



Your Ref: 3654030455SG
Our Ref : CI/AIG18016257/N

10 September 2018

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

**TECHNICAL INVESTIGATION REPORT OF FIRE INCIDENT INVOLVING THE
INSURED VEHICLE SJV 1154Z ON 27 AUGUST 2018**

1. We refer to your letter dated 3 September 2018 and the instructions therein.
2. Our analysis, comments and opinions with respect to the cause of fire to the Motor Vehicle SJV 1154Z (herein referred to as "**Insured Vehicle**") are set out below.

Inspection of the Motor Vehicle

3. The Insured Vehicle was physically inspected on 6 September 2018 at the premises of ETHOZ located at 30 Bukit Batok Crescent, Singapore 658075.
4. A static inspection was carried out to the Insured Vehicle where the following general information was recorded:-

Vehicle Registration No.	: SJV 1154Z
Make / Model	: HONDA FIT 1.3L A
Chassis No	: GE61112186
Year of Registration	: January 2010
Mileage	: N.A (battery melted)

5. The exterior front body and interior compartment of the Insured Vehicle sustained visible fire damage. This included its windscreen, front bonnet, headlights, front bumper, side panels, front rims, front tyres and dashboard.
6. The fire had resulted in extensive damage to the engine compartment of the Insured Vehicle. Most of the components inside the engine compartment were found to be severely burnt and/or melted as a result of the fire. 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 exterior body of the Insured Vehicle had sustained visible fire damage. This included its windscreen, front bonnet, headlights, front bumper, side panels, front rims and front tyres.



Photo 2 shows the general view of the right portion of the Insured Vehicle at the time of our inspection. The exterior body of the Insured Vehicle had sustained visible fire damage. This included its windscreen, front bonnet, front bumper and right headlight.



Photo 3 shows the general view of the left portion of the Insured Vehicle at the time of our inspection. The exterior body of the Insured Vehicle had sustained visible fire damage. This included its windscreen, front bonnet, left headlight, front bumper, left side panel, left front rim and left front tyre.



Photo 4 shows a closer view of the windscreen of the Insured Vehicle at the time of our inspection. The windscreen had sustained extensive fire damage.



Photo 5 shows the interior compartment of the Insured Vehicle at the time of our inspection. The interior compartment of the Insured Vehicle was observed to be severely affected by the fire, in particular the left portion of the dashboard (arrowed).



Photo 6 shows a closer view of the the interior compartment of the Insured Vehicle which was observed to be severely affected by the fire, in particular the left portion of the dashboard (circled).



Photo 7 shows a general view of the engine compartment of the Insured Vehicle at the time of our inspection. Most of the components inside the engine compartment were found to be severely burnt and/or melted as a result of the fire.

7. At the time of physical inspection of the Insured Vehicle, we had found several modifications and additionally fitted electronic and/or electrical component(s) on the Insured Vehicle. These included 2 aftermarket twitters (which had sustained serious fire damage), 2 aftermarket speakers, an aftermarket amplifier, an aftermarket subwoofer, an aftermarket in-car DVD player (which had sustained serious fire damage and aftermarket 15- inch alloy rims. All these fitted components were not the standard type for the Insured Vehicle. See photos 8 - 16 below.



Photo 8 shows the 1st aftermarket twitter fitted onto the right corner of the dashboard of the Insured Vehicle upon our inspection which had sustained minor fire damage (circled).



Photo 9 shows the 2nd aftermarket twitter fitted onto the left corner of the dashboard of the Insured Vehicle upon our inspection which had sustained serious fire damage (circled).



Photo 10 shows the aftermarket amplifier and subwoofer fitted behind the rear passenger seats of the Insured Vehicle upon our inspection.



Photo 11 shows the aftermarket amplifier fitted behind the rear passenger seat of the Insured Vehicle upon our inspection. The brand of the amplifier was 'ROCKFORD FOSGATE' (circled).



Photo 12 shows the aftermarket subwoofer fitted behind the rear passenger seat of the Insured Vehicle upon our inspection. The brand of the subwoofer was 'ROCKFORD FOSGATE' (circled).



Photo 13 shows the in-car DVD player that was fitted at the centre portion of the front dashboard of the Insured Vehicle which had sustained serious fire damage. The brand of the in-car DVD player was 'PIONEER' (circled).



Photo 14 shows the 1st aftermarket speaker fitted at the front passenger door panel (circled).



Photo 15 shows the 2nd aftermarket speaker fitted at the driver door panel (circled).



Photo 16 shows the non-standard rim found to be fitted on the Insured Vehicle at the time of our inspection. The 15- inch alloy rims fitted on the Insured Vehicle were not the standard type for the Insured Vehicle.

Investigation and Technical Analysis

8. For this particular case, the fire appears to have originated within the engine compartment of the Insured Vehicle, somewhere around the left rear portion of the engine compartment. This can be determined based on the circumstances of the case as well as given that the fire damage around the rear left portion of the engine compartment was most extensive.
9. Upon closer examination of the area where the fire to the Insured Vehicle had likely started, we had found greenish residue on several stretches of original factory fitted wirings leading towards the Engine Control Module (ECM) of the Insured Vehicle. 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 suggest that the cause of fire to the Insured Vehicle could have possibly been due to electrical in nature. See photos 17 – 20 below.



Photo 17 shows the wirings around the left rear portion of the engine compartment, which is in the immediate vicinity where the fire to the Insured Vehicle had likely started. Greenish residue was found on the wirings (red arrows) leading to the Engine Control Module (ECM) (yellow arrow). The presence of such greenish residue suggests occurrence of an electrical short circuit.



Photo 18 shows a closer view of the wirings with greenish residue (red arrows) leading to the Engine Control Module (ECM) (yellow arrow). The presence of such greenish residue suggest occurrence of an electrical short circuit.



Photo 19 shows a closer view of the wirings with greenish residue (red arrows) leading to the Engine Control Module (ECM) (yellow arrow). The presence of such greenish residue suggest occurrence of an electrical short circuit.



Photo 20 shows a close up view of the wirings with greenish residue (red arrows) leading to the Engine Control Module (ECM) (yellow arrow). The presence of such greenish residue suggest occurrence of an electrical short circuit.

10. From the Singapore Police Report No. F/20180828/2048 and Accident Statement, which was made by Mr Tan Louis Victor Roboth (herein referred to as "Mr Tan"), we note that the fire to the Insured Vehicle had started at a time when it was parked. Mr Tan was first alerted of the fire by his colleague.
11. We managed to speak to Mr Tan where we were able to gather further information pertaining to the incident as well as information pertaining to the history of the Insured Vehicle.
12. According to Mr Tan, on 27 August 2018, he had driven the Insured Vehicle from his home located in Yishun to the Fitness First gym located at 321 Clementi. He travelled along the BKE/PIE/AYE and took the Clementi Avenue 6 exit. He worked out for an hour before driving to his office at Pantech Business Hub located at 194 Pandan Loop. He parked the Insured Vehicle at the sheltered carpark at 0850 hours. At about 0910 hours he got a call from his finance manager, Mr Cheng who told him that the Insured Vehicle was on fire. Mr Tan rushed to the Insured Vehicle. By the time he arrived at the carpark at 0920 hours, the SCDF were already at the incident scene and extinguishing the fire.
13. The SCDF took about half an hour to put out the fire. There was a vehicle parked to the right of the Insured Vehicle when the fire broke out but Mr Tan did not recall it sustaining any consequential damage. There was no vehicle parked to the left side of the Insured Vehicle when the incident occurred.
14. Since the fire had activated the fire alarm, the police were also present at the incident scene. Police officers took down Mr Tan's statement. Mr Tan also assisted SCDF personnel in their preliminary investigations. Mr Tan was authorized by the SCDF to tow the Insured Vehicle at 1200 hours. Mr Tan called the AIG hotline and made towing arrangements. The tow truck arrived at 1430 hours. Mr Tan hitched a ride with the towing personnel to Ethos where he made the insurance report at 1453 hours. Mr Tan lodged a police report at the Ang Mo Kio North Neighbourhood Police Centre the following day, on 28 August 2018 at 1035 hours.
15. With regards to the history of the Insured Vehicle, we were able to gather from Mr Tan that the Insured Vehicle was purchased new in 2010. Mr Tan is the owner and only driver of the Insured Vehicle. To the best of his recollection, there has not been any major mechanical problem and/or electrical problem with the Insured Vehicle.

16. We asked Mr Tan regarding the 2 aftermarket twitters, 2 aftermarket speakers, aftermarket amplifier, aftermarket subwoofer, aftermarket in-car DVD player and aftermarket 15- inch alloy rims that were fitted onto the Insured Vehicle. He informed us that he bought the in-car DVD player from Chuan Sing Auto Accessories Centre (herein referred to as "**Chuan Sing**") shortly after he purchased the Insured Vehicle. He had it fixed together with a reverse camera. He also bought the aftermarket audio system consisting of the speakers, twitters, amplifier and subwoofer. All these components were also installed at Chuan Sing. He also replaced the original rims with aftermarket 15- inch alloy rims. Mr Tan mentioned that he had not changed any other audio component since then. He also did not experience any issues with the audio system for the past 8 years he had been driving the Insured Vehicle.
17. Pertaining to the maintenance aspect, Mr Tan mentioned that he sends the Insured Vehicle for periodic servicing. He services the Insured Vehicle at Sau Hock Motor Services located at Block 10, Ang Mo Kio Industrial Park 2A (Ave 5), #02-14, AMK Autopoint, Singapore 568047. He had the Insured Vehicle serviced about 1 month prior to the incident on 18 July 2018.
18. During the course of our investigations, we were able to obtain from Mr Tan, a tax invoice of the most recent servicing and repairs done to the Insured Vehicle. The servicing package had included the changing of engine oil and oil filter. The front brake pads were also replaced and 1 of the tyres was patched. See Invoice 1 below.



Auto
Consultants
Pte Ltd

Company Registration No. 199607198R

51 UBI AVE 1, #01-25 PAYA UBI INDUSTRIAL PARK, SINGAPORE 408933 TEL : (065) 62563561 FAX : (065) 67414108

SAU HOCK MOTOR SERVICES

Repair for all kinds of Motor Vehicle

Blk 10, Ang Mo Kio Industrial Park 2A (Ave 5) #01-14 AMP Autoquest Singapore 680457

Cheque Payment Sent To: Blk 601C Edgecliff Flats #03-648 Singapore 1228811

Company Registration No. 53085300L

HP: 9100 8638 Fax: 6555 4006

CASH SALES

No. 23796

M/s.

Vehicle No

SJV 1154 Z

Date

18/07/18

Qunty	Description	Amount S	cts
4L	Engine oil	80	00
1	oil filter	15	00
1set	front Disc Pads	85	00
1set	Repair kit	85	00
1	Tyre Amend	9	00
	Labour	70	00
		TOTAL S\$	342.00

Goods sold are not returnable
Goods received in good order and condition.

Authorised Signature

For SAU HOCK MOTOR SERVICES

Invoice 1 shows the servicing and repairs done on the Insured Vehicle at Sau Hock Motor Services on 18 July 2018 (arrowed). The servicing package had included the changing of engine oil and oil filter. The front brake pads were also replaced and 1 of the tyres was patched (circled).

19. Mr Tan mentioned that since the latest servicing and repairs were done he had not experienced any other mechanical or electrical problems with the Insured Vehicle. He also mentioned that there were neither warning lights displayed nor was there an abnormal rise in temperature of the Insured Vehicle while he was driving before the incident occurred.

Incident Scene Photographs

20. We were able to obtain photographs which were taken by Mr Tan at the incident location. The photographs were taken during the fire and after the fire to the Insured Vehicle was extinguished.

21. In general, the information that could be gathered from these photographs had corresponded to the events that were related to us by Mr Tan. Our close examination of these photographs also showed no unusual foreign material(s) and/or object(s) found on the ground in the immediate area of the parking lot of where the Insured Vehicle was parked. See photos 21 - 23 below.



Photo 21 shows firefighters putting out the last remnants of the fire to the Insured Vehicle (arrowed). In general, the information that could be gathered from this photograph had corresponded to the events that were related to us by Mr Tan, which is the SCDF were already at the incident location and putting out the fire by the time Mr Tan had arrived.



Photo 22 shows SCDF personnel conducting preliminary investigations as to how the fire to the Insured vehicle had likely started.



Photo 23 shows the left side view of the Insured Vehicle after the fire was extinguished. The extensive damages sustained to the left front portion of the Insured Vehicle indicate that the fire had started from the left portion of the engine compartment (circled).

22. Based on the vehicle service record invoice provided, we are of the opinion that it is unlikely that the fire could have been caused by poor maintenance of the Insured Vehicle.
23. Given the circumstances of incident as reported, the possibility of the cause of fire to the Insured Vehicle being due to engine overheating would seem unlikely as the fire had started after the engine was switched off for a period of time (about 20 minutes).

24. The possibility of the fire being due to external factors (foreign material(s) stuck on hot surfaces, arson and sabotage amongst others) would also seem unlikely given that our examination of the available incident scene photographs did not reveal any unusual material(s)/object(s) found on the parking lot where the Insured Vehicle was parked. The location of where the Insured Vehicle was parked was also observed to be not at a secluded location.
25. The possibility of the fire being due to electrical in nature would then seem more likely given that engine overheating and external factors would both seem unlikely. The fire being due to electrical in nature is also supported by the burnt wirings found in the engine compartment of the Insured Vehicle, which was earlier discussed in paragraph 9 above.
26. 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.
27. Our checks with both local and international bodies and associations had revealed that at the time of writing this report, there were 2 manufacturer recalls for the Insured Vehicle. The 1st recall was on 28 May 2015 for the airbag inflator containers. It was rectified on 20 April 2016. The 2nd recall was on 9 July 2015 for the SRS airbags. However it was not rectified. See search result from LTA below.

Enquiry on Vehicle Recall - Vehicle Specific

*CHECK FOR RECALL ON VEHICLE RECALLS SUBMITTED FROM 1 APRIL 2017 IS AVAILABLE

Vehicle Owner Particulars	
Owner ID Type	Singapore PRIC
Owner ID	44024 ←
Vehicle Details	
Vehicle Registration number	UV12342 ←
Make	HONDA
Vehicle Model	FIT 1.8LX
Engine No.	1136A127994
Chassis No.	02641102536
Recall Details	

1

Retail No: R201130280

Manufacture Recall Date: 09 Jun 2015

Estimated Completion Year of Recall: 2017

Brief Description (As Provided by Motor Dealer): On investigation of the certain cases of owner's SRS air bag problems from the market, it was found that some of them varied greatly in severity of gas generating propellant.

Date Recalled:

For more details, contact CHIP GUAN CREDIT PTE LTD

Hotline Information: ANGELO @ 83322678

2

Retail No: R201300147

Manufacture Recall Date: 28 May 2015

Estimated Completion Year of Recall: 2016

Brief Description (As Provided by Motor Dealer): As regards certain passenger's air bag inflators, the capsule of the inflator could break and scatter the inflator component parts around, causing injury to the vehicle occupants in the event of the air bag deployment.

Date Recalled: 20 Apr 2016

For more details, contact CHIP GUAN CREDIT PTE LTD

Hotline Information: MS ANGELO @ 83322678




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Conclusion

28. 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 of electrical in nature. For this particular case, the fire had originated along the wiring inside the engine compartment, somewhere around the rear left portion of the engine compartment. The wirings were original factory wirings leading to the Engine Control Module (ECM) of the Insured Vehicle.

29. We 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.
30. We found the Insured Vehicle to be fitted with 2 aftermarket twitters, 2 aftermarket speakers, an aftermarket amplifier, an aftermarket subwoofer, an aftermarket in-car DVD player and aftermarket rims (15 inch alloy rims). The abovementioned electrical/electronic components and rims do not require prior approval from LTA.
31. We are further of the opinion that the additionally fitted electrical/electronic components found on the Insured Vehicle could have possibly caused overloading to the electrical system of the Insured Vehicle. However considering that the installation was carried out shortly after the Insured Vehicle was purchased which was approximately more than 8 years prior to the fire incident, the overloading was likely to be minimal.
32. Although the aftermarket alloy rims and fitted on the Insured Vehicle were not the standard type for the Insured Vehicle, we are of the view that these parts did not cause and/or contribute to the fire incident.
33. Our 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.


Muhd Nazri
Technical Investigator


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