



Your Ref: 800SWAISCL20220073SL
Our Ref : CS4/AIS22002915/N

19 August 2022

Allianz Insurance Singapore Pte. Ltd.

79 Robinson Road #09-01
Singapore 068897
(Claims Division)

**TECHNICAL INVESTIGATION REPORT OF FIRE INCIDENT INVOLVING THE
MOTOR VEHICLE YN 5916E ON 19 MARCH 2022**

1. We refer to your letter dated 28 March 2022 and the instructions therein.
2. Our analysis, comments and opinions with respect to the cause of fire to the Motor Vehicle YN 5916E (herein referred to as “**Insured Vehicle**”) are set out below.

Inspection of the Motor Vehicle

3. The Insured Vehicle was physically inspected on 29 March 2022 at the premises of Klenco Singapore (herein referred to as “**Klenco**”) located at 18 Gul Crescent, Singapore 629527.
4. A static inspection was carried out to the Insured Vehicle where the following general information was recorded:-

Vehicle Registration No.	: YN 5916E
Make / Model	: DULEVO 5000 VELOCE EU5 A
Chassis No	: ZA9S5020E5AC38189
Year of Registration	: August 2014
Mileage	: N.A (wiring affected)

5. The Insured Vehicle was observed to have sustained extensive fire damage at its frontal portion. The body panels at the frontal portion and the undercarriage components at the front underside were found to have been burnt to char. Parts inside the interior compartment were also observed to be completely burnt, leaving charred skeletal remains. The engine and transmission of the Insured Vehicle were also affected.

6. At the time of inspection, we did not find any unusual skeletal remains which could have suggested that there was possible modification(s) and/or additionally fitted electronic and/or electrical component(s) on the Insured Vehicle. See photos 1 – 6 below.



Photo 1 shows a general view of the rear portion of the Insured Vehicle. The rear portion was observed to be relatively unaffected by the fire.



Photo 2 shows a general view of the frontal portion of the Insured Vehicle at the time of our inspection. The Insured Vehicle was observed to have sustained extensive fire damage at its frontal portion. The body panels at the frontal portion and the undercarriage components at the front underside were found to have been burnt to char.



Photo 3 shows a general view of the right frontal body of the Insured Vehicle at the time of inspection. The Insured Vehicle was observed to have sustained extensive fire damage at its frontal portion. The body panels at the frontal portion were found to have been burnt to char.



Photo 4 shows the interior compartment of the Insured Vehicle. All the parts inside the interior compartment were found to be burnt and/or melted. Its front seats, roof upholstery, carpet and various trims were all burnt and/or melted as a result of the fire



Photo 5 shows the underside of the Insured Vehicle, at its frontal area. The various undercarriage components at the front underside of the Insured Vehicle were observed to be affected. This had included components of the braking system and steering system.



Photo 6 shows the engine compartment, which was located at the back of the Insured Vehicle's front cabin. The various parts and components within the engine compartment of the Insured Vehicle were all affected by the fire. This had included the engine of the Insured Vehicle.

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 from the right centre portion of the Insured Vehicle, which houses the engine. This can be determined from the burn pattern and the high heat intensity burn marks (whitish burn marks) found on the right centre portion of the Insured Vehicle and also the rust that had developed at the areas around the engine compartment.
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. Hence the rust that had developed around the engine compartment of the Insured Vehicle is an indication that the fire to the Insured Vehicle had originated from the engine compartment. See photo 7 below.



Photo 7 shows the engine compartment of the Insured Vehicle where the burn pattern and whitish burn marks were found (arrowed). Such whitish burn marks are a result of exposure to prolonged heat intensity, which had caused the steel/metal material of the engine compartment to be exposed to natural environmental condition. Hence the rust that had developed around the engine compartment of the Insured Vehicle (circled) is an indication that the fire to the Insured Vehicle had originated from the engine compartment.

10. Upon closer examination around the areas in closest proximity to the engine compartment which was where the fire to the Insured Vehicle had likely started, we had found several stretches of burnt wirings with greenish residue. These wirings were original factory fitted wirings around 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. This physical evidence would appear to suggest that the cause of fire to the Insured Vehicle could have possibly been due to electrical in nature. See photos 8 - 11 below.



Photo 8 shows upon closer examination around the areas in closest proximity to the engine compartment which was where the fire to the Insured Vehicle had likely started, we had found several stretches of burnt wirings with greenish residue. These wirings were original factory fitted wirings around the engine compartment. The presence of such greenish residue suggests occurrence of an electrical short circuit. The greenish residue is normally left behind from oxidation as a result of chemical reaction involving the copper wires.



Photo 9 shows a closer view of the several original factory fitted wirings around the engine compartment with greenish residue (arrowed). The presence of such greenish residue suggests occurrence of an electrical short circuit.



Photo 10 shows a closer view of the several original factory fitted wirings around the engine compartment with greenish residue (arrowed). The presence of such greenish residue suggests occurrence of an electrical short circuit.



Photo 11 shows a close up view of the several original factory fitted wirings around the engine compartment with greenish residue (arrowed). The presence of such greenish residue suggests occurrence of an electrical short circuit.

11. From the Singapore Accident Statement which was made by Mr Rose Lee bin Sapari (herein referred to as “**Mr Lee**”), we note that the fire to the Insured Vehicle had started at a time when he was driving the Insured Vehicle along the AYE. Mr Lee was first alerted of the fire by another motorist.
12. We managed to speak to Mr Lee where we were able to gather further information pertaining to the incident as well as to the history of the Insured Vehicle.
13. According to Mr Lee, on 19 March 2022 at around 0800 hours, he had collected the Insured Vehicle from Klenco. He was instructed to drive the Insured Vehicle a workshop located in Jurong. He drove the Insured Vehicle along AYE (Tuas) on the left mots lane. Suddenly he saw another motorist signalling to him that something was wrong with the Insured Vehicle. Mr Lee glanced at the right side mirror and noticed that the right portion of the Insured Vehicle was on fire. Mr Lee immediately stopped the Insured Vehicle, switched off the ignition and alighted from the Insured Vehicle. He called his supervisor to report the incident.
14. Within 5 minutes the police had arrived followed by the SCDF. The fire was extinguished fairly quickly. Mr Lee did not take any photographs or videos of the incident. Mr Lee mentioned that the SCDF and police asked him a few questions pertaining to the incident but did not take down his statement. They also asked if he required medical assistance. Mr Lee’s supervisor made towing arrangements. The tow truck arrived within an hour. The Insured Vehicle was towed to Klenco.
15. Mr Lee made an insurance report at Cheng Hoe Motor Pte. Ltd. on 21 March 2022 at 1841 hours.
16. Mr Lee mentioned that he only drove the Insured Vehicle on that day to the workshop. He added that he was usually assigned to another vehicle for work assignments.
17. Mr Lee mentioned that there were neither warning lights displayed nor was there an abnormal rise in temperature throughout the period the Insured Vehicle was driven.
18. With regards to the history of the Insured Vehicle, we were able to gather from Mr Caleb Chia (herein referred to as “**Mr Chia**”) who is the operations executive of Klenco that the Insured Vehicle was purchased new 8 years ago.

19. Pertaining to the maintenance aspect, Mr Chia informed us that the Insured Vehicle was sent for periodical servicing. The vehicle servicing is done at a workshop located in- house.

20. During the course of our investigations, we were able to obtain from Mr Chia the latest servicing and repair records of the Insured Vehicle. The last repairs before the incident was done on 15 July 2021 which had included the replacement of the side brush. The latest servicing before the incident was done on 15 December 2021. The servicing package had included changing of engine oil, oil filter, diesel fuel filter, air filter and water separator filter. The hydraulic oil was also topped up. See invoice 1 below.

Veh No	Department	Description	Date In	Date Out	Mileage	Name Of Mechanic	Driver Name/Contact	Type Of Services	Parts Description	Quantity	Unit Price	Parts Costs	Labour Charge (HRS)
YN 5916 E	← NWIPC	MS		→ 15/7/2021		Ah Yong	→ Sathi 83231007	→ Side Brush Not Working + Servicing				\$ 179.00	\$ 60.00

Veh No	Department	Description	Date In	Date Out	Mileage	Name Of Mechanic	Type Of Services	Parts Description	Parts Costs	Labour Charge (HRS)	Outside Service Charge	Total Costs
YN 5916 E	← NWIPC	MS	15/12/2021	→ 15/12/2021	N/A	Li HuaLei	Hydraulic Leaking + Servicing	→ Engine Oil (SAE 10/40 CI4/SM) 14L + Oil Filter + Diesel Fuel Filter + Air Filter + Water Separator Filter + Hydraulic Oil (SAE 68) 30L	\$ 239.00	\$ 150.00	\$ -	\$ 389.00

Invoice 1 shows the last repairs and latest servicing done to the Insured Vehicle on 15 July 2021 and 15 December 2021 at the Klenco in- house workshop (red arrows) which included replacement of the side brush, changing of engine oil, oil filter, diesel fuel filter, air filter and water separator filter. The hydraulic oil was also topped up (black arrows).

21. To the best of Mr Chia's recollection, there has not been any major mechanical problem and/or electrical problem with the Insured Vehicle. He also informed us that ever since the Insured Vehicle was purchased, there has not been any modification(s) and/or additional electrical or electronic component(s) fitted to the Insured Vehicle.

Incident Scene Photographs

22. We were able to obtain photographs from the Singapore Accident Statement of the Insured Vehicle at the incident location. The photographs were taken during the fire and after the fire to the Insured Vehicle were extinguished.

23. In general, the information that could be gathered from these photographs had corresponded to the events that were related to us by Mr Lee. 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 12 & 13 below.



Photo 12 shows the SCDF attending to the fire.



Photo 13 shows the Insured Vehicle after the fire was extinguished. In general, the information gathered from this photograph had corresponded to Mr Lee's statement, which is the fire had started from the engine compartment (arrowed).

24. 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 Lee had mentioned to us there were no indications of abnormally high temperatures on the Insured Vehicle when he was driving before the incident occurred.
25. 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 location where the Insured Vehicle caught fire was observed to be not at a secluded location.
26. 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 wirings that were found beneath the sub engine compartment as well as the wirings leading from the battery of the Insured Vehicle, which was earlier discussed in paragraph 10 above.

27. 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 search result from LTA below.

Land Transport Authority	
Vehicle Recall Details	
ONLY INFORMATION ON VEHICLE RECALLS SUBMITTED FROM 9 APRIL 2007 IS AVAILABLE	
Owner ID Type	Owner ID
Company	155H ←
Vehicle No.	Make/Model
YN5916E ←	DULEVO/ 5000 VELOCE EU5 A
Engine No.:	Chassis No.:
1192225	ZA9S5020E5AC38189
Recall Details:	
No Recall Detail records ←	

Conclusion

28. 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 original factory fitted wirings inside the engine compartment, somewhere around the right centre portion of the Insured Vehicle.

29. 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.

30. 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.

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.

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