

Toyota Motor Engineering & Manufacturing North America, Inc.

Vehicle Safety & Compliance Liaison Office 19001 South Western Avenue Torrance, CA 90501

September 17, 2015

DEFECT INFORMATION REPORT

1. Vehicle Manufacturer Name:

Toyota Motor Manufacturing Canada Inc. ["TMMC"] 1055 Fountain Street North, Cambridge, Ontario, Canada N3H 5K2

Affiliated U.S. Sales Company

Toyota Motor Sales, USA, Inc. ["TMS"]
19001 South Western Avenue, Torrance, CA 90501

Supplier of the Cowl Louver

TG Minto Corporation
300 Toronto St, Palmerston, ON, N0G 2P0, Canada
TJ, 510, 242, 2000

Tel: 519-343-2800

Country of Origin: Canada

2. <u>Identification of Involved Vehicles</u>:

Based on production records, we have determined the involved vehicle population as in the table below.

Make/	Model	Manufac-	VIN		Production
Car Line	Year	turer	VDS	VIS	Period
Toyota/ RAV4	2009 - 2012	TMMC	BF3#V	#W001117 - #W024120	October 27, 2008 through December 19, 2012
			BK3#V	#W001142 - #W013774	
			ZF3#V	#W001048 - #W016918	
			ZK3#V	#W001076 - #W003645	
			##4DV	#W003435 - #W270656	

Toyota/ RAV4 EV	2012- 2014	TMMC	YL4DV	CW001001 - EW003538	July 24, 2012 through August 29, 2014
--------------------	---------------	------	-------	---------------------	---------------------------------------------

Note: (1) Although the involved vehicles are within the above VIN range, not all vehicles in this range were sold in the U.S.

(2) Only the involved vehicles produced by TMMC are equipped with the affected cowl louver and water channel assembly. RAV4 vehicles produced in Japan utilize a different supplier which utilizes a different manufacturing process.

3. <u>Total Number of Vehicles Potentially Involved:</u>

Toyota RAV4 : 420,959 Toyota RAV4 EV : 2,497

4. Percentage of Vehicles Estimated to Actually Contain the Defect:

Unknown

5. Description of Problem:

The subject vehicles are equipped with a water channel located underneath the cowl louver at the base of the windshield and above the windshield wiper link assembly. Due to stresses applied to the water channel during the manufacturing process, a section of the water channel in some vehicles may become deformed and prevent water from draining properly. If water collects in the channel, it may drip onto the joint which connects the windshield wiper link and wiper motor. Over time, water dripping on to the joint can cause corrosion and wear at the joint. In some cases this could result in the separation of the wiper link from the wiper motor crank arm. If separation occurs, the windshield wipers could become inoperative, which could reduce driver visibility and increase the risk of a vehicle crash.

6. <u>Chronology of Principal Events</u>:

May 2012

Toyota received a field technical report from the Canadian market indicating a clicking sound when the front windshield wiper switch is activated and inoperative windshield wipers. It was found that the windshield wiper link had separated from the wiper motor. The wiper link and

the motor were replaced. However, the parts were not available for recovery and the cause of separation could not be investigated.

January 2013

Toyota received a dealer report from the U.S. market indicating that the windshield wipers were inoperative due to separation of the wiper link from the wiper motor. The windshield wiper link assembly was recovered for an investigation. It was found that the plastic case at the joint connecting the wiper link to the ball pin, which is assembled in the wiper motor crank arm, was abnormally worn. However, the wiper motor was not recovered, and a full investigation could not be completed.

November 2014 – March 2015

In November 2014, Toyota received a field summary report from the Canadian distributor indicating an increase in out-of-warranty repairs for inoperative wipers on the subject vehicles. The summary report noted three Toyota field reports in the Canadian market pertaining to inoperative windshield wipers due to separation of the wiper link from the wiper motor. Additionally, cases were noted as predominantly occurring on vehicles produced at the TMMC plant. To further investigate the separation of the windshield wiper link, Toyota began recovery of complaint parts from the field. An initial investigation of some returned parts found corrosion at the ball pin of the wiper motor crank arm and wear inside the plastic case.

April 2015 – July 2015

Toyota's investigation continued. Because complaints of inoperative windshield wipers came mainly from the Canadian market and cold weather states in the U.S., Toyota conducted a field survey in Canada to inspect vehicles with inoperative windshield wipers. In the subject vehicles, it was observed that the ball pin of the wiper motor crank arm was corroded. It was also observed that the water channel underneath the cowl louver at the base of the windshield, above the wiper link, exhibited a deformation around the location of the joint connecting the wiper link to the wiper motor. To investigate this deformation further, additional part recovery activity of both in-use good parts and complaints parts began, focusing on the water channel from vehicles produced in North America and Japan. Toyota also began collecting parts from southern states in the U.S., in addition to part recovery in Canada, to determine whether there could be any influence of road salt use in accelerating corrosion of the windshield wiper link joint.

August 2015

Through the investigation of recovered parts it was found that deformation was observed on some recovered water channels above the joint of wiper link and motor installed in vehicles produced at TMMC. However, this phenomena was not observed on vehicles produced in Japan, which utilize a different component manufacturer than TMMC-produced vehicles. An investigation of the manufacturing process by the North American supplier found that the pin holes which join the water channel to pins in the cowl louver were out of alignment. During the assembly process, this misalignment can cause stresses to be applied to the water channel and, over time, result in deformation of the channel.

Toyota concluded that, if the water channel becomes deformed, water could collect in the channel and not drain as intended, dripping down onto the joint which connects the windshield wiper link to the wiper motor crank arm. Over time, and accelerated by the presence of mud and salt in the water dripping onto the wiper link joint, the ball pin of the wiper motor crank arm could corrode. Corrosion of the ball pin can cause the plastic case of the wiper link to wear. If the plastic case becomes excessively worn, it could result in separation of the wiper link from the wiper motor and inoperative windshield wipers.

September 14, 2015

Based on the above investigation, Toyota decided to conduct a voluntary safety recall campaign on the subject vehicles.

As of September 10, 2015, Toyota is not aware of any crashes or injuries caused by this condition. 32 warranty claims have been received that relate or may relate to this condition, No Toyota field reports have been received from the U.S.

7. Description of Corrective Repair Action:

All known owners of the subject vehicles will be notified by first class mail to return their vehicles to a Toyota dealer to have the water channel replaced with an improved one. In addition, a new wiper link with wiper motor crank arm will be replaced. The wiper link will have a protective cover over the wiper link joint to minimize water splash and a retainer ring to prevent the wiper arm from separating from the wiper motor.

Reimbursement Plan for pre-notification remedies

The owner letter will instruct vehicle owners who have paid to have this condition remedied

prior to this campaign to seek reimbursement pursuant to Toyota's General Reimbursement Plan.

8. Recall Schedule:

Notifications to owners will occur by November 16, 2015. A copy of the draft owner notification letter(s) will be submitted as soon as available.

9. <u>Distributor/Dealer Notification Schedule:</u>

Notifications to distributors/dealers will be sent on September 17, 2015. Copies of dealer communications will be submitted as they are issued.