



MIDMEL CARS

SPECIAL REPORT: Pete Winton drives Pete Steven's MID 4

Optima Road Test

We all carry in our heads a 'picture' of the World which is used to make value judgements. Everyone has a different 'picture' which is why

human beings rarely agree on anything, and often get things wrong. During our lives circumstances serve to change the 'picture'. Our reaction to that change is the difference between youth and experience, the latter being born from our learning from the events which alter, or add to, the original 'picture'.
The picture RCMC paints of

the 1/10th Off-Road scene is one of new products, Associated 'RC10's', and Parma products. That is because those that write for magazine see those areas through their position and experience. Readers not at the forefront of the National racing scene could be forgiven for thinking that there are no good old products, nor cars worth racing other than the 'RC10' and 'CAT'. Wrong! I discovered just how wrong when acting as scrutineer at a recent Chesham club meeting. Whilst the top two finals contained 14 'CAT's' and two 'Optima MID's', the C, D, E, F and G finals had a numerical superiority in favour of the 'MID'.
This interesting state of affairs was a bit at odds with my 'picture', and rather an

eye-opener. Checks with a number of friends in the trade confirmed that the Kyosho 'Optima MID-4' and 'MID/4 Turbo' were (indeed are) very popular with club drivers. This of course runs contrary to our articles painting the 'CAT' as all conquering, or if one is less polite, ignoring the 'MID-4' completely! We decided that someone should put a latest spec 'MID-4' through its paces since Pete Stevens had won the Dumfries National with the car, and was lying third in the National series - neither mean feats in themselves. Where better to go than the hero of the hour Pete Stevens, 'Kyosho' sponsored and now giving every indication of a car on the up. Pete kindly loaned his spare car for the National meeting at GEC Stychfields - Stafford, and thus this road test was born.

The basic 'Optima MID' specification is unchanged from its release last year. The motor is mounted in front of the rear axle and drives the rear

Left: Pete's Mid has home developed chassis which has contributed to the Kyosho item now available. Below: Undertray from Ripmax is taped onto chassis so that screw heads are kept clean.

wheels through a train of gears. Drive is passed to the front wheels by a single belt which passes over the top of the motor and returns on top of the chassis. Differentials are fitted to front and rear axles, with solid drive shafts to each wheel - no one way roller clutches on the front axle. Suspension is based on the same design at each corner of the car - a lower wishbone with wide based inner pivots supporting an upright. A single adjustable link connects the top of the upright to the chassis. Each corner of the car has a single spring/damper unit to control the movement of its wheel.

One would expect Pete Stevens' car (even his spare) to have all the latest modifications and indeed it has. From the latest 'Optima MID-4 Turbo SE' comes ball-and-thrust race differentials fitted front and rear. The long-wheelbase conversion kit (adding 17mm to the distance between the axles) is now available and was fitted. This kit comes with a saddle pack layout, and we added an undertray. As such our test 'MID-4' was not exactly the same as the majority of such cars in use, but it did represent the latest spec available for the breed.

The less I say about the parlous state the car was received in, the less likely Pete is to tell you about the 'KO FET' servo that got damaged before seeing a race track! On arrival the car was stripped of all suspension components and given a thorough clean. All mechanics were remarkably good considering this season in practice and some races, it was testament to the good design and sturdy nature of the Kyosho parts. The car easily accepted the required electronics - 'KO FET' servo, Laser 'Mini-PRO' speed

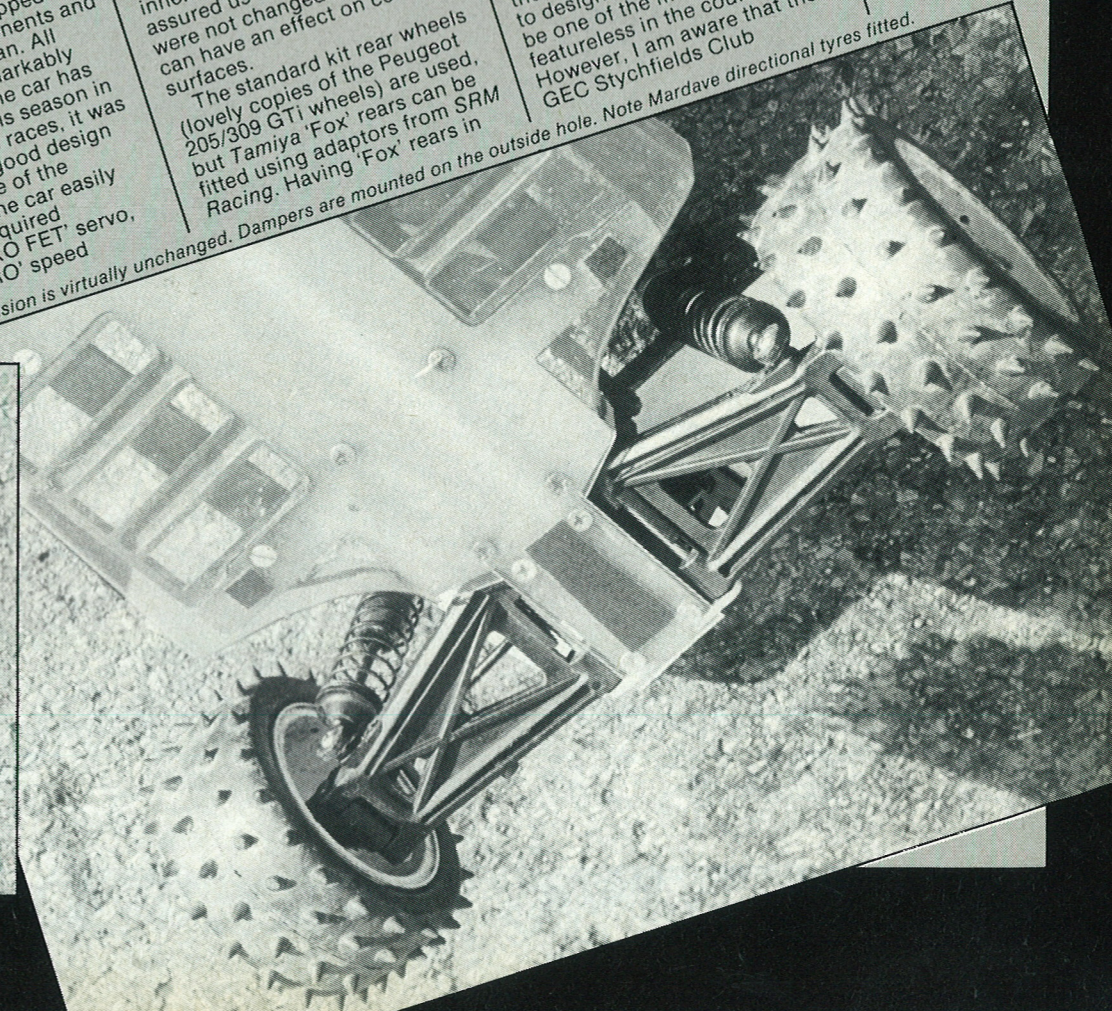
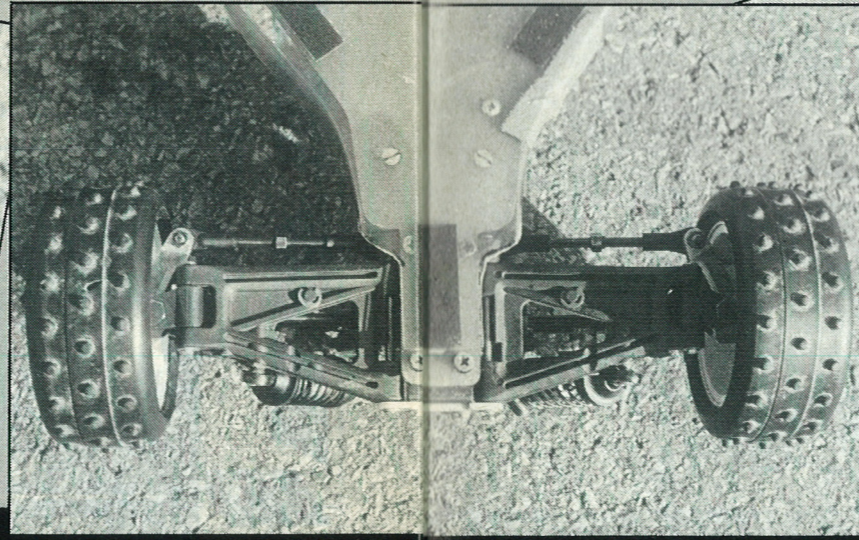
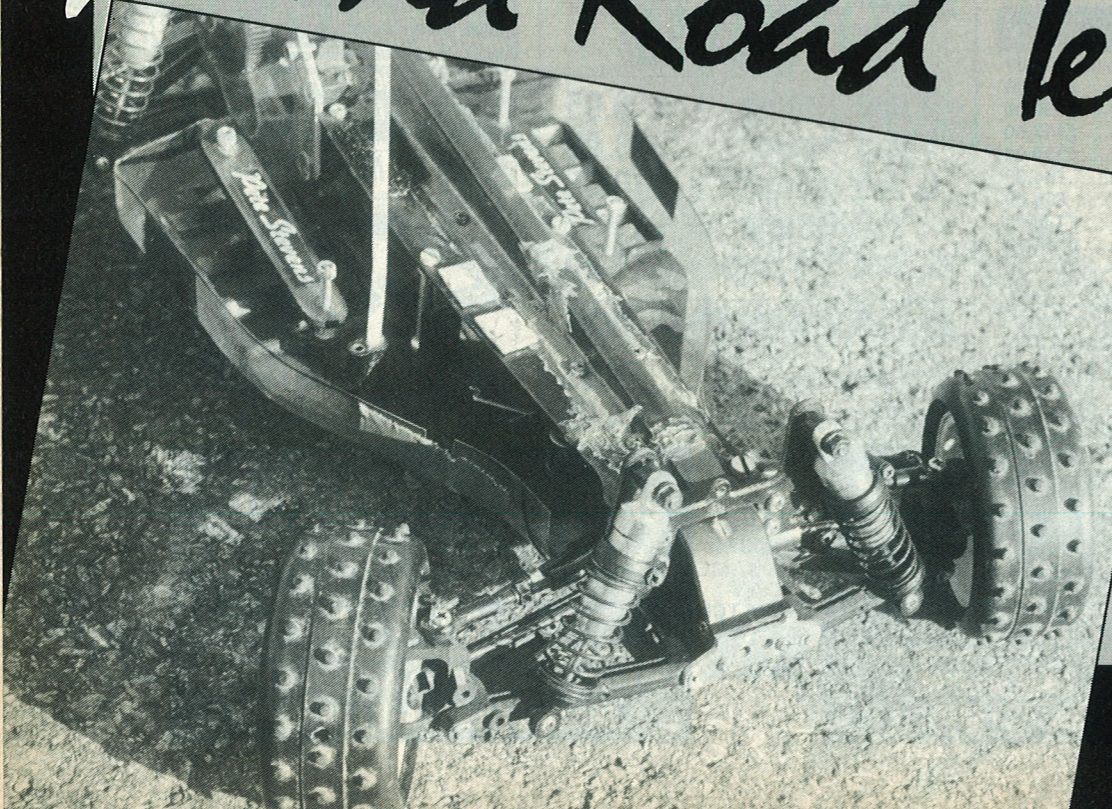
The rear suspension is virtually unchanged. Dampers are mounted on the outside hole. Note Mardave directional tyres fitted.

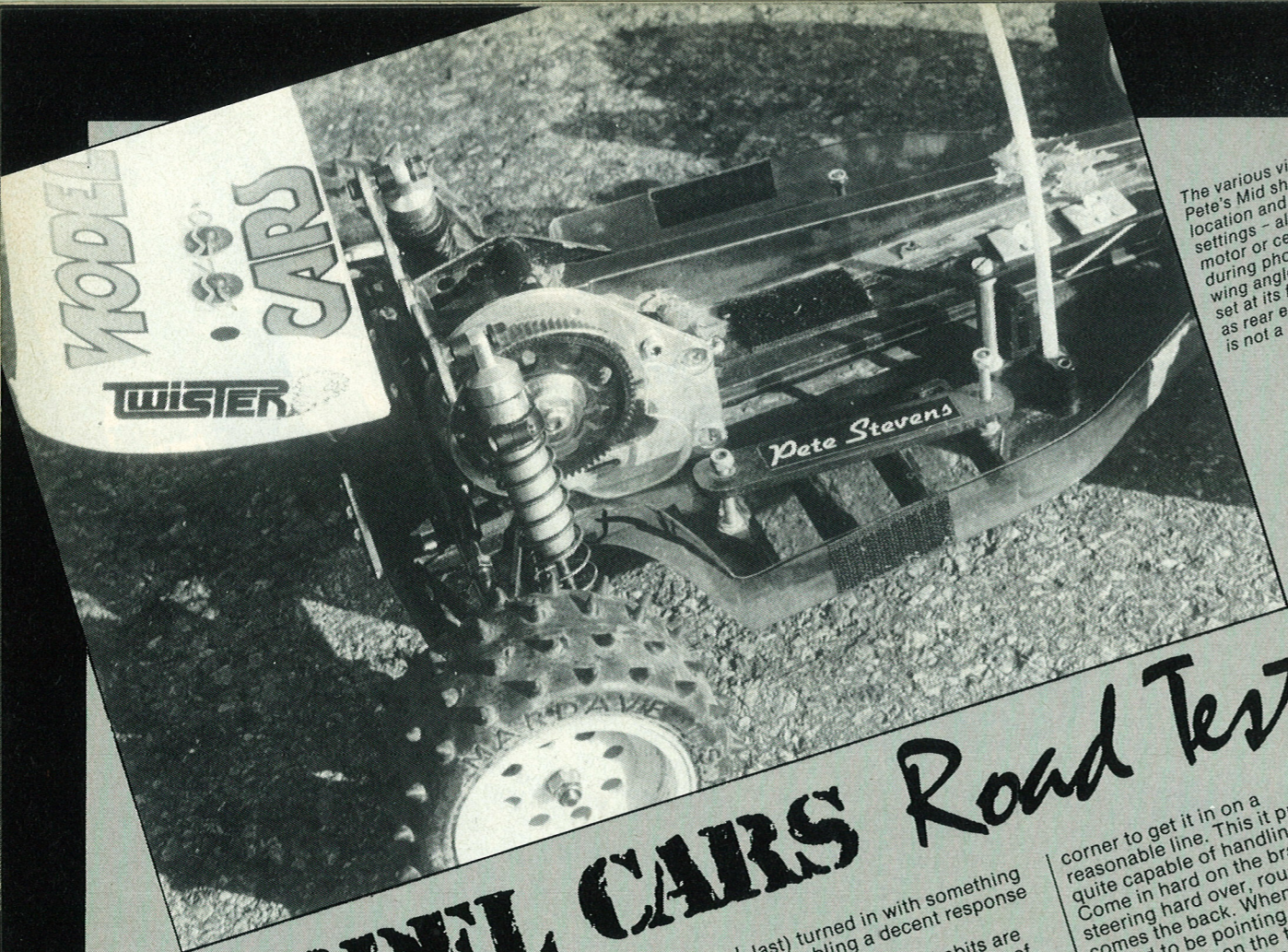
was over the weight limit on race day. The first point of call on arrival at Stafford was Pete's pit to agree a set-up for the track. Agree is not quite the truth, we did as we were told! Front wheels were set with zero toe-in at rest (at fully laden) and the front wheel camber set at about 3 degrees with a ride height of about 22mm. Kyosho black springs were fitted to dampers containing 20wt oil. Damper pistons with two cutouts were fitted front and rear, the rear dampers also having black springs and 20wt oil. Rear ride height was about 22mm, with the rear wheels set to 0 degrees camber with the car at rest. Photos show the position of the top links at their innermost mountings. Pete assured us that these settings were not changed often, but can have an effect on certain surfaces.

The standard kit rear wheels (lovely copies of the Peugeot 205/309 GTI wheels) are used, but Tamiya 'Fox' rears can be fitted using adaptors from SRM Racing. Having 'Fox' rears in

the box (for the 'RC10') dictated this approach. Front wheels were 'Hotshot' type (in my box from the 'Maxima' test) again fitted using adaptors from SRM. The use of these narrower front wheels is preferred to the wide (rear) wheels supplied in the kit for most grass based UK tracks for a better balance is achieved. Standard 'CAT' spike tyres were fitted all round for practice on a crisp, but dew-laden grass circuit. No-one could accuse the Stafford club of over-taxing their imagination when it came to designing their track, it must be one of the most flat and featureless in the country. However, I am aware that the GEC Stychfields Club

Committee place certain restrictions on even the 1/12th section, so they probably cannot allow the digging up of their lawns for 1/10th. No matter, we were here and there





The various views of Pete's Mid show the cell location and suspension settings - although no motor or cells were fitted during photography. The wing angle is normally set at its flattest as rear end grip is not a problem.

MODEL CARS Road Test

was a race to be run and it was the same for everyone. Gearing for my Twister 17 double (402) was taken from notes on the 'CAT'. The car felt good but suffered from understeer turning in, as well as going far beyond the five minutes. Further discussion at the pit table led to our first change of the day, as springs were changed from black all round to Kyosho silver all round. Oil was left the same resulting in slight over-damping, the aim to promote grip. Tyres were also changed to 'CAT' six-row-cut-spike on the rear and four-row-block fronts. Gearing was lowered by one tooth.

Down to business

During round one (me in heat 9 of 12) the track dried and the grass started to wear away. Andrew Robson led the heat with us hard on his tail. The car still felt slightly slow, but now very driveable. While circulating alone trying to catch Andrew it soon became clear that the 'MID' likes to be given a cautious approach to corners on the right line, to be given a steady throttle on the first part of the bend and will quite accept full power from such a flat circuit with no

bumps to avoid such an approach rapidly paid dividends, by halfway we were right up on Andrew's tail. Having carefully learned the rules of driving this 'MID', they were soon forgotten in the heat of trying to pass. This is when we learn that the 'MID' is a very stable car, not willing to dart and weave around like a 'CAT' when looking for that gap which opens the way to a clear circuit. Whatever abuse metered out from the sticks (and the Lord blessed me well in that area!) the 'MID' just stayed put. However, we finally got past down the straight, only to throw it away four corners later! We were thrilled to score 15 laps, twelfth after round one. For round two we decided that the track was going to be more slippery, and therefore some more grip would be needed at the front. Stiffening the rear suspension causes the rear weight transfer to the front, and this was preferable to changing which would then suspension which would then have been too light to deal with the two artificial ramps. Rear springs were Kyosho black and 30 weight oil fitted to keep the track, suspension was lowered all round by moving the shock mountings to their upper positions on the towers. All this work produced another 15 lap time slightly slower than the first (due to a bad start and the subsequent traffic) but a very good chassis set-up which (at

last) turned in with something resembling a decent response to the helm.

A car's real bad habits are easily found if the amount of horsepower in the chassis is greatly increased. Pete provided some of 'Twister's' best powered by Sanyo 'SCE' cells. Frankly I was impressed, not with the horsepower (if felt slow) but with the way the car handled. Although the 'MID' chassis cannot generate (yet) enough mechanical grip to get tight into medium-fast turns, its inherent stability is much less punishing of small mistakes. We won't talk about the lap times - if I hit that track marker one more time it would have made double figures!

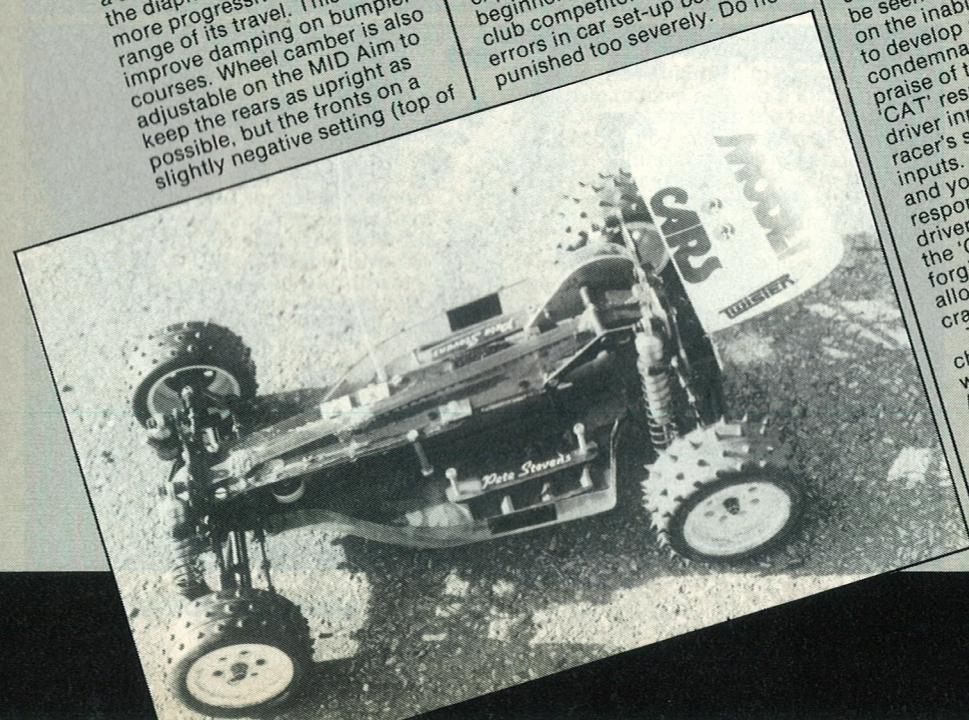
Round four, a change of tyres to 'CAT' min-spikes all round and a change of gear ratio. Pete said the car looked fast, so did many others, but it still felt slow to me which must indicate that it was handling well. The by now very worn nature of the track had been underestimated and excessive understeer put paid to another 15 lapper, this only a very fast 14.

The results

So, eighteenth fastest (out of 120) on my first competitive outing with a new car - well, I was pleased! My time was 15 seconds off the pace, and this year my 4WD Nationals have been two F finals. At club I am normally 10 or so seconds off Pete Stevens, this time a similar margin pertained. The car was very easy to drive, during the last round with the understeer it needed to be thrown at the

corner to get it in on a reasonable line. This it proved quite capable of handling. Come in hard on the brakes, steering hard over, round comes the back. When it looked to be pointing the right way, ease up on the throttle and round she goes. It is easy in terms of line. What impresses though is the total stability of the car during these manoeuvres. I could not say the same of my CAT from a stability point of view, but then again it does not have as much understeer.

As the damp of the evening descended, tyres were reverted to six-row-cut-spike rears, and standard fronts with cut down spikes. This was the best the car had been all day, the cool of the evening stiffening the dampers, and the cut spike fronts ideal for the conditions. After an exciting tussle with Jimmy Hamilton (who drove nicely in an aggressive way - no quarter asked, none given, and no contact in five close fought laps, way to



go!) we came home winners by a couple of lengths - winners of the 'C' final that is! Obviously it is impossible to give a definite set-up for a car driven once at a favourable track - a car which belongs to someone else at that. Of the major mods mentioned, dinner money should be saved for the longer wheelbase conversion and the ball differentials. The standard 'MID' I drove way back is remembered as stable and forgiving but slightly prone to rolling on high grip tracks. Pete advises that the longer wheelbase helps eradicate this problem, and also improves handling on very bumpy tracks. The ball differentials improve to experiment with, springs and damper oil we have mentioned. In addition try filling the dampers without the rubber diaphragm in the top. Cut the middle out of the diaphragm converting it into a large O ring to seal the cap - replacements are not expensive. The diaphragm, whilst preventing air entering the oil, also acts as a secondary spring. Without the diaphragm the damper is more progressive over the range of its travel. This can improve damping on bumper courses. Wheel camber is also adjustable on the MID Aim as possible, but the fronts on a slightly negative setting (top of

the wheel leans in) - all settings with the car fully laden on a flat pit table. Increasing rear negative camber can improve mid corner grip and/or turn-in depending on other settings, but this will be traded off to some loss or other, try it and see since I have insufficient track hours to know.

Do not be afraid to cut down the spikes on tyres. This reduces the tendency for the car to roll over, but does not necessarily mean reduced grip. The 'MID' is basically well balanced and can be thrown around without a total spin. Above all give the car time to change direction by slowing it down before the scrub off speed. The steering will be traded off to some loss or other, try it and see since I have insufficient track hours to know.

I liked the car. I liked it a lot. It now comes as no surprise to me that club drivers up and down the country buy it in droves. The typical Japanese strengths of high quality materials, well designed and accurately machined parts, that unmarked attention to detail mark the 'MID' out as the finest club car around. Success at National level is not forthcoming because it is not (yet) a racer. The same sprightly, even edgy, handling of the 'CAT' which will punish mistakes is the very reason the car is so successful. Racers have the skill to exploit that trait in the car, whereas drivers come unstuck by their inability to master the technique. The difference between a racer and a driver is subtle, but very distinct.

This parallel neatly sums up the difference between a 'CAT' and a 'MID'. The 'CAT' begs to be driven by racers, people who can get the best from its agility and pace. The 'MID' is not so responsive which makes it ideal for drivers who want to further their skill and experience from the level of beginner right through to top club competitor without their errors in car set-up being punished too severely. Do not

forget that the 'CAT' has been developed for two years, the 'MID' for less than one. Which is not to say that the 'MID' cannot win at the highest level, it most certainly can. Pete has already won a round of the BRCA National series, and his help set up Denis Blandin's Optima 'MID-4' to win the 1988 European Championship. Nor does it mean the 'CAT' is too hot to handle for club drivers, there are enough around to prove that wrong too. It is rather that the 'CAT' was the car to beat when the 'MID' was released, and when it did not beat the 'CAT' straight out of the box people put away, or sold off, their 'MID's'. That can be seen as a direct reflection on the inability of most people to develop a car, not a condemnation of the 'MID' or 'CAT' responds instantly to driver inputs, it depends on the racer's skill to give the right inputs. Give it the wrong inputs and you get the wrong response - instantly! Mere drivers such as ourselves like the 'Optima MID-4' because it forgives the wrong inputs and allows us time to learn our craft.

The whole episode has changed my 'picture' of the world. It is obvious why the Kyosho 'Optima MID-4' is bought in huge numbers by drivers throughout the world, gives them a lot of enjoyment. Let there be any doubt, the best estimates I can obtain suggest that Kyosho sell ten times as many 'MID's' as

