



INVESTIGATIVE UPDATE

Electric Vehicle Run-off-Road Crash and Postcrash Fire Spring, Texas (HWY21FH007)

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

This report updates the preliminary report issued by the NTSB on May 10, 2021, concerning the crash of a Tesla Model S P100D car in Spring, Texas, on April 17, 2021. The car was westbound on Hammock Dunes Place when it left the road, drove over a curb, and hit a drainage culvert, a raised manhole, and a tree (see figure 1). A postcrash fire destroyed the car. The car was occupied by a driver and one passenger, both of whom died in the crash.

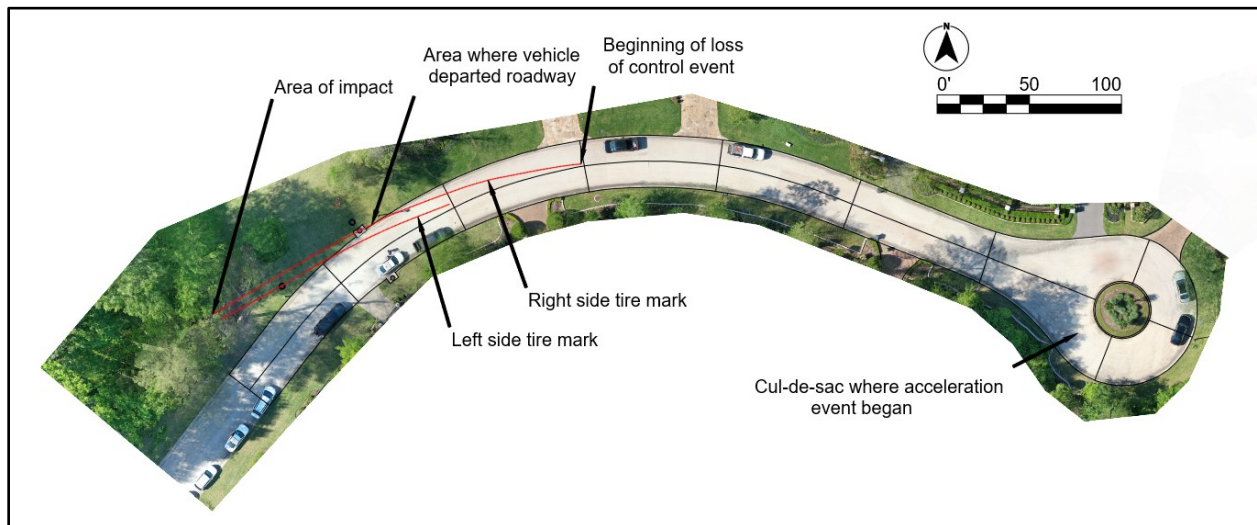


Figure 1. Overhead view of Hammock Dunes Place showing events in crash trip and tire evidence.

Investigative activities since the preliminary report was issued include a forensic examination to evaluate the deformation of the steering wheel. In addition, the NTSB Recorders Laboratory repaired the car's event data recorder (EDR) and extracted critical precrash data from the unit.

Steering Wheel Examination

A postcrash inspection of the car showed that the steering wheel was damaged and deformed. The steering wheel was removed and transported to the NTSB Materials Laboratory for detailed examination. Initial results indicate that although some damage was caused by the intense heat of the postcrash fire, deformation along the top and left side of the steering wheel's outer rim, as shown in figure 2, was due to an impact.

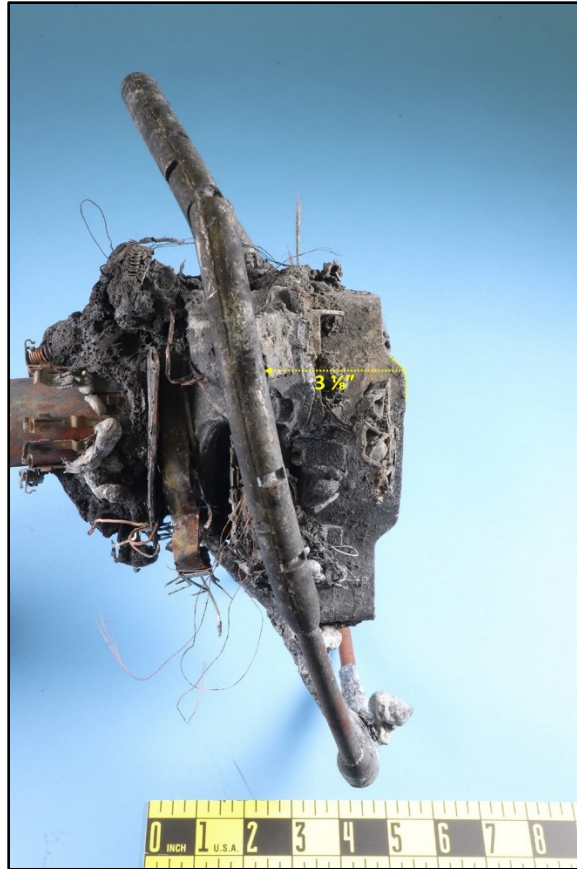


Figure 2. Steering wheel viewed from left. Yellow dotted line shows measured displacement of outer rim from top right front corner of center hub cover.

Event Data Recorder

With the assistance of the EDR module manufacturer, the NTSB Recorders Laboratory repaired and downloaded the fire-damaged EDR. Data from the module indicate that both the driver and the passenger seats were occupied, and that the seat belts were buckled when the EDR recorded the crash. The data also indicate that the driver was applying the accelerator in the time leading up to the crash; application of the accelerator pedal was found to be as high as 98.8 percent. The highest speed recorded by the EDR in the 5 seconds leading up to the crash was 67 mph.¹

As part of the investigative process, the NTSB is evaluating the EDR data and comparing it with the physical evidence documented from the crash scene and the vehicle. The data are also being compared with information developed by the NTSB Vehicle Performance Division in its analysis of security video showing the car at the beginning of the crash trip.

The information in this update is preliminary and subject to change as the NTSB investigation progresses. Analysis of the crash facts, along with conclusions and a determination of probable cause, will come when the final report on the investigation is completed. No

¹ No speed limit signs were posted in the crash area, but according to Texas Transportation Code 545.352, the speed limit for the road is 30 mph.

conclusions about how the crash happened should be drawn from the information in this investigative update. Additional information will be released as warranted. All aspects of the crash, including Tesla's advanced driver assistance system, the postcrash fire, occupant egress, and results of the driver's toxicological tests, remain under investigation while the NTSB determines the probable cause, with the intent of issuing safety recommendations to prevent similar events in the future.