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Saturday, October 1, 2011

BY CERTIFIED MAIL
October 1, 2011
BMW of North America, LLC
300 Chestnut Ridge Road
Woodcliff Lake, NJ 07677-7731

OCT 11 2011

Dear Sir or Madam:

The purpose of this letter is to notify you of a serious, life-threatening flaw that exists in the design of the BMW R1200RT fuel pump assembly utilized in multiple model years of the R1200RT. In addition to this letter informing BMW of North America of this problem, a copy of this document has been filed as part of a new case with the United States Department of Transportation National Highway Traffic Safety Administration under temporary complaint number JBN1-18051.

Background
A fuel pump failure that occurred in a 2005 BMW R1200RT, VIN WB10388045Z[redacted] in September 2011 precipitated the following investigation.

The Failure
Fuel pump housing high-pressure fuel quick disconnect reinforcement flange cracks under high pressure cycling and leaks, sending raw fuel down the left fairing in close proximity of the vehicles left exhaust pipe and ignition system components. The vehicle's fairing effectively captures the fuel vapors creating a significant risk for fire. In addition, leaking fuel, streaming along the left fairing is exhausted on the rider's left leg, creating significant risk for the rider even after dismounting the vehicle. A photograph of the typical failure mode is contained within this letter.

Consequences of Failure
The combination of high fuel pressure and negligent design create substantial risk for riders of the impacted vehicles. There are multiple negative consequences of this failure, a few of which are outlined below:

1. Riders become fuel soaked as fuel leaks down the left fairing and then is forced by fairing airflow dynamics on to the rider's left leg.
2. Fuel vapors, captured by the fairing and heated by the exhaust pipe become extremely volatile and could lead to a fire and/or explosion.
3. Fuel vapors rising from the fairing and exiting the top of the fairing between the instrument panel and fuel tank, are blown by airflow into the rider's face. The carcinogenic aspects of fuel inhalation are documented.

Preliminary Analysis
Examination of the fuel pump assembly suggests that the high-pressure fuel quick disconnect reinforcement flange was inadequately designed for the fuel pump outlet

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pressures. BMW's choice of a non-metallic (composite) pump housing combined with a composite high-pressure disconnect fitting was unwise and the failure mechanism is obvious. High pump pressure expands the composite high-pressure fitting causing it to radially load the fuel pump high-pressure quick disconnect flange. Over time, pressure cycling causes the quick disconnect reinforcement flange to crack in multiple locations allowing fuel to leak. A relatively easy (and inexpensive) fix for this design flaw would be to use a metallic quick disconnect fitting which would alleviate the radial loading of the high pressure quick disconnect reinforcement flange.

Impact

Research into this failure suggests that the number of vehicle owners impacted by this failure is significant. Evidence collected from BMW motorcycle dealerships and Internet sources regarding R1200RT fuel pump quick disconnect flange failures indicates that the failure of the high pressure quick disconnect reinforcement flange is widespread.

Requested Relief

1. That BMW of North America issue an immediate voluntary recall of all R1200RT fuel pump assemblies with designs similar to that found in 2005 BMW R1200RT, VIN WB10388045Z[redacted]
2. That BMW of North America then repair or replace defective fuel pump assemblies at no expense to the owner.
3. That BMW of North America contact all owners who purchased replacement fuel pumps for the impacted series of vehicles and issue full refunds to those owners who indicate that the fuel pump was replaced due to a leaking high pressure quick disconnect reinforcement flange.
4. That BMW of North America redesign their fuel pump assemblies to eliminate pressure cycling stress fractures in the high pressure quick disconnect reinforcement flange.

Summary

As an engineer, third year doctoral student, and owner of an R1200RT impacted by the failure outlined in this letter, I am concerned about the significant liability BMW of North America faces by not addressing the defective design of the high pressure quick disconnect reinforcement flange. It is my sincere hope that BMW of North America will addresses my concerns. I would be happy to speak to someone from BMW North America regarding this issue and can be contacted on my cell phone at [redacted]

[redacted]

CC: U.S. Department of Transportation National Highway Traffic Safety Administration


GERMANY BMW

[redacted]
Mesa, Arizona

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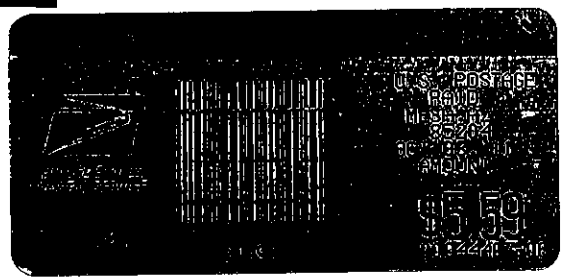

RETURN RECEIPT REQUESTED

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DEPARTMENT OF TRANSPORTATION, NHTSA
OFFICE of Defects INVESTIGATION / CRD, NVS-216
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WASHINGTON, DC 20590