

## Testing the driverless Uber—first nerves, and then acceptance

September 14 2016



It was driverless Uber's turn to veer left across a four-way stop, but the driver opposite apparently didn't think so.

He jumped out into the intersection, cutting us off, making the person sitting behind the Uber wheel for safety both try to take over steering



and hit the panic button.

But it was all unnecessary. The Uber-computer saw the looming crash, hit the brakes itself and then, the other driver well past, guilelessly headed on its pre-programmed path.

A tour of Pittsburgh in a car without a driver could be full of such scares. But remarkably, there seemed to be fewer incidents like that in the self-driving cars Uber is launching on the US city's street's Wednesday than in a regular, human-steered vehicle.

Sitting in the traditional driver's seat with hands millimeters from the wheel, just in case, and the red panic stop button to the right, just in case, it took only about 10 minutes to get used to the idea that this beast—a Ford Fusion decked out with laser radar, cameras and other sensors—knew what it was doing.

It drives like someone's 80 year old grand-dad. It maintains a very long distance from the car ahead, and stops well behind the others. Sometimes it takes off from a stop with an impatient surge; other times in a slow pickup. Most of the time it stops with an easy deceleration; other times it hits the brakes harder, with no evident reason.

But it mostly seems calm and patient, signalling for turns, never honking—unlike a lot of drivers on the road.

## Winter test ahead

Uber has been testing its self-driving cars in Pittsburgh, the eastern rustbelt city of 2.6 million now undergoing a tech-based revival, for less than two years, repeatedly negotiating its narrow bumpy streets, scores of bridges crossing the two rivers that meet at the city center, and the steep hills surrounding it.



Raffi Krikorian, director of the Uber Advanced Technologies Center in the city, calls Pittsburgh the "double black diamond" of driving terrain.

Read: Uber launches groundbreaking driverless car service

The car seems to have mastered it. Uber nevertheless sends out with each car two technicians, one to keep his hands close to the wheel to intervene in difficult situations while the other monitors things.

The cars need an intervention on average every couple miles, and it is easy to see why. Delivery trucks suddenly stop and block the lane; pedestrians cross unexpectedly.

But what is surprising is that the car does not flinch half the amount of times a driver might. The oncoming truck worryingly close to the center line? Driverless Uber held its line when a human driver might not; the truck never crossed the center. It sees things you can't, says a technician.

And an impatient driver who zipped around the Uber car dangerously in a no-passing zone did not freak out its computer-brain at all. There was just a slight pullback—just enough to fortify passenger confidence. Yet it stops when it needs to.

The most dangerous issue in a test ride for reporters this week was that it was too easy for the person sitting in the driver's seat just to forget about watching the road. The <u>car</u>, the technicians stress, still isn't ready for that.

They still have to be tested in the heavy snow and ice of a Pittsburgh winter.

And the most daunting challenge, an official says, is the most basic for a taxi-like service: picking up and dropping off passengers. Self-driving



Uber is trained to find a completely safe parking spot—often not available—when cars with drivers will readily stop in the road to let passengers on and off.

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