

Your Ref: DMPC1900268H
Our Ref : CS/ICS19018236/D

24 October 2019

M/s ECICS Limited

10 Eunos Road 8 #09-04A
Singapore Post Centre
Singapore 408600
(Motor Claims Department)

TECHNICAL INVESTIGATION REPORT OF FIRE INCIDENT INVOLVING THE INSURED VEHICLE SGL 2506Z ON 12 OCTOBER 2019

1. I refer to your request dated 16 October 2019.
2. My analysis, comments and opinions with respect to the cause of fire to the insured vehicle SGL 2506Z (herein referred to as "**Insured Vehicle**") are set out below.

Inspection of the Insured Vehicle

3. The Insured Vehicle was physically inspected on 16 October 2019 at the premises of M/s Verve Motorclinic Pte Ltd, No. 25 Kaki Bukit Road 4 #03-39 Synergy@KB, Singapore 417800.

4. A static inspection was carried out to the Insured Vehicle where the following general information was first recorded: -

Vehicle Registration No.	: SGL 2506Z
Make / Model	: Toyota Wish 1.8A
Chassis No	: ZNE100323973
Year of Registration	: 2006 (September)
Mileage	: N.A (wiring affected)

5. The Insured Vehicle was noted to have sustained fire damage that was confined to the left side of its engine compartment. Parts located at the left side of the engine compartment like the air intake housing, battery, fuse box, wiper panel garnish amongst others were observed to have been burnt and/or partially melted. Exteriorly, the front bumper, front left headlamp, front bonnet and front left fender were affected. The interior compartment and rear portion were unaffected.
6. There was no modification(s) and/or electronic and/or electrical component(s) additionally fitted on the Insured Vehicle at the time of my inspection. See photo 1 – 4 below.



Photo 1 shows a general view of the front left body of the Insured Vehicle at the time of my inspection. The fire damage was confined to the left side of the Insured Vehicle's engine compartment. The interior compartment and the rear portion of the Insured Vehicle were unaffected. Exterially, the front bumper, front bonnet, front left headlamp and front left fender were affected by the incident.



Photo 2 shows a general view of the engine compartment of the Insured Vehicle. The fire damage was confined to the left side (circled) of the engine compartment. Parts like the air intake housing, battery, fuse box, wiper panel garnish amongst others were observed to have been burnt and/or partially melted.



Photo 3 shows a closer view of the burnt and/or partially melted parts that were located at the left side of the engine compartment. This had included the air intake housing, battery, fuse box, wiper panel garnish amongst.



Photo 4 shows the interior compartment of the Insured Vehicle, which was unaffected by the incident. The rear portion of the Insured Vehicle was also similarly unaffected by the incident.

Circumstance of Incident

7. From the Singapore Accident Statement, which was made by Mr Mohd Yunos Bin Mohd Jumadi (herein referred to as “**Mr Yunos**”), I note that the fire to the Insured Vehicle had started at a time when he was driving the Insured Vehicle. Mr Yunos smelt burning smell and saw smoke emitting from the front bonnet of the Insured Vehicle. Not too long thereafter, a fire broke out. Mr Yunos immediately stopped the Insured Vehicle by the side of the road and extinguished the fire.
8. I spoke to Mr Yunos on 18 October 2019, where through telephone conversation, I was able to gather further information pertaining to the incident as well as information pertaining to the history of the Insured Vehicle.
9. According to Mr Yunos, on 12 October 2019 at about 2300hrs, he was driving the Insured Vehicle heading to his sister’s house in Pasir Ris estate. He had started his journey from a relative’s home at Punggol Estate and estimates that he had been driving for approximately 30mins when the Insured Vehicle caught fire. Prior to this, the Insured Vehicle was parked at his relative’s home for about an hour. His wife, his sister and several of their children were onboard the Insured Vehicle at the material time. Mr Yunos informed me that he was on the way to send his sister home before returning to his home at Tampines Avenue 8.
10. Along the journey from Punggol, Mr Yunos first noticed the high beam indicator icon at the dashboard suddenly light up, and after the exit from TPE, he saw, from the reflection of other vehicles in front, that the front left headlamp of the Insured Vehicle was not working (no light was illuminated). Mr Yunos then smelt some burning smell before seeing smoke coming out from the left side of the front bonnet. A fire appeared at the same area, prompting Mr Yunos to steer the Insured Vehicle to the side of the roadway.
11. Upon stopping, Mr Yunos recalls that he had switched off the engine, alighted and lifted the front bonnet of the Insured Vehicle. He noticed fire at the left side of the engine compartment and immediately took steps to try and extinguish the fire. Some passing motorists also stopped and assisted Mr Yunos to extinguish the fire before the arrival of SCDF and Police officers. The Insured Vehicle was eventually arranged to be towed to Verve Motorclinic at Kaki Bukit where an own damage claim was submitted.

12. With regard to the history of the Insured Vehicle, I was informed by Mr Yunos that the Insured Vehicle was purchased brand new in 2006. The Insured Vehicle was initially registered under a relative's name before it was transferred to his name many years ago. The COE of the Insured Vehicle was extended for 5 years in 2016. Mr Yunos is the main driver and all maintenance and servicing aspect of the Insured Vehicle are handled by him.
13. Mr Yunos informed me that the last servicing carried out was in September 2019 at a workshop in Sin Ming estate. He does not recall the name of this workshop as it was the first time that he had sent the Insured Vehicle for servicing at that place upon the recommendation of a friend. A normal servicing was carried out and Mr Yunos paid in cash without obtaining any documentation and/or receipt. At this same time, Mr Yunos had also sent the Insured Vehicle for its mandatory yearly inspection. The Insured Vehicle had passed the inspection, allowing him to purchase the road tax.
14. According to Mr Yunos, he experienced issues to the front headlamps of the Insured Vehicle, whereby the blubs would blow quite frequently. On several occasions, either the bulb for the front left headlamp or the bulb for the front right headlamp would blow. He estimates the frequency of this occurring to be about 2 – 3 months once. Each time, Mr Yunos will have to replace the blown bulb. Mr Yunos could not recall when was that last time that the blub(s) for the front headlamps of the Insured Vehicle had blown prior to this incident.
15. During my conversation with Mr Yunos, he also informed that he had taken some photographs whilst at the incident scene. These were duly forwarded to me for my review upon my request.

Incident Scene Photographs

16. The photographs taken by Mr Yunos had showed the Insured Vehicle after the fire was extinguished, and just as it was about to be towed away. Generally, I was not able to gather any notable information from the photographs provided by Mr Yunos. See photo 5 & 6 below.



Photo 5 shows a general view of the Insured Vehicle at the incident location with the fire already extinguished, and just as it was about to be towed away. Generally, there was no notable information that could be gathered upon reviewing the photographs provided by Mr Yunos.



Photo 6 shows a general view of the Insured Vehicle at the incident location with the fire already extinguished, and just as it was about to be towed away. Generally, there was no notable information that could be gathered upon reviewing the photographs provided by Mr Yunos.

Investigation And Technical Analysis

17. Given the circumstance of incident described by Mr Yunos, the fire had occurred while the Insured Vehicle was being driven/engine in operation. Common causes of fire arising from a vehicle that is being driven and/or with its engine in operation include engine overheating, leakage of fluid onto hot surfaces or electrical nature. For this case, the physical condition of the wrings as seen during my inspection of the Insured Vehicle and also the information gathered during the course of my investigations, indicate that the cause of fire was due to electrical in nature. The following paragraphs 18 & 19 discusses the physical evidence relating to this.
18. Firstly, it was observed during my inspection that the Insured Vehicle had sustained fire damage only at the left side of its engine compartment. Based on this single area of fire damage that the Insured Vehicle had sustained (interior compartment and rear portion also unaffected), the fire is established to have originated at the left side of the Insured Vehicle's engine compartment.
19. Upon my close examination of the left side of the engine compartment, I had found greenish residue on an original factory fitted wiring. The wiring was observed to be for the front left headlamp of the Insured Vehicle. The presence of greenish residue indicates internal heating of copper wires, a sign of an electrical short circuit occurring. Such greenish residue is normally left behind from oxidation as result of chemical reaction involving copper wires. This physical evidence indicates that the cause of fire to the Insured Vehicle was due to electrical in nature. See photo 7 - 10 below.



Photo 7 shows the left side of the Insured Vehicle's engine compartment. Basing on the single area of fire damage that the Insured Vehicle had sustained, the fire can be determined to have occurred within the engine compartment of the Insured Vehicle, at the left side.

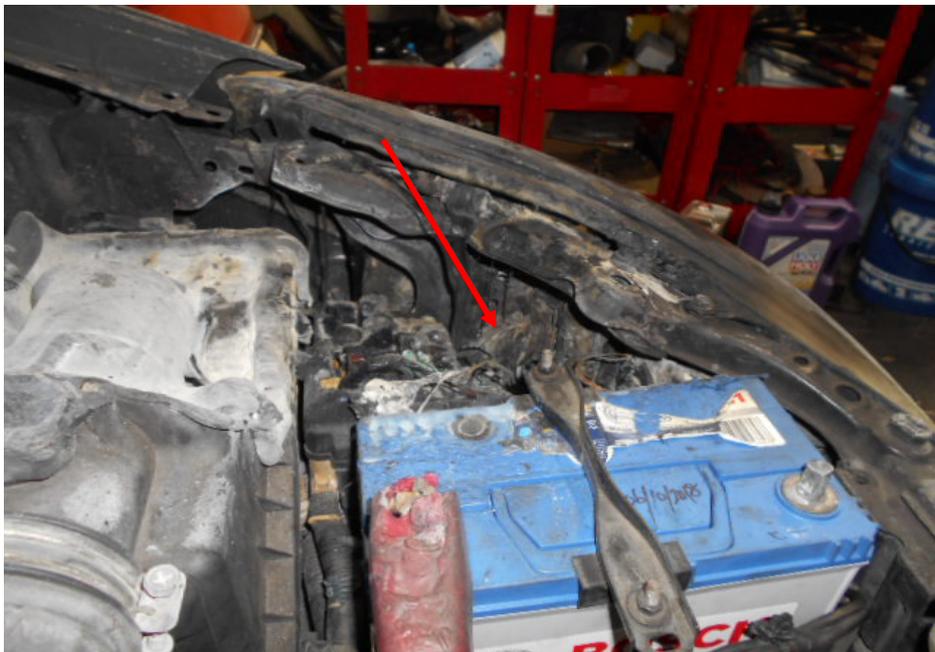


Photo 8 shows a closer view of the left side of the engine compartment. Upon my closer examination, I had found greenish residue on an original factory fitted wiring at the area (arrowed) directly behind the front left headlamp of the Insured Vehicle.



Photo 9 shows the greenish residue (arrowed) that was found on an original factory fitted wiring. The wiring was observed to be for the front left headlamp of the Insured Vehicle. The presence of greenish residue indicates internal heating of copper wires, a sign of an electrical short circuit occurring. Such greenish residue is normally left behind from oxidation as result of chemical reaction involving copper wires.

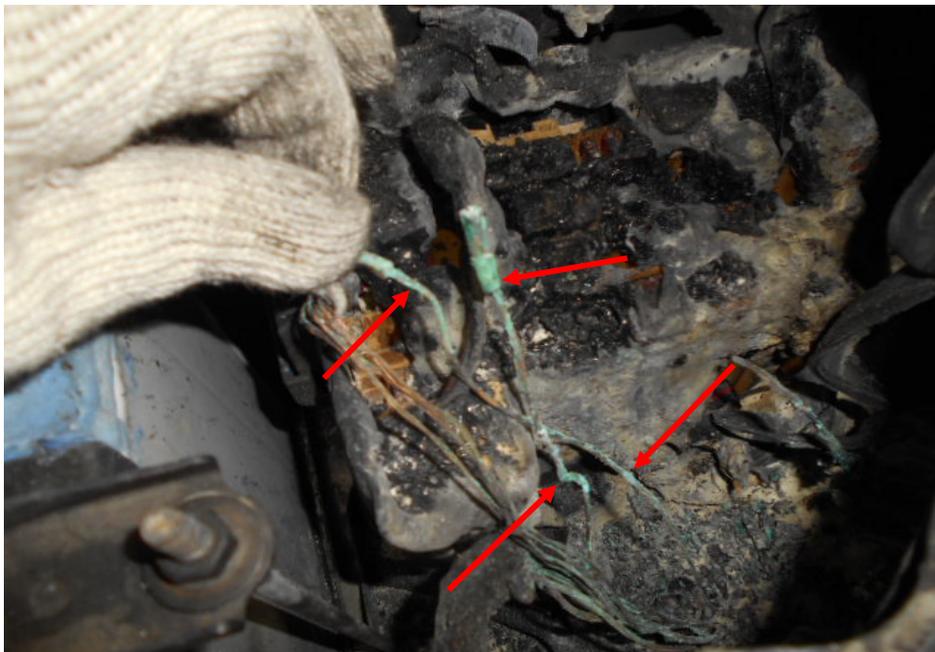


Photo 10 shows a closer view of the greenish residue (arrowed) that was found on the wiring for the front left headlamp of the Insured Vehicle. The presence of greenish residue indicates internal heating of copper wires, a sign of an electrical short circuit occurring. This physical evidence indicates that the cause of fire to the Insured Vehicle was due to electrical in nature.

20. During my conversation with Mr Yunos, he had mentioned that the blub for the front left headlamp had blown just before the fire incident. He further mentioned that the bulb(s) for the front left headlamp and/or the front right headlamp would blow quite frequently, about 2 to 3 months once. From this information, it can be gathered that there was abnormality with the wirings for the front headlamps of the Insured Vehicle.
21. Under normal circumstance, typical cause(s) of bulb blowing includes an overload of electrical current flowing through the wirings and/or an abnormal travel path of electrical current triggering high heat that could blow the bulb. Since there were several past occasions of bulb blown experienced by the Insured Vehicle, the issue of bulb blowing experienced by the Insured Vehicle can then be considered to be a recurring issue. If thorough check(s) were to be carried out previously (especially after there were several occurrences of bulb blown), the fire incident to the Insured Vehicle could possibly have been prevented.
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:	687H
Vehicle Details	
Vehicle Registration number:	SGL2506Z ←
Make:	TOYOTA
Vehicle Model:	WISH 1.8 A
Engine No.:	1ZZ2685106
Chassis No.:	ZNE100323973
Recall Details	
No Recall Detail records ←	

Conclusion

23. Having investigated and technically analysed 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 originally fitted wiring for the front left headlamp of the Insured Vehicle.
24. I did not find any evidence which had suggested that the cause of fire to the Insured Vehicle was due to poor maintenance. However, the information gathered during the course of my investigations did suggest that the fire was due to a recurring electrical problem.
25. There were no modification(s) or additional electronic and/or electrical component(s) fitted on the Insured Vehicle at the time of my inspection of the Insured Vehicle.
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 & Accident Reconstructionist (SAE-A)*

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