



U.S. Department
of Transportation

**National Highway
Traffic Safety
Administration**

ODI RESUME

Investigation: PE 15-006
Date Opened: 02/27/2015
Investigator: Kyle Bowker **Reviewer:** Bruce York-B
Approver: Frank Borris
Subject: CNG Fuel Container Rupture During A Fire

MANUFACTURER & PRODUCT INFORMATION

Manufacturer: Autocar, LLC, Autocar Industries, LLC, HEIL ENVIRONMENTAL
Products: 2014 Autocar ACX/Heil Half/Pack Freedom CNG Refuse Truck
Population: 500 (Estimated)
Problem Description: Compressed natural gas (CNG) fuel container(s) rupture during a fire incident.

FAILURE REPORT SUMMARY

	ODI	Manufacturer	Total
Complaints:	0	TBD	TBD
Crashes/Fires:	1	TBD	TBD
Injury Incidents:	0	TBD	TBD
Number of Injuries:	0	TBD	TBD
Fatality Incidents:	0	TBD	TBD
Number of Fatalities:	0	TBD	TBD
Other*:	1	TBD	TBD

*Description of Other: The subject incident was widely reported by numerous news media outlets.

ACTION / SUMMARY INFORMATION

Action: A Preliminary Evaluation has been opened.

Summary:

The Office of Defects Investigation (ODI) identified an incident that occurred on January 27, 2015 in Indianapolis, Indiana involving a model year 2014 Autocar ACX / Heil "Half/Pack Freedom" refuse collection truck that reportedly caught fire and subsequently experienced a catastrophic rupture of two CNG fuel containers. It appears that the pressure relief devices (PRDs) did not protect the fuel containers as intended. There are no reports of injury, however, there was extensive property damage to the incident vehicle and several adjacent structures. One fire fighter was reportedly struck by falling debris, which caused him to fall to the ground, but he was not injured. Property damage is estimated at over \$500,000.

The incident vehicle was equipped with a CNG fuel system designed Agility Fuel Systems, Inc. (Agility) including five (5) Hexagon Lincoln Type 4 fuel containers, each nominally 16" x 81" in size, mounted transversely across the top of the trash compactor body. Each fuel container was equipped with two PRDs: an OMB Saleri S.p.A. brand manual fuel container isolation valve with integrated PRD along the left (or street) side of the vehicle, and a Ventil Technik GmbH (VTI) brand PRD along the right (or curb) side of the vehicle.

The subject incident began at approximately 0530 hours shortly after the driver made a stop to collect refuse about half way through the regularly scheduled route. The driver observed a fire that appeared to originate in the vehicle body where the refuse is collected. Drivers are trained to deal with this scenario and are encouraged to dump the refuse in an empty lot, if possible, to protect the vehicle and to provide fire fighters with improved access to the fire. However, given the fire intensity and the vehicle location at the time the fire was first observed, the driver elected to abandon the vehicle and call the authorities for help. The driver deployed the entire contents of a 20 lb. portable fire

extinguisher but it was not enough to extinguish the flames. Fire fighters arrived on the scene and began to attack the fire with water.

Despite the efforts of fire fighters, the two fuel containers mounted most forward on the body ruptured catastrophically, sending debris flying as far as 600 yards away. As a result, all 5 fuel containers were displaced from the vehicle. It is suspected that the rupture of one fuel container created a cascade effect that caused the second fuel container to also rupture. The incident fuel containers and PRDs were collected at the scene and returned to the vehicle owner who maintains custody of them. The vehicle owner reported his plans to subject the incident PRDs to a detailed non-destructive examination by a third party expert.

A Preliminary Evaluation has been opened to determine why the failed CNG fuel container did not vent adequately to prevent a rupture.