

Your Ref: DMPC2200326H/CT
Our Ref : CS4/ICS22007322/N

4 August 2022

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 SMD 9920K ON 31 JULY 2022**

1. We refer to your letter dated 1 August 2022 and the instructions therein.
2. Our analysis, comments and opinions with respect to the cause of fire to the Motor Vehicle SMD 9920K (herein referred to as “**Insured Vehicle**”) are set out below.

Inspection of the Motor Vehicle

3. The Insured Vehicle was physically inspected on 3 August 2022 at the premises of Yew Tee Automobile Tech Pte. Ltd. (herein referred to as “**YTA**”) located at 25 Kaki Bukit Rd 4, Synergy@KB, #01-61, Singapore 417800.
4. A static inspection was carried out to the Insured Vehicle where the following general information was recorded:-

Vehicle Registration No.	: SMD 9920K
Make / Model	: MERCEDES BENZ C200 AMG A
Chassis No	: WDD2050422R171783
Year of Registration	: May 2017
Mileage	: N.A (battery melted)

5. The exterior front body of the Insured Vehicle sustained visible fire damage. This included its front windscreen, front bonnet, front windscreen wiper garnish and front windscreen wipers.
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. The interior compartment was relatively unaffected by the fire. See photos 1 – 6 below.



Photo 1 shows the general view of the frontal 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 front windscreen, front bonnet, front windscreen wiper garnish and front windscreen wipers.



Photo 2 shows the general view of the right frontal 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 front windscreen, front bonnet, front windscreen wiper garnish and front windscreen wipers.



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 front windscreen, front bonnet, front windscreen wiper garnish and front windscreen wipers.



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



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 relatively unaffected by the fire.



Photo 6 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 on the Insured Vehicle. These included an engine strut bar and aftermarket 18- inch alloy rims. All these fitted components were not the standard type for the Insured Vehicle. See photos 7 & 8 below.

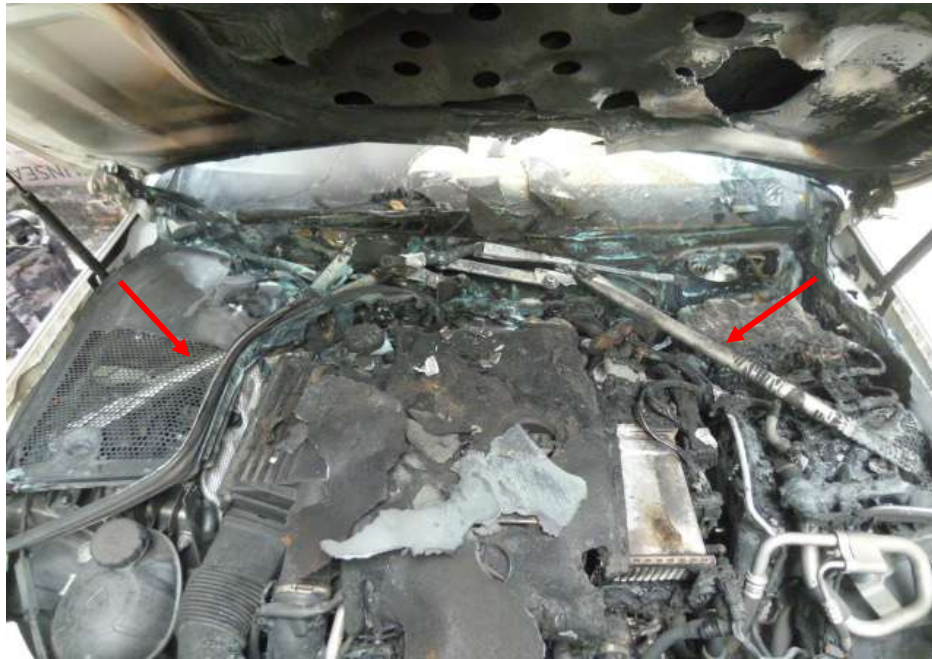


Photo 7 shows the engine strut bar (arrowed) fitted on the Insured Vehicle. However it had sustained minor fire damage.



Photo 8 shows the non-standard rim found to be fitted on the Insured Vehicle at the time of our inspection. The 18- 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 rear centre portion of the engine compartment. This can be determined from the whitish burn marks on the rear centre portion of the front bonnet of the Insured Vehicle and also the rust that had developed on the underside of the front bonnet, at the bottom centre portion.
9. The whitish burn marks are a result of exposure to prolonged heat intensity. Rust would normally start to develop around these areas soon after a fire as prolonged exposure to high heat intensity usually causes steel/metal material body parts to be exposed to natural environmental condition. The rust that had developed on the underside of the front bonnet, around the bottom centre portion, is an indication that the rear centre portion of the engine compartment had sustained exposure to prolonged high heat intensity. See photos 9 - 12 below.



Photo 9 shows the burn pattern and whitish burn marks that were found on the rear centre portion of the front bonnet of the Insured Vehicle (circled). Such whitish burn marks are a result of exposure to prolonged heat intensity, which may indicate where the fire had started. Rust would also begin to develop on these areas soon after the fire.



Photo 10 shows a closer view of the burn pattern and whitish burn marks that were found on the rear centre portion of the front bonnet of the Insured Vehicle (circled).



Photo 11 shows the rust that had developed on the underside of the front bonnet, around the bottom centre portion (circled). The development of rust is an indication that this area was subjected to prolonged exposure to high heat intensity, which had caused the steel/metal material of the front bonnet to be exposed to natural environmental condition. Hence the fire to the Insured Vehicle can be determined to have originated towards the rear centre portion of the engine compartment.



Photo 12 shows a closer view of the rust that had developed on the underside of the front bonnet, around the bottom centre portion (circled).

10. 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 several stretches of wirings with greenish residue. These wirings were original factory fitted wirings leading from 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 appear to suggest that the cause of fire to the Insured Vehicle could have possibly been due to electrical in nature. See photos 13 – 17 below.



Photo 13 shows the wirings around the rear centre portion of the engine compartment which is near to the vicinity where the fire to the Insured Vehicle had likely started. We observed greenish residue on the wirings leading from the Engine Control Module (ECM) of the Insured Vehicle (circled). 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.



Photo 14 shows a closer view of the greenish residue on some of the burnt wirings leading from the ECM (arrowed).

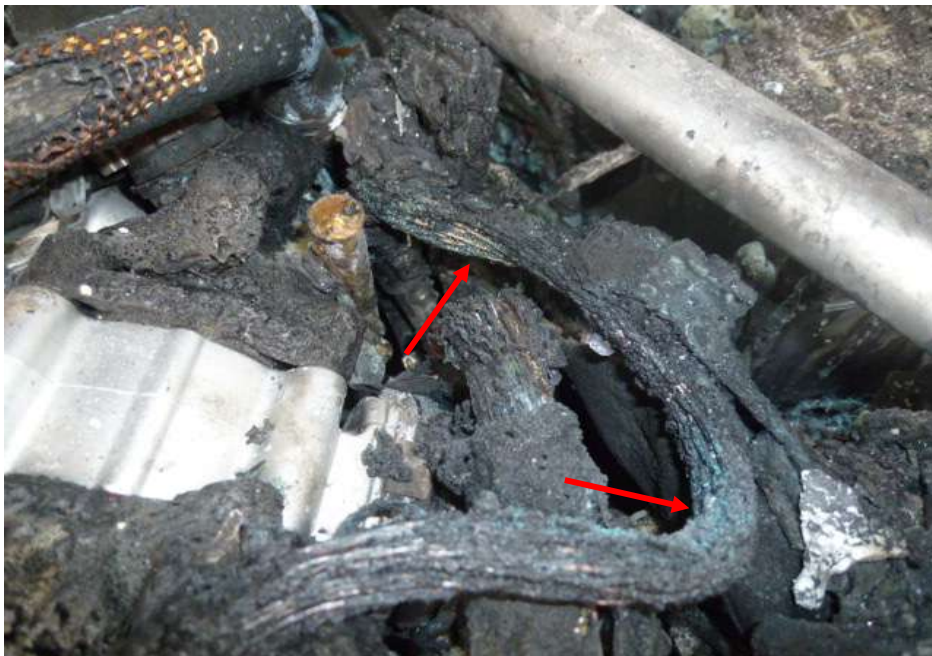


Photo 15 shows a closer view of the greenish residue on the wirings leading from the ECM of the Insured Vehicle (red arrows). The presence of such greenish residue suggests occurrence of an electrical short circuit.



Photo 16 shows a close up view of the greenish residue on the wirings leading from the ECM of the Insured Vehicle (red arrows). The presence of such greenish residue suggests occurrence of an electrical short circuit.



Photo 17 shows a close up view of the greenish residue on the wirings leading from the ECM of the Insured Vehicle (red arrows). The presence of such greenish residue suggests occurrence of an electrical short circuit.

11. From the Singapore Accident Statement which was made by Mr Song Jun Yang, Simon (herein referred to as “**Mr Song**”), we note that the fire to the Insured Vehicle had started at a time when he had stopped by the roadside. Mr Song was first alerted of white smoke emitting from the front bonnet of the Insured Vehicle.
12. We managed to speak to Mr Song on 3 August 2022 where we were able to gather further information pertaining to the incident as well as information pertaining to the history of the Insured Vehicle.
13. According to Mr Song, the incident at occurred at about 1530hrs on 31 July 2022 along Paterson Hill. He had travelled from his home located at Hougang Street 51 together with his wife. He had to deliver an item to a customer at Takashimaya Shopping Centre. He took the CTE (City) from Ang Mo Kio Avenue 5 and exited at Orchard Road. After delivering the item, he travelled along Paterson Hill and was headed towards Bukit Merah via Irwell Bank Road for another delivery. He was driving on the middle lane when he suddenly smelt something burning within the interior compartment and asked his wife about it.
14. He then saw white smoke emitting from the rear centre portion of the front bonnet. He noticed the ‘engine check’ light and other warning lights displayed on the dashboard of the Insured Vehicle. However he mentioned that he did not notice the ‘engine overheating’ warning light being displayed. He could not recall if there were any error codes or messages displayed on the dashboard as he was panicking at that moment. He wound down the windows and stopped the Insured Vehicle by the left side of the road and immediately switched off the engine. Both of them exited the Insured Vehicle and Mr Song took a video of the white smoke emitting from the front bonnet.
15. The smoke started getting more intense. Mr Song called his friend for advice who told him to contact an insurance authorized workshop. Mr Song called YTA and made towing arrangements. He then called 995 and ran to the nearest condo to get help from the security guard. He returned with a security guard from the Marq condo who brought a fire extinguisher. By the time he returned, the Insured Vehicle was already on fire. Mr Song mentioned that a delivery rider was already at the incident scene attempting to put out the fire with a fire extinguisher. The security guard also attempted to put out the fire. A few minutes later the police arrived followed by the SCDF. Mr Song mentioned that the SCDF took 15 minutes to arrive. Firefighters opened the front bonnet and extinguished the fire with a water jet within 5 minutes.

16. Mr Song assisted SCDF personnel in their preliminary investigations. He asked the SCDF fire investigator what was the cause of the fire. The fire investigator told Mr Song that the fire had started from the engine compartment but he could not determine what had caused it. The police also asked him a few questions and took down his statement. The tow truck which had arrived earlier was on standby till Mr Song got permission from SCDF to tow the Insured Vehicle.
17. The Insured Vehicle was towed to YTA. Mr Song and his wife grabbed a ride to continue with the delivery before heading home. Mr Song went to YTA the following day, on 1 August 2022 and made an insurance report at 1501 hours. The police told Mr Song that a police report was unnecessary.
18. With regards to the history of the Insured Vehicle, we were able to gather from Mr Song that he is the owner and only driver of the Insured Vehicle. The Insured Vehicle was purchased secondhand in June 2020 from a private seller. He has been driving the Insured Vehicle for about 2 years. To the best of his recollection, there has not been any major mechanical problem and/or electrical problem with the Insured Vehicle.
19. We asked Mr Song regarding the engine strut bar and aftermarket 18- inch alloy rims that were fitted onto the Insured Vehicle. He mentioned that the engine strut bar was already fitted onto the Insured Vehicle when he purchased it. He replaced the original rims with aftermarket 18- inch alloy rims.
20. Pertaining to the maintenance aspect, Mr Song mentioned that he sends the Insured Vehicle for periodic servicing. He services the Insured Vehicle at Revzone Performance Pte. Ltd. located at 71 Woodlands Ave 10, #01-01 Woodlands Industrial Xchange, Singapore 737743. He had the Insured Vehicle serviced about 2 weeks prior to the incident on 18 July 2022.
21. During the course of our investigations, we were able to obtain from Mr Song, 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. See Invoice 1 below.

Revzone Performance Pte Ltd ←
71 Woodlands Ave 10, #01-01
Woodlands Industrial Xchange
Singapore 737743
Tel: 88260077
Email: admin@revzoneperformance.com
Company Reg No: 202100500E



INVOICE : INV -1693-2022

TO : JUN YANG ECCS
Singapore
TEL : 92261188
MAKE : MERCEDES BENZ
MODEL : C200 AMG A
NOTES : Notes

DATE : → 18/07/2022
SALESPERSON :
TERMS : Due upon receipt
JS NO :
MILEAGE (KM) : 130904
VEHICLE NO : → SMD9920K

NO	DESCRIPTION	QTY	UNIT	U/PRICE	AMOUNT
1	MOTUL 8100 X-CESS GEN2 5W40 (5 LITRES)	1	BOTTLES	0.00	0.00
2	8100 X-CESS GEN2 5W40 (1 LITRE)	1	BOTTLES	0.00	0.00
3	TS OIL FILTER ELEMENT	1	PCS	0.00	0.00
4	SERVICING PACKAGE	1		148.00	148.00
5	8100 X-CESS GEN2 5W40 (1 LITRE) (ADDITIONAL) (SPECIAL)	1	BOTTLES	12.00	12.00

SG DOLLARS: ONE HUNDRED SIXTY SINGAPORE DOLLAR
(SGD) ONLY

SUB-TOTAL 160.00
TOTAL (SGD) 160.00

Customer's Acknowledgement
I agreed that the above jobs had been
performed to my satisfaction.

Revzone Performance Pte Ltd

REVZONE PERFORMANCE PL



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SCAN TO PAY

Customer's Signature : _____

Invoice 1 shows the servicing and repairs done on the Insured Vehicle on 18 July 2022 at Revzone Performance Pte. Ltd. (arrowed). The servicing package had included the changing of engine oil and oil filter (circled).

22. Mr Song mentioned that since the latest servicing and repairs were done he had not experienced any other mechanical or electrical problems with the Insured Vehicle.

Incident Scene Photographs

23. The photographs and video recordings provided had showed the Insured Vehicle with smoke emitting from the front bonnet as well as after the fire was extinguished and being towed. The extent of fire damage was similar to what we observed when we inspected the Insured Vehicle. The background seen from the photographs had also corresponded to the incident occurring along Paterson Hill. Generally, the information that we were able to gather from the photographs and video recordings provided by Mr Song had corresponded to the information that he had related to us. See photos 18 – 22 below.

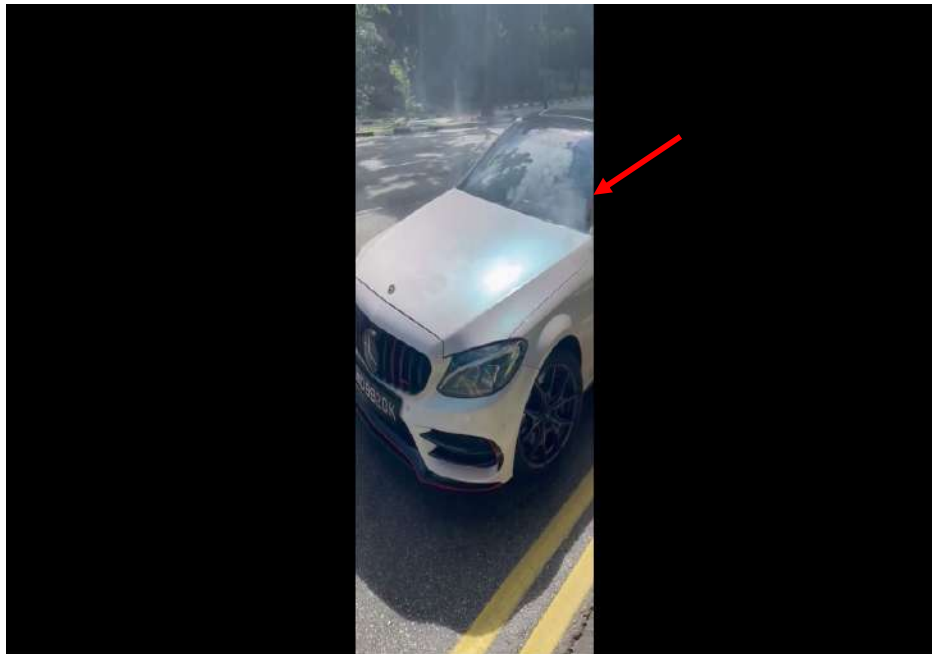


Photo 18 shows a screenshot taken from the video recording that was provided by Mr Song. The Insured Vehicle could be seen with white smoke emitting from the rear centre portion of the front bonnet (arrowed).



Photo 19 shows a screenshot taken from the video recording that was provided by Mr Song. In general, the information that could be gathered from this screenshot had corresponded to the events that were related to us by Mr Song which is the delivery rider and condo security guard were attempting to put out the fire to the Insured Vehicle with fire extinguishers (arrowed).



Photo 20 shows the Insured Vehicle 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 Song which is the police and SCDF had responded to the incident (arrowed).



Photo 21 shows the Insured Vehicle being prepped to be towed to YTA post-incident. The extent of fire damage was similar to what we observed when we inspected the Insured Vehicle. The background seen from the photograph had also corresponded to the incident occurring along Paterson Hill.



Photo 22 shows the Insured Vehicle at the incident location after the fire was extinguished. The severity of damage of the frontal portion had corresponded to the events that were related to us by Mr Song, which is the fire had started from the engine compartment of the Insured Vehicle (arrowed).

24. 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.
25. 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 Song had mentioned to us there were no indications of abnormally high temperatures on the Insured Vehicle. Moreover, an overheated engine would have caused the Insured Vehicle to stall. However in this case, Mr Song 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.
26. 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 road near 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.
27. 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 10 above.
28. 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 Singapore NRIC	Owner ID 073H
Vehicle No. SMD9920K	Make/Model MERCEDES BENZ/ C200 AMG A

Engine No.: 27492030612914	Chassis No.: WDD2050422R171783
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Recall Details:
 No Recall Detail records

Conclusion

29. 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 wirings inside the engine compartment, somewhere around the rear centre portion of the engine compartment. The wirings were original factory fitted wirings leading from the Engine Control Module (ECM) of the Insured Vehicle.
30. 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.
31. We found the Insured Vehicle to be fitted with an engine strut bar and aftermarket 18- inch alloy rims. The abovementioned engine strut bar and rims do not require prior approval from LTA.
32. Although the engine strut bar and alloy rims 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.
34. 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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