# Tech Center News®

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**DECEMBER 31, 2018** 

# Executive Loss, New Tech Drive Changes in 2018

auto industry, with major unforeseen shake-ups in leadership, OEMs moving away from producing sedans and leaps in technology.

The death of FCA CEO Sergio Marchionne in July was a surprise to the industry. In January, at the North American International Auto Show, Marchionne announced that his retirement was set for sometime in 2019.

When asked if he had picked a successor, Marchionne said that there was a plan in place to name his replacement, but that it was the FCA board of directors' plan. According to the Associated Press, Marchionne had shoulder problems for some time and was finally getting the problem fixed.

Marchionne experienced complications and on July 21, FCA named Mike Manley, who was running the Jeep and Ram brands, as Marchionne's replacement effective immediately.

On July 25, the news agency ANSA reported that Marchionne suffered cardiac arrest while recovering from surgery to his right shoulder a few days prior in a Zurich hospital, which landed him in intensive care, where he later suffered a second, fatal car-

2018 was a busy year for the were not publicly known. The Detroit Free Press reported that Marchionne's family confirmed by email to Bloomberg that the companies Marchionne ran -FCA, Ferrari and tractor maker CNH Industrial - weren't told of his health condition until July when they were notified he wouldn't return to work.

Many media sites credited Marchionne with creating FCA, a company that was more profitable than either Chrysler or Fiat. NPR wrote that "under Marchionne's guidance, Fiat Chrysler has enjoyed huge gains in its long-popular Jeep brand, and it built on the Dodge Challenger to become a player in the resurgent muscle car market.'

NPR also noted that other gains were reflected in the company's healthy balance sheets and in its corporate strategy. Fiat Chrysler obtained 100 percent ownership of Chrysler in 2014; two years later, it spun off its Ferrari brand.

The automaker has also expanded into important markets building Jeep Cherokees in China and the Jeep Compass in

Nissan also lost its CEO, but in an entirely different way than FCA. Nissan Chairman Carlos Ghosn, who, according to the Associated Press, became one of the auto industry's most powerful executives by engineering a turnaround at the Japanese manufacturer, was arrested Nov. 20 and was fired for allegedly underreporting his income and misusing company funds, the automaker said.

The Associated Press wrote that the scandal reverberated across the globe and abruptly threw into question Ghosn's future as leader of the Renault-Nissan-Mitsubishi alliance, which sold 10.6 million cars last year, more than any other automotive manufacturer in the world.

Ghosn remained behind bars and on Dec. 20 AP wrote, "Nissan's former Chairman Carlos Ghosn has been sitting in a humble cell for more than a month, interrogated day in and day out, without a lawyer present."

GM made news on Nov. 27 when the company announced that even though unemployment is low, the economy is growing and U.S. auto sales are near historic highs, General Motors is cutting thousands of jobs in a

**CONTINUED ON PAGE 3** 



Marchionne's health issues FCA CEO Sergio Marchionne died in 2018 after shoulder surgery.



Bill Ford unveiled company plans to renovate Detroit's train station.

# Pacifica Earns Top Marks in Safety Crash Tests

families, so having a minivan that meets the highest safety standards is something buyers consider important, said FCA spokesman Eric Mayne.

The 2019 Chrysler Pacifica minivan has earned a Top Safety Pick rating from the Insurance Institute for Highway Safety (IIHS).

The Chrysler Pacifica launched with a new design in model-year 2017. Each year since then, the vehicle has earned Top Safety Pick+ or Top Safety Pick honors - a significant achievement in the wake of IIHS testing that has upgraded its criteria six times since modelyear 2013, said FCA spokesman Eric Mayne.

"We believe safety is paramount, which is why we get these results," Mayne said.

"From an engineering perspecvan is a technological milestone," ca. "It offers exceptional crash- sensors for greater precision.

Minivans are designed to haul worthiness, without compromising attributes such as interior space or fuel efficiency."

High-strength steel accounts for 72 percent of its body structure - the most such content in the North American minivan segment, Mayne said. Yet, the Chrysler Pacifica is 250 lbs. lighter than the vehicle it replaced, which benefits fuel economy. The 2019 Chrysler Pacifica's combined city/highway fueleconomy rating of 22 miles per gallon is beat only by its electrified platform-mate, the Chrysler Pacifica Hybrid.

The Pacifica's safety rating is no coincidence, Mayne said. The 2019 Pacifica minivan has more than 100 available safety and security features, one of which is Forward Collision Warning-Plus, which earned the highest-possitive, the Chrysler Pacifica mini- ble IIHS rating of "superior." The feature benefits from sensor-fusaid Phil Jansen, head of Product sion technology, which blends the Development, FCA North Ameri- attributes of camera and radar Touring Plus model offers the Advanced SafetyTec Group as standard equipment. The package comprises more than 10 safety and security features, including

For 2019, the Chrysler Pacifica Forward Collision Warning-Plus, Lane Departure Warning-Plus and ParkSense front/rear park assist with stop.

**CONTINUED ON PAGE 4** 



The 2019 Pacifica was thoroughly tested for crash safety by IIHS.

#### Sierra AT4 Option Package Designed For Off-Road Trucking Enthusiasts

more than just a good-looking vehicle, it's tough and not afraid to go off paved roads, said Duncan Aldred, vice president of Global GMC.

Defining the premium off-road segment, the 2019 GMC Sierra AT4 is now available with the allnew Off-Road Performance Package, Aldred said. The Off-Road Performance Package adds factory-installed performance upgrades that bring additional power and purpose to the Sierra AT4.

"The 2019 GMC Sierra AT4 debuted all-new, purposeful tech-

The GMC Sierra pickup truck is nologies for the premium truck segment and the new Off-Road Performance Package takes it a step farther," said Aldred. "It offers optimized performance, both on- and off-road.

> The Sierra AT4 Off-Road Performance Package includes:

- 6.2L V8 engine mated to 10speed automatic transmis-
- 18-inch machined aluminum wheels with Goodyear Wrangler DuraTrac tires.

**CONTINUED ON PAGE 2** 

#### Ford Lays Out **Strategy For Coming Year**

With 2018 coming to an end, Ford is looking to what 2019 will bring, said Ford spokeswoman Elizabeth Kellogg.

Self-driving cars are a hot topic today, but if one had to choose, would that person rather his or her children ride in an autonomous vehicle or drive with a stranger?

Many people are surprised to learn that 67 percent of adults would opt for the self-driving car, Kellogg said. That insight is one of many revealed in the 2019 Looking Further with Ford Trend Report, released in mid-December. The report takes a deep look into the reasons for behavioral change, specifically uncovering the dynamic relationships consumers have with the shifting landscape of technology

Change is not always easy particularly when it is driven by forces outside of one's control, Kellogg said. In a global survey of 14 countries, Ford's research revealed that 87 percent of adults believe technology is the biggest driver of change.

And, while 79 percent of adults maintain that technology is a force for good, there are large segments of the population that have significant concerns. Some are afraid of artificial intelligence. Others fear the impact of technology on our emotional well-being.

"Individually and collectively, these behavioral changes can take us from feeling helpless to feeling empowered and unleash a world of wonder, hope and progress," said Sheryl Connelly,

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#### **MCC Teaching Manufacturing** Skills Classes

To help meet the burgeoning skills gap in manufacturing in Southeast Michigan, Macomb Community College is offering three advanced manufacturing programs in early 2019.

The programs - controls technician, maintenance technician and robot technician - are designed to give participating students the training needed to enter the manufacturing industry with no previous experience necessary, said Sean Patrick, MCC manager of Media Relations.

All three programs are noncredit and full-time, featuring a combination of classroom education and hands-on experience, The programs run between three and four months long, depending on the program, Patrick said.

An information session for the maintenance technician and robot technician programs will be held on Jan. 17 from 10 to 11:30 a.m. at Macomb Community College's M-TEC, 7900 Tank Avenue in Warren. Call 586-498-4100 for more information.

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## Lamborghini Concept Vehicle's Body Glows in the Dark?

Call it a bright spot in the future of automotive technology.

The Lamborghini LB48H will not only be a hybridised version of its iconic V12 engine. It will be one of two 2020 series-production Lamborghinis to use electrification, along with a plug-in hybrid Urus SUV, and will be previewed by a low-volume, \$3 million hypercar due to be revealed next year, according to a post on Dec. 20 by Mike Duff for the Web site Autocar.

Road & Track picked up the story and wrote that "Earlier this year, Lamborghini boss Stefano Domenicali confirmed that the successors for the Aventador and Huracan will combine highrevving naturally aspirated engines with electric motors, and we may soon get a preview of what they'll look like.

"Rumors about a new hybrid hypercar, codenamed LB48H, have been floating around since the summer, when Lamborghini reportedly held a preview event for prospective buyers. Autocar reports that the LB48H will be a preview of sorts for the Aventador's successor, which is due in 2020. Additionally, a source familiar with Lamborghini's plans tells R&T that the LB48H will cost a little less than \$3 million, and it'll glow in the dark.'

In an article posted on Road & Track Web site Dec. 20, Chris Perkins wrote that Lamborghini wants to embrace electrification as a way to keep using its naturally aspirated V10s and V12s, but the batteries needed to power an electric motor are heavy. That's not a major issue in, say, a luxury SUV, but it is with a supercar. As a workaround, Lamborghini is probably going to ditch those batteries in favor of supercapacitors in this hypercar.

Perkins went on to write that

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Lamborghini in 2017 showed off an all-electric concept car, the Terzo Millenio, which featured supercapacitors developed in concert with MIT.

Supercapacitors are much smaller than batteries, and they're able to discharge and recover energy at the same time, making them ideal for what Lamborghini wants.

Lamborghini is working with Professor Mircea Dinca at the MIT chemistry department to develop supercapacitors with energy density matching that of the batteries used in other electrified cars, Perkins wrote.

In his story, Duff wrote, "Hybridisation has come from necessity, rather than choice.

The law will determine what level of pure-electric driving you need," Lamborghini's Chief Technical Officer Maurizio Reggiani told Autocar.

"There are several discussions ongoing. Some say 20km, some say 30km and China is suggesting 50km - and normally we only develop one car worldwide."

As to the body of this new vehicle, Perkins wrote, "Expect more traditional carbon fiber and lots of Lamborghini's forged composites for the LB48H, as well as some sort of tech that'll make it glow in the dark.

That part we're not too clear on, but it's the sort of lunacy we'd expect from Lambo.

"We also imagine the LB48H will take some design cues from the (all-electric concept car) Terzo Millenio."

Lamborghini, on its Web site, described the Terzo Millennio as vehicle that comes "with a visionary approach, bringing its own DNA's values in the extreme. To plan its path through the electric super sports car, Lamborghini defines the requirements of the third millennium in terms of energy storage and innovative materials to secure the most emotional and ultimate driving experience.

The Web site states that the Lamborghini Terzo Millennio de-

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velops through 4 pillars – Energy, Innovation in Materials, Powertrain & Vehicle Architecture, Sound & Emotion.

Specifically, the Terzo Millennio Lamborghini aims to reduce weight and to increase the availability of electric energy using structural electric energy storing composites as a rechargeable battery, according to Lamborghini's Web site.

The target is to improve the nanomaterial technology, diffusing nano-charges in CFK-based panels able to store electric energy and in the meantime to form the body and structures of the car. CFK stands for Carbon Faserverstärkte Kunststoffe (German for Carbon Fibre-Enhanced Plastics).

At the same time, according to the Lamborghini Web site, the project aims to combine the technology to monitor continuously the whole carbon fiber structure, both visible and invisible, with the concept of healthmonitoring: the goal is to provide for the Terzo Millennio the ability to conduct its own health-monitoring, to detect cracks and damages that might occur after accident, throughout its substruc-



A new concept car is said to be based on the EV Terzo Millennio.

## **GMC Now Offering Option Package for Off-Roaders**

CONTINUED FROM PAGE 1

- Cat-Back Performance Exhaust System.
- Performance Air Intake.

Thanks to these additions, the AT4 Off-Road Performance Package delivers up to 435 horsepower and 469 lb.-ft. of torque - increases of 15 horsepower and 9 lb.-ft. of torque over a Sierra equipped with a conventional 6.2L V8 engine. The 6.2L is manufactured at GM's Tonawanda engine plant in

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New York and was recently named a Wards 10 Best Engine for 2019.

For 25 years, WardsAuto editors have evaluated every allnew or significantly improved engine or electric propulsion system available in production vehicles in the U.S. Vehicles must have a starting MSRP less than \$64,000.

The editors score eligible vehicles on horsepower, torque, technology, observed fuel economy, relative competitiveness and noise characteristics.

The Off-Road Performance Package's upgrades build on the Sierra AT4's distinctive formula of authentic off-road capability, innovative technology and bold design, along with GMC's premium refinement, said Aldred.

The Sierra AT4 was introduced earlier this year, and content includes standard 2-inch factory-installed suspension lift, standard 4WD with a two-speed transfer case, locking rear differential and skid plates, standard off-road-tuned Rancho monotube shock absorbers as well as Standard Hill Descent Control and standard Traction Select System.

Aldred said the 2019 GMC Sierra AT4 is just rugged.

It's also sylish, he said, and comes with the standard GMC exclusive, industry-first Multi-Pro Tailgate.

It also includes standard black chrome finish on the fog lamp bezels, fender surround and grille insert, standard bodycolor grille surround, door handles and bumper, standard exclusive athletic interior trim elements and standard red vertical recovery hooks.

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#### **COVERS THE TECH CENTER AND THE IMMEDIATE AREA**

#### 2019 NAIAS Gives New Auto, Tech **Firms Platform**

The North American International Auto Show (NAIAS), in partnership with Techstars Mobility, will host 65 startups from 10 countries,

The goal is to allows these new companies to showcase their innovative mobility-focused products and technologies at the 3rd annual AutoMobili-D exposition Jan. 14-17, said NAIAS Chairman Bill Golling.

"Each year AutoMobili-D has built upon the prior year's success with growing startup participants," said Golling. "In fact, we'll see a 20 percent increase in participation at the upcoming show with startups encompassing a wide range of technologies and businesses - from autonomous and connected cars to mapping and journey planning to ride sharing and smart cities.'

"The startup area has grown by 59 percent since it began in 2017," said Techstars Mobility Manager Ted Serbinski. "Startups understand that every key decision in automotive and supplier strategy eventually goes through Detroit, where the future of mobility is as strong as ever. AutoMobili-D has been a key player in this process."

A total of 63 percent of companies at the event are first-time exhibitors, Serbinski said. And 86 percent have existing relationships with automotive and tech companies. Collectively, the startups employ over 872 world-

Participating 2019 startups include Advanced Connected Vehicle Solutions of Farmington Hills. ACVS provides software solutions for securely connecting vehicles to cloud services.

Its modular telematics client software supports needs such as remote operations, Firmware Iver The Aur(FOTA), and diagnostics.

# OEMs Experience Changes at Top in Year 2018

**CONTINUED FROM PAGE 1** 

major restructuring aimed at generating cash to spend on innovation.

As part of the announcement, GM stated it was no longer going to manufacture several sedan models, including the Buick LaCrosse, the Chevy Volt, the Cadillac CT6, the Chevy Impala, the Chevy Cruze and the Cadillac XTS. As a result of these moves, GM would be closing plants in Lordstown (Ohio) Baltimore and Detroit-Hamtramck.

GM officials said that instead, the company would be emphasizing its pickup truck and SUV lineups. Additionally, GM would dedicate more research dollars to develop autonomous and electric technologies.

Automotive analyst John McElroy said the move made financial sense because that is where consumer preference has shifted and that's where OEM profits are most generated.

McElroy said that what was unusual about GM's move was that was being done at a time when the company was making healthy profits. In the past, Detroit automakers usually waited until a financial crisis was occurring before making radical structural changes.

GM's announcement followed a pattern. In April, Ford officials announced that the company would stop selling all car models in North America but two: the Mustang muscle car and a version of the compact Focus called

Ford officials stated the discontinued sedans would be replaced by five new SUVs, all to deal with a market that has shifted dramatically in five years, Ford officials said. In March of 2018, trucks and SUVs were twothirds of U.S. new vehicle sales. They were less than half in March of 2013.

win," said Ford CEO Jim Hackett.

Ford and GM weren't the only OEMs cutting down on the production of sedans.

Volkswagen announced that it was discontinuing selling the Touareg in North America. Even the VW Beetle was discontinued.

Hyundai announced it was stopping production of the luxury sedan Axera. Honda ceased production of the CR-Z and Nissan ended production of the

McElroy said that he expects to hear similar announcements from other OEMs in 2019, as the market continues to shift toward SUVs and pickups.

The emphasis on developing new technology continued. In June, Ford announced that the company was purchasing the abandoned Central Train Station in Detroit's Corktown neighbor-

In addition to revitalizing the area, Ford would build facilities to help develop its AV technolo-



Stephen Carlisle

Reconstruction of the train station started in late 2018.

And the Cadillac brand announced that it was returning to Michigan.

For the past four years, Cadillac was headquartered in New York City, but in September GM announced that Cadillac was returning home and the brand would be based in Warren at an office across the street from the Tech Center.



Johan de Nysschen

This decision was made after Cadillac, in April, named Steve Carlisle as the new president of the Cadillac brand. He replaced Johan de Nysschen.

A spokesman said the move would place the Cadillac brand team closer to those responsible for the new Cadillacs, including design, engineering, purchasing and manufacturing, ensuring full integration of Cadillac's global growth strategy.



#### **Arlington Manor Apartments** Move In Incentives For GM Employees

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# Ford Develops 2019 Strategy Based on Consumer Needs

**CONTINUED FROM PAGE 1** 

Ford Global Consumer Trends and Futuring manager.

"At Ford, we are deeply focused on human-centric design and are committed to finding mobility solutions that help improve the lives of consumers and their communities.

In the context of change, we have to protect what we consider most valuable - having a trusted relationship with our customers. So we are always deliberate and thoughtful about how we navigate change.'

Here are a few key insights from Ford's 7th annual Trends Report:

- half of people Almost around the world believe that fear drives change and seven in 10 say that they are energized by change.
- 87 percent agree that technology is the biggest driver of today's change and almost 8 in 10 citizens believe that technology is a force for good.
- 45 percent of adults globally reported that they envy people who can disconnect from their devices.
- 7 out of 10 consumers agreed that we should have a mandatory timeout from our devices.

Ford's Trend Report serves as a blueprint for understanding how key patterns of consumer behavior around the globe are expected to influence consumers and corporations in 2019 and beyond, Kellogg said.

The company identified seven trends for 2019.

There is the Tech Divide, Kellogg said. Technology has a profound impact on how we connect with and see the world - more than ever before.

Yet, there's an underlying tencess and believe it's a force for good and those who don't have

At Ford, technology is used to help make mobility smarter, safer and more convenient for people around the world, Connelly said.

The company is deliberate about the technology used, and educating consumers on how to use technology smartly, thoughtfully and in ways that add value to their lives.

In some cities, the company leverages the work of the City Solutions team, which works with cities to understand their physical and cultural infrastructure and find solutions to help residents move more freely.

Then there is Digital Detox. Despite being tethered to our devices, trends show that many are increasingly aware of - and alarmed by - their device dependency and seeking ways to hold themselves accountable for the time they spend online, Connelly said.

Ford has studied the effects of high-performance race-car driving on the brain. The company is applying data uncovered in its research of these "buzz moments" - the thrills that play a vital role in overall wellness - to better understand how to improve drivers' experience and mindset behind the wheel.

Another idenified trend is called Reclaiming Control. In a world where control feels so out of grasp for many, consumers are looking for ways to reclaim agency over their lives where self-improvement is paramount, Connelly said.

As part of Ford's human-centered design process, empathy research is conducted to understand people's needs and habits

 including university professors, sion between those who have ac- tri-athletes, and everyday citizens.

> The company uses this research to develop vehicles and technology, like Ford Co-Pilot 360, which is designed to help relieve some of the burdensome tasks of driving and give the drivers confidence in their vehicle's ability to adapt and handle stressful road scenarios.

> Another trend for 2019 is referred to as Many Faces of Me, Connelly said.

With social media playing such a large part in consumers' lives today, many portray various personas - from who they are in real life to how they depict themselves online, which ultimately impacts what they buy, wear and drive, as well as their technology choices.

Ford understands that a vehicle is a reflection of a driver's sense of self and as such, the vehicles are designed to speak to an individual's needs while reinforcing and projecting who they

Then there is Life's Work. This trend is about how people perceive work has changed with many global citizens now working to live, not living to work, Connelly said.

Companies are responding in kind: with benefits, sabbaticals and extended leave being offered, as well as opportunities for mental enrichment and

Ford believes that talent is strengthened when people are encouraged to experience the world around them and give back to the community, Connelly

The company's 30 under 30 program allows young employees to take paid time away from their jobs to learn about philan-



Ford is testing Lidar equipment to make driving less stressful.

thropic organizations and strategize ways to connect them to future donors and volunteers, helping them to make an impact on their communities.

A trend called Eco-Momentum was also indentified, Connelly

While changing lifelong habits can be hard, consumers overwhelmingly agree that environmental progress will depend on changes in human behavior and many look for guidance on how and where to improve their environmental footprint.

Sustainable practices are critical to the health of the environment and to Ford's success. He said the company is also focused on reducing emissions from its vehicles by doing its share to deliver on CO2 reductions consistent with the Paris Climate Accord.

"We already charted our course for the future to invest in 16 fully electric vehicles within a global portfolio of 40 electrified vehicles through 2022.

The final trend is called Easy Street, Connelly said. The mobility journey isn't as simple as going from point A to B, it's about what people do with our time along the way.

Americans spend more time in their cars than they receive vacation time, so the ability to get things done while on the road could change the commute experience as Americans know

Ford believes that self-driving vehicles will reduce society's pain points and expand access to transportation and goods delivery, Connelly said.

The company is working with companies to understand how goods delivery through the use of self-driving vehicles can be improved.

An example of this is a pilot program Ford is conducting with Walmart and Postmates, exploring how self-driving vehicles can complement Walmart's home delivery offerings.

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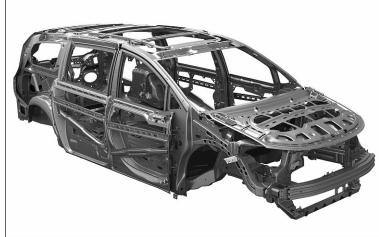
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The Pacifica went through several crash tests by IIHS.

## Pacifica Crash Test Results Earn Vehicle Top Ratings

**CONTINUED FROM PAGE 1** 

Lane Departure Warning-Plus alerts and assist the driver by the vehicle to a stop. leveraging the Pacifica's Electric Power Steering (EPS) to deliver subtle steering-wheel inputs if the system detects a need for course correction. ParkSense front/rear park assist with stop uses ultrasonic sensors to detect stationary objects and alerts the driver accordingly.

If a collision appears imminent in reverse gear, the system will provide a momentary, au-

tonomous brake pulse. Below 4.4 mph, if the driver has not already intervened, the system will bring

With more than 100 available safety and security features, the Uconnect Theater rear-seat entertainment system, available 4G Wi-Fi and a full array of comfort and convenience technologies, the Chrysler Pacifica and Pacifica Hybrid are minivans ideally suited for families and have earned their spots as the most awarded minivans of the past three years, Mayne said.

#### New Lake Locks Should Help State's Economy

LANSING, Mich. (AP) - Michigan's commitment of up to \$52 million toward construction of a new Great Lakes shipping lock could accelerate the project's completion by a year and save taxpayers \$30 million.

Gov. Rick Snyder and the U.S. Army Corps of Engineers released the figures Dec. 26 while announcing a memorandum of agreement.

Michigan's funds will be used to pay for design work and a portion of a channel deepening project that will be an important step toward building a second largesized lock at Sault Ste. Marie to accommodate freighters that haul iron ore and other bulk commodities. The federal government is spending \$32 million on the channel deepening.

Congress has authorized funding for the second large Soo Lock but must appropriate funds over numerous years to pay for the \$1 billion project.

#### Feds Declare Not Enough Takata Airbags Replaced

DETROIT (AP) - More than three years after the government took over management of recalls involving dangerous Takata air bag inflators, one-third of the recalled inflators still have not been replaced.

That's according to an annual report on the recalls released Dec. 21 by the government and a court-appointed recall monitor.

The report touts progress made this year by 19 automakers involved in the recalls, with recall repair rates across all companies increasing 30 percent during the year, according to the National Highway Traffic Safety Administration.

But the report by monitor John Buretta says 16.7 million faulty inflators out of 50 million under recall have yet to be replaced. And 10 million more inflators are scheduled to be recalled in January.

Safety advocates said the completion rate should be far higher given the danger associated with the inflators. At least 23 people have been killed worldwide and hundreds injured due to the problem. The recalls forced Takata to seek bankruptcy protection and sell most of its assets to pay for the fixes.

The inflators grow more dangerous as they get older because ammonium nitrate deteriorates due to high humidity and cycles from hot temperatures to cold.

The most dangerous places for inflators are in areas of the South along the Gulf of Mexico that have high humidity along with high heat.

Jason Levine, executive director of the nonprofit Center for Auto Safety, said it's taking too long to replace all of the infla-

# **Automaker Data Collection Creates Challenges**

by MICHAEL LIEDTKE AP Technology Writer

SAN FRANCISCO (AP) - That holiday trip over the river and through the woods to grandmother's house could turn into a nice little gift for automakers as they increasingly collect oodles and oodles of data about the

Automakers are collecting valuable pieces of information thanks to the internet connections, cameras and sensors built into most vehicles in recent

The online access makes it possible for cars to be unlocked remotely if the keys are lost. It's how safety features can be upgraded wirelessly and maintenance schedules adjusted based on performance.

But these digital peepholes are also offering automakers a windshield-size view of people's lives.

That's creating the potential for intrusive marketing pitches and government surveillance of drivers and their habits.

No serious incidents have occurred in the United States, Europe and Japan, but a red flag has already been raised in China, where automakers have been sharing location details of connected cars with the govern-

"We are not that far away from when 100 percent of all new cars will come equipped with data modems," Navigant Research analyst Sam Abuelsamid predicted.

"Having the potential to collect more data about people in their cars means there is going to be potential for abuses,

Here are some key questions about the auto industry's acceleration down the data-collection highway:

A: In 2016, about one in every five cars sold globally could be plugged into the internet, according to BI Intelligence. By 2020, about three out of every four cars sold will be online.

So if you are driving a 2009 Toyota Corolla, you probably only have to worry about the tracking and data collection being done by the smartphone resting on the cup holder. But as those older models go to the scrapyard, it will become difficult to avoid a vehicle set up for gathering data that will be sent to automakers

Which automakers are leading the way in this trend?

A: General Motors accounted for 46 percent of connected-car shipments last year, according to the market research firm Counterpoint. They're followed by BMW (20 percent), Audi (14 percent) and Mercedes Benz (13 percent).

In addition, Tesla's Model S sold since 2012 all come with connectivity. The firm said the biggest markets for connected car sales last year were China (32 percent), the United States (13 percent), Germany (11 percent) and the United Kingdom (9 per-

Q: Do I own data that's collect-

A: Under U.S. law, it's unclear. Drivers own the data stored in the "black boxes" that monitor vehicles in a crash. Police and insurers need a driver's consent or a court order - to get that data. But there are no laws addressing data collected by

ternet connections. So far, few automakers will share their data in the United States without the owners' con-

automakers through vehicle in-

Q: What kind of cars collect sent, Abuelsamid said. Twenty companies - including GM, Toyota, Ford, Hyundai and Mercedes-Benz – signed a voluntary agreement in 2014 to get permission before sharing a driver's location, health or behavior with third parties.

> The agreement doesn't require approval from drivers for data to be shared with emergency workers or for internal research.

> One of the most notable exceptions is electric car maker Tesla Motors, which has released data publicly to reveal - sometimes within hours of a crash - how fast a driver was traveling and whether the company's semi-autonomous Autopilot system was engaged at the time of an acccident or was turned after the collision took place.

O: In what ways are automakers passing along data when drivers allow it to be shared?

A: They're giving the data to insurers to determine the premiums that should be charged, if a driver consents.

This could be good if data indicates drivers are cautious, adhere to speed limits and seldom log lots of miles.

But insurance premiums could jump for drivers who are prone to speeding or frequent hard braking - all of which could be interpreted as raising the risks for accidents. Insurers would also know whether your seat belt is fastened

Q: Can I stop an automaker from collecting my data?

A: Most automakers let owners decline, or opt out of, data collection, but that's usually buried in the fine print and the option is missed by many of the drivers who use such technology.

Otherwise, permission is assumed. Also, unlike smartmay be required to ensure that cars operate safely and can receive essential software updates as needed.

That's especially true as more vehicles come with features such as semi-autonomous driving. And it could be necessary in order to have self-driving vehicles operate on streets.

Q: Should I be worried about automakers using my data in ways that are annoying or compromise my privacy?

A: Probably, if what has happened with smartphones is a reliable gauge.

As automakers collect more data about drivers, they're more likely to look for ways to profit from the use of that collected information.

The built-in display screens and mapping software would seem to be ideal spots for automakers to post advertisements.

This would be similar to what Google, Facebook, Amazon and many other internet companies already do.

The business consultancy McKinsey has estimated automotive data could be worth \$450 billion to \$750 billion worldwide by

Ford Motor CEO Jim Hackett may have foreshadowed what's coming as he boasted in a recent interview about how much the automaker already knows about its customers who get their loans through its financial services division.

All the lending information has allowed Ford to learn how much money people spend, where they live and whether or not they are married

"We've never ever been challenged on how we use that," Hackett told a Freakonomics podcast last month.

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## Silverado 4500, 5500, 6500 HD Now Here

The Chevrolet Silverado is more than just the 1500.

And now the Chevrolet Silverado 4500HD, 5500HD and 6500HD chassis cab trucks - the first-ever medium-duty Silverado trucks are in production and on their way to dealerships, said GM spokesman Mike Ofiara.

The trucks, which were first publicly shown at the 2018 NTEA Work Truck Show, are designed to be the most customer-focused medium-duty trucks of any major competitor, Ofiara said.

Established in 1964, the National Truck Equipment Association (NTEA), represents more than 2,050 companies that manufacture, distribute, install, sell and repair commercial trucks, truck bodies, truck equipment, trailers and accessories, Ofiara said.

The Silverado medium-duty production launch caps a record year for GM's Commercial business, with a double-digit yearover-year sales increase expect-

"When we decided to get back into the medium-duty segment, we were determined to build the truck our customers have been asking for," said Ed Peper, U.S. vice president, GM Fleet.

"We listened to the needs of fleet managers, truck drivers, technicians and dealers to design a truck that's easy to upfit, easy to drive, easy to service and easy to own.

The new Silverado trucks are popular with upfitters because the clean, straight frame rail design has no rivets, brackets or welds to get in the way, Peper said.

Additionally, the seven cab-toaxle lengths can work for a variety of upfits. Some of the strongest interest has come from the housing and highway construction, landscaping and utility industries, he said.

"Demand for the new Silverado medium duty has been exceptionally strong from dealers, Upfitter, and customers," said John Schwegman, director of commercial product and medium duty, GM Fleet. "With our large vehicle portfolio from sedans to crossovers to large trucks, our Chevy Business Elite dealers can offer commercial customers a one-stop shop that supports their business needs."

The Silverado medium-duty chassis cab is just one of three new Silverado models Chevrolet is introducing within just 18 months, Peper said. The other • Silverado 1500 - which offers DuraBed, the most functional bed of any pickup with best-in-class cargo volume in every bed length, plus a segment-leading 12 fixed tie-downs, Peper said.

Silverado 2500HD 3500HD - which feature new trailering technology, significant increases in towing and payload capabilities and a host of available technologies and features designed specifically heavy-duty truck customers.

All Silverado models will also be available in chassis cab configurations, Ofiara said.



Chevrolet's heavy-duty Silverados are now at dealerships.

## **Uber Gets DOT Permission** To Test AVs in Pittsburgh

PITTSBURGH (AP) - The Penn- mph, and it has narrow roads, sylvania Department of Transportation has approved Uber's request to resume testing of autonomous vehicles on public roads in the Pittsburgh area.

The approval, effective Dec. 18 and lasting for one year, comes about nine months after one of Uber's autonomous test vehicles hit and killed an Arizona pedestrian. Testing was suspended after the March 18 crash in Tempe, Ariz.

Uber can test throughout Allegheny County, where Pittsburgh is located. Its vehicles must have at least one human backup driver and two if the company plans to go over 25 miles per hour, department spokeswoman Erin Waters-Trasatt said.

Uber spokeswoman Sarah Abboud confirmed the approval but declined to say when the testing would resume.

The ride-hailing company had previously said it wanted to resume testing in a Pittsburgh entertainment, shopping, office and residential area called the Strip District, where its automated vehicle operations are located. Speed limits on most roads in the district are no higher than 25

railroad tracks, potholes and numerous pedestrians that present challenges for self-driving vehicles. Uber also has said it would test only during daytime hours and not in inclement weather.

The company filed an application to restart testing back in November, as it issued a lengthy safety report pledging to put two human backup drivers in each vehicle and take a raft of other precautions to make the vehicles safe.

Company officials have acknowledged they have a long way to go to regain public trust after the crash that killed Elaine Herzberg, 49, as she crossed a darkened Arizona road outside the lines of a crosswalk.

Police said Uber's backup driver in the autonomous Volvo SUV in Arizona was streaming the television show, "The Voice," on her phone and looking downward before the crash. The National Transportation Safety Board said the autonomous driving system on the Volvo spotted Herzberg about six seconds before hitting her, but did not stop because the system used to automatically apply brakes in potentially dangerous situations were disabled.

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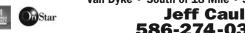
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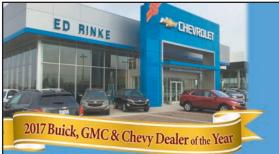
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