



51 UBI AVE 1, #01-25 PAYA UBI INDUSTRIAL PARK, SINGAPORE 408933 TEL : (065) 62563561 FAX : (065) 67414108

Your Ref: VA1/GA134082  
Our Ref :CS/ASM18009602/Z

11<sup>th</sup> June 2018

**M/s AXA Insurance (Singapore) Pte Ltd**  
8 Shenton Way #24-01, AXA Tower,  
Singapore 068811  
(Motor Claims Department)

**TECHNICAL INVESTIGATION REPORT OF FIRE INCIDENT INVOLVING THE  
INSURED VEHICLE SB4D ON 21<sup>st</sup> May 2018**

1. We refer to your letter dated 30<sup>th</sup> May 2018 and the instructions therein.
2. Our analysis, comments and opinions with respect to the cause of fire to the insured vehicle SB4D (herein referred to as "**Insured Vehicle**") are set out below.

**Inspection of the Insured Vehicle**

3. The Insured Vehicle was physically inspected on 31<sup>st</sup> May 2018 at the premises of Cycle & Carriage Industries Pte Ltd, Pandan Loop Service Center, 188 Pandan Loop, Singapore 128378.
4. A static inspection was carried out to the Insured Vehicle where the following general information was recorded:-

Vehicle Registration No.	: SB4D
Make / Model	: Mercedes-Benz
Chassis No	: WDD2120652B083041
Year of Registration	: 2014 (November)
Mileage	: N.A (Electronic System Damage)

5. The Insured Vehicle was noted to have sustained fire damages that were confined to its front portion. The effected burnt area was observed to be on the middle slightly towards the left section of the engine compartment.
6. 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, at the centre area internal portion and several parts of the engine components especially at the centre of the engine. See photo 1 – 4 below.

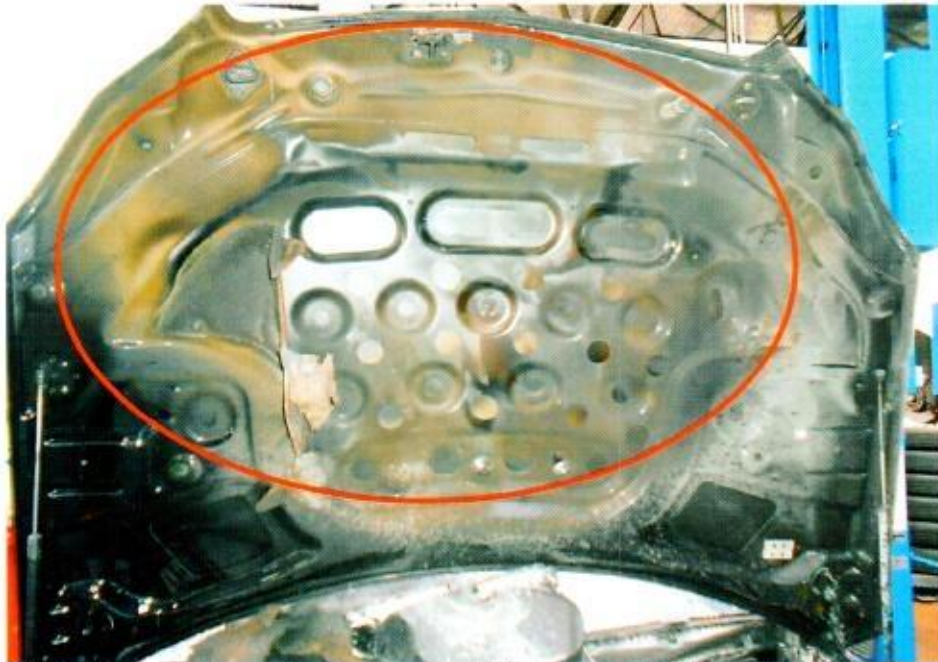


**Photo 1** shows the general view of the front portion of the Insured Vehicle at the time of our inspection. The fire damage to the Insured Vehicle was confined to its front bonnet, at the centre area; engine parts were amongst the body parts that were found to have been affected as a result of the fire.



**Photo 2** shows the general view of the front centre portion of the Insured Vehicle at the time of our inspection. The fire damage to the Insured Vehicle was confined to its front bonnet, at the centre area; engine parts were amongst the body parts that were found to have been affected as a result of the fire.





**Photo 3** shows the underside bonnet of the Insured Vehicle at the time of our inspection. It was observed to sustained with burnt marks.



**Photo 4** shows the interior compartment of the Insured Vehicle, which was observed to be unaffected by the fire incident.

7. At the time of inspection of the Insured Vehicle, we found an additional video camera recorder fitted on the front windshield. We did not find any other 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 its centre portion at the engine compartment. This can be determined from the burn pattern and the high heat intensity burn marks found on the underside of the front bonnet of the Insured Vehicle; at the engine centre portion and also given that there was no other area of the Insured Vehicle that were found with damage of burnt nature.
9. These (whitish) burn marks are a result of exposure to prolong 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. See photo 5 & 6 below.



**Photo 5** shows the burn pattern and whitish burn marks (circled) that were found on the underside of the front bonnet of the Insured Vehicle. Such whitish burn marks are a result of exposure to prolong heat intensity, which may indicate where the fire had started. Rust would also begin to develop on these areas soon after the fire.





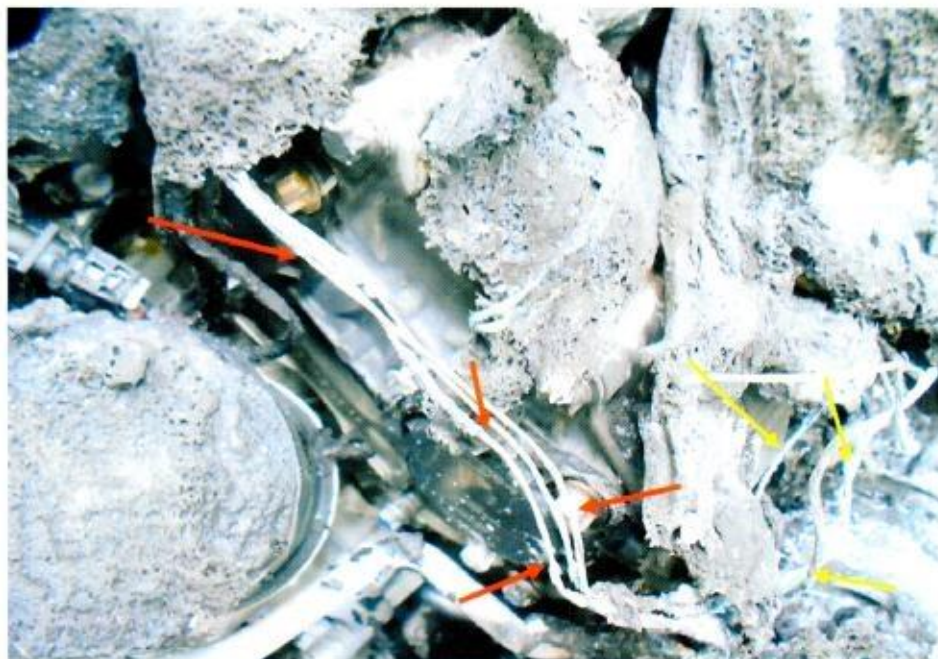
**Photo 6** shows the whitish burn marks that were found on the underside of the front bonnet, directly under the area where the same whitish burn marks were found on the top side of the front bonnet. The rust (circled) that had developed around this area was a result of prolong exposure to high heat intensity, which had caused the steel/metal material of the front bonnet to be exposed to natural environmental condition.

10. Upon closer examination of the area around the centre of the engine compartment, which was in the immediate vicinity of where the fire to the Insured Vehicle had likely started, we had found several stretches of wiring burnt internally to its bare copper state. The wirings were likely to be the original engine wire harness. Such condition normally indicate 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 photo 7 & 8 below.





**Photo 7** shows a closer view of the wirings around the left rear of the engine compartment, which was in the immediate vicinity where the fire to the Insured Vehicle had likely started.



**Photo 8** shows a closer view of the wirings (red arrow) which were found to have been burnt internally to its bare copper state, suggesting occurrence of an electrical short circuit. These wirings were observed to be greenish (yellow arrow) believe to be the focal point of the fire ignition.



11. From the Singapore Accident Statement report, which was made by Mr Mark Shaw (On behalf of 'In The Estate of Shaw Vee King'), who was the son of the late Mr Shaw Vee King (Mr Mark Shaw was also the successor of his late father Mr. Shaw Vee King) informed that his wife Ms Goh Po Sui Tiara Budiprawiro (herein referred to as "**Ms Tiara**") was the driver prior to the fire incident. She had parked the Insured Vehicle at an open car park in the vicinity of Bukit Timah Saddle Club 51 Fairway Drive. Suddenly, from inside the Insured Vehicle she saw smoke emit from the front bonnet. Managed to open the front bonnet and saw smoke had already ignited into fire.
12. We note that the fire to the Insured Vehicle had started when it was parked. It was running smoothly to a few destinations before arriving at Bukit Timah Saddle Club 51 Fairway Drive.
13. We had arranged for a face to face interview session with Mr Mark Shaw & Ms Tiara in their office at No. 1 Scotts Road, Shaw Centre on 06<sup>th</sup> June 2018 where we were able to gather further information pertaining to the incident as well as information pertaining to the history of the Insured Vehicle.
14. According to Ms Tiara, on 21<sup>st</sup> May 2018 at about 1730hrs, she had parked the Insured Vehicle reversed parked inside an open space parking lot, in the vicinity of Bukit Timah Saddle Club 51 Fairway Drive. While waiting for her daughter from another car arrive, she waits in the car. About a few minutes waiting after parking the Insured Vehicle, she saw smoke emitting from the front bonnet. Rushed out from the Insured Vehicle, she opens the front bonnet. The smoke ignites into flame. She called 995 for assistance. Quickly ran into the club house to look for fire extinguisher. The clubhouse staff came to her aid with a fire extinguisher & extinguished the fire.
15. SCDF fire fighters & SPF officer came soon after. By then the fire was already extinguished. She was interviewed by both investigation officers.

16. Mr Mark Shaw then contacted the Cycle & Carriage helpline informing them of the incident. The Insured Vehicle was eventually arranged to be towed from the incident location to Cycle & Carriage Industries Pte Ltd, Pandan Loop Service Center, 188 Pandan Loop, Singapore 128378 on the same day at about 2017hrs.
17. We were able to gather from Mr Mark Shaw that the Insured Vehicle was purchased brand new in 2014. The late Mr Shaw Vee King is the registered owner of the Insured Vehicle. According to Mr Mark Shaw, he is the predecessor of his late father's assets including the Insured Vehicle. Prior to the fire incident his wife Ms Tiara was driving the Insured Vehicle. To the best of his recollection, there has not been any major mechanical and/or electrical problem with the Insured Vehicle apart from the usual wear and tear that a vehicle would experience.
18. Regarding the maintenance aspect, Mr Mark Shaw informed us that the last servicing carried out on the Insured Vehicle was on 27<sup>th</sup> March 2018 at Mercedes-Benz Center at 301 Alexandra Road Singapore 159968 . He was able to provide me with a document relating to this servicing. Our review of this document revealed that the recorded mileage of the Insured Vehicle during this servicing was 78,154km. The engine oil, oil filter, standard scope servicing and fuel additives were replaced during this servicing. See document below relating to this servicing which was provided to me by Mr Mark Shaw.





Auto  
Consultants  
Pte Ltd

Company Registration No. 199607198R

51 UBI AVE 1, #01-25 PAYA UBI INDUSTRIAL PARK, SINGAPORE 408933 TEL : (065) 62563561 FAX : (065) 67414108



Mercedes-Benz

Cycle & Carriage  
Incorporated Pte Ltd  
Authorized Dealer  
Company No: 194058496  
201-A Singapore Road

# TAX INVOICE

Invoice Name & Address	Cust No/Name	Owner Name & Vehicle Info
Mr. Shau Wei King 1 Scotts Road #13-02 Shaw Centre Singapore 228218	Reg No/Reg Date 27/03/2015 / 10/11/2014 Date of Invoice 27/03/2015 / 18/04 Chassis No W021204528583041 Engine No 2768235012752 Make/Model Mer/E 400 SEDAN (4212) 4MATIC Colour/Trim CDI 187 Obsidian Bl / 147 215 Leather SL	
Contact No: 67352077		



Account No	Terms	Date/Time Period	CSE	Operator	WIP No	Invoice/Credit Note No
43000755	Credit	09/03/2016 / 20/11	21	ER / Joseph Lee	52719	27318533

Description of Goods & Services	Qty	Unit Price S\$	Amount S\$
Z Maintenance SERVICE A Carry out maintenance			67.50
N 0000310 Labour to carry Short Test (By Bentley)			121.50
N 00115700 PERFORM SERVICE A WITH PLUS PACKAGE			5.00
M 000001 Sentry			
X WINDSHIELD WASHER FLUID	1.00	9.54	9.54
X OIL FILTER ELEMENT	1.00	54.90	54.90
X ULTRA-SHIELD 90-0L	6.50	20.28	131.82
X OPS OIL CLEANER (250ML)	2.00	23.00	46.00
X FUEL ADDITIVES	1.00	29.79	29.79
Z RESVC NEXT SERVICE DUE: 03154 Kilo or MAR 2016 (whichever earlier)			

*Service carried out on 27th March 2016*

Parts	323.27		Nett	497.27
Labour	189.00	7% GST on		34.81
Standard Menu	0.00			
Specialist Job	0.00		Total Payable	532.08
Diagnostics Job	0.00		Paid	0.00
Sundry/Others	5.00		Total Due	532.08
Total (w/o GST)	497.27			

Agreement is made with effect from 1st April 2016. Thank you.

Any dispute in this invoice must be made within 3 days. This is a computer generated document. No signature is required.



Auto Consultants Pte Ltd

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301 Robinson Road  
Singapore 069548  
Tel: 6355 1500  
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Mercedes-Benz Express Service Center  
30 Long Ewe Road  
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19. At the time of inspection of the Insured Vehicle, our observation found that the Insured Vehicle was installed with an additional video camera recorder fitted on the front windshield. Mr Mark Shaw informed us that the video camera was installed upon purchased of the Insured Vehicle. The installation was performed by an authorised contractor that were engaged by Cycle & Carriage Pte Ltd. Further observation reveals that there was no modification(s) and/or additional electronic or electrical component(s) fitted on the Insured Vehicle.
20. To the best of his knowledge, no other motor vehicle or property was affected by the fire incident.
21. We visited the incident location on 06<sup>th</sup> June 2018 which was located at Bukit Timah Saddle Club 51 Fairway Drive with the information & photograph that we had gathered during our conversation with him as references.
22. When driving into the open car-park driveway of Bukit Timah Saddle Club 51 Fairway Drive, the parking lot was observed to be on the left side of the open car-park. It was in the middle of the stretch of non-numbered parking lots.
23. At the time of our visit, we were not able to clearly see if there were any burnt marks or burned residual remains on the ground inside the parking lot. This was mainly due to the non-extensive fire that occurred at the time of incident. The time taken to extinguish the fire also plays a big part in controlling a fire situation. We also did not find any nearby foreign material or object that relates to the fire incident. Therefore no material/physical evidence was found at time of our investigation on site. However in relation to the video footage & the information as a result of our face to face interview, we can conclude that the fire incident did happen at the said location.
24. The location where the Insured Vehicle was parked at the material time of incident was also noted to be not at a secluded location. See photo 9 – 13 below.





Photo 9 shows the general view of the Saddle Club signboard at the entrance of 51 Fairway Drive.



Photo 10 shows the general view of the Saddle Club signboard at the entrance of 51 Fairway Drive.



**Photo 11** shows the general view of the Saddle Club signboard at the entrance of 51 Fairway Drive.



**Photo 12** shows the general view of the open car-park entrance. The said non-numbered parking lot was on the left side upon entering the vicinity.





**Photo 13** shows the general view of the non-numbered parking lot that was said to be the where the fire incident had happened.

25. We were however able to obtain photographs which was taken by Ms Tiara at time of the incident. The photographs were taken at time of the incident, where the club staff was seen extinguishing the fire from the Insured Vehicle.
26. In general, the information that could be gathered from these photographs had corresponded to the events that were related to us by Mr Mark Shaw & Ms Tiara. 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 parking lot where the Insured Vehicle was parked. See photo 14 - 16 below.





**Photo 14** shows the Insured Vehicle at the incident scene while the club staff extinguishing the fire (arrowed). There appears to be no abnormal foreign material(s) and/or object(s) found on the ground in the immediate area where the Insured Vehicle was parked. In general, the information that could be gathered from these photographs had corresponded to the events that were related to us by Mr Mark Shaw & Ms Tiara.





**Photo 15** shows the Insured Vehicle at the incident scene after the fire was extinguished. SCDF officers were seen investigating the Insured Vehicle.



**Photo 16** shows the Insured Vehicle at the incident scene after the fire was extinguished. SCDF officers were seen investigating the Insured Vehicle.

27. 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 there were neither warning lights displayed nor was there an abnormal rise in temperature throughout the period he was driving the Motor Vehicle.
28. The possibility of the fire being due to external factor (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 parked.
29. Basing on the situation, the engine of the Insured Vehicle was on idling mode at the material time of incident, therefore electrical current would still be flowing within the electrical system. Several electrical and/or electronic components on the Insured Vehicle would require current to remain in operation and/or in idling mode. These components may include the alarm system, clock, radio and cabin light amongst others.
30. The possibility of the fire being due to electrical in nature would then seem more likely given that engine overheating and external factor would both seem unlikely. The fire being due to electrical nature is also supported by the condition of the wirings of the Insured Vehicle. The sparked from the short circuit wires might cause ignition to start a fire which was earlier discussed in paragraph 10 above.
31. Our checks with both local and international bodies and associations had revealed that at the time of writing this report, there was a manufacturer recall to similar make and model vehicle as the Insured Vehicle "the engine compartment seal was not fastened to the partition wall as planned". However, it was rectified on 05<sup>th</sup> May 2015 by Cycle & Carriage Pte Ltd. 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: 6269Z

#### Vehicle Details

Vehicle Registration number: SB4D  
Make: MERCEDES BENZ  
Vehicle Model: E400 SEDAN (R18)  
Engine No.: 27682030122752  
Chassis No.: WDD2120652B083041

#### Recall Details

1	Recall No.:	R2015030096
	Manufacturer Recall Date:	24 Feb 2015
	Estimated Completion Year of Recall:	2016
	Brief Description (As Provided by Motor Dealer):	The engine compartment seal was not fastened to the partition wall as planned, the seal might temporarily adhere to the engine hood when it is opened. In this case, the engine compartment seal might partially detach from the partition wall.
	Date Rectified:	05 May 2015
For more details, contact DAIMLER SOUTH EAST ASIA PTE. LTD.		
Hotline Information:		CYCLE AND CARRIAGE CUSTOMER ASSISTANCE CENTRE at 64 71 9111

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### Conclusion

32. 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 wiring inside the engine compartment, somewhere around its front portion in the middle section of the engine. The wirings were likely to be the original engine wire harness.

33. 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.

34. An additional video camera recorder was found fitted on the front windshield. Mr Mark Shaw informed us that the video camera was installed upon purchased of the Insured Vehicle. The installation was performed by an authorised contractor that was engaged by Cycle & Carriage Pte Ltd. However, we did not find any evidence which had suggested that the cause of fire to the Insured Vehicle was due to the additional video camera recorder.
35. There were no other 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.
36. Our investigations had also revealed that at the time of writing this report, there was a manufacturer recall to similar make and model vehicle as the Insured Vehicle "the engine compartment seal was not fastened to the partition wall as planned". However, it was rectified on 05<sup>th</sup> May 2015 by Cycle & Carriage Pte Ltd. Hence, it may not be possibly related to this incident.



**Rohaizal A. Rahim**  
*Technical Investigator*



**Ang Bryan Tani**  
AMSOE, AMIRTE, AFF SAE, M.MATAI, AFF.Inst.AEA  
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