

Your Ref: SNM22D209121  
Our Ref : CS4/CTI22013017/N

9 January 2023

**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 SMW 3361M ON 18 DECEMBER 2022**

1. We refer to your request dated 4 January 2023.
2. Our analysis, comments and opinions with respect to the cause of fire to the insured vehicle SMW 3361M (herein referred to as “**Insured Vehicle**”) are set out below.

**Inspection of the Insured Vehicle**

3. The Insured Vehicle was physically inspected on 4 January 2022 at the premises of Chuan Ho Auto Service (herein referred to as “**Chuan Ho**”) located at 160 Sin Ming Drive, Sin Ming AutoCity #07-09, Singapore 575722.
4. A static inspection was carried out to the Insured Vehicle where the following general information was recorded: -

Vehicle Registration No.	: SMW 3361M
Make / Model	: NISSAN GT-R 3.8A
Chassis No	: R35002067
Year of Registration	: March 2008
Mileage	: N.A (wiring affected)

5. The Insured Vehicle was observed to have sustained severe fire damage to its interior compartment. Its top portion had also sustained minor fire damage that was mainly due to heat from the fire.
6. From the burn pattern, the fire appears to have been most intense at the rear portion of the Insured Vehicle. This follows the extent of burn damage being more severe within the interior compartment as compared to the burn damage at the top portion of the Insured Vehicle. See photos 1 – 6 below.



**Photo 1** shows a general view of the right side of the Insured Vehicle at the time of our inspection. From the burn pattern, the fire appears to have been most intense at the rear portion of the Insured Vehicle. This follows the severe fire damage that was observed within the interior compartment of the Insured Vehicle.



**Photo 2** shows a general view of the front portion of the Insured Vehicle at the time of our inspection. The Insured Vehicle was observed to have sustained severe fire damage at its right rear passenger portion. Its front portion was relatively unaffected by the fire.



**Photo 3** shows a general view of the left portion of the Insured Vehicle at the time of our inspection. From the burn pattern, the fire appears to have been most intense at the right rear passenger portion of the Insured Vehicle. This follows the severe fire damage that was observed within the interior compartment of the Insured Vehicle.



**Photo 4** shows a general view of the interior compartment of the Insured Vehicle, which was affected the most by the fire. Almost all the parts within the interior compartment were severely burnt and/or melted.



**Photo 5** shows a general view of the top portion of the Insured Vehicle. Its top portion had sustained minor fire damage that was mainly due to heat from the fire (circled).



**Photo 6** shows a general view of the engine compartment of the Insured Vehicle. Its engine compartment was relatively unaffected by the fire.

7. At the time of physical inspection of the Insured Vehicle, we had found several modifications and additionally fitted electronic and/or electrical component(s) on the Insured Vehicle. These included an electronic boost controller (which had sustained minor fire damage), non- standard mid pipe and rear exhaust mufflers and aftermarket 20- inch alloy rims. All these fitted components were not the standard type for the Insured Vehicle. See photos 7 - 11 below.



**Photo 7** shows the electronic boost controller additionally fitted onto the Insured Vehicle upon our inspection which had sustained minor fire damage. The brand of the controller was 'HKS' (circled).



**Photo 8** shows a front view of the non-standard rear exhaust mufflers that were found to be fitted on the Insured Vehicle at the time of our inspection.



**Photo 9** shows a close up top view of the non-standard rear exhaust mufflers that were found to be fitted on the Insured Vehicle at the time of our inspection. The brand of the rear exhaust mufflers was 'AKRAPOVIC' (circled).



**Photo 10** shows a close up view of the non-standard mid pipe that was found to be fitted on the Insured Vehicle at the time of our inspection (arrowed). The brand of the rear exhaust mufflers was 'AKRAPOVIC'.



**Photo 11** shows the non-standard rim found to be fitted on the Insured Vehicle at the time of our inspection. The 20- inch alloy rims fitted on the Insured Vehicle were not the standard type for the Insured Vehicle.

### **Investigation and Technical Analysis**

8. For this particular case, the fire appears to have originated within the interior compartment of the Insured Vehicle, somewhere under the right rear passenger seats which is where the petrol tank is located. 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 the top portion of the petrol tank. These 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 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 top portion of the petrol tank, in the immediate vicinity of where these whitish burn marks were found, would also support our findings of where the fire to the Insured Vehicle had originated. See photos 12 & 13 below.



**Photo 12** shows the burn pattern and whitish burn marks that were found on the exterior surface of the top portion of the petrol tank of the Insured Vehicle (circled). 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.

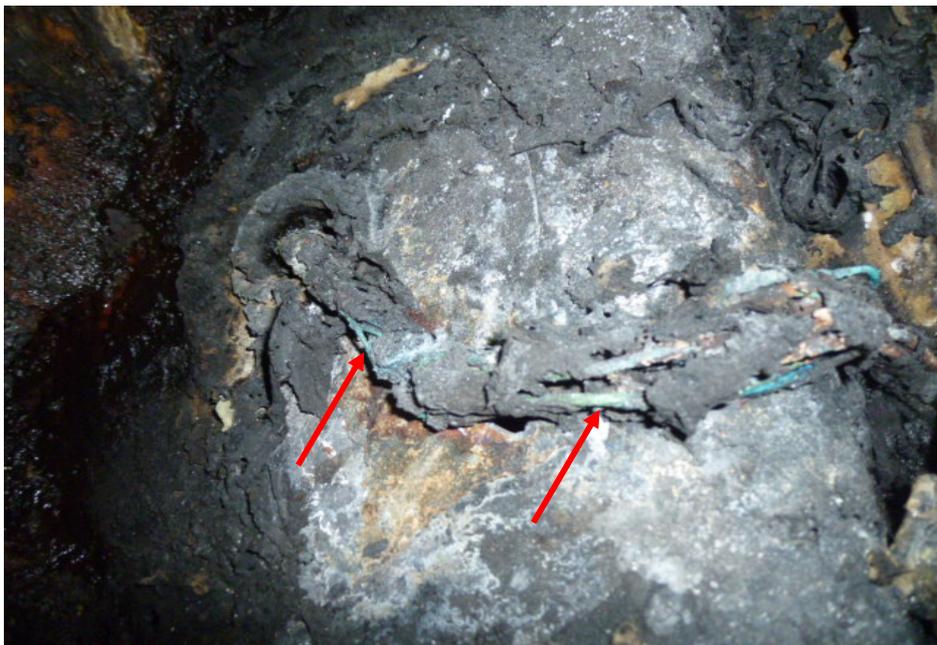


**Photo 13** shows a closer view of the rust that had developed on the exterior surface of the top portion of the petrol tank of the Insured Vehicle (arrowed). The development of rust is an indication that this area was subjected to prolonged exposure to high heat intensity, which had caused the steel/metal 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 from the petrol tank.

9. Upon closer examination of the petrol tank, which was where the fire to the Insured Vehicle had likely started, we had found traces of greenish residue on several stretches of burnt wirings. 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 then appear to suggest that the cause of fire to the Insured Vehicle could have possibly been due to electrical in nature. See photos 14 - 17 below.



**Photo 14** shows the burnt wirings around the petrol tank which is in the immediate vicinity where the fire to the Insured Vehicle had likely started. Upon closer examination, we had found traces of greenish residue on several stretches of these burnt wirings (circled). 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 15** shows a closer view of the greenish residue found on several stretches of burnt wirings (arrowed). The presence of such greenish residue suggests occurrence of an electrical short circuit.



**Photo 16** shows a close up view of the greenish residue found on several stretches of burnt wirings (red arrows). The presence of such greenish residue suggests occurrence of an electrical short circuit.

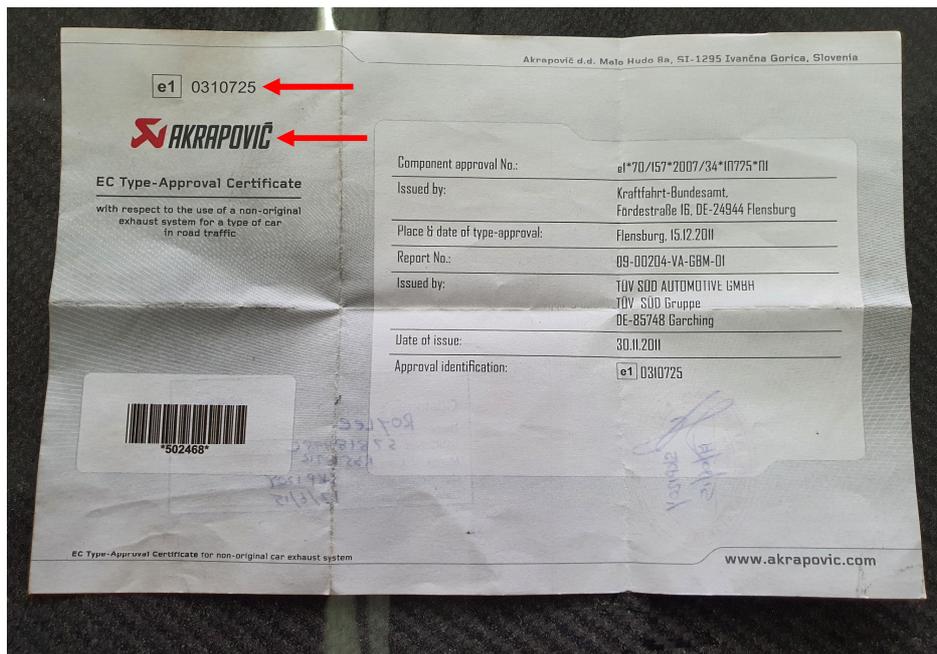


**Photo 17** shows a close up view of the greenish residue found on several stretches of burnt wirings (red arrows). The presence of such greenish residue suggests occurrence of an electrical short circuit.

### **Circumstance of Incident**

10. From the Singapore Police Report No. T/20221219/7042 and Accident Statement, which was made by Mr Tan Meng Li (herein referred to as “**Mr Tan**”), we note that the fire to the Insured Vehicle had started at a time when he was driving. Mr Tan was first alerted of the fire when he detected a burning smell coming from the rear portion of the Insured Vehicle.
11. We managed to speak to Mr Tan 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 Tan, at about 1405 hours on 18 December 2022 he was driving the Insured Vehicle along Upper Paya Lebar Road together with his wife and son from Kovan and were headed towards Joo Chiat Road. As he approached the slip road to Hougang Street 11, Mr Tan mentioned that there was a loss of power to the Insured Vehicle. He slowly moved to the left side of the road and stopped the Insured Vehicle. He tried to start the Insured Vehicle but it could not be started. He then detected a burning smell from the rear portion of the Insured Vehicle. He turned around to see white smoke emitting from the right rear passenger portion of the Insured Vehicle. He immediately exited the Insured Vehicle with his wife and son and called 995.
13. The SCDF arrived within 5 minutes followed by the police. The fire was put out within an hour. He assisted the SCDF in their preliminary investigations. Mr Tan called the China Taiping insurance hotline and made towing arrangements. The tow truck arrived in an hour and the Insured Vehicle was towed to Chuan Ho. Mr Tan lodged a police report at the Traffic Police HQ the following day, on 19 December 2022 at 1554 hours. He made an insurance report at Chuan Ho later that same day at 1758 hours.
14. With regards to the history of the Insured Vehicle, we were able to gather from Mr Tan that the Insured Vehicle was purchased secondhand from a private owner in 2020. He is the owner and main driver of the Insured Vehicle.

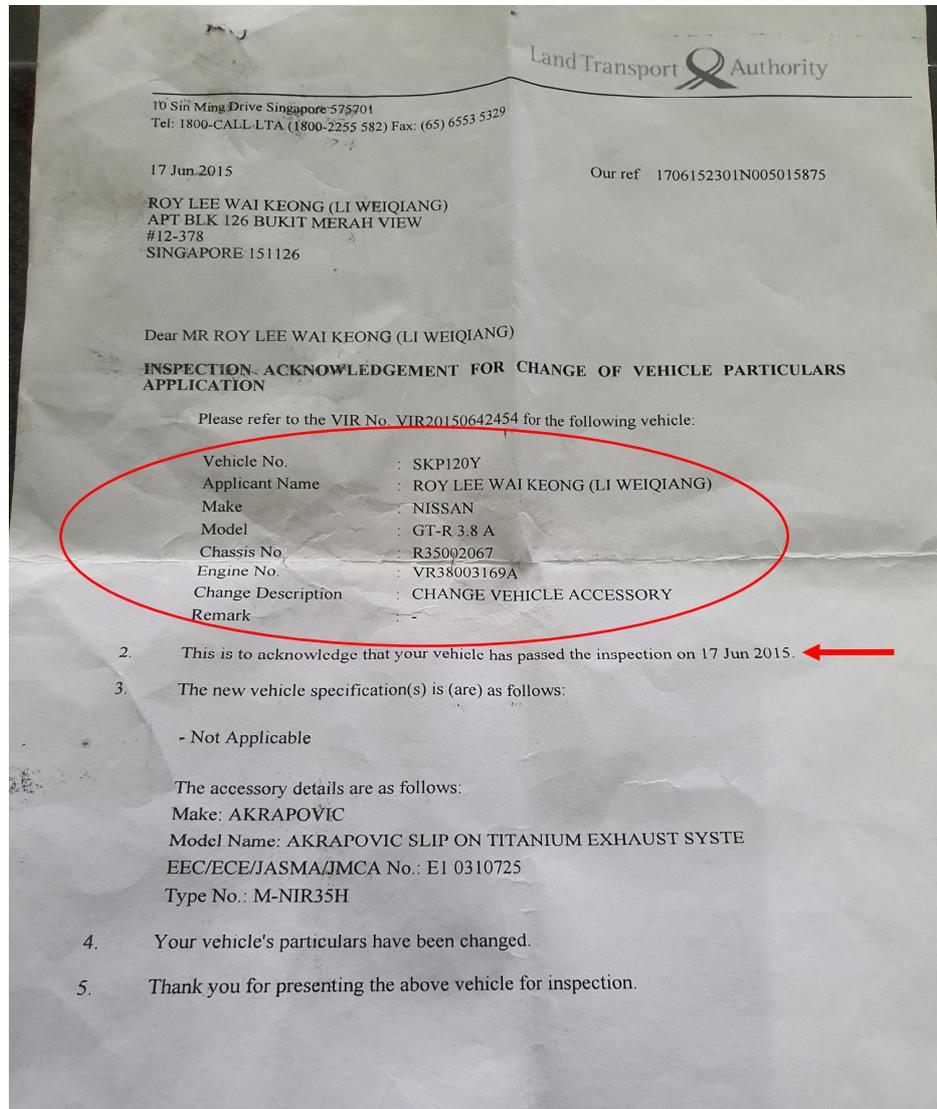
15. We asked Mr Tan regarding the aftermarket electronic boost controller, non-standard mid pipe and rear exhaust mufflers as well as 20- inch alloy rims that were fitted onto the Insured Vehicle. He informed us that the aftermarket electronic boost controller, non- standard mid pipe and rear exhaust mufflers as well as aftermarket 20- inch alloy rims were already fitted onto the Insured Vehicle when he purchased it.
16. As for the aftermarket mid pipe and rear exhaust mufflers, Mr Tan mentioned that the aftermarket mid pipe and rear exhaust mufflers were fitted onto the Insured Vehicle on 17 June 2015 and inspected on the same day by the previous owner. We were able to obtain the exhaust authentication certificate as well as the inspection acknowledgement letter issued by the LTA to prove that the aftermarket mid pipe and rear exhaust mufflers had passed the mandatory inspection on 17 June 2015. See photos 18 – 20 below.



**Photo 18** shows the front copy of the AKRAPOVIC mid pipe and rear exhaust mufflers authentication certificate with its serial number (arrowed).



Photo 19 shows the rear copy of the AKRAPOVIC mid pipe and rear exhaust mufflers authentication certificate. The mid pipe and rear exhaust mufflers were fitted onto the Insured Vehicle on 17 June 2015 (arrowed) and had passed the mandatory inspection at STA Inspection Centre on 17 June 2015 (circled).



**Photo 20** shows the inspection acknowledgement letter issued by the LTA to prove that the AKRAPOVIC mid pipe and rear exhaust mufflers fitted onto the Insured Vehicle (circled) had passed the mandatory inspection on 17 June 2015 (arrowed).

17. Pertaining to the maintenance aspect, Mr Tan mentioned that he sends the Insured Vehicle for periodic servicing. He services the Insured Vehicle at Chuan Ho. He had the Insured Vehicle serviced about a month prior to the incident on 23 November 2022.

18. During the course of our investigations, we were able to obtain from Chuan Ho, a tax invoice of the most recent servicing and repairs done to the Insured Vehicle. The servicing package had included the changing of engine oil and oil filter. See Invoice 1 below.



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Specialise In Nano-Tech Spray-Painting, Waterborne Paint, Accident Claims, Panel Beating Repair, Grooming, Polishing And Nano-Tech Ceramic Coating

INVOICE NO : CH005526  
INVOICE DATE : 29/11/2022

CUSTOMER ID : MR CALEB	VEH PLATE : SMW 3361 M
CUSTOMER CONTACT : 9790 8446	VEH MAKE / MODEL : NISSAN / GTR
DATE & TIME IN : 23/11/2022 - 09:00 AM	VEH COLOUR : KAD
DATE & TIME OUT : 29/11/2022 - 06:00 PM	VEH CHASSIS : R35002067
	VEH MILEAGE : 150877 KM

REMARKS :

S/N	DESCRIPTION	AMOUNT
1	STA INSPECTION	\$74.90
2	WHOLE CAR QUARTZ NANO TECH WATER BASED POLISHING SURFACE PAINT CORRECTION SURFACE PH NEUTRAL SEALANT APPLICATION	\$550.00
3	DISMANTLE 2X DOOR PANEL TO FACILITATE INSTALLATION OF 1 SET FOCAL DOOR SPEAKER	\$780.00
4	DISMANTLE BUMPER, MEND AND REINFORCEMENT OF FRONT BUMPER LIP SAND,PATCH AND SPRAY PAINT O.N FRONT BUMPER LIP	\$320.00
5	2X DOOR WINDOW TINTING CAR COOL	\$220.00
6	ENGINE OIL ESSO GTR SPEC 10W50 6LITRES	\$230.00
7	NISSAN OIL FILTER	\$18.00
8	LABOUR TO SERVICE AND REPLACE THE ABOVE MENTIONED	\$60.00
<b>GRAND TOTAL</b>		<b>\$2252.90</b>



CH CHUAN HO PTE LTD

CUSTOMER'S SIGNATURE

Invoice 1 shows the servicing done on the Insured Vehicle on 23 November 2022 (arrowed). The servicing package had included the changing of engine oil and oil filter (circled).

19. Mr Tan mentioned that since the latest servicing was done he had not experienced any other mechanical or electrical problems with the Insured Vehicle. He also mentioned that there were neither warning lights displayed nor was there an abnormal rise in temperature of the Insured Vehicle while he was driving before the incident occurred.

20. Mr Tan mentioned that since the purchase of the Insured Vehicle, he has not done any modification(s) and/or additionally fitted any electrical or electronic component(s) to the Insured Vehicle.

### **Incident Scene Photographs**

21. We were able to obtain from Mr Tan photographs of the Insured Vehicle he had taken during the fire as well as 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 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 where the Insured Vehicle was positioned. See photos 21 – 23 below.



**Photo 21** shows the arrival of the SCDF not long after the Insured Vehicle caught fire. 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 SCDF responded to the incident (arrowed).



**Photo 22** shows the SCDF fire investigators performing preliminary investigations on the Insured Vehicle after the fire was extinguished (arrowed).



**Photo 23** shows the Insured Vehicle at the incident scene after the fire was extinguished. The severity of damage of the right rear passenger portion of the Insured Vehicle (arrowed) as compared to the left portion had corresponded to the events that were related to us by Mr Tan, which is the fire had started from the right rear passenger portion of the Insured Vehicle.

22. 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 Mr Tan had mentioned to us there were no indications of abnormally high temperatures on the Insured Vehicle when he drove the Insured Vehicle the day before the incident occurred.
23. 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.
24. 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 burnt wirings found in the petrol tank of the Insured Vehicle, which was earlier discussed in paragraph 9 above.
25. 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 30 January 2015 for the steering column. There was a second manufacturer recall on 22 May 2015 for the actuator. However all the recalls were not rectified. See search result from LTA below.

Land Transport Authority	
<b>Vehicle Recall Details</b>	
<small>ONLY INFORMATION ON VEHICLE RECALLS SUBMITTED FROM 9 APRIL 2007 IS AVAILABLE</small>	
<i>Owner ID Type</i> Singapore NRIC	<i>Owner ID</i> 259I ←
<i>Vehicle No.</i> SMW3361M ←	<i>Make/Model</i> NISSAN/ GT-R 3.8 A
<i>Engine No.:</i> VR38003169A	<i>Chassis No.:</i> R35002067

<b>Recall No.: R2016070257</b>	
Manufacturer Recall Date: 22 May 2015 ←	Estimated Completion Year of Recall: 2018
Brief Description (As Provided by Motor Dealer): Due to inappropriate sealing structure at the tightening area of the cylinder of actuator for the pop-up engine hood, the water may enter into the actuator. As a result, the pop-up engine hood may not be lifted adequately at a frontal vehicle collision. ←	Date Rectified: - ←
Hotline Information: KENNETH at 81987505	
For more details, contact VINCAR PTE. LTD.	
<b>Recall No.: R2015030097</b>	
Manufacturer Recall Date: 30 Jan 2015 ←	Estimated Completion Year of Recall: 2015
Brief Description (As Provided by Motor Dealer): Due to an inappropriate roundness of the outer tube in the steering column, the load to the inner bearing may be uneven. ←	Date Rectified: - ←
Hotline Information: KENNETH at 81987505	
For more details, contact VINCAR PTE. LTD.	
Printed on 05 Jan 2023 12:57:36	
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## Conclusion

26. 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 petrol tank of the Insured Vehicle. The wirings were original factory wirings of the Insured Vehicle. The electrical fire had radiated to the surrounding components leading to fire within the interior compartment of the Insured Vehicle.

27. 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.
28. We found the Insured Vehicle to be fitted with an electronic boost controller, non-standard rear exhaust mufflers and aftermarket 20- inch alloy rims. The abovementioned electronic boost controller and rims do not require prior approval from LTA however the non-standard mid pipe and rear exhaust mufflers would require prior approval from LTA. Mr Tan has provided documents to prove that the non-standard mid pipe and rear exhaust mufflers has been approved by the LTA.
29. We are further of the opinion that the additionally fitted electrical/electronic component found on the Insured Vehicle could have possibly caused overloading to the electrical system of the Insured Vehicle. However considering that the installation was carried out before the Insured Vehicle was purchased which was approximately more than a few years prior to the fire incident, the overloading was likely to be minimal.
30. Although the aftermarket alloy rims, mid pipe and rear exhaust mufflers fitted on the Insured Vehicle were not the standard type for the Insured Vehicle, we are of the view that these parts did not cause and/or contribute to the fire incident.
31. 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.

32. SCDF was activated to attend to the fire incident and a fire report pertaining to their findings will likely be forth coming. We have applied for this fire report and will forward a copy of the report once it is made available to us.

**Muhd Nazril***Senior 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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