



Your Ref: S8M00X66  
Our Ref : CS/ASM18019433/N

1 November 2018

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

**TECHNICAL INVESTIGATION REPORT OF FIRE INCIDENT INVOLVING THE  
INSURED VEHICLE CB 6956G ON 8 SEPTEMBER 2018**

1. We refer to your letter dated 25 October 2018 and the instructions therein.
2. Our analysis, comments and opinions with respect to the cause of fire to the insured vehicle CB 6956G (herein referred to as "**Insured Vehicle**") are set out below.

**Inspection of the Insured Vehicle**

3. The Insured Vehicle was physically inspected on 25 October 2018 at the premises of UCB Engineering (herein referred to as "**UCB**") located at 2C Jalan Pesawat, Singapore 619359.
4. A static inspection was carried out to the Insured Vehicle where the following general information was recorded:-

Vehicle Registration No.	: CB 6956G
Make / Model	: ZHONG TONG LCK6107H
Chassis No	: LDY6KS9D8B0004831
Year of Registration	: Jun 2012
Mileage	: N.A. (wiring affected)

5. The exterior body of the Insured Vehicle had sustained fire damage at the centre portion as well as rear portion. Affected parts had included the side panels, rear wheel rims, rear tyres, left glass panel, rear windscreen and engine panel, amongst others. The engine compartment of the Insured Vehicle had sustained significant fire damage. The interior compartment of the Insured Vehicle was relatively unaffected by the fire except for the floorboard towards the end of the rear cabin which was observed to be partially burnt and/or melted as a result of the fire. See photos 1 – 10 below.



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



**Photo 2** shows the general view of the rear left portion of the Insured Vehicle at the time of our inspection. The exterior body of the Insured Vehicle had sustained fire damage at the centre portion as well as rear portion. Affected parts had included the side panels, rear tyres, rear wheel rims, left glass panel, rear windscreen and engine panel, amongst others.





**Photo 3** shows a closer view of the left portion of the Insured Vehicle at the time of our inspection. The fire damage was observed to be most severe at its left centre portion. Affected parts had included the left side panel, left rear wheel rim, left rear tyre and left glass panel, amongst others (circled).



**Photo 4** shows the general view of the right rear portion of the Insured Vehicle at the time of our inspection. The exterior body of the Insured Vehicle had sustained fire damage at the centre portion as well as rear portion. Affected parts had included the side panels, rear tyres, rear wheel rim, rear windscreen and engine panel, amongst others.



**Photo 5** shows a closer view of the right portion of the Insured Vehicle at the time of our inspection. The fire damage to the Insured Vehicle was confined to its centre portion. Affected parts had included the right side panel, right rear wheel rim and right rear tyre, amongst others (circled).



**Photo 6** shows the general view of the rear portion of the Insured Vehicle at the time of our inspection. The Insured Vehicle had sustained fire damage at the rear portion. Affected parts had included the rear windscreen and engine panel, amongst others (circled).





**Photo 7** shows the general view of the damaged rear windscreen of the Insured Vehicle at the time of our inspection.



**Photo 8** shows a general view of the engine compartment of the Insured Vehicle at the time of our inspection. The engine compartment of the Insured Vehicle was significantly affected by the fire. Most of the parts inside the engine compartment were found to be partially burnt and/or melted as a result of the fire.



**Photo 9** shows the rear cabin of the Insured Vehicle at the time of inspection. The floorboard towards the rear portion of the rear cabin was observed to be slightly affected by the fire.



**Photo 10** shows a closer view of the floorboard towards the rear portion of the rear cabin of the Insured Vehicle which was found to be partially burnt and/or melted as a result of the fire (circled).



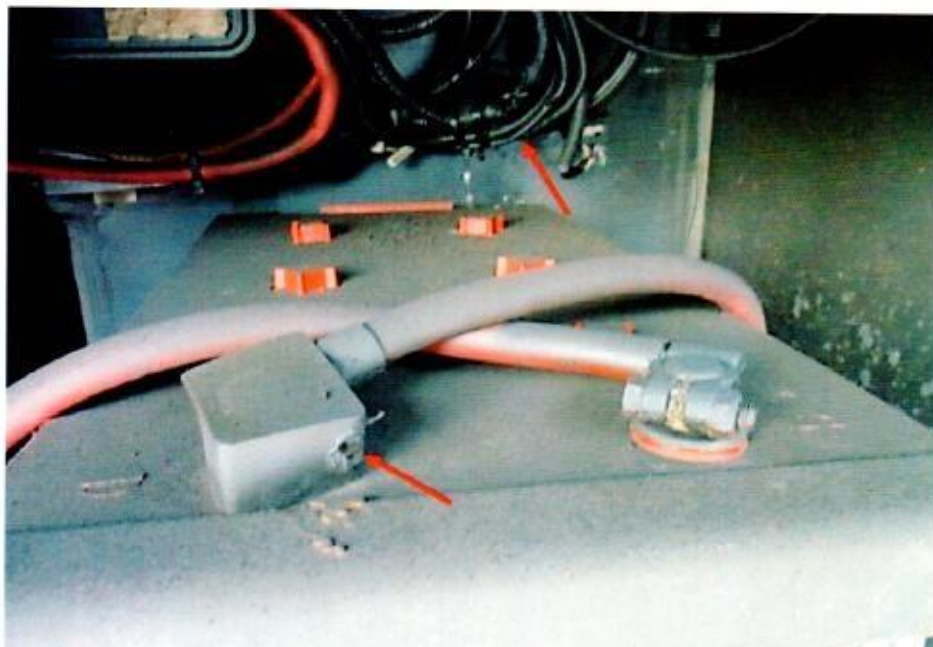
6. At the time of inspection of the Insured Vehicle, we did not find any additionally fitted electronic and/or electrical component(s) on the Insured Vehicle. There also appears to be no modification(s) fitted on the Insured Vehicle.

#### **Investigation and Technical Analysis**

7. For this particular case, the fire appears to have originated from the left rear portion of the Insured Vehicle, near to the vicinity where the battery is located. This can be determined from the nature of the fire damage which was more extensive at the left rear portion. The right rear portion had sustained minimal fire damage. Basing on the circumstances of the fires' origin at the material time of incident as well as examining the area where the extent of fire damage was most severe, we can determine that the fire had likely started from the left rear portion of the Insured Vehicle.
8. Upon closer examination of the left rear portion of the Insured Vehicle as well as around the immediate vicinity to where the fire had likely started, we had found greenish residue on several burnt stretches of original factory fitted wirings leading from the battery. The presence of such 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 11 - 16 below.



**Photo 11** shows a view of the left rear portion of the Insured Vehicle, near to the vicinity where the battery is located. We had found several burnt stretches of original factory fitted wirings leading from the battery (circled).



**Photo 12** shows a closer view of the several burnt stretches of original factory fitted wirings leading from the battery (arrowed).

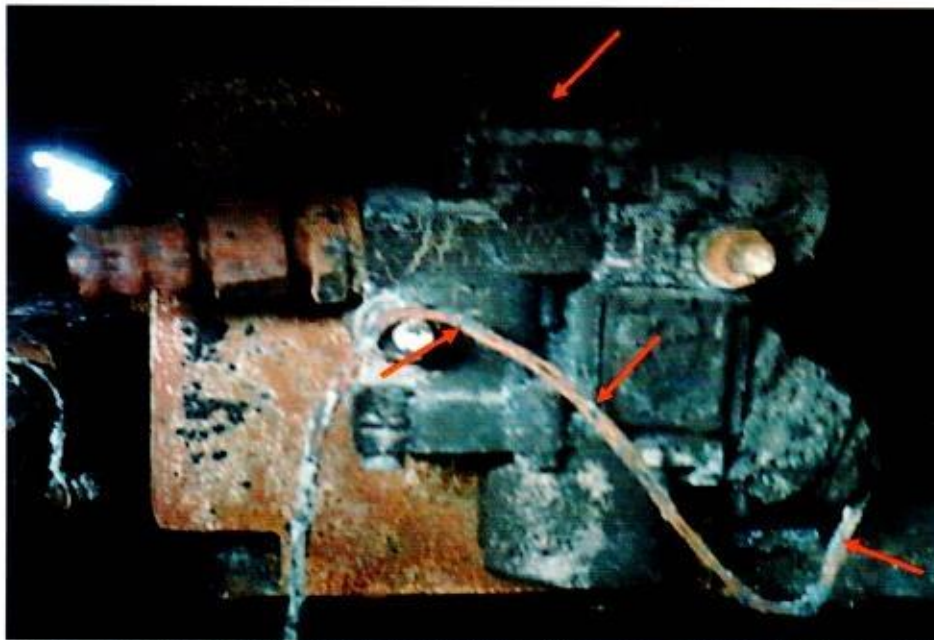




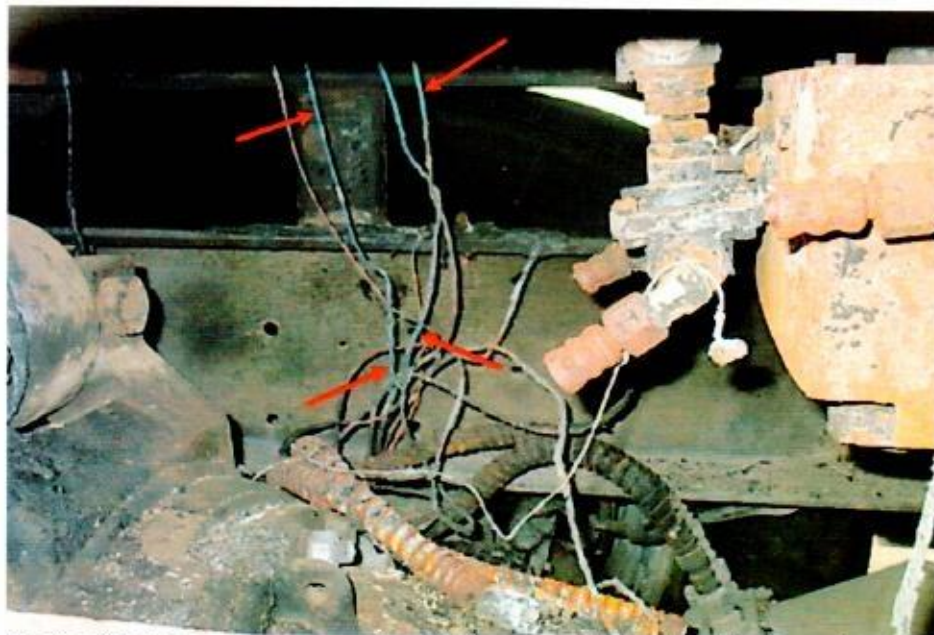
**Photo 13** shows a close up view of the several burnt stretches of original factory fitted wirings leading from the battery (arrowed).



**Photo 14** shows a close up view of the several burnt stretches of original factory fitted wirings leading from the battery (arrowed).



**Photo 15** shows upon closer examination of the area around the immediate vicinity to where the fire had likely started, we had found greenish residue on several burnt stretches of original factory fitted wirings leading from the battery (arrowed). The presence of such 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 16** shows a close up view of the greenish residue that was found on several burnt stretches of original factory fitted wirings leading from the battery (arrowed). The presence of such greenish residue suggests occurrence of an electrical short circuit.



9. From the Singapore Police Report No. J/20180927/2052 and Accident Statement which was made by Mr Kwek Choon Hou (herein referred to as "**Mr Kwek**"), who is the owner of the Insured Vehicle, we note that the fire to the Insured Vehicle had started at a time while he was driving the Insured Vehicle. Mr Kwek was first alerted of the fire when he saw smoke emitting from the rear of the Insured Vehicle.
10. We managed to speak to Mr Kwek where we were able to gather further information pertaining to the incident as well as information pertaining to the history of the Insured Vehicle.
11. According to Mr Kwek, on 8 September 2018 at around 1300hours he had picked up passengers from Jurong West Street 52 and was headed to the National Stadium. He was travelling to Kallang Road via Mountbatten Road on the 1st lane when he suddenly saw smoke emitting from the rear portion of the Insured Vehicle.
12. Mr Kwek immediately stopped the Insured Vehicle, switched off the engine and called the SCDF for assistance. Firefighters arrived and the fire was extinguished shortly after. Mr Kwek mentioned that nobody was injured and there was no damage to any government property. Mr Kwek made arrangements to have the Insured Vehicle towed to UCB after the SCDF was done with their preliminary investigations.
13. We asked Mr Kwek why the insurance report was only made 2 weeks post-incident. He mentioned that initially he had intended to repair the Insured Vehicle at his own expense. However, after his mechanic informed him that it would be costly to repair the Insured Vehicle, Mr Kwek arranged for the Insured Vehicle to be towed to Sng Ah Tee located at Block 3, Pioneer Road North, #01-18, Singapore 628457. Mr Kwek made the insurance report at Sng Ah Tee on 26 September 2018 at 1609 hours.
14. After the insurance report was made, Mr Kwek went to the Bukit Panjang Neighbourhood Police Centre the following day, on 27 September 2018 where he lodged a police report at 1056 hours.
15. With regards to the history of the Insured Vehicle, we were able to gather from Mr Kwek that the Insured Vehicle was purchased new in 2012. As the Insured Vehicle is a school bus registered with a CB- suffix registration number, Mr Kwek is exempted from purchasing COE for the Insured Vehicle.



16. Pertaining to the maintenance aspect, Mr Kwek mentioned that the Insured Vehicle will be sent for periodic servicing every 2 months at an in-house workshop located in Penjuru. As Mr Kwek pays in cash, he does not keep any servicing receipts.
17. To the best of his recollection, Mr Kwek mentioned had not experienced any mechanical or electrical problems with the Insured Vehicle till the day of the incident. He 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.

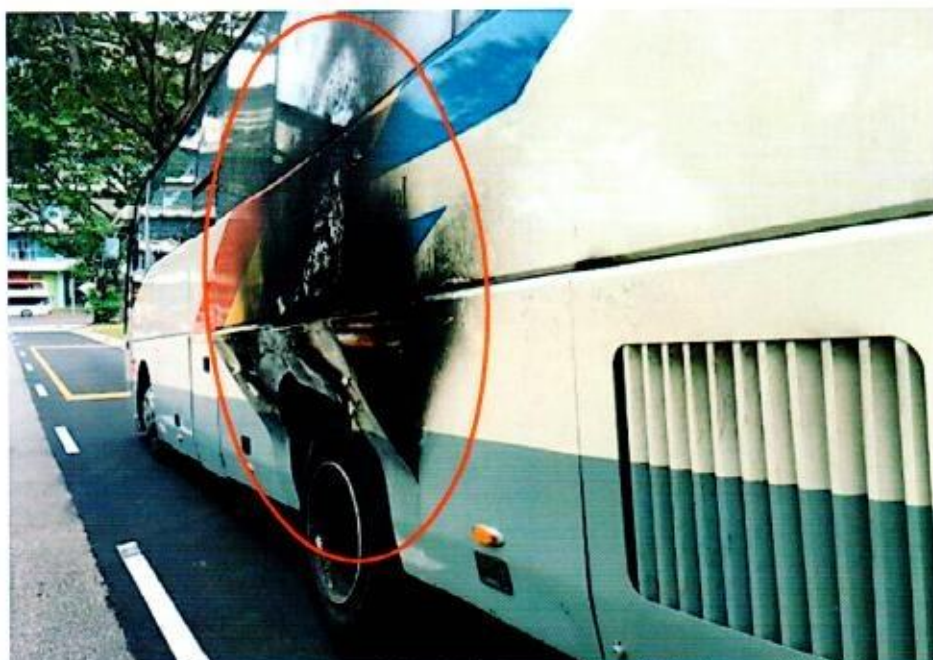
### **Incident Scene Photographs**

18. We were able to obtain photographs taken by Mr Kwek at the incident location. The photographs after the fire to the Insured Vehicle were extinguished.
19. In general, the information that could be gathered from these photographs had corresponded to the events that were related to us by Ms Kwek. 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 17 – 19 below.



**Photo 17** shows the Insured Vehicle being prepped to be towed post- incident. In general, the information gathered from this photograph had corresponded to Mr Kwek's statement, which is the fire started while Mr Kwek was driving the Insured Vehicle on the 1st lane.





**Photo 18** shows a closer view of the left rear portion of the Insured Vehicle post-incident. In general, the information that could be gathered from this photograph pertaining to the nature of fire damage had corresponded to the events that were related to us by Mr Kwek, which is the fire had started from the left rear portion of the Insured Vehicle (circled).



**Photo 19** shows a close up view of the left rear portion of the Insured Vehicle post- incident. In general, the extensive damages sustained to this portion of the Insured Vehicle had corresponded to the events that were related to us by Mr Kwek, which is the fire had started from the left rear portion of the Insured Vehicle.

20. 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 Kwek 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 Kwek was alerted of the fire while he was driving the Insured Vehicle and switched off the engine of the Insured Vehicle.
21. 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 as the fire occurred as Mr Kwek was driving the Insured Vehicle. The location where the Insured Vehicle caught fire was also observed to be not at a secluded location.
22. The possibility of the fire being due to electrical in nature would then seem more likely given that engine overheating and external factors would seem unlikely. The fire being due to electrical nature is also supported by the faint traces of greenish residue that were found on several burnt stretches of original factory fitted wirings leading from the battery of the Insured Vehicle, which was earlier discussed in paragraph 8 above.
23. 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 pose a fire risk. 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:	S061J
Vehicle Details	
Vehicle Registration number:	CB6956G
Make:	ZHONG TONG
Vehicle Model:	LCK6107H
Engine No.:	ISBE4250B21918719
Chassis No.:	LDYK39D8B0004831
Recall Details	
No Recall Detail records	

OK

Please do not use your browser's Back or Forward buttons as this may result in information loss



**Conclusion**

24. 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 original factory fitted wirings leading from the battery of the Insured Vehicle. The wirings were original factory components of the Insured Vehicle.
25. 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.
26. 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 pose a fire risk.

**Muhd Nazril**

Technical Investigator

**Ang Bryan Tani**

AMSOE, AMIRTE, AFF SAE, M.MATAI, AFF.Inst.AEA

Senior Technical Investigator

Technical Investigation &amp; Reconstructionist (SAE-A)

**DISCLAIMER OF LIABILITY TO THIRD PARTIES:-** This Report is made solely for the use and benefit of the Client named on the front page of this Report. No liability or responsibility whatsoever, in contract or tort, is accepted to any third party who may rely on the Report wholly or in part. Any third party acting or relying on this Report, in whole or in part, does so at his or her own risk.