

Your Ref : S9M01D3B
Our Ref : CS/ASM19002267/N

14 February 2019

M/s AXA Insurance Pte. Ltd.
8 Shenton Way #24-01
AXA Tower
Singapore 068811
(Motor Claims Department)

**TECHNICAL INVESTIGATION REPORT OF FIRE INCIDENT INVOLVING THE
INSURED VEHICLE SDB 9812G ON 6 FEBRUARY 2019**

1. We refer to your letter dated 8 February 2019 and the instructions therein.
2. Our analysis, comments and opinions with respect to the cause of fire to the insured vehicle SDB 9812G (herein referred to as "**Insured Vehicle**") are set out below.

Inspection of the Insured Vehicle

3. The Insured Vehicle was physically inspected at the premises of Borneo Motors (herein referred to as "**BM**") located at 2 Pandan Crescent, Singapore 128461.
4. A static inspection was carried out to the Insured Vehicle where the following general information was recorded:-

Vehicle Registration No.	: SDB 9812G
Make / Model	: TOYOTA COROLLA ALTIS 1.6 STANDARD (AUTO)
Chassis No	: MR053REH604587500
Year of Registration	: Aug 2018
Mileage	: N.A. (battery melted)

5. The Insured Vehicle was observed to have sustained severe fire damage all around. Its engine compartment and interior compartment were completely burnt. Rust had accumulated all over the rear and centre portion of the Insured Vehicle as a result of exposure to environmental condition for a period of time. See photos 1 – 7 below.



Photo 1 shows the general view of the front portion of the Insured Vehicle at the time of our inspection. The Insured Vehicle was observed to have sustained extensive fire damage all around. Its engine compartment and interior compartment were completely burnt. Rust had accumulated all over the rear and centre portion of the Insured Vehicle as a result of exposure to environmental condition for a period of time.



Photo 2 shows the general view of the left body of the Insured Vehicle at the time of our inspection. The Insured Vehicle was observed to have sustained extensive fire damage all around. Rust had accumulated all over the rear and centre portion of the Insured Vehicle as a result of exposure to environmental condition for a period of time.



Photo 3 shows the general view of the right body of the Insured Vehicle at the time of our inspection. The Insured Vehicle was observed to have sustained extensive fire damage all around. Rust had accumulated all over the rear and centre portion of the Insured Vehicle as a result of exposure to environmental condition for a period of time.



Photo 4 shows the general view of the rear right body of the Insured Vehicle at the time of our inspection. The Insured Vehicle was observed to have sustained extensive fire damage all around. Rust had accumulated all over the rear and centre portion of the Insured Vehicle as a result of exposure to environmental condition for a period of time.



Photo 5 shows the general view of the rear left body of the Insured Vehicle at the time of our inspection. The Insured Vehicle was observed to have sustained extensive fire damage all around. Rust had accumulated all over the rear and centre portion of the Insured Vehicle as a result of exposure to environmental condition for a period of time.



Photo 6 shows the general view of the interior compartment of the Insured Vehicle at the time of our inspection. Its interior compartment was completely burnt as a result of the fire.



Photo 7 shows the engine compartment of the Insured Vehicle at the time of our inspection. The entire engine compartment of the Insured Vehicle was observed to be severely burnt. Most of the parts inside the engine compartment were found to be burnt and/or melted as a result of the fire.

6. At the time of inspection, we did not find any unusual skeletal remains which could have suggested that there was possible modification(s) on the Insured Vehicle.

Investigation and Technical Analysis

7. Based on the circumstances for this particular case, the fire appears to have originated from the exterior portion of the undercarriage of the Insured Vehicle, somewhere around the rear exhaust muffler. This can be determined basing on the area where the extent of fire damage was most severe, the circumstances of the fires' origin at the material time of incident and also the high heat intensity burn marks (whitish burn marks) that were found on the exterior surface of its rear exhaust muffler. These whitish burn marks are a result of exposure to prolong heat intensity. Rust would normally start to develop around these areas soon after a fire as the prolonged exposure to high heat intensity usually causes the bare steel/metal material of the body parts to be exposed to natural environmental condition. The rust that had developed on the rear exhaust muffler, in the immediate vicinity of where these whitish burn marks were found, would also support our findings of where the fire to the Insured Vehicle had originated. See photo 8 below.

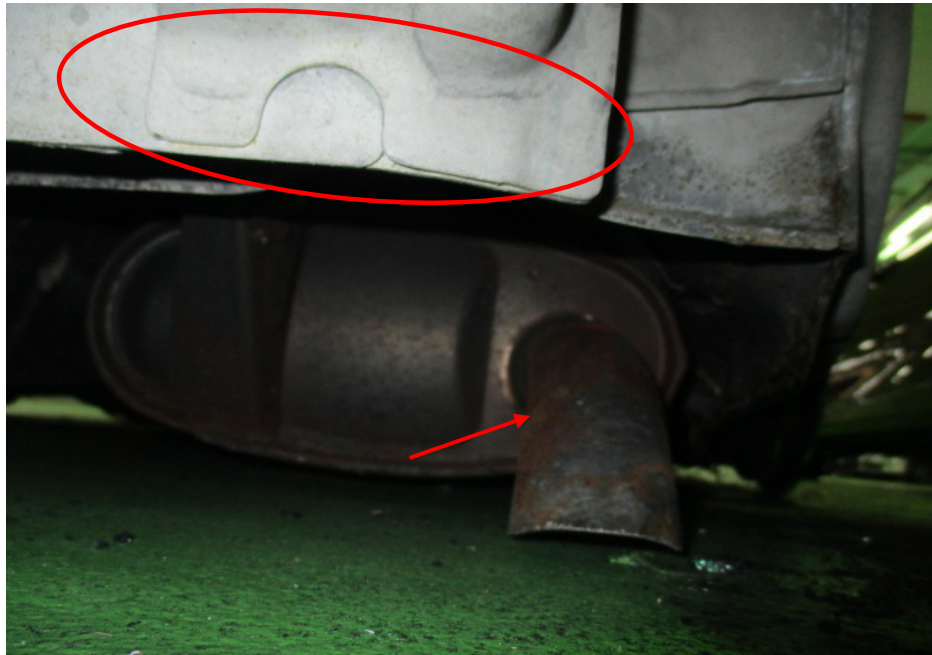


Photo 8 shows the fire damage at the exterior portion of the undercarriage of the Insured Vehicle. The high heat intensity burn marks (whitish burn marks) found on the exterior surface of its rear end panel (circled) and rust that had developed on the rear exhaust muffler (arrowed) indicates that the fire to the Insured Vehicle had originated from the exterior of the Insured Vehicle.

Site Inspection

8. Since the physical damage and burn pattern of the Insured Vehicle had indicated that the fire had originated from the exterior of the Insured Vehicle, we had visited the reported incident location, which was at the road shoulder of the Lornie Viaduct towards Toa Payoh/CTE.
9. Prior to our visit, we spoke to the insured driver of the Insured Vehicle, Mr Cheng Hock Hua (herein referred to as **“Mr Cheng”**) who informed us that the Insured Vehicle went over a mattress while he was driving on the 1st lane. It was shortly after that he heard a rattling sound coming from underneath the Insured Vehicle. He immediately pulled over at the road shoulder, switched off the engine and examined the Insured Vehicle. He then noticed the mattress was stuck under the rear exhaust muffler of the Insured Vehicle. Mr Cheng mentioned that there was a strong burning smell emitting from under the Insured Vehicle as he tried unsuccessfully to pull the mattress out. It was then that a police patrol car was passing by the Insured Vehicle.

10. The 2 police officers stopped and rendered assistance. By then a fire had broken out from the undercarriage of the Insured Vehicle. Mr Cheng and his family were instructed to keep a safe distance away from the Insured Vehicle. The police officers redirected traffic and attempted to put out the fire with fire extinguishers. As the fire had gotten bigger, they called for backup and the SCDF.
11. We did not find any CCTV camera(s) located in the vicinity of the Lornie Viaduct where the incident had occurred.
12. At the time of our visit, we observed burn marks and/or burnt residual remains on the ground as well as on the kerb nearest to where the Insured Vehicle was positioned when the fire occurred. We also observed that the adjacent barrier and railing were affected by the fire. We had also found the charred residual remains of the mattress on the ground. We did not observe any other damaged or newly replaced government property at the time of our visit to the incident location. See photos 9 – 13 below.



Photo 9 shows the general view of the location where the fire incident had occurred. The Insured Vehicle was positioned at the road shoulder of the Lornie Viaduct towards Toa Payoh/CTE. From our observations, there was no CCTV camera(s) located in the vicinity of the viaduct.



Photo 10 shows the burn marks and/or burnt residual remains on the ground at the road shoulder of the Lornie Viaduct towards Toa Payoh/CTE where the incident occurred (arrowed).



Photo 11 shows the burn marks on the adjacent kerb, barrier and railing nearest to where the Insured Vehicle was positioned when the fire occurred (arrowed).



Photo 12 shows the charred residual remains of the mattress on the ground (arrowed). We did not observe any other damaged or newly replaced government property at the time of our visit to the incident location.



Photo 13 shows a close up view of the charred residual remains of the mattress found on the ground where the incident occurred (arrowed).

13. During the course of our investigations, we were able to obtain coloured photographs showing the Insured Vehicle at the incident location before, during and after the fire was extinguished by SCDF personnel. These were provided to us by Mr Cheng.
14. Our examination of these photographs revealed that the mattress was stuck under the Insured Vehicle. The photographs had also showed the Insured Vehicle on fire and similar extent of damage and burn pattern to the Insured Vehicle as per what we had observed during our physical inspection of the Insured Vehicle. Apart from the aforesaid, there was no further notable information that could be gathered from these photographs. See photos 14 - 17 below which were provided to us by Mr Cheng.



Photo 14 shows the Insured Vehicle stopping at the road shoulder after Mr Cheng drove over the mattress (arrowed).



Photo 15 shows the Insured Vehicle on fire before the arrival of the SCDF. In general, the information that could be gathered from this photograph had corresponded to the events that were related to us by Mr Cheng, which is the police were present at the incident location when the fire broke out.



Photo 16 shows the Insured Vehicle at the incident location after the fire was extinguished by SCDF personnel. Firefighters can be seen using a hydraulic winch to remove the remnants of the burnt mattress that was stuck under the rear exhaust muffler of the Insured Vehicle (arrowed). The extent of damage and burn pattern to the Insured Vehicle was observed to be similar to what we had observed during our physical inspection of the Insured Vehicle.



Photo 17 shows the Insured Vehicle being prepped to be towed post-incident. In general, the information that could be gathered from this photograph had corresponded to the events that were related to us by Mr Cheng, which is the fire was caused by the mattress (arrowed) that was stuck under the rear exhaust muffler of the Insured Vehicle.

15. Our checks with both local and international bodies and associations had also revealed that at the time of writing this report, there is no manufacturer recall of similar make and model vehicle as the Insured Vehicle that may possibly be related to fire being originated from the exterior of the Insured Vehicle. See search result from LTA below.

Enquiry on Vehicle Recall - Vehicle Specific

* ONLY INFORMATION ON VEHICLE RECALLS SUBMITTED FROM 9 APRIL 2007 IS AVAILABLE

Vehicle Owner Particulars	
Owner ID Type:	Singapore NRIC
Owner ID:	5812C
Vehicle Details	
Vehicle Registration number:	SDB9812G
Make:	TOYOTA
Vehicle Model:	COROLLA ALTIS 1.6 STANDARD (AUTO)
Engine No.:	1ZR0C05145
Chassis No.:	MR053REH604587500
Recall Details	
No Recall Detail records	

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Conclusion

16. Having investigated and technically analysed the damages of burnt nature to the Insured Vehicle, we are of the view that the cause of fire to the Insured Vehicle was likely due to external factor from the mattress that was stuck under the rear exhaust muffler of the Insured Vehicle.
17. The cause of fire being due to the mattress is also supported by our visit to the incident location where we had found the remnants of the burnt mattress at the area where the Insured Vehicle had stopped.
18. There was no modification(s) or additional electronic and/or electrical component(s) fitted on the Insured Vehicle at the time of our inspection of the Insured Vehicle.

19. At the time of writing this report, there was also no manufacturer recall of similar make and model vehicle as the Insured Vehicle that could possibly be related to this particular incident.
20. SCDF was activated to attend to the fire incident and a fire report pertaining to their findings will likely be forth coming. We have applied for this fire report and will forward a copy of the report once it is made available to us.

Muhd Nazril*Technical Investigator***Ang Bryan Tani***AMSOE, AMIRTE, AFF SAE, M.MATAI, AFF.Inst.AEA**Senior Technical Investigator**Technical Investigation & Reconstructionist (SAE-A)*

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