



PRELIMINARY REPORT

HIGHWAY

HWY21FH007

The information in this report is preliminary and will be supplemented or corrected during the course of the investigation.

About 9:07 p.m. central daylight time on Saturday April 17, 2021, a 2019 Tesla Model S P100D electric car, occupied by the 59-year-old owner and a 69-year-old passenger, was westbound on Hammock Dunes Place, a residential road in Spring, Harris County, Texas, when it crashed and caught fire.¹ Hammock Dunes Place is a concrete two-lane road with one westbound and one eastbound lane and mountable concrete curbs on either side. At the crash location, the roadway was level, with a curve to the south (figure 1). The roadway was equipped with streetlights but did not have lines to define the travel lanes. No speed limit signs were posted in the crash area, but the maximum speed limit for the road was 30 mph.



Figure 1. Hammock Dunes Place looking toward crash site.

The crash trip originated at the owner's residence near the end of a cul-de-sac. Footage from the owner's home security camera shows the owner entering the car's driver's seat and the passenger entering the front passenger seat. The car leaves and travels about 550 feet before

¹ Spring is a census-designated place in the extraterritorial jurisdiction of Houston in Harris County, Texas.

departing the road on a curve, driving over the curb, and hitting a drainage culvert, a raised manhole, and a tree.

The crash damaged the front of the car's high-voltage lithium-ion battery case, where a fire started. The fire destroyed the car, including the onboard storage device inside the infotainment console (figure 2). The car's restraint control module, which can record data associated with vehicle speed, belt status, acceleration, and airbag deployment, was recovered but sustained fire damage. The restraint control module was taken to the National Transportation Safety Board (NTSB) recorder laboratory for evaluation.



Figure 2. Fire and impact damage to car.

The vehicle was equipped with Autopilot, Tesla's advanced driver assistance system. Using Autopilot requires both the Traffic Aware Cruise Control and the Autosteer systems to be engaged.² NTSB tests of an exemplar car at the crash location showed that Traffic Aware Cruise Control could be engaged but that Autosteer was not available on that part of the road.

As a result of the crash and fire, both car occupants were fatally injured. The NTSB continues to collect data to analyze the crash dynamics, postmortem toxicology test results, seat belt use, occupant egress, and electric vehicle fires. All aspects of the crash remain under investigation as the NTSB determines the probable cause, with the intent of issuing safety recommendations to prevent similar crashes. The NTSB is working alongside the Harris County Texas Precinct 4 Constable's Office, which is conducting a separate, parallel investigation. The National Highway Traffic Safety Administration and Tesla are supporting the NTSB in the investigation.

² Traffic Aware Cruise Control is an adaptive cruise control system that provides longitudinal control (acceleration and deceleration). Autosteer is a lane-keeping assist system that provides lateral control (steering) to keep a vehicle in its lane.