



Your Ref: 73306  
Our Ref :CS/DAI17021032/D

03 November 2017

**M/s Direct Asia Insurance (Singapore) Pte Ltd**  
88 South Bridge Road  
Singapore 058716  
(Motor Claims Department)

**TECHNICAL INVESTIGATION REPORT OF FIRE INCIDENT INVOLVING THE INSURED VEHICLE SJJ 5064L ON 27 OCTOBER 2017**

1. I refer to your request dated 31 October 2017.
2. My analysis, comments and opinions with respect to the cause of fire to the insured vehicle SJJ 5064L (herein referred to as "**Insured Vehicle**") are set out below.

**Inspection of the Insured Vehicle**

3. The Insured Vehicle was physically inspected on 01 November 2017 at the premises of Charn's Customcraft, Block 1010 Bukit Merah Lane 3 #01-105 Singapore 159724.
4. A static inspection was carried out to the Insured Vehicle where the following general information was recorded:-

Vehicle Registration No.	: SJJ 5064L
Make / Model	: Hyundai Santa Fe 2.7A
Chassis No	: KMHSH81DR9U421399
Year of Registration	: 2008 (September)
Mileage	: 105,806km

5. The Insured Vehicle was observed to be in good general condition with no visible fire damage found on its exterior body and interior compartment.
6. Upon checking its engine compartment, I had found evidence suggesting an occurrence of a fire/smoke incident at the left rear area of the engine compartment. The wiring connector for the ABS control module (Anti-Brake Lock) was found to have been partially melted. The bonnet insulator and bottom part of the front windscreen, directly above the area where the partially melted wiring connector was found, had also sustained slight heat damage. Other than these, there appears to be no other part(s) that were affected by the incident. See photo 1 – 5 below.



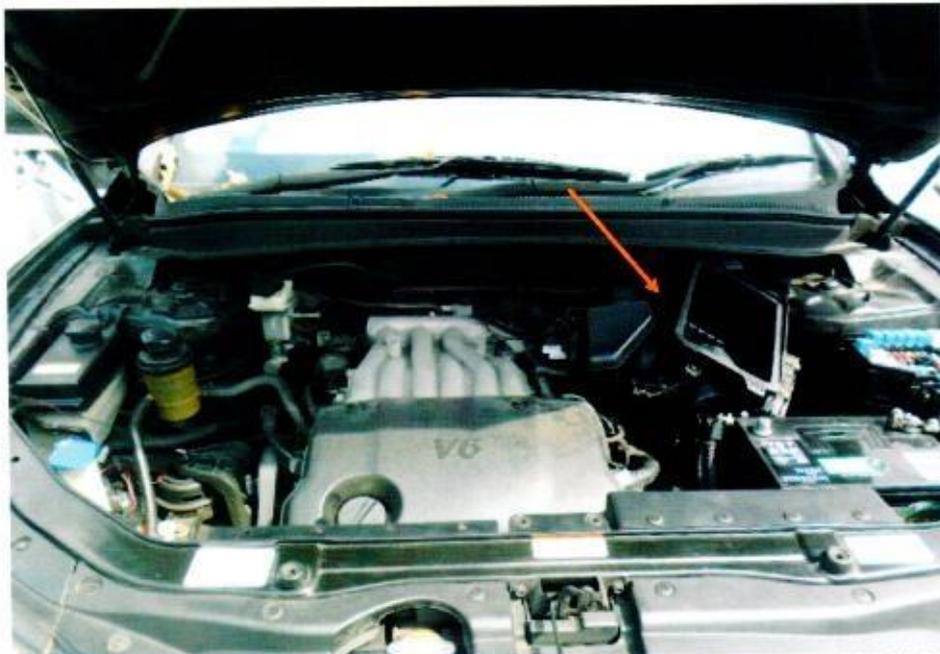
**Photo 1** shows a general view of the front left body of the Insured Vehicle at the time of my inspection. There was no visible fire damage found on the exterior body of the Insured Vehicle. The mileage of the Insured Vehicle recorded at the time of my inspection was 105,806km.



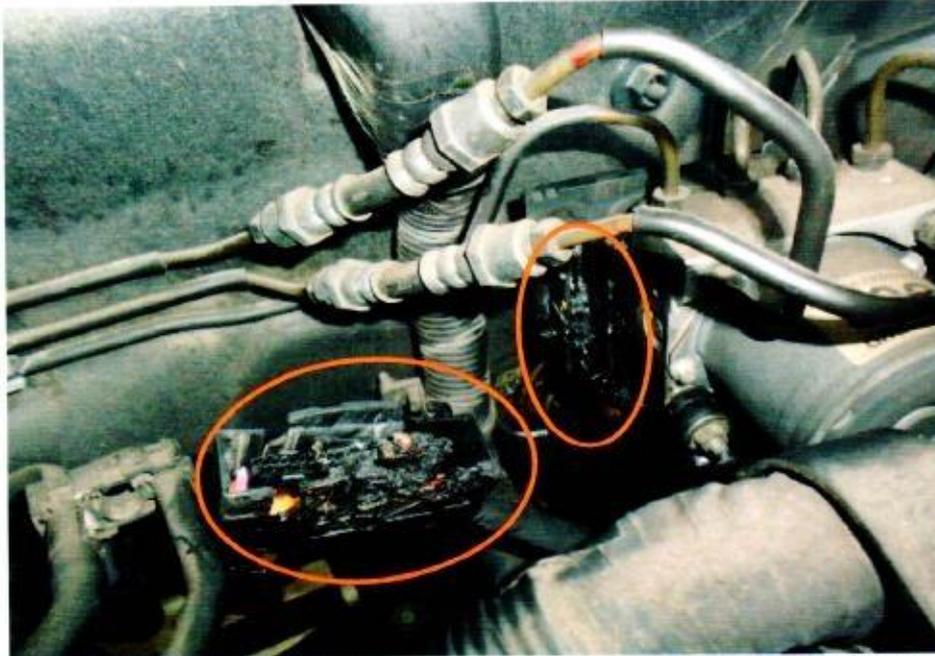
**Photo 2** shows a general view of the front right body of the Insured Vehicle at the time of my inspection. There was no visible fire damage found on its exterior body and interior compartment.



**Photo 3** shows a general view of the rear body of the Insured Vehicle at the time of my inspection. The Insured Vehicle was observed to be in good general condition with no visible fire damage found on its exterior body and interior compartment.



**Photo 4** shows a general view of the engine compartment of the Insured Vehicle. Evidence suggesting an occurrence of a fire/smoke incident was found at the left rear area of the engine compartment. The bonnet insulator and bottom part of the front windscreen, directly above this area, had also sustained slight heat damage.



**Photo 5** shows the partially melted wiring connector (circled) for the ABS control module (Anti-Brake Lock), suggesting an occurrence of a fire/smoke incident.

7. A pair of additional speakers was found fitted to the Insured Vehicle. These speakers and its wirings were intact and unaffected by the incident. See photo 6 below.



**Photo 6** shows the interior compartment of the Insured Vehicle, which was unaffected by the incident. A pair of additional speakers (arrowed) was found fitted to the Insured Vehicle. These speakers and its wirings were intact and unaffected by the incident.

### **Investigation and Technical Analysis**

8. For this particular case, the fire/smoke incident had originated within the engine compartment of the Insured Vehicle, at the left rear area of the engine compartment. This was established given that the damage of fire/smoke nature was confined to that single particular area of the Insured Vehicle.
9. The cause of fire/smoke can also be clearly established to be due to electrical in nature given that the wirings of the ABS control module was found to be partially melted with no other part(s) sustaining fire/heat damage. See photo 7 below.

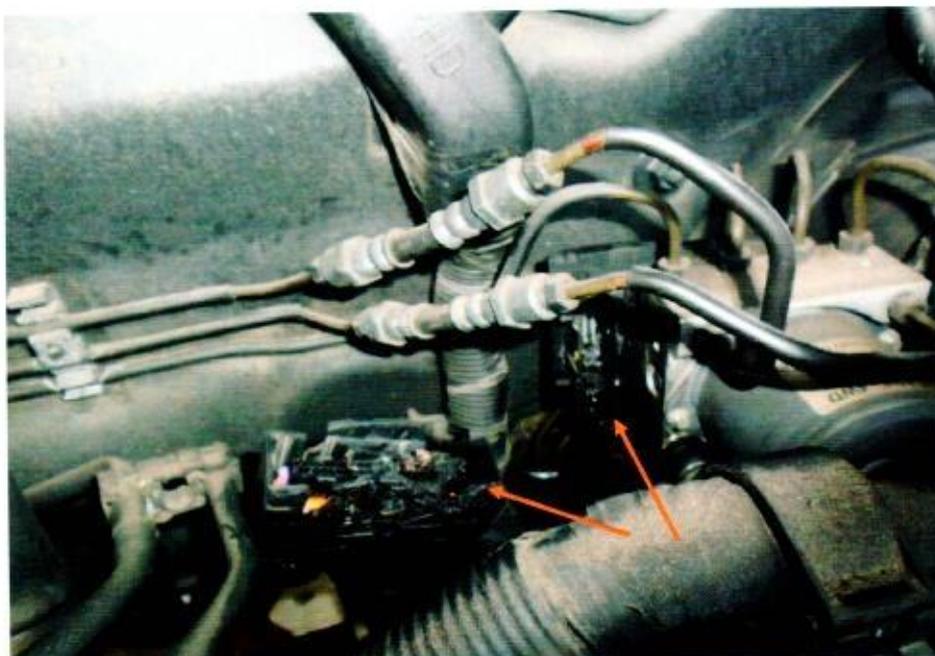
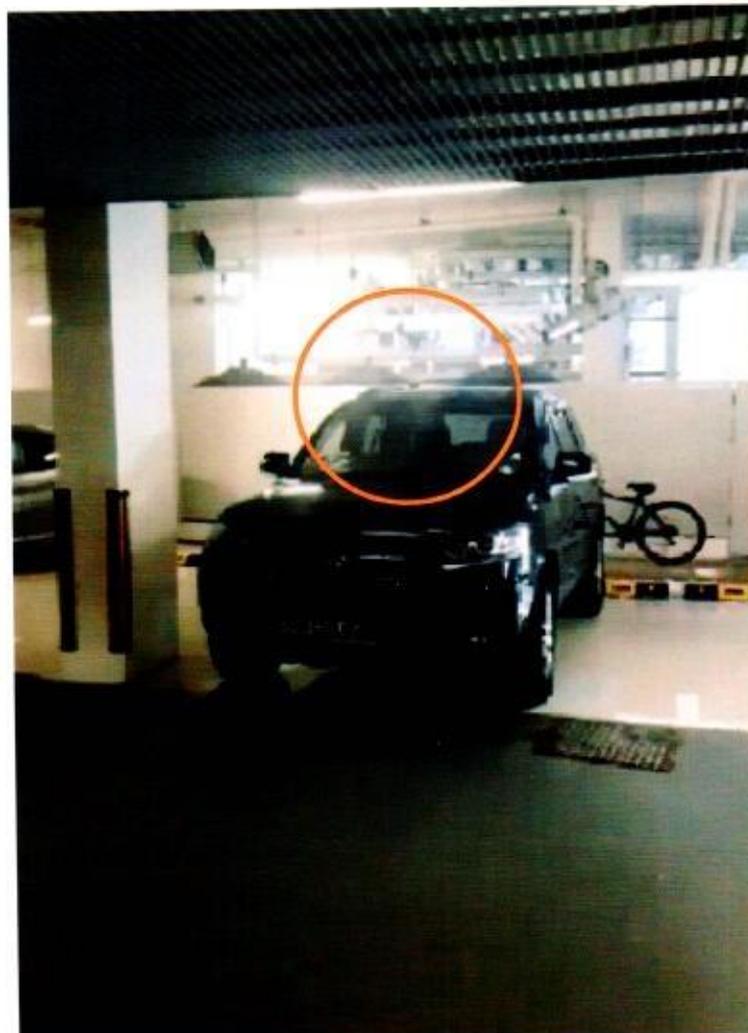


Photo 7 shows the partially melted wirings of the ABS control module (arrowed) at the left rear area of the engine compartment. Since there was no other damage of fire/smoke nature found, it can hence be established that the fire/smoke incident had originated at this area of the Insured Vehicle, with the cause of fire/smoke due to electrical nature.

10. The cause of fire/smoke incident being due to electrical nature is also supported by the reported circumstances of incident where it was reported that the incident had occurred at a time when the Insured Vehicle was parked. This would indicate that the engine of the Insured Vehicle was not in operation hence the cause of the incident being due to engine overheating would seem unlikely. The cause of incident being due to fluid self-igniting from contact onto hot surfaces would also seem unlikely for similar reasons that the engine of the Insured Vehicle was not in operation. There was no heat (arising from engine operation) within the engine compartment for the fluids to reach temperatures that would be high enough (flashpoint) to cause the fluids to self-ignite.

11. The possibility of the fire/smoke incident being due to external factor (foreign material(s) stuck on hot surfaces, arson and sabotage amongst others) would also seem unlikely as the incident had originated from within the engine compartment of the Insured Vehicle, with no damage of fire/smoke nature found on its exterior body. Furthermore, my review of a video recording taken at the time of incident had showed no unusual object(s) and/or material(s) on the ground in the immediate vicinity of where the Insured Vehicle was parked. See screenshot below taken from the video recording that I had manage to obtain in the course of my investigations.



Screenshot from the video recording showing smoke (circled) coming out from the gaps between the front bonnet and front windscreen. There was no unusual object(s) and/or material(s) on the ground in the immediate vicinity of where the Insured Vehicle was parked. This would suggest that the cause of incident was unlikely to be due to external factor like arson or sabotage.



12. During my inspection of the Insured Vehicle, the spouse of the registered owner of the Insured Vehicle was also present, retrieving some personal belongings that was kept inside the Insured Vehicle. I was thus able to gather information pertaining to the history of the Insured Vehicle.
13. The Insured Vehicle was purchased second hand from a used car dealer around January 2017. She and her husband share usage of the Insured Vehicle. Both of them did not experience any mechanical problem and/or abnormality during their time driving the Insured Vehicle. With regard to the maintenance and servicing, I was provided documents which had showed that the engine oil and oil filter were replaced on 15 March 2017, while the battery was replaced on 13 June 2017. The Insured Vehicle had also passed the mandatory vehicle inspection on 11 September 2017. See photo 8 - 10 showing documents supporting the aforesaid, which I was able to obtain.



Photo 8 shows the document relating to the engine oil and oil filter that were replaced on 15 March 2017.

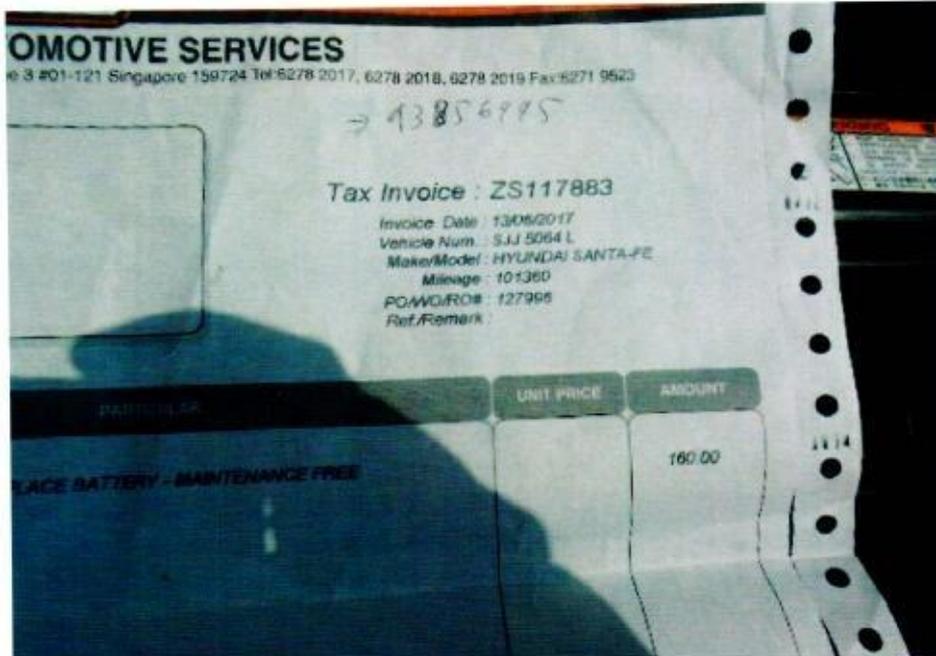


Photo 9 shows document relating to the battery replacement on 13 June 2017.



Photo 10 shows document certifying that the Insured Vehicle had passed the mandatory vehicle inspection on 11 September 2017.

14. 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 search result below from LTA.



VRL Application

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### Enquiry on Vehicle Recall - Details

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

#### Vehicle Owner Particulars

Owner ID Type: Foreign Identification Number

Owner ID: 0386U

#### Vehicle Details

Vehicle  
Registration  
number:

SJJ5064L ←

Make:

HYUNDAI

Vehicle Model:

CM SANTA FE 2.7 A S/R

Engine No.:

G6EA8A213472

Chassis No.:

KMHS81DR9U421399

#### Recall Details

No Recall Detail records ←

### Conclusion

15. Basing on my inspection of the Insured Vehicle, I am of the view that the fire/smoke incident had originated around the left rear area of the Insured Vehicle's engine compartment. The cause of fire was likely to be of electrical in nature along the wirings for the ABS control module.
16. I did not find any evidence to suggest that the cause of fire was due to poor maintenance and/or recurring electrical problem.
17. There was a pair of additional speakers fitted on the Insured Vehicle at the time of incident however these speakers did not cause and/or contribute to the fire/smoke incident. Other than these speakers, there were no other modification(s) fitted on the Insured Vehicle.



18. My investigations 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 this incident.

**Ang Bryan Tani**

AMSOE, AMIRTE, AFF SAE, M.MATAI, AFF.Inst.AEA  
Senior Technical Investigator  
Technical Investigation & Reconstructionist (SAE-A)

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