

Your Ref : SHC 6227M
Our Ref : CI/TP20007757/N

28 July 2020

M/s Premier Taxis Pte. Ltd.
23 Changi South Avenue 2
Singapore 486443

TECHNICAL INVESTIGATION REPORT OF FIRE INCIDENT INVOLVING THE INSURED VEHICLE SHC 6227M ON 27 JULY 2020

1. We refer to your letter dated 27 July 2020 and the instructions therein.
2. Our analysis, comments and opinions with respect to the cause of fire to the insured vehicle SHC 6227M (herein referred to as “**Insured Vehicle**”) are set out below.

Inspection of the Insured Vehicle

3. The Insured Vehicle was physically inspected on 27 July 2020 at the premises of Premier Taxis Pte. Ltd. (herein referred to as “**Premier**”) located at 23 Changi South Avenue 2, Singapore 486443. A static inspection was carried out to the Insured Vehicle where the following general information was recorded:-

Vehicle Registration No.	: SHC 6227M
Make / Model	: KIA OPTIMA 1.7 (A) DIESEL
Chassis No	: KNAGM414MF5542430
Year of Registration	: October 2014
Mileage	: N.A. (wiring affected)

4. The Insured Vehicle was noted to have sustained fire damage that was confined to its front portion. The engine compartment of the Insured Vehicle was observed to be seriously burnt while the interior compartment was observed to be relatively unaffected by the fire.
5. The fire had resulted in the body parts at the front portion of the Insured Vehicle to be burnt. This had included its front bonnet, front windscreen, and side panels amongst others. 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 fire damage to the Insured Vehicle was confined to its front portion. Its front bonnet, front windscreen and side panels were amongst the body parts that were found to have been affected as a result of the fire.



Photo 2 shows the general view of the right body 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 front windscreen, front bonnet and right front panel.



Photo 3 shows the general view of the left body 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 front windscreen, front bonnet and left front panel.



Photo 4 shows a closer view of the underside of the front bonnet of the Insured Vehicle at the time of our inspection. The fire damage to the Insured Vehicle was confined to its front portion. Its insulating material on the underside of the front bonnet was amongst the body parts that were found to have been affected by the fire.



Photo 5 shows the general view of the front windscreen of the Insured Vehicle at the time of our inspection. The front windscreen was slightly affected by the fire.



Photo 6 shows the engine compartment of the Insured Vehicle at the time of our inspection. The rear portion of the engine compartment of the Insured Vehicle was observed to be seriously burnt. Some of the parts inside the engine compartment were found to be burnt and/or melted as a result of the fire.



Photo 7 shows the interior compartment of the Insured Vehicle, which was relatively unaffected by the fire.

6. At the time of inspection of the Insured Vehicle, we did not find any additionally fitted electronic and/or electrical component(s) on the Insured Vehicle. There also appears to be no modification(s) fitted on the Insured Vehicle.

Investigation and Technical Analysis

7. For this particular case, the fire appears to have originated within the engine compartment of the Insured Vehicle, somewhere around the rear centre portion of the engine compartment. This can be determined from the cracks in the insulating material on the underside of the front bonnet, the melted wiper panel and also the parts around this area which were more severely affected by the fire. See photos 8 & 9 below.



Photo 8 shows a close up view of the cracks in the insulating material on the underside of the front bonnet of the Insured Vehicle (circled).



Photo 9 shows a close up view of the melted wiper panel found upon our inspection of the Insured Vehicle (circled).

8. Upon closer examination of the rear centre portion of the engine compartment, which was where the fire to the Insured Vehicle had likely started, we had found greenish residue on several burnt stretches of original factory fitted wirings around the rear centre portion of the engine compartment. The presence of such 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 10 - 14 below.



Photo 10 shows the original factory fitted wirings around the rear centre portion of the engine compartment, which is in the immediate vicinity where the fire to the Insured Vehicle had likely started. We had found greenish residue on several burnt stretches of these wirings (circled). The presence of such 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.



Photo 11 shows a closer view of the greenish residue found on some of the burnt stretches of original factory fitted wirings (circled). The presence of such greenish residue suggests occurrence of an electrical short circuit.



Photo 12 shows a close up view of the greenish residue found on some of the burnt stretches of original factory fitted wirings (arrowed). The presence of such greenish residue suggests occurrence of an electrical short circuit.

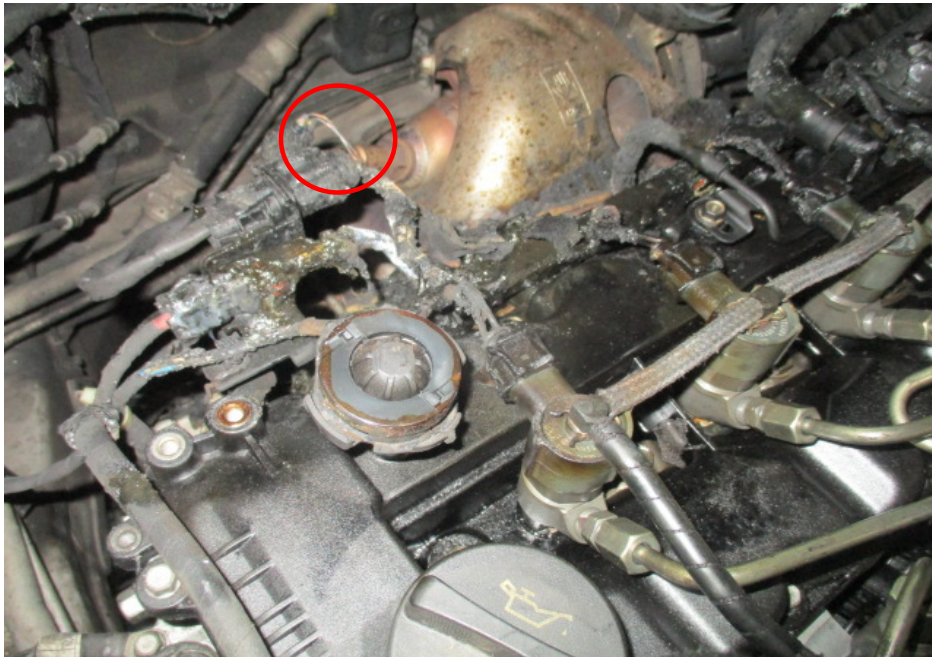


Photo 13 shows a closer view of the greenish residue found on some of the burnt stretches of original factory fitted wirings (circled). The presence of such greenish residue suggests occurrence of an electrical short circuit.

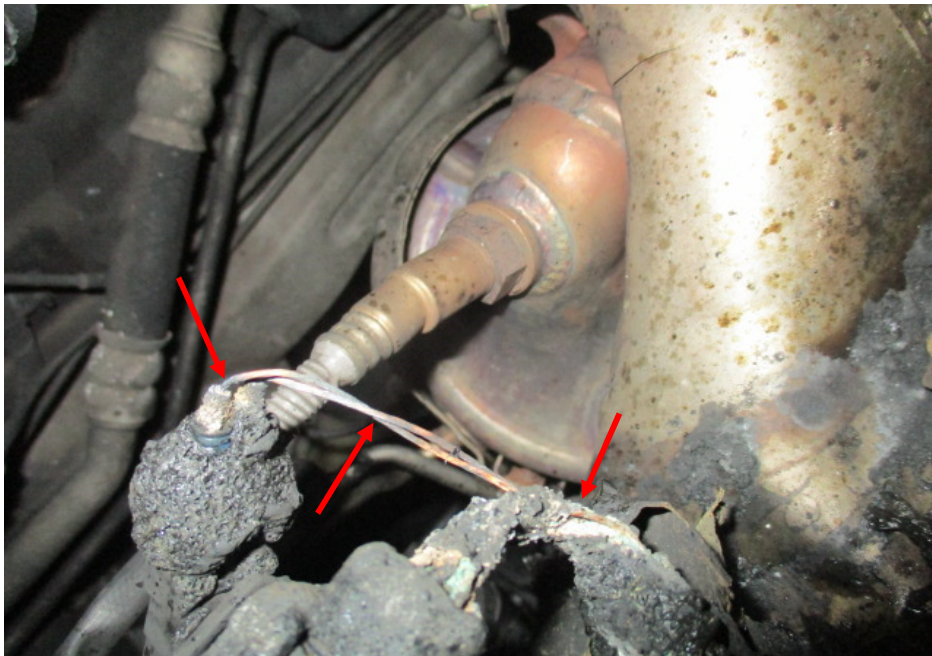


Photo 14 shows a close up view of the greenish residue found on some of the burnt stretches of original factory fitted wirings (arrowed). The presence of such greenish residue suggests occurrence of an electrical short circuit.

9. From the Singapore Accident Statement which was made by Mr Teng Shenn Shin (herein referred to as “**Mr Teng**”), we note that the fire to the Insured Vehicle had started at a time when he was driving. Mr Teng was first alerted of the fire when he saw smoke coming out of the front bonnet of the Insured Vehicle.
10. We were able to gather further information pertaining to the incident as well as information pertaining to the history of the Insured Vehicle.
11. According to Mr Teng, he had picked up a passenger from Lorong Kilat in the morning of 27 July 2020 and was headed to Block 449 Ang Mo Kio Avenue 10. He turned into Ang Mo Kio Street 43 which was when he noticed smoke emitting from the rear portion of the front bonnet. He pulled over to the side of the road and instructed his passenger to alight from the Insured Vehicle. Mr Teng could not remember if he had switched off the engine but he immediately pulled the bonnet release lever and exited the Insured Vehicle. He opened the front bonnet and saw a small fire at the rear centre portion of the Insured Vehicle. Mr Teng got a bottle of water from the Insured Vehicle and put out the fire while his passenger called the SCDF. Mr Teng managed to put out the fire before the SCDF arrived.
12. The SCDF and police arrived in less than 10 minutes. By then the fire was extinguished. The police took down Mr Teng's statement. Mr Teng also assisted the SCDF with their preliminary investigation. Mr Teng called Premier and made towing arrangements after putting out the fire. The tow truck arrived after 0900 hours.
13. The tow truck was towed to Premier. Mr Teng hitched a ride with the tow truck. He then filed an insurance report at 1015 hours at Premier.
14. With regard to the history of the Insured Vehicle, we were able to gather from Mr Teng that he has been driving the Insured Vehicle for 1 year. He also mentioned that he is the only driver of the Insured Vehicle. He usually drives from 0630 hours to 1830 hours daily. Mr Teng informed us that he had no issues whilst driving the Insured Vehicle. There was no loss of power to the Insured Vehicle. He mentioned that the last servicing was done in July 2020 at Premier.
15. Mr Teng also informed us that ever since he drove the Insured Vehicle, he has not done any modification(s) and/or additionally fitted any electrical or electronic component(s) to the Insured Vehicle.

16. Mr Teng told us that he neither noticed any warning lights nor abnormally high temperatures whilst driving the Insured Vehicle.

Incident Scene Video

17. We were able to obtain a video of the incident taken from the in-vehicle recording device of the Insured Vehicle. In general, the information that could be gathered from this video had corresponded to the events that were related to us by Mr Teng. See screenshots 1 & 2 below.



Screenshot 1 shows smoke emitting from the front bonnet of the Insured Vehicle after Mr Teng pulled over to the side of the road (arrowed).



Screenshot 2 shows Mr Teng attempting to put out the fire to the Insured Vehicle with a bottle of water (arrowed).

Incident Scene Photographs

18. We were able to obtain from Mr Teng, photos of the Insured Vehicle which he had taken after the fire was put out. In general, the information that could be gathered from these photographs had corresponded to the events that were related to us by Mr Teng. 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 where the Insured Vehicle was positioned. See photos 15 & 16 below.



Photo 15 shows the SCDF conducting preliminary investigations on the Insured Vehicle post- incident. In general, the information that could be gathered from this photograph had corresponded to the events that were related to us by Mr Teng which is the police were also present at the incident location (arrowed).



Photo 16 shows the Insured Vehicle at the incident scene after the fire was extinguished. In general, the information that could be gathered from this photograph had corresponded to the events that were related to us by Mr Teng, which is the fire had started in the rear centre portion of the engine compartment (circled).

19. Pertaining to the maintenance aspect, the Insured Vehicle is serviced at Premier.
20. During the course of our investigations, we were also able to obtain from Mr Lawrence Ong, who is a senior manager at Premier, documents relating to the servicing of the Insured Vehicle. The Insured Vehicle was last serviced on 16 July 2020, less than 2 weeks before the incident occurred. The servicing package had included the changing of engine oil, oil filter and air filter. Both headlights were also replaced. Refer to Invoice 1 below.

Premier Automotive Services Pte Ltd
23 Changi South Avenue 2
#04-02
Singapore 486443
GST: 200707743D ROC: 200707743D
Phone: (65) 6214 8880
Fax: (65) 6214 4498

Tax Invoice



Date	Page
Jul 16, 2020	1
Invoice Number	
IV2007008857	

Sold To:

Premier Taxis Pte Ltd
23 Changi South Avenue 2
#03-03
Singapore 486443

Ship To:

Premier Taxis Pte Ltd
23 Changi South Avenue 2
#03-03
Singapore 486443

Shipment / DO No.	Order Date	Vehicle No.	Case ID	PO Number	Terms
SM2007011299		SHC6227M	PAUTO-2007007871		30D

S/N	Item Number	Description	Qty. Shp.	Unit Price	Total Discoun	Total Amount
1	S22	Kia Optima Service Package			0.00	558.00
2	S25	Labour Charge - Replace both headlight			0.00	25.00
0	LP OWS HYPER MAX	5W40 C3 (Engine Oil - 1000 Ltrs IBC)	5	0.00	0.00	0.00
0	26320 2A500	Service Kit Oil Filter (Optima / I30) (OE0073)	1	0.00	0.00	0.00
0	97133 3SAA0	Filter Assy-Air (KO 1 / 2)	1	0.00	0.00	0.00

Comments:
Kia Optima2 PTAXI-2007011522

Authorised By:

Subtotal	583.00
Less discount	0.00
Total amount	583.00
GST 7%	40.81
Grand total	623.81

Invoice 1 shows the servicing and repairs done on the Insured Vehicle on 16 July 2020 at Premier (arrowed). The servicing package had included the changing of engine oil, oil filter and air filter. Both headlights were also replaced (circled).

21. 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.
22. 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 Mr Teng had mentioned to us there were no indications of abnormally high temperatures when he was driving the Insured Vehicle on the day of the incident.
23. 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 as the fire occurred as Mr Teng was driving the Insured Vehicle. The location where the Insured Vehicle caught fire was also observed to be not at a secluded location.
24. 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 nature is also supported by the condition of the wirings that were found in the engine compartment of the Insured Vehicle, which was earlier discussed in paragraph 8 above.
25. Our checks with both local and international bodies and associations had 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. See search result from LTA below.

Vehicle Recall Details

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

Owner ID Type Company	Owner ID 975H
Vehicle No. SHC6227M	Make/Model KIA/OPTIMA 1.7(A) DIESEL
Engine No.: D4FDEH311476	Chassis No.: KNAGM414MF5542430
Recall Details: No Recall Detail records	

Save as PDF

OK →

Print



not use your browser's Back or Forward buttons as this may result in information loss

Conclusion

26. 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 original factory fitted wirings inside the engine compartment, somewhere around the rear centre portion of the engine compartment.
27. 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.
28. There were no modification(s) or additional electronic and/or electrical component(s) fitted on the Insured Vehicle at the time of our inspection of the Insured Vehicle.
29. 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 Nazril***Senior Technical Investigator***Ang Bryan Tani***AMSOE, AMIRTE, AFF SAE, M.MATAI, AFF.Inst.AEA
Senior Technical Investigator
Technical Investigation & Reconstructionist (SAE-A)*

DISCLAIMER OF LIABILITY TO THIRD PARTIES:- This Report is made solely for the use and benefit of the Client named on the front page of this Report. No liability or responsibility whatsoever, in contract or tort, is accepted to any third party who may rely on the Report wholly or in part. Any third party acting or relying on this Report, in whole or in part, does so at his or her own risk.