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Guiding Air Helps with Fuel Efficiency

The 2014 Sierra full-size pickup truck has spent more development time in a wind tunnel than any GMC pickup before it, resulting in design changes that benefit both fuel efficiency and interior quietness.

To achieve improved airflow, aerodynamic engineers like Diane Bloch examined every millimeter of the truck to find areas of improvement, debunking some popular myths along the way.

To study the way air passes over, under and around the Sierra, engineers used General Motors' Aerodynamics Lab, a 750-foot-long tunnel through which a 43-foot-diameter fan powered by a DC electric motor with the equivalent of 4,500 horsepower can generate winds of up to 138 mph. Aerodynamic advancement is one reason why the 2014 Sierra will be the most fuel-efficient V8 pickup on the market, according to GM officials.

"We can't stop air; we can only guide it through the path of least resistance. It's like electricity, without the shock," said Bloch, GM aerodynamic performance engineer. "The biggest misconception is that it's all about single components. But a certain side mirror design doesn't create a certain amount of drag – its interaction with the rest of the vehicle does."

For example, a new air dam be-



The 2014 Sierra undergoing wind tunnel tests.

low the 2014 Sierra's front bumper successfully reduces drag because it directs air toward the ground and away from the truck's rough underbody. And Sierra's ducted flow path between the grille and radiator prevents air from swirling inside the truck's front cavities. Even the top of the Sierra's tailgate and the center high-mounted stoplight are optimized to guide air cleanly around the truck. Because Bloch's team saw unwanted airflow between the cab and bed, new sealing has been added.

"We discovered that in the

computational analysis we perform," said Bloch. "The most harmful air between the cab and bed was coming over the cab and down through the gap, so we paid the most attention to that specific area."

The pickup market has a great number of available aftermarket accessories, and Bloch said those have a varying impact on aerodynamics. Add-ons like bug deflectors on the hood or wider tires can raise the drag coefficient, which is the measure of

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Radio Personality Pitches in For Foster Care Awareness

by Jim Stickford

WOMC radio personality Stacey DuFord of the morning show, "Bobby & Stacey," was at Warren city hall May 22 as part of an effort to promote awareness of foster care needs in Macomb County.

DuFord said that the radio station was happy to help bring awareness to the issue, but that the real heroes were the people who ran the foster care system.

Mike Patterson, Macomb County Child Welfare director for the state's Department of Human Services, said having WOMC and state officials at Warren city hall was part of an effort to bring foster care to the attention of more people.

"This May is 'Foster Care Month' in Michigan," Patterson said. "The governor made the designation. This is basically a recruitment and awareness event meant to inform the public about the needs of children and families in the foster care system."

Jacqueline Warfield, licensing supervisor for the state's Department of Human Services, said that right now Macomb County



WOMC's Stacey DuFord displays foster care information in front of the city hall in Warren.

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GM, Chrysler, Ford Take Quality Lead Over Imports

by Irena Granaas

For the first time in more than 10 years, domestic automakers had more winning vehicles than the imports in a quality study.

Research-based consultancy Strategic Vision reported that news in its "Best 2013 Total Quality Vehicles" list. GM, Chrysler and Ford all had something to celebrate with the release of the research firm's 18th annual Total Quality Index vehicle winners. America's domestic carmakers competed grille to grille with the best in the industry, and in many cases won their segment.

According to a Strategic Vision news release about the latest results, "It is clear that domestic manufacturers restated their position in some very competitive segments."

GM either bested or tied the competition in seven categories, including Mid-Size Car (Chevrolet Volt, a tie with the Ford Fusion); Premium Coupe (Chevrolet Corvette Coupe); Premium Convertible/Roadster (Chevrolet Corvette Convertible, a tie with the Porsche Boxster); Mid-Size Crossover Utility (Chevrolet Traverse); Large Utility (GMC Yukon); Near Luxury Utility (Buick Enclave); and Full-Size Pickup (Chevrolet Avalanche).

Chrysler was also well-represented in the top placements, including the Small Car segment (Dodge Dart); Convertibles (Chrysler 200 Convertible); Minivan (Chrysler Town & Country); and Mid-Size Traditional Utility (Dodge Durango).

"Dodge Dart's win in the small car segment is extraordinary when you consider how much focus, design and competitive engi-



2013 Chevrolet Traverse

neering exists within this important segment," said Strategic Vision VP Christopher Chaney.

"Dart is essentially 'proof of concept' that when you mix super-exceptional versatility, motivating exterior styling and a strong array of high-quality performing components and concepts, customers respond. The challenge then becomes getting the word out."

Ford was a first place co-leader in the Mid-Size Car segment (Fusion, tied with the Chevrolet Volt); and the Dearborn automaker took solo honors in the Heavy-Duty Pickup segment for the Ford F-250 and F-350.

"There's no questioning domestic carmakers want to lead. For the first time in over a decade our comprehensive and complete study of Quality resulted in more domestic winners than imports," said Alexander Edwards, president of Strategic Vision. "Don't misunderstand – imports like Hyundai are a force to be reckoned with and Toyota

has regrouped with Total Quality winners Lexus LS, Tacoma and FJ Cruiser. But, domestics are running in the tight race also, and it's now forcing all manufacturers to build the most superior, innovative and holistically quality vehicles possible to gain the hearts and minds of the customer."

Strategic Vision has been measuring quality since 1994 with its "Total Quality" concept, which examines 155 aspects of total quality.

"In our vehicle study, we look at over 442 variables, many using a scale that involves love," said Darrel Edwards, Ph.D., founder and executive chairman, Strategic Vision.

"Our ongoing, revolutionary goal is always capturing the hearts and minds of the customer's decision-making. That is why we use scales that include: 5) Love It, 4) Delightful, 3) Excellent 2) Satisfactory and 1) A Failure. We use specific aspects of specific emotions to create a scale that captures concrete



2013 Dodge Dart GT



2013 Ford Fusion

judgments with great clarity – thus, we have Total Quality."

Wesley Sherwood, manager, Quality Communications for Ford, responded to the recognition given to the Fusion.

"We are pleased the new Fusion earned top quality honors in the highly competitive midsize car segment based on leading fuel economy, technology and game-changing looks," he said.

"Fusion had best-ever April

sales of 26,722 cars, a 24 percent increase over record 2012 levels. The strongest retail sales increases for Fusion continue to come from the Western and Southeastern U.S. – with sales in the West doubling and Southeast sales up 70 percent."

Sherwood noted this is just the latest award for the Fusion, noting the car was named among the KBB.com list of Best Family Cars of 2013.

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