

Your Ref: TP/IP/20187/2022  
Our Ref : CI/TPD22008172/P

1<sup>st</sup> September 2022

**General Investigation Team**

Traffic Police Department  
Singapore Police Force  
10 Ubi Avenue 3  
Singapore 408865

**MECHANICAL INSPECTION REPORT OF MOTOR CAR SND 5736R**

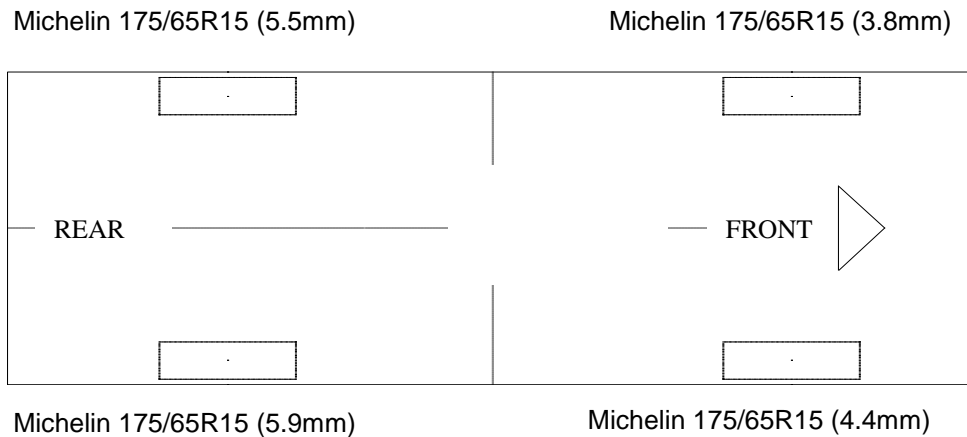
1. I refer to your request on 16<sup>th</sup> August 2022 to conduct a physical inspection of a Motor Car bearing registration number SND 5736R (herein referred to as "**Motor Car**"), which was involved in a road traffic accident on 1<sup>st</sup> August 2022.
2. The objective of the inspection is to determine if there was any possible mechanical failure to the Motor Car that may have contributed to the accident.
3. Following the request, I had carried out a physical inspection of the Motor Car on 31<sup>st</sup> August 2022 at the premises of Traffic Police vehicle pound, 517 Airport Road Singapore 539942 and Indeco Engineers Pte Ltd, 39 Defu Lane 12, Singapore 539139. 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 24,845km.
5. The Motor Car was observed to have sustained damage at its front portion. Its front bonnet, front body panel and front bumper were amongst the body parts and various engine components were damaged as a result of the accident.

## Tyres and Wheel Rims

6. The condition of the Motor Car's 4 tyres was observed to be in serviceable condition. I did not find any tear, cut or burst mark(s) on the outer and the inner sidewalls as well as across the tread of the 4 tyres. The 4 tyres were also observed to be sufficiently inflated for vehicular operation. The tyre brand, tyre size and remaining tread depth of the 4 tyres were recorded as follows:-



7. The 4 tyres were observed to be wrapped around steel wheel rims that were found to be without any damage. See photo 1 – 10 below.



**Photo 1** shows the general view of the Motor Car's rear body at the time of my inspection. The Motor Car rear was observed to be unaffected by the accident.



**Photo 2** shows a general view of the Motor Car's front body at the time of my inspection. The Motor Car was observed to have sustained damage at its front portion. Its front bonnet, front body panel and front bumper were amongst the body parts and various engine components were damaged as a result of the accident.



**Photo 3** shows the close up view of the Motor Car's front body at the time of my inspection. The Motor Car was observed to have sustained damage at its front portion. Its front bonnet (circled) were amongst the body parts that were damaged as a result of the accident.



**Photo 4** shows the close up view of the Motor Car's front body at the time of my inspection. The Motor Car was observed to have sustained damage at its front portion. Its front bumper (red circle) and front body panel (yellow circle) were amongst the body parts that were damaged as a result of the accident.





**Photo 5** shows a general view of the Motor Car's right body at the time of my inspection. The Motor Car left was observed to be unaffected by the accident.



**Photo 6** shows a general view of the Motor Car's left body at the time of my inspection. The Motor Car left was observed to be unaffected by the accident.



**Photo 7** shows the condition of the front right tyre of the Motor Car, which was observed to be in serviceable condition with remaining tread depth of approximately 4.4mm. The tyre, which was wrapped around alloy wheel rim, was also observed to be sufficiently inflated for vehicular operation.



**Photo 8** shows the condition of the rear right tyre of the Motor Car, which was observed to be in serviceable condition with remaining tread depth of approximately 5.9mm. The tyre, which was wrapped around standard steel wheel rim, was also observed to be sufficiently inflated for vehicular operation.





**Photo 9** shows the condition of the rear left tyre of the Motor Car, which was observed to be in serviceable condition with remaining tread depth of approximately 5.5mm. The tyre, which was wrapped around standard steel wheel rim, was also observed to be sufficiently inflated for vehicular operation.

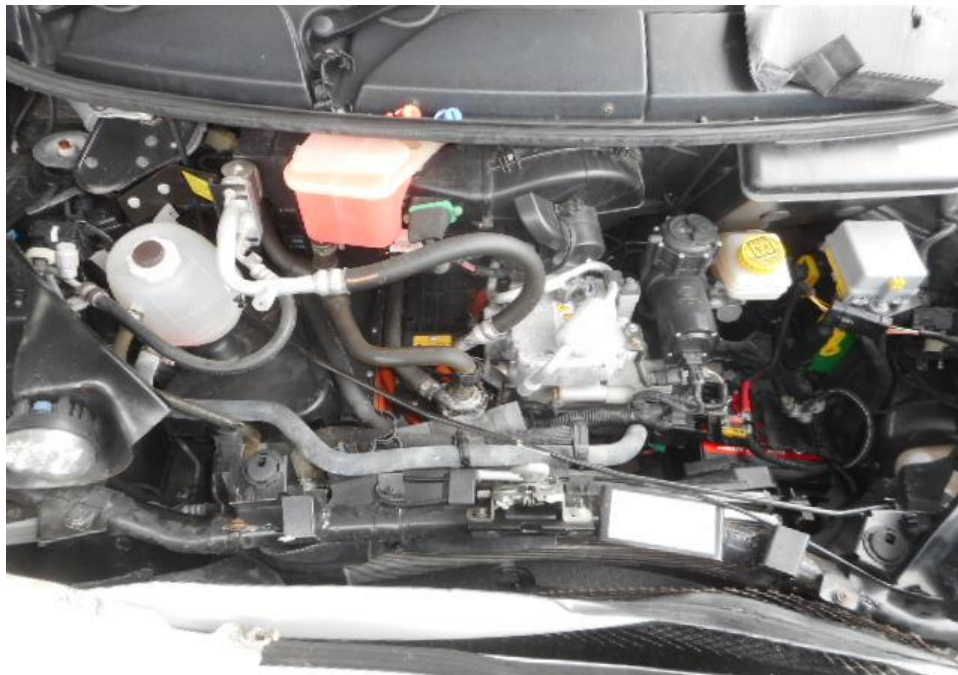


**Photo 10** shows the condition of the front left tyre of the Motor Car, which was observed to be in serviceable condition with remaining tread depth of approximately 3.8mm. The tyre, which was wrapped around standard steel wheel rim, was also observed to be sufficiently inflated for vehicular operation.

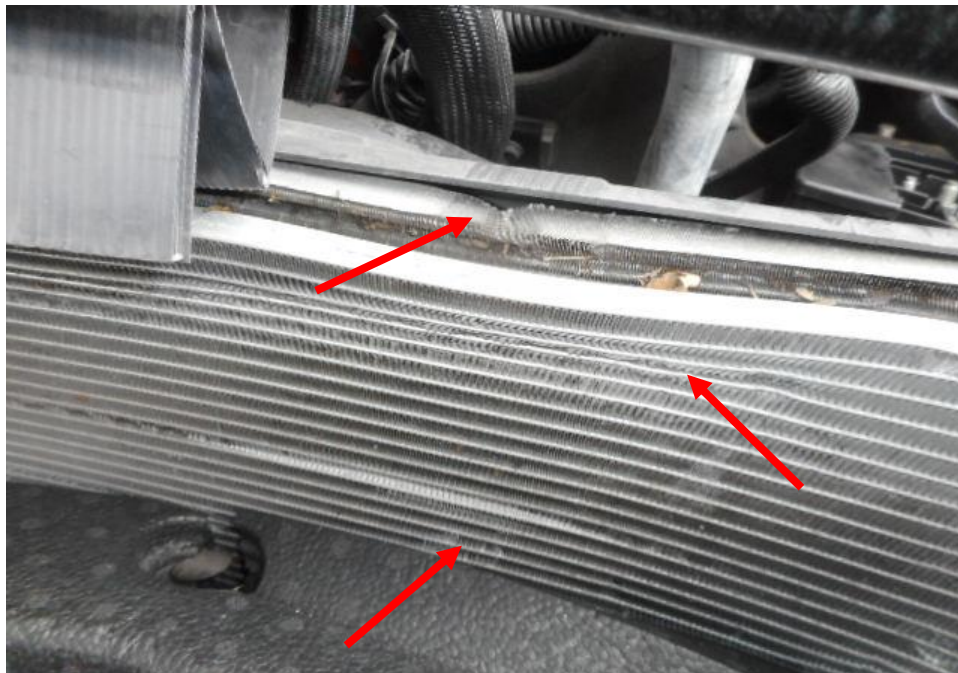
**Electric motor Compartment & Operating Fluids**

8. Upon examination of the electric motor compartment of the Motor Car, I had observed the coolant radiator, 12V battery and high voltage cables inside the electric motor compartment to be damaged as a result of the impact from the accident which had pushed the coolant radiator towards there components and resulting to the sustained damages. The electric motor coolant was observed to be insufficient as a result of the damage to the coolant radiator sustained from the accident. The brake fluid were found to be of sufficient level for operating purposes. Visually, there was also no contamination found to the fluid.
9. Further examination of the electric motor compartment revealed no sign(s) or indication(s) of fluid leakage and/or fluid stain within the electric motor compartment of the Motor Car.
10. My subsequent checks on the underside of the Motor Car also revealed no sign(s) or indication(s) of fluid leak and/or fluid stain(s). Visually, the various undercarriage components of the Motor Car were all observed to be intact and without any visible damage.
11. The original 12V battery taken out and replaced with a new 12V battery to facilitate our inspection. See photo 11 – 19 below.





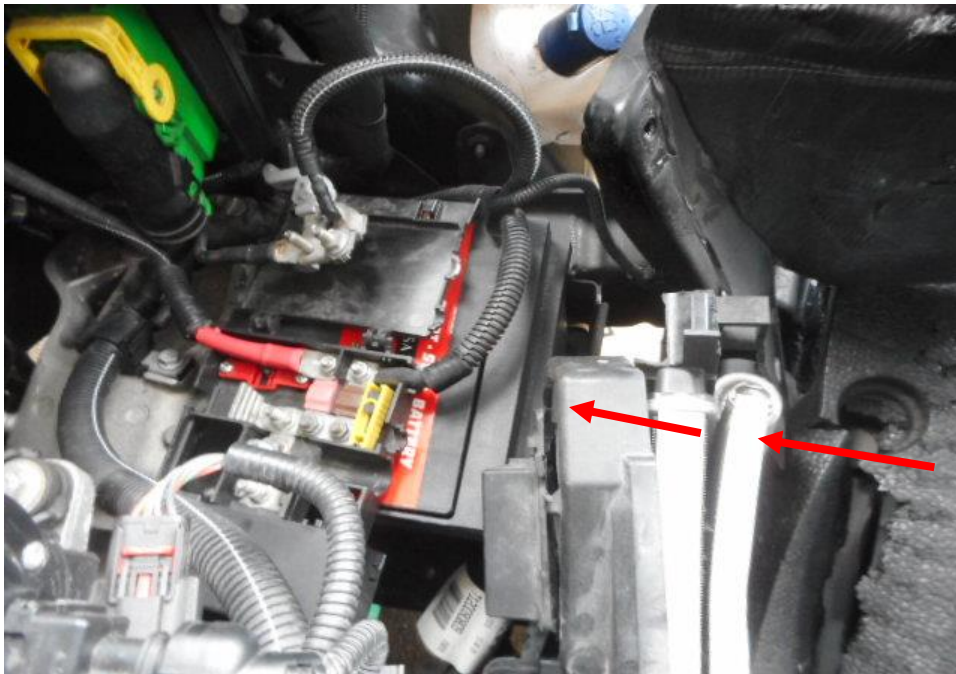
**Photo 11** shows a general view of the Motor Car's electric motor compartment. I had observed the coolant radiator, 12V battery and high voltage cables inside the electric motor compartment to be damaged as a result of the impact from the accident which had pushed the coolant radiator towards these components and resulting to the sustained damages. The electric motor coolant was observed to be insufficient as a result of the damage to the coolant radiator sustained from the accident. However, the brake fluid were found to be of sufficient level for operating purposes. Visually, there was also no contamination found to the fluid.



**Photo 12** shows the coolant radiator of the Motor Car at the time of my inspection. The coolant radiator (arrowed) was observed to be damaged as a result of the accident.



**Photo 13** shows the coolant reservoir of the Motor Car at the time of my inspection. The coolant fluid was observed to be of insufficient level (arrowed) due to the damaged radiator as a result of the accident.

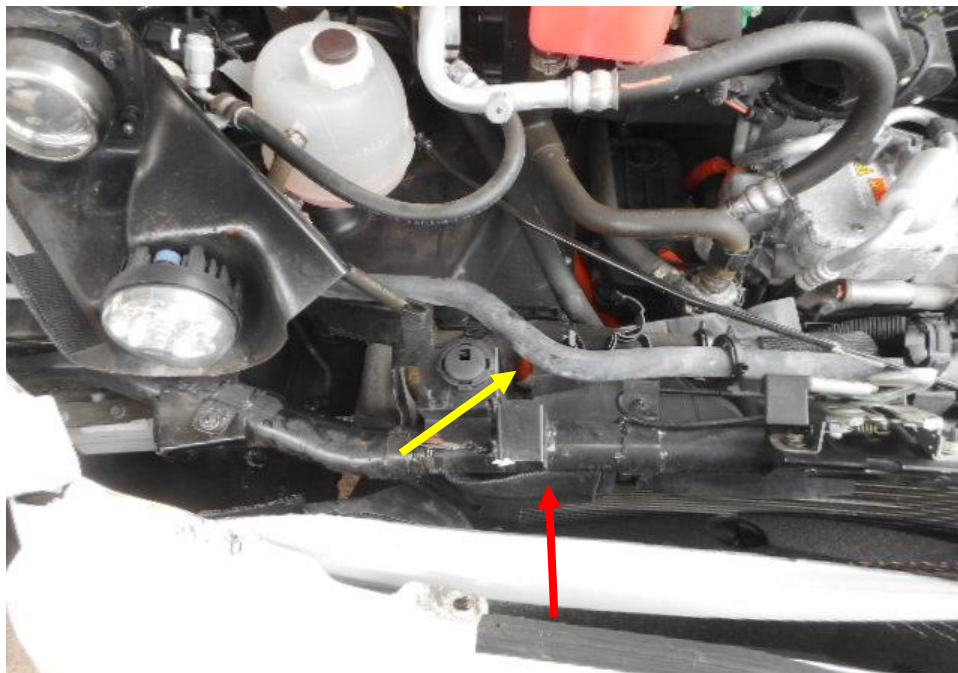


**Photo 14** shows checks being carried out to electric motor compartment on where the location of the 12V battery of the Motor Car is located at the time of my inspection. The coolant radiator was observed to bend inwards and pieced the 12V battery (arrowed) as result of the induced impact from the accident.

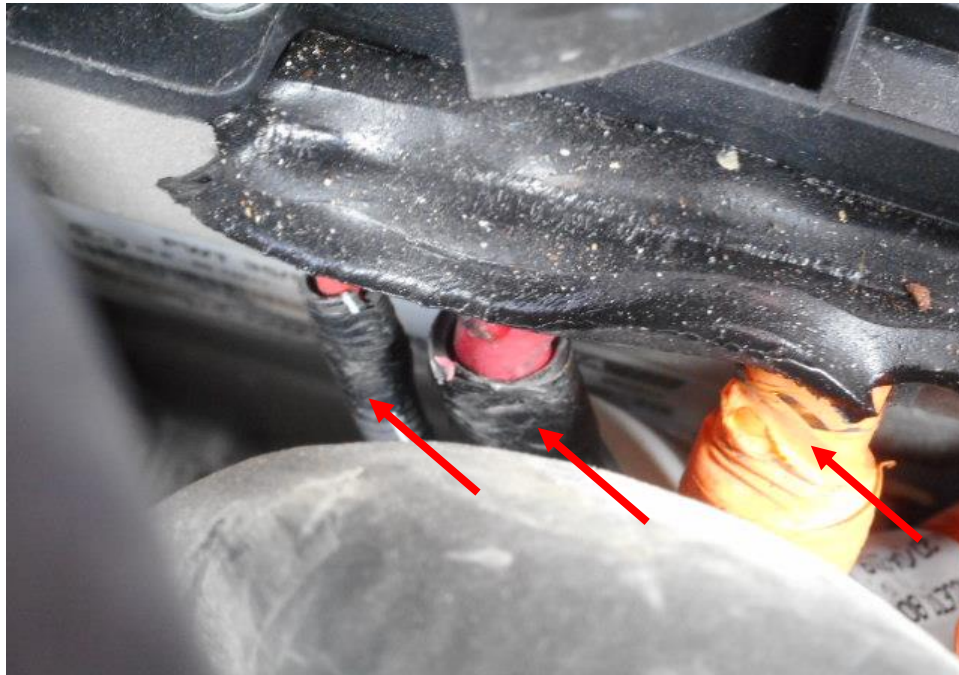




**Photo 15** shows checks being carried out to the original 12V battery of the Motor Car at the time of my inspection. The 12V battery was observed to be pieced by the bend coolant radiator as result of the induced impact from the accident (arrowed).



**Photo 16** shows checks being carried out to electric motor compartment on where the location of the high voltage cable of the Motor Car is located at the time of my inspection. The high voltage cables (yellow arrow) was observed to sustain damages as result of the induced impact on the coolant radiator (red arrow) from the accident.



**Photo 17** shows the close up view on the electric motor compartment on where the location of the high voltage cable of the Motor Car is located at the time of my inspection. The high voltage cables (arrowed) was observed to sustain damages as result of the induced impact on the coolant radiator from the accident



**Photo 18** shows the brake fluid reservoir of the Motor Car at the time of my inspection. The brake fluid was observed to be of sufficient level (arrowed) and without any visible contamination.



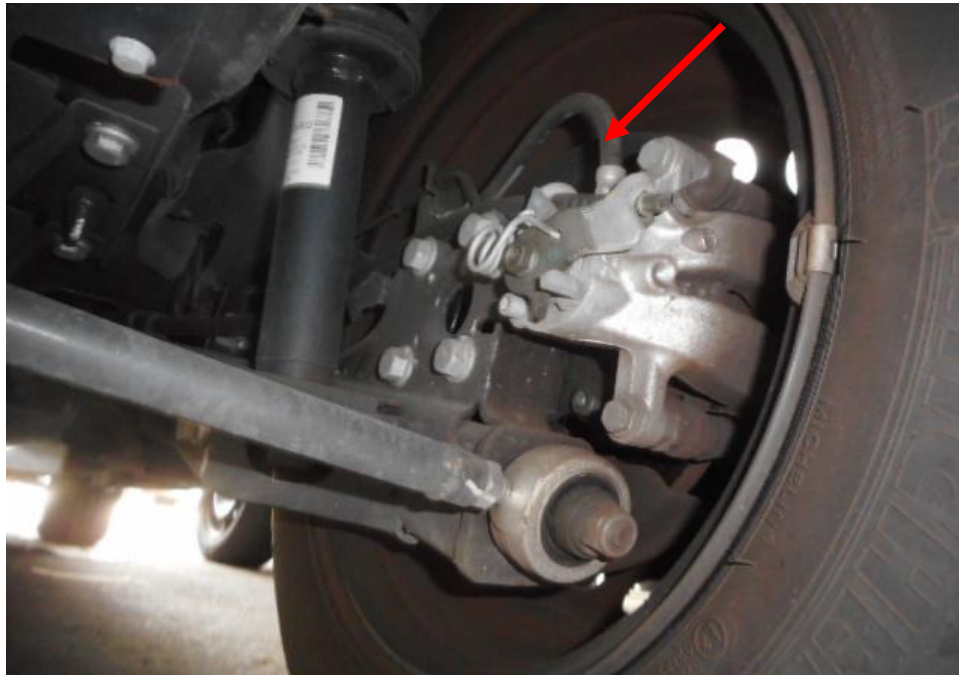


**Photo 19** shows the undercarriage of the Motor Car, at the area where the electric motor housing and transmission housing are located. I did not find any sign(s) or indication(s) of fluid leak and/or fluid stain(s) on the underside of the Motor Car.

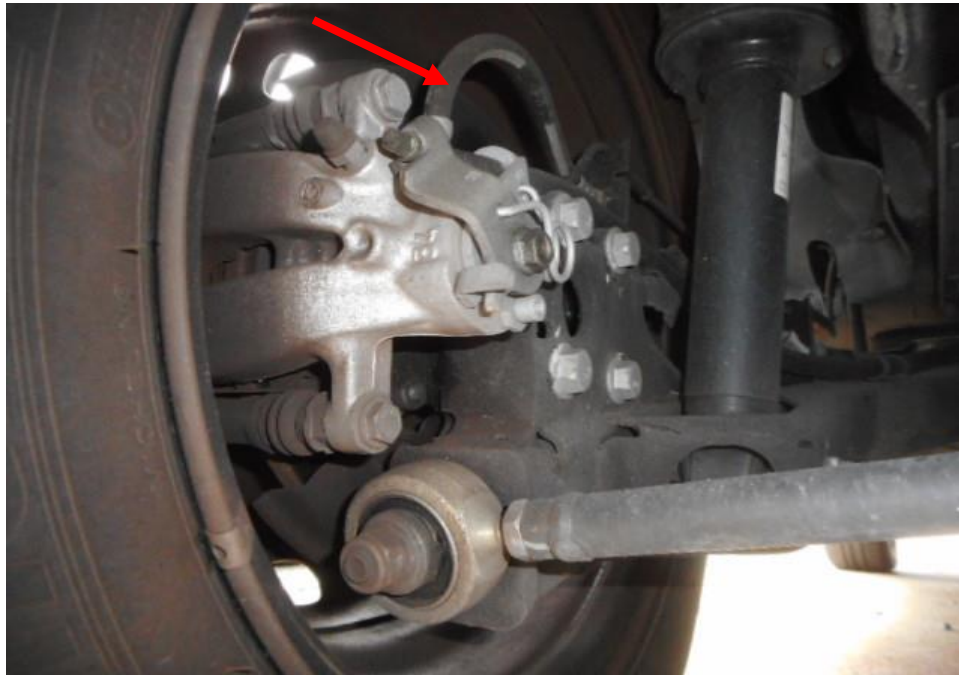
### **Braking System & Steering System**

12. Static brake tests was able to be conducted as the brake booster was able to be powered up on the Motor Car and revealed no abnormality. The brake booster had responded well to the various tests conducted. There was also no abnormal movement of the brake pedal when it was depressed. In general, the static brake tests had suggested that there was no internal leakage of pressure/vacuum in the braking system of the Motor Car. The braking system of the Motor Car was likely to be in serviceable condition at the material time. This was taking into consideration that the brake fluid was of sufficient level, and also that there was no sign(s) of brake fluid leakage along the brake hoses and brake pipes.
13. We have also conducted a static test on the handbrake of the Motor Car and revealed no abnormality. The handbrake had responded well to the various tests conducted. There was also no abnormal movement of the handbrake when it was engaged and disengaged.

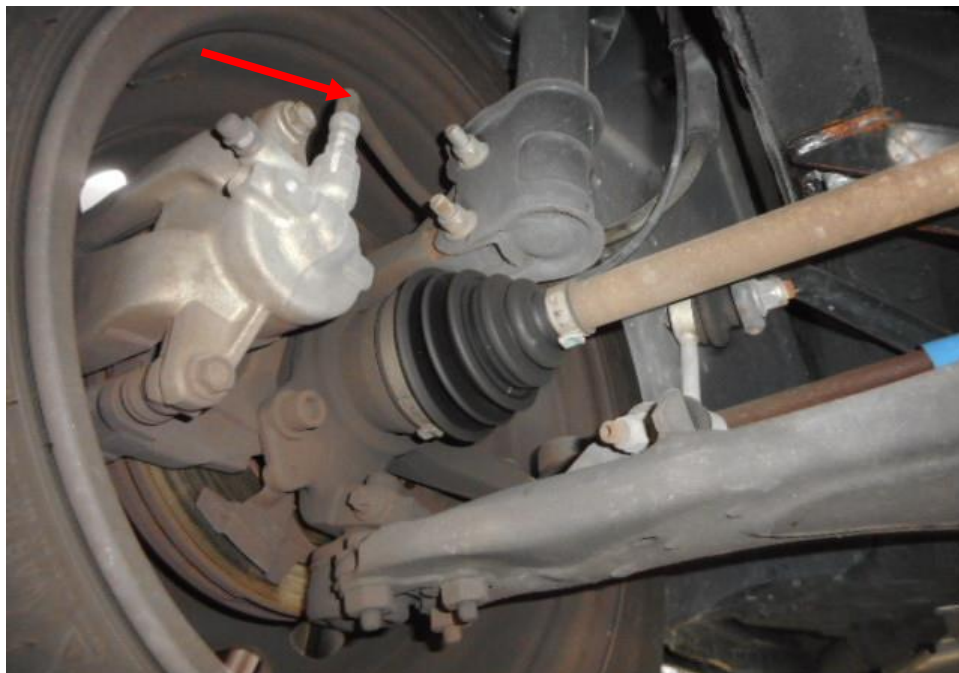
14. Static test on the steering system of the Motor Car was not conducted as the electric motor of the vehicle was unable to be powered. However, my visual examination of the other various steering components which had included the steering rack and pinion, the tie rod ends and ball joints revealed that these components were all generally intact. See photo 20 - 25 below.



**Photo 20** shows the brake hose/pipe (arrowed) at the rear right wheel of the Motor Car. No leakage of brake fluid was observed. Visual examination of the various components of the braking system like the drum brake, brake booster, brake pedal etc. had revealed all to be intact and without visible damage.



**Photo 21** shows the brake hose/pipe (arrowed) at the rear left wheel of the Motor Car. I did not observe any leakage of brake fluid at the time of my inspection of the Motor Car. The undercarriage components of the Motor Car were also all found to be intact and without any visible damage.



**Photo 22** shows the brake hose/pipe (arrowed) at the front right wheel of the Motor Car. I did not observe any leakage of brake fluid at the time of my inspection of the Motor Car. The undercarriage components of the Motor Car were also all found to be intact and without any visible damage.



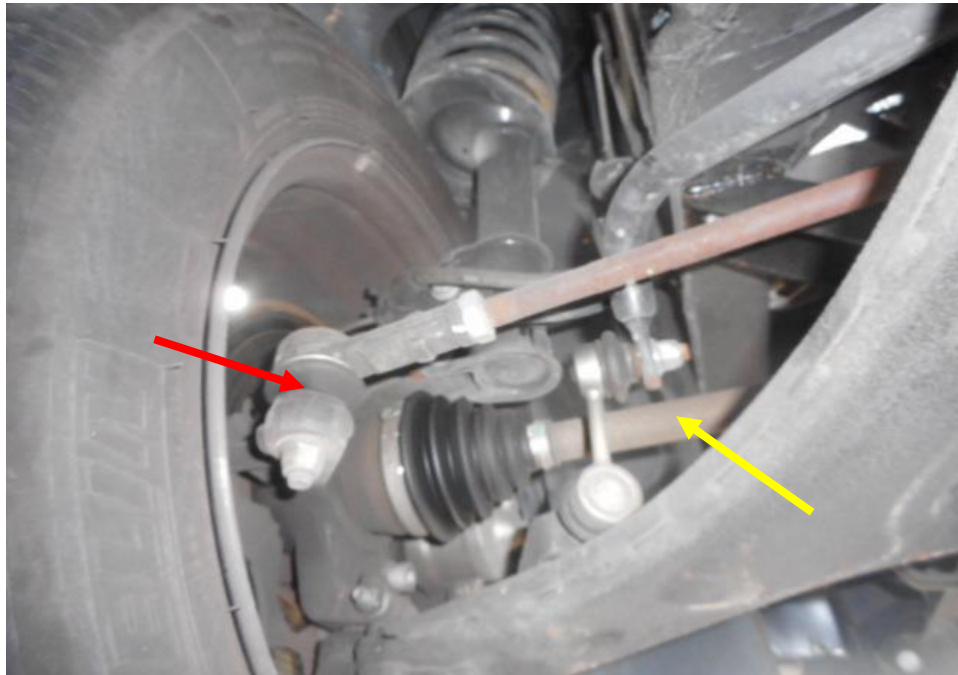


**Photo 23** shows the brake hose/pipe (arrowed) at the front left wheel of the Motor Car. No leakage of brake fluid was observed. Visual examination of the various components of the braking system like the brake caliper (circled), brake booster, brake pedal etc had revealed all to be intact and without visible damage.



**Photo 24** shows the various undercarriage components at the front right wheel of the Motor Car, in particular the steering tie rod (red arrow) and its driveshaft (yellow arrow). The various steering components were all found to be intact. There was also no sign of fluid stain observed on the various undercarriage components at the front right wheel of the Motor Car.





**Photo 25** shows the various undercarriage components at the front right wheel of the Motor Car, in particular the steering tie rod (red arrow) and its driveshaft (yellow arrow). The various steering components were all found to be intact. There was also no sign of fluid stain observed on the various undercarriage components at the front right wheel of the Motor Car.

### **Electronic Safety / Warning Indicators**

15. The Motor Car's automatic self-test of the functionality of its electronic operating systems was not conducted as it was unable to be started up.

### **Seat Belts**

16. The front right, front left, rear right and rear left seat belts of the "Motor Car" were tested and all the seat belts were able to be fastened securely into the respective pre-tensioners that were fitted at the sides of each seat.

### **Operational Behaviour of the Motor Car**

17. An operational test by driving the Motor Car to primarily determine whether there was any abnormality to the electric motor system and steering system of the Motor Car was not conducted given the extent of damage that it had sustained to its coolant radiator and high voltage cables was unable to start up had prevented me from carrying out any operational test(s) in these systems.

18. However, we were able to conduct a short operational test to the handbrake and braking system of the Motor Car, in which I had conducted, did not produce any sign(s) or symptom(s) to suggest that there was any abnormality to its handbrake and its braking system as the Motor Car was able to stop when the handbrake and braking system was engaged.

## Conclusion

19. For this particular case, I was unable to determine whether there was any possible mechanical failure to the Motor Car that may have contributed to the accident. The extent of damage that it had sustained had prevented me from carrying out any operational test(s) to the electric motor and steering system.

20. However, a short operational test and static test to the handbrake, braking system which I had conducted, did not produce any sign(s) or symptom(s) to suggest that there was any abnormality to its handbrake and braking system. Our visual inspection of the mechanical components of the Motor Car's handbrake and braking system appear to suggest that these components were all generally intact and unaffected by the accident and there was no leakage found at the handbrake and braking components of the Motor Car.

21. The 4 tyres of the Motor Car were also found to be in serviceable condition. I did not find any tear, cut or burst mark(s) on the outer and the inner sidewalls as well as across the tread of the 4 tyres. The 4 tyres were also observed to be sufficiently inflated for vehicular operation with remaining tread depth of approximately 3.8mm to 5.9mm.



**Sherwin Beh**

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