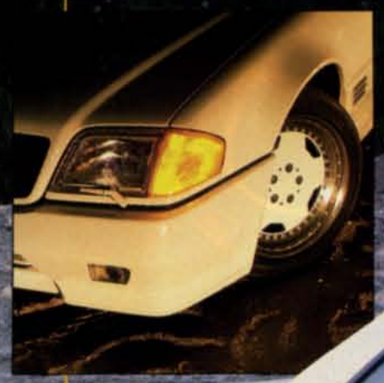
# RENNTECH

## MERCEDES







PHOTOS: LES BIDRAWN

by Niles Seifert

## The Hartmut Approach

What do you do after years of experience building well-mannered, high-powered thoroughbred automobiles with one of the most prestigious manufacturing and conversion firms in the world? Whatever you like. Why not? Speed technology has a romantic pull that few are able to resist; and for those forehanded enough to indulge their fancies, there is a conversion shop in Delray Beach, Florida, where all that experience is being applied to produce some very fast, very sophisticated road machinery. The shop is RENNTECH.

Hartmut Feyhl and a business partner created RENNTECH almost two years ago. Harmut is a Mercedes expert of the highest degree. Trained in Germany, he has come up "through the ranks" by means of his experience and the mastering of his trade. In Germany there seems to be a law or regulation to cover every aspect of every activity imaginable. This might have its drawbacks; but what it also means is that there is a great deal of standardization, so when you say that you are a "master mechanic" it has meaning—you have earned the title by meeting some very strict requirements. Hartmut was awarded this title—the highest award obtainable for such a craftsman—by the Oberbayern Chamber of Trade in 1985. Master Feyhl comes well-recommended.

His association with Mr. Aufrecht (the 'A' of AMG) began while he was still in middle school. He joined the small firm shortly after it moved from Grossaspach to Affalterbach. Starting in 1977 he worked his way up to Automotive Engineer with AMG. His experience in the company includes work in mechanical design and improvement. He has participated in the development and construction of the AMG 32-valve V8 engine, as well as engine design modification (to meet EPA standards), and bumper modification (to meet DOT standards). He's also an expert in computer-controlled fuel-injection systems and has made design modifications to fuel-injection CPU chips. His primary assistant is his chief mechanic, BMW factory trained Steve Jones.

So what is a RENNTECH car? It starts off as a Mercedes (although Porsche and BMW owners do patronize the shop) and it ends up being whatever the customer wishes it to be. This is the beauty of this kind of conversion shop; the customer chooses the modification(s), and instead of merely cutting and pasting to produce a pastiche of parts hung on what used to be a factory product, RENNTECH converts the car to new specifications.

You might ask, "Why do something like that to a perfectly good Mercedes?" That's just the reason why. You see, part of what makes the aftermarket conversion scene so exciting is that you can take that perfectly good, top-quality piece of machinery and make it even better, make it fit the customer. But merely fitting the customer isn't really reason enough alone to make these elaborate modifications. What a personalized car of this kind offers is the chance to play with the most recent innovations in the industry. It takes three to 10 years for a factory-produced automobile to make it from conception to

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the dealer's floor. Does this mean that most of us are driving "old" technology, the latest and greatest engineering from say, 1979, for example? Yes.

What a company like RENNTECH offers is the chance to drive today's automotive engineering, today. There are many improvements, many innovations that die a quiet death in the automotive industry because they are not marketable (or the industry does not want to market them) at the time of their appearance. True, more often cost is the restriction, but for the exotic car buyer that is not an issue anyway.

So, again, what is a RENNTECH car? It's whatever you want it to be. Mr. Feyhl uses primarily AMG parts, but will use whatever the customer specifies so long as it does not mean a step down in quality. Take, for example, the 500 SL he's been working on. He feels that he would be hard-pressed to improve on Mercedes quality; he offers quantitative improvements which improve the overall quality of an engine or car. The 32-valve V8 engine is so well machined and matched that he does not alter so much as he increases, he tunes for performance. The displacement is taken from 5.0 liters to 6.0 liters (96.5 mm/84 mm b&s to 100 mm/94.8 b&s). Porting is done only if necessary and only so far as to ensure a perfect mating of parts. The valvetrain is left alone—the stock 5.0 has electronically-controlled variable valve timing which adjusts itself with engine speed to keep the torque curve from plateauing too soon at the upper rpm range. The mechanism is controlled by the computer which uses rpm input to trigger an electromagnet on the front of each intake camshaft. A valve is opened allowing engine oil under pressure to enter a chamber and actuate a gear assembly which alters the

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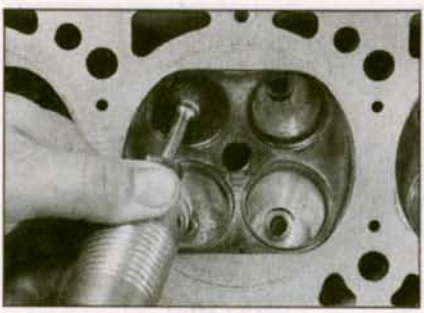

intake valve timing a couple of degrees. On the eight cylinder the mechanism shifts from retard (at idle) to advance to retard again as the engine climbs through the rpm band. The result of this device's operation is an improved, more even power curve.

The crankshaft is modified to allow for the longer stroke. Compression is raised from 10.1 to 10.3. What started off as a 320-hp V8 ends up as a 380-hp engine, which produces 402 lb-ft of torque. Horsepower and torque peaks are at 5600 and 3900 rpm, respectively. Hartmut stresses that if the peaks seem perhaps unimpressive to some, that his goal is to ensure that his finished product still be a Mercedes, that it run smoothly, reliably and quirk-free throughout its powerband. He wants his customer to be able to take his car to any Mercedes service rep for its regular service, and nothing more—none of those weekly visits to the shop for tweaking and tuning.

The fuel-injection system remains "as is" with the exception of its CPU. The chip is removed and replaced with an AMG chip. Hartmut will point out that this is not a "performance chip," and that no such thing is available despite what some have been led to believe. The AMG chip takes into account the increase in displacement of the modified engine and ensures optimum fuel/air ratio at all rpm ranges, while still meeting emissions requirements.

Although AMG is RENNTECH's source for chips, Hartmut will eventually be applying his experience in fuel-injection program design and will perform the actual chip programming himself. RENNTECH has been working with the EPA lab in Dearfield Beach and has applied for consideration as a small volume manufacturer, recognition as such being the first step toward official sanction to make conversions.

RENNTECH is conservative when it comes to suspension modifications—stock is more than sufficient, and so far, the perfect compromise between sports performance and comfort. Perhaps a stiffer sway bar to inhibit diving in hard corners, but nothing more unless the customer insists upon it. The

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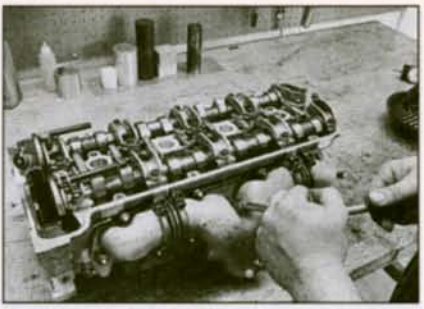

AMG body kit he's installed includes front spoiler, rear apron, side skirts and rear spoiler. AMG 3-piece, modular wheels (8.5x17 front, 10x17 rear) were fitted with Pirelli P7s—quiet running tires, but sometimes difficult to balance. "Modular" here means not welded, about fastened—inner, outer rings and center pieces are separate components which are matched to the tire size and offset requirements of the particular chassis to which they will be applied.

The differential underwent a ratio modification, from 2.65 to 3.06 for more torque. Additionally, where the original differential did not have limited-slip, it now does. This is a modification that Hartmut has worked up; the customer can choose whatever he wants in the way of differential and Hartmut builds the gears as necessary. (He did mention that the Gleason-Torsen differential, when used in the SL, produces a disconcerting clunking in tight turns at slow speeds due to the flex in the SL's rear subframe.)

As for the transmission, the only change necessary to accommodate the more powerful engine was to make a minor alteration in the modulator pressure setting to prevent slipping associated with the higher torque. For the larger engines, Hartmut feels that the automatic transmission is definitely the way to go. Besides ease and comfort of operation, the Mercedes-Benz 4-speed is highly responsive and has none of the "laziness" for which automatics are so often reproached.

Guided by the principle that a Mercedes should remain a Mercedes, no matter what modifications may be performed, Hartmut will no doubt be building muscularly impressive thoroughbreds for some time to come. If your style requires genuine sophistication and you want to take advantage of the latest in new-wrought automotive engineering, today, then why not explore some of those possibilities with him?

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