



U.S. Department
of Transportation

**National Highway
Traffic Safety
Administration**

ODI RESUME

Investigation: PE 21-002

Date Opened: 01/15/2021

Investigator: Ryan Rahimpour

Approver: Stephen Ridella

Subject: Trolley bus circuit breaker fires

Date Closed: 07/22/2022

Reviewer: Joshua Neff

MANUFACTURER & PRODUCT INFORMATION

Manufacturer: ARBOC Specialty Vehicles, LLC

Products: 2018-2020 ARBOC Spirit of America trolley buses

Population: 113

Problem Description: Improperly secured 30-amp recessed circuit breaker can short, resulting in key-on or key-off fires.

FAILURE REPORT SUMMARY

	ODI	Manufacturer	Total
Complaints:	1	0	1
Crashes/Fires:	0	0	0
Injury Incidents:	0	0	0
Fatality Incidents:	0	0	0

ACTION / SUMMARY INFORMATION

Action: This PE is closed.

Summary:

In a July 7, 2020 letter, Los Angeles World Airports (LAWA) informed the National Highway Traffic Safety Administration (NHTSA) of three separate fire incidents resulting in the total loss of eight of its Spirit of America trolley buses. These buses were manufactured by ARBOC Specialty Vehicles, LLC (Arboc) on incomplete chassis from Freightliner Custom Chassis Corporation. Considering the safety concerns and substantial losses, LAWA grounded the remaining buses in its fleet. On January 15, 2021, NHTSA opened an investigation to determine if a defect in the subject vehicles exists and presents an unreasonable risk to vehicle occupants and nearby people or property.

On February 24, 2021, the Office of Defects Investigation (ODI) sent an Information Request (IR) letter to Arboc. On April 8, 2021, ODI received an IR response from Arboc that included information on vehicle production, consumer complaints, field reports, warranty claims, manufacturer actions, vehicle changes and other data related to the alleged defect. On June 29, 2021, Arboc sent NHTSA a copy of an investigation report/update (Investigations into LAWA Thermal Events) done by a third-party investigation firm (hired by the chassis manufacturer) that included an assessment of the alleged defect/fires. ODI also engaged in discussions with the manufacturer about the alleged defect on multiple occasions during this investigation.

Upon analysis of available data, ODI has not determined the existence of a safety defect. The third-party investigation report points to the 30-amp recessed circuit breaker as the hottest point in the vehicle during the December 21, 2019 fire (first fire) and suggests that it could have been a root cause for that fire. However, that report is inconclusive.

Based on available information, the causation of the two subsequent fires appears unrelated to the circuit breaker. The second fire (February 2020) appears to have been caused by technician error during repair of fleet vehicles by Arboc pursuant to TSB AR 875. Information provided by Arboc from the third-party investigation indicates that the third fire (June 3, 2020) was likely caused by the intentional or negligent acts of individuals who gained unauthorized access to LAWA property and the trolleys themselves.

NHTSA is not aware of fires other than the three described above in the LAWA fleet. There are other fleets with the same make and model trolley buses. Arboc has also previously taken several actions related to the subject vehicles. On June 9, 2020, Arboc issued TSB AR875 to secure the 30-amp recessed circuit breaker. On June 17, 2020, Arboc issued Recall 20V-335 to address misrouted power cables that may short circuit, increasing the risk of a fire.

Since June 3, 2020, there have been no reports of vehicle fires and no reports of crash, injury, or death. Based on the available information, NHTSA has closed this investigation without finding a safety-related defect. The closing of this investigation does not constitute a finding by NHTSA that no safety-related defect exists. The Agency reserves the right to take further action if warranted by the circumstances.