

Mid-Engine Myths by David Blumlein

Historians have always to be on their guard against accidentally propagating myths and the history of motoring tends to carry its share of misleading "facts", some of which remain uncorrected sometimes for years. They certainly do creep into the motoring journals, especially those which specialise in classic cars. A typical example is to look upon Colin Chapman's beautiful Lotus 25 as the first monocoque racing car - absolute nonsense! Another favourite surrounds the origin of mid-engined cars, i.e. those whose engine is placed ahead of the rear wheels and behind the driver, as is now almost universal in racing machinery.

I am prompted to mention this having seen in FSW 3/2009 Ixo's Mercedes 150 Sports Roadster ([IXOMUS018](#)), a rare and historically important car dating from 1935, so frequently labelled as "the World's first mid-engined production car". Wrong! So, what is the truth?

As with most concepts, we can so easily quote the old adage "there's nothing new under the sun", and mid-engined cars really do have their origin at the very dawn of motoring. Strictly speaking, for example, Peugeot's Type 9 in 1894 was mid-engined because it had a Daimler v-twin mounted ahead of its chain-driven rear axle, the occupants on top as was the case with so many of these pioneering cars. Then with the advent of the "système Panhard" in 1891, cars quickly settled down to be front-engined and rear wheel-driven and to find the true expression of what we understand to be mid-engined we need to turn to the vision of Edmund Rumpler in his works at Berlin-Johannisthal.

This genius created and patented in 1919 a design for a car based on the shape of a 'teardrop', the chassis being a pressed steel frame that followed such a shape. A central driving position was located up front with the passengers behind, but ahead of a mid-mounted engine in unit with a gearbox and transaxle driving the rear wheels. Known as the "Tropfenwagen", examples of open and closed bodywork accompanied two chassis at the 1921 Berlin Motor Show where their advanced features made them the "star" of the show. In practice their rear swing axles - and it was Edmund Rumpler who invented the swing-axle while at Adler's in 1903 - were a source of trouble but some of these amazing cars were used as taxis in and around the German capital. That mid-mounted engine was itself unusual in the early cars, consisting of three banks each of two cylinders in W-formation, this unit being made by Siemens and Halske and having a capacity of 2580 c.c. Later a 2.6 litre four-cylinder unit replaced it. So there was a genuine mid-engined production car, albeit not produced in big quantities, a fire at the factory having a devastating effect on output.

Among those who took notice were the board of the Benz company in Mannheim and they obtained a licence allowing cars of Rumpler's design to be produced. A Tropfenwagen tourer was purchased for evaluation and was filled with a 2.6 litre four-cylinder side-valve Benz engine. Soon the board was persuaded that it would create good publicity to anticipate the production of similar cars by building a racing car for the 1922 2-litre formula. At the same time, the Benz leaders decided not to seek a full licence and went ahead developing their own interpretation of Rumpler's basic concept. The work took longer than expected but the result was, on the race tracks, an amazing challenger which was given the official title of Benz RH (Rennwagen Heckmotor) which means rear-engined racing car; the engine albeit behind the driver was mounted like the Rumpler ahead of the rear-axle and was in fact mounted in the middle, anticipating the emergence of the Auto-Union some ten years later. Benz designed for the car a new d.o.h.c. six-cylinder two-litre, the cantilevered semi-elliptic springs were copied from the Rumpler although the swing axles had universal joints to avoid Rumpler patents! The radiator was mounted above and behind the engine and the three-speed gearbox was located between the engine and the final drive.

Three white cars appeared at the Grand Prix of Europe at Monza on 9 September 1923. Willy Walb, who was closely involved in the car's development, had engine trouble, but Ferdinand Minoia, a veteran of the 1908 French Grand Prix (Lorraine-Dietrich) and winner of the first Mille Miglia in 1927 (O.M.), came fourth with Franz Horner fifth, a very encouraging debut for these radically different cars. That was their only Grand Prix appearance as the economic situation in Germany in those very difficult times after the Great War curtailed such activities, although we find the RH being adapted as a 2-litre sports car at the end of 1924. These came to have a new nose with faired in headlights and the spare wheel placed flat in an upper compartment which caused the fuel tank to be relocated in the extreme rear of the chassis in a new, later more, rounded tail. Eventually the radiator found its way up front and the addition of wings and even splash guards as on the Rumpler passenger cars helped to make the conversion more convincing - shades of what was to be done with some of the Cooper-Bristols thirty years later! These sports Benz cars performed within Germany, notable successes including Alfred Rosenberger winning and setting fastest lap in a five lap sports car race at the new 13.8 mile road circuit at Solitude and setting a new record for the Herkules hill-climb near Kassel, and Walb winning the sports car class in August 1925 at Freiburg. These works-supported ac-



The inspiration for this piece, Ixo's die-cast (IXOMUS018) of the Mercedes-Benz Type 150 Roadster

tivities finished at the end of 1925 and we must remember that Benz was at this time preparing to combine with its great rival, the Daimler-Motoren-Gesellschaft to become Daimler-Benz or as we know it more familiarly, Mercedes-Benz. As the new company evolved, two of the Mannheim engineers, Hans Nibel and Max Wagner, rose to high positions and they had not forgotten the benefits of mid-engines on roadholding.

The new company, by the early Thirties, was working on a small rear-engined passenger car, the Type 130H, which was launched in 1933. It was not the most successful offering from the famous company but it encouraged the emergence of the Type 150 sports car which was a direct descendant of the Tropfenwagen with which it shared its engine location. The Type 150 had a 1498c.c. overhead camshaft engine (whereas most production Mercedes-Benz cars at the time had the L-head sidevalve units) and a tubular backbone chassis forked at the rear to accommodate the engine, this the work of Max Wagner. Front independent suspension was by twin transverse leaf springs while at the rear the coil sprung swing axles were carried over from the Type 130 saloon as were the main elements of the four-speed transaxle. The radiator was a large double-core block at the rear above the transaxle and air was ducted through this by a big fan which also conveniently delivered low pressure air to the carburettor.

It is probable that no more than twenty five of these cars were produced and two body styles were made: the two-seater roadster with two spare wheels mounted on the sides to create more luggage room, the lack of this being an integral weakness in the mid-engined production car - look at the Bugatti Veyron; it possesses no room for luggage at all! Possibly just six cars came with a coupé body but these were very much aimed at competition work. The front end was more aerodynamic than the roadster and the rear panels were liberally louvred with a narrow slot in the roof for rearward vision through the interior mirror.

Several of these coupé cars took part in the 1934 2,000km trial around Germany which had its start and finish in Baden-Baden. Four of the Type 150 drivers won a gold medal including a 25-year old Hermann Lang who

had been with Daimler-Benz just a year as a racing mechanic; it was his first success on four wheels. One of the coupés also won a special award in August in the more demanding Liege-Rome-Liege rally for being the leader in Pisa on the way back from Rome. Berlin's Hans-Joachim Bernet finished without penalty points and was the best placed driver of a closed car at the finish.

By 1936 Daimler-Benz gradually lost interest in rear and mid-engines and the normal front-engined cars were at the forefront of their production once again. We find little deviation from this acceptance of the "système Panhard" from most manufacturers as Europe emerged from another world war, the Volkswagen Beetle and Renault 4CV being the obvious examples of big companies putting the engine in a different place. The race track dropped some hints, the odd M.A.P. Diesel in 1950 being the first mid-engined car to run at Le Mans, and the 1953 Porsche 550 coupés having their engines "in the right place" as they won their class. The T39 'Bob-Tail' Cooper-Climax hinted strongly at that company's forthcoming successes in the Grand Prix world but it was not until the racing fraternity had got the message well and truly after Cooper's two Formula 1 World Championships that production engineers investigated more earnestly the concept of mid-engined road cars. René Bonnet, having split with his long time associate Charles Deutsch over the future of the amazing flat-twin Panhard engine, went his own way and developed what was to have been a sports coupé with a mid-located Mini engine set transversely (anticipating the Deep Sanderson 301) but Renault came up with an offer and Bonnet's engineers mounted the French unit longitudinally albeit in the same position. This René Bonnet Djet went into production at the end of 1962 and thus became the world's first mid-engined production coupé, shortly followed by the Ferrari Dino, de Tomaso Vallelunga, Lamborghini Miura, ATS 2500, Lotus Europa...

René Bonnet made 198 of them which was considerably more than Rumpler production and, of course, the Mercedes-Benz Type 150 but they are all landmark cars in the wonderfully interesting history of the motor car.