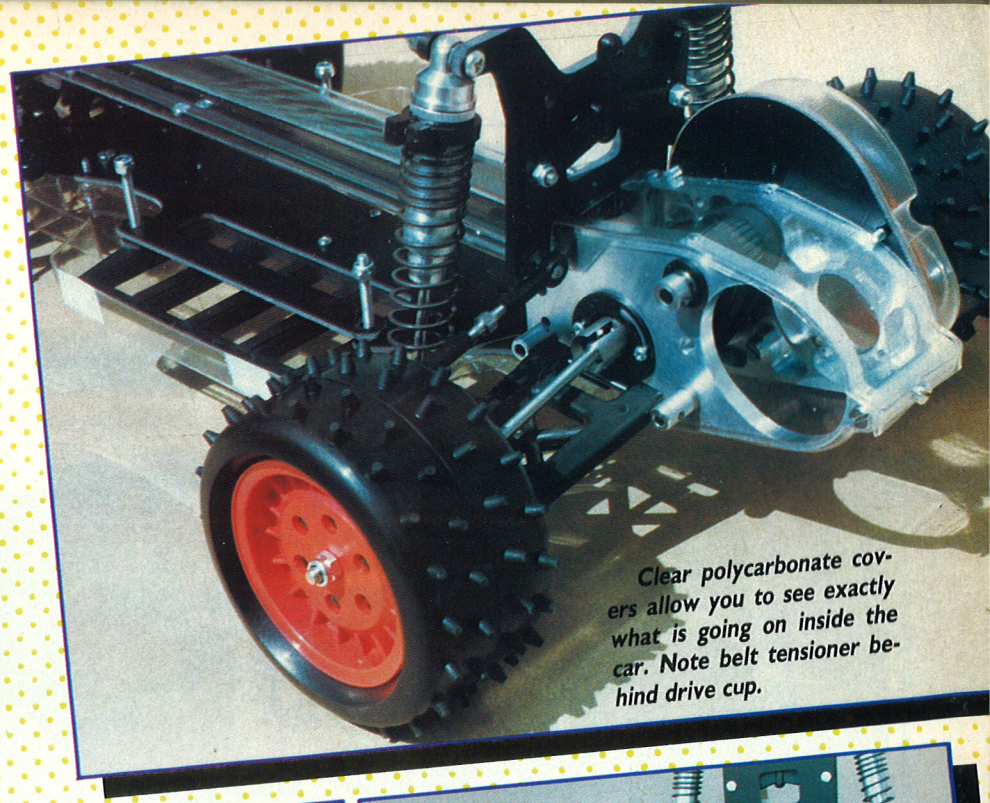
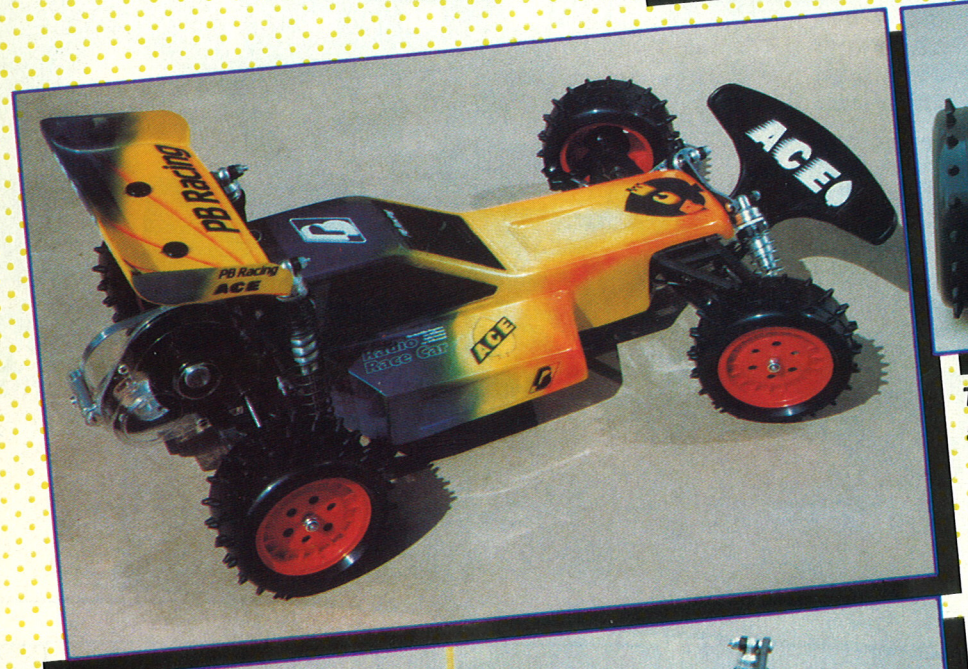
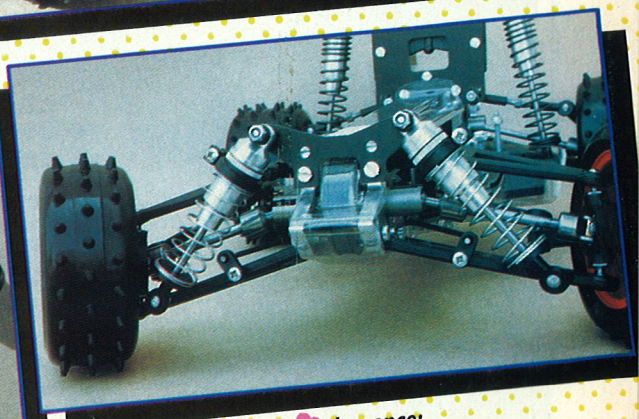
THE ACE

Greg Halliday looks at PB's new 4WD contender

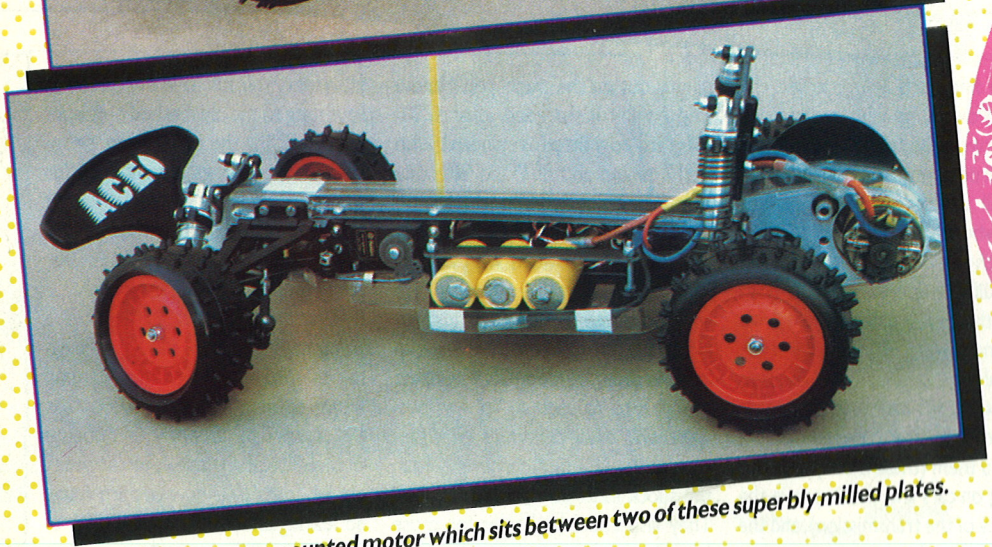


Clear polycarbonate covers allow you to see exactly what is going on inside the car. Note belt tensioner behind drive cup.





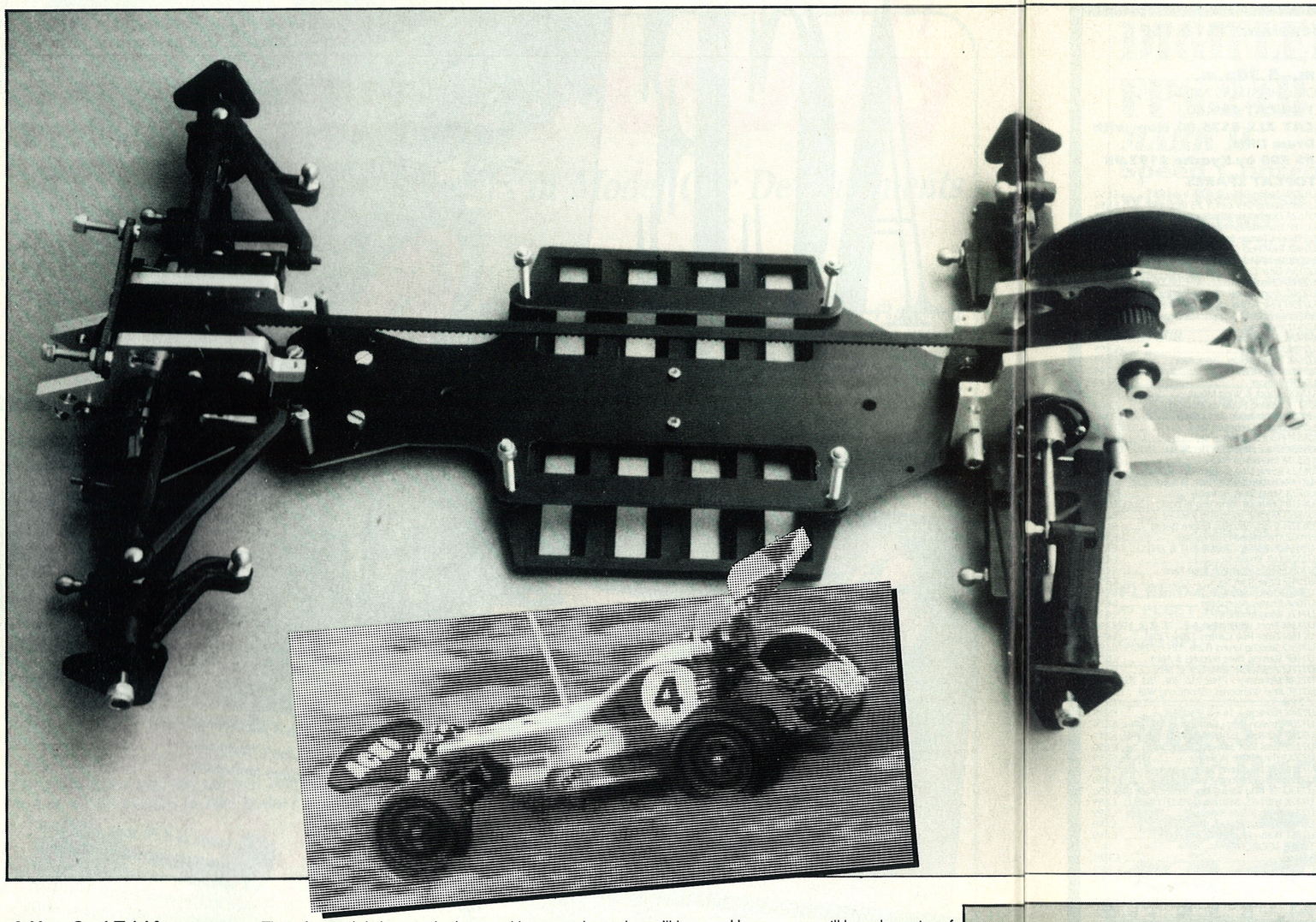
There is plenty of ground clearance; and don't those new shockers look good.



PB's Ace has a rear mounted motor which sits between two of these superbly milled plates.

It seems as if PB took a leaf from Kyosho's marketing handbook when they decided to launch their new four wheeled drive Ace 1/10 car. With almost as much hype as when the Mid-Optima was introduced (and taking almost as long before it finally appeared), the new contender from PB is finally before us, and I can assure you it is no Mini-Mustang/Maxima clone! PB have radically re-thought the design of their car and come up with something quite different to the opposition!

ACE



A New Card Trick?

Probably the most noticeable thing about the Ace is that it has a rear motor position, something you normally find only on rear wheel drive cars. Mind you, one of the most successful 4WD cars a few years ago was the old Optima, and that was rear motored! Another reversal of trend is that the car has a shorter wheelbase at 261mm; the Maxima is 272mm. The chassis structure is made up from four very neat computer milled alloy side plates (the combined weight of all four is less than three ounces), which are attached to a black glass fibre chassis and top brace. Bolted to the chassis are plastic saddle-pack battery holders giving an option of forward or rear mounted cells, plus stick pack fitting if required. The cells are held in place by glass-fibre straps and nuts.

Three fine pitch belts provide the transmission of power to the four wheels; two belts to the rear and one to the front, with a Mardave/Nodis type ball differential between each pair of wheels. PB's previous off-road cars each used one belt and twin geared diffs. The drive shafts at both ends of the car have ball and pin drive inner ends, with Hardy-Spicer type universal joint outer ends as used on the Maxima. PB can also provide an option of one way roller clutches if you need them (these usually improve steering on cars and also improve the efficiency of the transmission), and the design of these has been improved by permanently attaching them to the drive shafts. That doesn't sound like a great improvement, but if like me you managed to crash your Maxima heavily and have lost the one way assembly out on the track, you'll know why I think it's a good idea! 48DP gears are now fitted as standard, with a 21T pinion and 80T and 90T ring gears being supplied with the kit.

Four totally new design alloy shock absorbers are provided with a novel idea for adjusting the damping rate without changing the oil — just remove the spring, push the shaft up into the casing and rotate it. The effect of this is to squeeze an 'O' ring between two brass cone nuts which increases the 'O' ring diameter within the shock absorber casing. Neat eh?! They also could be better for those 'greens' amongst you. There's no excuse now to tip your shock oil all over the grass! Personally I'm not sure this system would be consistent in varying temperatures, and it can be a little difficult to get them adjusted equally. However, you still have the option of reverting to the old method of balancing by varying the oil viscosity. Progressive rate springs are supplied for the rear, but all four springs do seem a little hard to cover *all* track conditions; I would like to have seen a softer set included, or at least their availability as an optional extra! Perhaps that's to come. Mind you, I did dig through my pit box and found that Option House springs fit! It's also nice to see PB responding to previous criticism of their use of single seals on the shock absorber shafts — now two are fitted, so leaking shocks could be a thing of the past.

Shuffle the Pack (or putting the thing together!)

The Ace is not a difficult car to assemble, but it is no five minute job either! The following points may be useful to builders:

There are a lot of metal to metal threaded joints, on all of these use a thread locking compound if you don't want your car coming apart in the middle of the 'A' final! Position the ballrace in the centre of each differential pulley and not on the diff half shaft as suggested, otherwise you could find the race is only just sitting in the pulley. It also seems OK not to grease the diff balls — PB say they run their 1/8th cars this way with no ill effect! Anyway, we all know that greasy diffs get gritty quickly, don't we?

About the only Maxima parts retained on the Ace are the rear wishbones and stub axle carriers. As the same moulding is used for each side the rear wheel tracking is different on the right and left. This was a problem on the Maxima, but fortunately it was resolved by Ralls Racing. They designed a new glassfibre rear bulkhead with the wishbone pivots offset. In this combination the Maxima was a winner as anybody who witnessed Brennan Ralls RRC 'A' finals placings last year will vouch for. However, it is not so much of a problem on the Ace as the facility is provided to alter the rear tracking; in fact PB recommend a parallel tracking arrangement for greater speed. In order to achieve this straight line tracking I found it is necessary to insert one washer behind the right rear alloy mounting post and three behind the left. By the way, the Ace has the facility to increase the rear anti-squat setting.

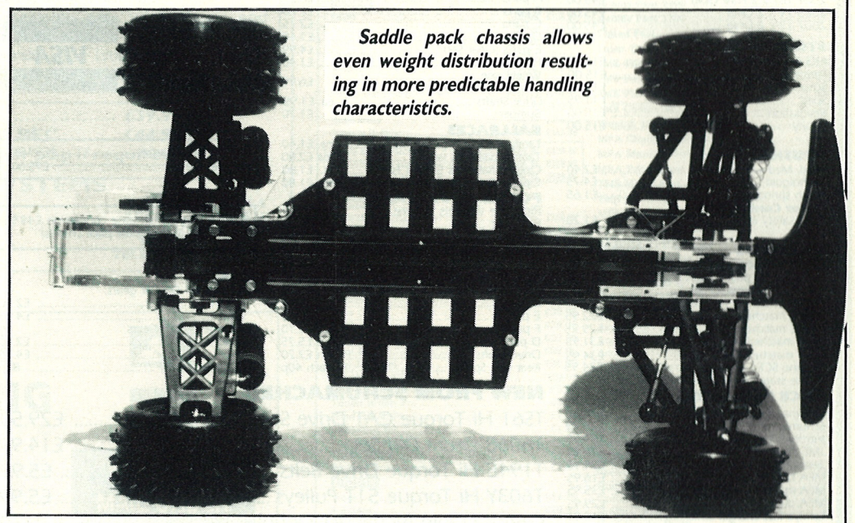
Cut off the unused right hand steering bellcrank arm or it will restrict the lock by fouling on the servo and use a light lubricant on the alloy plates when screwing in the self-tap screws.

Is Ace Trumps?

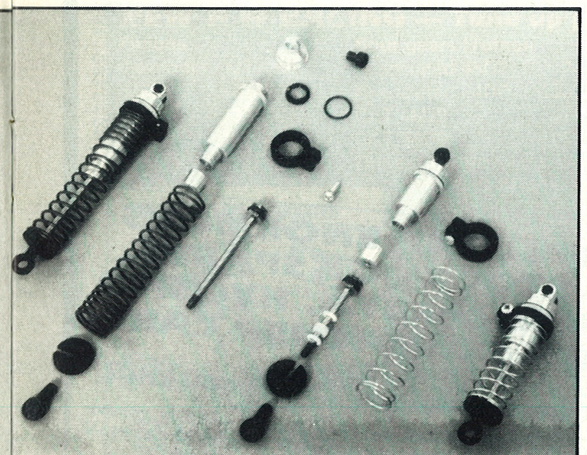
All in all an interestingly designed package that is quite different to the opposition, and if PB's previous cars are anything to go by, it should certainly be quick on the straights. We will watch with interest whether PB's formulae is right — who knows, maybe next season all cars will follow this trend!

The Ace is available from a PB dealer near you, price £199.

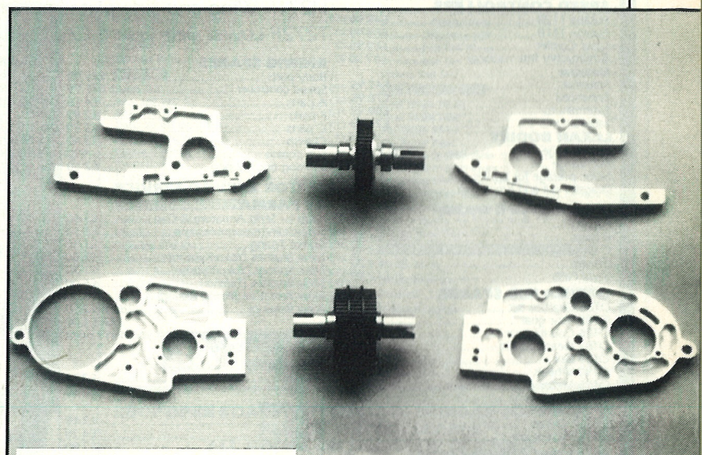
(My thanks to Richard Hopkins for the very nice paint job.)



Saddle pack chassis allows even weight distribution resulting in more predictable handling characteristics.



How it all works, the adjustable shocker.



Aluminium side plates are beautifully milled saving weight without removing strength.