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World Debut: 2005 Ford Mustang

Ford's original ponycar turns 40 and hits the spa for a full body makeover

From the February, 2004 issue of Motor Trend

1979. Jimmy Carter was president. There were no such things as an iPod, a DVD, or an MP3. Britney Spears, F1-championship runner-up Kimi Raikkonen, and Nike \$90-million teenager LeBron James weren't even born yet. It was also the year when Ford brought an all-new [Mustang](#) to market. And it hasn't done so since.

In car years, 25 is an impossibly long time, although Ford gave the Mustang many updates along the way. Two of them--for 1994 and 1999--were substantive remodels. Factions within the Blue Oval brass tried to kill the car at least twice during those two-and-a-half decades. And the current car has become woefully long in the tooth. Still, Mustang has, at times in spite of itself, become one of the most iconic nameplates in automotive history.



All that is behind us now: Ford has rededicated itself to the Mustang's future and, as a 40th-birthday present, wiped clean the pony's slate with a truly new lineup that shares just about nothing with the old one. We got a first taste of it a year ago (February 2003) with GT and convertible concept cars that foretold the upcoming Mustang's story without showing its entire hand. Now, the real thing is ready for prime time: The racy, hunkering fastback on these pages is a production spec [2005 GT](#), wearing only subtle skunk stripes and slightly beefier rolling stock to dress it up for the auto-show circuit. The new Mustang, in both V-6 and GT forms, will make its auto-show debut just as you read this, with the convertible appearing a few months later. The entire lineup comes to market this fall.

The new look will be the subject of much debate and bench racing. Our short take is that it's a bold, aggressive shape liberally frosted with memorable design cues from golden-era Mustangs. The stance is substantially beefier than the previous car's.

"Only Ford can make the Mustang, and it can only be done in Detroit. Nobody else in the world can claim it."
--Phil Martens, Group Vice President, Product Creation

Dimensionally, the new car, using a GT coupe as the example, is 4.4 inches longer than its predecessor, atop a wheelbase that's been increased by a legroom-improving 5.8 inches. The 2005 is about an inch narrower, although track has increased more than two inches. Early rumors had the Mustang based on a shortened version of the DEW98 platform that underpins the Lincoln LS, Ford Thunderbird, and Jaguar S-Type. That's only somewhat true.

"We started with DEW98 as a natural beginning because it was the last major rear-drive platform we did, and we have experience of taking multiple nameplates off of it," says Hau Thai-Tang, the Mustang's chief nameplate engineer. "We learned a lot about making a convertible from it when we did the Thunderbird, and we knew we weren't going to achieve the structural stiffness targets we were aiming for [for the Mustang]. Because the Thunderbird has no rear seat, we were able to add some structure behind the front seats. We didn't have that flexibility with the Mustang, because it must have a back seat." So the platform needed major structural enhancement and materials optimization in many areas, which it got.

The result is that so much has changed, in terms of components and dimensions, it's effectively a new chassis. Thai-Tang adds that "at the component level, there's about 35-percent reusability from other Ford products. But in terms of pure DEW98 carryover, there's not a lot; the front chassis rail architecture, floorpans, trans tunnel, saddle-style fuel tanks are similar. The rest is new." Weight distribution improves from the current 57/43 to a better-balanced 52 percent front, 48 rear. Torsional rigidity of the new car versus the old? Double.

[Mercedes-Benz](#) uses three-valve-per-cylinder layouts to great effect in most of its current powerplants, and Ford has adopted this architecture for several of the same reasons: It allows for a central spark-plug location, increased intake flow, higher compression, less detonation, enhanced low-end torque, and improved combustion precision, which helps with emissions. Compression is a relatively high 9.8:1, and the engine redlines at 6250 revs. Its 300 horsepower at 6000 rpm makes it a match for the expensive, hand-assembled, 305-horse DOHC four-valve engine used in the SVT Cobra through 1998, and its 315-pound-feet torque rating outguns the much respected 5.0-liter overhead valvers of the 1987-1995 Mustangs.

Why three valves? "Three real drivers," states Phil Martens, group vice president, product creation. "The first is torque and refinement. It has a nicer, and broader, torque curve than the two-valve version. The second is efficiency, from a combustion/emissions standpoint and in terms of fuel economy." Finally, the engineering team felt this configuration provided the power curve linearity that would be maximized by the five-speed automatic and close-ratio, five-speed manual transmissions. Not to be ignored is that it's more cost-effective than a DOHC, four-valve layout.

The engine shares about 40 percent of its componentry with the [2004 F-150's](#) Triton 5.4-liter, about 30 percent with the old SOHC two-valve engine, and the other 30 percent is new and Mustang-specific. "And wait until you hear it," says Wagner. "Three of the team members on this engine are racers, and many own Mustangs older than they are. This engine had to be right and had to sound and feel like a torquey American V-8." Two transmissions will be offered: a Tremec 3650 five-speed manual and Ford's own 5R55S five-speed automatic, the latter another Mustang first.

Don't write off the base powerplant as strictly for rental car use. The old, grumbly 3.8-liter OHV 90-degree V-6 has given way to an updated 4.0-liter V-6 rated at 202 horsepower. This engine is an inherently balanced 60-degree design and is also a SOHC unit. It's much the same "Cologne" unit as found in the [Ford Explorer](#), but this is its first appearance in a car platform. It, too, can be had with your choice of a five-speed manual or automatic.

"It's a unique opportunity to work on an all-new Mustang. For the first time in history, we're not coming off some higher-volume existing derivative, like a Falcon, Fairlane, or Pinto."
--Hau Thai-Tang, Chief Nameplate Engineer, Mustang

What of the current Cobra's supercharged DOHC V-8? An SVT-ified version of the new [Mustang](#) will break cover in mid-2005. We expect at least 400 horses this time around, mated to a six-speed manual transmission, possibly offering sequential manual control. More about the next Cobra as its development story progresses.

There's been much speculation about the new Mustang's suspension offerings, but the answers are straightforward. Although the DEW98 has a fully independent suspension with upper and lower control arms up front, it wasn't utilized. "The 4.6-liter V-8 engine didn't fit between the upper control arms of the front suspension of the DEW98s double wishbones, which also helped with affordability," explains Thai-Tang. In its place is a MacPherson-strut design, which few agree is the best option in terms of handling potential. [BMW](#) has proven, however, that it can be made to perform, so we'll withhold final opinion about this engineering decision until we've driven what Ford hath wrought.

Drag racers and Ford's accountants will be pleased at the choice of a live axle out back. "Among our customer groups that know and care what sort of rear suspension their car has, a large number of them want a solid rear axle; they're primarily the core enthusiast drag racers, and they like the durability, reliability, and ease of modification with it, changing axle ratios, etc.," says Thai-Tang. "There's another group that wants the sophistication and cornering advantage of an

IRS, and we're going to offer it on the upcoming SVT Cobra. Unlike the last time, when we kind of shoehorned the IRS in [an older platform]; this time, we've designed the rear architecture to accommodate both right from the beginning."

The previous car's cabin had been showing its age for decades; even the last-generation's double-cockpit layout was tired and awash in marginally assembled, mediocre plastics. That slate also has been wiped clean by an attractive new layout that promises higher comfort levels, vastly improved ergonomics, more front and rear leg- and headroom, higher-quality materials, and better detailing. The top-line GT interior is splashed with aluminum and aluma-look plastics that recall the 1967-1968 cars. And how's this for cool? The [2005 Mustang](#) will be the first production car in the world to offer driver-configurable instrument lighting. Just like selecting wallpaper for your computer screen, the Mustang owner will be able to scroll through preset color choices or custom-configure the lighting from hundreds of combinations. Trick.

Unlike the [Camaro](#), Firebird, Javelin, Barracuda, and [Challenger](#), the Mustang lives. Ford has underscored its commitment to America's first and still one true ponycar by spending hundreds of millions of dollars to give the Mustang its first complete retool in two and a half decades. Everyone at Ford with whom we spoke is legitimately enthusiastic about the project, and that includes a lot of hard-core sports car, musclecar, and racer types.

This much also is clear: The cars you see here are just the start. Look forward to an ongoing rollout of special and higher-performance variants, but closer to the new model's debut, not just as a means to keep an old car marketable, as was the case with the previous-generation Bullitt and Mach 1.

Happy 40th, Mustang. We look forward to taking you out for a ride.

Could It Happen?

Last summer, Carroll Shelby announced he was going to end his car-building career where it started: with [Ford](#), although he wasn't exactly clear on what that meant. But, as his legacy was established with Cobras and Shelby Mustangs, it's only logical that this reassociation will be founded, at least in the beginning, on the same types of hardware.

Squint at the new [Mustang](#), and it's easy to visualize Shelby GT350 and 500 versions of it. The rear quarter windows are an obvious Shelby cue--that also cured a potentially nasty blind spot--and the new GT wheels resemble the optional Shelby/Crager units available on the original. Our exclusive photo illustration just finishes the job of creating the next Shelby Mustang that we hear Ford is already at work on.

2005 Ford Mustang GT	
POWERTRAIN/CHASSIS	
Drivetrain layout	Front engine, rwd, 2-door, 5-pass coupe
Engine type	90° V-8, alum blk/hds
Valve gear	SOHC 3 valves/cyl
Bore x stroke, in/mm	3.55x3.54 / 90.2x90.0
Displacement, ci/cc	281.0 / 4606
Compression ratio	9.8:1
Max horsepower @ rpm	300 @ 6000
Max torque @ rpm	315 @ 4500
Specific output, hp/liter	65.1
Power-to-weight, lb/hp	11.4 (est)
Max engine speed, rpm	6250
Transmission	5-speed manual or 5-speed automatic
Suspension,	front; rear MacPherson struts, coil springs, anti-roll bar; live axle, coil springs, anti-roll bar
Brakes,	f;r 12.4-in vented disc; 11.8-in vented disc ABS
Wheels	18x9.0 cast alum (17x7.0 standard)
Tires	255/45R18
DIMENSIONS	
Wheelbase, in	107.1
Track, f/r, in	62.3 / 62.5
Length, in	187.6
Width, in	72.1
Height, in	54.5
Cargo capacity, cu ft	12.3
Curb weight, lb	3425 (est)
Weight, f/r %	52/48 (est)
ESTIMATED PERFORMANCE DATA	
0-60 mph, sec	5.2
1/4 mile, sec @ mph	13.90 @ 104.00
Braking, 60-0 mph, ft	116
200-ft skidpad, lateral g	0.85
CONSUMER INFO	
Airbags	Dual front, front side
Base price	\$26,900 (est)
On sale in U.S.	Fall 2004

DESIGNER TALK: [2005 Mustang](#)

By TOM MATANO, Director, Industrial Design, Academy of Art College

Upon first glance at photography of the 2005 [Mustang](#) in production form, I felt something has been lost from last year's concept car. That show car was dressed up in high-performance guise, with pronounced air intakes on the hood as well as side air scoops derived from the 1968 Shelby GT 350. The production GT shown here is a bit more "standard," indicating additional packages to follow.

The show car is a modern interpretation of the 1968 model, with crisp lines and a sophisticated feel. These high design qualities are expected of [Ford's](#) worldwide director of design J Mays's signature design philosophy. He has given us a higher design quality that, in my opinion, was lacking in domestic automotive design. Comparison of the old and new [Explorer](#), [Expedition](#), and [Navigator](#) bears this out. The production Mustang, however, falls short of the higher esteem of the

show car, which took an old theme to a new level of modern design and raised the bar of design quality.

The overall feel of the front end is quite good. It shows the car's stance and poise. However, the bottom of the air intake on the front valance is too thin for the overall mass of the front bumper. From the side, the longish rear overhang and flat vertical profile of the rear bumper make the rear half of the car heavier than the front half. The rear view also shows good stance and good proportion of the upper and lower body. Overall, the tautness of this view is a vast improvement over today's Mustang, and the three-element split taillamps are the right direction to maintain the heritage.

Inside, the production model actually looks better than the show car. The center stack is cleaner than the concept's and appears well laid out with high design quality.

DESIGNER TALK: 2005 Mustang cont...

For the final appraisal of the new [Mustang](#), I have to withhold judgment until I see it on the road among other cars. I praise [Ford's](#) selection of the 1968 Mustang as the base for the 2005 model, and I look forward to the other versions of this new generation.

- 01** Large air-intake on the front bumper suggests "hot" motor within
- 02** Grille-mounted foglights evoke 1968 Shelby GT and 1969 Mach 1
- 03** Clean and well-toned line from tip of front fender to the rear
- 04** Rear quarter window recalls the 1966 Shelby fastback
- 05** Great tire/wheel opening relationship
- 06** Strong stance, pronounced fenders on four corners
- 07** Well-executed Mustang signature taillamps and center badge on rear
- 08** Twin-canopied dashboard reminds me of the one I used to sit on in my uncle's 1965 model

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