

HITLER AND GRAND PRIX RACING

The inside story of how Dr Ferdinand Porsche created the Auto Union GP car

BY DR FERRY PORSCHE

WHEN MY FATHER met Hitler in 1933 he was surprised at the Chancellor's memory. The meeting concerned the important question as to which German firm was to receive a state subsidy to build a new race car. Daimler-Benz, of course, was looking to the lion's share of this money but they had counted without Auto Union. The latter group sent officials to visit Hitler as well, and my father was one of those who spoke on their behalf. He had a long conversation with the new Chancellor and persuaded him that it would be to everyone's interest to have two different makes of German cars in competition. At least, when he left he felt pretty certain that would be the decision; but what surprised my father most was Hitler's memory, for during the friendly reception he said, "I remember you well, Doctor. We met at Solitude in 1925—wasn't it?" Yes, indeed, it was, although the conversation had then been extremely brief.

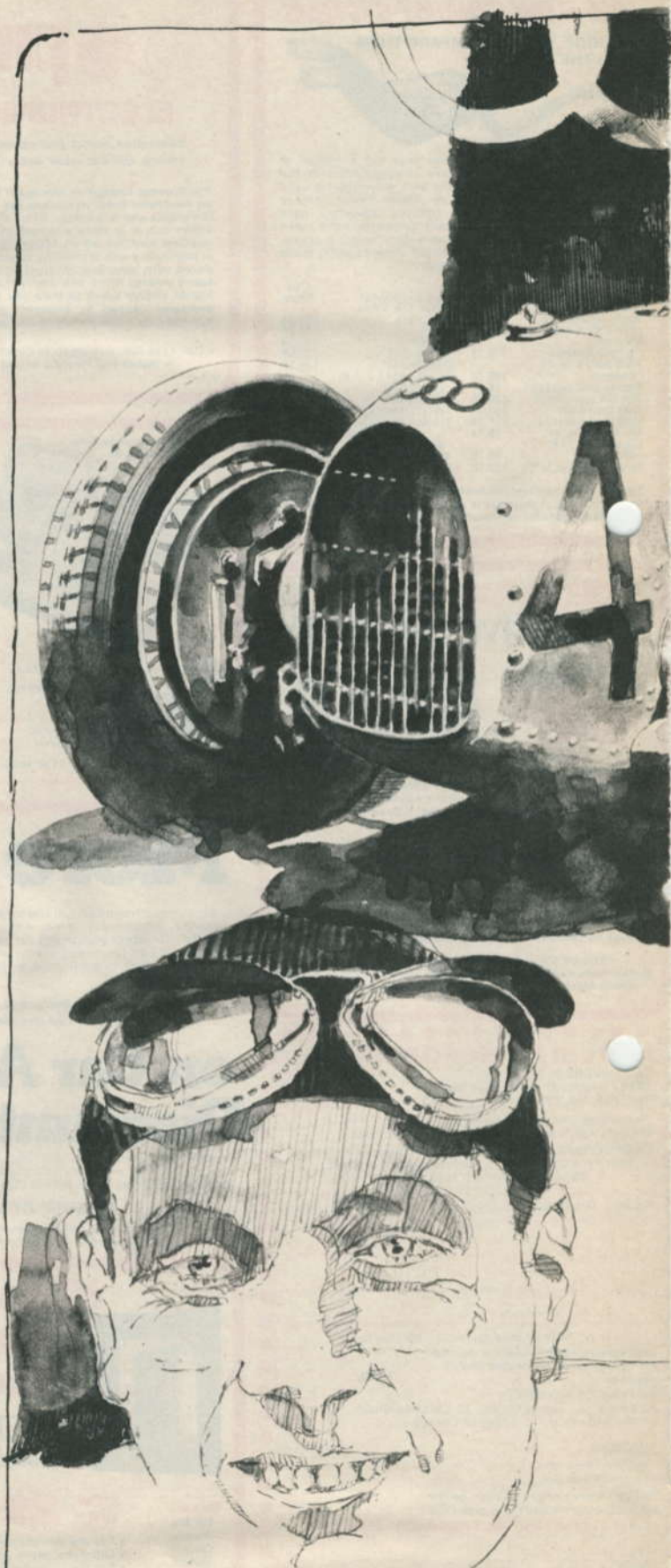
This time, my father made the most of the opportunity. It had been at the back of his mind for some time to build a German race car capable of gaining international recognition. So he took the obvious line of reasoning, never losing sight of Hitler's political motivation. From the standpoint of political prestige, he argued, few achievements would do more to carry abroad the new German ideology than a successful race car to appeal to the sporting instincts of people the world over.

So, while doing many other pressing things in 1932, we managed to squeeze in the time to complete the first design calculations for the future Auto Union. This was to be the most revolutionary and advanced design of any epoch, for a very long time to come. There was so much about it that was totally new to racing and made a clean break with so-called tradition—a 16-cylinder, supercharged engine; a unique system of valve actuation; torsion bar suspension and many other features about which (despite the explorations of many writers) there are still things to be said. The basic concept was to squeeze enormous power into a very compact, streamlined body of surprisingly modest dimensions. There was not, and indeed there would not be for many generations, any sort of race car with design ideals resembling those that we could already see clearly.

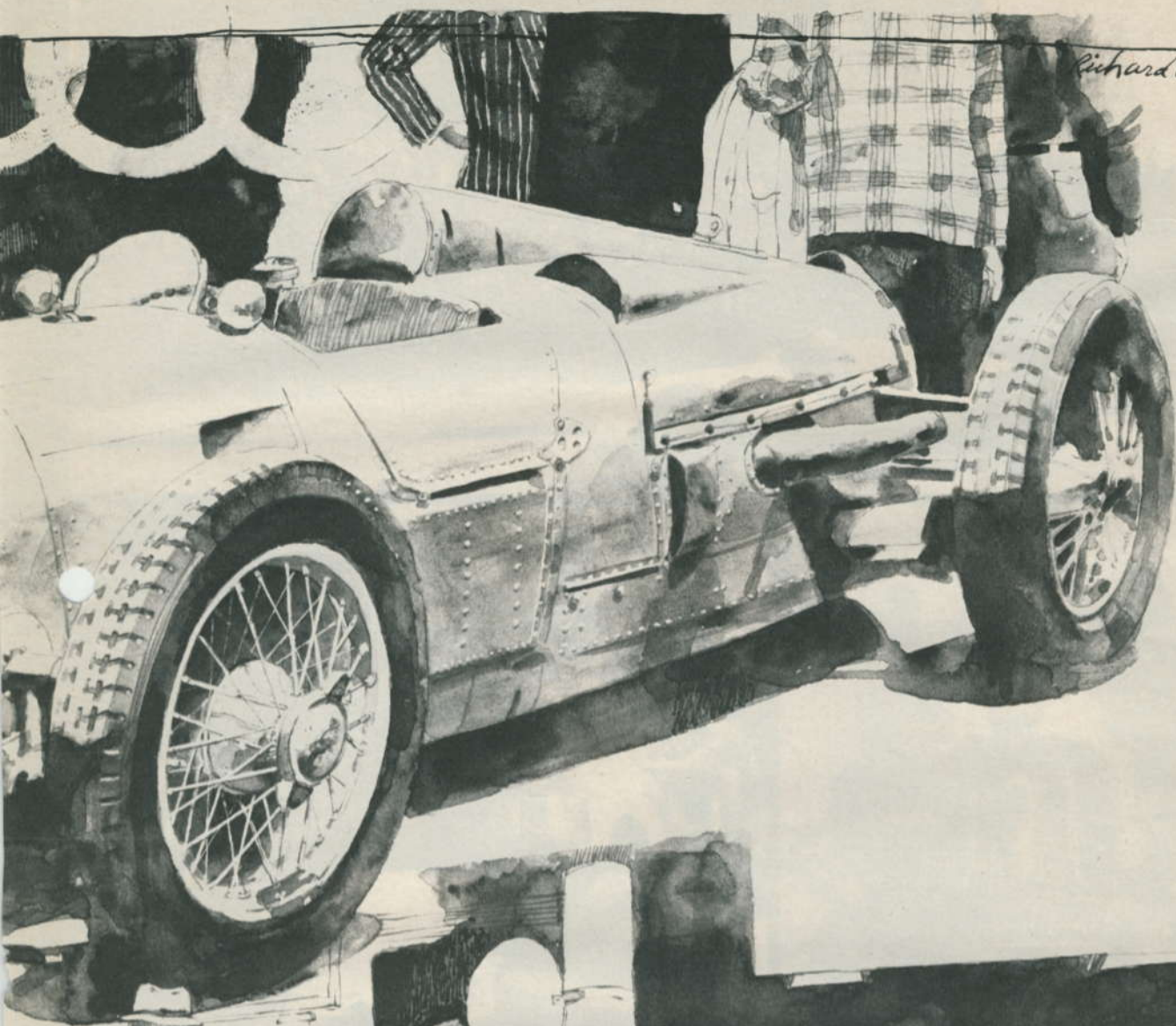
One thing I don't believe many of today's racing enthusiasts appreciate is what a bonanza the (then) new 750 Kilogram International Grand Prix formula really was. This set the maximum weight of the car at 1650 lb but put no restriction on engine power or design features. We, of course, had previous experience in race-car building with Austro-Daimler and Daimler-Benz, but the specific novelty of the proposed car was that it was "all free." Our main problem, therefore, was to build an engine of the highest capacity consistent with the lowest weight. Our starting point was a V-16 with only one camshaft in the head, operating the valves on both banks. We got around this hurdle by actuating the intake valves with fingers and the exhaust valves with short transverse pushrods. The valves were arranged at an included angle and the combustion chamber was hemispherical. To minimize weight, there was also the →

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80 ROAD & TRACK



The young Bergmeister, Shelsley Walsh

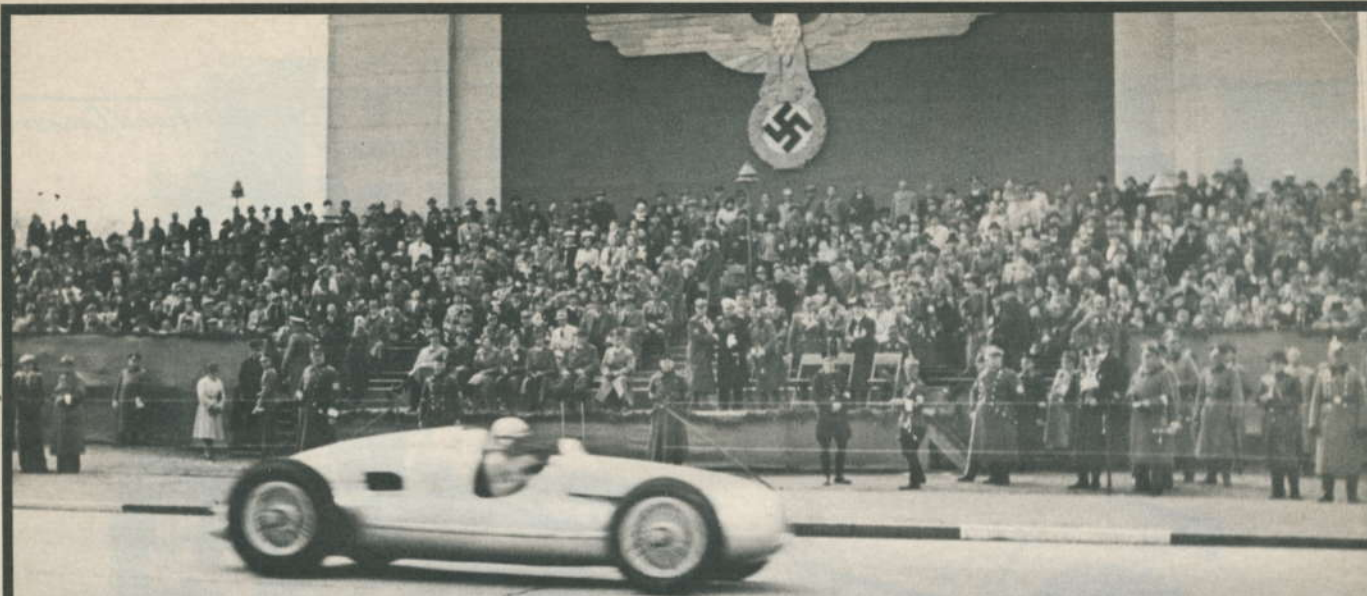


Richard Corson



Left to right: Auto Union
racing director Dr. Fahrenzeisen,
Bigalke, Nuvolari, Hasse, Kautz,
Hans Stuck, Muller and
Paula Stuck.

ILLUSTRATION BY RICHARD CORSON



PHOTOS BY KURT WÖRNER



In May, 1939, this 3-liter V-12 Auto Union was demonstrated in Hamburg for the assembled dignitaries (above). Like to change sparkplugs? There were 16 for this 1937 Auto Union (far left). To 1939 again (left) and soldiers pushing the car to the track at the Nürburgring. Professor Ferdinand Porsche (below), genius behind the Auto Union cars, confers with driver Bernd Rosemeyer.



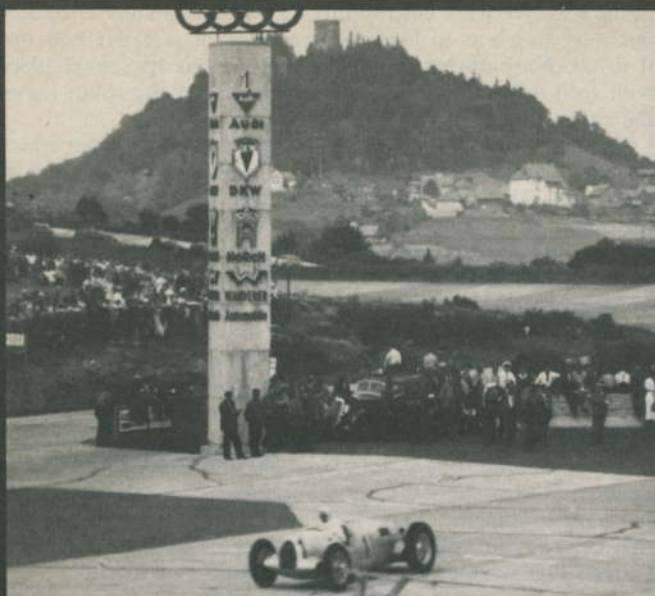
question of where best to locate the engine.

I was responsible for this entire calculation and it soon became clear that if we placed the engine in the middle and the gearbox behind the axle, we would achieve the lowest possible combined weight without sacrifice of strength. You have only to look at some of today's Grand Prix cars to see what I mean. As to the torsion bars I've already mentioned, we at first made use of these only in front, going subsequently to the all-round design. The body, if it could be called that, was in itself a masterpiece of lightness and compactness. It was designed by one of our people, Mr Erwin Kommenda, who got the whole thing down to a mere 45 kilograms or 99 lb! Still we did feature a "chassis" which consisted of two parallel tubes serving an important purpose beside their natural function. Cooling water from the center-mounted engine circulated through these tubes, passed through a special radiator

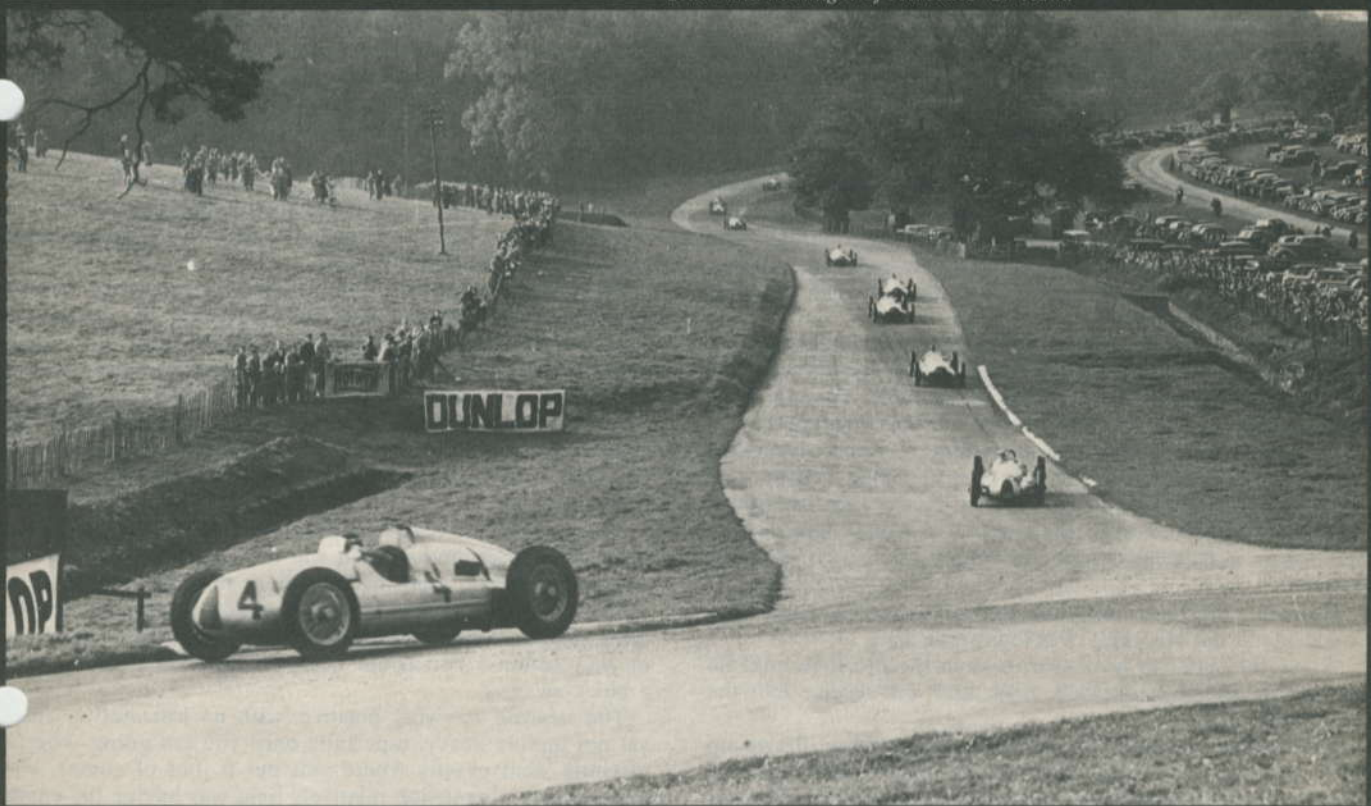
at the front of the car and then recirculated back into the cylinder block through the other tube.

It naturally takes a team of dedicated and capable engineers to put together the ideas that ultimately become a race car, and here are some names that certainly deserve mention in connection with the Auto Union. For instance, our engine specialist, Mr Kalles, was responsible for getting all the bugs out of a pretty complex power unit—or as many as he possibly could. The "chassis" became the responsibility of Mr Froelich while, as already mentioned, the bodywork was Mr Kommenda's province. My particular job on this project was more that of a coordinator responsible for seeing that the team worked smoothly. More than this, I was charged with the problems of calculating weight distribution and so on.

All this is by way of explaining our fairly high state of readiness when the time came soon after Hitler's accession to



Hans Stuck (left) running past the rather imposing Auto Union tower at the Nürburgring. Stuck again (above) now in one of the popular pre-war hillclimbs. Donington Park, 1939 (below) with Tazio Nuvolari leading Stuck and the might of Mercedes' GP team.



power in 1933, for some kind of a concrete, practical proposal to build a really modern German race car to the new Grand Prix formula.

Adolf Hitler's speech at the opening of the 1933 Berlin Motor Show had a very favorable effect not only on public morale but on the industry itself. Besides proclaiming that cars would no longer be taxed, he announced that work was beginning on a gigantic cross-country *Autobahn* system.

Last but by no means least came what we at Porsche had been waiting and hoping for. Germany must have some really good Grand Prix cars, competitive in every way. This was a "necessity" and it would be a "fine advertisement for Germany." By which Mr Hitler meant, of course, excellent political propaganda.

At this point, we, as the independent designing firm of Porsche, were free to approach Auto Union, Daimler-Benz or

anyone else who might be interested (and in a position to do something about it) and offer them our own race car design which, by then, was pretty well advanced. If you stop to think about it, we were in an enviable position, with a head start in design on everyone else and beholden to no manufacturer since we were not in the business of building cars.

At about this time, too, I think, the Government offered the sum of 600,000 Reichmarks to subsidize whichever firm might decide to start building race cars of international merit.

Conversations we had with Auto Union brought forth a very favorable reaction, but there was one little catch.

"Yes," they agreed, after a good look at our drawings. "We like your design and we'll go along with all the basic features you want to put into this car, provided we are included in the 600,000 mark bonus offered by the Government."

"As you well know," my father told them, "the decision does ➡

not rest with us. But I'll try to arrange a meeting between the Reichskanzler and you people."

He had a special reason for wanting this meeting to take place. It seemed as if Hitler was inclined—very much inclined—toward awarding the 600,000 RM to Daimler-Benz as being the best equipped and most promising manufacturer of race cars. This belief was not without foundation, but the whole business deserved to be discussed openly. The meeting took place at the Chancellery in Berlin and my father took great pains to point out to Hitler that in Saxony as well as in Württemberg there was a high level of engineering skill available (Auto Union, of course). This manufacturer could translate into reality a very modern and quite unique mid-engine race car design which we at Porsche had practically ready, down to the most intricate drawing.

"You mean," the Führer said, "that given the materials and the means you could make an immediate start?"

That was exactly what we meant and my father said so. And this, I think, really rang the bell with Hitler. He had never forgotten the meeting with my father at Solitude, eight years before, brief and casual though it had been.

And as always, when his curiosity was aroused, his voice became harsher and his strange blue eyes brightened with intensity.

"Tell me something, Herr Doktor, why do you want to build a race car with a 16-cylinder engine and all the attendant complications? I'm not an engineer, but . . ."

My father turned this argument aside for a more practical one.

"Simply because it's better to have a much greater number of small explosions in each cylinder than a few very large ones. Or to put it more simply, you get much smoother running from the explosions in those multiple 'thimbles'—which in turn means less wear and more acceleration. And that, after all, is much of what racing is about."

However my father precisely phrased it, or what else he said, his arguments certainly convinced Hitler that he was right. So the Chancellor agreed that Auto Union and Daimler-Benz would share the 600,000 RM offered by the Government.

As was to be expected, Daimler-Benz was very displeased and would not accept this verdict. They appealed to Hitler and pointed out, "As it happens, we also have a race car design well advanced. And even though it is a front-engine layout, this too is a Porsche design. So who is to say which is the better?"

However, Mr Hitler was not one to change his mind once it was made up. His reply was logical, at least.

"It's a lot better to have two irons in the fire than one! So we will go ahead as decided. Each firm will receive half the financial help."

This suited us quite well and we had a contract drawn up with Auto Union, in which part of the money received from the Government would have to be turned over to the Porsche company. This contract was to remain valid for the entire period of the International 750 Kilogram Formula.

Soon the No. 1 Prototype Auto Union was ready for its first road test and I had the privilege of driving it. This was a long time ago but my first impression remains as vivid as ever. I will try to describe it briefly. First of all, the noise. The engine kicked-up a tremendous racket compared with any ordinary car when you put your foot down the least bit; but even this was a relative thing. The smaller and much more frequent power impulses gave an impression closer to that of a turbine than an orthodox racing engine. But there was much more to it than that, of course. By comparison, when I kicked down hard on the throttle of our faithful Wanderer touring car, for example, the reaction was so slow that I had an uneasy feeling for a moment that the accelerator pedal was disconnected!

Of course, we soon found that the road nearest the factory was of little use in testing a machine of the caliber of the Auto Union. The car was much too fast, and besides the devastating acceleration there was the problem of ordinary traffic getting

in the way. We were not running on a closed circuit! Therefore our next step was to load the machine on a trailer and tow it to the Nürburgring. Here the first serious tests took place with such drivers as Stuck and Leiningen on the south leg of the course.

The first Auto Union had a capacity of 4.5 liters from which we could obtain between 240 and 250 bhp at a maximum of 4500 rpm. That was in the beginning. Very soon we raised the output to 350 bhp, then 400 bhp, which was about as much as we could reliably expect from 4.5 liters. However, by using our ability to increase the engine capacity to 6.0 liters, it was not long before we upped the output to more than 600 bhp! With a car weighing well under 1600 lb we had at our disposal about 0.38 bhp for each pound of weight—a fantastic power-to-weight ratio by any standards and at any time. (Today's Porsche 917 Turbo has a power-to-weight ratio of 0.63 bhp/lb.) And the beauty of this output was that we got it at really low engine revolutions—somewhere between 5000 and 5500 rpm! The reduction in wear and the resultant increase in reliability are not hard to imagine. Expressed in practical terms, this meant that each engine could be run for three or perhaps even four Grands Prix without any major overhaul.

Getting back to personal driving impressions, the one thing you had to be very careful not to do with an Auto Union was kick the throttle down hard from a standing start. Very wide tires did not exist in those days and even our first car disposed of far more power than its tires could possibly put down the road. So, if you were not extremely careful, the wheels would spin and smoke and the rear end of the car would begin to snake alarmingly so that you had to really fight to regain control and maintain a reasonable balance between acceleration and roadability. Until you got that part of it licked you could get yourself into serious trouble.

The racing seat of the Auto Union was not exactly like the armchair in a clubroom and the suspension by present-day standards was harsh and unyielding because a lot of technical points about roadability and chassis tuning had not yet been thought of; but even the hard ride was not unbearable. However, that still left plenty of other things to worry about. The clutch was necessarily quite heavy and there was no assist. So you could not fool around with it. There were just two positions—in or out!

We did use a five-speed gearbox but it had, of course, straight-cut teeth, and while it was easy to shift if you double-clutched properly, used the throttle at the right moment and showed the right degree of determination in moving the gear lever, heaven help you if it sensed any weakness or hesitation in your actions. You could hear the noise of clashing teeth a block away.

The steering was very positive, with no lost motion at all, yet not unduly heavy, especially once you got going. The car instantly went exactly where you put it, but of course what made the steering action relatively light was having the engine behind you. The Auto Union, I supposed, could be described in today's terms as having a high evasive capability. As for the brakes, they were very good, but this efficiency was mainly because of the very large drums mounted on 22-in. wheels, with a relatively light overall weight.

To sum it all up, when you finally got a decent road grip, you could then kick down the throttle, get a howling, almost deafening response from the engine and absolutely catapult down the road. There is no other word for it.

But like all the things you enjoy most, this testing period came to an end all too soon. My father had different ideas.

"I don't want to encourage you in any way," he said. "It's too great a responsibility. And since you obviously do have a strong potential as a racing driver, the best thing you can do is to stay out of race cars in the future."

"But father . . ." I objected.

"Your real job," he went on, totally ignoring me, "is to be a car designer. You're pretty good at that too, so stick with it. At least you won't get hurt."