

Your Ref: G0075148  
Our Ref : CI/AVI21011784/N

11 November 2021

**M/s Aviva Ltd.**

4 Shenton Way #26-00  
SGX Centre  
Singapore 068807  
(Motor Claims Department)

**TECHNICAL INVESTIGATION REPORT OF FIRE INCIDENT INVOLVING THE INSURED VEHICLE SMK 310T ON 6 NOVEMBER 2021**

1. We refer to your letter dated 9 November 2021 and the instructions therein.
2. Our analysis, comments and opinions with respect to the cause of fire to the insured vehicle SMK 310T (herein referred to as "**Insured Vehicle**") are set out below.

**Inspection of the Insured Vehicle**

3. The Insured Vehicle was physically inspected on 10 November 2021 at the premises of BIS Automobiles Pte. Ltd. (herein referred to as "**BIS**") located at 30 Tebans Gardens Crescent, Singapore 608927.
4. A static inspection was carried out to the Insured Vehicle where the following general information was recorded:-

Vehicle Registration No.	: SMK 310T
Make / Model	: BMW 216I ACTIVE TOURER
Chassis No	: WBA2X92090VD11502
Year of Registration	: March 2019
Mileage	: N.A. (battery melted)

5. The Insured Vehicle was noted to have sustained fire damage that was confined to its frontal portion. The entire engine compartment of the Insured Vehicle was observed to be severely burnt while the interior compartment was observed to be severely affected by the fire.
6. The fire had resulted in the body parts at the frontal portion of the Insured Vehicle to be burnt. This had included its front bumper, front bonnet, front support panel, front grille, front headlamps, front windscreen, front wheel rims, front fenders and front tyres, amongst others. See photos 1 – 6 below.



**Photo 1** shows the general view of the rear portion of the Insured Vehicle at the time of our inspection. The rear portion of the Insured Vehicle was relatively unaffected by the fire.



**Photo 2** shows the general view of the frontal portion of the Insured Vehicle at the time of our inspection. The fire damage to the Insured Vehicle was confined to its frontal portion. The entire engine compartment of the Insured Vehicle was observed to be severely burnt while the interior compartment was observed to be severely affected by the fire.





**Photo 3** shows the closer view of the right front body of the Insured Vehicle at the time of our inspection. The fire damage to the Insured Vehicle was confined to its frontal portion. Its front bumper, front bonnet, front support panel, front grille, front headlamps, front windscreen, front wheel rims, front fenders and front tyres, amongst others were amongst the body parts that were found to have been affected by the fire.



**Photo 4** shows the general view of the front windscreen of the Insured Vehicle at the time of our inspection. The fire damage to the windscreen was extensive.



**Photo 5** shows the engine compartment of the Insured Vehicle at the time of our inspection. The entire engine compartment of the Insured Vehicle was observed to be severely burnt. Most of the parts inside the engine compartment were found to be burnt and/or melted as a result of the fire.



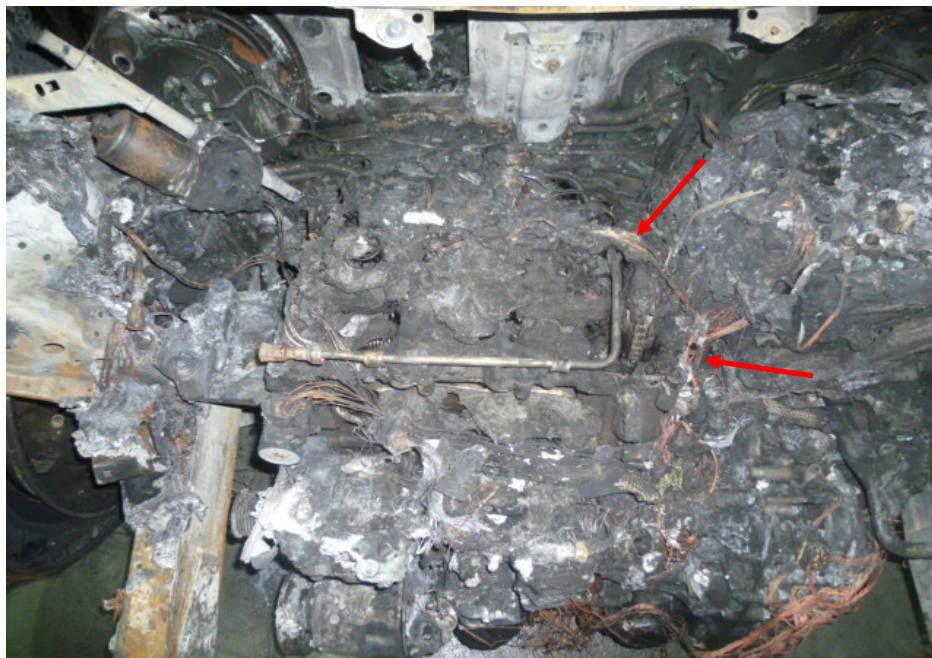
**Photo 6** shows the interior compartment of the Insured Vehicle, which was severely affected by the fire.



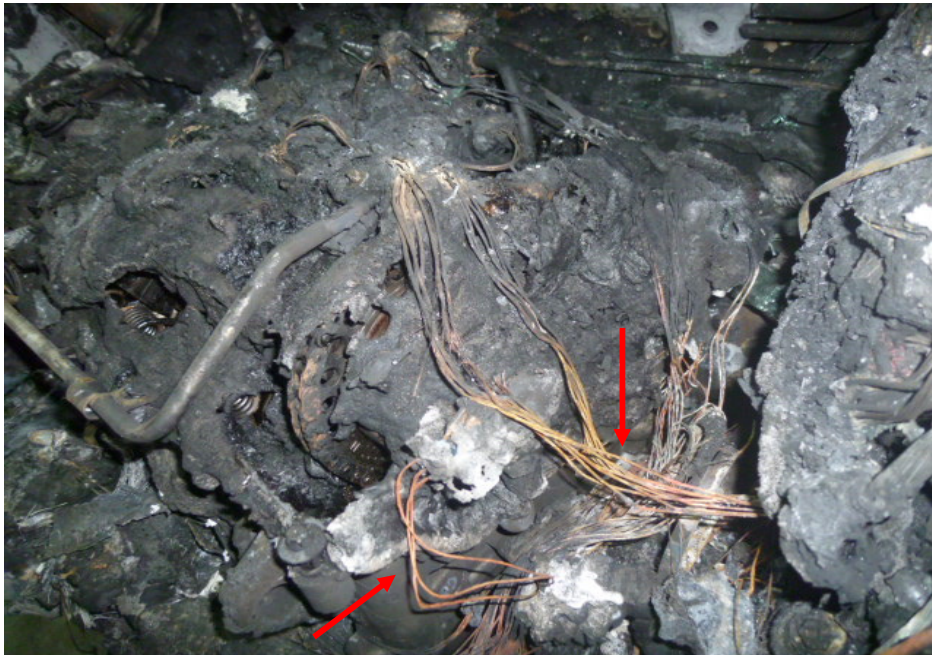
7. At the time of inspection of the Insured Vehicle, we did not find any additionally fitted electronic and/or electrical component(s) on the Insured Vehicle. There also appears to be no modification(s) fitted on the Insured Vehicle.

### **Investigation and Technical Analysis**

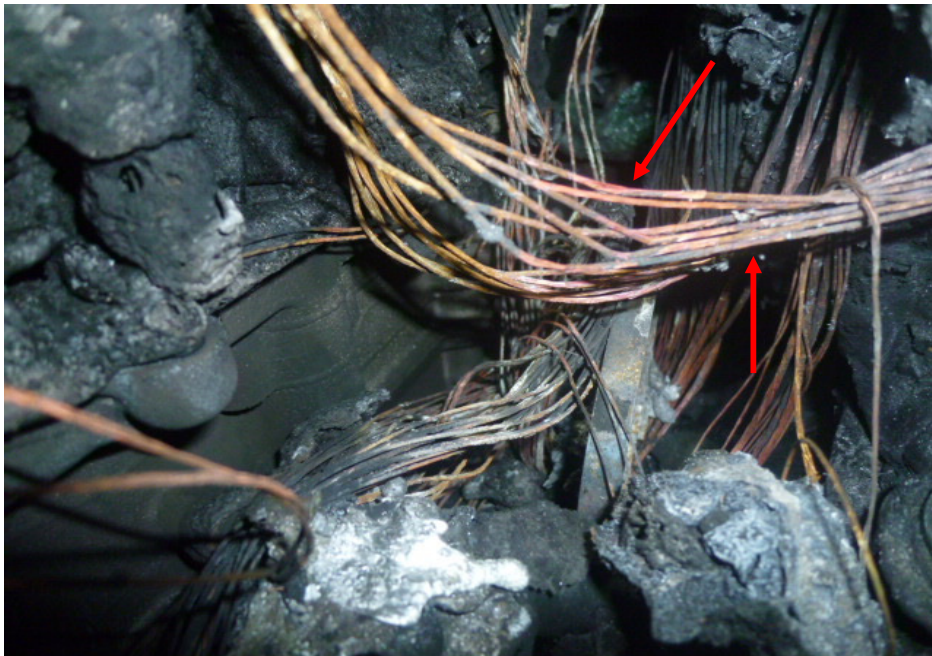
8. For this particular case, the fire appears to have originated within the engine compartment of the Insured Vehicle as this was the area where the damage of fire nature was most severe.
9. Upon closer examination of the engine compartment, which was where the fire to the Insured Vehicle had likely started, we had found several stretches of wiring burnt internally to its bare copper state. Such condition normally indicates internal heating of copper wires which is a sign of an electrical short circuit occurring. This 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 7 - 9 below.



**Photo 7** shows the wirings around the engine compartment, which is in the immediate vicinity where the fire to the Insured Vehicle had likely started. The wirings (red arrows) were found to have been burnt internally to its bare copper state, suggesting occurrence of an electrical short circuit.



**Photo 8** shows a closer view of the wirings (red arrows) which were found to have been burnt internally to its bare copper state, suggesting occurrence of an electrical short circuit.




**Photo 9** shows a close up view of the wirings (red arrows) which were found to have been burnt internally to its bare copper state, suggesting occurrence of an electrical short circuit.



10. From the Singapore Accident Statement, which was made by Ms Nancy Reneta Goh Geok San (herein referred to as “**Ms Goh**”), we note that the fire to the Insured Vehicle had started at a time while her husband, Mr Lee Tze Ann (herein referred to as “**Mr Lee**”) was driving. They were alerted of the fire by a passer-by who saw flames emitting from the engine compartment.
11. We managed to speak to Mr Lee 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 Lee, they had left their home located in Tanjong Rhu and were headed to pick up Mr Lee’s mother at Upper Boon Keng Road to accompany her for her CT scan appointment at Tan Tock Seng Hospital. They travelled via Lavender Street along the 2nd lane when a ‘Send vehicle to workshop’ message prompt flashed on the dashboard display of the Insured Vehicle. Mr Lee then noticed smoke emitting from both sides of the front bonnet. He stopped the Insured Vehicle along the left most lane and attempted to contact the BMW Service Centre via the Insured Vehicle’s call button. Ms Goh assisted her mother-in-law out of the Insured Vehicle when a passer-by alerted them to the flames emitting from the engine compartment. Ms Goh immediately informed Mr Lee who alighted from the Insured Vehicle. Ms Goh then called 995.
13. SCDF and the police arrived in a few minutes and put out the fire shortly after. Mr Lee assisted the SCDF in their preliminary investigations. The police also took their statements. Ms Goh made towing arrangements. The tow truck arrived within 2 hours and the Insured Vehicle was towed to BIS. Ms Goh lodged a police report at the Marine Parade Neighbourhood Police Centre the following day, on 7 November 2021 at 2318 hours. She made an insurance report at BIS on 8 November 2021 at 1658 hours.
14. With regards to the history of the Insured Vehicle, we were able to gather from Mr Lee that the Insured Vehicle was purchased new in 2019. Ms Goh is the main 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.
15. Pertaining to the maintenance aspect, Ms Goh sends the Insured Vehicle for periodic servicing at Performance Motors Ltd. (herein referred to as “**PML**”) as the Insured Vehicle was still under warranty. The Insured Vehicle was regularly serviced at 280 Kampong Arang Road, East Coast Centre, Singapore 438180.

16. During the course of our investigations, we were able to obtain from Ms Goh, documents relating to the latest servicing records of the Insured Vehicle. The Insured Vehicle was last serviced at on 14 October 2021, less than a month before the incident occurred. The servicing package had included the changing of engine oil, oil filter, air filter and spark plugs. Refer to Invoice 1 below.


BMW Dealer **Performance Motors Limited** 

A Sime Darby Motors Company  
Co. Reg. No. 197401531W GST Reg. No. M2-8030081-x  
Toll Free Number 1800-2155289




303, Alexandra Road  
Sime Darby Performance Centre  
Singapore 119941  
Poc. 64747770

201, Singapore Road  
Sime Darby  
Singapore 436892  
Poc. 63443773

315, Alexandra Road  
Sime Darby Business Centre  
Singapore 119941  
Fax 64747771 (AfterSales)  
(Motorway)



**SERVICE TAX INVOICE**  
RE-PRINT

Repair Order No. <b>W3 1600694</b>	Page No. <b>1 of 2</b>	Invoice Number <b>2440504 / WSB</b>	Download BMW Performance SG Mobile App Today!
Date In <b>14/10/2021</b> 	Invoice Date <b>14/10/2021</b>	Payment Term <b>Internal</b>	
Cust. Svc. Advisor <b>Ashia Lim Tiam Hock</b>	Invoice By <b>Kathy Pua</b>		
- CUSTOMER INFORMATION - <b>Nancy Reneta Goh Geok Sze (Nancy Reneta Wu Yashan)</b> 8D Tanjong Pagar Road #05-04 Singapore 436892		- INVOICE TO - <b>Internal-BMW Basic Svc Inclusive</b>	
REGN. NO. <b>SMK310T</b> 	CHASSIS NO. <b>WBA2X92090VD11502</b>	REGN. DATE <b>27/03/2019</b>	MODEL <b>216i Active Tourer</b>
			RELEASE <b>66267</b>

JOB CODE	DESCRIPTION	UNITS	DISC %	NETT
1	Cust Com RATC = NO VOICE = NO Regular 5-yr/100,000 km	0.00		0.00
Sub-Total :				0.00
JOB CODE	DESCRIPTION	UNITS	DISC %	NETT
2	0000105 Service - standard scope	2.00		0.00
Sub-Total :				0.00
JOB CODE	DESCRIPTION	UNITS	DISC %	NETT
3	0000610 90001 ub Engine oil service Fully Synthetic Engine Oil 4.5 litres SET OIL FILTER ELEMENT	3.00 4.50 1.00		0.00 0.00 0.00
Sub-Total :				0.00
JOB CODE	DESCRIPTION	UNITS	DISC %	NETT
4	0000616 Microfilter service MICROFILTER(ACTIVATED CARBON CONTAI	2.00 1.00		0.00 0.00
Sub-Total :				0.00
JOB CODE	DESCRIPTION	UNITS	DISC %	NETT
5	0000622 Spark plug service SPARK PLUG HIGH POWER	8.00 3.00		0.00 0.00
Sub-Total :				0.00
JOB CODE	DESCRIPTION	UNITS	DISC %	NETT
6	(S/L)/W/SCREEN WASHER ADDITIVE(250ML	1.00		0.00

**Invoice 1** shows the last servicing package done on the Insured Vehicle on 14 October 2021 at PML (arrowed) which included changing of engine oil, oil filter, air filter and spark plugs.



17. Mr Lee mentioned that there were neither warning lights displayed nor was there an abnormal rise in temperature of the Insured Vehicle when he was driving the Insured Vehicle on the day of the incident.
18. Ms Goh mentioned that since driving the Insured Vehicle, she has not done any modification(s) and/or additionally fitted any electrical or electronic component(s) to the Insured Vehicle.

### **Incident Scene Photographs**

19. We were able to obtain from Ms Goh and Mr Lee, photos of the Insured Vehicle which were taken during and 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 both Ms Goh and Mr Lee. 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 10 & 11 below.



**Photo 10** shows the Insured Vehicle on fire before the arrival of the SCDF. In general, the information that could be gathered from this photograph had corresponded to the events that were related to us by Ms Goh and Mr Lee which is the fire had started from the engine compartment of the Insured Vehicle (arrowed).




**Photo 11** shows the SCDF conducting preliminary investigations after putting out the fire on the Insured Vehicle. In general, the information that could be gathered from this photograph had corresponded to the events that were related to us by Ms Goh and Mr Lee which is the SCDF and police were present at the incident scene (arrowed).

20. 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.
21. Given the circumstances of the incident as reported, the possibility of the cause of fire to the Insured Vehicle being due to engine overheating would seem unlikely as Mr Lee had mentioned to us there were no indications of abnormally high temperatures on the Insured Vehicle when he was driving on that day. Moreover, an overheated engine would have caused the Insured Vehicle to stall. However in this case, Mr Lee was the one who noticed smoke emitting from the front bonnet while he was driving and stopped the Insured Vehicle. Therefore, we are of the opinion that the fire was not caused by an overheated engine.
22. 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 ground where the Insured Vehicle was positioned. The location of where the Insured Vehicle was positioned was also observed to be not at a secluded location.



23. 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 9 above.

24. 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

<i>Owner ID Type</i> <b>Singapore NRIC</b>	<i>Owner ID</i> <b>500Z</b>
<i>Vehicle No.</i> <b>SMK310T</b>	<i>Make/Model</i> <b>B.M.W./ 216I ACTIVE TOURER</b>
<i>Engine No.:</i> <b>40435477B38A15A</b>	<i>Chassis No.:</i> <b>WBA2X92090VD11502</b>
<i>Recall Details:</i> <b>No Recall Detail records</b>	

### Conclusion

25. Having investigated and technically analysed the damages 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 wirings inside the engine compartment. The wirings were original factory wirings of the Insured Vehicle.

26. 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.
27. 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.
28. 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.
29. SCDF was activated to attend to the fire incident and a fire report pertaining to their findings will likely be forth coming. We have applied for this fire report and will forward a copy of the report once it is made available to us.

**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)*

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