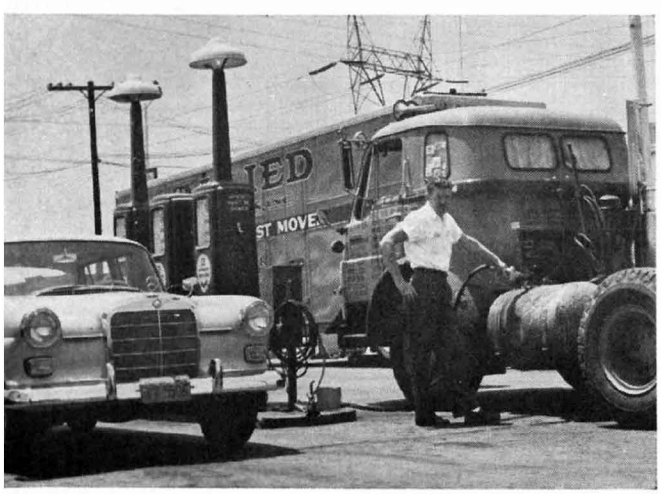
MERCEDES-BENZ 190-D DIESEL

MT Takes a Top Import with a Unique Powerplant on a Cross-Country Test

MT Road Test



Mercedes 190-D isn't exactly favorite customer at diesel oil pump, where trucks load up with 60 gallons of fuel.

by Wayne Thoms

IN THE CONTEXT of standards by which most Americans judge automobiles, the Mercedes-Benz 190-D (for Diesel) is a paradox. Its contrasting qualities seem contradictory, yet they exist compatibly. It is a compact (106.3-inch wheelbase) that is loaded with usable space. It is a true economy car, yet at a suggested base of $4038 (West Coast p.o.e.) and $4237.58 as ours was equipped, it is well out of the economy-car price range. It is exceptionally rugged but so luxuriously appointed that one almost hesitates to put it to the heavy-duty work for which it was designed. It feels sluggish, yet it is quite possible to maintain extremely high average speeds in comfort and safety.

What makes the 190-D so different, even for an import, is its diesel engine. Despite the very real advantages inherent in diesel operation, long recognized by truckers, the diesel automobile will probably never be a large-scale success with the public, even though the factory sells all it can build. There are three very sound reasons why this is true, and they must be understood before one can intelligently evaluate the worth of an automotive diesel.

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Mercedes-Benz 190-D *continued*

First of all, a diesel is noisy. Considering the Mercedes' 21-to-1 compression ratio, there is bound to be some clatter. It is especially noticeable in the 190-D at idle, although at cruising speeds the engine noise level can scarcely be distinguished from any other four-cylinder of similar size.

Second, diesels tend to be heavier than gasoline engines for their size and power output. This adversely affects the car's power-to-weight ratio, the reason diesels have a reputation for lacking punch. Related to, and equally important, is the fact that diesel engines do not put out as much power per cubic inch as does the typical gasoline engine.

Finally, the diesel is more expensive. It costs more to manufacture; tolerances are more critical. In the case of the 190-D, the fuel injection alone adds substantially to the car's price.

On the plus side, the Mercedes diesel offers two tempting attractions: economy and durability. Fuel mileage is greater than with gasoline engines. (In the case of a test fleet of Mercedes taxis in service in a major West Coast city, the diesels averaged 26 mpg against 13.1 for the gasoline cabs.) Additionally, the cost of fuel is less than with gasoline. We found that in California it runs about 13-18 cents per gallon. After adding state and federal road taxes plus state sales tax, the true cost ranges downward from 30 cents, still under gasoline price. (Don't try to buy it in bulk to evade road taxes. The authorities frown upon it.)

Durability of the 190-D is a little tougher to discuss without actually spending half a lifetime wearing one out. But there are many cases on record of mileage well above 100,000 miles without any major repairs being necessary. We heard of a rural mail carrier who put on 150,000 miles, only replacing the clutch and repairing the fuel injection in that distance.

Of less driver significance but no less importance in some areas is the surprising fact that the 190-D emits far less air pollutants than do gasoline engines. In other words, less smog. Tests run by the Los Angeles Air Pollution Control District indicate that the D is especially good on deceleration, the period during which gasoline engines put forth most of their unburned hydro-carbons. The actual comparison with a six-cylinder gasoline engine was 10 parts per million for the diesel, 5600 ppm for the gasoline engine. One reason for this may be that the diesel pump shuts off completely on deceleration, so that no unburned fuel can be pushed out the exhaust.

Mercedes has been building diesels for more than 25 years and has turned out 350,000 since 1950. This is not a huge number of cars by Detroit standards, but more than enough to insure that the firm knows what it is doing. This knowledge is reflected throughout the 190-D, most noticeable in how close Mercedes has been able to approximate gasoline operation and characteristics.

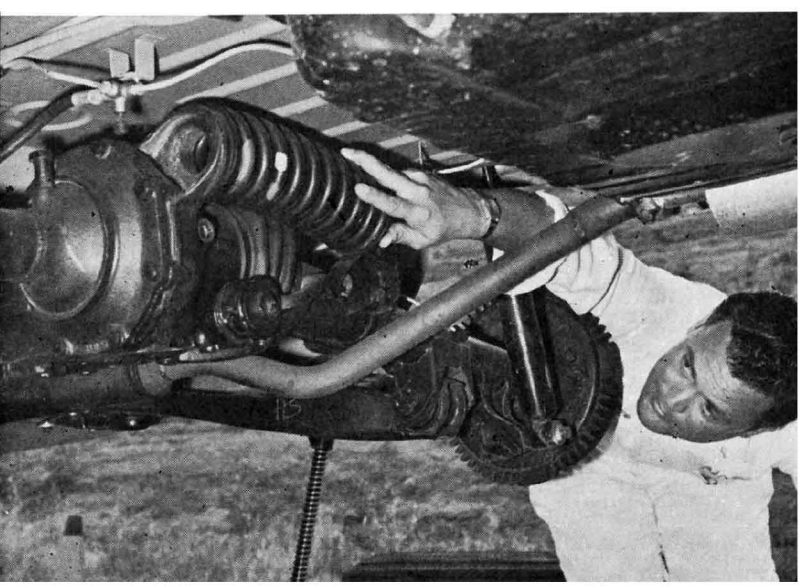
Starting the D differs from gasoline practice. When the engine is cold, the key must be turned on and starter knob pulled out to the pre-heat position. This lights the glow plugs, also an indicator on the dash. After a few seconds (about 10 in summer, more in winter), the starter is pulled and the engine starts. From here on, the engine fires on compression ignition, but from the driver's viewpoint there is nothing different from a gasoline auto. Once the engine is warm, it is not necessary to light the glow plugs to restart.

There is a procedure for stopping the engine. Before the key may be switched off, the starter knob must be pushed in, thereby shutting off the fuel supply. We noted only one disadvantage: in parking lots and wash racks it is essential to brief attendants on how to start and stop the car.

The M-B diesel engine features a pre-combustion chamber, which has two important advantages in an automotive diesel. It allows for quieter operation and permits the engine to put out more horsepower and torque at better fuel consumption rates than with any other type of combustion chamber.

Although the diesel is relatively small (121.3 cubic inches) and produces only 60 hp at 4200 rpm, the 190-D has a rated top speed of 78 mph, also the cruise. We found that it actually reached its top without difficulty and would hold any high cruising rate up to this point easily and with no apparent strain on the machinery. During a series of open-road trips, we were able to produce averages ranging from 53.9 to 65.3 mph on stretches of highway that were generally about 100 miles long. (Some of this involved bending California's maximum speed law slightly, but we were careful to slow to legal limits through towns.)

Actual direct operating cost turned out to be amazingly low — a fraction over a penny a mile, 1.06 cents to be precise. At no time did we drive for economy. Instead, we deliberately penalized the car by driving it to extract maximum performance, which meant no let-up at any time. A secondary handicap involved the fact that the car was practically new. We began to keep mileage checks at 279 miles and all but ignored the



Much of the 190's riding comfort and good handling characteristics are due to race-bred, low-pivot swing axle.

Tight, fast left-hander produced no body roll whatsoever. Rear end is extremely well behaved for a swing-axle type.

THE 190-D, LIKE OTHER MERCEDES CARS, IS BUILT TO TAKE PLENTY OF BACK-COUNTRY PUNISHMENT AND WILL KEEP COMING BACK FOR MORE.

This is the kind of front-to-rear weight transfer that makes the drag racers drool. Unfortunately, it doesn't do a thing for the 190's performance. With only 60 hp on tap, this one is strictly a super economy-type car.

break-in speed rules which were supposed to apply for the first 1200 miles. At about 1500 miles, fuel consumption began to improve and continued to get better as the 190-D was more thoroughly broken in.

The factory rates the fuel consumption range at 28-36 mpg during normal highway driving, 31 mpg at a steady 58 mph. Our figures stayed at the bottom end of the range, dipping slightly below in the early stages of the test. Had we driven in a more "average" manner, consumption would have run up to the factory's 36 mpg. However, we prefer to drive a car to obtain economy figures more in keeping with what anyone might get.

Enjoying diesel economy presents a separate problem: where to buy fuel. Almost every community has a diesel outlet that caters to trucks, usually located on a main highway near the edge of town. We noted a few annoyed looks (which we ignored) at our requests for 10 gallons or less, when a truck order for 60 gallons is common. But the 190-D holds only 13.7 gallons.

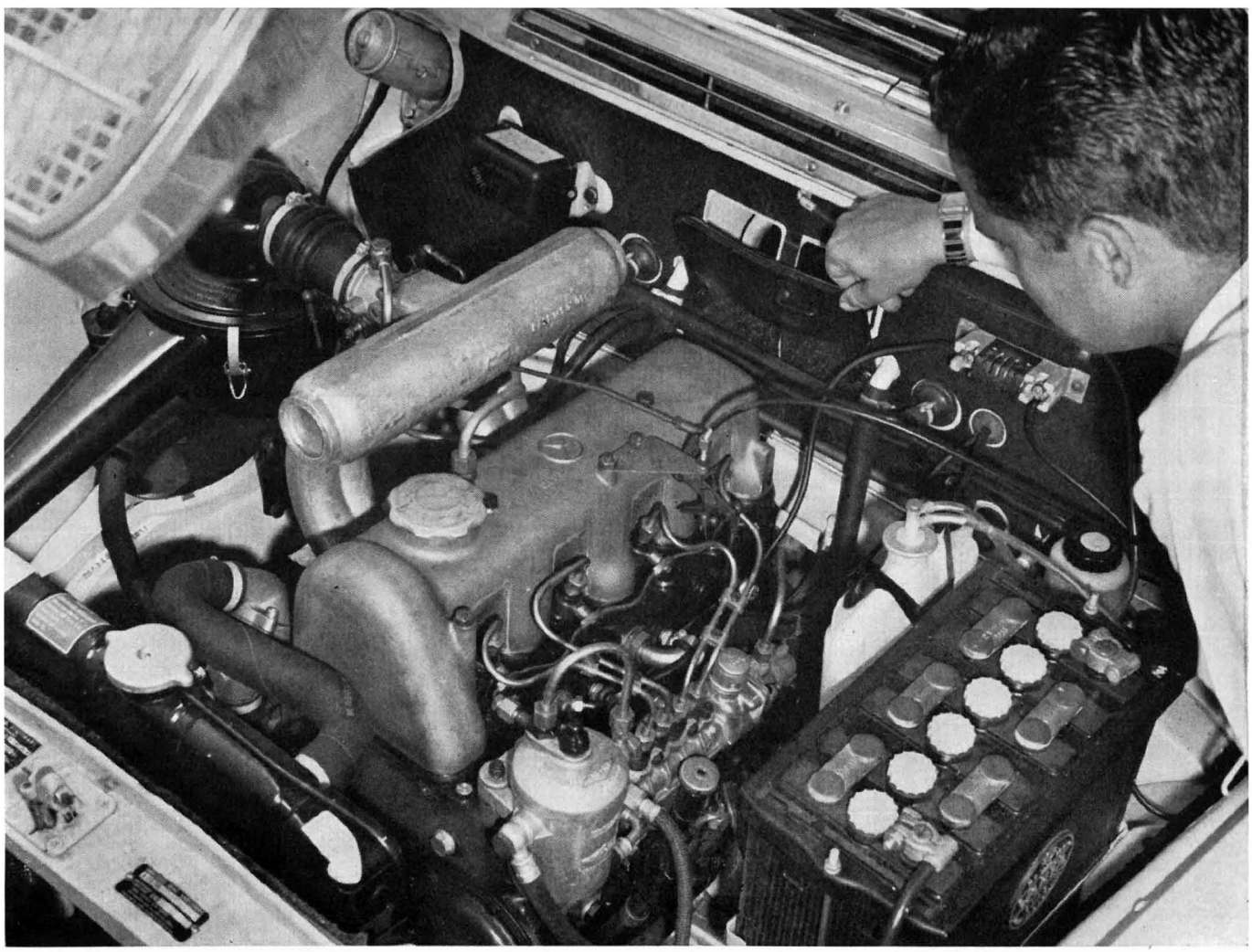
Acceleration figures speak for themselves and not too loudly. We found that it was best to use the engine at full throttle through the gears, letting the engine wind up in order to stay with traffic. The 190-D does stay with traffic as long as it is driven vigorously.

Using the car's available power was a different experience from most cars. At full throttle any effort to feather off on the accelerator pedal to reduce speed became frustrating. There is a very limited range within which the pedal is effective; it seems to be either full on or off except during take-off.

Brakes proved to be fairly good. Stopping distances from 30 and 60 were quite acceptable, but the consensus of the staff was that there was not enough braking power on the rear wheels. The reason behind the conclusion was that on the 60-mph stop, the front brakes locked up at the very end of the stop, while the rear wheels never did. The rear raised severely so that there had to be a lot of weight transfer forward.

All the aspects of the car's roadability, handling and ride were especially impressive. Practically anything we attempted was done in full confidence that the car would be with, rather than against, us. At high speed on a sharply cambered, poorly surfaced road, the Mercedes clung well and was no effort to hold in a straight line (a contrast to some big-selling domestics along the same stretch). During hard turns there was little body roll, a healthy amount of understeer and a final but highly predictable amount of oversteer. In other words, the 190-D could be pushed safely through a fast turn by a rank novice, and it gave plenty of warning before it reached the limits of adhesion.

The 190-D was judged to be one of the best-handling, most comfortable cars ever to pass through the test program. The suspension is, of course, all-independent, and the rear axle features Mercedes' famed low pivot point and compensating



THE INJECTOR PUMP IS THE HEART OF THIS SINGLE-OVERHEAD-CAM ENGINE AND PERFORMS BEAUTIFULLY, IF THE FILTERS ARE KEPT CLEAN.

Short, 106.3-inch wheelbase isn't apparent inside the car. The interior room is equal to (and surpasses many) cars with wheelbases up to 10 inches longer.

Big drums, with cooling fins and aluminum shoes, give fade-free operation.

spring developed in their racing program and adapted directly to their passenger cars.

The car had only one fault that we could consider basic. It lacked reserve passing power from high speeds. One needs plenty of margin to get around a car at speeds in the 60-mph range. A couple of miscellaneous items for which no one cared included the vertical ribbon-type speedo — hard to read with its diagonal indicator line. And we noted a blinding reflection from the windshield wiper arm at mid-day.

Engine and wind noise level was very low. The interior is well insulated, the engine smooths out at speed, and normal conversation is entirely practical at highway speeds.

Mercedes has utilized interior and trunk space so that there is a great deal more room available than one would imagine. The trunk is rated at 22.6 cubic feet, although it holds more luggage than some other trunks we have tried which claimed similar capacities. The amount of rear seat space is more than ample. Riding over the rear axle is no disadvantage with independent rear suspension. Consequently, the 190-D has a rear seat 16 inches high, 56 inches wide, with kneeroom that varies from 25 to 34 inches (from rear seat backrest to back of front seat), depending upon front-seat adjustment. The individual front seats, 12 inches off the floor, are contoured for long-distance comfort, supporting back and thighs well. The 190, incidentally, shares a body shell with the more expensive 220 series with minor differences — two inches less wheelbase and about six inches shorter cowl in the 190.

In the trim, finish and fit department one expects any Mercedes product to be outstanding. The 190-D follows the pattern. We simply couldn't fault the car visually, while the obviously precise assembly tolerances help explain why the Mercedes is a relatively expensive automobile.

With the facts in place, one must conclude that the 190-D is a unique and outstanding car. Who should buy it? It certainly is not the ideal vehicle for everyone. We might suggest that it is best suited for high-mileage drivers, particularly those whose driving leads into rough terrain. It's an economy-luxury package unlike anything else in the world. /MT

MERCEDES-BENZ 190-D

4-door, 5-6 passenger sedan

OPTIONS ON CAR TESTED: Tex leather seats, plastic headliner, front bumper guards, whitewall tires, seat belts

BASIC PRICE: $4038 (West Coast p.o.e.)

PRICE AS TESTED: $4237.58 (plus tax and license)

ODOMETER READING AT START OF TEST: 279 miles

RECOMMENDED ENGINE RED LINE: 4300 rpm

PERFORMANCE

ACCELERATION (2 aboard)

0-30 mph ..... 6.5 secs.
0-45 mph 13.8
0-60 mph 26.3

Standing start ¼-mile 24.6 secs. and 58.5 mph

Speeds in gears
1st ..... 21 mph 2nd ..... 37 mph 3rd ..... 55 mph

Speedometer Error on Test Car

Car's speedometer reading	31	47	49	60	71	81
Weston electric speedometer	30	45	50	60	70	80

Observed miles per hour per 1000 rpm in top gear ..... 18 mph

Stopping Distances — from 30 mph, 35 ft.; from 60 mph, 152 ft.

SPECIFICATIONS FROM MANUFACTURER

Engine
Overhead-cam 4
Bore: 3.43 ins.
Stroke: 3.29 ins.
Displacement: 121.3 cubic inches
Compression ratio: 21:1
Horsepower: 60 @ 4200 rpm
Ignition: 12-volt

Gearbox
4-speed, all-synchro; column lever

Driveshaft
Open

Differential
Hypoid
Standard ratio: 3.9:1

Wheels and Tires
Steel sheet disc wheels;
5JK x 13-B 7.00 x 13 whitewall tires

Suspension
Front: Independent; upper and lower wishbones; coil springs with integral hydraulic shocks, stabilizer bar
Rear: Independent; low-pivot swing axle; coil springs with integral hydraulic shocks

Brakes
Hydraulic drum; turbo-cooling.
Front, two leading shoes; rear, one leading and one trailing shoe
Front and rear: 9-in. dia. x 2¾ in. wide

Body and Frame
Frame-floor unit, welded to semi-supporting body
Wheelbase: 106.3 ins.
Track: front, 57.8 ins.; rear, 58.5 ins.
Overall length: 186.5 ins.
Dry weight: 2865 lbs.