

Your Ref: SNM21D207649/C01/TANKW
Our Ref : CS4/CTI22000190/N

11 January 2022

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 SJY 8264C ON 23 DECEMBER 2021**

1. We refer to your letter dated 6 January 2022 and the instructions therein.
2. Our analysis, comments and opinions with respect to the cause of fire to the Motor Vehicle SJY 8264C (herein referred to as "**Insured Vehicle**") are set out below.

Inspection of the Motor Vehicle

3. The Insured Vehicle was physically inspected on 7 January 2022 at the premises of Auto Insure Pte. Ltd. (herein referred to as "**Auto Insure**") located at 6 Marsiling Lane, Singapore 739145.
4. A static inspection was carried out to the Insured Vehicle where the following general information was recorded:-

Vehicle Registration No.	: SJY 8264C
Make / Model	: HONDA CIVIC 1.8L 5AT
Chassis No	: JHMFD1630AS200066
Year of Registration	: October 2010
Mileage	: N.A (wiring affected)

5. The exterior front body of the Insured Vehicle sustained visible fire damage. This included its front windscreen, front bonnet, headlights, front bumper, side panels, front rims and front tyres.
6. The fire had resulted in extensive damage to the engine compartment of the Insured Vehicle. Most of the components inside the engine compartment were found to be severely burnt and/or melted as a result of the fire. See photos 1 – 6 below.



Photo 1 shows the general view of the frontal portion of the Insured Vehicle at the time of our inspection. The exterior body of the Insured Vehicle had sustained visible fire damage. This included its front windscreen, front bonnet, headlights, front bumper, side panels, front rims and front tyres.



Photo 2 shows the general view of the right portion of the Insured Vehicle at the time of our inspection. The exterior body of the Insured Vehicle had sustained visible fire damage. This included its front windscreen, front bonnet, headlights, front bumper, right front fender, right front rim and right front tyre.



Photo 3 shows the general view of the left portion of the Insured Vehicle at the time of our inspection. The exterior body of the Insured Vehicle had sustained visible fire damage. This included its front windscreen, front bonnet, headlights, front bumper, left front fender, left front rim and left front tyre.



Photo 4 shows a closer view of the front windscreen of the Insured Vehicle at the time of our inspection. The front windscreen had sustained minimal fire damage (arrowed).



Photo 5 shows the interior compartment of the Insured Vehicle at the time of our inspection. The interior compartment of the Insured Vehicle was observed to be relatively unaffected by the fire.



Photo 6 shows a general view of the engine compartment of the Insured Vehicle at the time of our inspection. Most of the components inside the engine compartment were found to be severely burnt and/or melted as a result of 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 aftermarket steering wheel, an onboard diagnostic (OBD) gauge fuel, an aftermarket amplifier, 2 aftermarket speakers, an in-car DVD player, a non- standard rear exhaust muffler and mid pipe, undercarriage brace and aftermarket 17- inch alloy rims. All these fitted components were not the standard type for the Insured Vehicle. See photos 7 - 18 below.



Photo 7 shows the aftermarket steering wheel that was fitted onto the Insured Vehicle upon our inspection (arrowed).



Photo 8 shows the on-board diagnostic (OBD) gauge that was fixed on the right 'A' pillar of the Insured Vehicle. The brand of the gauge was 'LUFI XF REVOLUTION' (circled).



Photo 9 shows the aftermarket amplifier fitted underneath the driver seat of the Insured Vehicle upon our inspection. The brand of the amplifier was 'Nakamichi' (circled).



Photo 10 shows the 1st aftermarket speaker fitted onto the driver door of the Insured Vehicle upon our inspection.



Photo 11 shows the 2nd aftermarket speaker fitted onto the left front passenger door of the Insured Vehicle upon our inspection.



Photo 12 shows the in-car DVD player that was fitted at the centre portion of the front dashboard of the Insured Vehicle upon our inspection. The brand of the DVD player was 'Pioneer' (circled).



Photo 13 shows the undercarriage brace found to be fitted on the Insured Vehicle at the time of our inspection. The brand of the brace was 'Ultra Racing' (circled).



Photo 14 shows a front view of the non-standard rear exhaust muffler that was found to be fitted on the Insured Vehicle at the time of our inspection.



Photo 15 shows a closer left side view of the non-standard rear exhaust muffler that was found to be fitted on the Insured Vehicle at the time of our inspection. The brand of the rear exhaust muffler was 'DRIFT RACING' (arrowed).

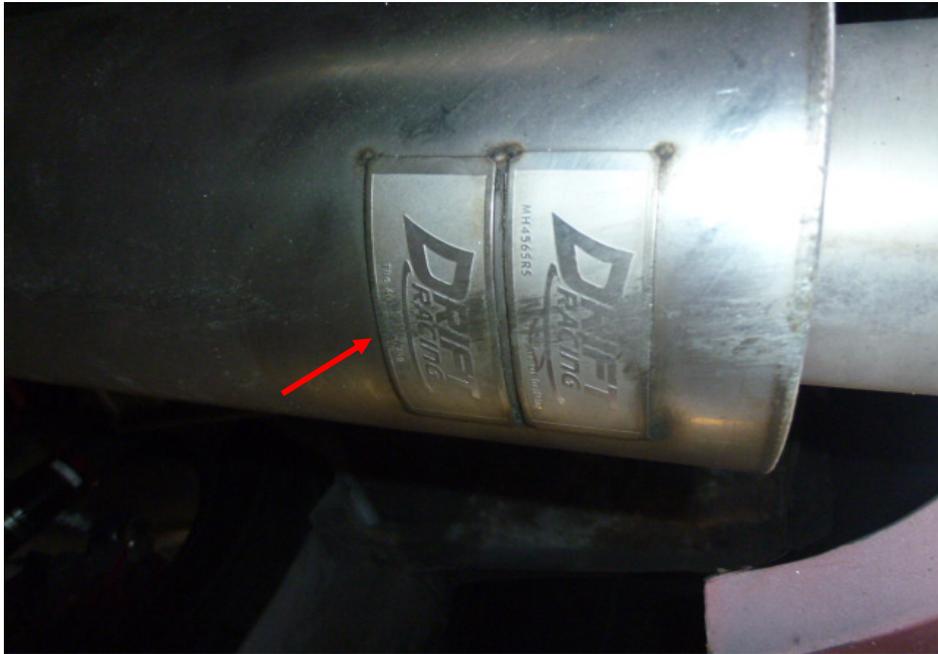


Photo 16 shows a close up view of the non-standard rear exhaust muffler that was found to be fitted on the Insured Vehicle at the time of our inspection. The brand of the rear exhaust muffler was 'DRIFT RACING' (arrowed).



Photo 17 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 muffler was 'DRIFT RACING'.



Photo 18 shows the non-standard rim found to be fitted on the Insured Vehicle at the time of our inspection. The 17- 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 engine compartment of the Insured Vehicle, somewhere around the right portion of the engine compartment. This can be determined from the greenish residue that was found on several stretches of burnt original factory fitted wirings mainly around the right 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. These physical evidences would appear to suggest that the cause of fire to the Insured Vehicle could have possibly been due to electrical in nature. See photos 19 – 23 below.



Photo 19 shows the burnt wirings around the right portion of the engine compartment which is near to the vicinity where the fire to the Insured Vehicle had likely started (circled).

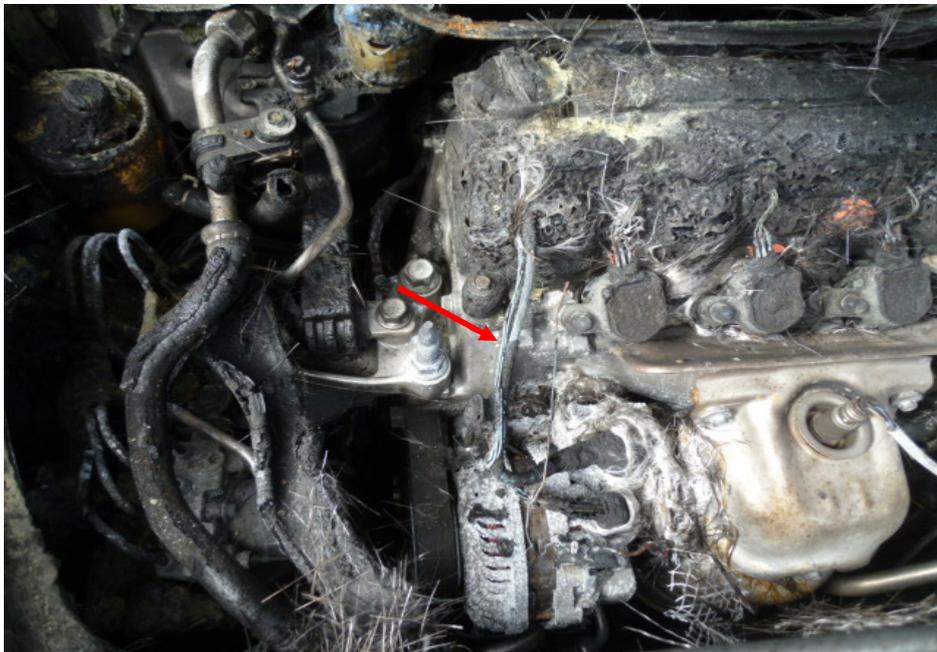


Photo 20 shows a closer view the greenish residue on several stretches of burnt wirings at the right portion of the engine compartment (red arrows). The presence of greenish residue indicates internal heating of copper wires, a sign of an electrical short circuit occurring. The greenish residue is normally left behind from oxidation as a result of chemical reaction involving the copper wires.



Photo 21 shows a closer view the greenish residue on several stretches of burnt wirings at the right portion of the engine compartment (red arrows). 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 22 shows a close up view of the greenish residue on the wirings at the right portion of the engine compartment. The presence of such greenish residue suggests occurrence of an electrical short circuit.

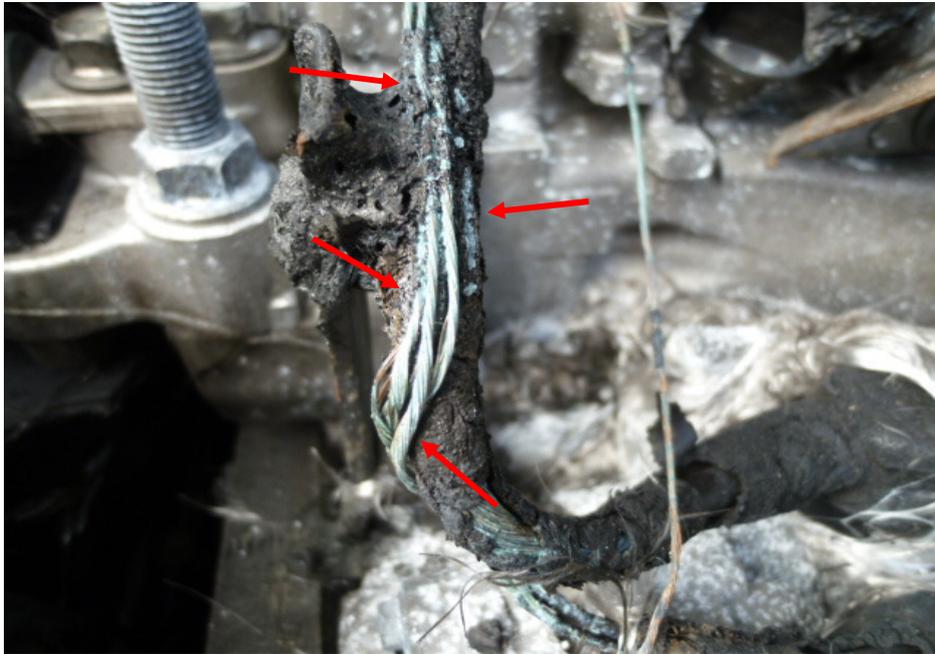


Photo 23 shows a close up view of the greenish residue on several burnt wirings at the right portion of the engine compartment (arrowed). The presence of such greenish residue suggests occurrence of an electrical short circuit.

9. From the Singapore Police Report No. A/20211224/7012 and Accident Statement, which was made by Mr Muhammad Raihan bin Suhaimi (herein referred to as “**Mr Raihan**”), we note that the fire to the Insured Vehicle had started at a time when he was driving. Mr Raihan was first alerted of white smoke emitting from the front bonnet of the Insured Vehicle.
10. We managed to speak to Mr Raihan where we were able to gather further information pertaining to the incident as well as information pertaining to the history of the Insured Vehicle.
11. According to Mr Raihan, the incident occurred at about 1816hrs on 23 December 2021 along Victoria Street. He had fetched his mother from work at Bedok South and sent her home to Block 502 Bedok North. He then proceeded alone to Arab Street to have dinner with his friends. He travelled along PIE (Tuas) towards the KPE (ECP) and took the Rochor Road exit. He turned right at Beach Road and was finding a parking spot. He ended up at Victoria Street and was waiting at the traffic junction to turn left into Ophir Road.

12. Suddenly he saw the 'engine warning' light on the dashboard. A few seconds later, the engine died. Mr Raihan tried to start the engine but there was no cranking sound or any display lights on the dashboard. He then saw white smoke emitting from the right portion of the front bonnet.
13. Mr Raihan immediately tried to exit the Insured Vehicle manually as the doors were electronically locked when the engine died. He managed to exit the Insured Vehicle, went over to the left side of the street and called 995. Fortunately, a group of foreign workers from a nearby construction site came forward with 2 fire extinguishers. They also brought a lorry and sprayed water at the engine compartment. The fire was extinguished in about 5 minutes.
14. SCDF arrived in 10 minutes followed by the police. Firefighters proceeded to make sure that the fire was extinguished. Mr Raihan assisted SCDF personnel in their preliminary investigations. The police asked him a few questions. About half an hour later, traffic police arrived at the incident scene to make sure that no public property was damaged. The SCDF fire investigator came about an hour later and took photographs. Mr Raihan's wife, Ms Huda arrived at the incident scene at 1830hrs. Ms Huda made towing arrangements as soon as she arrived. Ms Huda took a photograph and a video of the incident. The tow truck arrived at 1946hrs. The Insured Vehicle was towed to Auto Insure.
15. Mr Raihan and his wife went to the Kaki Bukit Branch of Auto Insure on 24 December 2021. They were instructed to make a police report first. So they went home and filed an e- report. They then forwarded the police report to Auto Insure.
16. With regards to the history of the Insured Vehicle, we were able to gather from Mr Raihan that the Insured Vehicle belongs to his father, Mr Suhaimi bin Abu Amin and Mr Raihan is the main driver. His wife also drives the Insured Vehicle. The Insured Vehicle was purchased secondhand in 2020 from Optimum Motoring. The COE of the Insured Vehicle was also recently extended for another 10 years by Optimum Motoring. To the best of his recollection, there has not been any major mechanical problem and/or electrical problem with the Insured Vehicle hence the decision to renew the COE of the Insured Vehicle.

17. We asked Mr Raihan regarding the aftermarket steering wheel, onboard diagnostic (OBD) gauge, aftermarket amplifier, 2 aftermarket speakers, in-car DVD player, non- standard mid pipe and rear exhaust muffler, undercarriage brace and aftermarket 17- inch alloy rims that were fitted onto the Insured Vehicle. He informed us that the OBD gauge was fitted so as to monitor the condition of the Insured Vehicle. Mr Raihan mentioned that he replaced the original steering wheel with an aftermarket steering wheel. The amplifier and speakers were installed onto the Insured Vehicle after his father purchased it. He also replaced the original CD player of the Insured Vehicle with a DVD player as well as the original rims with aftermarket 17- inch alloy rims.
18. As for the aftermarket mid pipe rear and exhaust muffler, Mr Raihan mentioned that he purchased the aftermarket mid pipe and rear exhaust muffler after his father purchased the Insured Vehicle. He had the aftermarket mid pipe and rear exhaust muffler fitted onto the Insured Vehicle on 16 November 2021 and inspected on 17 November 2021. 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 muffler had passed the mandatory inspection on 17 November 2021. See photos 24 – 26 below.



Photo 24 shows the front copy of the DRIFT RACING mid pipe and rear exhaust muffler authentication certificate with its serial number (arrowed).

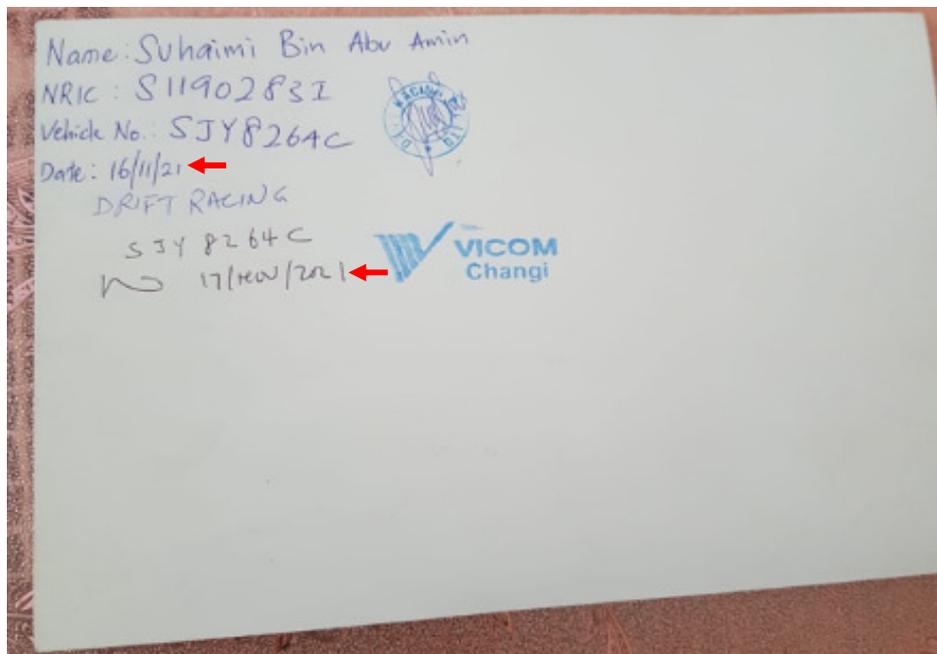


Photo 25 shows the rear copy of the DRIFT RACING mid pipe and rear exhaust muffler authentication certificate. The mid pipe and rear exhaust muffler were fitted onto the Insured Vehicle on 16 November 2021 and had passed the mandatory inspection at Vicom Inspection Centre on 17 November 2021 (arrowed).

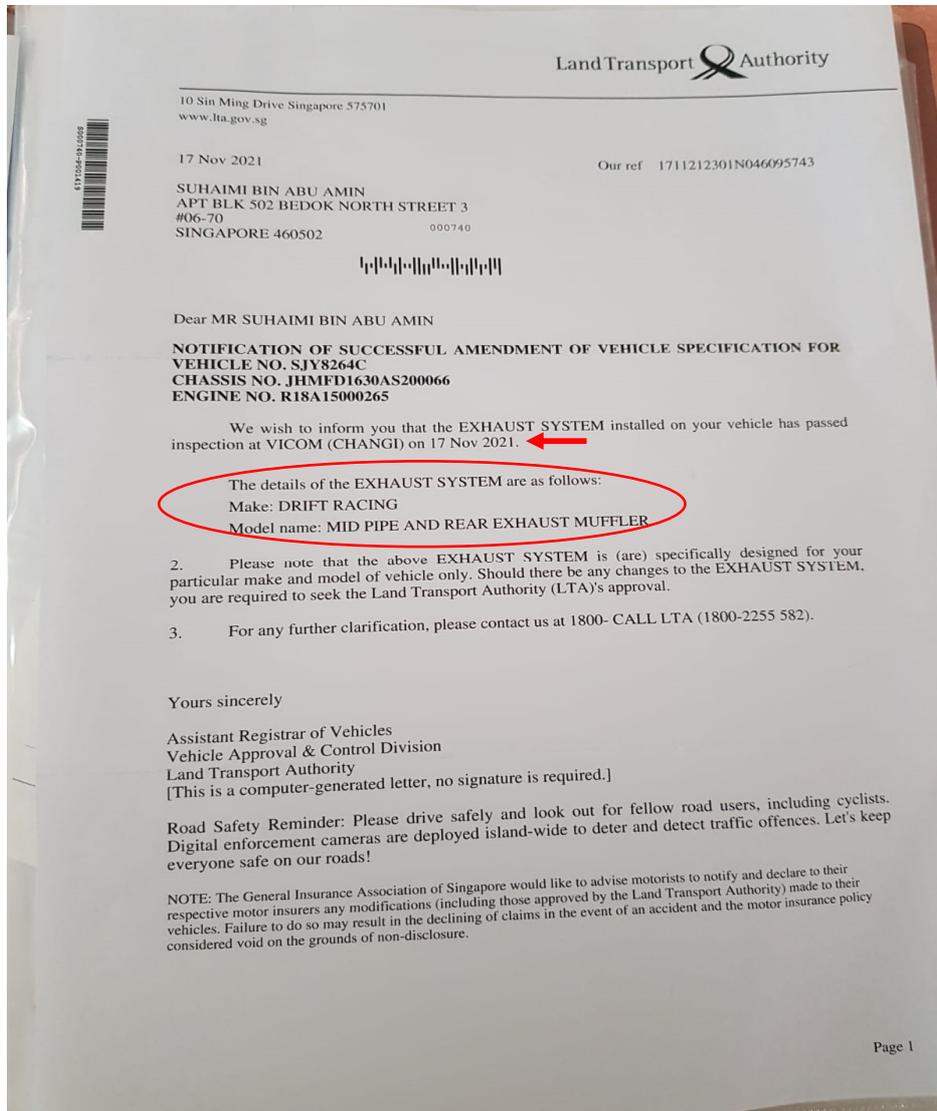
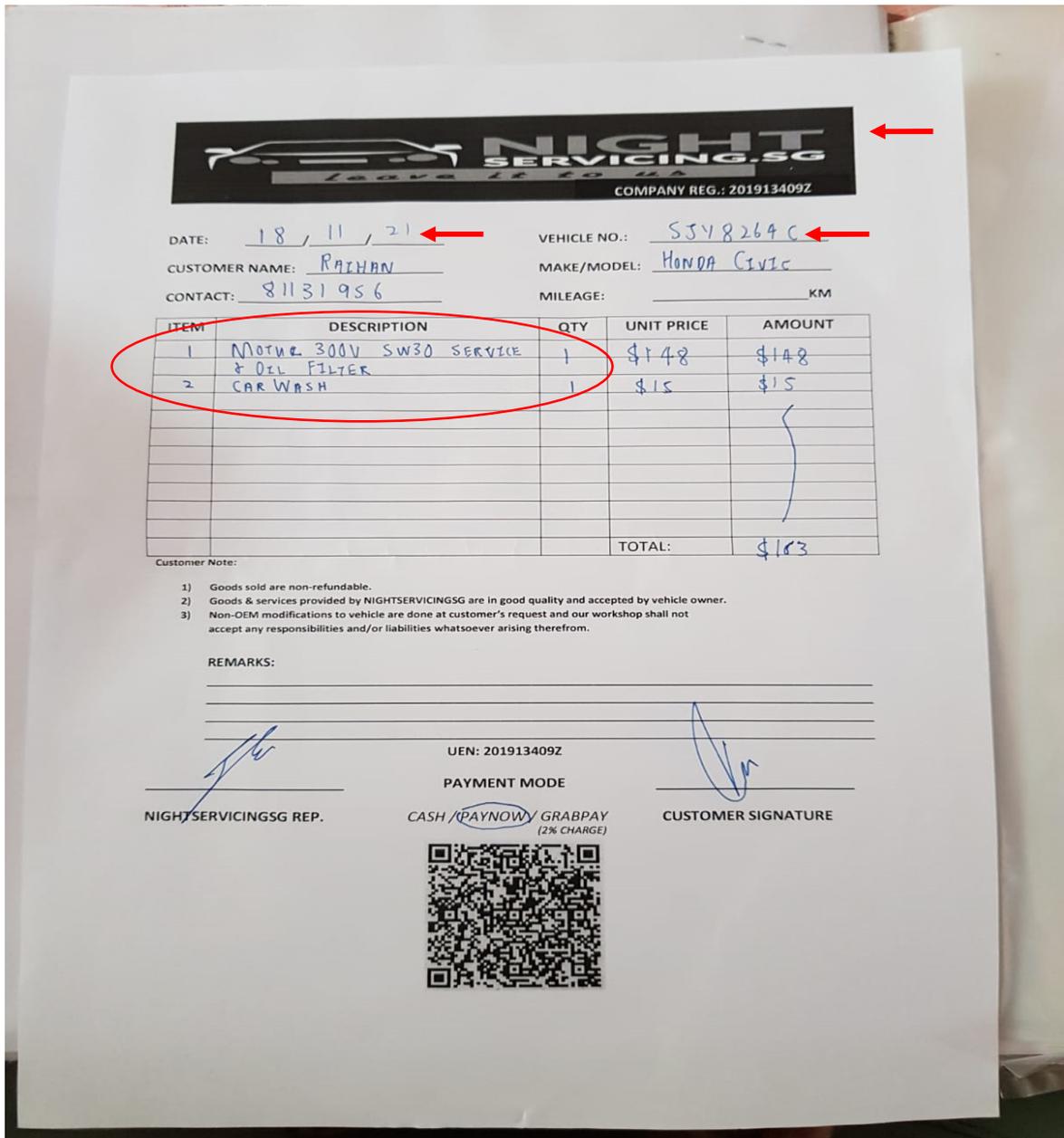


Photo 26 shows the inspection acknowledgement letter issued by the LTA to prove that the DRIFT RACING mid pipe and rear exhaust muffler fitted onto the Insured Vehicle (circled) had passed the mandatory inspection on 17 November 2021 (arrowed).

19. Pertaining to the maintenance aspect, Mr Raihan mentioned that he sends the Insured Vehicle for periodic servicing. He services the Insured Vehicle at NightServicingSg located at 25 Kaki Bukit Road 4, #07-60, Synergy@ Kaki Bukit, Singapore 417800. He had the Insured Vehicle serviced about a month prior to the incident on 18 November 2021.

20. During the course of our investigations, we were able to obtain from Mr Raihan, 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.



NIGHTSERVICINGSG
COMPANY REG.: 201913409Z

DATE: 18, 11, 21 VEHICLE NO.: SJY8264C

CUSTOMER NAME: RAIHAN MAKE/MODEL: HONDA CIVIC

CONTACT: 81131956 MILEAGE: _____ KM

ITEM	DESCRIPTION	QTY	UNIT PRICE	AMOUNT
1	MOTOR 300V SW30 SERVICE & OIL FILTER	1	\$148	\$148
2	CAR WASH	1	\$15	\$15
TOTAL:				\$163

Customer Note:

- 1) Goods sold are non-refundable.
- 2) Goods & services provided by NIGHTSERVICINGSG are in good quality and accepted by vehicle owner.
- 3) Non-OEM modifications to vehicle are done at customer's request and our workshop shall not accept any responsibilities and/or liabilities whatsoever arising therefrom.

REMARKS:

UEN: 201913409Z

PAYMENT MODE: CASH / PAYNOW / GRABPAY (2% CHARGE)

NIGHTSERVICINGSG REP. CUSTOMER SIGNATURE



Invoice 1 shows the servicing and repairs done on the Insured Vehicle on 18 November 2021 (arrowed). The servicing package had included the changing of engine oil and oil filter (circled).

21. Mr Raihan mentioned that since the latest servicing and repairs were 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.

Incident Scene Photographs

22. We were able to obtain a photograph which was taken by Ms Huda at the incident location. The photograph was taken when the Insured Vehicle was on fire before the arrival of the SCDF.

23. In general, the information that could be gathered from this photograph had corresponded to the events that were related to us by Mr Raihan. Our close examination of this photograph also showed no unusual foreign material(s) and/or object(s) found on the ground in the immediate area of the road along Victoria Street where the Insured Vehicle was positioned. See photo 27 below.



Photo 27 shows the Insured Vehicle on fire. In general, the information that could be gathered from this photograph had corresponded to the events that were related to us by Mr Raihan, which is he called 995 after exiting the Insured Vehicle (arrowed).

24. 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.
25. 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 Raihan had mentioned to us that there were no indications of abnormally high temperatures on the Insured Vehicle.
26. 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 photograph 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.
27. 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 engine compartment of the Insured Vehicle, which was earlier discussed in paragraph 8 above.
28. 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 25 July 2011 for the water pump pulley area. There was a second manufacturer recall on 9 July 2015 for the SRS airbag inflators. There was a third manufacturer recall on 9 June 2016 for the propellant wafers in the airbag inflators. However all the recalls were 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 283I ←
Vehicle No. SJY8264C ←	Make/Model HONDA/ CIVIC 1.8L 5AT
Engine No.: R18A15000265	Chassis No.: JHMF1630AS200066

Recall Details

Recall No.: R2015080142

Manufacturer Recall Date:

09 Jul 2015 ←

Estimated Completion Year of Recall:

2018

Brief Description (As Provided by Motor Dealer):

As results of investigating market returned parts, for specific types of driver SRS airbag inflators, some were confirmed to have wide ranges of density variations with propellants. Therefore, even though the cause has not be determined, since there is a risk of abnormal deployment when airbag is deployed, relevant inflators will be replaced with new parts as preventative action. ←

Date Rectified:

24 Jul 2017 ←

Hotline Information:

KAH MOTOR CO SHDN BHD at 68413838

For more details, contact KAH MOTOR COMPANY SDN. BERHAD.

Recall No.: R2016070265

Manufacturer Recall Date:

09 Jun 2016 ←

Estimated Completion Year of Recall:

2019

Brief Description (As Provided by Motor Dealer):

According to the equipment defect notifications filed by Takata, the propellant wafers in some of the subject inflators may degrade over time, which could lead to over-aggressive combustion in the event the airbag is activated. In the event of an inflator rupture, metal fragments could pass through the airbag cushion material possible causing serious injury or fatality to vehicle occupants. ←

Date Rectified:

24 Jul 2017 ←

Hotline Information:

KAH MOTOR CO SDN BHD at 68413838

For more details, contact KAH MOTOR COMPANY SDN. BERHAD.

Recall No.: R2011070047

Manufacturer Recall Date:

25 Jul 2011 ←

Estimated Completion Year of Recall:

2018

Brief Description (As Provided by Motor Dealer):

If the convex area on back of the water pump pulley tightening hole gets worn as is repeatedly subject to auxiliary belt load, the tightening bolt may come loose and eventually break, causing the auxiliary belt to detach, and power generation failure and cooling failure may result. Should this happen, the warning light would come on, the engine would stop and unable to restart. ←

Date Rectified:

29 Dec 2011 ←

Hotline Information:

KAH MOTOR CO.SDN.BHD at 68413838

For more details, contact KAH MOTOR COMPANY SDN. BERHAD.

Conclusion

29. 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 right portion of the engine compartment. The wirings were original factory fitted wirings of the Insured Vehicle.
30. 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.
31. We found the Insured Vehicle to be fitted with an aftermarket steering wheel, an onboard diagnostic (OBD) gauge fuel, an aftermarket amplifier, 2 aftermarket speakers, an in-car DVD player, a non- standard mid pipe and rear exhaust muffler, undercarriage brace and aftermarket 17- inch alloy rims. The abovementioned electrical/electronic components, undercarriage brace and rims do not require prior approval from LTA however the non-standard mid pipe and rear exhaust muffler would require prior approval from LTA. Mr Raihan has provided documents to prove that the non-standard mid pipe and rear exhaust muffler has been approved by the LTA.
32. We are further of the opinion that the additionally fitted electrical/electronic components 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 shortly after the Insured Vehicle was purchased which was approximately more than a year prior to the fire incident, the overloading was likely to be minimal.
33. Although the aftermarket steering wheel, alloy rims, undercarriage brace, mid pipe and rear exhaust muffler 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.

34. 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.

**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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