

Your Ref: C10004587/LA  
Our Ref : CS/AGI19020265/P

28<sup>th</sup> November 2019

**M/s Auto & General Insurance (Singapore) Pte. Ltd.**

190 Clemenceau Avenue, #03-01  
Singapore Shopping Centre  
Singapore 239924  
(Motor Claims Department)

**TECHNICAL INVESTIGATION REPORT OF FIRE INCIDENT INVOLVING THE INSURED VEHICLE SGP 5912T ON 13<sup>th</sup> November 2019**

1. We refer to your letter dated 14<sup>th</sup> November 2019 and the instructions therein.
2. Our analysis, comments and opinions with respect to the cause of fire to the insured vehicle SGP 5912T (herein referred to as “**Insured Vehicle**”) are set out below.

**Inspection of the Insured Vehicle**

3. The Insured Vehicle was physically inspected on 15<sup>th</sup> November 2019 at the premises of Progressive Car Care Pte Ltd located at Block 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.	: SGP 5912T
Make / Model	: NISSAN LATIO 1.5L (A)
Chassis No	: JN1BAAC11Z0002587
Year of Registration	: 20 DECEMBER 2006
Mileage	: N.A (wiring affected)

5. The Insured Vehicle was observed to have sustained severe fire damage all around. Its engine compartment and interior compartment was completely burnt. Rust had accumulated around the front and centre portion of the Insured Vehicle as a result of exposure to environmental condition for a period of time. See photos 1 – 6 below.



**Photo 1** shows the general view of the rear portion of the Insured Vehicle which was observed to be affected heat and smoke damage at the time of our inspection as a result of the fire.



**Photo 2** 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 front and centre portion of the Insured Vehicle as a result of exposure to environmental condition for a period of time.



**Photo 3** shows the general view of the right 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 front and interior compartment of the Insured Vehicle as a result of exposure to environmental condition for a period of time.



**Photo 4** shows the general view of the left 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 front and centre portion of the Insured Vehicle as a result of exposure to environmental condition for a period of time.



**Photo 5** shows the general view of the interior compartment of the Insured Vehicle at the time of our inspection. Its interior compartment was completely burnt as a result of the fire.



**Photo 6** 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, we did not find any unusual skeletal remains which could have suggested that there was possible modification(s) on the Insured Vehicle.

### **Investigation and Technical Analysis**

7. Based on the circumstances for this particular case, the fire appears to have originated from the front of the Insured Vehicle, somewhere around the front and spread to the centre portion. This can be determined basing on the area where the extent of fire damage was most severe, the circumstances of the fires' origin at the material time of incident and also the high heat intensity burn marks (whitish burn marks) that were found on the exterior surface of its front bonnet and centre portion.
8. 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 the prolonged exposure to high heat intensity usually causes the bare steel/metal material of the body parts to be exposed to natural environmental condition. The rust that had developed on the front bonnet and centre portion, in the immediate vicinity of where these whitish burn marks were found, would also support our findings of where the fire had affected the Insured Vehicle. See photo 7- 10 below.



**Photo 7** shows the exterior of the front bonnet of the Insured Vehicle at the time of our inspection. The high heat intensity burn marks (whitish burn marks) and rust that had development found on the exterior surface of the bonnet indicates that the fire had originated from the front portion of the Insured Vehicle.



**Photo 8** shows the underside of the front bonnet cover of the Insured Vehicle at the time of our inspection. The High heat intensity burn marks (whitish burn marks) and rust that had development found on the exterior surface of the bonnet indicates that the fire had originated from the front portion of the Insured Vehicle.



**Photo 9** shows the exterior of the centre portion of the Insured Vehicle at the time of our inspection. The high heat intensity burn marks (whitish burn marks) and rust that had development found on the exterior surface indicates that the fire had originated from the frontal portion of the Insured Vehicle.



**Photo 10** shows the underside of the front bonnet cover of the Insured Vehicle at the time of our inspection. The High heat intensity burn marks (whitish burn marks) and rust that had development found on the exterior surface of the bonnet indicates that the fire had originated from the front portion of the Insured Vehicle.

9. Upon closer examination of the front portion of the Insured Vehicle which was where the fire had started, we had found traces of greenish residue on the main wirings harnesses leading from the battery to the electrical components of the Insured Vehicle. The wirings were original wirings fitted from the manufacturer. 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 the 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 - 13 below.



**Photo 11** shows the general view of the interior compartment of the Insured Vehicle at the time of our inspection. The fire damage to the Insured Vehicle has affected its engine and interior compartment. Its interior dashboard (circled), radio head unit (yellow arrow), various original wiring harnesses was amongst the parts in the compartment that were found to have been affected as a result of the fire.



**Photo 12** shows a general view of the original wiring harness in the engine compartment. The original wiring harness (circled) was observed with greenish residue on the surface. 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.



**Photo 13** shows a close up view of the original wiring harness in the engine compartment. The original wiring harness (yellow and red circled) was observed with greenish residue on the surface. 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.

10. From the Singapore Accident Statement, which was made by Mr Chow Pak Thong, Paul (herein referred to as **“Mr Chow”**); we note that the fire to the Insured Vehicle had started at a time when it was parked stationary at the MSCP parking lot. Mr Chow was first alerted of the fire by the Police officers at his home.
11. We managed to speak to Mr Chow on 20<sup>th</sup> November 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.
12. According to Mr Chow, on 11 November 2019, this was 2 days prior to the fire incident. Mr Chow parked the Insured Vehicle in his home MSCP at BLK 312A Anchorvale Lane. On 13 November 2019 @ 0600 hours Mr Chow was asleep at home when Police officers came knocking on his door informing him that the Insured Vehicle had caught fire in the MSCP where it was parked. Subsequently, he rushed down and saw SPF officers and SCDF units already on scene condoning of the entrance of the MSCP and fighting the fire.
13. The fire was extinguished within 30 mins. Mr Chow was then given access to the Insured Vehicle and had his statement was taken by the Police officers.
14. Mr Chow subsequently contacted his insurance company (AGI) and made towing arrangements. The tow truck arrived within 30mins and the Insured Vehicle was towed to Progressive Car Care Pte Ltd. Mr Chow made an insurance report on the day at 1658 hours.
15. Mr Chow mentioned that he had not experienced any mechanical or electrical/electronic 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 throughout the period the Insured Vehicle and when driven, prior to the fire.
16. With regards to the history of the Insured Vehicle, we were able to gather from Mr Chow that the Insured Vehicle was purchased pre-owned. He is the registered owner of the Insured Vehicle. Mr Chow informed us that he is the sole driver of the Insured vehicle since the day he bought the Insured Vehicle 5 years ago.

17. Pertaining to the maintenance aspect, Mr Chow sends the Insured Vehicle for periodical servicing. He provided us with his latest servicing record, inspection certification and there was no major overhaul done or modifications done to the Insured Vehicle.

**THE LOCAL WORKSHOP**  
by The Local Leasing Company Pte. Ltd.  
1 Bukit Batok Crescent #05-16 WCEGA Plaza  
Singapore 658064  
Hp: 8778 4878 / 9011 0003 / 8128 8649  
Company Reg. No.: 201632096M

**INVOICE**  
No.: **2093**

**BILL TO**

Name & Contact: \_\_\_\_\_ Date: 1-4-19

Vehicle Plate / Brand / Model: SGP 5912T Mileage: 119205  
Nissan Latio

DESCRIPTION	QUANTITY	UNIT PRICE (S\$)	AMOUNT (S\$)
Totachi 5W40			65
Oil filter			
Brush wiper			
TOTAL S\$			65

All goods sold are non-refundable E & OE

Payment Terms: Cash / NETS / Credit Card / Cheque Bank, No. \_\_\_\_\_ / Credit \_\_\_\_\_ days

**DESCRIPTION**

Next Service: \_\_\_\_\_ Km

Tyre: \_\_\_\_\_

YOM: \_\_\_\_\_

Front: \_\_\_\_\_ Kpa

Rear: \_\_\_\_\_ Kpa

Rotation at: \_\_\_\_\_ Km

Customer's Signature \_\_\_\_\_

Date & Time \_\_\_\_\_

### Incident Scene Photographs

18. During the course of our investigations, we were able to obtain coloured photographs showing the Insured Vehicle at the incident after the fire was extinguished by SCDF personnel. These were provided to us by Mr Chow.

19. Our examination of these photographs revealed that the fire had started from the front of the Insured Vehicle. The photographs had also showed the Insured Vehicle on fire and similar extent of damage and burn pattern to the Insured Vehicle as per what we had observed during our physical inspection of the Insured Vehicle. There were two Vehicles that were parked beside the Insured Vehicle that had also sustained fire damage from the burning of the Insured Vehicle. Apart from the aforesaid; there was no further notable information that could be gathered from these photographs. See photos 14 - 16 below which were provided to us by Mr Chow.



**Photo 14** shows the badly burned Insured Vehicle at the MSCP after the fire was put out by 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 Chow, location when the fire broke out.



**Photo 15** shows the exterior of the front bonnet of the Insured Vehicle at the time of our inspection. The high heat intensity burn marks (whitish burn marks) and rust that had development found on the exterior surface of the bonnet indicates that the fire had originated from the front portion of the Insured Vehicle. In general, the information that could be gathered from this photograph had corresponded to the events that were related to us by Mr Chow, location when the fire broke out.



**Photo 16** shows the Insured Vehicle at the incident location and the two Vehicles beside the Insured Vehicle had also sustain fire damage for the burning 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 Chow had mentioned to us that the Insured Vehicle was left parked stationary for 2 days prior to the fire incident.
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 Chow 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 both seem unlikely. The fire being due to electrical nature is also supported by the condition of the original wiring harnesses wirings that were found leading from the battery assembly to the electrical components on the Insured Vehicle, which was earlier discussed in paragraph 9 above.
23. Our checks with both local and international bodies and associations had also revealed that at the time of writing this report, there is no manufacturer recall of similar make and model vehicle as the Insured Vehicle that may possibly be related to fire being originated from the engine or interior compartment of the Insured Vehicle. See search result from LTA below.



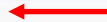


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AAA



## 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:	7561
Vehicle Details	
Vehicle Registration number:	SGP5912T 
Make:	NISSAN
Vehicle Model:	LEAF 1.6 A
Engine No.:	HR15038777A
Chassis No.:	JN1B4AC1120002587
Recall Details	
1 Recall No.:	R2016030213
Manufacturer Recall Date:	10 Mar 2016 
Estimated Completion Year of Recall:	2017
Brief Description (As Provided by Motor Dealer):	ABS ACTUATOR UNIT COULD POSSIBLY BE DAMAGED BY EXCESSIVE WATER PENETRATION DURING HIGH PRESSURE CAR AND/OR ENGINE WASH. 
Date Rectified:	-
For more details, contact TAN CHONG MOTOR SALES PTE LTD	
Hotline Information:	TAN CHONG MOTOR SALES PTE LTD at 64694090/213

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**Recall** shows the recall details of the Insured Vehicle, this recall package consist of the ABS actuator unit possibly damaged by water during high pressure car wash. This components have not been replace, however there is no relation to the cause of the fire. (arrowed).

## **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 nature. For this particular case, the fire had originated along the original wiring harnesses leading to the battery to the electrical 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. There was 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.
27. Our investigations had also revealed that at the time of writing this report, there is no manufacturer recall to similar make and model vehicle as the Insured Vehicle that may possibly be related to this incident.

**Sherwin Beh**

*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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