

Equipment Recall Report

(Section 573.6)

Manufacturer Name: Cruise LLC
Submission Date: Aug. 26, 2022
NHTSA Recall No: _____
Manufacturer Recall No: 2022.05.13.00

Manufacturer Information

Manufacturer Name: Cruise LLC
Address: 333 Brannan St., San Francisco, CA
Company phone: 415-335-4097

Population

Number of potentially involved: 80
Estimated percentage with defect: 100

Equipment Information

Brand/Trade 1: Cruise LLC
Model: Cruise ADS software release Delta/2022.05.13.00
Part No: N/A
Size: N/A
Function: N/A

Descriptive Information: The subject population includes Cruise Automated Driving Systems (“ADS”) with software release Delta/2022.05.13.00. At the time of the incident described in the chronology, this totaled 80 ADS units, determined through a review of software release records.

Production Dates:

Begin: May 13, 2022
End: July 5, 2022

Description of the Defect

Description of the Defect: In a rare circumstance described below, a safety feature in the prior version of the subject ADS, known as the reflexive planner, caused the AV to hard brake while performing an unprotected left turn (“UPL”) when the ADS determined a hard brake was necessary to avoid a severe front-end collision with an oncoming vehicle or other road use. Cruise has decided to submit this voluntary report in the interest of transparency to the public and based on its discussions with NHTSA. Only one such incident has occurred in over 123,560 driverless UPLs performed prior to the updated software release. The incident involved an oncoming vehicle traveling well above the speed limit in a restricted right-turn/bus-only lane as the Cruise AV was performing a UPL. As the Cruise AV turned left and began traversing the intersection, the Cruise AV predicted that the oncoming vehicle, which was traveling

approximately 40 mph in the 25 mph right-turn lane, would turn right and directly into the path of the Cruise AV. After the Cruise AV braked to avoid colliding with the front end of the oncoming vehicle, the oncoming vehicle suddenly moved out of the right-turn lane and proceeded straight through the intersection colliding with the rear right quarter panel of the Cruise AV. Cruise has determined that in this unique UPL situation, the ADS had to decide between two different risk scenarios and chose the one with the least potential for a serious collision at the time, before the oncoming vehicle's sudden change of direction. Cruise has determined this scenario would not recur after a software update installed on all affected vehicles on July 6, 2022.

Description of the Safety Risk: In the rare circumstances described above, a Cruise AV with the subject ADS version may, when making a UPL, not have correctly predicted nor was been sufficiently reactive to the sudden path change of a road user violating demarcated lane usage and operating at excessive speed, which could increase the risk of a crash.

Chronology:

On June 3, 2022, a Cruise AV, operating in driverless mode, was involved in a collision with another vehicle. The next day, Cruise reported the incident to NHTSA in accordance with NHTSA's Standing General Order. Cruise also immediately began an investigation of the crash.

As part of its investigation, Cruise obtained the police report of this crash. The police report found, among other things, the "party at most fault" for the collision was the other vehicle, which was "traveling in the ... right turn only lane at a speed that was greater than is reasonable or prudent having due regard for the safety of others on the roadway." However, in an abundance of caution and in accordance with its safety practices and policies, Cruise implemented certain mitigation measures, including disabling unprotected left turns from the fleet, and reducing the ODD to a smaller geofence. Since releasing the new software update on July 6, 2022, Cruise has gradually reintroduced UPLs in its fleet.

During its investigation, Cruise met with NHTSA multiple times, providing updates and analyses of the subject crash and the ADS behavior, as well as explanations of next steps and mitigation measures, as noted above. Cruise presented information to NHTSA that, during the incident, Cruise AV's reflexive planner feature recognized a front-end collision risk created by a speeding vehicle, which reasonably indicated that it would take a right because it was in the right hand turn lane. The Cruise AV stopped to avoid the collision risk and create a path for the other vehicle. The Cruise AV had to decide between two different risk scenarios and chose the one with the least potential for a serious collision. NHTSA suggested that the appropriate mechanism for disseminating this information to the public was for Cruise to file this 573 equipment recall notice. In deference to the agency's position and in hopes of adding transparency to the public's understanding of the events related to this singular incident, Cruise agreed to file this report.

Description of the Remedy

Description of the remedy program: As part of the normal course of Cruise's continuous improvement and release process, on July 6, 2022, Cruise released a new software update that, among other things, improves the ADS's predictive performance in various ways, including conditions similar to the singular, exceptional event that is the subject of this filing. Cruise has determined that the ADS would have selected a different path that averted the collision.

How remedy component differs from recalled components: The updated software is a new release.

Identify how/when recall condition was corrected in production: The prior ADS software installed in vehicles was updated to the newer software release.

Recall Schedule

Description of the Recall Schedule: Cruise AVs have never been offered for sale to third parties and are solely owned by Cruise or GM. As such, there are no owners or dealers to notify under 49 C.F.R. Parts 573 or 577 and part 577 is therefore inapplicable.

Planned Dealer Notification Date: N/A

Planned Owner Notification Date: N/A

Purchaser Information

Name: N/A

Address: N/A

Country: N/A

Company Phone: N/A

Cruise Representative

Hannah Lindow

Communications Manager