

Your Ref : D24010145MFCT
Our Ref : CS/FCI24110385/N

2 December 2024

M/s First Capital Insurance Limited

16 Raffles Quay #42-01
Hong Leong Building
Singapore 048581

**TECHNICAL INVESTIGATION REPORT OF FIRE INCIDENT INVOLVING THE
INSURED VEHICLE SHA 7884U ON 17 NOVEMBER 2024**

1. We refer to your letter dated 19 November 2024 and the instructions therein.
2. Our analysis, comments and opinions with respect to the cause of fire to the insured vehicle SHA 7884U (herein referred to as “**Insured Vehicle**”) are set out below.

Inspection of the Insured Vehicle

3. The Insured Vehicle was physically inspected on 20 November 2024 at the premises of ComfortDelGro Engineering Pte. Ltd. (herein referred to as “**CDGE**”) located 59 Loyang Drive, Singapore 508969. A static inspection was carried out to the Insured Vehicle where the following general information was recorded:-

Vehicle Registration No.	: SHA 7884U
Make / Model	: HYUNDAI SX2 KONA 1.6 GDI HEV
Chassis No	: KMHHB811VRU053347
Year of Registration	: April 2024
Mileage	: N.A. (battery melted)

4. The Insured Vehicle was noted to have sustained fire damage that was confined to its frontal portion, left body and right body. The entire engine compartment of the Insured Vehicle was observed to be severely burnt while the interior compartment was observed to be severely affected by the fire.
5. The fire had resulted in the body parts at the frontal portion left body and right body of the Insured Vehicle to be burnt. This had included its front bumper, front bonnet, front support panel, front grille, front headlamps, front windscreen, front wheel rims, left body, right body and front tyres amongst others. See photos 1 – 6 below.



Photo 1 shows the general view of the right rear portion of the Insured Vehicle at the time of our inspection. The rear portion of the Insured Vehicle was relatively unaffected by the fire.



Photo 2 shows the general view of the frontal portion of the Insured Vehicle at the time of our inspection. The fire damage to the Insured Vehicle was confined to its frontal portion, left body and right body. The entire engine compartment of the Insured Vehicle was observed to be severely burnt while the interior compartment was observed to be severely affected by the fire.



Photo 3 shows the closer view of the right front body of the Insured Vehicle at the time of our inspection. The fire damage to the Insured Vehicle was confined to its frontal portion, left body and right body. Its front bumper, front bonnet, front support panel, front grille, front headlamps, front windscreen, front wheel rims, left body, right body and front tyres were amongst the body parts that were found to have been affected by 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 front windscreen was extensive.



Photo 5 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.



Photo 6 shows the interior compartment of the Insured Vehicle, which was severely affected by the fire.

6. 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

7. For this particular case, the fire appears to have originated within the interior compartment of the Insured Vehicle based on the circumstances of the incident as reported by the driver of the Insured Vehicle.
8. Upon closer examination of the right bottom portion of the driver dashboard panel, which was where the fire to the Insured Vehicle had likely started, we had found faint 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 7 - 9 below.



Photo 7 shows the wirings around the right bottom portion of the driver dashboard panel, which is in the immediate vicinity where the fire to the Insured Vehicle had likely started. We noticed faint traces of greenish residue on several stretches of burnt wirings (circled). The presence of greenish residue indicates internal heating of copper wires, a sign of an electrical short circuit occurring.



Photo 8 shows a closer view of the burnt wirings around the right bottom portion of the driver dashboard panel. We noticed faint traces of greenish residue on several stretches of the burnt wirings (circled). The greenish residue is normally left behind from oxidation as a result of chemical reaction involving the copper wires.

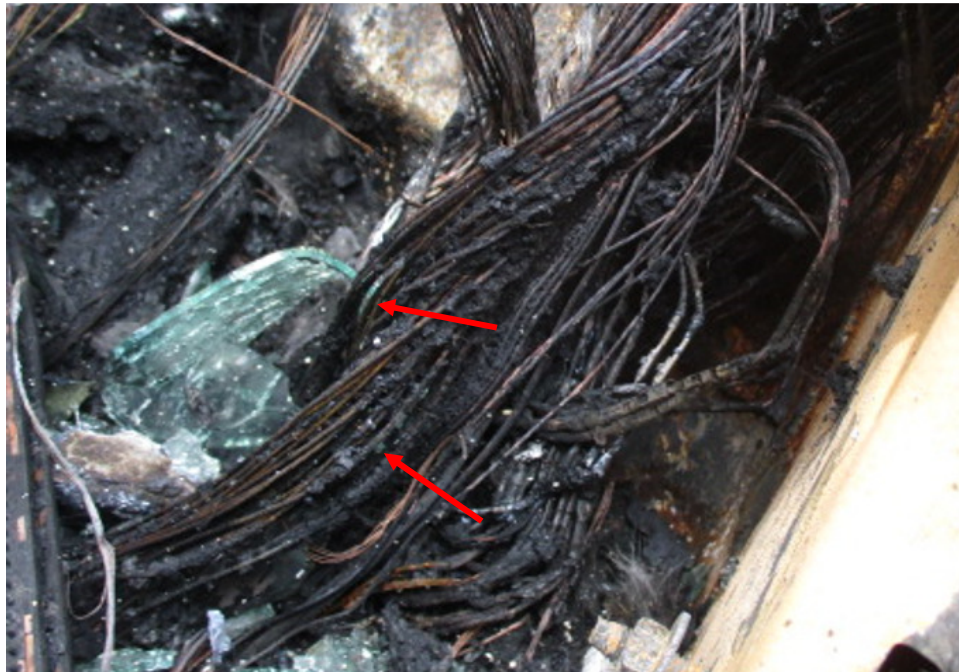


Photo 9 shows a close up view of the faint traces of greenish residue found on several stretches of burnt wirings (arrowed). The presence of such greenish residue suggests occurrence of an electrical short circuit.

9. From the Singapore Accident Statement which was made by Mr Cheong Chun Kiong (herein referred to as “**Mr Cheong**”), we note that the fire to the Insured Vehicle had started at a time when he was driving. Mr Cheong was first alerted of the fire when he saw flames emitting from the right bottom portion of the driver dashboard panel of the Insured Vehicle.
10. We were able to gather from Mr Cheong further information pertaining to the incident as well as information pertaining to the history of the Insured Vehicle.
11. According to Mr Cheong, in the early morning of 17 November 2024 at around 0300 hours, he had dropped off a passenger at Star Vista and was driving along Holland Road hoping to flag another passenger. Whilst stationary at a traffic stop, he noticed white smoke emitting from the right bottom portion of the driver dashboard panel of the Insured Vehicle, specifically around the front bonnet release lever. He also noticed white smoke emitting from the right portion of the front bonnet. He wound down all 4 windows as he thought the air conditioning was too cold. He called CDGE to inform them of the issue and requested for towing. As he drove towards Napier Road, he saw flames emitting from the area near the front bonnet release lever.
12. He stopped the Insured Vehicle near a bus stop, switched off the engine and tried to put out the fire with his right hand. However the fire was too big and Mr Cheong burnt his right hand. He immediately took his wallet and mobile phone and exited the Insured Vehicle. By then, a passerby had witnessed the fire and called 995. Within 15 minutes, the police arrived followed by the SCDF and an ambulance.
13. As firefighters were attempting to put out the fire, Mr Cheong was examined by paramedics. Since he had suffered second- degree burns to his right hand, paramedics advised him to go to the hospital for treatment. As he was being prepped to be taken to the Singapore General Hospital, Mr Cheong assisted the SCDF in their preliminary investigations. The police also took Mr Cheong’s statement. The Insured Vehicle was towed to CDGE. Mr Cheong filed an insurance report the following day, on 18 November 2024 at 1519 hours at CDGE.

14. With regard to the history of the Insured Vehicle, we were able to gather from Mr Cheong that he is the relief night shift driver of the Insured Vehicle. He had been driving the Insured Vehicle for the past 8 months. He mentioned that he had no issues whilst driving the Insured Vehicle. There was no loss of power to the Insured Vehicle.
15. Mr Cheong also informed us that ever since he drove the Insured Vehicle, he has not done any modification(s) and/or additionally fitted any electrical or electronic component(s) to the Insured Vehicle.
16. Mr Cheong told us that he neither noticed any warning lights nor abnormally high temperatures whilst driving the Insured Vehicle. According to Mr Cheong, the SCDF had not informed him how the fire to the Insured Vehicle had started.

Incident Scene Photographs

17. We were able to obtain photographs of the Insured Vehicle which were taken during and after the fire had been extinguished. In general, the information that could be gathered from this photograph had corresponded to the events that were related to us by Mr Cheong. 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 bus stop where the Insured Vehicle was positioned. See photos 10 & 11 below.



Photo 10 shows the Insured Vehicle on fire before the arrival of the SCDF.

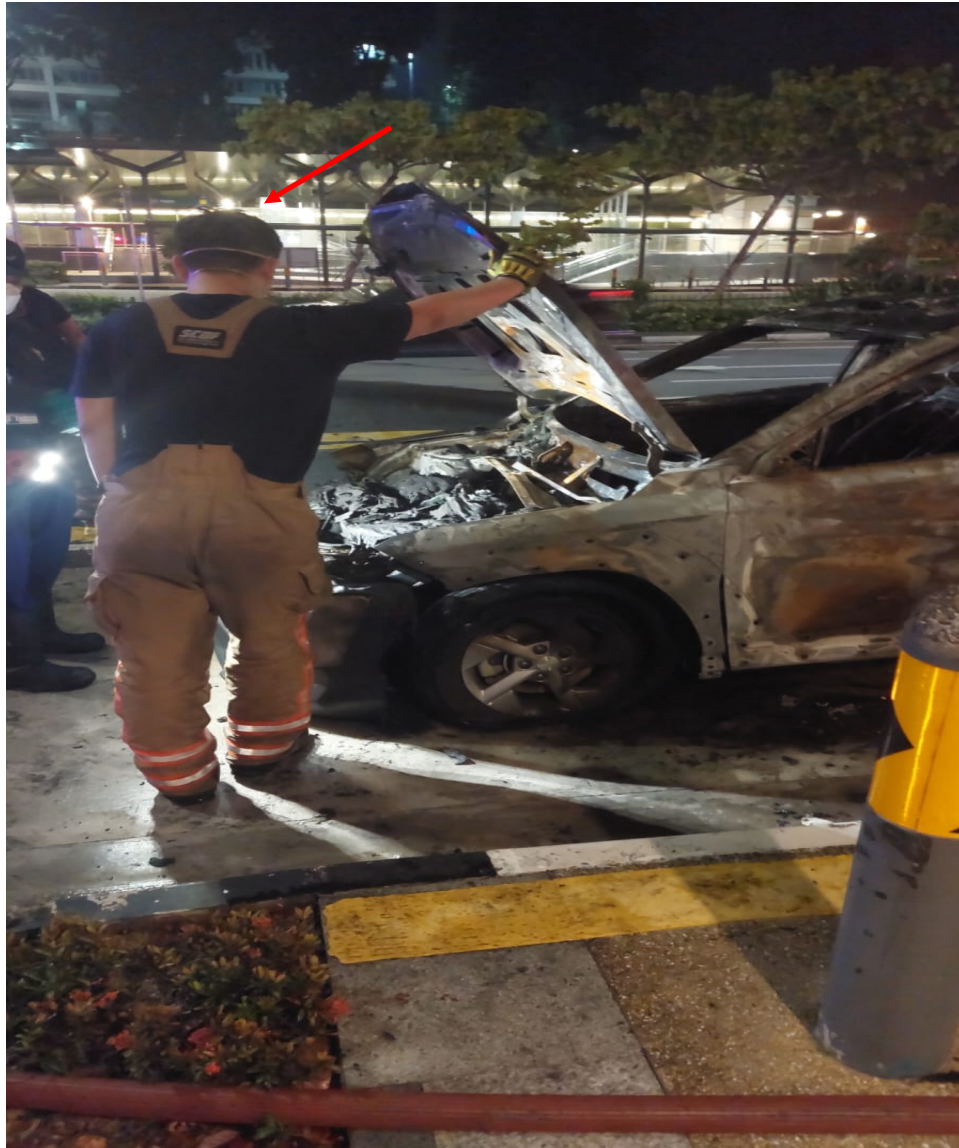


Photo 11 shows firefighters conducting preliminary investigations on the Insured Vehicle post- incident. In general, the information that could be gathered from this photograph had corresponded to the events that were related to us by Mr Cheong, which is the SCDF were present at the incident location (arrowed).

18. Pertaining to the maintenance aspect, the Insured Vehicle is serviced at a ComfortDelGro workshop located in Loyang.
19. During the course of our investigations, we were also able to obtain from Mr Lim Tien Song, who is a service advisor at CDGE, a document relating to the servicing of the Insured Vehicle. The Insured Vehicle was serviced on 4 September 2024 and 8 November 2024 respectively. The servicing package on 4 September 2024 had included the changing of engine oil, oil filter and air filter. The tyres were also replaced.

20. The servicing package on 8 November 2024 had included the changing of oil filter and air filter. The wiper blades were also replaced. Refer to Invoice 1 below.

Date: 20.11.2024
YTSS11F

TAXI SERVICE HISTORY

Time: 15:56:14
Page: 1

Taxi Nos: SHA7884U

Model: KONA

Reg Date: 23.04.2024

Workshop: LY

Serviced on: 04.09.2024 / 08:05:00

Time Out: 04.09.2024 / 09:30:00

Remarks: (Kona PM Service,Pre-Inspection Check,A/C)

Job Card Nos: 603690607

Type: JP

Odometer Reading: 60,046

PM/PROBLEM REPORTED

20.0

Mechanical Team Repair - U-ESwords

20.1

Service - USE SWORDS ONLY

QC

QC TEST BY LAT

- Swords

MATERIAL CHANGED

SN

DESCRIPTION

QTY

1

SHELL HELIX ULTRA SP 5W30

4.000

L

2

OIL FILTER

1.000

EAC

3

FILTER ASSY-AIR

1.000

EAC

4

TYRE KUMHO 95H ECSTA PS71 205/65R16

2.000

EAC

Serviced on: 08.11.2024 / 08:20:00

Time Out: 08.11.2024 / 10:05:41

Remarks: (Kona PM Service,wiper, check all tyres,)

Job Card Nos: 603711959

Type: JP

Odometer Reading: 87,900

PM/PROBLEM REPORTED

20.0

Mechanical Team Repair - U-ESwords

20.1

Service - USE SWORDS ONLY

QC

QC TEST BY LAT

- Swords

MATERIAL CHANGED

SN

DESCRIPTION

QTY

1

OIL FILTER

1.000

EAC

2

WIPER BLADE 26"DRIVER MOQ 50

1.000

EAC

3

WIPER BLADE 16" PASSENGER MOQ 50

1.000

EAC

4

FILTER ASSY-AIR

1.000

EAC

REMARKS

SN

DESCRIPTION


4

Kona PM Service,wiper, check all tyres,

Invoice 1 shows the servicing done on the Insured Vehicle at the CDGE workshop at Loyang on 4 September 2024 and 8 November 2024 respectively (red arrows). The servicing package on 4 September 2024 had included the changing of engine oil, oil filter and air filter. The tyres were also replaced. The servicing package on 8 November 2024 had included the changing of oil filter and air filter. The wiper blades were also replaced (circled).

21. 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.

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 Cheong had mentioned to us there were no indications of abnormally high temperatures when he was driving the Insured Vehicle on the day of the incident. Moreover, an overheated engine would have caused the Insured Vehicle to stall. However in this case, Mr Cheong was the one who noticed the smoke emitting from the driver dashboard and switched off the engine of the Insured Vehicle. Therefore, we are of the opinion that the fire was not caused by an overheated engine.
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 as the location where the Insured Vehicle caught fire was 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 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 8 above.
25. 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.



Vehicle Recall Details

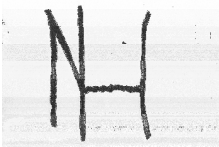
ONLY INFORMATION ON VEHICLE RECALLS SUBMITTED FROM 9 APRIL 2007 IS AVAILABLE

Owner ID Type Company	Owner ID 821R
Vehicle No. SHA7884U	Make/Model HYUNDAI/ SX2 KONA 1.6 GDI HEV
Engine No.: G4LLRU405592	Chassis No.: KMHBB811VRU053347
Recall Details: No Recall Detail records	

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 original factory fitted wirings inside the interior compartment, somewhere around the right bottom portion of the driver dashboard panel.
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. 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.
29. 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.

30. SCDF was activated to attend to the fire incident and a fire report pertaining to their findings will likely be forthcoming. 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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