



Your Ref: 9434846195SG-001
Our Ref : CI/AIG17023412/N

1 December 2017

M/s AIG Asia Pacific Insurance Pte. Ltd.
78 Shenton Way #08-16
CHARTIS Building
Singapore 079120
(Motor Claims Department)

**TECHNICAL INVESTIGATION REPORT OF FIRE INCIDENT INVOLVING THE
INSURED VEHICLE SGG 6916Z ON 25 NOVEMBER 2017**

1. We refer to your letter dated 28 November 2017 and the instructions therein.
2. Our analysis, comments and opinions with respect to the cause of fire to the Motor Vehicle SGG 6916Z (herein referred to as "**Insured Vehicle**") are set out below.

Inspection of the Motor Vehicle

3. The Insured Vehicle was physically inspected on 1 December 2017 at the premises of Progressive Auto Pte. Ltd. (herein referred to as "**Progressive**") located at Blk 3022A Ubi Road 1, #01-45/46, Singapore 408716.
4. A static inspection was carried out to the Insured Vehicle where the following general information was recorded:-

Vehicle Registration No.	: SGG 6916Z
Make / Model	: MERCEDES BENZ E200NGT-PC
Chassis No	: WDB2110422A958268
Year of Registration	: 2006 (May)
Mileage	: N.A. (battery melted)

5. The exterior body and interior compartment of the Insured Vehicle sustained visible fire damage. This included its front windscreen, front bonnet, headlights, front bumper, front bumper reinforcement panel, side panels, front rims, front tyres and dashboard, amongst others.
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 severely burnt and/or melted as a result of the fire. See photos 1 – 6 below.



Photo 1 shows the general view of the front 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, headlights, front bumper, front bumper reinforcement panel, side panels, front rims and front tyres.



Photo 2 shows the general view of the right front 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, headlights, front bumper, front bumper reinforcement panel, right side panel, front right rim and front right tyre.



Photo 3 shows the general view of the left front 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, headlights, front bumper, front bumper reinforcement panel, left side panel, front left rim and front left tyre.



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 serious fire damage.



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 significantly affected by the fire which included the dashboard, steering wheel, front seats and roof upholstery amongst others.



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 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 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 traces of greenish residue on several stretches of burnt wirings at the rear centre portion. 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 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 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 some of the wirings (circled). The presence of greenish residue indicates internal heating of copper wires, a sign of an electrical short circuit occurring.



Photo 8 shows a closer view of the greenish residue found on the wirings (circled) at the rear centre portion of the engine compartment. The presence of such greenish residue suggests occurrence of an electrical short circuit.

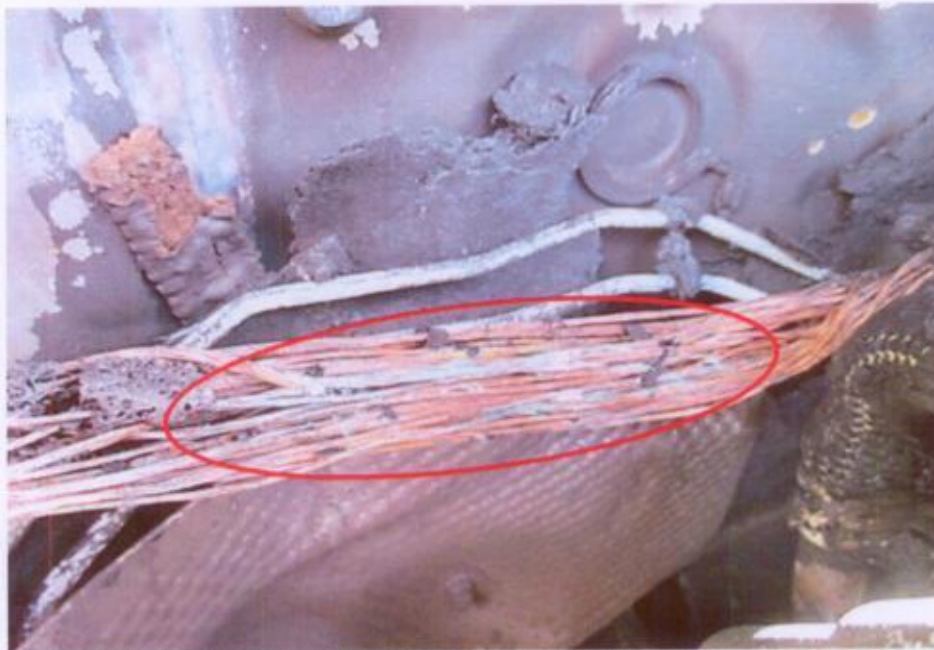

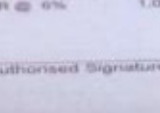


Photo 9 shows a close up view of the greenish residue found on the wirings (circled) at the rear centre portion of the engine compartment. The presence of such greenish residue suggests occurrence of an electrical short circuit.

10. From the Singapore Police Report No: G/20171126/2032 and Accident Statement, which was made by Mr Hum Tee Sung (herein referred to as "**Mr Hum**"), we note that the fire to the Insured Vehicle had started at a time when he had just sent his friend home. Mr Hum was first alerted of the fire when his friend saw smoke emitting from the front bonnet.
11. We managed to speak to Mr Hum on 4 December 2017 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 Hum, on 25 November 2017, at about 1800 hours, he had been driving the Insured Vehicle from Sims Drive and had just dropped off his friend in between blocks 491G and 491H of Tampines Street 45. After she alighted, she noticed smoke emitting from the front bonnet of the Insured Vehicle and informed Mr Hum. He immediately switched off the engine, took out the key and released the front bonnet hatch. He proceeded to open the front bonnet and saw the wirings near the rear centre portion of the engine compartment on fire.
13. Mr Hum called the police. The SCDF were activated and arrived to the incident location 10 minutes later. By then the fire had engulfed the Insured Vehicle. Firefighters took approximately 5 minutes to extinguish the flames. Mr Hum called his insurance agent to notify him of the incident.
14. The tow truck arrived an hour after the fire was extinguished. The Insured Vehicle was towed to Progressive. Mr Hum lodged a police report at the Tampines East Neighbourhood Police Post the next day on 26 November 2017 at 1256 hours. He filed the insurance report at Progressive on 27 November 2017 at 1051 hours.
15. With regards to the history of the Insured Vehicle, we were able to gather from Mr Hum that the Insured Vehicle was purchased second hand in May 2015 with a year COE remaining. He is the registered owner and main driver of the Insured Vehicle. The COE of the Insured Vehicle was also recently extended for another 10 years in May 2016 by Mr Hum. To the best of his recollection, there has not been any major mechanical problem and/or electrical problem with the Insured Vehicle hence his decision to renew the COE of the Insured Vehicle.
16. Pertaining to the maintenance aspect, Mr Hum sends the Insured Vehicle for periodical servicing.

17. During the course of our investigations, we were able to obtain a receipt of the most recent servicing and repairs done to the Insured Vehicle. The last servicing before the incident was done on 17 November 2017 at Hawk Tyre Service Sdn. Bhd. (herein referred to as "**Hawk Tyre**") located at No. 90, Jalan Tampoi, 81200 Johor Bahru, Johor, Malaysia. The servicing package included changing of engine oil, oil filter and air filter. Mr Hum also had the front tyres and the front tyre tube valve rubbers replaced. See Invoice 1 below.

HAWK TYRE SERVICE SDN BHD		(CO. NO. 43350-P)	
90, 90, JALAN TAMPOI 81200 JOHOR BAHRU, JOHOR, MALAYSIA Tel No: 607-335 0505 URL: www.hawktyre.com.my GST Reg. No.: 00094627584			
Accounts Name: TEMP DEBTOR-TAMPOI Vehicle Owner: HUM TEE SUNG Address: BLK 234, TAMPOI ST 4, #08-547, SINGAPORE 621234 Mechanic: MALAYSIA		TAX INVOICE No: HQ1701116INV Date: 17/11/2017 JobSheet No: 230520/1421705395 Mileage: 999,999 KM Vehicle No: SGG0516Z Vehicle Model: MERCEDES BENZ E200 Your Ref:	
Description	Quantity	Unit Price (RM)	Total Price (RM)
225/50VR17 EXCELLENCE GDY NEW TYRE	2 PC	330.00	660.00
TUBELESS VALVE RUBBER S	2 PC	5.00	10.00
ENG OIL SVC CHARGE	1 JOB	10.00	10.00
ENG OIL MOBIL SUPER 2000X2 (4L)	2 TIN	115.00	230.00
OIL FILTER—HU514X MERC	1 PC	55.00	55.00
AIR FILTER—E472L W211-200K	1 PC	90.00	90.00
TYRE PROTECTION PLAN 17"	2 PC	30.00	60.00
			Total (Excl. GST): 1,061.00
			GST @ 6%: 63.66
			Total (Incl. GST): 1,124.66
			Rounding Amount: -0.01
			Trade-In Amount: 0.00
			Voucher Amount: 0.00
			Total Amount Payable: 1,124.65
Next Service Date: 17/11/2017 Next Service Mileage: 1,007,999 KM E & O.E.		GST Summary: Amount (RM) Tax (RM) SR @ 6% 1,061.00 63.66 0.00 0.00	
Customer's Signature & NRC No:  20822464E		Authorised Signature: 	
HTS/A 131774			

Invoice 1 shows the latest servicing done on the Insured Vehicle on 17 November 2017 at Hawk Tyre (red arrows). The servicing package included the changing of engine oil, oil filter and air filter. Mr Hum also had the front tyres and the front tyre tube valve rubbers replaced (circled).

18. Mr Hum mentioned that after the latest servicing and repairs were done, he had not experienced any mechanical problems with the Insured Vehicle till the day of the incident. He also mentioned that there were neither warning lights displayed nor was there an abnormal rise in temperature of the Insured Vehicle while he was driving on the day the incident occurred.

Site Inspection

19. We visited the incident location on 4 December 2017 taking the reports made by Mr Hum and the information that we had gathered from them as references.
20. Firstly, we note that the incident had occurred along the service road adjacent to Block 491H of Tampines Street 45. The Insured Vehicle was positioned before the refuse collection centre.
21. There is a police camera affixed at the lift lobby of Block 491H. However the view of the camera is blocked by a wall. The Insured Vehicle was positioned behind the wall at the time of the incident. Hence the camera would have been unable to record any footage of the incident from that angle.
22. At the time of our visit, we found burnt marks and/or burnt residual remains on the ground where the Insured Vehicle was positioned. We also found burnt marks on the kerb nearest to where the Insured Vehicle was positioned when the fire occurred. Apart from the burnt marks on the kerb, we did not observe any other damaged or newly replaced government property at the time of our visit to the incident location. See photos 10 - 15 below.



Photo 10 shows the entrance of Block 491H located at Tampines Street 45 (circled).



Photo 11 shows the service road in between blocks 491G (circled) and 419H where the Insured Vehicle was positioned when the incident occurred.



Photo 12 shows the service road in between blocks 491G and 491H (arrowed) where the Insured Vehicle was positioned when the incident occurred. There is a police camera affixed at the lift lobby of Block 491H (circled).



Photo 13 shows a closer view of the police camera affixed at the lift lobby of Block 491H (circled). However the view of the camera is blocked by a wall. The Insured Vehicle was positioned behind the wall at the time of the incident. Hence the camera would have been unable to record any footage of the incident from that angle.

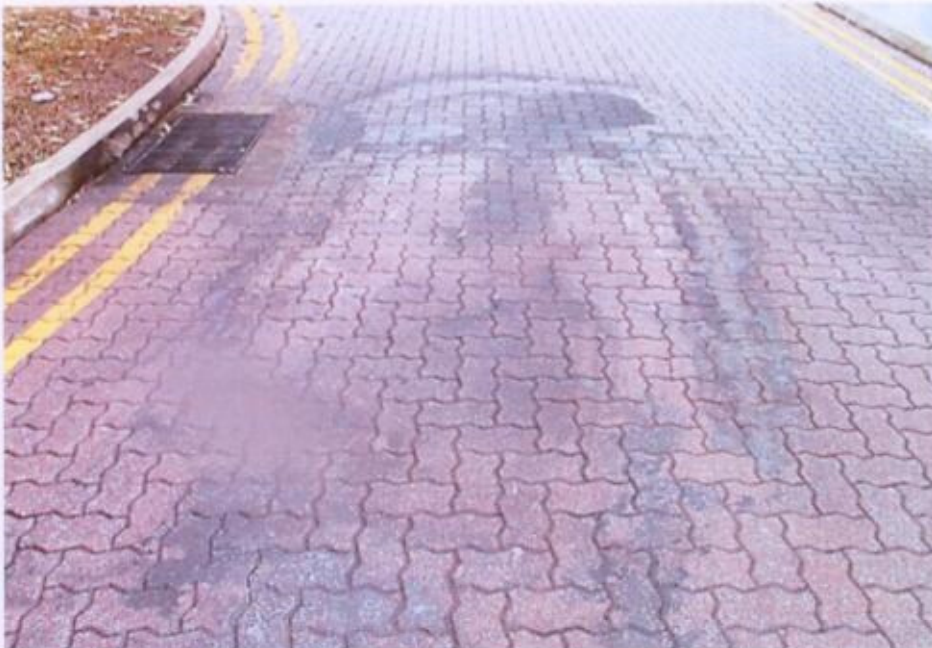


Photo 14 shows a close up view of the burnt marks and/or burnt residual remains on the ground where the Insured Vehicle was positioned at the time of incident (circled).



Photo 15 shows the burnt marks on the kerb nearest to where the Insured Vehicle was positioned when the fire occurred (circled). Apart from the burnt marks on the kerb, we did not observe any other damaged or newly replaced government property at the time of our visit to the incident location.

Incident Scene Photographs

23. Although we were not able to obtain video footage of the incident, we were however able to obtain photographs which were taken by Mr Hum at the incident location. The photographs were taken during and after the fire to the Insured Vehicle was extinguished.

24. In general, the information that could be gathered from these photographs had corresponded to the events that were related to us by Mr Hum. 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 of the service road where the Insured Vehicle was positioned. See photos 16 - 21 below.

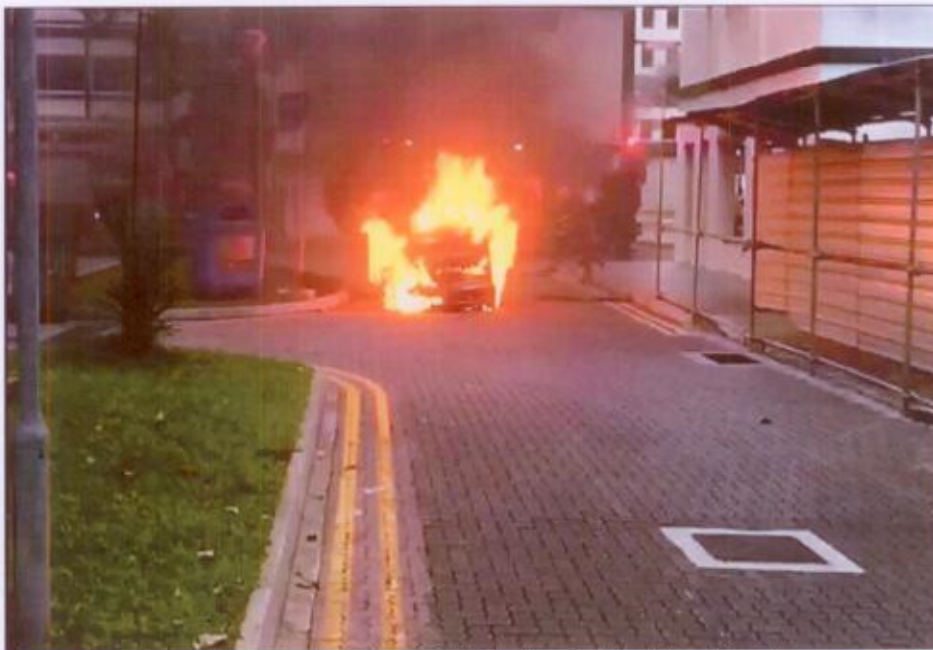


Photo 16 shows the arrival of the SCDF to the incident location. In general, the information that could be gathered from this photograph had corresponded to the events that were related to us by Mr Hum in which the fire had engulfed the Insured Vehicle by the time the SCDF arrived.



Photo 17 shows firefighters beginning to put out the fire.



Photo 18 shows firefighters extinguishing the last remnants of the fire.



Photo 19 shows the SCDF making sure that the fire had been completely extinguished.



Photo 20 shows the Insured Vehicle being towed away.



Photo 21 shows a front view of the Insured Vehicle as it was being prepped to be towed away. In general, the extensive damages sustained to the front portion had corresponded to the events that were related to us by Mr Hum, which is the fire started from the front bonnet.

25. 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.
26. 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 Hum had mentioned to us there were no indications of abnormally high temperatures on the Insured Vehicle when he was driving on the day of the incident.

27. 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 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.
28. 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.
29. 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.

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:	2464E ←
Vehicle Details	
Vehicle Registration number:	SGG6916Z ←
Make:	MERCEDES BENZ
Vehicle Model:	E200NGT-PC
Engine No.:	27194130752891
Chassis No.:	WDB2110422A958268
Recall Details	
No Recall Detail records ←	

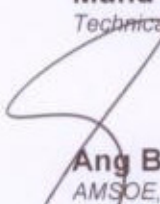
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Conclusion

30. 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. The wirings were original factory wirings of the Insured Vehicle.
31. 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.
32. 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.
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

Technical Investigator


Ang Bryan TaniAMSOE, AMIRTE, AFF SAE, M.MATAI, AFF.Inst.AEA
Senior Technical Investigator
Technical Investigation & Reconstructionist (SAE-A)

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