BMW M5

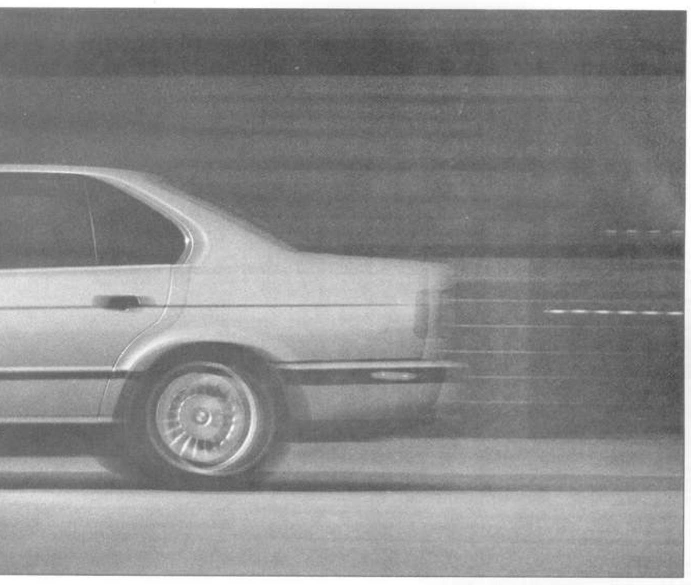
Oh, to be in Germany, now that the new M5 is here.

BY KEVIN SMITH

PHOTOGRAPHY BY TOM DREW

• This litigious society of ours puts warning labels on everything from lawn mowers to baby toys. So we suggest one for the windshield, near the driver's line of sight, of every 1991 BMW M5 sold in the U.S.A.: "WARNING: Attempts to appreciate this automobile's capabilities upon the public highways will have your license collecting points faster than the Boston Garden scoreboard."

No one would pay one whit of attention, naturally. But it would only be fair. Because the M5 is so wickedly swift and unflappably balanced that it almost needs an autobahn to be truly enjoyed. (Maybe the foreign-delivery plan should be mandatory for this car.) The M5 is, you see, the quickest and fastest regular-production four-door automobile this magazine has ever tested. Aside from the odd AMG-class mutant, it's the strongest four-door, period.



And sheer power may not even be the M5's best quality. Its true best quality may be just that: its pure best-ness. Given some perfectly reasonable criteria, BMW's new-generation M5 just might be the best car in the world.

Take the engine, for starters—a crown jewel of a powerplant. The BMW S38 inline six began life as the 24-valve special powering the marvelous but star-crossed 1978 M1 supercar. More than just a twin-cam-head conversion on the true-blue BMW 3.5, it included a juggling of bore and stroke dimensions (increased and decreased, respectively) for a more oversquare configuration. With mechanical fuel injection (and of course, no catalytic converter), it produced 266 hp.

Nearly a decade later, the engine came to this country for the first time (not counting gray-market M1s) in a pair of M-Sport variants of existing BMW road cars. Both in the M6, which was a pumped-up 635CSi coupe (*C/D*, July 1987), and in the M5, a similarly powered 5-series sedan (*C/D*, December 1987), the four-valve-per-cylinder six employed electronic injection and a catalytic converter to make itself welcome on our shores. But 26 hp went out the tailpipe in place of the dreaded pollutants: the U.S. rating was 256 hp. And fuel economy was none too good, with EPA city/highway numbers of 10/19 mpg.

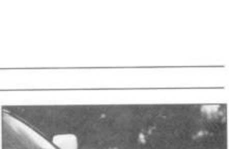
So the engineers over at Motorsport (BMW's go-fast skunkworks) had their mandate: Make a modern S38 that tops the power output of the original engine, meets current American emissions standards, and does it all on less fuel.

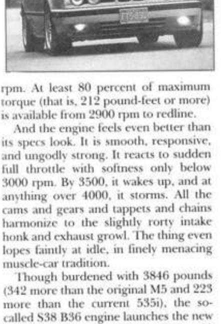
A little extra displacement came first. Holding the original 93.4mm bore (compared with the SOHC 3.5's 92.0) but taking stroke back up to the 3.5's 86.0mm (from 84.0) netted 3535cc, enough for BMW to refer to this as a 3.6-liter engine. (The 3.5 measures a true 3430cc; the original S38 displaced 3453cc.)

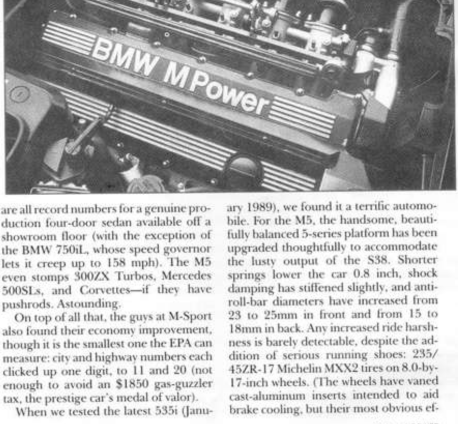
Compression has risen to 10.0:1 (the old S38's was 9.8:1; the current 3.5's is 9.0:1), and new camshafts give more valve lift and duration. Intake and exhaust systems breathe more freely, and a flapper valve in the middle of the intake plenum varies the effective volume of that chamber to harness resonance wave activity and fatten the torque curve below 4120 rpm and above 6720. A new crankshaft, which is lighter and stronger, and stiffer valve springs permit the new, higher redline of 7250 rpm (up from 6900).

The factory's graph paper shows a smooth and steep horsepower line peaking at a lofty 310 hp at 6900 rpm and a humpbacked torque curve with a broad plateau around 265 pound-feet at 4750 rpm. At least 80 percent of maximum torque (that is, 212 pound-feet or more) is available from 2900 rpm to redline.

Although its interior is unusually stark and businesslike for a $60,000 sedan, the M5 has fine, highly adjustable leather sport seats and a superb driving position.







And the engine feels even better than its specs look. It is smooth, responsive, and ungodly strong. It reacts to sudden full throttle with softness only below 3000 rpm. By 3500, it wakes up, and at anything over 4000, it storms. All the cams and gears and tappets and chains harmonize to the slightly rorty intake honk and exhaust growl. The thing even lopes faintly at idle, in finely menacing muscle-car tradition.

Though burdened with 3846 pounds (342 more than the original M5 and 223 more than the current 535i), the so-called S38 B36 engine launches the new M5 lustily. Our testing reveals that 60 mph flashes by in 5.6 seconds, and 100 in 14.5. The quarter-mile printout reports 14.2 seconds at 99 mph. The M5 is still accelerating when the fuel injection's speed governor says, "Sorry, that'll have to be enough," at a true 155 mph. These are all record numbers for a genuine production four-door sedan available off a showroom floor (with the exception of the BMW 750iL, whose speed governor lets it creep up to 158 mph). The M5 even stomps 300ZX Turbos, Mercedes 500SLs, and Corvettes—if they have pushrods. Astounding.

On top of all that, the guys at M-Sport also found their economy improvement, though it is the smallest one the EPA can measure: city and highway numbers each clicked up one digit, to 11 and 20 (not enough to avoid an $1850 gas-guzzler tax, the prestige car's medal of valor).

When we tested the latest 535i (January 1989), we found it a terrific automobile. For the M5, the handsome, beautifully balanced 5-series platform has been upgraded thoughtfully to accommodate the lusty output of the S38. Shorter springs lower the car 0.8 inch, shock damping has stiffened slightly, and anti-roll-bar diameters have increased from 23 to 25mm in front and from 15 to 18mm in back. Any increased ride harshness is barely detectable, despite the addition of serious running shoes: 235/45ZR-17 Michelin MXX2 tires on 8.0-by-17-inch wheels. (The wheels have vaned cast-aluminum inserts intended to aid brake cooling, but their most obvious ef-

COUNTERPOINT

• I just thumbed through our *Buyers Guide to 1990 New Cars* and ticked 79 that ought to be parked in my garage. Cars that are friendly or fun or fast or all three. In writing about those cars, we spit out a dumptserful of adjectives, a ton of hyperbole.

Now along comes the M5, and my thesaurus looks as barren as Betty Ford's liquor cabinet. Let us move straight to hyperbole: the M5 is the best sedan in the world. (Yes, we *did* say that about the BMW 750iL. But, see, the 750iL is the best *luxury* sedan, and the M5 is the best *sports* sedan.)

Okay, the M5 isn't perfect. It idles like a Camaro Z28 with a bracket-racer General Kinetics cam. Its interior is gratuitously austere for a car that is more fun than Michael Jordan on an L.A. playground. And I'd like to twist the ear lobes of the marketing guy who jury-rigged the black breadbox in the middle of the back seat.

But on the whole, what BMW has done with the M5 is what AMG *ought* to have been doing, since 1986, with the Mercedes 300E. *Cazart!*

—John Phillips III

BMW has gone and made the best better. It upped the horsepower in the 535i from 208 hp to 310 and created the M5. What can be said about the quickest production four-door sedan we've ever tested? Plenty.

In terms of straight-line performance, this is a rocket that can blast away from virtually anything you'll find at a stoplight. Turbocharged Talons and supercharged T-Birds are child's play for this machine. Hurl it into a tight corner and the M5 is again impressive, with everything working together to sustain plenty of adhesion until the inevitable burst of acceleration on the way out.

There is a lot of good to say about this car, most of which can be summed up with oohs and ahs. There is a bit of an ugh, too. The trim molding and the dash are hard, black plastic and not very inviting. But that's a small drawback for a car that does everything else so well. *—David Kunkler*

With all the hoopla and shouting about the Lexus LS400 and the Infiniti Q45, you'd think the German auto industry had closed up shop. The BMW M5 will disabuse you of any such notion.

We've known all along that the 5-series BMW was a terrific driver's car. If you *really* like to drive, the M5 takes matters even further. Quicker than a 300ZX Turbo, the M5 is what good drivers get when they go to heaven.

I can't say enough about BMW's restraint in not covering its hot-shot model with stripes, decals, "ground-effects" tack-ons, or any other tawdry tricks. It presents a dignified exterior. And interior. Only when you ask it to move swiftly will the M5 reveal its runway-wide streak of down-in-the-trenches, hard-nosed strength.

The M5 can be said to define the modern concept of performance: a car with speed, comfort, handling, efficiency, power, and panache. It makes just enough good noises to let you know that it's a closet rocket. And to let the competition know they've got something to shoot at.

—William Jeanes

fect is to give the first-glance impression that someone has fitted whitewalls.)

Bigger front-brake rotors (0.5 inch larger in diameter, 0.2 inch thicker) balance the M5's speed and mass. Anti-lock control is standard, naturally. Engine-speed-sensitive variable-assist power steering carries over from the 535i, though it has been quickened from an overall ratio of 16.2 to 15.6:1.

These refinements take the 5-series chassis' road handling from excellent to more excellent. Or excellent at higher speeds. The M5 understeers gently all the time, and while it can be thrown into oversteer with abnormally violent wheel and throttle action, this yields nothing but a little artificial drama.

Searching for details to criticize, we note that this latest BMW still has a numb spot in the steering right around center. Maybe that's "padding" to help avoid overcontrol on the autobahn. If so, we're not convinced, because the M5's high-speed tracking also feels vaguely unsettled to us, particularly on uneven road surfaces. Neither trait is a serious impediment to speed or enjoyment, mind you.

The only frustration in driving the M5 is the limitations of the public-road environment—especially all those other drivers, who suddenly seem to be going *really* slowly when you get in this car. Looking for that natural cruising pace that all cars settle into or searching for the boundaries of the car's comfort envelope in cornering just has you going faster and faster and faster.

If you must rein the car in and tiddle along at unnaturally (for it) tame speeds, at least the M5 is comfortable and accommodating. It has a premium-quality, although hard, feel about it: the leather-covered sport seats give firm support, the steering wheel is perfectly contoured but thinly padded, the doors close with a *thun* (there's not even a "*k*" on the end), and the headlight switch operates with a sharp snap.

As you'd expect, the interior layout and finish are first-rate and thoroughly businesslike. If there is a criticism to be leveled at the M5's cabin, it's that the place might be a little too cool, a little too stark. Some warmth in the materials wouldn't hurt. Neither would an adjustable steering column, which BMW loses when it fits an air bag.

Interestingly, the new M5 is strictly a four-passenger car. A broad armrest with a storage drawer separates the rear seat into distinct individual buckets, recalling the aft cabin of BMW's 6-series coupe (though with much more passenger room). Together with the car's sparkling performance, this seating array suggests a fine compromise between the traditional coupe trade-offs (close-coupled and free of wasted space, but punishing for the occasional rear-seat passengers) and those of most sports sedans (good access for passengers when you need to carry them, but more than a sporting driver needs the rest of the time).

Credit the tidy proportions and sleek shape of the current 5-series sedan. The car is clearly driver-oriented—in a way the 7-series, for example, really isn't. Combine this perfect sense of scale with comfortable accommodations for four, lively handling, and brutal speed and you have probably the finest all-around enthusiast's car available for $56,600.

Or at any price, actually. There's just no other car like the M5 on the market. An Infiniti Q45 comes closest, maybe, but it's bigger and much less quick. Ditto BMW's own 750iL. Nothing else is even playing the same game.

So go ahead and call the new M5 the best car in the world. You'll get no argument from us. Just one suggestion: go to Munich to pick yours up. And drive the blazes out of it on the roads of the gods before bringing it home. Otherwise, no matter how much you love it, you'll have no idea how good your M5 really is. ●

Vehicle type: front-engine, rear-wheel-drive, 4-passenger, 4-door sedan

Price as tested: $59,905

Options on test car: base BMW M5, $56,600; gas-guzzler tax, $1850; cellular phone, $1205; heated seats, $250 (freight included in base price)

Standard accessories: power steering, windows, seats, locks, and sunroof, A/C, cruise control, rear defroster

Sound system: BMW AM/FM-stereo radio/cassette, 10 speakers

ENGINE

Type	6-in-line, iron block and aluminum head
Bore x stroke	3.68 x 3.39 in, 93.4 x 86.0mm
Displacement	216 cu in, 3535cc
Compression ratio	10.0:1
Engine-control system	Bosch Motronic with port fuel injection
Emissions controls	3-way catalytic converter, feedback fuel-air-ratio control
Valve gear	chain-driven double overhead cams, 4 valves per cylinder
Power (SAE net)	310 bhp @ 6900 rpm
Torque (SAE net)	265 lb-ft @ 4750 rpm
Redline	7250 rpm

DRIVETRAIN

Transmission	5-speed
Final-drive ratio	3.91:1, limited slip

Gear	Ratio	Mph/1000 rpm	Max. test speed
I	3.51	5.3	39 mph (7250 rpm)
II	2.08	9.0	65 mph (7250 rpm)
III	1.35	13.8	100 mph (7250 rpm)
IV	1.00	18.7	135 mph (7250 rpm)
V	0.81	23.0	155 mph (6750 rpm)

DIMENSIONS AND CAPACITIES

Wheelbase	108.7 in
Track, F/R	58.0/58.8 in
Length	185.8 in
Width	68.9 in
Height	54.8 in
Frontal area	22.3 sq ft
Ground clearance	5.4 in
Curb weight	3846 lb
Weight distribution, F/R	50.7/49.3%
Fuel capacity	23.8 gal
Oil capacity	6.1 qt
Water capacity	14.1 qt

CHASSIS/BODY

Type	unit construction with 1 rubber-isolated crossmember
Body material	welded steel stampings

INTERIOR

SAE volume, front seat	51 cu ft
rear seat	41 cu ft
luggage space	13 cu ft
Front seats	bucket
Seat adjustments	fore and aft, seatback angle, front height, rear height, thigh support
General comfort	poor fair good **excellent**
Fore-and-aft support	poor fair good **excellent**
Lateral support	poor fair **good** excellent

SUSPENSION

F:	ind, strut located by 1 lateral link and 1 leading link, coil springs, anti-roll bar
R:	ind, semi-trailing arm, coil springs, load-leveling shock absorbers, anti-roll bar

STEERING

Type	recirculating ball, power-assisted
Turns lock-to-lock	3.3
Turning circle curb-to-curb	36.1 ft

BRAKES

F:	12.4 x 1.1-in vented disc
R:	11.8 x 0.8-in vented disc
Power assist	vacuum with anti-lock control

WHEELS AND TIRES

Wheel size	8.0 x 17 in
Wheel type	forged aluminum 2-piece
Tires	Michelin MXX2, 235/45ZR-17
Test inflation pressures, F/R	38/41 psi

CAR AND DRIVER TEST RESULTS

ACCELERATION	Seconds
Zero to 30 mph	2.0
40 mph	3.1
50 mph	4.3
60 mph	5.6
70 mph	7.5
80 mph	9.5
90 mph	11.6
100 mph	14.5
110 mph	17.8
120 mph	21.5
130 mph	26.0
Top-gear passing time, 30–50 mph	9.1
50–70 mph	9.5
Standing ¼-mile	14.2 sec @ 99 mph
Top speed	155 mph

BRAKING

70–0 mph @ impending lockup	175 ft
Fade	**none** moderate heavy

HANDLING

Roadholding, 300-ft-dia skidpad	0.81 g
Understeer	minimal **moderate** excessive

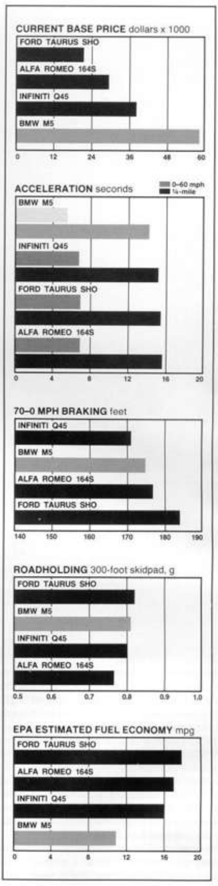
COAST-DOWN MEASUREMENTS

Road horsepower @ 30 mph	6 hp
50 mph	15 hp
70 mph	32 hp

FUEL ECONOMY

EPA city driving	**11 mpg**
EPA highway driving	20 mpg
C/D observed fuel economy	**16 mpg**

INTERIOR SOUND LEVEL

Idle	55 dBA
Full-throttle acceleration	77 dBA
70-mph cruising	69 dBA
70-mph coasting	69 dBA