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You're Ref: TP/IP/02286/2022 30th March 2022
Our Ref: CI/TPD22002401/P

General Investigation Team
Traffic Police Department
Singapore Police Force
10 Ubi Avenue 3
Singapore 408865

MECHANICAL INSPECTION REPORT OF MOTOR CAR SKH 4566K

1. I refer to your request on 15th March 2022 to conduct a physical inspection of a Motor Car bearing registration number SKH 4566K (herein referred to as "**Motor Car**"), which was involved in a road traffic accident on 28th January 2022 and caught fire during its journey when it was towed to the vehicle pound.

2. The objective of the inspection is to determine if there was any possible foul play which is related to the fire on the Motor Car or the road traffic accident that may have resulted to the fire.

3. Following the request, I had carried out a physical inspection of the Motor Car on 16th March 2022 at the premises of Traffic Police vehicle pound, 517 Airport Road Singapore 539942. I now set out below my observations and comments with respect to this inspection.

General Condition

4. The mileage of the Motor Car at the time of my inspection was not recorded as the whole vehicle it was badly burnt.

5. The Motor Car was observed to have sustained severe fire damages all round and we had further observed that it had also sustained physical damage at its right and rear portion. Its right door panels, right rear fender and its rear body panels were amongst the body parts that were damaged as a result of the road traffic accident. See photo 1 – 6 below.

Photo 1 shows a general view of the Motor Car's front body at the time of my inspection. The front of the Motor Car was observed to not sustain any physical damages.

Photo 2 shows the general view of the rear portion of the Motor Car at the time of our inspection. The Motor Car was observed to have sustained physical damage at its rear portion. Its rear left bumper portion was observed to have been damaged as a result of the road traffic accident. The fire had also affect the rear of the Motor car.

Photo 3 shows the close up view of the rear portion of the Motor Car at the time of our inspection. The Motor Car was observed to have sustained physical damage at its rear portion. Its rear left bumper portion (circled) was observed to have been damaged as a result of the road traffic accident. The fire had also affect the rear of the Motor car.

Photo 4 shows the general view of the right portion of the Motor Car at the time of our inspection. The Motor Car was observed to have sustained physical damage at its right portion. Its right body panel and right rear fender portion was observed to have been damaged as a result of the road traffic accident. The fire had also affect the right of the Motor car.

Photo 5 shows the close up view of the rear portion of the Motor Car at the time of our inspection. The Motor Car was observed to have sustained physical damage at its right portion. Its right body panel (yellow circle) and right rear fender (red circle) portion was observed to have been damaged as a result of the road traffic accident. The fire had also affect the right of the Motor car.

Photo 6 shows the general view of the interior compartment of the Motor Car at the time of our inspection. Its interior compartment was completely burnt as a result of the fire.

Investigation and Technical Analysis

6. Based on the circumstances for this particular case, the fire appears to have originated from the rear left of the Motor Car, somewhere around the rear left and spread to the front of the Motor Car. 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 its rear left chassis portion.

7. These whitish burn marks are a result of exposure to prolong 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 vehicle components, in the immediate vicinity of where these whitish burn marks were found, would also support our findings of where the fire had affected the Motor Car. See photo 7 and 8 below.

Photo 7 shows the exterior of the rear left portion of the Motor Car at the time of our inspection. The high heat intensity burn marks (whitish burn marks) and rust that had development found on the exterior surface indicates that the fire had originated from the rear left portion of the Motor Car.

Photo 8 shows the exterior of the rear left portion of the Motor Car at the time of our inspection. The high heat intensity burn marks (whitish burn marks) and rust that had development found on the exterior surface (circled) indicates that the fire had originated from the rear left portion of the Motor Car.

8. Upon closer examination of the rear left portion of the Motor Car which was where the fire had started, we had found traces of greenish residue on the main wirings harnesses leading to the electrical components of the Motor Car. The wirings were original wirings fitted from the manufacturer. 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 the 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 Motor Car could have possibly been due to electrical in nature. See photos 9 - 11 below.

Photo 9 shows a general view of the original wiring harness in the rear left interior compartment. The original wiring harness (circled) was observed with greenish residue on the surface. 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 10 shows a close up view of the original wiring harness in rear left interior compartment. The original wiring harness (circled) was observed with greenish residue on the surface. 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.

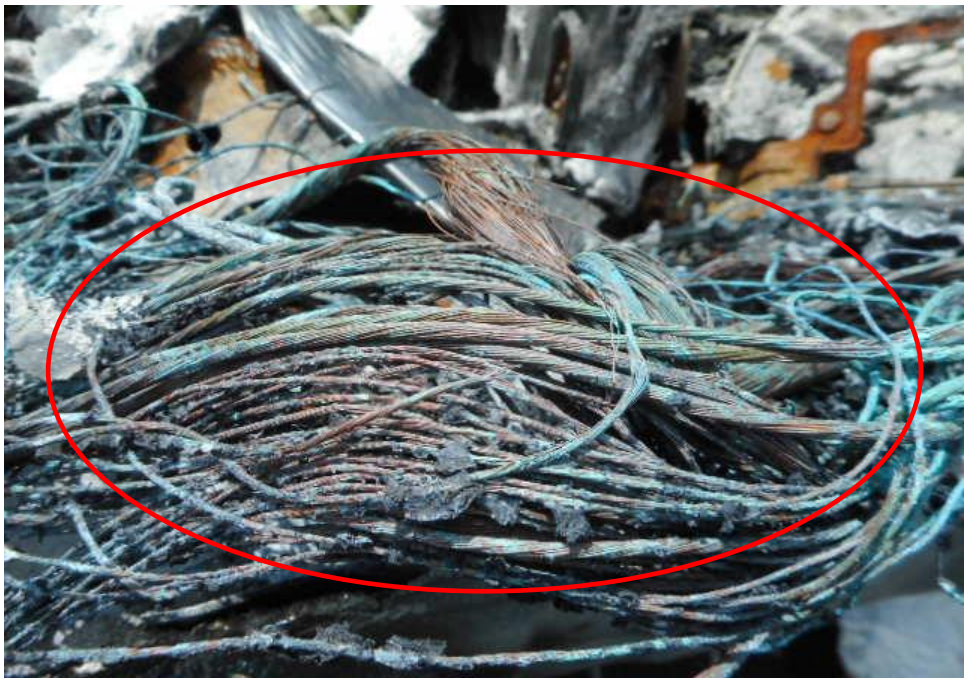

Photo 11 shows a close up view of the original wiring harness in the rear left interior compartment. The original wiring harness (circled) was observed with greenish residue on the surface. The presence of greenish residue indicates internal heating of copper wires, a sign of an electrical short circuit occurring. The greenish residue is normally left behind from oxidation as a result of chemical reaction involving the copper wires.

Incident Scene Photographs

9. During the course of our investigations, we were able to obtain coloured photographs showing the Motor Car at the incident scene after the Motor Car was involved in an accident. These were provided to us by the Traffic Police Department for investigations.

10. Our examination of these photographs revealed that rear left portion of the Motor Car had sustained impact damages from the accident. The photographs had also showed the Motor Car similar extent of damage as per what we had observed during our physical inspection of the rear left of the Motor Car. Apart from the aforesaid; there was no further notable information that could be gathered from these photographs which were provided to us by the Traffic Police Department for investigations. See photos 12 and 13 below

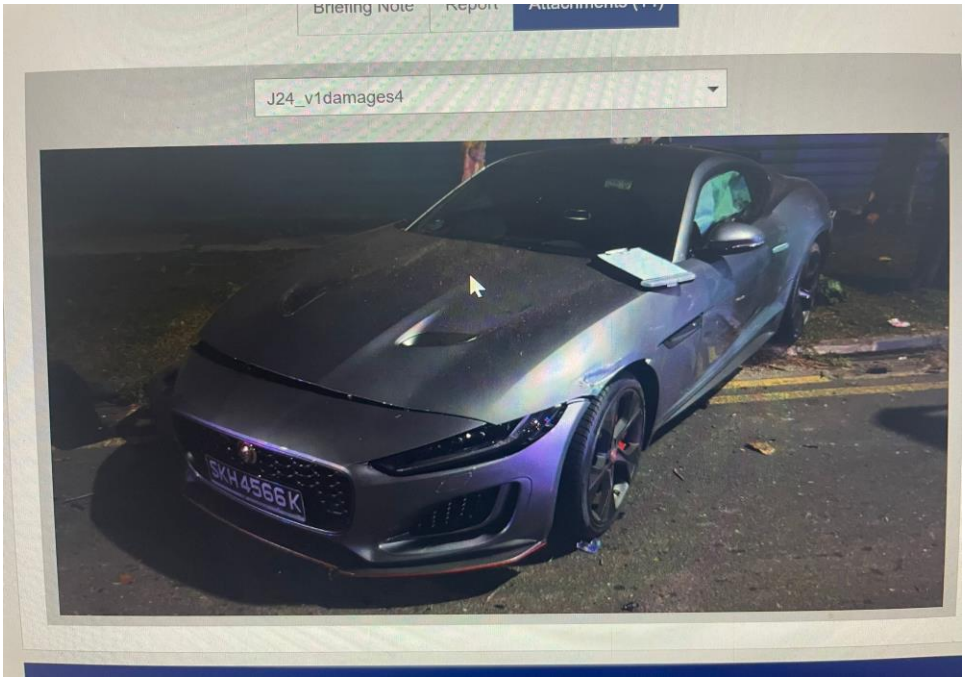

Photo 12 shows the front portion of the Motor Car at the time of incident scene. The front portion did not sustain major damages from the impact of the incident. In general, the information that could be gathered from this photograph had corresponded to our findings on the Motor Car during our inspection.

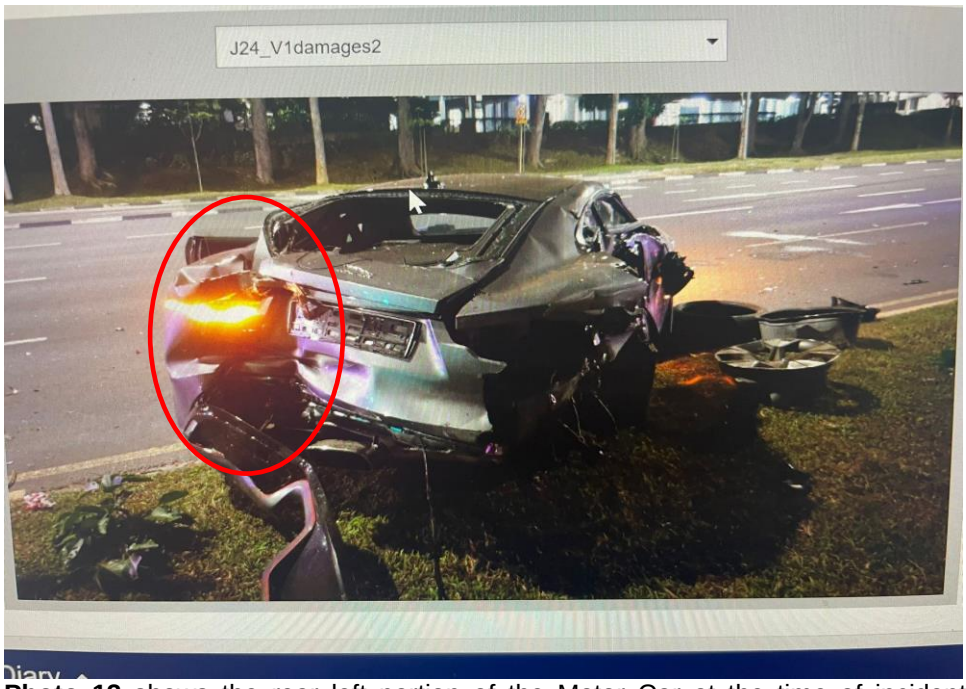

Photo 13 shows the rear left portion of the Motor Car at the time of incident scene. The rear left portion had sustained dent damages from the impact of the incident. In general, the information that could be gathered from this photograph had corresponded to our findings on the Motor Car during our inspection.

11. Given the circumstances of the incident as reported, the possibility of the cause of fire to the Motor Car being due to engine overheating would be unlikely as Motor was immobilized after the accident at the incident scene.

12. 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 fire occurred when the Motor Car was in the midst of towing by to the Traffic Police Vehicle Pound. The location where the Motor Car caught fire was also observed to be not at a secluded location.

13. 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 original wiring harnesses wirings that were found leading to the electrical components on the Motor Car, which was earlier discussed in paragraph 8 above.

14. We are in view, that the cause of fire to the Motor Car was due to the impact from the accident when had damaged the original wiring harnesses wirings and electrical components located at the rear left portion of the Motor Car causing an electrical short circuit during the towing journey by the tow truck to the Traffic Police Vehicle pound.

Conclusion

15. Having investigated and technically analysed the damages of burnt nature to the Motor Car, we are of the view that the cause of fire to the Motor Car was of electrical nature. For this particular case, the fire had originated along the original wiring harnesses leading to the electrical components of the Motor Car as result of the accident that it was involved previously.

Sherwin Beh
Technical Investigator

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