## Tesla's Are Killing Their Owners. 'Tesla Accelerated Seconds Before Slamming Into Highway Barrier, Killing Driver': NTSB

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The NTSB has released its report analyzing the March 23 Tesla Model X crash in Mountain View, which ended in the tragic death of a 38 year old Apple engineer and took place while Autopilot was engaged - and while the driver had their hands off of the steering wheel. While many of the details were known previously, the most surprising revelation was that the vehicle actually sped up seconds before the crash.

As Bloomberg reports, the Model X that crashed in California while being guided by its semi-autonomous

driving system, accelerated to 71 miles an hour in the seconds before the vehicle slammed into a highway barrier, according to the NTSB investigators. In the preliminary report on the March 23 crash, investigators report that the driver's hands were detected on the steering wheel only 34 seconds during the last minute before impact.

The investigation is the latest to shine a spotlight into potential flaws in emerging autonomous driving technology.

Another NTSB probe of a selfdriving Uber Technologies Inc. car that killed a pedestrian March 18 in Arizona found that the car's sensors picked up the victim, but the vehicle wasn't programmed to brake for obstructions. Walter Huang, a 38year-old engineer who worked at Apple Inc., died in Mountain View, California, in the March 23 crash when his Model X struck a highway barrier as he was using the driver-assistance system known as Autopilot. The car's computer didn't sense his hands on the steering wheel for six seconds before the collision, according to NTSB.

The full NTSB report can be read here. Here are the highlights:

According to performance data downloaded from the vehicle, the driver was using the advanced driver assistance features trafficaware cruise control and autosteer lane-keeping assistance, which Tesla refers to as "autopilot."

As the Tesla approached the paved gore area dividing the main travel lanes of US-101 from the SH-85 exit ramp, it moved to the left and entered the gore area.[1] The Tesla continued traveling through the gore area and struck a previously damaged crash attenuator at a speed of about 71 mph.[2] The crash attenuator was located at the end of a concrete median barrier. The speed limit on this area of roadway is 65 mph.

Preliminary recorded data indicate that the traffic-aware cruise control speed was set to 75 mph at the time of the crash.[3] The impact rotated the Tesla counterclockwise and caused a separation of the front portion of the vehicle. The Tesla was involved in

subsequent collisions with two other vehicles, a 2010 Mazda 3 and a 2017 Audi A4 (see figure 1).

The NTSB report concluded:

- The Autopilot system was engaged on four separate occasions during the 32-minute trip, including a continuous operation for the last 18 minutes 55 seconds prior to the crash.
- During the 18-minute 55-second segment, the vehicle provided two visual alerts and one auditory alert for the driver to place his hands on the steering wheel. These alerts were made more than 15 minutes prior to the crash.
- During the 60 seconds prior to the crash, the driver's hands were detected on the steering wheel on three separate occasions, for a total of 34 seconds; for the last 6 seconds prior to the crash, the vehicle did not detect the driver's hands on the steering wheel.
- At 8 seconds prior to the crash, the Tesla was following a lead vehicle and was traveling about 65 mph.

- At 7 seconds prior to the crash, the Tesla began a left steering movement while following a lead vehicle.
- At 4 seconds prior to the crash, the Tesla was no longer following a lead vehicle.
- At 3 seconds prior to the crash and up to the time of impact with the crash attenuator, the Tesla's speed increased from 62 to 70.8 mph, with no precrash braking or evasive steering movement detected.

It also confirmed the battery had been breached, causing a fire:

During the collision sequence, the Tesla's 400-volt lithium-ion high-voltage battery was breached, and a postcrash fire ensued (see figure 2). The driver was found belted in his seat. Bystanders removed him from the vehicle before it was engulfed in fire. The driver was transported to a local hospital, where he died from his injuries. The driver of the Mazda sustained minor injuries, and the driver of the Audi was uninjured.

Even stranger was the news that the battery reignited 5 days after the vehicle had been taken off the road:

The Mountain View Fire Department applied approximately 200 gallons of water and foam during a period of fewer than 10 minutes to extinguish fires involving the vehicle interior and the exposed portion of the high-voltage battery. Technical experts from Tesla responded to the scene to assist in assessing high-voltage hazards and fire safety. After being allowed to cool, the vehicle was transported with a fire engine escort to an impound lot in San Mateo. The highway was reopened at 3:09 p.m.

Around 4:30 p.m. that afternoon, at the impound lot, the Tesla battery emanated smoke and audible venting. The battery was monitored with a thermal imaging camera, but no active fire operations were conducted. On March 28, 5 days after the crash, the battery reignited. The San Mateo Fire Department responded and extinguished the fire.

The NTSB report also appears to contradict some statements Tesla has made regarding the incident. As

Twitter user @TeslaCharts pointed out, Tesla claimed on its blog the driver received "several" alerts "earlier in the drive", when the actual number, per the NTSB, was two and "earlier in the drive" was found to be "more than 15 minutes prior to the crash".

Recall that these are almost the same circumstances surrounding the recent Model S slamming into the back of a fire truck in Utah. We reported on that development on May 25.

Police results from that recent Salt Lake City crash were released weeks ago, indicating not only was the car was in Autopilot mode when it crashed into a stopped firetruck, but also that it sped up seconds before the moment of impact.

The police report was detailed as follows:

A Tesla Model S that crashed into a parked firetruck on a Utah highway this month while in its Autopilot mode sped up prior to the accident, a police report says.

Data retrieved from the sedan shows that it picked up speed for 3.5 seconds shortly before the collision in South Jordan, according to the Associated Press. The acceleration from 55 mph to 60 mph suggests that the Tesla had been following a slower car that then moved out of the way, allowing the Tesla to resume the

## higher speed that the Autopilot system had been set at.

Furthermore, the car did not warn the driver ahead of the collision, even as the driver may have been taking a cue from Elon's Model 3 reveal, where he told people they could "sleep" in their car: to wit, the driver had her hands off the wheel for 80 seconds and was admittedly looking at her cell phone at the moment of the crash:

The driver, Heather Lommatzsch, told police that she had been looking at her phone and claimed the Tesla did not provide any warnings that it was about to crash. The car's log said that her hands had been off of the steering wheel for 80 seconds leading up to the impact, and that she applied the brakes less than a second before hitting the firetruck, which was blocking the lane to protect the scene of a previous accident.

The March 23 Model X crash was similar in nature: there, the Model X suffered a gruesome and deadly crash when the vehicle hit a carpool lane barrier, leading two more cars to crashing into it, and causing the lithium ion batteries powering the vehicle to ignite and explode, at which point the vehicle burst into flames.

We reported on these details on March 24.

Autopilot continues to be a serious point of concern for Tesla, with critics arguing that it is extremely dangerous

and has been billed deceptively. This has garnered investigations and probes by both the NTSB and the and NHTSA, several of which are still ongoing.

Unfortunately, for the ill-fated driver of this Model X, they have become yet another data point in what is increasingly looking more and more like a several year long beta test of Autopilot as installed on Tesla vehicles. And needless to say, Tesla's Autopilot has been the subject of previous scrutiny following other crashes involving the vehicles.

Weeks ago, Tesla claimed its Autopilot was not engaged when a Model S veered off a road and plunged into a pond outside San Francisco, killing the driver. The NTSB has yet to confirm Tesla's version of events.

Earlier in May, the NTSB opened a probe into an accident in which a Model S caught fire after crashing into a wall at a high speed in Florida. Two 18-year-olds were trapped and died in the blaze. The agency has said it does not expect Autopilot to be a focus in that investigation.

Finally, as has been discussed by analysts, the liability that Musk may have brought unto himself and to the company by giving people the impression at the Model 3 unveiling that the car would be fully autonomous, could soon come back to bite the company in a big way, resulting in a costly and lengthy recall which could quickly sap the company's dwindling cash.