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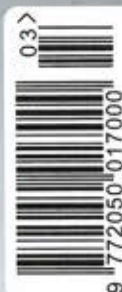
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HAMMER HAS BECOME A CATCH ALL NAME FOR AMG'S HOT W124, BUT THERE WERE MANY VARIATIONS ON THE THEME

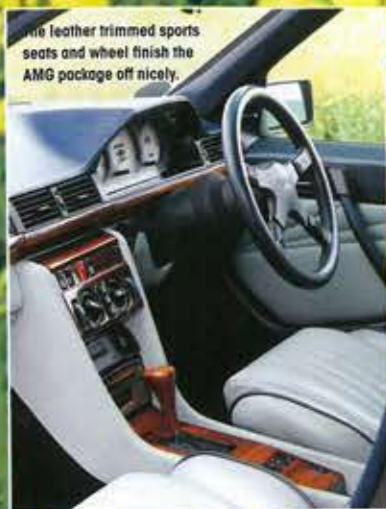
Muscle building

AMG created the first ever V8 powered W124 back in 1986. Ian Kuah tells the full story of the legendary, super fast saloon that became known, unforgettably, as the Hammer

IMAGES Ian Kuah



"THE FUEL TANK WAS STOCK 300E BUT THE MOTOR DRANK 30 PER CENT MORE, SO HURTLING DOWN THE AUTOBAHN MEANT STOPPING EVERY 200KM"



The leather-trimmed sports seats and wheel finish the AMG package off nicely.



Early five-litre, four-valve AMG-tuned V8.



In speed trials a Hammer's speedo showed 182mph.

While most Mercedes enthusiasts are well acquainted with the 500E/E500 of the early 1990s, fewer may be au fait with a much rarer beast, the AMG Hammer. It would not be wrong to call the Hammer the father of the 500E, at least in concept, for while Mercedes-Benz kicked off the idea of a big V8 saloon with cars like the 300SEL 6.3 back in the 1960s, AMG's creation was the first time a V8 went into a mid-sized body shell, the W124 saloon of the mid 1980s.

With nearly three decades passed since it appeared and AMG absorbed into Mercedes-Benz in 1999, there are very few people left at AMG today who worked on the Hammer, but we tapped into that period when we spoke with Hartmut Feyhl (pictured above right), owner of Florida based Mercedes tuner RennTech. Feyhl worked for AMG in Affalterbach in Germany in the mid 1980s and went on to head the technical department of AMG North America.

"AMG mooted plans to shoehorn the M117 V8 into the W124 as far back as 1984," he recalls. "At the time, it was a bit of a weekend project and I remember the hilarious episode when we taped up the prototype bumper/spoilers to take moulds off them. The man whose task it was to prepare the car for this used AMG packing tape to protect the prototype parts from the plaster. By the time we came to remove the tape, the heat had transferred the AMG lettering on the packing tape to the bumpers and the car ended up driving around with 'AMG' lettering plastered all over it!"

Feyhl went to America in October 1986, having by that time built two prototypes in Affalterbach. "The car had already been nicknamed 'The Hammer' and one of my first tasks in the US was to build Hammers there," he says. "AMG sent over five kits of parts in a container and the first US spec Hammer was a red car based on a 300E."

Hammer has become a catch all name for AMG's hot W124, but there were many variations on the theme. "The first Hammer we ever built in Germany was based on a 200," Feyhl says. "We experimented with the five-litre engine from the W126 first as we were already tuning it. In the ensuing months, we had 5.2-, 5.4- and then 5.6-litre versions in two-valve form. The 5.2 was a very sweet motor but the 5.5, and especially the 5.6, were really potent."

The making of a Hammer, or 300E 5.0 AMG as it was officially known, included stripping the car, making cuts in the engine bay for clearance, fabricating new bulkhead sections where necessary, reinforcing the engine bay and installing the big V8. "The frame rails towards the rear of the engine bay had to be modified," Feyhl recalls. "We welded in stiffeners and made a new firewall that was also removable. Weight distribution was not too badly affected as the six had an iron block and the V8 was all alloy. The subframe, propshaft and driveshafts were upgraded to take the much more potent engine, and we also added a US made Gleason-Torsen differential." The interior was stock 300E, but with a different speedometer.

"The stock gearbox was borderline with this kind of power, and it was only later, when I founded RennTech and some Hammer owners started coming to me for rebuilds, that I did some modifications to strengthen it," explains Feyhl. "The gearbox is fine when you run fast on the autobahn, but some of the US owners were running hard from stoplight to stoplight and heat soak was a problem."

The prototype Hammer went like a rocket up to around 280km/h (174mph), but it proved hard to get it beyond



ABOVE Three-pointed star car was transformed during its visit to the AMG workshop.

ABOVE RIGHT Working for AMG, Hartmut Feyhl was a key engineer on the Hammer project.



290km/h. "We tried lowering the car, fitting narrower tyres and experimented with final drive ratios, all without success," Feyhl recalls. "We then blueprinted an engine and installed special cams, which boosted output by 20bhp, but even that was not enough to break the magic 300km/h barrier."

Then they started on the aerodynamics. "We tried cleaning up the underbody, which was already pretty good on the standard car, and at one point we even had an adjustable spoiler system whose angle of attack could be mechanically changed via a control on the dash!"

Driving the Hammer was quite an experience, according to Feyhl, and in the absence of a big budget development programme, the approach was very much suck it and see. "I built the second ever Hammer for [AMG founder] Hans Werner Aufrecht," recalls Feyhl, who had to drive it to Estoril, Portugal for Domingos Piedade, HWA's partner in the company, who was heavily involved in motorsport – the Hammer was to be the medical car for the Formula 1 grand prix in that country.

"This was the first high speed, long distance run I did with the car and believe me, it was an adventure," Feyhl smiles. "It had standard single-piston 300E brakes and very lightly uprated suspension, so with nearly double the standard power and a tonne more torque it was really scary. A couple of times when trucks pulled out on me on the autobahn I thought I was not going to make it."

"Then I reached the French border and braked hard from over 200km/h. By the time I pulled up beside the French customs officer, the brakes were almost on fire. I used up one set of brakes going down to Portugal and another set coming back!"

But this wasn't his only problem. The fuel tank was stock 300E but the motor drank 30 per cent more, so hurtling down the autobahn meant stopping every 200km. It wasn't just the fuel consumption that was scary. "The handling was also very entertaining," Feyhl laughs. "The car was nose heavy, and tyres in those days were not really very good at the sort of speeds the Hammer was capable of. They were fine when new but by the time they were half worn, like when I was coming back from Estoril, the handling was unpredictable to say the least."

When Porsche helped Mercedes develop the 500E, many components from the then new R129 SL were used. It had the later M119 series 32-valve motor, but the Hammer's →

It was so quick that even high performance tyres of the day struggled to cope.



⇒ engines were based on the previous generation two valves per cylinder motor from the W126 S-Class. The first M119 version, the M119 960, came in the first 500SL R129 and had Bosch CIS KE injection. AMG built the last few Hammers with that motor, and also developed a boat motor based on it.

"We used the 335bhp five-litre engine until 1984," Feyhl recalls, "then stroked the motor to 5.2 and then 5.4 litres. We bought a load of old cranks for the previous 450 motor and these had 50 or 52mm diameters on the con rod big ends. On the 5.0- and 5.6-litre engines, the diameter was 48mm, so we offset ground them to give a suitable stroke for 5.2 litres.

"We also nitrided the cranks to toughen the metal. The 5.4-litre version was both bored and stroked, adding 2mm to the bore. Then the factory 5.6-litre motor came along and AMG bored that out to six litres, making the 5.2 and 5.4 conversions obsolete overnight." The KE Jetronic fuel injection had enough headroom for the job in hand and was therefore only lightly modified by AMG's engineers.

But it was the new cylinderhead that really unleashed the power. The four valves per cylinder arrangement was developed in 1984 and was available for the various engine capacities; AMG had two-valve and four-valve versions of each engine, but the four-valve heads were very expensive. "The heads were a three-piece plus rocker cover design, with the valve guides going through two of the components at an angle, and as we progressed, the castings changed to improve certain aspects," he says. "There were also three generations of rocker covers!"

"We had big issues with the early cams," he continues. "They used to break in the front neck area because of the loadings imposed by the drive chains. A vibration at around 5,000rpm on part load would simply snap the cam near the front. So we ended up with three generations of cams as we increased the bearing sizes from 25mm to 26mm, and finally 26.5mm in an effort to cure the problem."

As AMG was then still a relatively small tuner, costs were saved by parts sharing rather than developing bespoke parts. Erhard Melcher (the 'M' in AMG) designed most things, made the mock-ups from wood and then did the



AMG plate is proof of this Hammer's authenticity.

drawings, machining and even making his own machines to grind the camshafts from blanks.

According to Feyhl, at least six Hammers were built for the US: four saloons, one estate and a coupe, although the coupe had a two-valve motor. "The coupe was built after I left [in 1989], and there is a possibility that there could have been as many as eight cars built here in total," he says.

The Hammer used the M117 motor, engine code M117.968, while the Hammer coupe was a 300CE 6.0. The 5.6-litre four cam motor in the 300E 5.6 AMG had a bore and stroke of 96.5x94.8mm, and made 355bhp at 5,500rpm with 376lb ft of torque at 4,000rpm.

In 1987, *Road & Track* and *Auto Motor & Sport* co-operated in a top speed shoot-out at VW's Ehra Leissen proving ground in Lower Saxony in Germany. The Porsche based Ruf CTR Yellow Bird topped out at 211.4mph, but the red AMG Hammer was not disgraced.

Running the taller 2.24:1 final drive, it did 0-62mph in 5.2 seconds, taking 13.6 seconds through the quarter-mile with a 109.5mph terminal speed. Top speed was a creditable 182mph.

The wheelarches were extended to take larger wheels and tyres, 8.0Jx17-inch, one-piece AMG alloys with 215/45ZR17 and 235/45ZR17 rubber. Later, 8.5J and 10Jx17-inch AMG three-piece alloys became available, the wider rear wheels helping stability. You could have the wheels in silver, chromed (in the US) or with the wheel centres colour coded to the body colour.

The AMG Hammer was a hand built car requiring a huge amount of labour, its 1988 US price of \$161,422 reflecting that. The lesser price tags on today's AMG production cars, most of which will equal or beat the Hammer for performance if you remove their speed limiters, show how far AMG has come in 20 years.

Being an actual car manufacturer rather than a tuner, and now part of Mercedes-Benz and hence with access to nearly unlimited resources to develop and perfect a new model helps. But without the clear vision of Hans Werner Aufrecht and the pioneering spirit of the aftermarket tuners, cars like the Hammer, today's AMG range, and low volume specials like the CLK DTM AMG would very probably never have come about.

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**"THE AMG HAMMER WAS A
HAND BUILT CAR REQUIRING A
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BELOW
The W124 did not look quite so conservative after AMG had finished with it.

BELOW RIGHT
What contributed greatly to performance were the four-valve cylinderheads.

BOTTOM RIGHT
So hot was the pace that the ground hugging aero package was welcome.

