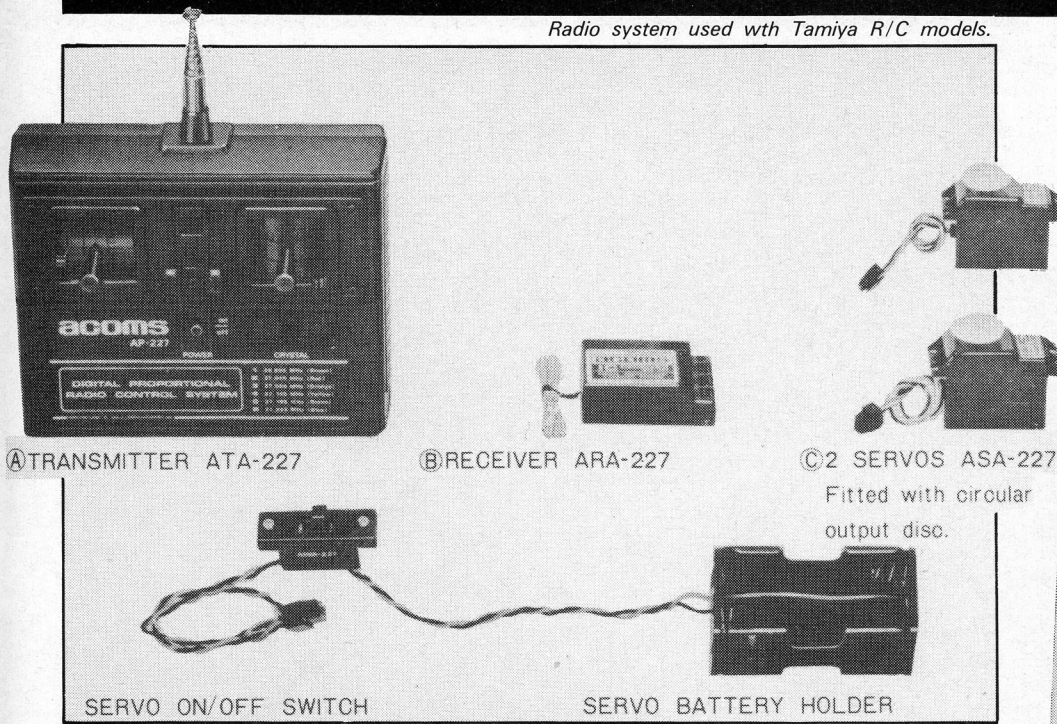
'Nicad' batteries.



Steel pinion gears for 1:12 cars. 10 and 15 tooth.



Parma Ferrari motors and armatures (used on 1:12 cars).



Cambria Saab turbo packaging.



equipment with which to race, it is also possible that younger readers of *Auto Modeller*, (and there are many I assure you) will form their own teams, which can be raced in venues such as community centres, playgrounds, local play areas, so I shall also, as promised, cater for these youngsters, by mentioning less expensive models too!

### Cars

When I visited my local stockist, I was immediately impressed by the wide range of cars and kits that are available today, from around the £10 mark, to round about £100!

I was allowed to inspect and photograph anything that I liked, and was immediately impressed by two kits that were in stock, manufactured by a firm called Cambria Model Kits And Accessories, of the High Street, Llanidloes, Powys.

The two Cambrian models on display, were a Lamborghini Countach, and a Saab Turbo, both to a 1/12 scale, featuring a unique front wheel drive system, developed to combat the problem of rear wheel spin. Transmitting the power to the front of the vehicle, gives better traction, and more positive steering, all the power being used for higher acceleration and faster cornering.

These cars have been designed to be easily driven, with the relative beginner in mind, and it has indeed been found by the company, that even a novice can achieve excellent racing times.

They are designed to tough competition standard, with tough nylon mouldings and precision machined steel parts. The body shells are moulded with front and rear bumpers, and are mounted in construction, on a jig drilled, tempered alloy chassis, with flex adjustment. Steering in Ackermann, with built in wheel castor, and adjustable track, with brass bushed linkages. Wheels are of nylon, with GP Cambrian tyres.

These delightful R/C models, also feature servo mounted steering override, for maximum

protection and positive centering, whilst the speed control system features metal encased resistors, and reverse, and electro-dynamic braking.

Motor, with all relative wiring, charge leads, sockets and aluminium carrier for low slung battery packs are also included in this excellent range of kits which are terrific value, at a mere £34.95, which, of course, does not include the 2-function radio equipment. The Nicad batteries, can be recharged in 20-25 minutes, by connecting the internal built-in charging unit to a normal 12 volt car battery, and running is approximately 10 minutes.

Although not in any way recommended for a beginner, this is an excellent competition standard kit, for the man who knows what he is doing, though I must add that **driving** is comparatively easy, once she has been put together. Good value!

Also on view at EMA, was a magnificent ready-built Martini Porsche 935 Turbo, distributed by JNT, being to 1/12 scale, of 6 function digital operation. Model R202 in the range, this one features forward/stop/reverse/left/right/ — and brake lights. The function breakdown is as follows:

1. Forward
2. Stop
3. Reverse  
(Servo control in optional sequence. Variable speed control — fully proportional.)
4. Left turn
5. Right turn
6. Brake light  
(Servo control in optional angles; fully proportional.)

As can be seen in the accompanying photograph, this is an excellent model, retailing at £39.95.

Of course, though there are a lot of manufacturers, specialising in the almost hand built competitive standard kits, which have to be coupled with a suitable radio unit, purchased separately, there are many excellent kits as well as ready-made cars, that come complete with the radio equipment at quite an inexpensive price. These are usually mass produced, and



J.N.T. Martini Porsche.

# R/C REVIEW

stemming from the Orient, are of exceptionally high quality.

The HP/Sanwa is a complete kit of the LP500S 'Lambo', (number 67 in the picture which shows it built up), 1:12 scale, with 2 channels, and this one retails for £59, again good value.

The Polytronics T-11 comes in assorted body shells, and is smaller scaled, the size not being marked, but I was quite amazed at its performance, for such a small scaled car, as it was digital proportional, with forward/stop/reverse, in optional sequence, and left/forward, right/forward — fully proportional, and left/reverse, right/reverse. Steering is digital.

For the absolute beginner, there were low cost units, such as the Asahi skyline GTX rally car, looking to be 1/24 in scale, with forward stop and reverse simple function, ideal for Junior, so that he doesn't play with yours! At £10.80 well worth spending out so that he stays out of your hair!

The little Waco Stringray was another nice little simple job, with one channel, controlling forward one way steering, with two speeds, slow or fast!

EMA Model Supplies also stock the marvellous Nichimo kits, imported by our old friends at Eisenmanns. I was able to take a close look at the 1:12 scale BMW Mark I, a ready-to-assemble kit which includes a Polycarbonate shell, TV suppressed motor, direct speed control system, coil spring rear suspension system, gear box with differential and gear box protective cover. Instructions are explicit, with exploded diagrams, and text — in Japanese — but not to worry, for the step-by-step English instructions, to go with the numerical diagrams, are also included, on a separate sheet.

Paint and decals are also supplied, and upon checking, I found that Nichimo do a range of two scales, 1:10 and 1:12, which include a 1:10 Lancia Stratos Monte Carlo, great stuff in my book, as I am a Stratos 'freak' as regular reader will know; and in 1:12 scale a Lotus Europa 'special' Marlboro Stratos, Celica Turbo, Porsche 935 of '78, Corvette Stingray, a fabulous Pantera GR5 and a Ferrari 365 BB, as well as my BMW. These Nichimos are good value for money, the BMW for instance retailing at £29.95, and they are controlled by a 2-channel proportional radio control transmitter/receiver and batteries, which are of course supplied separately. The receiver and servos, are built into the drive chassis section. The Lancia Stratos Monte Carlo and the Lotus Europa are two specials, being fully finished livery-wise, with body colour and decals, making especially colourful and realistic collectors' items as well as being functionable, bringing me back



R/C — powered Lancia Stratos marketed by Palitoy.



Nichimo BMW Presentation.

## No.1151 PETERBILT AUTO-CARRIER TRUCK



to one of my original points at the beginning of the article.

Hot news from Eisenmanns is, that they are also likely to distribute the competition standard Tsukuda models, which are to a 1/12 scale. They are a Corvette Stingray and a Mazda Savanna RX7, both ready-to-run, with electronic speed control, RS540 competition motor, 7.2 volt nicad battery, 6 band 2 channel transmitter receiver, complete with charger, and it is interesting to note, that these models are manufactured at what is considered to be the most advanced electronics factory in Japan. They will operate at 25 mph, and have a range of 100 metres, with interchangeable crystals, (meaning frequencies can be changed). They are expected to sell at around £90 to £120 — making them just a little up market, but don't forget they are complete.

Einco, the Eisenmann marketing name, are well and truly into the R/C field, and I have been perusing one of their catalogues, the "Games and Toys" one, and it seems that they also market a vast range of R/C equipment which is not under the Model and Hobbies banner, but which seems to me to be nearly as sophisticated as the latter! How about the 1/14 scale Porsche 935/2 Turbo or BMW Mark I for instance, which have proportional steering and speed control, and are fully functional, utilising six different colour frequency crystals and band flags, the transmitters having trimmers. A charging point is fitted into the back of each car, and anti-static circuit, and range cut-out are also featured.

The three channel/six function American truck and trailer looks to be a terrific model too, with automatic engaging and disengaging of the trailer.

There are a lot of different single channel/2 function cars too, such as the Countach, Porsche 928 and the M23 McLaren, as well as more sophisticated systems, such as the 1:16 scale three channel/7 function Porsche

Targa and Nissan Fairlady. With a super detailed 1/12 Porsche 935, and its partner the Elf Tyrrell six wheeler, also operating with proportional steering and speed control, with six frequency crystals, all of them being under the Games and Toys heading, I dread to think how good the actual cars in the Model division are!

Also at the less sophisticated end of the market, Palitoy are importing a range of R/C cars manufactured by the La Trax Corporation. The Alpha RCX and Mustang Cobra both come complete with a simple transmitter featuring proportional steering and forward and reverse. The Alpha can achieve true speeds of 3-5 mph, while the Mustang is capable of between 5-7 mph. Each car comes complete with a free re-charger.

Also from Palitoy and considerably more impressive, the ever popular Lancia Stratos featuring acceleration, engine noise and working indicators. Other important features on this attractive model are proportional speed and steering controls with full trimming facilities.

Collectors of die-casts will be familiar with the names Shinsei, but imagine a model from the Tractor Trailer series some three feet long displaying exceptional die-cast construction and detailing *and* powered by radio-control! Just such a model is the Peterbill Auto-Carrier Truck from Shinsei. A big hit at the recent Toy Fair at Earls Court, this model features two-channel, full function control, attains a top speed of 3 mph and comes loaded with innovations — another example of the fusion between R/C power and traditional areas of collecting and modelling. Who says that Radio Control offer nothing to the traditional die-cast collectors market?

Well, that's about it then for this radio review, which I hope has been instrumental in getting some of our modellers/collectors out of their easy chairs this summer, except to say that often the cost of R/C operating puts one off the hobby.

### Shinsei R/C — powered die-cast Peterbilt Auto Carrier.

However, there is no need to go in for it in a 100% committed way, for if you keep your eyes peeled, there are quite a lot of good value, lower price bracket models around. Keep an eye out in non-model shops such as Dixons, the photographic people for instance, for they often get hold of inexpensive, but nevertheless good quality lines, which they sell at cut prices. I have seen a fabulous Camaro 2 channel/7 function large scale model in Dixon's window, coming complete for £29.90 in the past few days! Also seen, a single channel Lancia Stratos with modulation system, for a mere £7.90, and a Lambo for £9.10.

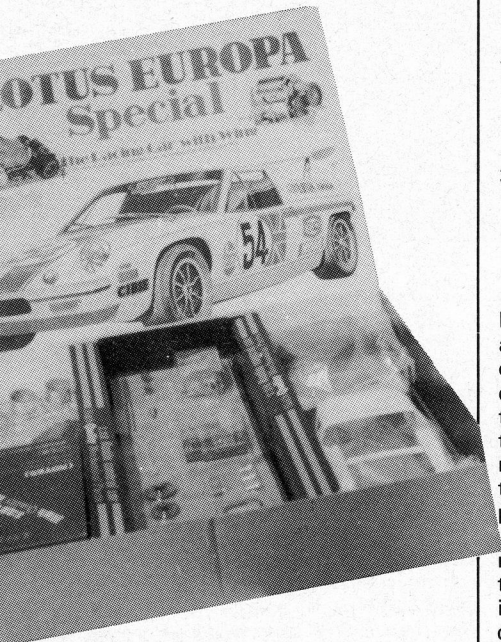
A shop situated in Kensington High Street, going by the name of 'The Tree House' also specialises in the less expensive R/C model, and sonic model, a Lancia Stratos having been seen there recently, for £9.99, a Lambo for £11.99 and a sonic Formula One car, very large in scale, for £8.99.

At the competitive end of the hobby, firms such as Mardave, of 7 Heanor Street, Sanvey Gate, Leicester, do some tremendous competition standard kits for £29.80, so it really does depend on how seriously you intend to take the hobby. You could take my advice, and get something ready-to-run, from the lower price range, with which to while away the Summer, during leisure time that is, and who knows, you may decide to go for something bigger for the Winter, and form that R/C racing club in your local hall! You may even do as I intend; for a generalised model car enthusiasts club, which caters for R/C racing, die-cast collecting, plastic and white-metal modelling, slot racing ... now you're talking, for that is exactly what I personally think the hobby should be about, complete co-operation between all people interested in model cars, whatever type, with no animosity whatsoever! Happy driving!



# R/C REVIEW

*The box before unpacking. Big and colourful with most components individually packaged.*



## Roger Howden builds Nichimo's Lotus Europa

**J**APANESE-PRODUCED plastic kits are always beautifully packaged, and for this reason one tends to believe that the product is always equally good. Nichimo are well known for their plastic kits and, although not so widely known, they also produce a number of models suitable for radio control. Their range of 1/12th and 1/10th cars adds to the ever growing range of cars in this category.

I like to divide electric cars into three distinct types, each of which caters for quite a different part of the model market.

1. Those simple but very robust kits, such as Mardave and Lectricar, which are by no means scale models but which are very fast indeed and can take the rough and tumble of competitive racing. The body, whilst meeting the requirements of the racing rules, can almost be considered an afterthought.
2. The well engineered and far more true-to-scale models produced with competition in mind but for those who like the added attractions of scale detail. Tamiya are masters in this category.
3. The simple toy radio controlled car beloved of mail order houses and department stores but not often seen on the shelves of your local model shop.

With this in mind I studied the Nichimo kit for a long time before beginning assembly in order to try and put it into one of my three categories. Try as I might I cannot put the Lotus Europa into any of them and so I must add a fourth to include those kits which are simply constructed, not suitable for serious racing, well above the toy standard and stem directly from a plastic kit. But more of that later.

For the already enthusiastic R/C car modeller I should say from the outset that this kit is not suitable, and I presume not intended for, serious racing. Whilst the chassis, steering and drive arrangements are nicely engineered the design does not cater for those little 'go faster' extras like ball race bearings and the larger RS 540 motor and most of the components are too lightly constructed to take hard knocks. But, there is a total of eight kits in the range so perhaps there is something of interest for everyone.

I tried to approach the problems of construction through the eyes of someone who has not tackled an R/C model before but who is familiar with plastic kit construction. I believe the kit will appeal most to modellers in this category.

It was something of a disappointment to find that the well laid out and illustrated Instruction Manual, the Spare Parts List and other related bits of paper in the kit were only in Japanese. A typewritten sheet of English instructions is, of course, included, but they include the usual smattering of peculiar phrases and in my opinion could well be improved.

### Rear Axle, Gearbox & Motor Assembly

Here we begin to build the model and the first decision to be made is whether to construct the high or middle/low gear ratio

drive assembly. The former is suitable where there is lots of room for high speed straight runs and the latter where a twisting circuit is to be negotiated. I opted for the low gear ratio to start, but this can always be changed later.

Coming to step 1 in the assembly instructions we are immediately faced with another small problem. Which side of the motor mount to offer up the main 52 teeth drive gear. The mount is assymmetric, cleverly designed to allow assembly of the high or low gear but we are not told whether to follow the illustrated manual or the picture on the box lid, both of which are different. After a few minutes reflection it becomes obvious that the instruction manual shows assembly of the high gear version. So, for those of you who decide to use the lower gears, follow the picture on the box lid!

It was when invited to fix the rear wheel to the axle that I discovered a neat little plastic spanner in a box of bits. Perfectly adequate for building the kit but I don't suppose it would last long in service.

The whole rear end, when assembled, is mounted on three studs and coil springs and this provides a simple rear suspension system in fore and aft and transverse directions.

### R/C Installation

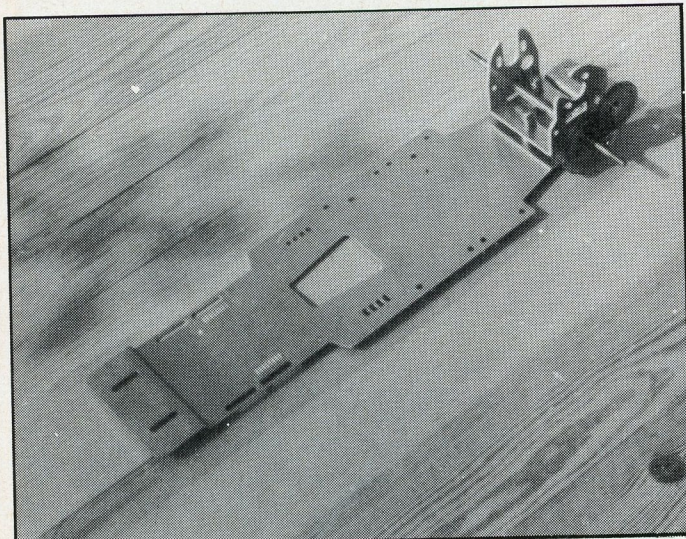
In common with most other kits of this type a knowledge of electrics or radio control is not at all necessary. Supplied with the kit are TWO neatly made and assembled rheostat type speed controllers. It is, of course, only necessary to use one of these and this allows forward, stop and reverse movement. It is connected via four coloured wires to the battery and motor. This is adequately explained in the instructions. What is not explained at all, however, is why the second speed controller is included; judging by the wirings, I am quite sure it is to be used with Nickel-Cadmium cells should these be used to drive the car but it really should be explained somewhere in the instructions.

In the kit comes a battery box to take four HP11 size batteries but a much better performance can be obtained by fitting a 6 volt pack of Nickel-Cadmium cells. These can either be charged for 12-14 hours by means of a mains charger or, as is more common, can be 'quick charged' via a suitable lead from a car battery.

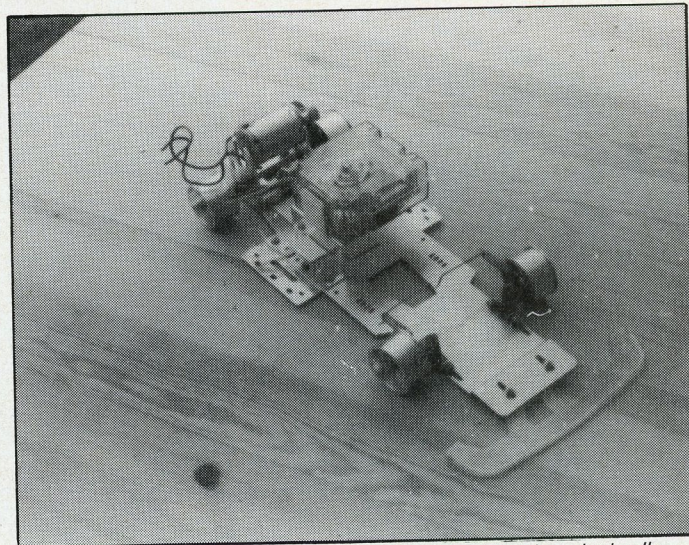
The speed controller is easily attached to the preformed bracket on the chassis by means of the double-sided tape provided, and the radio receiver, servos and power pack are also attached in the same way.

### Front Axle Assembly

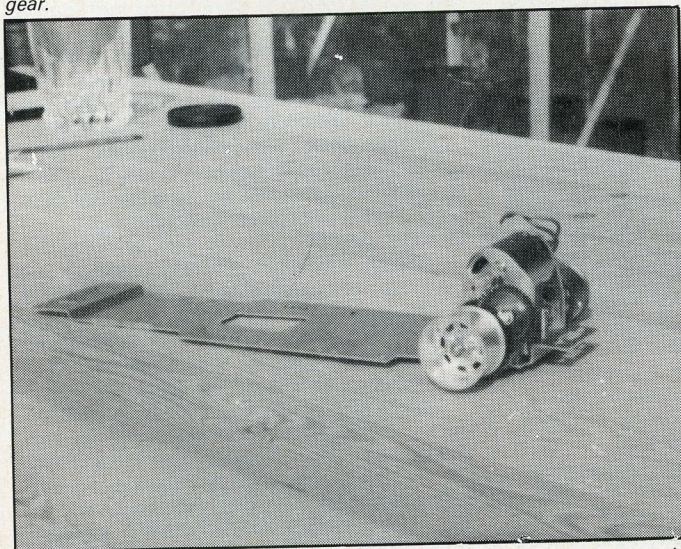
No suspension is provided on the front axle, which consists of a solid upper and lower wishbone moulding on each side using a nut and bolt kingpin. The axle on each side, which is also a nut and bolt, carrying the brass bushed front wheel, has an integrally moulded steering arm both of which are joined by a pre-bent wire track rod. The steering rod from the servo, also



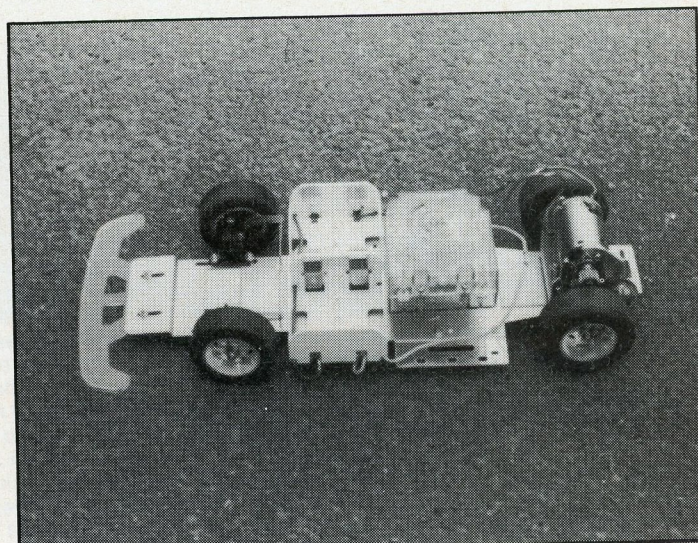
Rear axle assembly and gearbox before motor is fitted. All chassis holes are pre-drilled. Note alternative slots on motor mount for high or low gear.



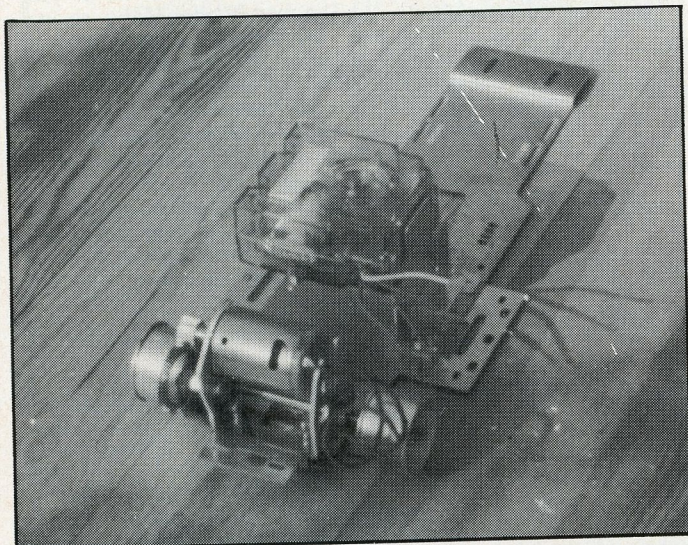
Front axle is assembled as two units, left and right hand, and wheelbase can be adjusted by means of slotted holes in chassis.



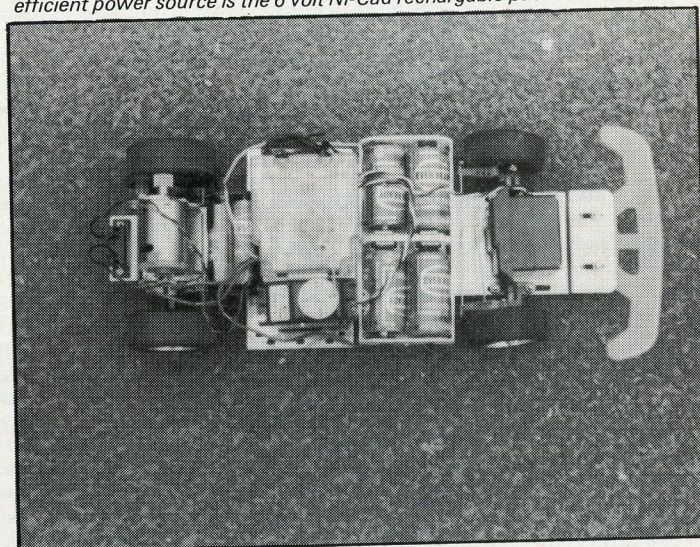
Chassis with rear end drive with complete and ready for front axle assembly and radio control.



Included in the kit are components to make up a battery box for U-2 size dry batteries, shown here assembled and fitted. A costlier but more efficient power source is the 6 volt Ni-Cad rechargeable pack.

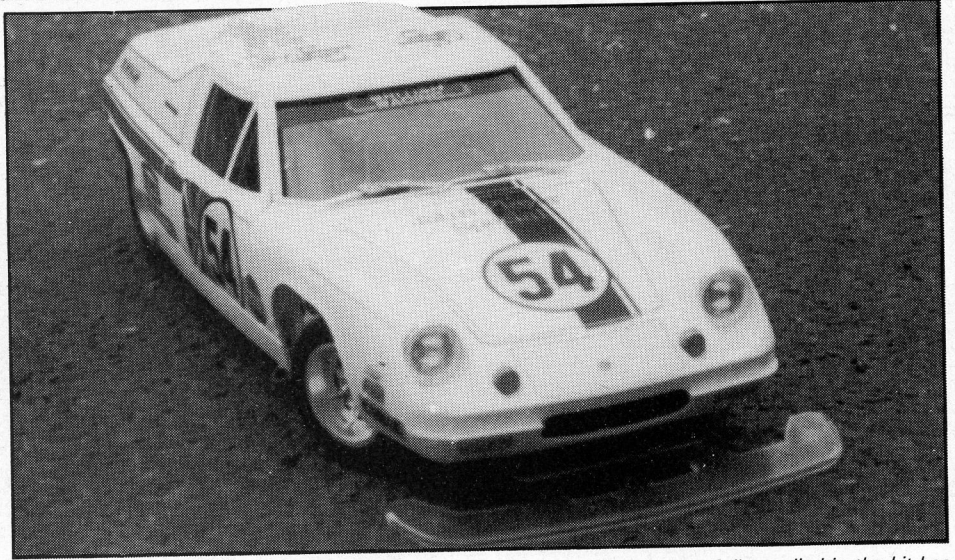


Bracket for speed controller and servo now fitted, together with body mounting plates.



An aerial view of the car ready for the road before fitting the body. Even the large ACOMS servos fit neatly into the space available.

# R/C REVIEW



*A wide plastic bumper will save the body from frontal damage but the aerofoil supplied in the kit has been deliberately omitted.*

pre-bent, is taken off the right hand steering arm.

When it came to installing the steering servo I was most surprised to read the note in the building instructions which says "when projection of servo touch to wheels, cut off them". I cannot imagine many modellers wishing to cut off bits of their expensive servos and perhaps prevent its use in other models. This would be foolish but I do not believe it is necessary anyway. To prove the point I fitted ACOMS radio equipment to the review model which probably uses one of the largest of the current modern servos and it fitted with no problems.

All that remains now is to slip the sponge rubber tyres over the hubs and the mechanical part of the construction is just about over. If you are intending to use the car at high speed or anything over walking pace it is essential to glue the tyres to the hubs. Any contact adhesive such as Evo Stick smeared on the inside of the tyre will do the job, but put the tyre onto the hub before the glue dries. Try also not to get the glue onto the outside wall otherwise it will look unsightly and be very difficult to remove.

## Battery Box Assembly

If you decide to use HP11 size dry batteries, the battery box should now be assembled and wired up according to the instructions. One piece of yellow and one piece of green coloured electrical wire is supplied and the green wire must be cut into two: one 13cm long and one 17cm long. The three wires are now crimped with pliers into position according to the building instructions. The English version is not too clear here but reference to the drawings in the Japanese manual will show where the three different lengths of wire fit.

Connecting up the speed controller is then a simple task of joining the wires colour to colour.

It is possible to join the wires as recommended in the instructions by twisting the two ends together but for a permanent joint I am sure most builders would wish to make a properly soldered joint suitably insulated with PVC tape or heat shrink tubing.

## Body Assembly

Coming to the body shell it became even more apparent that this is not a kit to take the bumps and spills of serious R/C racing. On the other hand, those who have already built plastic kits will delight in the authenticity and detail of the multitude of bits and pieces which have to be stuck together. This is not an area in which I **delight so** it was with a distinct lack of enthusiasm that I tackled this stage. The fact that the minute tube of glue provided with the kit ejected nothing but fresh air did nothing to restore morale, but a quick raid of the model box produced a bottle of Britfix Liquid Poly and the complete bodyshell was assembled with this.

The majority of the body mouldings are very good, the one exception being the rear window frame (Part No. A-13) which was a poor moulding and an indifferent fit into the main bodyshell. This, I am sure, would be no drawback to the enthusiastic plastic modeller and clearly with a little filling and sanding it could be faired in nicely. This is where the individual must decide whether he is to build a radio controlled 'concours' model or one which he is out to enjoy for its manoeuvrability and realism under way.

At this stage I found it easier to follow the clearly drawn diagrams of the main instruction manual, despite the Japanese captions. In fact, it should be said that throughout the construction it is essential to read the English translation in parallel with the main manual, since a number of important points have not been translated but can be picked up from the diagrams.

I did come across two points which did not appear to be covered in either the

English or Japanese versions and these were.

1. For no apparent reason there are two sets of windows supplied in the kit, one tinted blue and the other clear. There are also a number of plastic parts which cannot be used during the construction of this R/C version.
2. The necessity to cut away part of the front underside of the bodyshell in order to clear the bolts fixing the front bumper or 'Safety guard'.

This leads me to believe that the whole of the bodyshell package was designed for a non-working version of the same model.

Decals are supplied in profusion and the car can be finished in the same livery as on the box lid. It is a tedious and painstaking job to apply the gold lining around the bodyshell (it was for me anyway!) and you may feel that your model does not warrant this effort. Again, this is entirely a personal choice and will depend on whether you want to use the car or just admire it. The bodyshell on the review model was not painted, except for the lights and indicators, but so little of it shows under all the advertising decals that this is hardly noticeable. Incidentally, fitting the aerofoil seems to be optional since the body mounting holes have to be opened up before fixing. If you intend to drive the car in earnest I would not advise fitting it because it will almost certainly be demolished if the car turns over — an odds on chance for the beginner or even the over excited expert.

## Summary

In all a nicely produced kit which should be popular with modellers who are used to building plastics. I do not believe it was ever intended for serious racing but this does not matter. For those who want to get the feel of building and handling an R/C car, this model offers an excellent introduction.

I do wish the English instructions had

either been printed alongside the diagrams in the building manual or at least been fully translated.

**Importers:** Eisenmann (Hobbies & Models) Ltd., and available through model shops.

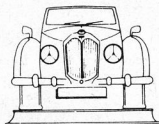
**Manufacturers:** NICHIMO Japan.

**Cost:** Although there is no recommended price, the kit less batteries and radio control equipment should be available at around £27.00. A good range of spare parts is also available.

**Service:** An added bonus is that Eisenmann now offer their customers a specialist repair service for both the Einco range of radio control, marketed through Eisenmann Games and Toys Limited, and for the sophisticated advanced radio control models which are an important feature of the Eisenmann Hobbies and Models range. These include competition standard vehicles from major Japanese manufacturers like Nichimo, Yokomo and Tsukuda.

The company has appointed John Eaton, a qualified electronics engineer to run the repair workshop with an assistant. The workshop is equipped with the most up-to-date servicing equipment and carries a wide range of spare parts for both Eisenmann ranges.

Says Managing Director, Peter Norman, "The Eisenmann repair service was initiated in January 1980 and is proving immensely popular with our customers. Radio control is a very important feature of our two ranges and we are glad to be able to provide this comprehensive back-up service."



## MARQUE ONE MODELS

**MGB's and MGC's  
— GT and Tourer  
versions — V8 and  
Jubilee "750" variants.**

(All from introduction to  
to present day)



1/24 scale, white metal model, individually hand built to one's own specification.

*Painted in original factory colours • All wheel options including spoked and V8 wheels • Sunshine roof/vinyl roof or plain GT. • Hood/touneau in any position on Tourer version • Personal registration number if required • Plated bumpers and grills • Rubber tyres.*

Virtually any extra can be put on, e.g. spoilers, wing mirrors, aerial, boot rack, etc.

Each model is numbered as they are a limited production.

Send 10p stamp for leaflet/order form.

NAME .....

ADDRESS .....

Tel. No. (if any) .....

**The Snuggery, Chatham Green,  
Near Little Waltham, Chelmsford,  
Essex CM3 3LG.**

**Telephone: Great Leighs 695**

Ref. No. AM 2/2

## TRUCK KITS BY ATHEARN in H/O scale

- \* Wide assortment of liveries
- \* Simple to construct Plastic Kits
- \* Two basic types of packing
- \* Tractor kits containing 2 tractors at £3.00 per set
- \* Trailer kits containing 2 trailers at £2.62 per set.

## COMPLETE STOCKS OF MÄRKLIN SPRINT CARS

S.A.E. for Price List and Catalogue

## COMPLETE STOCKS OF WIKING

S.A.E. for Price List and Catalogue.

## MEGA MODELS LIMITED

26 RATHBONE PLACE, LONDON, W.1

Tel: 01-636 7131

Opening hours 9.00 till 6.00 Mon-Sat

BARCLAYCARD

AMERICAN EXPRESS

ACCESS Accepted

# R/C REVIEW

**T**AMIYA have, over the past few years, built up an enviable reputation in this country for producing robust, powerful and exhilarating R/C models that really deliver.

Modellers buying Tamiya R/C products can be assured of crisp scale detailing on exciting themes from the world of 1:1 racing executed with flair and sacrificing very little in the way of appearance to the punchy power pack concealed under the robust injection-moulded body shells.

Great care is taken to achieve the ultimate in styling and the wheels and tyres are particularly impressive.

In terms of handling and power the standard engineering and electrics provide excellent performance, more than adequate for those who wish to race locally. However, performance can be enhanced by recourse to Tamiya's considerable range of products designed to give the edge over competitors through easy modifications.

This month we are taking a brief look at three highly divergent R/C models from Tamiya — each in their own way illustrating the adventurous approach to R/C modelling which the name Tamiya exemplifies.

## Tamiya's Roughrider Special

Reviewed by Ray Habgood

**S**OPHISTICATION COMBINES with toughness to provide the ultimate in rough road racing from Tamiya — the celebrated 'Rough Rider'. Unlike other R/C cars, which have a hard time dealing with anything but a flat surface, these models can really take some punishment.

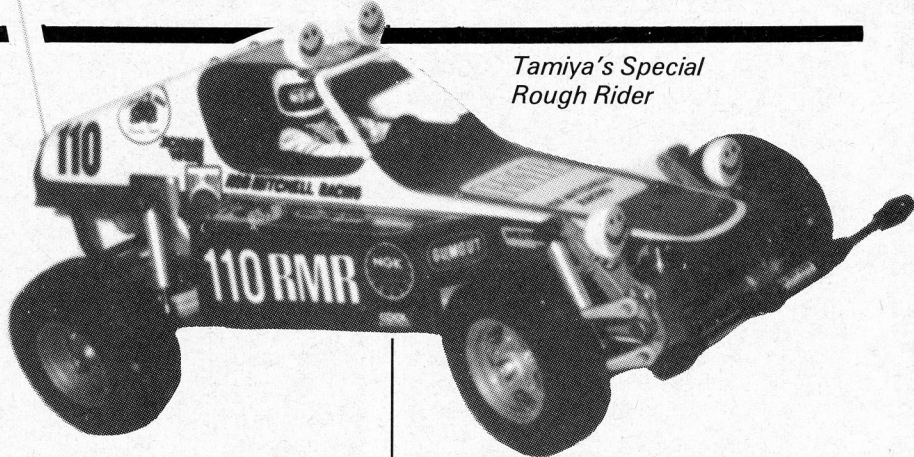
They can certainly be raced in the garden or similar rough ground, and they can even be run through puddles, thus providing more than good value for those who want to race all the time on a more casual basis than that provided by the club scene.

Superbly described our review kit. It's got the ultimate in off-road R/C and the design of the drive and suspension units are really the business.

The motor and gears are enclosed in a cast shell which can be screwed together and the two halves sealed with silicone sealant. Also a plastic motor cover and the external gear cover are sealed with silicone which makes the unit water-resistant (an ideal feature considering the variable climate of the UK).

Most of the assembly is based on Allen screws and also supplied in the kit is a tube

Tamiya's Special  
Rough Rider



The Special Rough Rider package — approximately £69 retail.

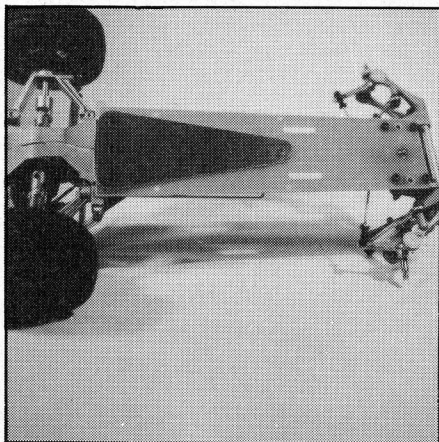
View of the rear assembly. Note angle of rear wheels, shock and suspension units.



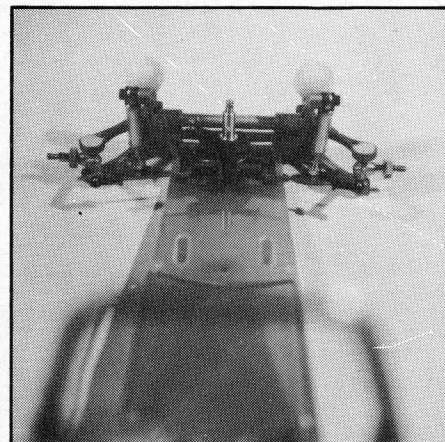
The sturdy construction of the chassis.



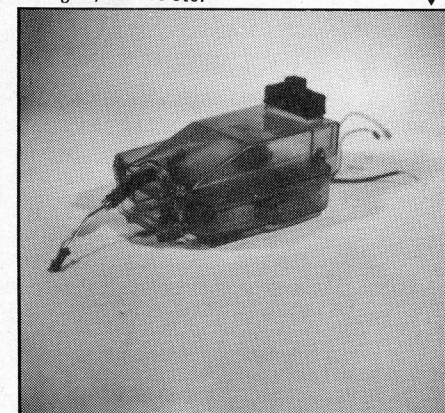
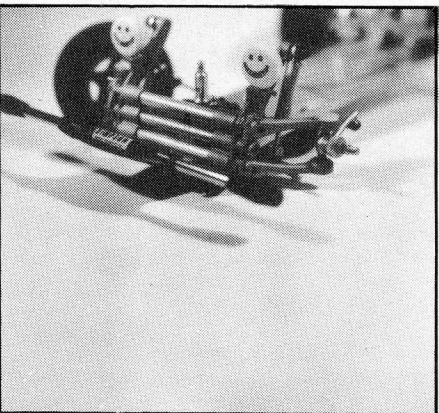
Steering and suspension units up front.

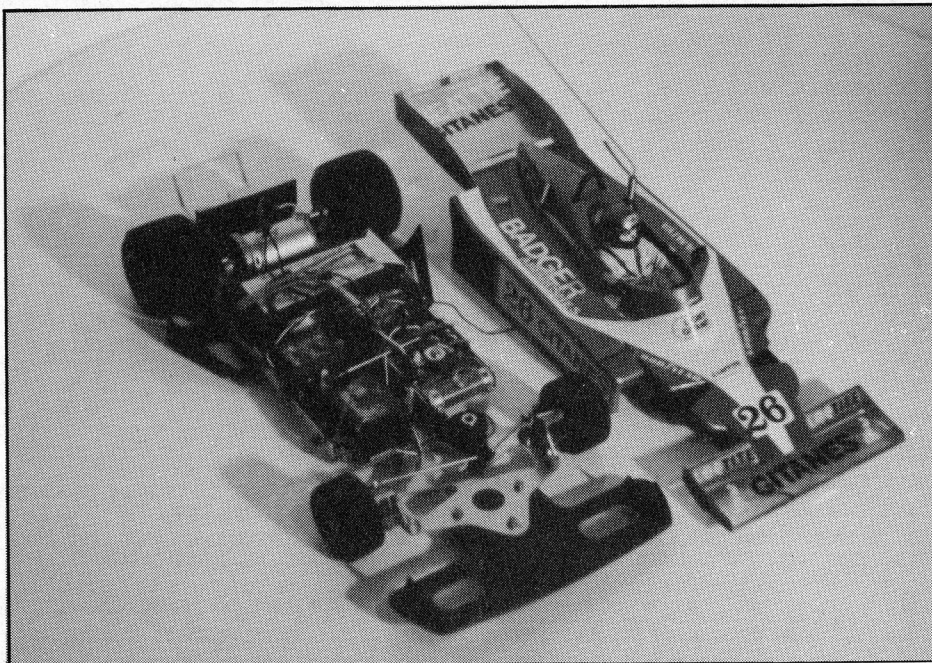


Front view, similar to the Volkswagen.



The sealed unit allows the model to be run through puddles etc.





1/12th scale Ligier from Tamiya.

of threadlock to stop any screws coming undone at the wrong time. On assembly the excellent suspension units and shock absorbers are filled with damper fluid which enhances the rugged driveability to the unit.

By following the instruction book it doesn't take long to get the majority of the build completed — modellers will be pleased to see that the high standard of instruction makes building and R/C car almost as simple as any normal plastic kit.

The front suspension unit and steering is similar to the Volkswagen, which is nice to see, as it adds realism to the completed model. The spring-loaded steering takes a lot of shock off the servo should one come down off a jump with a landing which is on the heavy side.

All the linkages are enclosed and to size, so it's just a matter of fitting your radio gear in the plastic box, locking the quick reverse pins, sealing the receiver box with sealant and screwing home. The unit is then screwed to the chassis and the linkage connected to the servo. The wheels are then fitted and, almost before you know it, you're on to spraying the body and finishing it by adding the decals provided.

I chose to spray it using the Badger 200-EX, which was ideally suited to this task and I added a little weathering, using Gloy 'Dark Earth' and 'Ocre' to give it that used look (although, once running, it will soon get dirty).

Hopefully, the photos provide an indication of the model's potential ... but this is one you've really got to run for yourself to experience the true delight of both power and handling.

With models like this around, off-road R/C racing is going to take off in a very big way in this country, meaning people can race any time and almost any where with a maximum level of enjoyment and a minimum level of bureaucracy.

Tamiya's Rough Rider is suitable for both kids and adults and is especially suited to those who have been disappointed by the limitations of less robust machines. Approximate retail price is £69.

*Review sample courtesy of Beatties.*

## TAMIYA

### Ligier and Ferrari

1/12th scale

Reviewed by Ray Habgood.

Formula One racing becomes a reality with two radio controlled cars from Tamiya that are both quick and easy to build and which offer lively compatible performance. Of the high standard usually associated with Tamiya, included in each kit is a clear body to use while practising if you are a newcomer to radio control.

Since both cars are roughly compatible, I will detail the Ligier as it was the first to become available. Assembly on this model took 2½ hours, leaving only the radio equipment to be installed. The unit used was the Acoms 2-channel proportional system. After installing the batteries, all that was left to do was to clip on the body and we were ready to race.

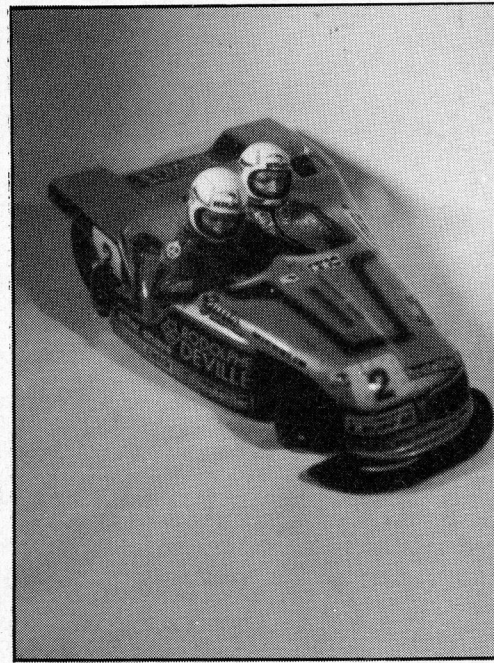
The body itself is of good quality and has the kind of detail with which modellers will already be familiar. There was little to do to the body as sheets of self-adhesive decals are included — all you have to do is cut them out and position them. The only change I made was to exchange the plastic tube used for the aerial for a boat aerial which I then bent to run along the body.

There is very little ground clearance with these cars and it is essential to find a very smooth surface to run them on. Nevertheless, the Ligier handled very well and was fast on the straight with good breaking on the bends due to the slip differential fitted on the rear axle.

After a few days running, I soon found it was going to be cheaper in the long run to fit a re-chargeable 5 cell nicad battery and use a charger, again both made by Acoms. The charger plugs into the cigarette lighter in the family car and can be completely charged in 15 minutes, which is obviously very convenient.

Once again, the realism of these scale models make them ideal vehicles for the modeller to extend his skills into a new and exciting area of scale Formula 1 racing.

*Review sample courtesy of Beatties.*



## BMW sidecar

Last year *Auto Modeller* carried a series of articles on scratchbuilding an R/C sidecar. The author of that series lamented at that time that there were no R/C sidecar units available over the counter and recommended that manufacturers look to this field when considering future production plans.

This year Tamiya are producing a BMW sidecar unit, that, for many motorcycle enthusiasts, will be the 'answer to a maiden's prayer'.

Stability is one of the main problems when designing any three-wheeled vehicle but the BMW held up very well on speed and cornering tests.

Again the low profile of the vehicle makes ground clearance something of a problem when racing on anything other than a flat and uniform surface. However, it is always advisable to join or form an R/C club to gain the maximum potential from any powered vehicle and the BMW alone could attract motorcycle enthusiasts to forming their own R/C clubs and competitions.

*Steering unit on the BMW.*

