

# 2005 Mustang Convertible



car by pure chance.

York triggered a flood of customers who wanted to be first to own while their checks cleared, and Ford took 22,000 orders the day the

his Pontiac past a Ford dealership in Newfoundland and Labrador promotional tour. He bought that Wimbledon White Mustang convertible the following day not knowing it was the first of the run.

By the time Ford persuaded him to sell his car back, he had driven 10,000 miles and Ford had built one million Mustangs – this less than two years after the sale. A deal was struck: in exchange for the first Mustang, Ford would trade the millionth Mustang. So, at the millionth Mustang celebration in Dearborn, Mich. on March 2, 1966, Capt. Tucker stood at the end of the assembly line as another white convertible rolled down the line.

Meanwhile, Mustang vehicle identification number 5F08F1000001 once again became the property of Ford Motor Company. In 1966, Ford delivered it to Henry Ford Museum, now called The Henry Ford, in Dearborn, Mich.

## CELEBRATING 40 YEARS OF MUSTANG

More than 100,000 Mustang fans and 3,000 cars invaded the Nashville Super Speedway in April of 2004 to celebrate the pony car's 40th anniversary. They didn't need a rock band or country music star to draw them to the site. They simply wanted to hang out with fellow enthusiasts who drive every type of Mustang ever made, in addition to meeting some of the car's past and present big guns and welcoming touring troupes of Mustang drivers – one coming and one leaving Nashville.

The Corvette had picked Nashville to celebrate its 50th anniversary in June of 2003. By contrast, only 15,000 showed up for its party at the Nashville Coliseum.

"It was our Woodstocks I and II and Lollapalooza literally rolled into one," says Dave Turnbull, who shepherded the "Great American Pony Drive," a group of 50 enthusiasts who left Nashville after the anniversary party and took the long way home – all the way to California, back through Mustang's hometown of Dearborn, Mich., and eventually down the Eastern seaboard. Turnbull's group picked up the touring baton from 300 members of "Mustangs Across America," who made a triumphant entrance into the super speedway to cap a six-day convoy drive from Los Angeles to Nashville.

The sponsoring Mustang Club of America (MCA) split the speedway parking lot in two sections. One side featured the first four body styles and the other side displayed the Fox-platform cars from 1979-2004. Many of the Mustangs competed for awards in 140 classes judged by officials of the MCA. The MCA is the largest Mustang club of 250 in the world with more than 11,000 members.

Mustangers took laps around the speedway track, swapped stories, learned about the 2005 Mustang and collected autographs from past and present Mustang engineering team members – from Dr. Don Frey of the Mustang class of 1964 to Hau Thai Tang, the chief engineer of the 2005 model.

One of the biggest attractions was high-performance entrepreneur Carroll Shelby. Reported *Motor Trend magazine*: "We suspect by the end of the first day, there wasn't a Mustang on the Super Speedway that didn't have Ol' Shel's signature on its dash or under its hood."

"Mustang always has been successful because it's true to its heritage and core customers," says Steve Lyons, president, Ford Division. "Those customers created and nurtured an image that appeals to the mass market and helps Mustang remain king of the hill."

And certainly the king of Nashville sports car birthday celebrations.

## **MUSTANG'S ASSEMBLY PLANT FLEXES ITS MUSCLES**

Building a rear-drive vehicle in the same plant as a front-drive vehicle is no easy task. Yet, the Auto Alliance International (AAI) plant in Flat Rock, Mich., is the new home of Ford's rear-drive Mustang, where it joins the front-drive Mazda6. The decision to relocate Mustang production from the Rouge plant in Dearborn, Mich. to the AAI plant drew on Ford's flexible manufacturing expertise in order to create a solution that met both brand's needs.

New flexible tooling was sourced, and equipment that could be refurbished to meet this goal was retained. That which could not be replaced. "Very little in the plant hasn't been refurbished, moved, or replaced in order to get ready for the Mustang," says plant manager Michael Boneham.

Mazda started building the 2003 Mazda6 in the AAI plant in late 2002, which meant basic functions like the build sequence were set at this time. Changes to include the Mustang had to work for both vehicles, and Ford standardized its body-build process based on the Mazda system.

Concurrently, Mazda began adding production of the Mazda6 five-door and wagon models to its sedan output just as Ford was looking to add the Mustang coupe and convertible on the same line. That meant the plant needed the flexibility to produce two cars and five basic variants with new machinery, and move from one shift to two.

Ford added 1,400 new workers at AAI, many of whom transferred from other Ford facilities and brought years of experience with them. A \$5 million grant from the U.S. Department of Labor supported programs to teach them about robotics, computers and advanced manufacturing methods, and supplemented the \$25 million Ford invested in the hiring and training process. Each new worker goes through a minimum two weeks training, and workers who switched jobs within the plant were re-trained. This affected about 35 percent of the employees working each shift.

In the body shop, 380 robots perform approximately 2,600 welds per car, and 40 new stamping dies have been added to produce 52 new parts for the Mustang. The hood is the only outer panel not made on site. The Ford Woodhaven (Mich.) Stamping Plant produces the aluminum hood, then ships it less than ten minutes down the road to the AAI facility which has moved to three full shifts in the stamping plant with the addition of Mustang production.

If there is a major shift in demand, production can be moved between the two welding lines to support the change. Reprogramming the machinery is all it takes to allow batches of Mustangs to run down the Mazda weld line. The plant has a capacity to build up to 290,000 vehicles per year.

In the paint area, Ford and Mazda each have five unique colors and five shared colors. There is room in the process for five additional colors. The waterborne paint is applied by 68 new Fanuc P500 robots, and the Mustang and Mazda share robotically applied liquid sound deadener as well.

The front and rear glass also is fitted by robots. Kawasaki robots apply the primer and urethane sealer, and fit the front and rear

glass on both the Mustang and Mazda6. An automated stacking and retrieval system (ASRS) was added to control the complexity arising from the different engine options. The Mazda6 utilizes four-cylinder engines from Chihuahua, Mexico, and V-6s from Ford's Cleveland, Ohio plant.

V-6 Mustang motors come from Cologne, Germany, and MOD V-8s from Romeo, Mich. Yet the right powertrain ends up in the right vehicle every time. Finally, the powertrains and suspensions for both platforms are mated to the bodies on a single line; the end-of-line test equipment was modified to handle both front- and rear-drive vehicles. Even the fuel-fill and battery installation equipment had to be made flexible due to the differences between the two car lines. Launch quality is among the highest ever at Ford, an achievement all the more amazing given the scale and diversity of the task.