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Your Ref: TP/IP/02096/2023 20th February 2023
Our Ref : CI/TPD23001587/P

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

MECHANICAL INSPECTION REPORT OF MOTOR CAR SLU 5837S

1. I refer to your request on 7th February 2023 to conduct a physical inspection of a Motor car bearing registration number SLU 5837S (herein referred to as "**Motor Car**"), which was involved in a road traffic accident on 21st January 2023.

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 20th February 2023 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.

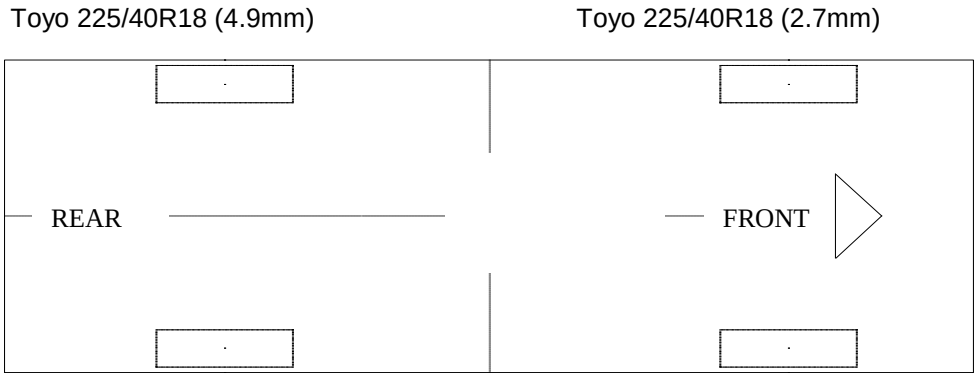
General Condition

4. The mileage of the Motor car was not recorded as the engine and ignition system of the Motor Car was damaged as a result of the accident.

5. The Motor car was observed to have sustained damage at its front portion. Its front windscreen, front bumper, both front fender and both front headlamp was amongst the body parts and various engine components were also damaged as a result of the accident. The Supplemental Restraint System (SRS) was activated 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 alloy wheel rims that were found to be without any damage. See photo 1 – 13 below.

Photo 1 shows a general view of the Motor Car's rear body at the time of my inspection. The rear portion of the Motor Car was observed to have been undamaged 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 windscreen, front bumper, both front fender and both front headlamp was amongst the body parts and various engine components were also damaged as a result of the accident. The Supplemental Restraint System (SRS) was activated 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 windscreen (circled) was 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 (circled) was damaged as a result of the accident.

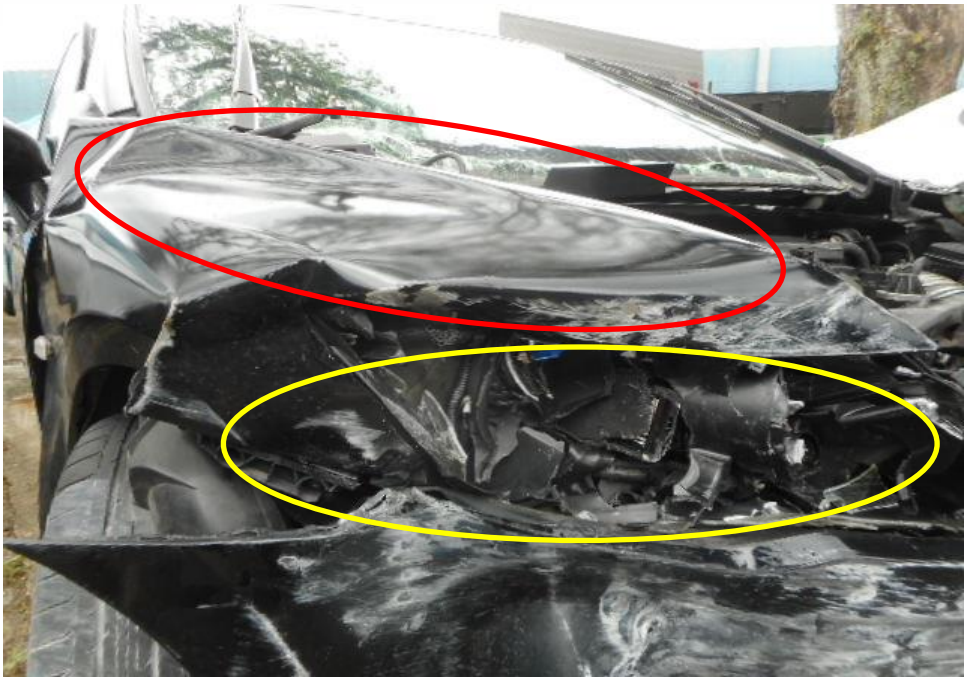


Photo 5 shows the close up view of the Motor Car's front body at the time of my inspection. The Motor car was observed to have sustained damage at its front portion. Its front fender (red circle) and front right headlamp (yellow circle) was damaged as a result of the accident.

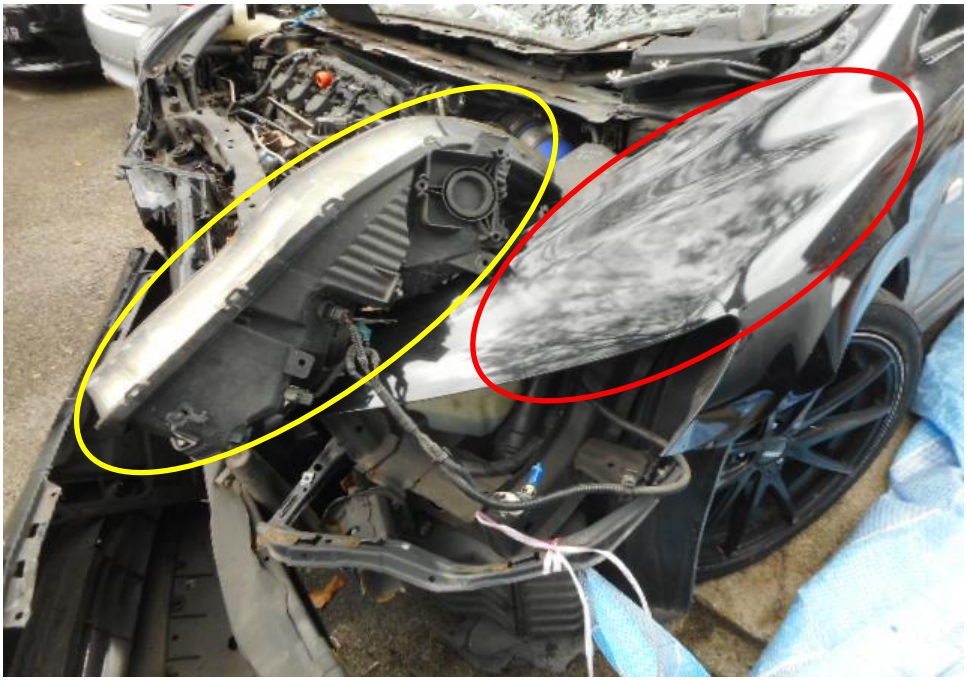


Photo 6 shows the close up view of the Motor Car's front body at the time of my inspection. The Motor car was observed to have sustained damage at its front portion. Its front fender (red circle) and front left headlamp (yellow circle) was damaged as a result of the accident.

Photo 7 shows a general view of the Motor Car's right body at the time of my inspection. The right portion of the Motor Car was observed to have been undamaged by the accident.

Photo 8 shows a general view of the Motor Car's left body at the time of my inspection. The left portion of the Motor Car was observed to have been undamaged by the accident.

Photo 9 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 2.9mm. The tyre, which was wrapped around alloy wheel rim, was also observed to be sufficiently inflated for vehicular operation.

Photo 10 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 5.4mm. The tyre was also observed to be sufficiently inflated for vehicular operation with no tear, cut or burst mark(s).

Photo 11 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 4.9m. The tyre was also observed to be sufficiently inflated for vehicular operation with no tear, cut or burst mark(s).

Photo 12 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 2.7mm. The tyre was also observed to be sufficiently inflated for vehicular operation with no tear, cut or burst mark(s).

Photo 13 shows the deployment of the Supplemental Restraint System (SRS) airbag in the Motor Car as a result of the accident.

Engine Compartment & Operating Fluids

8. We examination of the engine compartment of the Motor Car, I had observed we observed that the engine and ignition system was damaged as a result of the induced impact from the accident. However, we were able to inspect the brake fluid and engine oil were all found to be of sufficient level for operating purposes. Visually, there was also no contamination found to these fluids. Only the engine coolant was observed to be insufficient due to the damage to the coolant hose as result of the accident.

9. 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. See photo 14 -21 below.

Photo 14 shows a general view of the Motor Car's engine compartment. The various parts and components inside the engine compartment were observed that the engine and ignition system was damaged as a result of the induced impact from the accident.

Photo 15 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.

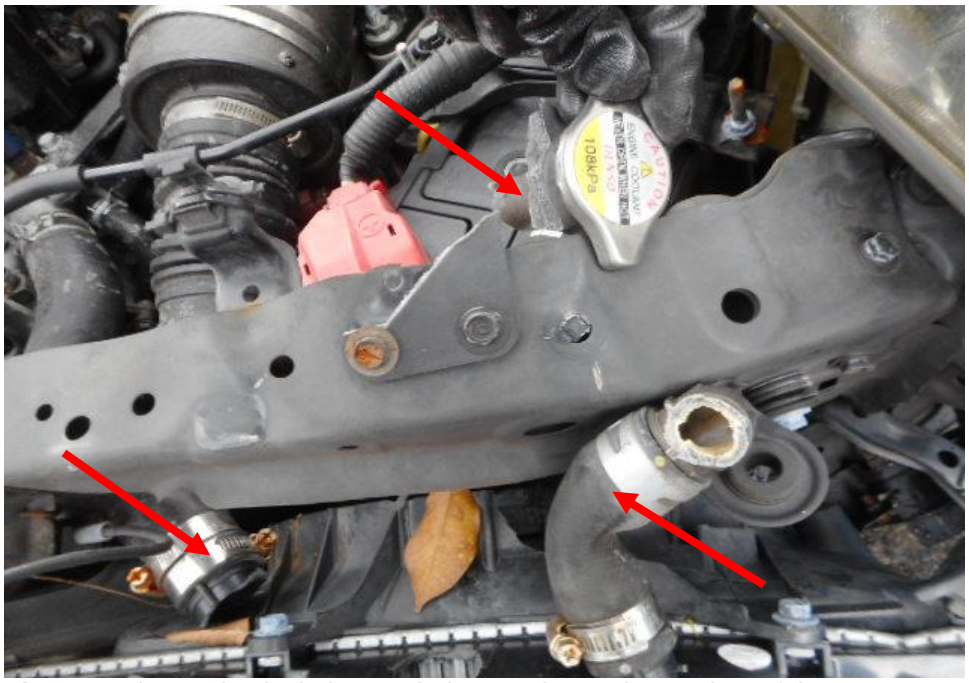


Photo 16 shows checks being carried out to the engine coolant of the Motor Car at the time of my inspection. The engine coolant was observed to be of insufficient level due to the damage sustained to the coolant hoses (arrowed) as a result of the accident.

Photo 17 shows the engine oil dipstick of the Motor Car at the time of my inspection. The engine oil was observed to be of sufficient level and without any visible contamination.

Photo 18 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 engine mounting (circled) was amongst the various components in the engine compartments were also damaged as a result of the accident.

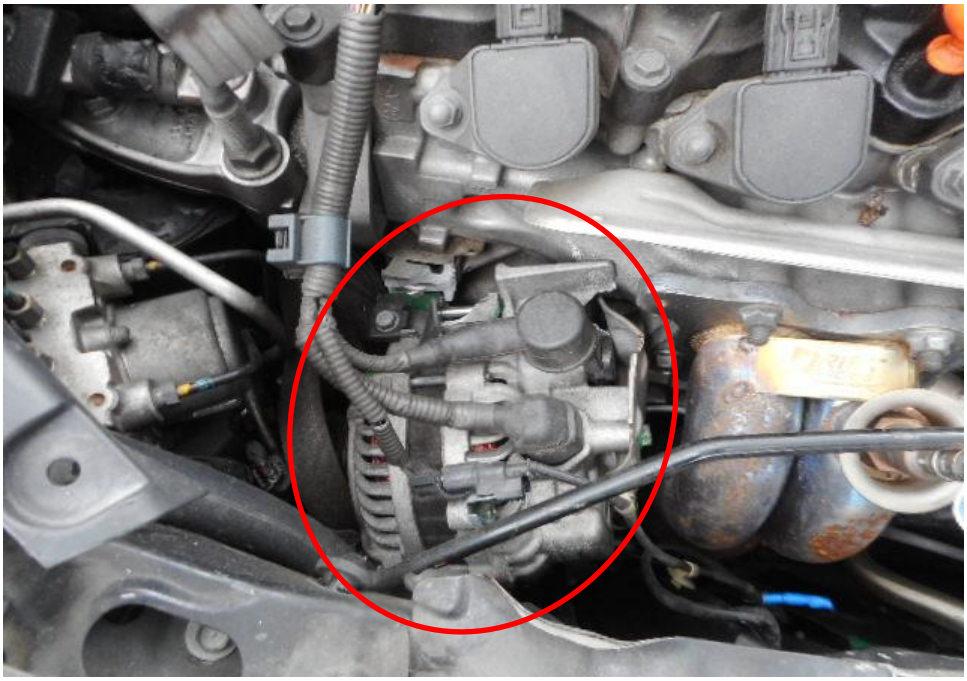


Photo 19 shows the close up view of the Motor Car's front body at the time of my inspection. The Motor car was observed to have sustained damage at its front portion. Its ignition system (circled) was amongst the various components in the engine compartments were also damaged as a result of the accident.

Photo 20 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 ignition system battery (circled) was amongst the various components in the engine compartments were also damaged as a result of the accident.

Photo 21 shows the undercarriage of the Motor Car, at the area where the engine 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

10. For this inspection, I was not able to conduct any static brake and steering tests on the steering and braking system of the Motor Car due to the Motor Car running on electric power steering (EPS) and braking system which requires the Motor Car to be started as the ignition system and engine is damaged.

11. My visual examination of the various steering and braking components which had included the rack and pinion, tie rods, tie rod ends and ball joints, brake hoses and brake pipes had revealed that these components were all generally intact. See photo 22 - 27 below.

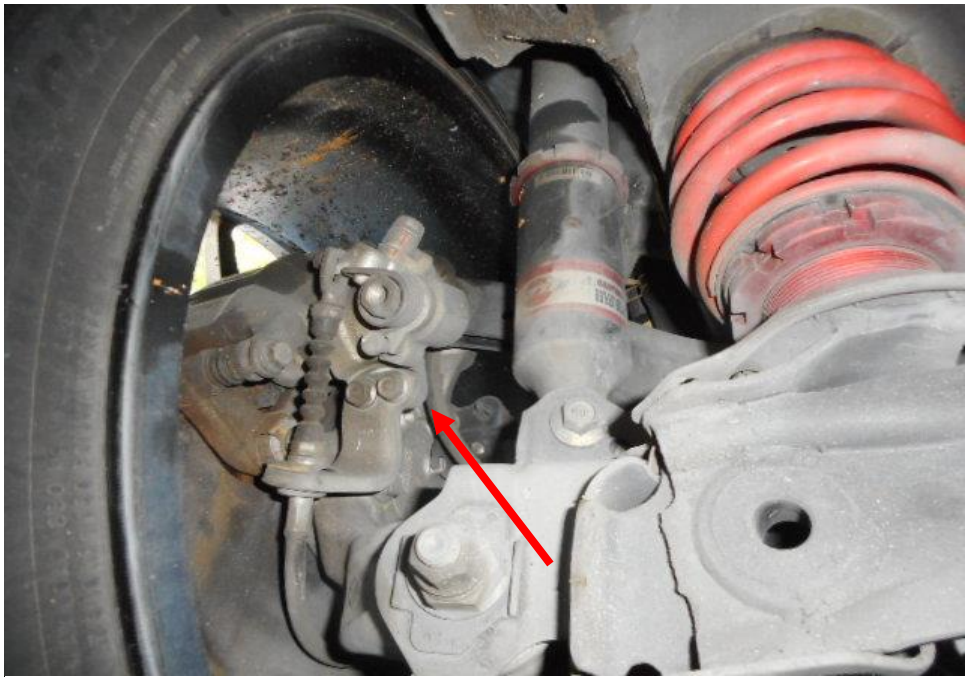


Photo 22 shows the brake hose/pipe (arrowed) at the rear left wheel of the Motor Car. No leakage of brake fluid was observed. Visual examination of the various components of the braking system like the drum brake and brake pedal etc had revealed all to be intact and without visible damage.

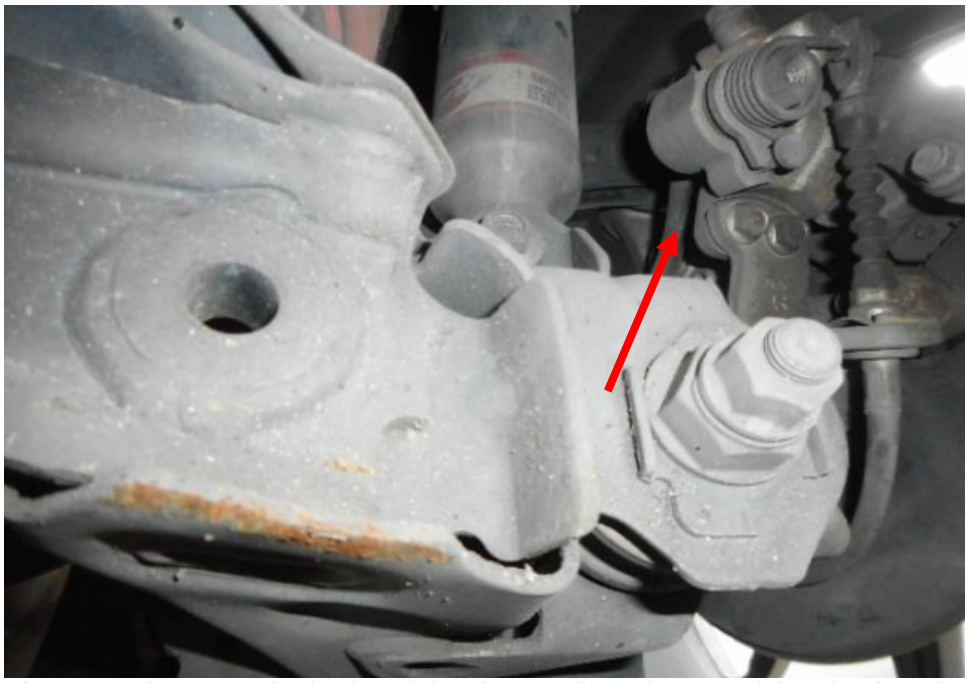


Photo 23 shows the brake hose/pipe (arrowed) at the rear right wheel of the Motor Car. No leakage of brake fluid was observed. Visual examination of the various components of the braking system like the drum brake and brake pedal etc had revealed all to be intact and without visible damage.

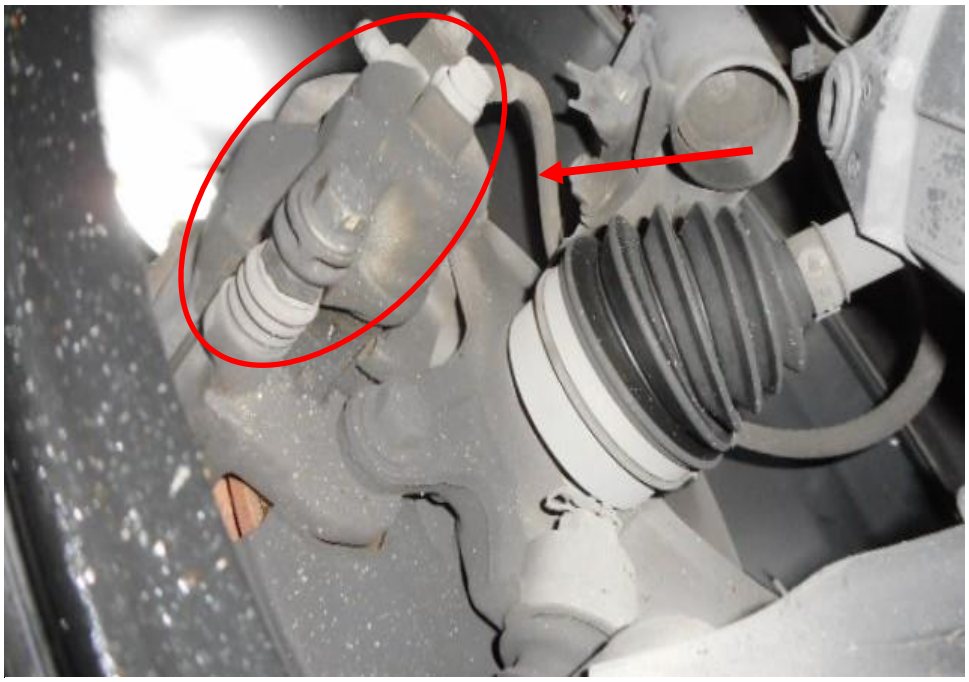


Photo 24 shows the brake hose/pipe (arrowed) at the front right wheel of the Motor Car. I did not observe any leakage of brake fluid at the time of my inspection of the Motor Car. Visual examination of the various components of the braking system like the brake caplier and brake hose etc had revealed all to be intact and without visible damage.

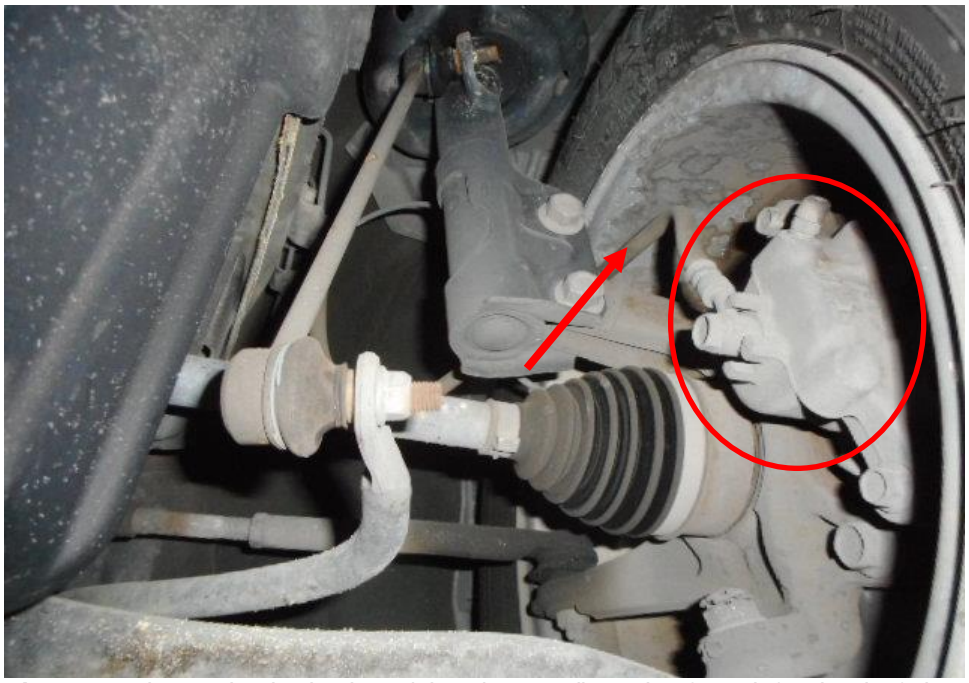


Photo 25 shows the brake hose/pipe (arrowed) at the front left wheel of the Motor Car. No leakage of brake fluid was observed. Visual examination of the various components of the braking system like the brake caliper (circled) and brake hose etc had revealed all to be intact and without visible damage.

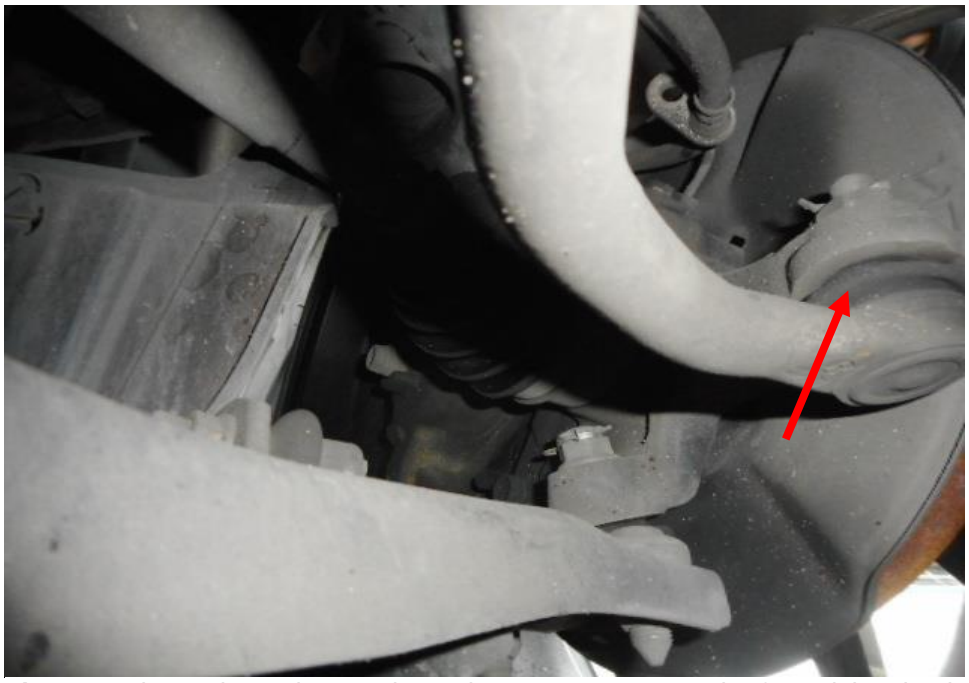


Photo 26 shows the various undercarriage components at the front right wheel of the Motor Car, in particular the steering tie rod (arrowed). The various steering components were all found to be intact. There was also no sign of fluid stain observed on the various undercarriage components at the front right wheel of the Motor Car.

Photo 27 shows the various undercarriage components at the front left wheel of the Motor Car, in particular the steering tie rod end (red arrow) and the driveshaft (yellow arrow). The various undercarriage components of the Motor Car were all found to be intact without any visible damage. There was also no sign of fluid stain(s) observed on the various undercarriage components.

Electronic Safety / Warning Indicators

12. The Motor Car's automatic self-test of the functionality of its various electronic operating systems was not able to be conducted as the engine and ignition system was damaged as a result of the accident. (unable to be started)

Seat Belts

13. The front right seat belt of the "Motor Car" was worn and the front left was not worn at the material time of accident as the respective pre-tensioners that were fitted at the side of each seat was activated upon the material time. See photo 28 and 29 below.

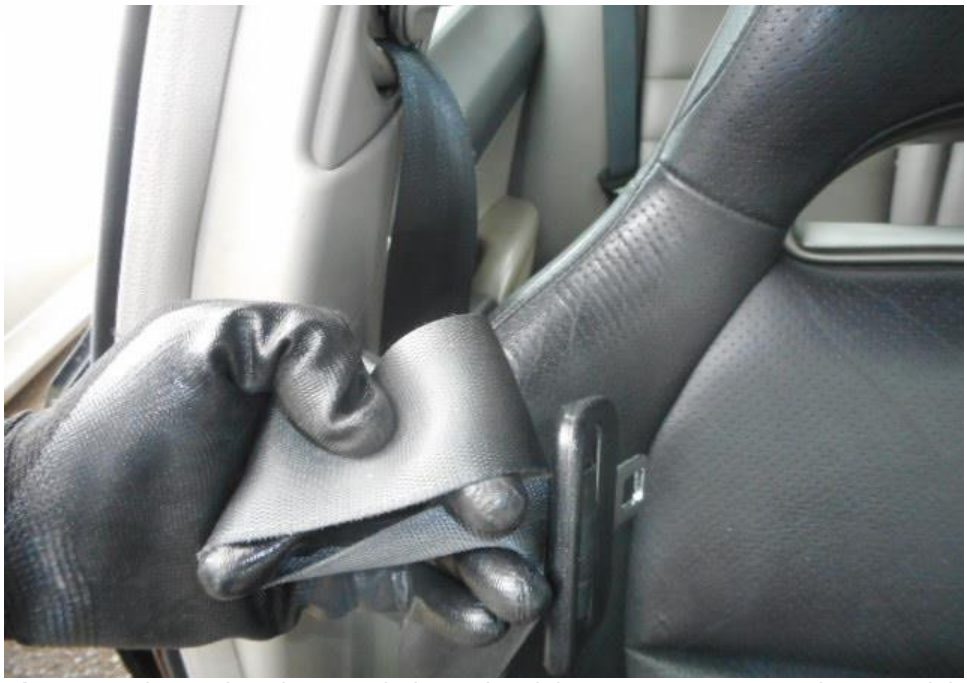


Photo 28 shows that the seat belt on the right seat was worn at the material time of accident as the safety pre-tensioners was activated at the moment of impact and caused the seat belt to be locked into the last position.

Photo 29 shows that the seat belt on the left seat was not worn at the material time of accident as the safety pre-tensioners was activated at the moment of impact and caused the seat belt to be locked into the last position.

Operational Behaviour of the Motor Car

14. Operational test to primarily determine whether there was any abnormality to the engine system, transmission system and braking system of the Motor Car could not be conducted given the engine and ignition system of the Motor Car was damaged as a result of the accident.

Conclusion

15. 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) and/or static test(s) to its engine system, braking system, transmission system, steering system and suspension system.

16. My visual checks the undercarriage components of the braking and steering system shows that these components are intact without visible damages.

17. 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 2.7mm to 5.4mm.

Sherwin Beh
Technical Investigator

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