

Your Ref: S8M00KG1
Our Ref : CS/ASM18010777/N

18 June 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 SKG 6679K ON 11 JUNE 2018

1. We refer to your letter dated 12 June 2018 and the instructions therein.
2. Our analysis, comments and opinions with respect to the cause of fire to the insured vehicle SKG 6679K (herein referred to as "**Insured Vehicle**") are set out below.

Inspection of the Insured Vehicle

3. The Insured Vehicle was physically inspected on 13 June 2018 at the premises of Hua Hong Pte. Ltd. (herein referred to as "**Hua Hong**") located at 25D Sungei Kadut Street 1, Singapore 729332.
4. A static inspection was carried out to the Insured Vehicle where the following general information was recorded:-

Vehicle Registration No.	: SKG 6679K
Make / Model	: MINI COOPER S COUPE AT ABS D/AB GAS/D TC
Chassis No	: WMWSX32090T139719
Year of Registration	: September 2012
Mileage	: N.A. (battery melted)

5. The Insured Vehicle was observed to have sustained severe fire damage all around. Its engine compartment and interior compartment were completely burnt. Rust had accumulated all over the Insured Vehicle as a result of exposure to environmental condition for a period of time. See photos 1 – 4 below.



Photo 1 shows the general view of the front portion of the Insured Vehicle at the time of our inspection. The Insured Vehicle was observed to have sustained extensive fire damage all around. Its engine compartment and interior compartment were completely burnt. Rust had accumulated all over the Insured Vehicle as a result of exposure to environmental condition for a period of time.



Photo 2 shows the general view of the left rear body of the Insured Vehicle at the time of our inspection. The Insured Vehicle was observed to have sustained extensive fire damage all around. Rust had accumulated all over the Insured Vehicle as a result of exposure to environmental condition for a period of time.



Photo 3 shows the general view of the interior of the Insured Vehicle at the time of our inspection. Its interior compartment was completely burnt.



Photo 4 shows the engine compartment of the Insured Vehicle at the time of our inspection. The entire engine compartment of the Insured Vehicle was observed to be severely burnt. Most of the parts inside the engine compartment were found to be burnt and/or melted as a result of the fire.

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 within the engine compartment of the Insured Vehicle as this was the area where the damage of fire nature was most severe.
8. 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 faint traces of greenish residue on several stretches of wirings. These wirings were original factory fitted wirings that were around the centre portion of the engine compartment. 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 5 - 7 below.

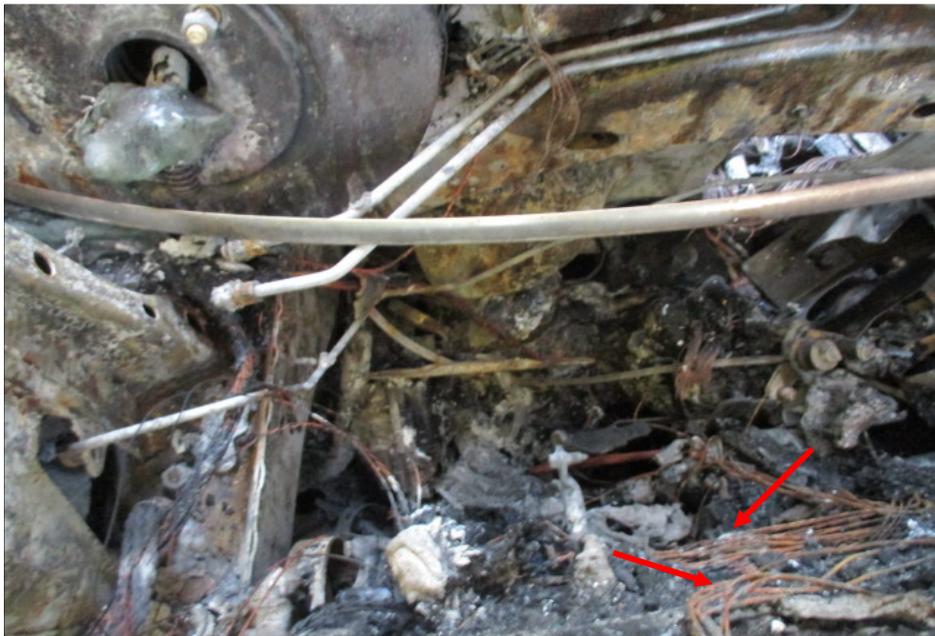


Photo 5 shows the factory fitted wirings around the centre portion of the engine compartment which is near to the vicinity where the fire to the Insured Vehicle had likely started. We observed faint traces of greenish residue on some of these wirings (arrowed).



Photo 6 shows a closer view of the wirings around the centre portion of the engine compartment. We observed faint traces of greenish residue on some of these wirings (circled). This seems to suggest the occurrence of an electrical short circuit.



Photo 7 shows a close up view of the greenish residue found on the wirings around the centre portion of the engine compartment (arrowed). The presence of greenish residue indicates internal heating of copper wires, a sign of an electrical short circuit.

9. From the Singapore Police Report No. T/20180612/7001 and Accident Statement, which was made by Mr Enzo Tan Weiren (herein referred to as “**Mr Tan**”), we note that the fire to the Insured Vehicle had started at a time when it was stopped. Mr Tan was first alerted of the fire when he saw smoke emitting from the engine compartment.
10. We managed to speak to Mr Tan on 19 June 2018 where we were able to gather further information pertaining to the incident as well as to the history of the Insured Vehicle. He mentioned that he had picked up his daughter from his mother’s house at Braddell that evening and proceeded to Jalan Kayu to have dinner with his wife. He travelled along the CTE towards TPE and took the Jalan Kayu exit. As he neared the split road of Jalan Kayu and Seletar Aerospace Way, he noticed a loss of power in the Insured Vehicle. The ‘Check Engine’ warning light was visible on the instrument panel as the Insured Vehicle started slowing down. Mr Tan pulled up along the chevron markings and waited for about 10 seconds before switching off the engine. He then unlocked the bonnet and exited the Insured Vehicle to inspect the engine compartment.
11. He observed white smoke emitting from the centre portion of the engine compartment. Approximately 1 minute later a small fire had broken out in the centre portion of the engine compartment. Mr Tan quickly grabbed a water bottle from the Insured Vehicle and attempted to put out the fire however he did not have enough water. The fire got bigger after a few minutes and Mr Tan immediately got his daughter and laptop out of the Insured Vehicle before dialling 995.
12. Both Mr Tan and his daughter waited at the central divider which was a considerable distance away from the Insured Vehicle. Mr Tan had informed his wife who then came to the incident location soon after. The police arrived shortly after and assisted in re- directing traffic while waiting for firefighters who arrived 30 minutes after Mr Tan made the call. The fire had engulfed the Insured Vehicle by that time. The fire was extinguished within 20 minutes. Police officers then took Mr Tan’s statement and he also assisted the SCDF in their preliminary investigations. Mr Tan was allowed to make towing arrangements for the Insured Vehicle after half an hour.
13. The tow truck arrived within 30 minutes and the Insured Vehicle was towed to Hua Hong. Mr Tan and his daughter travelled in his wife’s car. He lodged a police report at the Traffic Police Division HQ on 12 June 2018 at 0004 hours. An insurance report was made at Hua Hong later that day at 1015 hours.

14. With regard to the history of the Insured Vehicle, we were able to gather from Mr Tan that the Insured Vehicle was purchased new from Eurokars Pte. Ltd. in September 2012. Mr Tan has owned the Insured Vehicle for close to 6 years and is the only driver of the Insured Vehicle.
15. Pertaining to the maintenance aspect, Mr Tan services the Insured Vehicle periodically every 10,000km. The last servicing was done on 26 January 2018 at MCF Auto Pte. Ltd. (herein referred to as “MCF”) located at 25 Kaki Bukit Road 4, #03-37, Singapore 417800.
16. To the best of his recollection, there has not been any major mechanical problem and/or electrical problem with the Insured Vehicle. Mr Tan also informed us that ever since he purchased the Insured Vehicle, he has not done any modification(s) and/or additionally fitted any electrical or electronic component(s) to the Insured Vehicle.

Site Inspection

17. With the information gathered, we visited the incident location on 19 June 2018 taking the reports made by Mr Tan and the information that we had gathered from him as references.
18. Firstly, we note that the incident had occurred after TPE along the split road of Jalan Kayu and Seletar Aerospace Way. The Insured Vehicle was positioned on the chevron markings when the fire broke out.
19. We noticed that the immediate vicinity was not monitored by traffic camera(s). At the time of visit, we observed burnt marks and/or burnt residual remains on the ground where the Insured Vehicle was positioned. Apart from the burn marks on the ground, we did not observe any other damaged or newly replaced government property at the time of our visit to the incident location. See photos 8 - 11 below.



Photo 8 shows the split road of Jalan Kayu and Seletar Aerospace Way (arrowed) after TPE. We noticed that the immediate vicinity was not monitored by traffic camera(s) The Insured Vehicle was positioned on the chevron markings when the fire broke out (circled).



Photo 9 shows the burnt marks and/or burnt residual remains on the ground where the Insured Vehicle was positioned when the fire broke out.



Photo 10 shows a close up view of the burnt marks and/or burnt residual remains on the ground where the Insured Vehicle was positioned when the fire broke out.



Photo 11 shows a close up view of the burnt residual remains on the ground where the Insured Vehicle was positioned (circled).

Incident Scene Photographs

20. We were able to obtain from Mr Tan several photographs of the Insured Vehicle which were taken after he had stopped the Insured Vehicle and after the fire had been extinguished. In general, the information that could be gathered from these photographs had corresponded to the events that were related to us by Mr Tan. 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 slip road where the Insured Vehicle was positioned. See photos 12 – 16 below.



Photo 12 shows the Insured Vehicle on fire before the arrival of the SCDF. In general, the information that could be gathered from this photograph had corresponded to the events that were related to us by Mr Tan, which is he had stopped the Insured Vehicle on the chevron markings after TPE along the split road of Jalan Kayu and Seletar Aerospace Way when the fire broke out (circled).



Photo 13 shows the rear portion of the Insured Vehicle as the fire got bigger before the arrival of the SCDF. In general, the information that could be gathered from this photograph had corresponded to the events that were related to us by Mr Tan, which is the fire had started from the front portion of the Insured Vehicle (circled).



Photo 14 shows firefighters attempting to put out the fire to the Insured Vehicle.

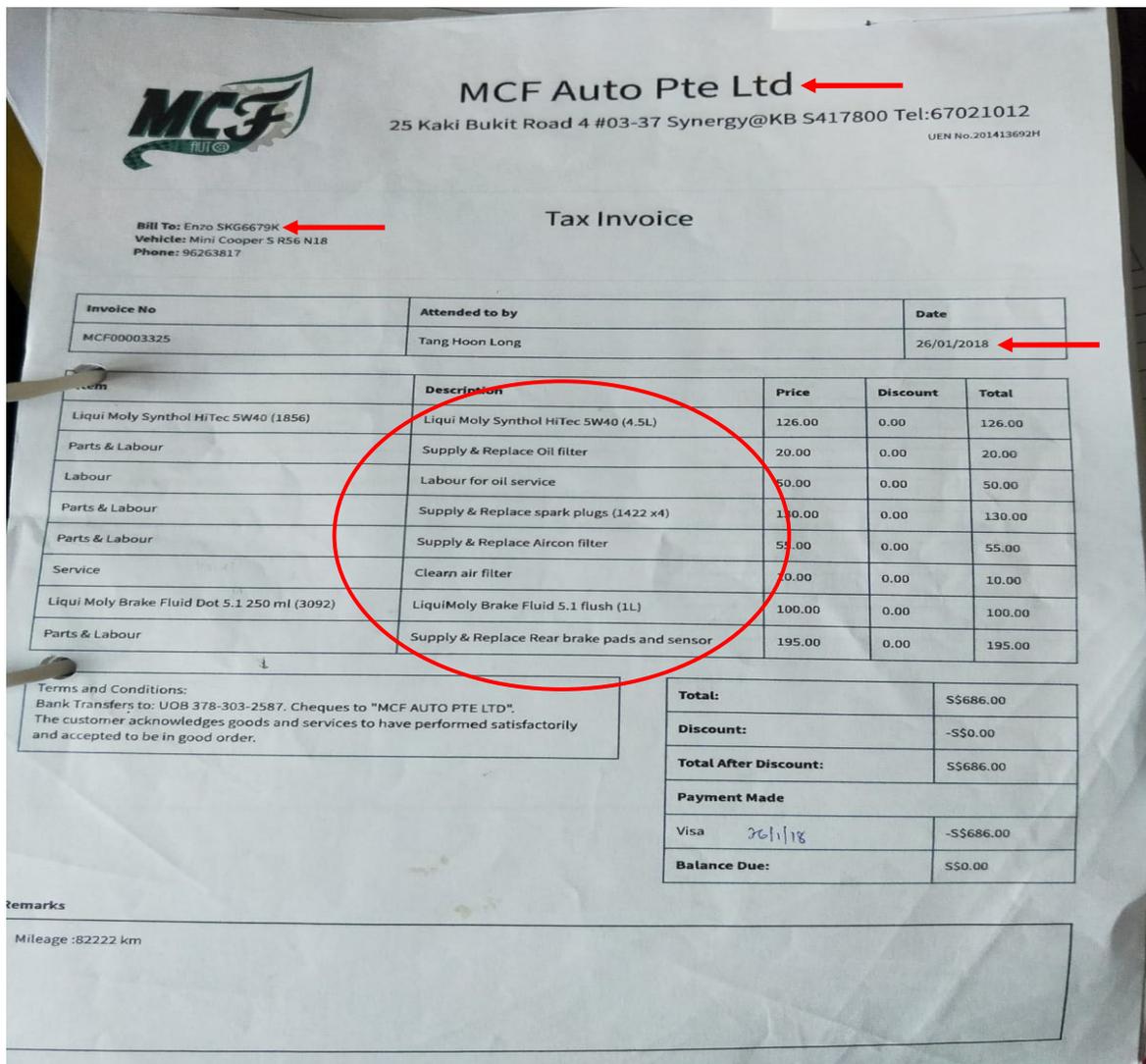


Photo 15 shows firefighters extinguishing the last remnants of the fire (circled). In general, the information that could be gathered from this photograph had corresponded to the events that were related to us by Mr Tan, which is the police (arrowed) and SCDF were present at the incident location.



Photo 16 shows the Insured Vehicle after the fire had been extinguished.

21. During the course of our investigations, we were also able to obtain from Mr Tan, a document relating to the last servicing of the Insured Vehicle at MCF on 26 January 2018. The servicing package included changing of engine oil and oil filter, spark plugs, aircon filter, rear brake pads and rear brake sensor. The air filter was cleaned and the brake fluid was also flushed Refer to Invoice 1 below.



MCF
MCF Auto Pte Ltd
25 Kaki Bukit Road 4 #03-37 Synergy@KB S417800 Tel:67021012
UEN No. 201413692H

Tax Invoice

Bill To: Enzo SKG6679K
Vehicle: Mini Cooper S R56 N18
Phone: 96263817

Invoice No	Attended to by	Date
MCF00003325	Tang Hoon Long	26/01/2018

Item	Description	Price	Discount	Total
	Liqui Moly Synthol HiTec 5W40 (1856)	126.00	0.00	126.00
Parts & Labour	Supply & Replace Oil filter	20.00	0.00	20.00
Labour	Labour for oil service	50.00	0.00	50.00
Parts & Labour	Supply & Replace spark plugs (1422 x4)	130.00	0.00	130.00
Parts & Labour	Supply & Replace Aircon filter	55.00	0.00	55.00
Service	Clean air filter	10.00	0.00	10.00
	Liqui Moly Brake Fluid Dot 5.1 250 ml (3092)	100.00	0.00	100.00
Parts & Labour	Supply & Replace Rear brake pads and sensor	195.00	0.00	195.00

Terms and Conditions:
Bank Transfers to: UOB 378-303-2587. Cheques to "MCF AUTO PTE LTD".
The customer acknowledges goods and services to have performed satisfactorily and accepted to be in good order.

Total:	\$S686.00
Discount:	-\$S0.00
Total After Discount:	\$S686.00
Payment Made	
Visa 26/1/18	-\$S686.00
Balance Due:	\$S0.00

Remarks
Mileage :82222 km

Invoice 1 shows the last servicing package done on the Insured Vehicle on 26 January 2018 at MCF (arrowed) which included changing of engine oil, oil filter, spark plugs, aircon filter, rear brake pads and rear brake sensor. The air filter was cleaned and the brake fluid was also flushed (circled).

22. 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.

23. 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 Tan 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 Tan was the one who noticed a loss of power and proceeded to stop the Insured Vehicle.
24. 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.
25. 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 condition of the wirings that were found in the engine compartment of the Insured Vehicle, which was earlier discussed in paragraph 8 above.
26. 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:	0108B ←
Vehicle Details	
Vehicle Registration number:	SKG6679K ←
Make:	MINI
Vehicle Model:	COOPER S COUPE AT ABS D/AB GAS/D TC
Engine No.:	B746J071N18B16A
Chassis No.:	WMWSX32090T139719
Recall Details	
No Recall Detail records ←	

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Conclusion

27. 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 centre portion of the engine compartment. The wirings were original factory fitted wirings of the Insured Vehicle.
28. 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.
29. 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.
30. 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.
31. SCDF was activated to attend to the fire incident and a fire report pertaining to their findings will likely be forthcoming. 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 Tani

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

Senior Technical Investigator

Technical Investigation & Reconstructionist (SAE-A)

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