

Paul Pagdin's Prototype car. Note gearing well clear of ground, silencer can as part of rigid box structure, and slight narrowing of box 'fuselage' in front

PB Racing

IT ALL HAPPENS AT HAVANT...

THERE IT WAS ON THE DESK a great shining lump of metal cunningly indented: nearby stood Prototype No. 1, muddy and short of a wheel, like a mechanical tomcat back from the wars. Keith Plested, 'Mr PB' rose from his drawing board and pointed: "There you are! First of the moulding patterns. Took an hour and a half on the Bridgeport last night. A toolroom man would have taken days. Another seven to make before I go off to Japan".

"How did the Austrian trip go in Vienna?"

"Oh, I won the Sports/GT in the Austrian GP. Wonderful new circuit, longest in Europe — over 300 metres long. Blew up an engine in the Formula; all my fault I had been running that OS for meeting after meeting — never a fault. I had to re-build the whole chassis too after a monstrous glitch. But it solved one of my problems. I have been putting the cars together on a perfectly flat surface with all modern aids. There I had the usual rickety folding table to work on. I took about an hour with an interested crowd of spectators. It looked all right and I went on to take the Sports/GT with it. When we got home I checked it — only about a degree out of line. This means that the ordinary driver building a kit probably without our works facilities for accuracy can do just as well ..."

"I expect you're quite relieved that the season is virtually over?"

"Not a bit of it! I'm entered for the Australian Grand Prix in October, I shall be going there first and then on to Japan ..."

Keith went on to explain that he was making a start on production for the PB all-suspension car with its chain drive. He pointed out the immense variety of gear ratios possible with this new departure, and the location of the gears well above the

danger level of getting torn by road surface with tyres running low on rubber. Then the problem of fewer and fewer teeth on the smaller spur gear automatically solved by the second gear step between engine and gearshaft.

Development was still continuing but he had now completed, with the assistance of Paul Pagdin, two more Prototypes. The Booth/Preston car (the third semi independent suspension car with De Dion suspension) had been really a stop gap job by Dave Preston to get into the 'wobbly wheel' set at short notice. For all that, the car had just won the Belgian GP in Ghent.

With eight days before his departure and lots to do Keith passed me over to right hand man Paul for a detailed photo session and discussion ...

Dickie: Tell me Paul what part have you played in this development?

Paul: The idea and initial development was done by Keith, during the months before the start of this season. Since then I have worked with him to produce first one prototype and subsequently a total of four cars which are all in various stages of development although we are now very close to putting the car into production.

Dickie: Now, starting at the front of the

car, what kind of suspension springing have you adopted?

Paul: We have torsion bar suspension which is quite soft. But we can utilise soft springs because we are using oil-filled shock absorbers of the telescopic variety as in fullsize practice to damp excessive movement.

Dickie: And can you alter the rate?

Paul: Yes, the rate is variable but we haven't found it necessary to change this. We would need to change the torsion bar which I think is a three or four minute job but we have not, as yet, come across a circuit which requires a change of spring rate.

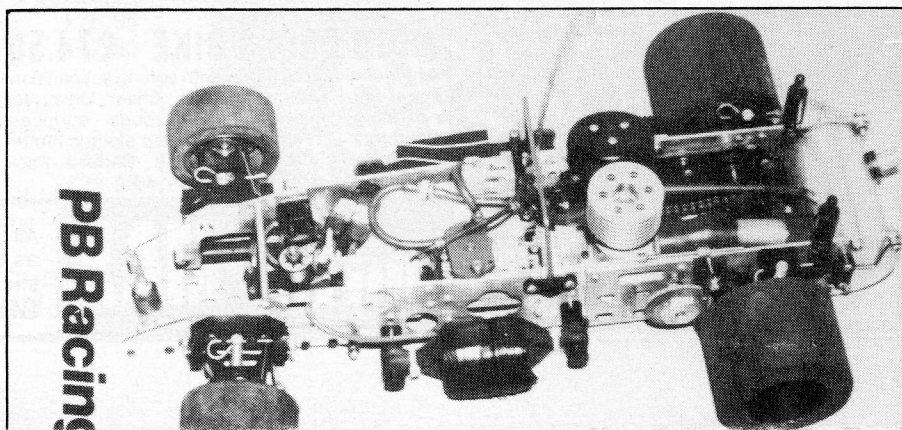
Dickie: Does this apply equally to the rear end?

Paul: Exactly the same system is employed with torsion bars and hydraulic shock absorbers. Again, we only carry one set of springs, but can adjust the right height which we find useful both at front and rear.

Dickie: I note you are retaining a rear end silencer with a straight through pipe to it; is there any special significance in that?

Paul: Yes, the silencer can is an integral part of the chassis and imparts a large degree of stiffness to the rear end. Using the construction which you see on the car

Other side view which shows straight through exhaust entry and location of disc brake



here we are able to retain a silencer which is adjustable, in that the length of mini-pipe can be changed by sliding the inlet pipe in and out of the can. Also it is improved because the exhaust is virtually a straight line, which is more efficient.

Dickie: Now coming to the chain. I did ask if you were using any special sort of chain, but I take it you are using any sort of available chain?

Paul: At this moment we are using as you say, available chain. On this particular car it is 5mm standard roller chain. I am almost certain that on the production cars it will be 6mm. This isn't due to any problems with the 5mm but 6mm is more readily available and even stronger.

Dickie: Well, that's important. Tell me, I see you've got a chain tensioner, that would, I imagine be retained on the production model in some form?

Paul: I would think so; some form of chain tensioner will be required unless we can get the design centres sufficiently accurate and chain life adequate without it.

Dickie: At the moment I think you are joining it with a link but in production I understand you will fit an endless belt?

Paul: That's quite true; in fact, this particular chain has no link — it is endless rivetted chain.

Dickie: The location of the chain and its accompanying gear is fixed permanently on the car and ratio changes effected by the spur gear — is that so?

Paul: This is quite correct, by utilising three clutch bells and three pinion gears we are in a position to have a wider range of ratios than one would normally use on a standard car.

Dickie: Almost like changing gears on a lathe?

Paul: It's a very quick matter also providing access to the clutch in a matter of seconds.

Dickie: I see that you have a box framework rather like a model aeroplane fuselage, slightly bowed coming through to the front.

Paul: Bending the chassis inwards of course gives a great deal of rigidity and we

think it is vitally important on a suspension car to have a very solid chassis that you can hang the wishbones on.

Dickie: At the moment you are using an OS engine — are you going to make it available for a general selection of engines?

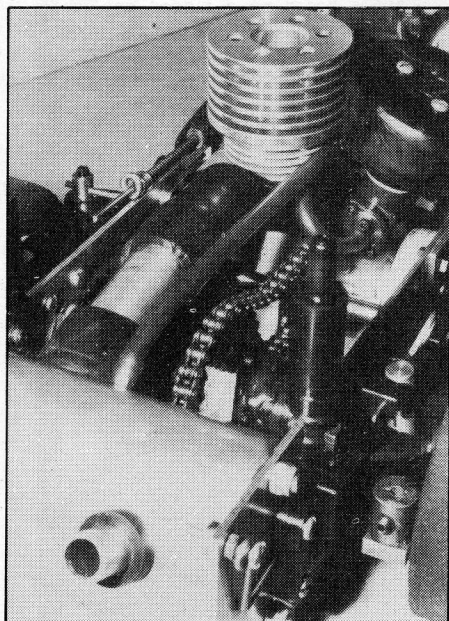
Paul: Yes, we are at the moment working on the rear exhaust engines. As it stands now the normal side exhaust engines will fit and before we get into production I am very confident we will have provision for the rear exhaust engines (Stop Press! Paul tells me rear exhaust engines can now be accommodated).

Dickie: But with a rear exhaust engine you will lose something of that straight through exhaust facility?

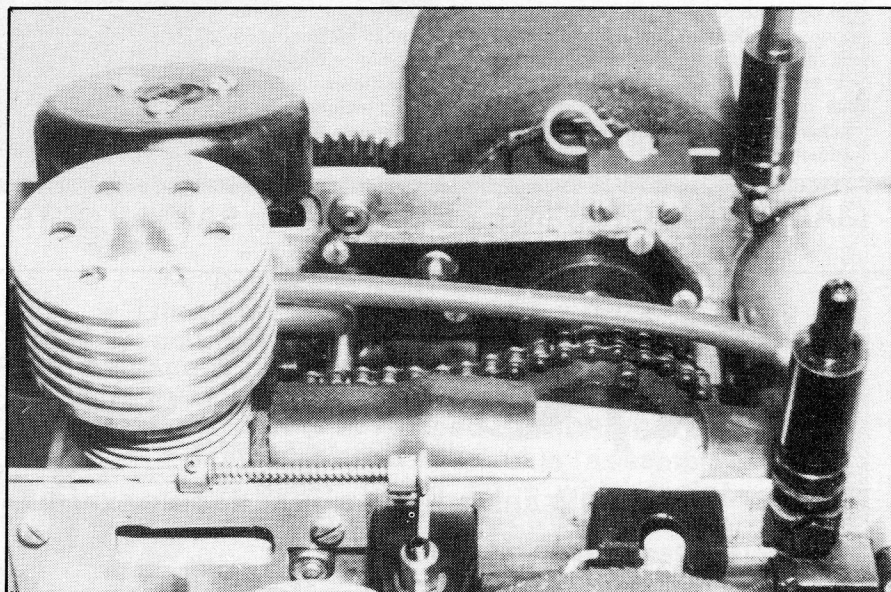
Paul: It will not be straight but we will still retain the rear can.

Dickie: Thank you very much for that. But can you give us any idea as to when it is likely to be in production?

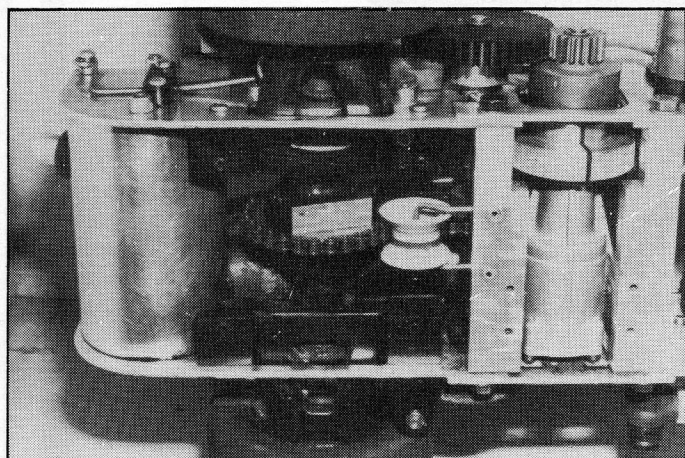
Paul: We are hoping for May/June next year.



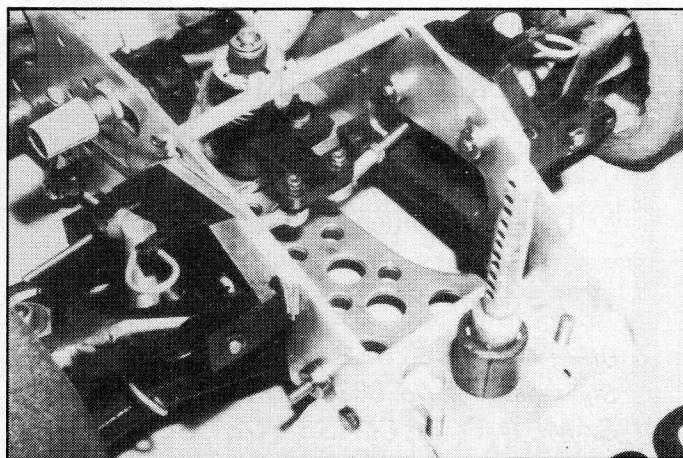
Another aspect of exhaust pipe and pressuring arrangement. Note also torsion spring



Close-up of exhaust pipe which can be adjusted; note also return tube to can pressuring fuel



Underside of chassis showing chain tensioner. An additional plastic moulding will enclose most of this underside for waterproofing purposes



Front end which shows the wishbones and torsion springs to advantage. Paul has indulged in considerable chassis lightening here