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18 December 2017

AIG Asia Pacific Insurance Pte Ltd
78 Shenton Way #08-16
AIG Building
Singapore 079120
(Motor Claims Department)

**TECHNICAL INVESTIGATION REPORT OF FIRE INCIDENT INVOLVING THE
INSURED VEHICLE SKB 3988P ON 01 DECEMBER 2017**

1. I refer to your request dated 07 December 2017.
2. My analysis, comments and opinions with respect to the cause of fire to the insured vehicle SKB 3988P (herein referred to as "**Insured Vehicle**") are set out below.

Inspection of the Insured Vehicle

3. The Insured Vehicle was physically inspected on 05 December 2017 at the premises of Premium Automobiles Pte Ltd, 55 Ubi Road 1, Singapore 408699.
4. A static inspection was carried out to the Insured Vehicle where the following general information was recorded:-

Vehicle Registration No.	: SKB 3988P
Make / Model	: Audi A8L 3.0 TFSI QU (SR+HID)
Chassis No	: WAUZZZ4H4BN014701
Year of Registration	: 2011 (March)
Mileage	: N.A (wiring affected)

5. The Insured Vehicle was noted to have sustained severe fire damage that was confined to its front body. Its engine compartment was observed to have sustained extensive fire damage. Its rear body and interior compartment were both unaffected by the fire.
6. The parts at the front body of the Insured Vehicle that were observed to have been burnt and/or melted as a result of the fire had included its front bumper, front fenders, front bonnet, front headlamps, front grille and front windscreen amongst others. Parts inside the engine compartment like the radiator, intake manifold, air duct, cooling fan, hoses and pipes amongst others were burnt and/or melted as a result of the incident. See photo 1 – 4 below.



Photo 1 shows a general view of the front right body of the Insured Vehicle at the time of inspection. The Insured Vehicle was observed to be severely burnt at its front body. Its front bumper, front bonnet, front grille, front right headlamp and front right fender were amongst the body parts that were found to have been affected as a result of the fire.



Photo 2 shows a general view of the front left body of the Insured Vehicle at the time of inspection. The Insured Vehicle was observed to be severely burnt at its front body. Its front left fender, front left wheel rim, front left tyre, front bonnet and front windscreen were amongst the body parts that were found to have been burnt and/or melted as a result of the fire.



Photo 3 shows the engine compartment of the Insured Vehicle at the time of inspection. Almost all the parts inside the engine area were observed to be burnt and/or melted as a result of the fire. These parts had included its radiator, air condenser, cooling fan, intake manifold, front bonnet absorbers, air duct, hoses and pipes amongst others.



Photo 4 shows the interior compartment of the Insured Vehicle at the time of inspection. The interior compartment and rear body of the Insured Vehicle was unaffected by the fire.

7. There was no modification(s) and/or additional electronic and/or electrical component(s) found fitted on the Insured Vehicle at the time of my inspection.

Circumstance of Incident

8. From the Singapore Accident Statement, which was made by Mr Indra Shaiful Bin Aman, who was the driver of the Insured Vehicle, I note that the fire to the Insured Vehicle had started at a time when it was parked with its engine switched off. Mr Indra was seated inside the Insured Vehicle for about 15mins to 20mins when he noticed smoke coming out from the front bonnet. He then alighted from the Insured Vehicle and was informed by a passerby that there were sparks of fire at the front left hand side tyre. The fire subsequently spread to other parts of the Insured Vehicle.
9. I spoke to Mr Indra over the phone on 07 December 2017 where I was able to gather further information pertaining to the incident as well as information pertaining to the history of the Insured Vehicle. Mr Indra is the main person that uses the Insured Vehicle as he is a paid driver under the employment of the registered owner of the Insured Vehicle.
10. According to Mr Indra, on 01 December 2017 he had driven the Insured Vehicle from Clark Quay area to Folkstone Road (off Dover Road). His employer and registered owner of the Insured Vehicle, Mr Ashish Jaiprakash Shastri, was seated inside the Insured Vehicle. Upon arriving at Folkstone Road just before 2000hrs, Mr Ashish had alighted to attend an event at No 2 Folkstone Road. Thereafter, Mr Indra had reversed parked the Insured Vehicle on the grass patch near No. 2 to wait for his employer.
11. According to Mr Indra, whilst waiting for his employer, he had switched off the engine and sat on the driver's seat with the driver's door slightly ajar for ventilation purposes. Approximately 15mins to 20mins later, he saw white smoke coming out from the gaps between the front bonnet, at the front left passenger side. As he was alighting from the Insured Vehicle, he heard someone shouting that there were flames coming out from the Insured Vehicle, at the front left tyre area. This alert came from one of the other drivers who were also waiting for their employers attending the same event.
12. Mr Indra immediately went to retrieve some personal belongings from the Insured Vehicle and subsequently had to move away as the fire was rapidly spreading to other parts of the Insured Vehicle. SCDF officers eventually arrived and extinguished the fire.

13. The Insured Vehicle was arranged to be towed to Premium Automobiles Pte Ltd after clearance was obtained from the attending SCDF officers and Police officers. An insurance report regarding the incident was also made the next day at Premium Automobiles Pte Ltd.
14. With regard to the history of the Insured Vehicle, I was able to gather from Mr Indra that as far as he knows, the Insured Vehicle was purchased brand new from the local distributor, Premium Automobiles Pte Ltd. He is the main driver of the Insured Vehicle, using it to ferry his employer around. According to Mr Indra, the Insured Vehicle was functioning normally during the drive from Clark Quay to Folkstone Road.
15. As part of his job scope, Mr Indra also takes care of the servicing and maintenance aspect of the Insured Vehicle. He recalls that the last servicing was done in January 2017 at Premium Automobiles Pte Ltd. Due to the low usage of the Insured Vehicle, servicing is usually done about once a year. There was some previous issue of jerkiness felt while driving the Insured Vehicle. This was highlighted to Premium Automobiles Pte Ltd some time back however it appears that this issue remains unsolved despite several checks carried out by Premium Automobiles Pte Ltd. Other than this, there was no electrical or other mechanical issues to the Insured Vehicle.
16. Mr Indra also informed me that there was no modification(s) and/or additional electronic or electrical component(s) fitted on the Insured Vehicle. He has taken several photographs and videos while he was at the incident scene.

Investigation and Technical Analysis

17. The photographs and videos provided to me had showed the Insured Vehicle with flames mainly engulfing its front left side. SCDF officers were seen examining the left side of the engine compartment after the fire was extinguished. This appears to correspond to the location (front left side of the Insured Vehicle) where smoke was first detected by the driver of the Insured Vehicle, and also where flames were first seen by another driver.
18. Upon further examination of the photographs and videos, I had also noted that there was no unusual foreign material(s) and/or object(s) on the ground in the immediate area of where the Insured Vehicle was parked. I did however observed fluid trails on the ground, beneath the front left side and in front of the Insured Vehicle. These fluids were likely leakage from the engine compartment of the Insured Vehicle but however were not the source of fire ignition given that the fluid was not combusted. See photo 5 & 6 below.



Photo 5 shows the Insured Vehicle at the incident scene with flames engulfing its left front body. Trails of fluid could be seen on the ground beneath the front left side, and in front of the Insured Vehicle. These leaked fluid were unlikely the source of fire as the fluid were not combusted. There was also no unusual foreign material(s) and/or object(s) on the ground in the immediate area of where the Insured Vehicle was parked.



Photo 6 shows the Insured Vehicle at the incident scene after the fire was extinguished. SCDF officers could be seen examining the left side of the engine compartment. The left front side of the Insured Vehicle was where smoke was first detected by the driver of the Insured Vehicle and also where flames were first seen by another driver

19. For this case, the burnt pattern of the Insured Vehicle suggest that the fire had originated at the left rear area of its engine compartment. This can be established by the whitish burn marks found on the front left fender, at the area nearer to the front left door of the Insured Vehicle (refer to photograph 2 above). These whitish burn marks are a result of exposure to high heat intensity and can normally be used to indicate where a vehicle fire had originated. As can be seen from the photographs and videos, flames were correspondingly concentrated at the area towards the back of the front left wheel of the Insured Vehicle.
20. My examination of the left rear area of the engine compartment during my inspection of the Insured Vehicle revealed wirings that were completely burned to its copper state. The wirings were likely to be original wire harnesses of the Insured Vehicle. The bright reddish colour of the copper wires suggest that the wirings were exposed to high heat. Such condition normally indicate internal heating of copper wires which is a sign of an electrical short circuit occurring. This would then appear to suggest that the cause of fire to the Insured Vehicle could have possibly been due to electrical in nature. See photo 7 – 9 below,



Photo 7 shows the wirings at the left rear area of the Insured Vehicle's engine compartment. The wirings (arrowed) were found to be completely burned to its bare copper state. The bright reddish colour of the copper wires suggest that the wirings were exposed to high heat. Such condition normally indicate internal heating of copper wires which is a sign of an electrical short circuit occurring. The wires were likely to be original wire harnesses of the Insured Vehicle.



Photo 8 shows a closer view of the wirings at the left rear area of the Insured Vehicle's engine compartment. The wirings were found to be completely burned to its bare copper state. Such condition normally indicate internal heating of copper wires which is a sign of an electrical short circuit occurring.



Photo 9 shows a closer view of another stretch of wirings at the left rear area of the Insured Vehicle's engine compartment. The bright reddish colour of the copper wires suggest that the wirings were exposed to high heat. Such condition normally indicate internal heating of copper wires which is a sign of an electrical short circuit occurring. This would then appear to suggest that the cause of fire to the Insured Vehicle could have possibly been due to electrical in nature.

21. Given the evidence and information that I was able to gather during the course of my investigations and the physical inspection of the Insured Vehicle, the fire had occurred at a time when the engine of the Insured Vehicle was switched off. The possibility of the cause of fire to the Insured Vehicle being due to engine overheating and/or fluid leak onto hot surfaces would therefore seem unlikely as the fire had started after the engine was switched off. The temperature within the engine compartment would have cooled down during this period of about 15mins to 20mins.
22. Occurrence of a vehicular fire at a time when its engine was switched off can usually be associated to 2 possible causes. One possible cause would be external factor while the other possible cause would be electrical in nature. For this case, the possibility of the fire being due to external factor (foreign material(s) stuck on hot surfaces, arson and sabotage amongst others) would seem unlikely given that the location of the incident was not a secluded location. Furthermore, my examination of the available incident scene photographs did not reveal any unusual material(s)/object(s) found on the ground in the vicinity of where the Insured Vehicle was parked. The fire being due to electrical in nature would then seem more likely.
23. Although the engine of the Insured Vehicle was switched off at the material time of incident, some electrical current would still be flowing within the electrical system as several electrical and/or electronic components on the Insured Vehicle would require current to remain in operation and/or in standby mode. These components may include the alarm system, clock, radio and cabin light amongst others. The cause of fire being due to electrical in nature seems to be also supported by the condition of the wirings that were found at the area where the fire had likely originated (refer to paragraph 19 and paragraph 20 above).
24. During the course of my investigations, I was able to obtain the entire servicing history of the Insured Vehicle commencing from the date of its registration in March 2011 to the time of my request on 05 December 2017. Upon my review of the records, I had noted that the last servicing carried out to the Insured Vehicle was on 11 January 2017 at the mileage of 73,682km. During this servicing, several parts were replaced. This includes the rear brake pads and brake discs, air intake hose, air condition pressure switch. Replacements of these parts were likely due to fair, wear and tear reasons.

25. Generally, the documents relating to the servicing history of the Insured Vehicle had indicated that the Insured Vehicle was regularly maintained (once a year). This was likely due to its relatively low mileage and less frequent usage. The documents provided had also indicated no complaint of any recurring electrical/electronic issues that had remained unresolved till the time of this incident.
26. My checks with both local and international bodies and associations had revealed that at the time of writing this report, there is no manufacturer recall of electrical nature to similar make and model vehicle as the Insured Vehicle that may possibly be related to this incident. See search result below from LTA.

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: 1936F

Vehicle Details

Vehicle Registration number: SKB3988P ←

Make: AUDI

Vehicle Model: A8L 3.0 TFSI QU (SR+HID)

Engine No.: CGW005354

Chassis No.: WAUZZZ4H48N014701


Recall Details

No Recall Detail records ←

Conclusion

27. Basing on the evidence and information that I was able to gather from my investigations, I am of the view that the fire had originated within the engine compartment of the Insured Vehicle, at the left rear area of the engine compartment. The cause of fire was likely to be of electrical in nature.

28. I did not find any evidence which had suggested that the cause of fire to the Insured Vehicle was due to poor maintenance and/or recurring electrical problem.
29. There were also no modification(s) or additional electronic and/or electrical component(s) fitted on the Insured Vehicle which could have contributed to the cause of fire.
30. My investigations had also revealed that at the time of writing this report, there is no manufacturer recall of electrical nature to similar make and model vehicle as the Insured Vehicle that may possibly be related to this incident.



Ang Bryan Tani

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