

# Will Self-Driving Vehicles Make the Roads Safer?

Every movie about the future has that essential scene showing the “City of the Future” ... you know the one... towering glass buildings, the fast-blinking advertisements, and the flashy cars, all hovering in the air, zooming by each other on some unseen digital pathway. The camera shoots down, giving us a glimpse inside our hero or heroine's car where we see a dash loaded with bright digital readouts and a steering wheel spinning left and right on its own.

In the movies, the automobiles all work effortlessly together in an undetected network, seemingly communicating with each other about speed and location to avoid collisions. If another car floats into their pathway, automatic systems take over and hit the brakes, saving the lives of our movie characters. It may seem like a far-fetched idea, but it is really? Many leading manufacturers already have systems like this in place on the road today.

## Rise of the Cars

In the 1939 New York World's Fair, General Motors sponsored an electric car by Norman Bel Geddes that was controlled by radio and roadway circuits. In the late 2000s, many of the major manufacturers such as Audi and Toyota were investing large amounts of research and development capital in new autonomous technology.

Google's self-driving cars have been cruising around since 2012, albeit mostly in test-mode. Uber started testing out its driverless tech in Pittsburgh this past September. Next year, General Motors hopes to debut Super Cruise, a system for the Cadillac CT6 that allows the driver “hands-free” driving. Heck, my current vehicle warns me about cars in my blind spot, objects passing behind me and will even warn me to apply the brakes if it detects an obstacle in my path. Some think we are just mere *steps* away from those hover-cars we have seen in the movies. Experts predict that by 2040, 75% of the automobiles hitting the streets in the U.S. will be driverless!

No matter your opinion on these advances in automobile technology, you cannot deny that updates are happening at lightening speed. But are they safe?

## A Matter of Safety

We all saw the news this past May when a Tesla driver operating a Model S car in Autopilot mode lost his life after slamming into a tractor-trailer, skidding under the truck and barreling through a fence. This was the first death in an autonomous vehicle. Tesla stated that the Autopilot failed to notice the white trailer against the backdrop of a bright sky and did not apply the braking system. The driver did not see it either, and may have not been looking at the road ahead. Tesla has made it clear in their vehicle literature and company statements that “Autopilot is an assist feature that requires you to keep your hands on the steering wheel at all times, and that you need to maintain control and responsibility for your vehicle while using it.”

Was this Tesla car an isolated incident? Who was at fault for this accident? Are all self-driving cars doomed to fail? Why are motor companies clamoring over creating and testing their own versions of

autonomous vehicles? What are the actual FACTS regarding national statistics of road and highway accidents when it comes to driver versus driver-less? Let's take a look...

- Reports from the National Highway Traffic Safety Administration (NHTSA) state that traffic accident related deaths average around 33,000 to 35,000 each year. Chris Urmson of Google put it this way: "That's comparable to a 737 falling out of the sky almost five days a week, which would be completely unacceptable in air travel."
- A total of 17,775 people died in vehicle related accidents during the first six months of 2016, which is 1,500 more than the same time last year, marking the largest spike since 1966.
- There are 1.2 million people killed worldwide each year in traffic collisions.
- Human error is the cause of 94% of all vehicle accidents.
- Studies report that over 81% of all accidents could be avoided if all cars employed a Vehicular Communication System (VCS) a form of vehicle-to-vehicle (v2v) communication that identifies positioning.
- Some studies also report that accidents caused by sleepy or distracted drivers could be cut out completely with the VCS system.
- The Obama Administration set a goal to end traffic-related deaths by 2046. While it is highly ambitious, it is also dependant on automakers to stabilize and effectively use new and emerging technologies for self-driving cars.
- To date, there has only been one death seemingly caused by an autonomous car that may have not functioned correctly.
- The Insurance Institute for Highway Safety states that together, the forward-collision warning systems and automatic emergency braking systems have already been shown to reduce rear-end accidents by 40%.

## The Human Element

Many experts think the solution to 35,000 accident fatalities a year is autonomous cars. If they can brake for us when we are distracted, alert us to potential hazards on the roads, and even communicate together in fleets, many experts concur that traffic deaths would plummet. Remember, *human error* is what causes 94% off accidents; eliminating the human element could lead to drastically less car accidents, injuries and death.

But the most significant improvements will only take place when every single vehicle on the roadway is at least, in part, computer-operated. Think about it... you have the fancy car with the VCS system, but none of those around you do. Sure, *your* car will stop you from crashing into the ones around you, but that doesn't mean the drivers of the others cars will not crash into *you*. And with a study showing that only 49% of Americans would be willing to give up control of their car in the name of safety, it doesn't seem like the entire country would be willing to jump on board the self-driving car train. Another survey by AAA said that 84% of those polled said they did *not* want their next car to have semi-autonomous features, that they trust their own driving skills more.

Where does that reluctance leave us on the path to creating safer roadways?

# The Road Ahead

Since the government is now fully on board, many hope that the public will join the campaign as well. The Department of Transportation recently published the first guidelines for safety expectations for design and development, pushing for uniform standards and policies for all driverless cars. The Obama administration started testing the driverless tech waters, so to speak, in 2013, and since then has moved to enthusiastically supporting the technology and advancements. President Obama proposed a \$4 billion federal budget over the next 10 years for research and development into driverless automobiles.

Our distant future may very well hold those movie hovercraft vehicles, but in the mean time, we have a long way to go when it comes to developing and perfecting the technology we need, as well as setting proper regulations in place for self-driving cars hitting the roads and highways. I can't wait to take a ride in my flying car through the skyways of our major cities.

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