



Your Ref: 590109
Our Ref :CS/MSG19006439/Z

16th April 2019

M/s MSIG Insurance (Singapore) Pte Ltd
16 Raffles Quay #24-01, Hong Leong Building,
Singapore 048581
(Motor Claims Department)

**TECHNICAL INVESTIGATION REPORT OF FIRE INCIDENT INVOLVING THE
INSURED VEHICLE SKR 7813A ON 04th APRIL 2019**

1. We refer to your letter dated 12th April 2019 and the instructions therein.
2. Our analysis, comments and opinions with respect to the cause of fire to the insured vehicle SKR 7813A (herein referred to as "**Insured Vehicle**") are set out below.

Inspection of the Insured Vehicle

3. The Insured Vehicle was physically inspected on 12th April 2019 at the premises of Eurokars Aftersales Centre (Body & Paint), 27A Tanjong Penjuru Singapore 609042.
4. A static inspection was carried out to the Insured Vehicle where the following general information was recorded:-

Vehicle Registration No.	: SKR 7813A
Make / Model	: Porsche Panamera
Chassis No	: WPOZZZ972BL002455
Year of Registration	: 2010 (October)
Mileage	: N.A (Electronic System Damage)

5. The Insured Vehicle was noted to have sustained fire damages to its front portion. The front right engine compartment of the Insured Vehicle was observed to be severely burnt by the fire.
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 and several parts of the engine components especially at the front right, windshield and right side of the Insured Vehicle. Except for the exterior rear, rear interior, exterior rear left & exterior rear right portion was not affected by the fire. See photo 1 – 4 below.



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



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



Photo 4 shows the interior compartment of the Insured Vehicle, which was observed to be affected by the fire incident. Burnt video camera was also noted to be dangling at time of our visit to the workshop.

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 the front right of the engine compartment. This can be determined from the burn pattern and the high heat intensity burn marks (whitish burn marks) found on the front bonnet of the Insured Vehicle, at both its top and under side.
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 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 burn pattern and whitish burn marks that were found on the topside 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.

10. Upon closer examination of the area around the front right 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. There were traces of greenish residue as evidence to show that 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.

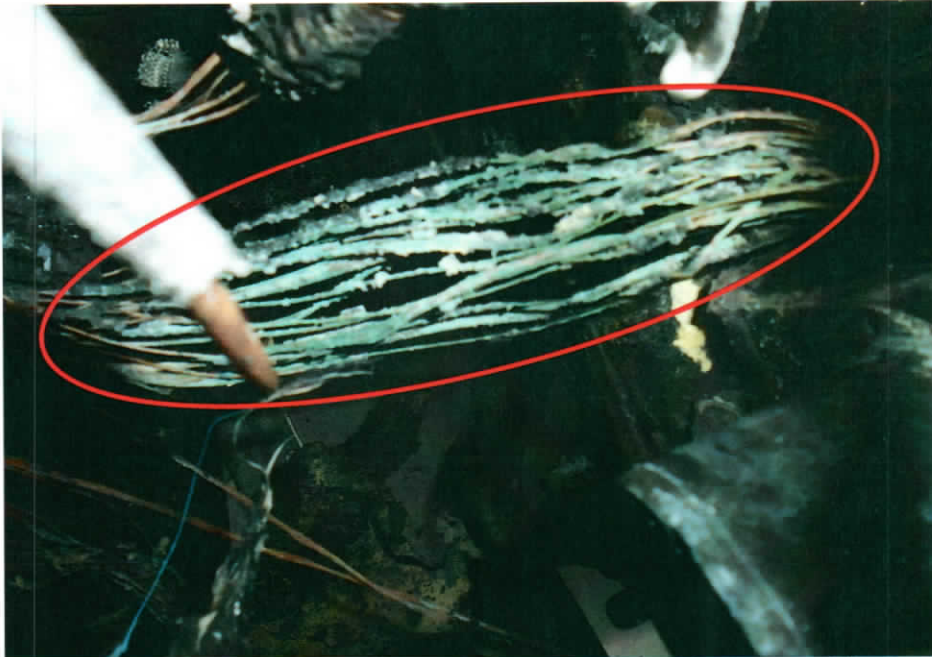


Photo 7 shows a closer view of the ABS motor pump wirings around the front right of the engine compartment, which was in the immediate vicinity where the fire to the Insured Vehicle had likely started.

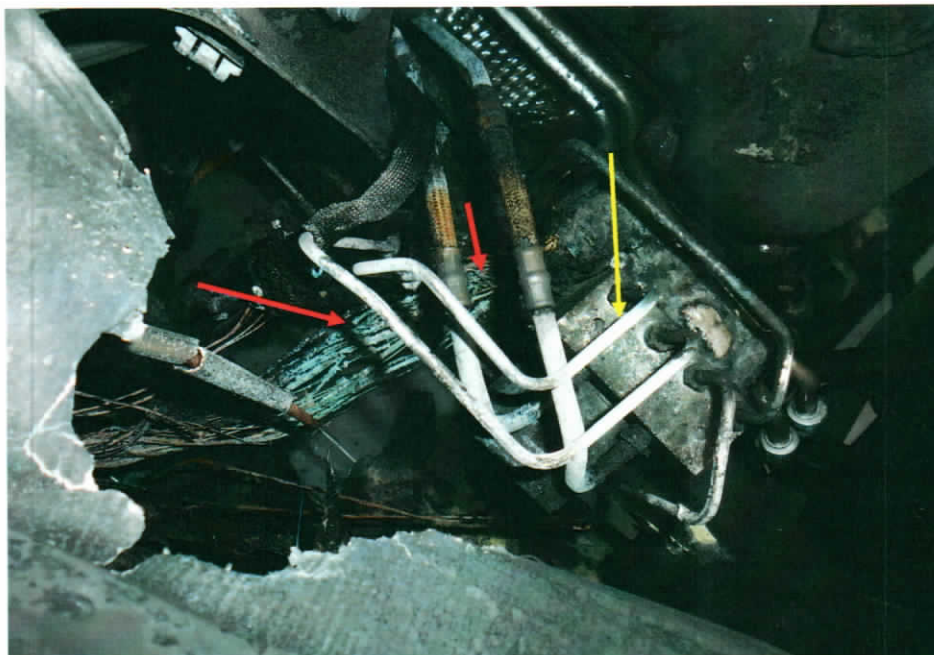


Photo 8 shows a semi close-up view of the ABS motor pump wirings (red arrow) which were found to have been burnt internally to its bare copper state, suggesting occurrence of an electrical short circuit. These wirings were observed to be greenish believe to be the focal point of the fire ignition.

11. From the Singapore Police Report No. D/20190409/2047, which was made by Mr Adam Tan Eng Lum (herein referred to as "**Mr Adam**") who was the last person driving the Insured Vehicle. Mr Adam had parked the Insured Vehicle at about 1905hrs at an Open Space car park located at Chun Tin Road as he had a foot massage appointment at Tang Dynasty. As he walks away from the Insured Vehicle, he saw smoke emits from the front bonnet. Rushed away from the Insured Vehicle and called SCDF for assistance. Soon after, the smoke got thicker and burst into flame. SCDF came and managed to extinguish the fire. Arrangement was made for the Insured Vehicle to be towed to Porsche Service Centre.
12. We note that the fire to the Insured Vehicle had started when it was parked shortly after a short drive. It was running smoothly to a few destinations before arriving at Chun Tin Open Space carpark.
13. We had arranged for a face to face interview session with Mr Adam in his office at I. Biz Centre, Old Toh Tuck Road on 03rd Floor, unit no. 17 on 15th April 2019 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. Mr Adam is currently running his own business in providing rental of entertainment equipment. He has been in the business since the last 20 years and still maintaining the business. He is the registered owner of the Insured Vehicle & also the only driver. Mr Adam drives the Insured Vehicle mainly to office & for transportation purposes.
15. According to Mr Adam, on 04th April 2019 at about 1905hrs, he had parked the Insured Vehicle reversed parked inside parking lot no. 82, in an Open Space carpark at Chun Tin Road for a foot massage appointment at Tang Dynasty. Earlier in the morning, he had sent his son to school and went for breakfast without any abnormalities. He came home driving the Insured Vehicle at about 1000hrs. At about 1100hrs, he had left home driving the Insured Vehicle to work at Old Toh Tuck Road. The Insured Vehicle was parked at his work place until 1810hrs. Still driving the Insured Vehicle home which was about 1820hrs.
16. He had notice of smoke emitted from his front bonnet after reverse parking inside the parking lot no. 82 of an Open Space car park at Chun Tin Road at about 1955hrs. He called for SCDF assistance immediately. Soon after, the front bonnet was engulfing with fire.

17. SCDF fire fighters & SPF officer came at about 2007hrs. The fire was extinguished by SCDF fire engines & officers. He was interviewed by both investigation officers for facts of the fire case.
18. Mr Adam then contacted Porsche Service Centre for assistance. The Insured Vehicle was eventually arranged to be towed from the incident location to Eurokars Aftersales Centre (Body & Paint), 27A Tanjong Penjuru, Singapore 609042 on the same day.
19. We were able to gather from Mr Adam that the Insured Vehicle was purchased as pre-owned unit from Porsche. Mr Adam is the registered owner of the Insured Vehicle. Prior to the fire incident Mr Adam 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.
20. Regarding the maintenance aspect, Mr Adam informed us that the last servicing carried out on the Insured Vehicle was on 30th March 2019 at Eurokars Aftersales Centre (Body & Paint), 27A Tanjong Penjuru Singapore 609042. Ms Eva Kok, the insurance claim officer provided 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 149743km. The engine oil, front brake pad & disc, brake vacuum pump, battery and valve cover gaskets were replaced during this servicing. See document below relating to this servicing which was provided to me by Ms Eva Kok. See below service invoice.

PORSCHE

History Report

VIN: WP0ZZZ97ZBL002455/ Model: Porsche Panamera		Registration Date: 20/10/2010		Reg. no: SKR7813A	
Prepare by: Edwin Alegre		Customer Name: Mr Tan Eng Lum		Job number	
Date In /Date Out	Mileage/Km	Customer Description/Fault	Rectification/Work done	Fault codes:	
27/09/2011	12747	1 st free service	Carry out oil change service		58119
07/08/12	27176	2 nd free service	Carry out intermediate service		12903
26/08/13	42499	3 rd free service	Carry out oil change service		24622
08/04/14	56979	4 th free service	Carry out major service		32734
06/01/15	71018	5 th free service	Carry out oil change service		42006
09/03/15	92802	Annual service	Carry out intermediate service		59394
15/08/16	102133	Check drive belt	Replaced drive belt/belt tensioner, battery and front brake pads & discs		11681
12/12/16	109324	Annual service	Carry out oil change service & replaced rear brake pads & discs		16551
02/03/17	113023	Head light not working/ 111pt check	Replaced head light bulb left, front suspension, engine mountings, tires and warranty extension		19740
24/04/17	115167	RH & LHR door cannot open	Replace door locks		22020
10/08/17	121127	Annual service	Carry out major service		26063
27/02/18	130466	LH wing mirror faulty	Replaced mirror base		32090
20/07/18	137319	Annual service/coolant leak	Carry out oil change and replace coolant pipe		35911
03/11/18	142237	Squash noise from the engine	Replaced engine belt & tensioner		39337
30/03/19	149743	Annual service	Carry out oil change service, replaced front brake pads & discs, brake vacuum pump, battery & valve cover gaskets		43463

Latest servicing invoice submitted for our review.

21. Mr Adam also informed me that there was no modification(s) and/or additional electronic or electrical component(s) fitted on the Insured Vehicle.
22. To the best of his knowledge, no other motor vehicle or property was affected by the fire incident.
23. We visited the fire incident location on 12th April 2019 which was located at Chun Tin Road open space carpark with the information & photograph that we had gathered during our conversation with Mr Adam as references.
24. When driving into the Open Space car-park driveway, the fire incident took place inside a parking lot no. 82 on the left side. We had also found burnt marks/ burnt residual on the parking lot ground. This reveals that there's evidence that fire incident happen at the said spot. See photo 9 – 12 below.



Photo 9 shows the general view of open space Car park sign board No. J0055 where the fire incident took place.



Photo 10 shows the general view of the open space car park entrance along Chun Tin Road.



Photo 11 shows the general view of the car park lot where the fire incident took place. Arrow shows where the Insured Vehicle last position before it caught fire.



Photo 12 shows the closer view of the car park lot where it had caught fire. Burnt debris remains believe from the Insured Vehicle was observed on the car park lot ground.

25. We were able to gather photograph that were submitted by Mr Adam on the day of the incident. The photographs were taken at the time of the fire incident.

26. In general, the information that could be gathered from these photographs had corresponded to the events that were related to us by Mr Adam. 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 location where the Insured Vehicle was last positioned. See photo 13 below.



Photo 13 shows the Insured Vehicle at the fire incident scene. 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 located. In general, the information that could be gathered from these photographs had corresponded to the events that were related to us by Mr Adam.

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 not in a running condition at the material time of incident. However, electrical current were still flowing within the electrical system for operational purposes. Several electrical and/or electronic components on the Insured Vehicle would require current to remain in operation and/or in idling mode. This would also include ABS (Anti-Locking Braking System) would require electrical power to perform its operations. As we found evidence on the ABS wiring which leave a greenish residue as a result of short circuit on the electrical wiring. The fire being due to electrical nature is also supported by the condition of the wirings of the Insured Vehicle, which was earlier discussed in paragraph 10 above.
30. 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 Vehicle Call record 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: 0148H

Vehicle Details

Vehicle Registration number: SKR7813A

Make: PORSCHE

Vehicle Model: PANAMERA

Engine No.: B03209

Chassis No.: WP0ZZZ97ZBL002455

Recall Details

No Recall Detail records

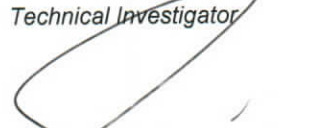
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Conclusion

31. 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 the ABS motor pump section of the engine. The wirings were likely to be from the original manufacturer's installation wire harness.
32. An additional video camera recorder was found fitted on the front windshield. Mr Adam informed me that it was installed upon purchased of the Insured Vehicle which was about 4 years back. 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.
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. 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.
35. 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.



Rohaizal A. Rahim
Technical Investigator



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