



Your Ref: 4646479085SG  
Our Ref : CI/AIG18014311/D

06 August 2018

**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 SBZ 3318D ON 16 JULY 2018**

1. I refer to your request dated 18 July 2018.
2. My analysis, comments and opinions with respect to the cause of fire to the insured vehicle SBZ 3318D (herein referred to as "**Insured Vehicle**") are set out below.

**Inspection of the Insured Vehicle**

3. The Insured Vehicle was physically inspected on 19 July 2018 at the premises of M/s Tan Chong Motor Sales Pte Ltd, 911 Bukit Timah Road, Singapore 589623.
4. A static inspection was carried out to the Insured Vehicle where the following general information was recorded: -

Vehicle Registration No.	: SBZ 3318D
Make / Model	: Nissan Qashqai 1.2 DIG-T CVT
Chassis No	: SJNFEAJ11U1488388
Year of Registration	: 2015 (October)
Mileage	: N.A (wiring affected)

5. The Insured Vehicle was noted to have sustained severe fire damage at its frontal body. Its engine compartment was observed to have been extensively burnt. The interior compartment was partially affected at the front area while the rear body of the Insured Vehicle was unaffected by the incident.
6. Body parts that were observed to have been burnt and/or melted as a result of the fire had included the front bumper, front fenders, front tyres, front bonnet, front headlamps, front grille and front windscreen amongst others. Parts inside the engine compartment like the radiator, intake manifold, air duct, hoses and pipes amongst others were all burnt and/or melted. The upholstery, front seats and carpet inside the interior compartment were partially burnt and/or melted. 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 have sustained severe fire damage at its frontal 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 burnt 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 have sustained severe fire damage at its frontal body. Its front bumper, front left fender, front left headlamp, front bonnet, front left tyre and front windscreen were amongst the body parts that were found to have been burnt as a result of the fire.



**Photo 3** shows the engine compartment of the Insured Vehicle at the time of inspection. All the parts inside the engine compartment were observed to be burnt and/or melted as a result of the fire. These parts had included the radiator, air condenser, cooling fan, intake manifold, fuse box, battery, air duct, hoses and pipes amongst others.



**Photo 4** shows the interior compartment of the Insured Vehicle, which was affected at the front area. The front seats, upholstery, carpet and various plastic trims were partially burnt and/or melted by the incident.



7. The Insured Vehicle was found to be fitted with an enhanced car audio system. Several speakers, amplifiers and wire cables amongst others, were found to be additionally fitted on the Insured Vehicle. A front strut bar, for road stability and handling improvement, was also found to be additionally fitted in the engine compartment of the Insured Vehicle. See photo 5 – 9 below.



Photo 5 shows the audio amplifier, wire cables and fuses that were found to have been additionally fitted on the Insured Vehicle at the time of my inspection. These were fixed behind the rear seats of the Insured Vehicle, as part of the enhanced car audio system.



Photo 6 shows the audio speakers that were found to have been additionally fitted on the "A" pillar trim of the Insured Vehicle at the time of my inspection.



Photo 7 shows the wire cables that were additionally fitted from the rear to the front of the Insured Vehicle, as part of the enhanced car audio system.



**Photo 8** shows the wire cables that were additionally fitted in the engine compartment of the Insured Vehicle. These wire cables appear to be grounding cables for the enhanced audio system that was fitted on the Insured Vehicle.



**Photo 9** shows the front strut bar (arrowed) that was additionally fitted in the engine compartment of the Insured Vehicle. This strut bar is not a standard item for the Insured Vehicle. The fitting of this strut bar enhances the road stability and handling of the Insured Vehicle.



### Circumstance of Incident

8. From the police report T/20180716/2022, which was made by one Chew Suan Chin (herein referred to as "**Madam Chew**"), I note that the fire to the Insured Vehicle had started at a time when she was driving the Insured Vehicle. Smoke was seen coming from the outside of the Insured Vehicle. Madam Chew then alighted from the Insured Vehicle and called Police for assistance.
9. Given the relatively brief description of events contained in the police report, I had on 26 July 2018 met with Madam Chew to primarily gather further information pertaining to the incident as well as information pertaining to the history of the Insured Vehicle. Madam Chew's spouse, Mr Richard Loh (herein referred to as "**Mr Loh**"), was also present during this meeting.
10. According to Madam Chew, on 16 July 2018 at about 0750hrs, she was driving the Insured Vehicle heading to her workplace at Singapore Polytechnic. Madam Chew is currently a lecturer at Singapore Polytechnic. She was from her home at Seletar Terrace, travelling along her usual route to her workplace. During the journey, she did not experience any abnormality to the Insured Vehicle.
11. Along Bishan Flyover towards the direction of Adam Road, she was on the right lane of the 2-lane roadway. The traffic condition was of start stop condition due to the usual morning peak hour period. Madam Chew was alone, and she recalls that the radio was switched on however she could not be sure whether the air conditioning system was switched on. Towards the end of the downslope stretch along the flyover, when the Insured Vehicle was stopped due to traffic condition, she noticed black and white smoke coming out from the gaps of the front bonnet. This was towards the front right of the Insured Vehicle. Madam Chew took her belongings and immediately alighted from the Insured Vehicle, calling the Police and SCDF for assistance. She also called her spouse, Mr Loh. Madam Chew informed me that she could not recall whether she had switched off the engine before alighting from the Insured Vehicle.
12. Whilst waiting for assistance, fire had engulfed the front portion of the Insured Vehicle. SCDF soon arrived and managed to extinguish the fire. After relating the earlier events to the SCDF officers and the police officers, Madam Chew was advised to tow the Insured Vehicle away. Arrangement was subsequently made to tow the Insured Vehicle to Tan Chong Motor, at Bukit Timah Road. A police report and Singapore Accident Statement regarding the incident was also made on the same day.

13. With regard to the history of the Insured Vehicle, I was able to gather from Madam Chew that the Insured Vehicle was purchased brand new in 2015 from the local distributor, Tan Chong Motor Sales Pte Ltd. She is the registered owner and main driver of the Insured Vehicle. The Insured Vehicle is used for commuting between her home and workplace, with occasional leisure purposes. Madam Chew informed me that she does not have any knowledge about vehicles and leaves the maintenance/upkeep aspect to her spouse, Mr Loh.
14. Mr Loh, who was also present when I met Madam Chew, informed me that he owns another vehicle but would drive the Insured Vehicle on occasions. He also informed that the Insured Vehicle is regularly maintained at Tan Chong Motor. Several issues with the Insured Vehicle was experienced last year, like engine oil leakage. There were also occasions of loss of power, where the Insured Vehicle did not move despite stepping on the accelerator pedal. The Insured Vehicle was sent to Tan Chong Motor for rectification and the issues had appeared to be rectified as they did not re-surface. Mr Loh also informed me that he had changed the battery of the Insured Vehicle 4 times since taking possession of it.
15. I was able to gather that Mr Loh had sent the Insured Vehicle to a shop named Audio Dimension, which is located at Toh Guan area. This shop specializes in car audio system. Mr Loh informed me that the original audio system of the Insured Vehicle was changed at this place. Several amplifiers, speakers, wire cables and other audio components were additionally fitted on the Insured Vehicle. These were done almost immediately after taking possession of the Insured Vehicle in 2015. Similarly, the front strut bar was also additionally fitted soon after purchasing the Insured Vehicle. Mr Loh informed me that there was no issue with the Insured Vehicle's audio system after installing the components. Receipts were no longer kept for these installations.
16. Madam Chew had taken some photographs during her time at the incident location and these were forwarded to me for review. Documents relating to the servicing and maintenance aspect of the Insured Vehicle were similarly forwarded to me by Mr Loh.

#### **Investigation and Technical Analysis**

17. The photographs provided to me had showed the Insured Vehicle after the fire was extinguished. It was stopped on the right lane of a 2-lane roadway. The damage of burnt nature to the Insured Vehicle immediately after the fire was put out had corresponded to the damage as seen by me during my inspection of the Insured Vehicle.



18. In general, the observations gathered from my review of the photographs that were taken at the incident scene had corresponded to Madam Chew's description of the events that she had related to me during our meeting on 26 July 2018. See photo 10 & 11 below.



Photo 10 shows the Insured Vehicle at the incident location after the fire was extinguished. It was observed to have stopped on the right lane of a 2-lane roadway. The damage of burnt nature to the Insured Vehicle immediately after the fire was put out had corresponded to the damage as seen by me during my inspection of the Insured Vehicle.



Photo 11 shows the Insured Vehicle at the incident location after the fire was extinguished. In general, the observations gathered from my review of the incident scene photographs had corresponded to Madam Chew's description of the events that she had related to me during our meeting on 26 July 2018.

19. With regard to the servicing and maintenance of the Insured Vehicle, I was provided documents for the period 25 January 2016 to 21 April 2018. Upon reviewing these documents, I note that the last servicing was on 21 April 2018. A standard servicing package was carried out to the Insured Vehicle. The piston ring of the Insured Vehicle was replaced on 11 September 2017 following the complain of power loss. Other parts replaced like engine mountings and front stabilizer bar bush amongst others, for the period that I had reviewed, were mainly due to fair, wear and tear. Generally, my review of the documents provided revealed that the Insured Vehicle was regularly maintained with no recurring complain of mechanical, electrical and/or electronic issue(s).



20. For this case, the severe fire damage at the engine compartment suggests that the fire to the Insured Vehicle had originated from within its engine compartment. Intense burn marks found on the front bonnet and both front fenders of the Insured Vehicle indicate that the frontal portion of the Insured Vehicle was exposed to prolong high heat intensity. Following, the characteristic of heat (hot air rises), the origin of fire can then be determined to be from the engine compartment of the Insured Vehicle as the engine compartment is covered by the front bonnet and front fenders. Flames from the confined spaces of the engine compartment would travel outwards and upwards, exposing the front bonnet and front fenders of the Insured Vehicle to high heat intensity hence leaving the intense burn marks as seen.
21. My examination of the Insured Vehicle's engine compartment, which was where the fire had originated, revealed wirings that were 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 indicates internal heating of copper wires, which is a sign of an electrical short circuit occurring. Hence the physical condition of the wirings at the engine compartment indicates that the cause of fire to the Insured Vehicle was due to electrical in nature. These bright reddish wirings were wire cables (grounding cables) that were additionally fitted for the enhanced audio system that was fitted on the Insured Vehicle. See photo 12 - 14 below.



Photo 12 shows the wirings at the Insured Vehicle's engine compartment. Several stretches of 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, which is a sign of an electrical short circuit.





**Photo 13** shows a closer view of the wirings at the right rear area of the Insured Vehicle's engine compartment. The wirings 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, which is a sign of an electrical short circuit occurring. These wirings were wire cables (grounding cables) that were additionally fitted for the enhanced audio system that was fitted on the Insured Vehicle.



**Photo 14** shows another stretch of wirings at the rear centre area of the Insured Vehicle's engine compartment that were bright reddish colour and completely burned to its bare copper state. These wirings were wire cables (grounding cables) that were additionally fitted for the enhanced audio system that was fitted on the Insured Vehicle.

22. My checks with both local and international bodies and associations revealed that at the time of writing this report, there was no manufacturer recall of similar make and model vehicle as the Insured Vehicle. See search result below obtained 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:	9445Z

##### Vehicle Details

Vehicle Registration number:	SBZ3318D ←
Make:	NISSAN
Vehicle Model:	QASHQAI 1.2 DIG-T CVT ABS 2WD 5DR
Engine No.:	HRA2190487A
Chassis No.:	SJNFEAJ11U1488388

##### Recall Details

No Recall Detail records ←

**Screenshot** shows the LTA search result regarding manufacturer recall involving the Insured Vehicle. Results gathered from my search revealed that the Insured Vehicle was not involved in any manufacturer recall campaign.

#### Conclusion

23. Having investigated and technically analysing the damages of burnt nature to the Insured Vehicle, I am of the view that the cause of fire to the Insured Vehicle was of electrical in nature. For this particular case, the fire had originated along the wirings inside the engine compartment. These wirings were wire cables (grounding cables) that were additionally fitted for the enhanced audio system of the Insured Vehicle.
24. The enhanced audio system that was fitted on the Insured Vehicle by the owner, soon after purchasing the Insured Vehicle in 2015, could have caused overloading to the electrical system of the Insured Vehicle, leading to the electrical short circuit. Although LTA compliant, the components of the enhanced audio system like the amplifiers, speakers and wire cables amongst others, had therefore contributed to and/or led to the occurrence of the fire to the Insured Vehicle.

25. 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.

26. 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**

AMSOE, AMIRTE, AFF SAE, M.MATAI, AFF Inst.AEA

Senior Technical Investigator

Technical Investigation & Reconstructionist (SAE-A)

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