



Your Ref: G0047390
Our Ref :CS/AVI18007515/D

30 April 2018

Aviva Ltd
4 Shenton Way #01-01
SGX Centre 2
Singapore 068807
(Motor Claims Department)

5001-

**TECHNICAL INVESTIGATION REPORT OF FIRE INCIDENT INVOLVING THE
INSURED VEHICLE SJY 7990X ON 15 MARCH 2018**

1. I refer to your request dated 24 April 2018.
2. My analysis, comments and opinions with respect to the cause of fire to the insured vehicle SJY 7990X (herein referred to as "Insured Vehicle") are set out below.

Inspection of the Insured Vehicle

3. The Insured Vehicle was physically inspected on 25 April 2018 at the premises of Teamwork Garage Pte Ltd, 53 Ubi Avenue 1 #01-23/24 Paya Ubi Industrial Park, Singapore 408934.
4. The Insured Vehicle was observed to have sustained extensive fire damage that was confined to its frontal portion. Its front bumper, front bonnet, front headlamps, front fenders and front windscreen were amongst the body parts that were severely burnt.
5. The engine compartment was also severely affected by the fire. Almost all the parts and components within the engine compartment were found to be badly burnt. This had included the air intake manifold, fuel rail, exhaust manifold and various hoses/pipes.
6. The interior compartment of the Insured Vehicle was observed to be relatively unaffected by the fire. Several rescue damages were also seen on the Insured Vehicle. The driver's door window was shattered and the rear tailgate was dented. I had also observed impact damage to some of the undercarriage components at the front underside of the Insured Vehicle. See photo 1 – 5 below.



Photo 1 shows a general view of the front right body of the Insured Vehicle at the time of my inspection. The Insured Vehicle was observed to have sustained extensive fire damage at its frontal portion. Its front bumper, front bonnet, front right headlamp and front right fender were amongst the body parts that were observed to have been burnt.



Photo 2 shows a general view of the front left body of the Insured Vehicle. The damage of fire nature was confined to the frontal portion of the Insured Vehicle. Its front bumper, front bonnet, front left headlamp, front left fender and front windscreen were amongst the body parts that were observed to have been burnt.



Photo 3 shows the rear body of the Insured Vehicle, which was unaffected by the fire. Its rear tailgate was however observed to be dented due to rescue operation.



Photo 4 shows the engine compartment of the Insured Vehicle at the time of my inspection. The various parts and components inside the engine compartment were observed to have been severely burnt. This had included the intake manifold, fuel rail, belting, exhaust manifold and various hoses/pipes.



Photo 5 shows the interior compartment of the Insured Vehicle, which was unaffected by the fire.

7. At the time of inspection, I did not find any modification(s) and/or additionally fitted electronic and/or electrical component(s) on the Insured Vehicle.

Circumstance of Incident

8. From the Police report T/20180315/2064, which was made by Mr Kan Jia Sheng, Jason (herein referred to as "**Mr Kan**"), I note that on 15 March 2018 at about 0445hrs, he was driving the Insured Vehicle when it was involved in an accident. The Insured Vehicle had collided onto the road divider at the junction of Bukit Timah Road turning into CTE (SLE). It was however not mentioned in the Police report that the Insured Vehicle had caught fire.
9. Given the lack of any details regarding the fire to the Insured Vehicle, I had on 25 April 2018 conducted a detailed interview with Mr Kan, where I was able to gather further information pertaining to the incident as well as information pertaining to the history of the Insured Vehicle.
10. According to Mr Kan, on 15 March 2018 at about 0445hrs, he was driving the Insured Vehicle heading back to his home at Block 471A Upper Serangoon Crescent when he was involved in an accident. He was alone and the weather was fine at the material time.

11. I was informed by Mr Kan that he came from a Bak Ku Teh eatery shop along River Valley Road. He was there since about midnight, having business discussion with some of his clients. Mr Kan works in the financial industry dealing in hedge funds and would often meet clients for business discussions. Mr Kan further inform me that he did not consume any alcohol at this eatery. He subsequently left the place at about 0400hrs thereabouts.
12. Mr Kan recalls that he was travelling on the second lane from the right of Bukit Timah Road, near to the POSB building. The lane had allowed him to turn right onto CTE (SLE). He brought the Insured Vehicle to a complete stop at the junction due to red traffic light signal. At that time, he was the first vehicle and when the green right turn arrow appeared, he stepped on the accelerator pedal and steered right.
13. Whilst turning right, Mr Kan informed me that he may have slightly misjudged the turning radius or thought that there was another vehicle which came into his turning radius or may have even been tired due to his long day; and for some reason, he had steered left abruptly. The Insured Vehicle then went straight and collided head on onto the centre divider, directly opposite the POSB Building. Upon the collision, the Insured Vehicle came to a stop with its front body mounted on the centre divider road kerb.
14. Mr Kan alighted from the Insured Vehicle, and as the Insured Vehicle was not driveable, he called his friend who is known to him as Aaron (9632 2691). Mr Kan had known Aaron for about 3 years and frequently consults Aaron about car related matters as Aaron operates a shop providing car related services. Mr Kan informed Aaron about the accident, who in turn informed Mr Kan that he will arrange for towing service. According to Mr Kan, he locked the Insured Vehicle and placed the keys to the Insured Vehicle on top of the rear right tyre as instructed by Aaron. Mr Kan then walked to the nearby Esso petrol station where he managed to board a taxi and head home to rest as he was not feeling well (head throbbing) after the accident. Mr Kan estimates his time at the accident scene to be about 10mins to 15mins and he did not take any photographs.
15. Mr Kan informed me that he left the scene because he was not feeling well after the accident and also because he could not do anything given that the Insured Vehicle was not moveable after the accident. It was also stopped at a location where it was not obstructing traffic as the junction was relatively wide. The Insured Vehicle was not on fire during the time that Mr Kan was at scene.

16. Upon reaching home, Mr Kan rested and subsequently received a phone call from Aaron at about 1000hrs plus informing him that the tow truck driver did not manage to tow the Insured Vehicle. Thereafter, the tow truck driver called Mr Kan and told him that when he arrived at the accident scene, the Insured Vehicle was already in the process of being towed away by the Police. Mr Kan was also informed that the Insured Vehicle was burnt at the frontal portion.
17. Upon hearing this, Mr Kan went to Serangoon North NPC to lodge a Police report where he was informed that the Insured Vehicle was impounded by Traffic Police. He was advised to wait for the investigation officer to contact him. On 02 April 2018, Mr Kan received a call from the investigation officer who told Mr Kan to see him at Traffic Police Headquarters. At Traffic Police Headquarters, Mr Kan's statement was recorded and the Insured Vehicle was also released to him. Mr Kan made arrangement to tow the Insured Vehicle to Teamwork Garage Pte Ltd where an own damage claim was submitted.
18. With regard to the history of the Insured Vehicle, Mr Kan purchased the Insured Vehicle around December 2017 from a used car dealer. He is the main driver and to the best of his recollection, there has not been any mechanical and/or electrical problem(s) with the Insured Vehicle during the few months of his possession. He has not done any servicing to the Insured Vehicle as he was informed by the used car dealer that the Insured Vehicle was just recently serviced. Mr Kan informed me that there was no modification and/or electronic/electrical components fitted on the Insured Vehicle. Since taking possession, he has replaced the tyres and wheel rims of the Insured Vehicle.
19. Mr Kan informed me that he does not know when or how the Insured Vehicle had caught fire. He was sure that he had turned the engine off before locking the Insured Vehicle and leaving the keys on top of the rear right tyre. He was unsure if there was any fluid leakage from the Insured Vehicle after the accident.

Investigation and Technical Analysis

20. Given the circumstance of incident described by Mr Kan, the fire had occurred after the Insured Vehicle's collision onto the centre divider. Common causes of fire arising after an accident collision include leakage of fluid onto hot surfaces or fire due to electrical nature.

21. During an accident, the impact force could result in fluid carrying hoses/pipes in the engine compartment to become detached/cut, leading to leakage of fluid. This may cause a fire to be ignited when the leaked fluid comes into contact with hot surfaces (like the exhaust pipes). The leaked fluid could possibly reach temperature sufficient for it to self-ignite. At the time of my inspection, the engine compartment was severely burnt. The various hoses/pipes were all observed to be burnt/melted. I was therefore unable to closely inspect the condition of the various fluid carrying hoses/pipes for any possible fluid leakage that may have occurred prior to the fire.
22. Following Mr Kan's description that he had turned off the engine before leaving the accident scene, and also that there was no fire during his 10mins to 15mins at the accident scene, it would hence seem unlikely that the fire to the Insured Vehicle had arose due to fluid leaking onto hot surfaces. Any hot surfaces within the engine compartment would have cooled down after the accident as the engine was not in operation after the accident (no heat within the engine compartment arising from engine operation).
23. Given that fluid leak was not the primary cause of fire, the most probable cause would then be electrical in nature. This is supported by my observations during inspection of the Insured Vehicle, where I had found greenish residue on several stretches of wirings within the engine compartment. The presence of greenish residue indicates internal heating of copper wires, a sign of an electrical short circuit occurring. The greenish residue is normally left behind from oxidation as a result of chemical reaction involving the copper wires. This physical evidence would then appear to indicate that the cause of fire to the Insured Vehicle was of electrical in nature.
24. During an accident, live wire(s) may become exposed/torn as a result of the impact force. These wires may have then come into contact with each other and/or the metal body of the Insured Vehicle resulting in sparks that could ignite a fire. Although the engine of the Insured Vehicle was not operating after the accident, 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. See photo 6 – 8 below.



Photo 6 shows the wirings at the front right side of the engine compartment. I had found greenish residue on several stretches of wirings (arrowed) around this area of the engine compartment. Such greenish residue indicates internal heating of copper wires, a sign of an electrical short circuit occurring.



Photo 7 shows a closer view of the wirings of the Insured Vehicle, which were found with greenish residue. The presence of such greenish residue indicates internal heating of copper wires, a sign of an electrical short circuit occurring. This would then indicate that the fire to the Insured Vehicle was due to electrical nature.

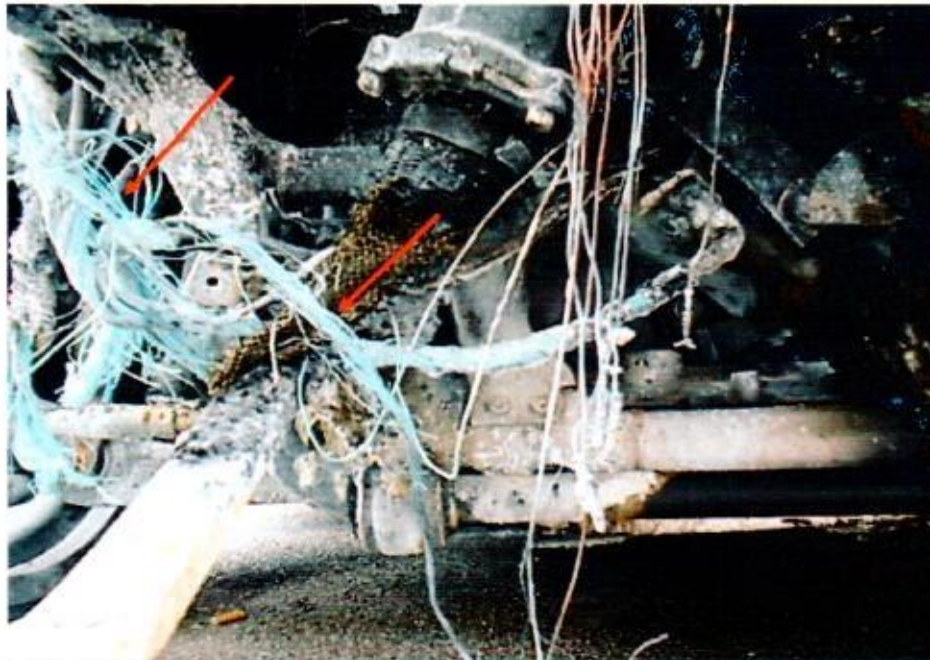


Photo 8 shows another stretch of wirings, at the front of the engine compartment, where greenish residue was found. Such greenish residue indicates internal heating of copper wires, a sign of an electrical short circuit occurring.

25. My checks with both local and international bodies and associations revealed that at the time of writing this report, there is no manufacturer recall of similar make and model vehicle as the Insured Vehicle. See screenshot below showing the search result 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:	9471J
Vehicle Details	
Vehicle Registration number:	SJY7990X ←
Make:	AUDI
Vehicle Model:	A5 SPORTBACK 2.0 TFSI QU
Engine No.:	CDN144196
Chassis No.:	WAUZZZ8T9BA014392
Recall Details	
No Recall Detail records ←	

26. My enquiries with Traffic Police Department revealed that Mr Kan possess a valid class 2, 2A, 2B and 3 driving licence. Action has been taken against Mr Kan for the offence of "Inconsiderate Driving (Accident)" for this particular accident. Mr Kan has paid the composition fine and was given 9 demerit points. See screenshot below.

DRIVER IMPROVEMENT POINTS

Licence Number: S8629471J **Date:** 25/04/2018

Total points as at 25/04/2018: 9 (arising from 1 settled offences).

Date of Offence	Description of Offence	Demerit Points
15/03/2018	INCONSIDERATE DRIVING (ACCIDENT) UNDER SECTION 65(a) OF THE ROAD TRAFFIC ACT CHAPTER 276	9

Demerit points due for deletion will only be expunged from the system at the end of the month.

A motorist who maintains a 12-month period free of offences with demerit points from the date of last offence, will have all his previous points cancelled from his record. Those who maintain a 24-month period free of offences from the date of expiry of the last suspension, which carry demerit points, will also have all previous suspensions cancelled from their records.

Conclusion

27. For this case, I am of the view that the fire had originated within the engine compartment of the Insured Vehicle. This was after the Insured Vehicle was involved in an accident where it had collided onto the centre divider kerb.

28. The cause of fire was likely to be of electrical in nature, where live wires may have become exposed/torn as a result of the impact force and come into contact with each other and/or the metal body of the Insured Vehicle, creating sparks that had ignited the fire.
29. At the time of inspection, I did not find any modification(s) and/or additionally fitted electronic and/or electrical component(s) on the Insured Vehicle.
30. My investigations 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.

**Ang Bryan Tani**

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