

Your Ref: OD / SNM20D202009/SGR7134Z/TANKL  
Our Ref : CS/CTI20006022/N

29 May 2020

**M/s China Taiping Insurance (Singapore) Pte Ltd**  
3 Anson Road #16-00  
Springleaf Tower  
Singapore 079909  
(Motor Claims Department)

**TECHNICAL INVESTIGATION REPORT OF FIRE INCIDENT INVOLVING THE  
INSURED VEHICLE SGR 7134Z ON 28 MAY 2020**

1. We refer to your letter dated 29 May 2020 and the instructions therein.
2. Our analysis, comments and opinions with respect to the cause of fire to the insured vehicle SGR 7134Z (herein referred to as “**Insured Vehicle**”) are set out below.

**Inspection of the Insured Vehicle**

3. The Insured Vehicle was physically inspected on 29 May 2020 at the premises of Cheng Hoe Motor Pte. Ltd. (herein referred to as “**CHM**”) located at 10 Ang Mo Kio Industrial Park 2A #01-04 AMK Autopoint, Singapore 568047.
4. A static inspection was carried out to the Insured Vehicle where the following general information was recorded:-

Vehicle Registration No.	: SGR 7134Z
Make / Model	: Nissan Sunny 1.6EXM
Chassis No	: JN1CFAN16Z0106511
Year of Registration	: February 2007
Mileage	: N.A (battery melted)

5. The Insured Vehicle was noted to have sustained fire damage that was confined to its front portion. The entire engine compartment of the Insured Vehicle was observed to be severely burnt while the interior compartment was observed to be slightly affected by the fire, particularly the left portion of the dashboard.
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, front grille, front headlamps, front windscreen and side panels, amongst others. See photos 1 – 6 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 portion. Its front bonnet, front grille, front windscreen and front headlamps 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 left portion of the Insured Vehicle at the time of our inspection. The fire damage to the Insured Vehicle was confined to its front portion. Its front bonnet, left front panel and front left headlamp were amongst the body parts that were found to have been affected as a result of the fire.



**Photo 3** shows the general view of the front right portion of the Insured Vehicle at the time of our inspection. The fire damage to the Insured Vehicle was confined to its front portion. Its front bonnet, right front panel and front right headlamp were amongst the body parts that were found to have been affected as a result of the fire.



**Photo 4** shows the general view of the front windscreen of the Insured Vehicle at the time of our inspection. The fire damage to the Insured Vehicle was confined to its left portion (circled).





**Photo 5** shows the engine compartment of the Insured Vehicle at the time of our inspection. The nature of fire damage to the engine compartment of the Insured Vehicle was observed to be extensive. Most of the parts inside the engine compartment were found to be severely burnt and/or melted as a result of the fire.



**Photo 6** shows the interior compartment of the Insured Vehicle which was observed to be slightly affected by the fire, particularly the left portion of the dashboard (arrowed).

7. 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**

8. For this particular case, the fire appears to have originated within the engine compartment of the Insured Vehicle, somewhere around the rear left portion 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 rear left side of the front bonnet of the Insured Vehicle and also the rust that had developed on the underside of the front bonnet, at the bottom left area.
9. The whitish burn marks are a result of exposure to prolonged 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. The rust that had developed on the underside of the front bonnet, around the rear left area, is an indication that the rear left portion of the engine compartment had sustained exposure to prolonged high heat intensity. See photos 7 & 8 below.



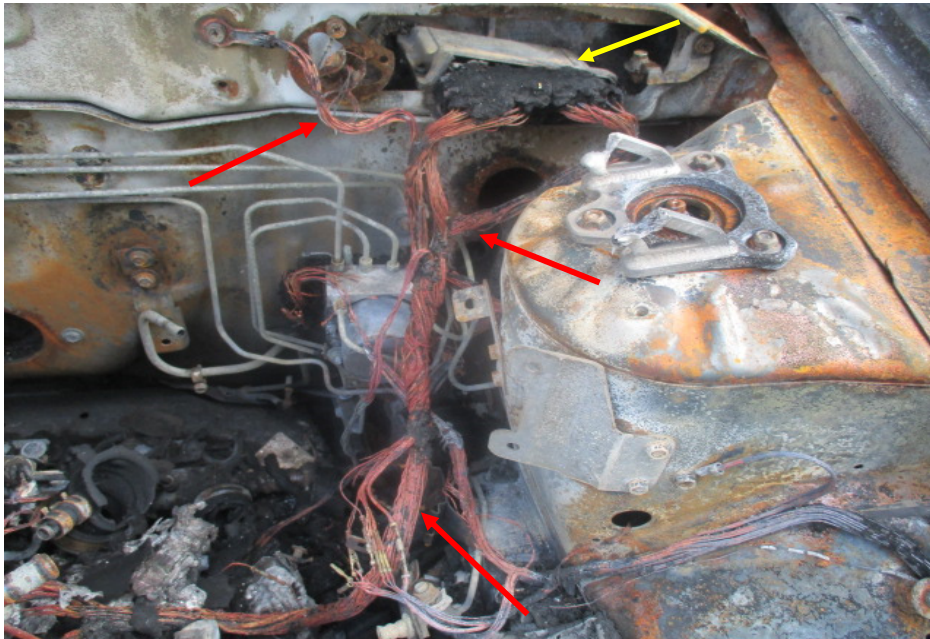
**Photo 7** shows the burn pattern and whitish burn marks (circled) that were found on the rear left side of the front bonnet of the Insured Vehicle. Such whitish burn marks are a result of exposure to prolonged heat intensity, which may indicate where the fire had started. Rust would also begin to develop on these areas soon after the fire.



**Photo 8** shows the rust (circled) that had developed on the underside of the front bonnet, around the bottom left area. The development of rust is an indication that this area was exposed to prolonged exposure to high heat intensity, which had caused the steel/metal material of the front bonnet to be exposed to natural environmental condition. Hence the fire to the Insured Vehicle can be determined to have originated towards the rear left portion of the engine compartment.

10. Upon closer examination of the rear left portion of the engine compartment, where the fire to the Insured Vehicle had likely started, we had found several stretches of wirings burnt internally to its bare copper state. The wirings were original factory fitted wirings leading towards the Engine Control Module (ECM) of the Insured Vehicle. The bright reddish colour of the copper wires suggests that the wirings were exposed to high heat. Such condition normally indicates internal heating of copper wires which is a sign of an electrical short circuit occurring. In addition, we also found greenish residue on some of the wirings. The presence of greenish residue further indicates internal heating of copper wires, another 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. These physical evidences 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 9 – 11 below.

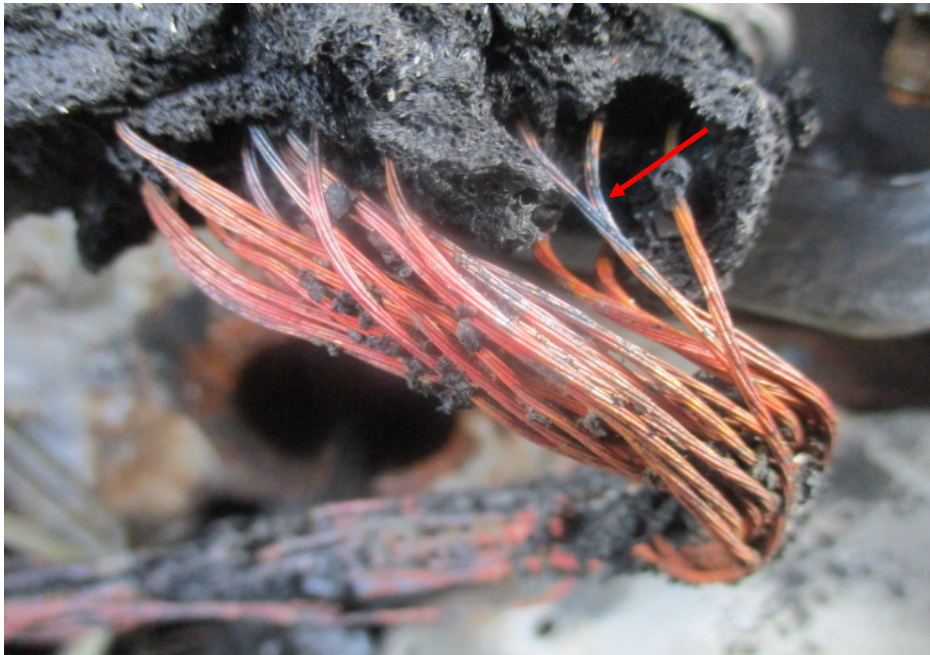




**Photo 9** shows the wirings around the rear left portion of the engine compartment, which is in the immediate vicinity where the fire to the Insured Vehicle had likely started. Several stretches of wirings leading towards the Engine Control Module (ECM) (yellow arrow) were found burnt internally to its bare copper state (red arrows). The bright reddish colour of the copper wires suggests that the wirings were exposed to high heat. Such condition normally indicates internal heating of copper wires which is a sign of an electrical short circuit occurring.



**Photo 10** shows a closer view of some of the wirings with greenish residue (red arrows). The presence of such greenish residue suggest occurrence of an electrical short circuit.



**Photo 11** shows a close up view of some of the wirings with greenish residue (arrowed). The presence of such greenish residue suggest occurrence of an electrical short circuit.

11. From the Singapore Accident Statement, which was made by Mr Ng Soon Yeow (herein referred to as **“Mr Ng”**), we note that the fire to the Insured Vehicle had started at a time when it was parked. Mr Ng was first alerted of the fire when he received a call from the police.
12. We managed to speak to Mr Ng where we were able to gather further information pertaining to the incident as well as information pertaining to the history of the Insured Vehicle.
13. According to Mr Ng, he last used the Insured Vehicle on 26 May 2020 to buy food. He parked the Insured Vehicle at level 1 of the multi- storey carpark at Block 792 Woodlands Avenue 6. He did not drive the Insured Vehicle until the incident occurred. 2 days later, on 28 May 2020 at 0755 hours, he received a call from the police informing him that the Insured Vehicle had caught fire. By the time he arrived at the incident location, the fire had been extinguished. Mr Ng mentioned that the Insured Vehicle was parked in between 2 other vehicles but there were no consequential damages sustained to the 2 vehicles. The police took down Mr Ng’s statement.



14. Mr Ng then called the China Taiping Insurance hotline and made towing arrangements. The Insured Vehicle was towed to CHM. Mr Ng went to lodge a police report at the Woodlands Division HQ at 1025 hours. He then made an insurance report at CHM later at 1506 hours.
15. With regards to the history of the Insured Vehicle, we were able to gather from Mr Ng that the Insured Vehicle was purchased new 13 years ago. He is the registered owner and main driver of the Insured Vehicle. His wife drives the Insured Vehicle occasionally. The COE of the Insured Vehicle was also recently extended for another 5 years by Mr Ng in 2017. To the best of his recollection, there has not been any major mechanical problem and/or electrical problem with the Insured Vehicle hence his decision to renew the COE of the Insured Vehicle.
16. Pertaining to the maintenance aspect, Mr Ng sends the Insured Vehicle for periodical servicing. He services the Insured Vehicle in Johor Bahru, Johor, Malaysia. The last servicing before the incident was done about 2 months ago. However, he does not keep any of the invoices.
17. Mr Lim also informed us that he has not done any modification(s) and/or additionally fitted any electrical or electronic component(s) to the Insured Vehicle.
18. Mr Lim mentioned that since the servicing was done, he had not experienced any other mechanical 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 throughout the period he was driving the Insured Vehicle.

### **Incident Scene Photographs**

19. We were able to obtain from Mr Ng, photos of the Insured Vehicle which he had taken after the fire was put out. In general, the information that could be gathered from these photographs had corresponded to the events that were related to us by Mr Ng. 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 parked. See photos 12 & 13 below.



**Photo 12** shows the Insured Vehicle at the incident scene after the fire was extinguished. In general, the information that could be gathered from this photograph had corresponded to the events that were related to us by Mr Ng, which is the Insured Vehicle was parked at level 1 of the multi- storey carpark when the fire occurred.



**Photo 13** shows the Insured Vehicle at the incident scene after the fire was extinguished. Whitish burn marks (arrowed) were observed on the rear left portion of the front bonnet, which indicates that the fire had started in the engine compartment.



20. 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 the fire had started after the Insured Vehicle was parked and the engine was switched off for a period of time (about 2 days).
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 given that our examination of the available incident scene photographs did not reveal any unusual material(s)/object(s) found on the lot near where the Insured Vehicle was parked. The location of where the Insured Vehicle was parked 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 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 10 above.
23. Although the engine of the Insured Vehicle was switched off at the material time of incident, some electrical current would still be flowing within the electrical system as several electrical and/or electronic components on the Insured Vehicle would require current to remain in operation and/or in standby mode. These components may include the alarm system, clock, radio and cabin light amongst others.
24. 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 on 10 March 2016 for the ABS actuator unit. However it was not rectified. See search result from LTA below.

## Vehicle Recall Details

\* ONLY INFORMATION ON VEHICLE RECALLS SUBMITTED FROM 9 APRIL 2007 IS AVAILABLE

Owner ID Type Singapore NRIC	Owner ID 037H
Vehicle No. SGR7134Z	Make/Model NISSAN/ SUNNY 1.6EXM
Engine No. QG16420838	Chassis No. JN1CFAN16Z0106511



## Recall Details

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: -
Hotline Information: TAN CHONG MOTOR SALES PTE LTD at 64694091/2/3  For more details, contact TAN CHONG MOTOR SALES PTE LTD	

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## **Conclusion**

25. 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 rear left portion of the engine compartment. The wirings were original factory wirings leading to the Engine Control Module (ECM) of the Insured Vehicle.
26. 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.
27. 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.
28. Our investigations had also revealed that at the time of writing this report, there was a manufacturer recall campaign in 2016 which had involved the Insured Vehicle however the cause of this recall does not possess a fire risk to the Insured Vehicle hence the recall can be considered to be not related to this fire incident.



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