

Your Ref: NM23D204743C01  
Our Ref : CS/CTI24080412/N

30 August 2024

**M/s China Taiping Insurance (Singapore) Pte. Ltd.**

3 Anson Road #16-00  
Springleaf Tower  
Singapore 079909  
(Motor Claims Department)

**TECHNICAL INVESTIGATION REPORT OF FIRE INCIDENT INVOLVING THE  
INSURED VEHICLE SLN 5752P ON 22 AUGUST 2024**

1. We refer to your letter dated 26 August 2024 and the instructions therein.
2. Our analysis, comments and opinions with respect to the cause of fire to the Motor Vehicle SLN 5752P (herein referred to as “**Insured Vehicle**”) are set out below.

**Inspection of the Motor Vehicle**

3. The Insured Vehicle was physically inspected on 26 August 2024 at the premises of Vin's Automotive Group (herein referred to as “**Vin's**”) located at 160 Sin Ming Drive, #03-03 Sin Ming AutoCity, Singapore 575722.
4. A static inspection was carried out to the Insured Vehicle where the following general information was recorded:-

Vehicle Registration No.	: SLN 5752P
Make / Model	: MERCEDES BENZ E220D SE AUTO
Chassis No	: WDD2130042A185927
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, front windscreen wipers and front fenders.
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, front windscreen wipers and front fenders.



**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, front windscreen wipers and right front fender.



**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, front windscreen wipers and left front fender.



**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 slight 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 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, somewhere around the centre portion of the engine compartment. This can be determined from the whitish burn marks on the 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 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 centre portion, is an indication that the centre portion of the engine compartment had sustained exposure to prolonged high heat intensity. See photos 7 - 10 below.





**Photo 7** shows the burn pattern and whitish burn marks that were found on the 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 8** shows a closer view of the burn pattern and whitish burn marks that were found on the centre portion of the front bonnet of the Insured Vehicle (circled).



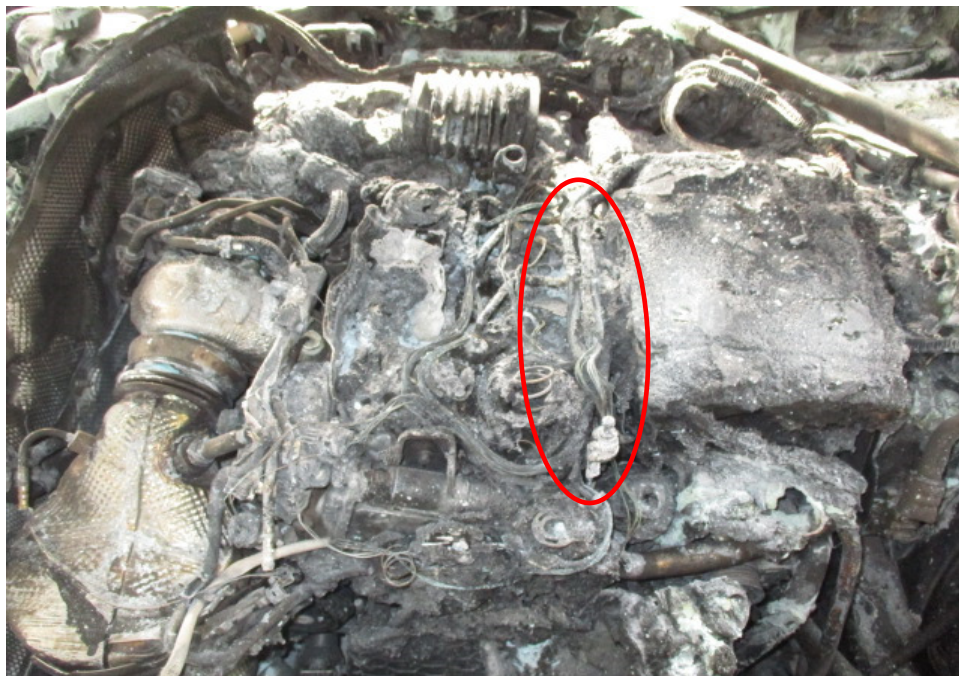
**Photo 9** shows the rust that had developed on the underside of the front bonnet, around the centre portion (circled). The development of rust is an indication that this area was subjected to prolonged exposure to high heat intensity, which had caused the steel/metal material of the front bonnet to be exposed to natural environmental condition. Hence the fire to the Insured Vehicle can be determined to have originated towards the centre portion of the engine compartment.



**Photo 10** shows a closer view of the rust that had developed on the underside of the front bonnet, around the centre portion (circled).



10. Upon closer examination of the 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 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 11 – 15 below.

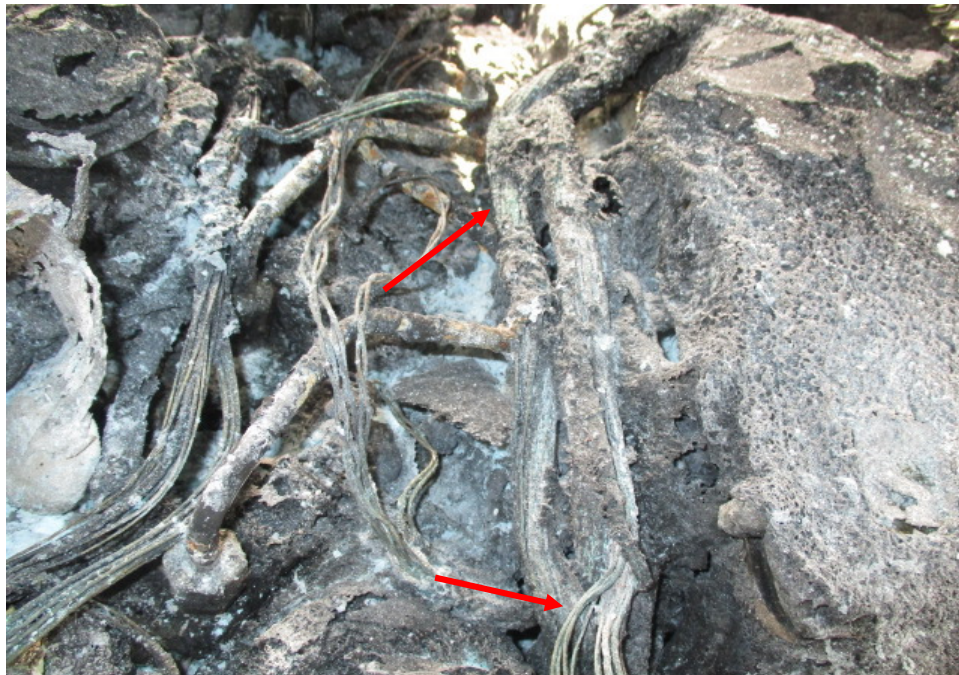


**Photo 11** shows the wirings around the centre portion of the engine compartment which is near to the vicinity where the fire to the Insured Vehicle had likely started. We observed greenish residue on some of the burnt wirings of the Insured Vehicle (circled). The presence of greenish residue indicates internal heating of copper wires, a sign of an electrical short circuit occurring.





**Photo 12** shows a closer view of the greenish residue on some of the burnt wirings 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.

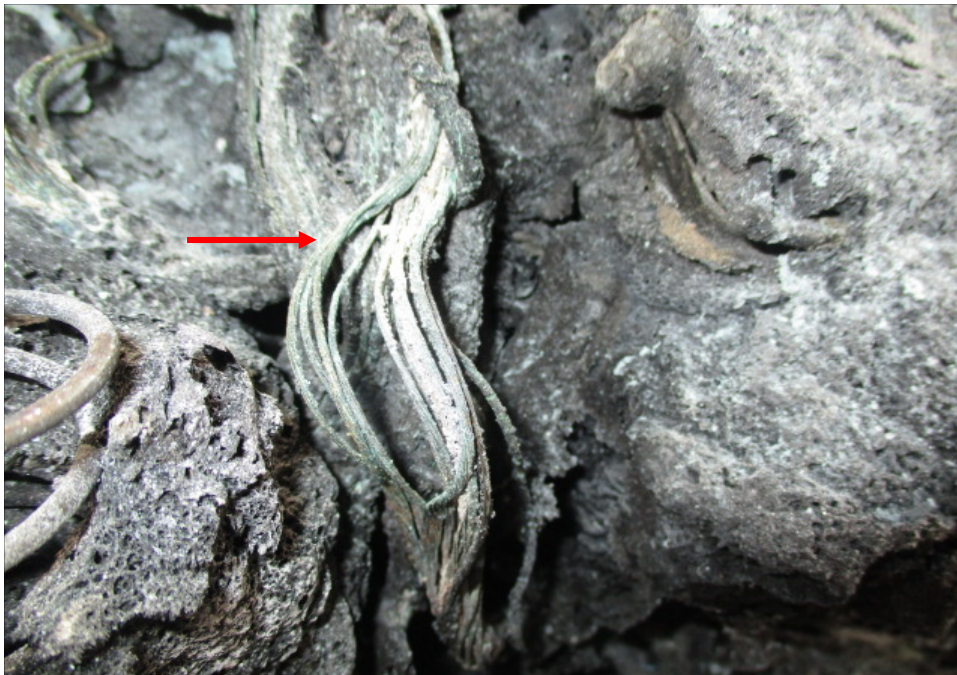


**Photo 13** shows a closer view of the greenish residue on the wirings of the Insured Vehicle (red arrows). The presence of such greenish residue suggests occurrence of an electrical short circuit.





**Photo 14** shows a close up view of the greenish residue on the wirings of the Insured Vehicle (arrowed). The presence of such greenish residue suggests occurrence of an electrical short circuit.




**Photo 15** shows a close up view of the greenish residue on the wirings of the Insured Vehicle (arrowed). The presence of such greenish residue suggests occurrence of an electrical short circuit.



11. From the Singapore Accident Statement which was made by Mr Ouyang Hongji, (herein referred to as “**Mr Ouyang**”), we note that the fire to the Insured Vehicle had started at a time after he had parked. Mr Ouyang was first alerted of the fire when he returned to carpark about half an hour later.
12. We managed to speak to Mr Ouyang on 27 August 2024 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 Ouyang, the incident at occurred at about 1150hrs on 22 August 2024 in the basement carpark of his home residence of Botanique at Bartley condominium located along Upper Paya Lebar Road. He had travelled from Ang Mo Kio that morning around 1130am and was heading home. When he returned to the basement carpark at around 1230pm, he was surprised to see the police and SCDF putting out the fire to the Insured Vehicle. By the time he arrived at the parking lot, he could not physically see flames but firefighters making sure the fire was put out. They then prised open the front bonnet using hydraulic rescue equipment. He took a video and pictures of the incident. Mr Ouyang called the insurance and made towing arrangements.
14. The tow truck arrived within an hour and the Insured Vehicle was towed to Vin's. Mr Ouyang made his own way to Vin's later that same day and made an insurance report in the evening. The police told Mr Ouyang that a police report was unnecessary.
15. With regards to the history of the Insured Vehicle, we were able to gather from Mr Ouyang that he is one of the directors for Vida & Partners Pte. Ltd. (herein referred to as “**Vida**”) The company does long and short term vehicle rentals. The Insured Vehicle was purchased by Vida secondhand in 2019 from a direct owner with 8 years of COE left. The Insured Vehicle was last rented out in June 2024. Hence the company agreed to let Mr Ouyang drive 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. Pertaining to the maintenance aspect, Mr Ouyang mentioned that Vida sends the Insured Vehicle for periodic servicing. Vida services the Insured Vehicle at MJ Automobile located at 7 Sin Ming Industrial Estate Sector C, #01-96, Singapore 575642. He had the Insured Vehicle serviced about 2 months prior to the incident on 11 June 2024.

17. During the course of our investigations, we were able to obtain from Mr Ouyang, 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 EGR control valve assembly and electric water pump assembly were also replaced. See Invoice 1 below.


**MJ Automobile**

Blk 7 Sin Ming Industrial Estate Sector C  
 #01-96 Singapore 575642  
 Tel: 6454 2203 / 9107 6995 / 9105 6323 Fax: 6452 3308  
 Email : mjautomobile@gmail.com  
 Business Reg. No: 53005076E

<b>TO: VIDA &amp; PARTNERS PTE LTD</b> SLN 5752 P MERCEDES E220D	Invoice No : 63886 Date : June 11, 2024 Mileage : 441161 KM
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Item	Description	Qty	Unit Price	Total Price
1	ELECTRIC WATER PUMP ASSEMBLY	1		
2	COOLANT	1		
3	REMOVE CROSSMEMBER CHASSIS AND DIESEL PARTICULATE FILTER TO REPLACE ABOVE PARTS	1		
4	COMPUTERIZED EQUIPMENT TO PERFORM ENGINE DIAGNOSIS & FAULT ANALYSIS (CEED)	1		
5	TO SUPPLY ABOVE PARTS, LABOUR AND COST OF REPAIR (SAP)	1	930.00	930.00
6	EGR CONTROL VALVE ASSEMBLY	1		
7	AIR INTAKE SYSTEM SMOKE TEST	1		
8	COMPUTERIZED EQUIPMENT TO PERFORM ENGINE DIAGNOSIS & FAULT ANALYSIS (CEED)	1		
9	TO SUPPLY ABOVE EGR CONTROL VALVE, LABOUR AND COST OF REPAIR	1	480.00	480.00
10	OVS HYPERMAX FULLY SYNTHETIC DIESEL ENGINE OIL (5W-40)	1		
11	OIL FILTER	1		
12	SERVICING	1	160.00	160.00
<b>PAYNOW TO UEN 53005076E</b>		<b>Total</b>	<b>SGD 1,570.00</b>	

Work accepted by

\_\_\_\_\_  
Name & Signature

MJ Automobile

\_\_\_\_\_  
*[Signature]*

A sincere commitment to quality service . . .

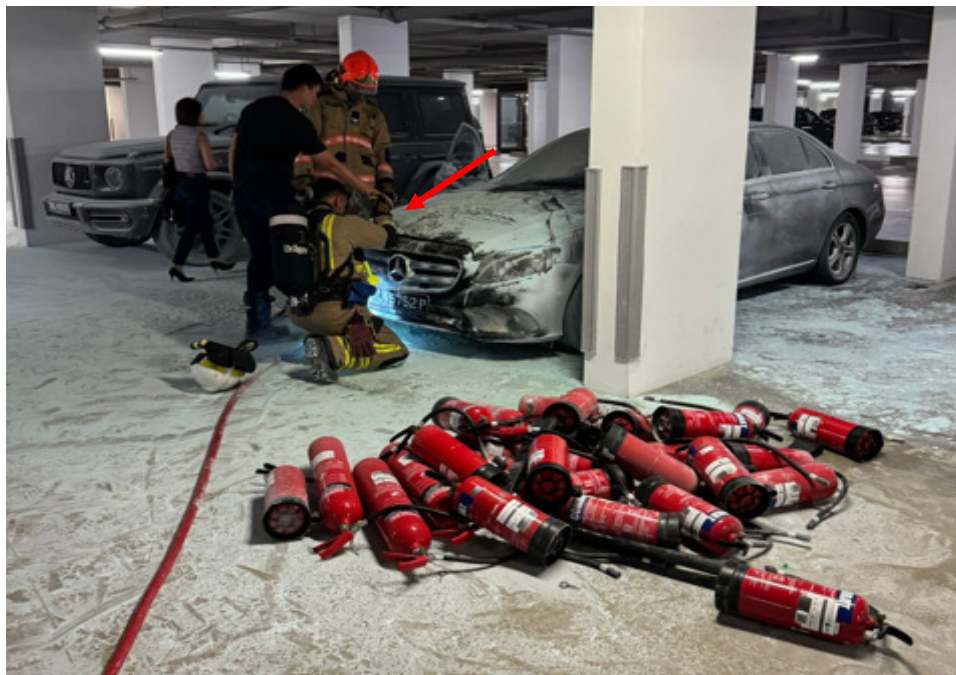
**Invoice 1** shows the servicing and repairs done on the Insured Vehicle on 11 June 2024 at MJ Automobile (red arrows). The servicing package had included the changing of engine oil and oil filter. The EGR control valve assembly and electric water pump assembly were also replaced (black arrows).



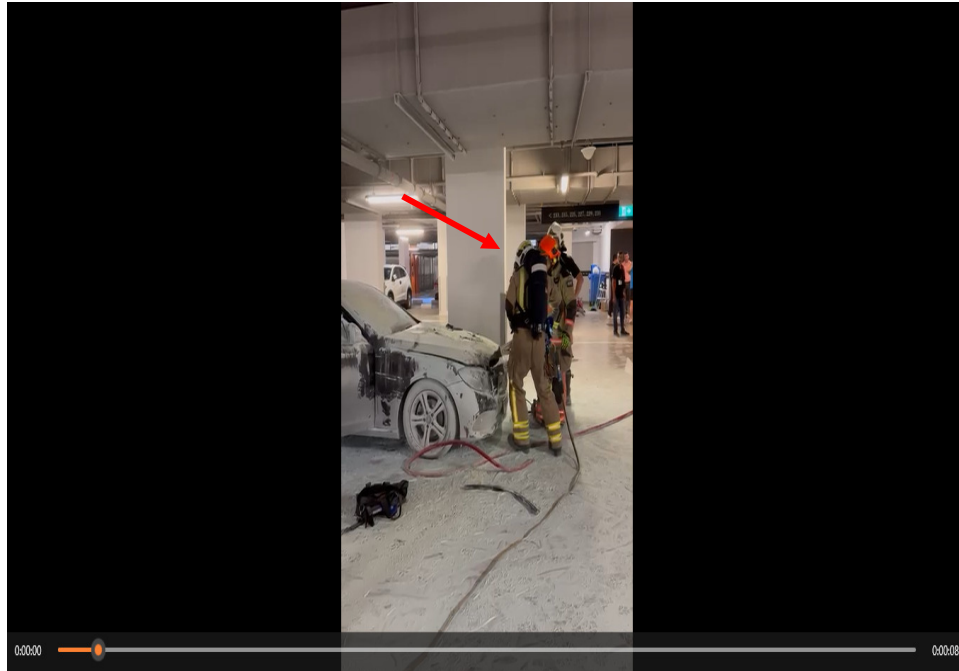
18. Mr Ouyang mentioned that since the latest servicing and repairs were done he had not experienced any other mechanical or electrical problems with the Insured Vehicle.

### **Incident Scene Photographs**

19. The photographs and video recording provided had showed the Insured Vehicle after the fire was extinguished. 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 the basement carpark of Mr Ouyang's condominium. Generally, the information that we were able to gather from the photographs and video recording provided by Mr Ouyang had corresponded to the information that he had related to us. See photos 16 – 19 below.



**Photo 16** shows firefighters making sure the fire to the Insured Vehicle was put out (arrowed). In general, the information that could be gathered from this photograph had corresponded to the events that were related to us by Mr Ouyang which is the fire was put out by the time he arrived at the incident scene.



**Photo 17** shows a screenshot taken from the video recording that was provided by Mr Ouyang. In general, the information that could be gathered from this screenshot had corresponded to the events that were related to us by Mr Ouyang which is firefighters prised open the front bonnet of the Insured Vehicle using hydraulic rescue equipment post- incident (arrowed).



**Photo 18** 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 Ouyang which is the police and SCDF had responded to the incident (arrowed).






**Photo 19** shows the engine compartment of the Insured Vehicle at the post-incident after the front bonnet was prised open by the SCDF. The severity of damage of the frontal portion had corresponded to the events that were related to us by Mr Ouyang, which is the fire had started from the engine compartment of the Insured Vehicle (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 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 half an hour).
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 lot near 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.

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 greenish residue that was found on the wirings of the Insured Vehicle, which was earlier discussed in paragraph 10 above.
24. 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.
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 <b>Company</b>	Owner ID <b>751W</b>
Vehicle No. <b>SLN5752P</b>	Make/Model <b>MERCEDES BENZ/ E220D SE AUTO</b>
Engine No.: <b>65492080083523</b>	Chassis No.: <b>WDD2130042A185927</b>
Recall Details: <b>No Recall Detail records</b>	



**Conclusion**

26. 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.
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)*

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