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Your Ref: TP/IP/66301/2018 18th March 2019
Our Ref : CI/TPD19002505/Z

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

MECHANICAL INSPECTION REPORT OF MOTOR TAXI SHD 2783U

1. We refer to your request on 17th December 2018 to conduct a physical inspection of a motor taxi bearing registration number SHD 2783U (herein referred to as "**Motor Taxi**"), which was involved in a road traffic accident on 30th November 2018.

2. The purpose of this inspection is to primarily determine if there was any possible mechanical failure to the Motor Taxi that may have contributed to the accident.

3. Following the request, we carried out a physical inspection of the Motor Taxi on 17th January 2019 at the premises of Traffic Police vehicle pound, 517 Airport Road Singapore 539942. We now set out below our observations and comments with respect to this inspection.

General Condition

4. The mileage of the Motor Taxi at the time of our inspection was not recorded due to the damages sustained as a result of the accident.

5. The Motor Taxi had sustained extensive impact damage at its frontal portion, right portion & left portion. The impact force was significant, causing the various parts and components of the Motor Taxi to be damaged. This had included its engine cooling system, which was amongst the multiple parts and components that were pushed towards the rear of the Motor Taxi.

6. Other body parts that were damaged had included a buckled front bonnet, dislodged front lower bumper, corrugated front left & right side fenders, cracked windshield, damaged coolant tank amongst others. The interior compartment was not affected by the accident.

7. This was likely due to the consistency of the accident's case facts that on 30th November 2018 at or about 0758hrs, the Motor Taxi (SHD 2783U) was travelling along PIE (Airport), slip road into CTE (SLE) when he was involved in an accident. Driver claimed that there was a mechanical fault to his Motor Taxi (turned steering to left but vehicle going right), thus skidded and collided onto government property along the slip road of PIE (Airport) into CTE (SLE). Driver insists that there was steering problem that caused him to lose control of his vehicle. See photo 1 to 9 below.

Photo 1 shows a general view of the frontal portion of the Motor Taxi at the time of our inspection. The Motor Taxi was observed to have sustained extensive impact damage at its frontal, left & right portion. The impact force was significant, causing the various parts and components to be damaged as a result of the accident.

Photo 2 shows a general view of the front right portion of the Motor Taxi at the time of our inspection. The Motor Taxi was observed to have sustained extensive impact damage at its front right portion.

Photo 3 shows a general view of the front left portion of the Motor Taxi at the time of our inspection. The Motor Taxi was observed to have sustained minor impact damage at its front left portion.

Photo 4 shows a closer view of the damage sustained on the Motor Taxi. The impact force was significant, causing the windshield to sustain cracked due to the accident.

Photo 5 shows a closer view of the damaged radiator tank of the Motor Taxi. The impact force was significant, causing also other various parts and components inside the engine compartment to be damaged as a result of the accident.

Photo 6 shows a general view of the Motor Taxi rear left portion. It was observed to be unaffected by the accident.

Photo 7 shows a general view of the Motor Taxi rear right portion. It was observed to be unaffected by the accident.

Photo 8 shows the interior portion of the Motor Taxi. The impact force triggered both driver & front passenger's airbag as a result of the accident.

Photo 9 shows a general view of the rear right portion of the Motor Taxi at the time of our inspection. The rear portion was observed to be in good condition unaffected by the accident.

Tyres and Wheel Rims

8. The condition of the Motor Taxi's rear left, rear right and front left tyres was observed to be in serviceable condition. We 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 3 tyres. The 3 tyres were also observed to be sufficiently inflated for vehicular operation.

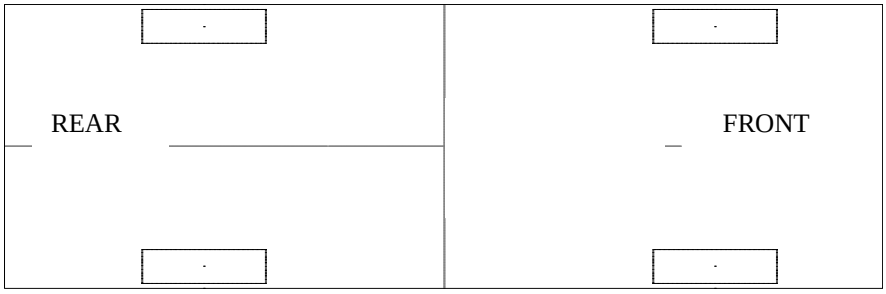
9. The condition of the front left tyre was observed with 2 small bloated marks on the outer wall likely caused by the excessive impact pressure to the front left tyre due to the accident's impact. However, it was observed to be sufficiently inflated for vehicular operation.

10. As for the front right tyre, it was observed to be deflated due to the accident's impact collision. We did found dent on the outer side of the alloy rim and also a small puncture mark about 15mm in length which was likely caused by the accident.

11. The tyre brand, tyre size and remaining tread depth of the 4 tyres were recorded as follows:-

Good Ride Radial RP 28
185/65R15 (4mm)

Acenda Ace-100 185/65R15 (6mm)
(Bloated mark on the outer sidewall)(Inflated)



Westlake Radial RP 18
185/65R15 (5mm)

Acenda Ace-100 185/65R15 (6mm)
(Deflated)(Dent on the wheel rim & cut mark)

12. The tyres were observed to be wrapped around steel wheel rims. The tyres were found to be without any significant damage apart for some relatively minor kerb grazing type of damage on the alloy rims.

13. However, the front right tyre alloy rim was observed to be dented (likely due to the accident) that might contribute to the deflation of the tyre. As for the front left tyre, it was observed to have sustained with 2 small bloating marks on the outer side wall likely due to the accident's impact collision. See photo 10 – 16 below.

Photo 10 shows the condition of the front right tyre of the Motor Taxi, which was observed to be deflated (likely due to the accident) which might cause by dented alloy wheel rim.

Photo 11 shows the condition of the dented front right wheel rim of the Motor Taxi as a result of the accident.

Photo 12 shows the condition of the dented front right wheel rim of the Motor Taxi as a result of the accident.

Photo 13 shows the condition of the front left tyre of the Motor Taxi, which was observed to be in serviceable condition with remaining tread depth of approximately 5mm. However, 2 small bloated marks were observed on the outer sidewall of the tyre likely due to the accident's impact.

Photo 14 shows the condition of the front left tyre of the Motor Taxi, which was observed to be in serviceable condition with remaining tread depth of approximately 5mm. However, 2 small bloated marks were observed on the outer sidewall of the tyre likely due to the accident.

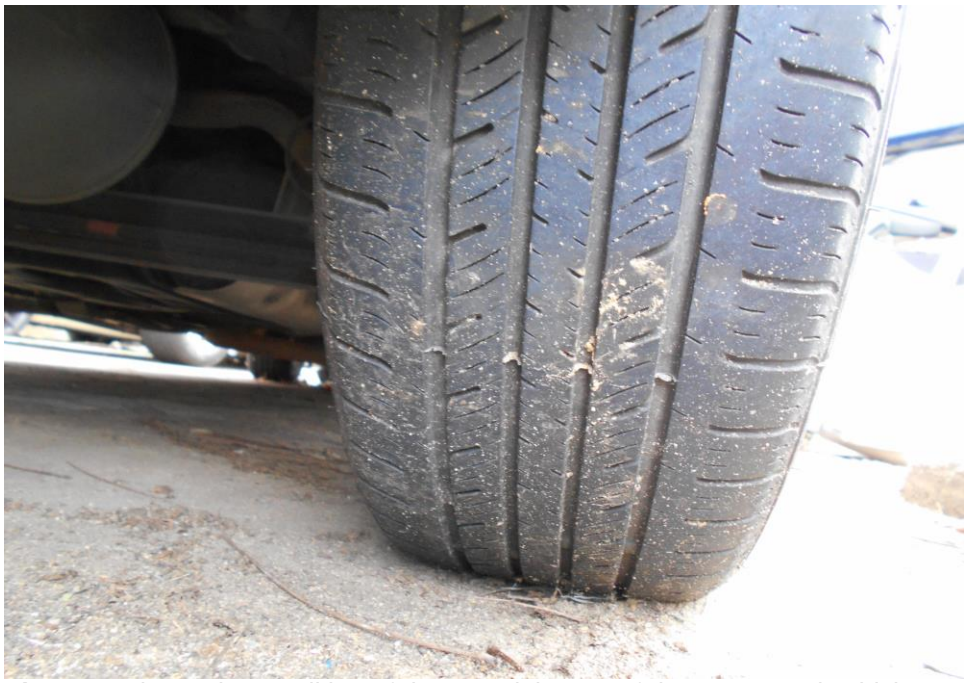


Photo 15 shows the condition of the rear right tyre of the Motor Taxi, which was observed to be in serviceable condition with remaining tread depth of approximately 6mm. There was also no tear, cut or burst mark(s) on the outer and the inner sidewalls as well as across the tread of this tyre.

Photo 16 shows the condition of the rear left tyre of the Motor Taxi, which was observed to be in serviceable condition with remaining tread depth of approximately 5mm. There was also no tear, cut or burst mark(s) on the outer and the inner sidewalls as well as across the tread of this tyre.

Engine Compartment & Operating Fluids

14. The engine compartment of the Motor Taxi was severely affected by the collision. We were unable to access to the engine compartment via the front bonnet. It was observed to be buckled inwards as a result of the accident. From our visual examination at time of the inspection, parts like the radiator, air intake system and exhaust manifold, amongst others were found to be damaged due to the accident's impact collision.

15. Leakage of the various operating fluids like the engine oil and engine coolant fluid was also noted. Given the extent of damages to the engine compartment, the leakages were likely due to the accident. The engine undercarriage was however observed to be covered with fluid, suggesting leakage of fluid. There was no accumulation of dust and/or dirt particles on the engine housing where the fluid stains had formed. This would indicate that the fluid leakage was a fresh leak and likely to be a result of the accident. We were therefore unable to comment whether these operating fluids were of sufficient level and without contamination for vehicular operation prior to the accident See photo 17 – 21 below.

Photo 17 shows a general view of the Motor Car's engine compartment portion. It was observed to be stuck affected by the accident.

Photo 18 shows the close up view of the radiator tank that was affected by the accident's impact.

Photo 19 shows the close up view of the wiper washer container that was observed to be damaged (broken) by the accident's impact.

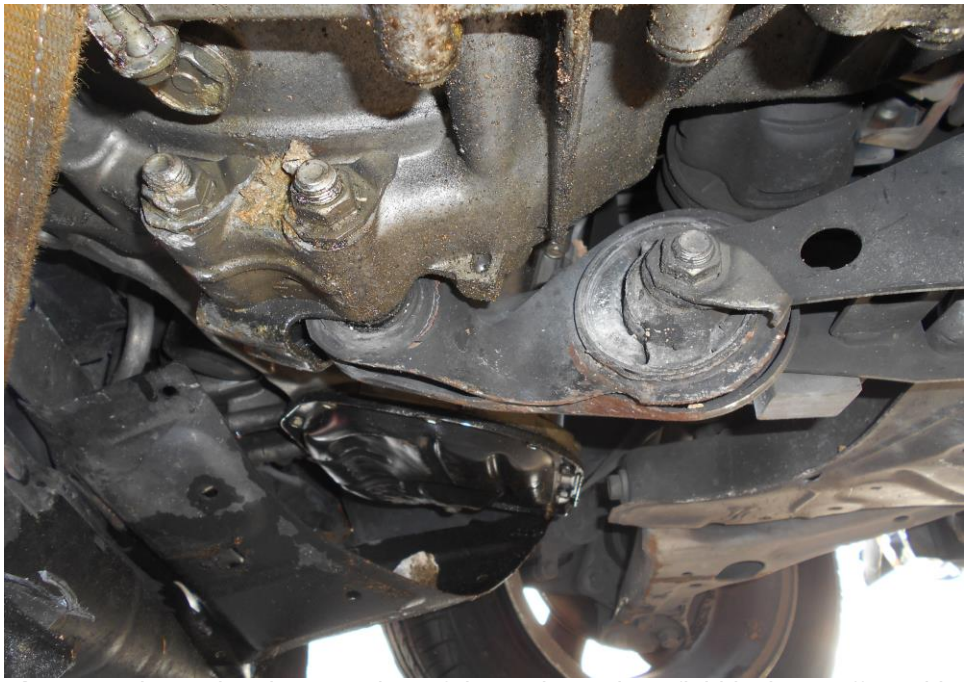


Photo 20 shows the close up view of the undercarriage fluid leakage affected by the accident's impact.

Photo 21 shows the close up view of the undercarriage fluid leakage affected by the accident's impact.

Steering System & Braking System

16. We were not able to conduct any operational tests on the steering system of the Motor Taxi due to the damages sustained which consists of deflated front right tyre and engine damages as a result of the accident.

17. However, our physical and visual examination on the steering system mechanical components reveals that it does not sustained any damages that relates to the accident. It's steering tie rod, drive shaft, lower steering arm and rubber bushing amongst others was intact & unaffected by the accident's impact.

18. As for the Motor Taxi driver's claimed of mechanical fault to the steering wheel (turned steering to the left vehicle going right), thus skidded and collided onto government's property. We had engaged a towing vehicle to lift up the Motor Taxi frontal portion (Steering portion). This was arranged for the purposed of testing the steering system's reaction while being lifted up.

19. A steering wheel testing was conducted during the Motor Taxi was lifted up by the towing crane jib. We had conducted manoeuvring of the steering wheel to the fullest left & right. It's both front wheel had reacted going to the same direction as the turning direction of the steering wheel without abnormalities. We had conducted the steering turning test for several times and obtained the same result which is both front wheels had reacted going to the same direction as the turning direction of the steering wheel. This had indicated that the steering system was in serviceable condition prior to the accident. See photo 22 to 28 below.

Photo 22 shows a Towing Truck was in position to lift up the Motor Taxi prior the test.

Photo 23 shows a Towing Truck was in position to lift up the Motor Taxi prior the test.

Photo 24 shows the Motor Taxi was lifted up by the Towing Truck for steering test purposes.

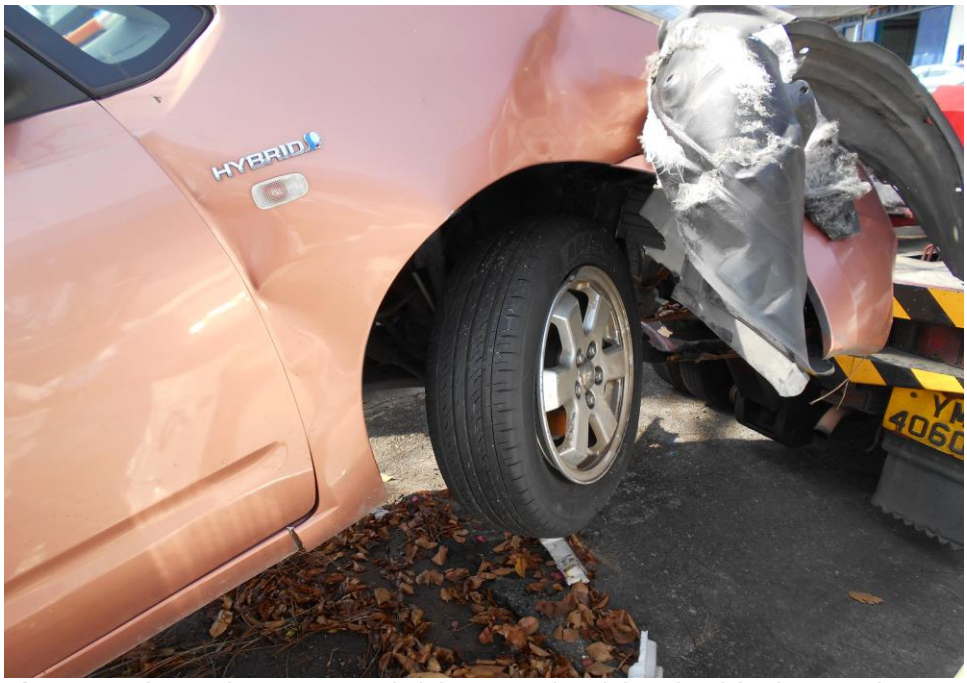


Photo 25 shows the Motor Taxi right tyre. The right wheel had reacted to our steer manoeuvre to the left without abnormality at time of testing.

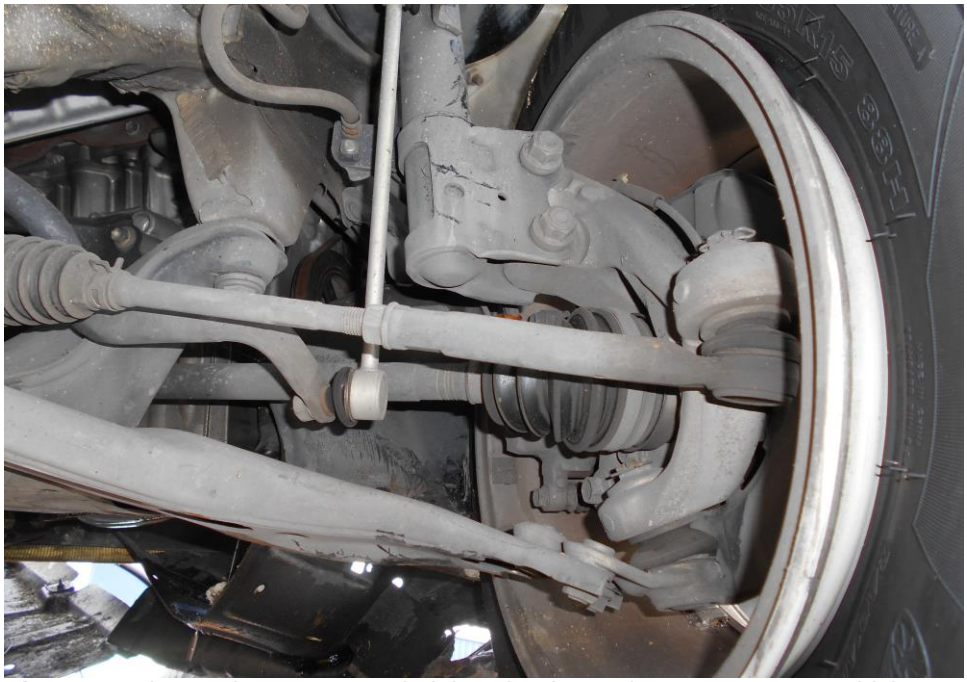


Photo 26 shows the Motor Taxi right wheel steering components which was found to be unaffected by the accident's impact.

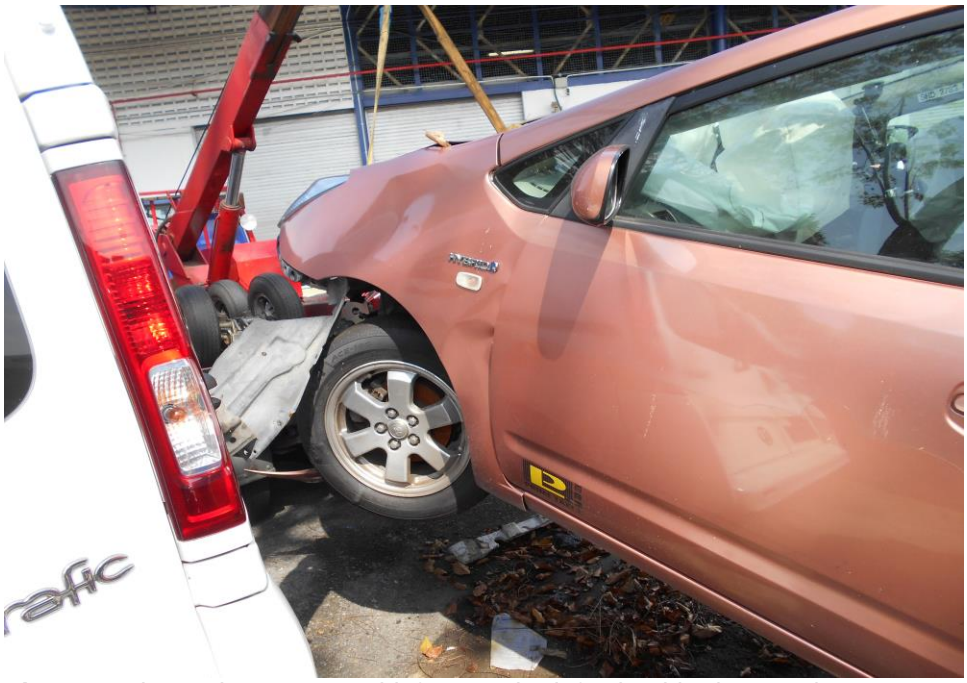


Photo 27 shows the Motor Taxi left tyre. The left wheel had reacted to our steer manoeuvre to the left without abnormality at time of testing.

Photo 28 shows the Motor Taxi left wheel steering components which was found to be unaffected by the accident's impact.

20. As for the braking system, our investigation reveals that there was no brake fluid leakage or damages to its supporting components. The brake hoses, brake booster and brake callipers were found to be intact and unaffected by the accident's impact. The brake fluid reservoir was however not able to be access due to the damages sustained to the front bonnet that causes it to be stuck at the time of our examination. See photo 29 - 32 below.

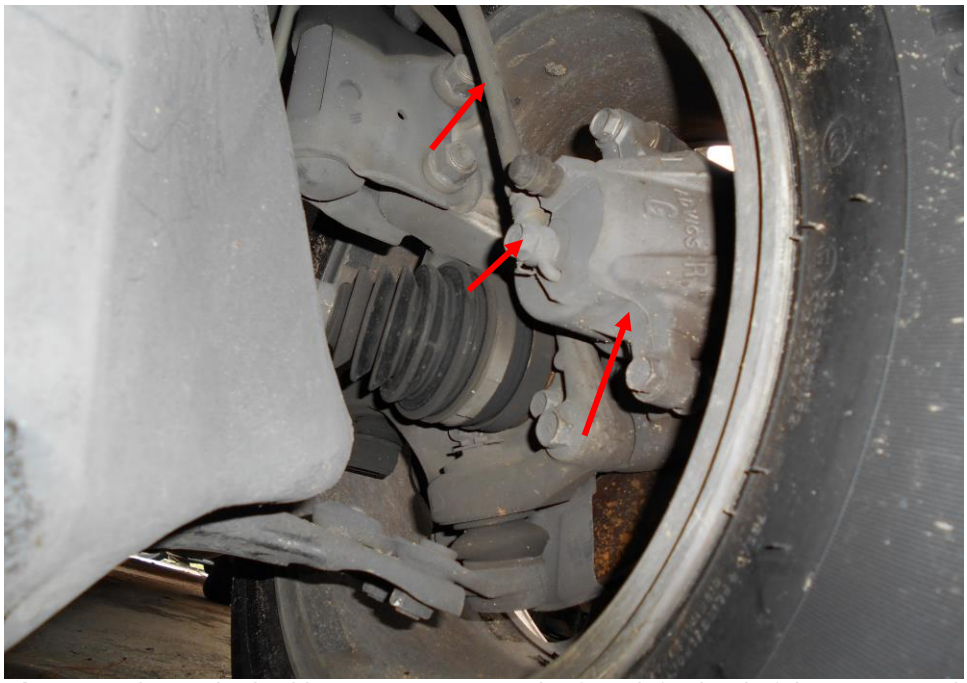


Photo 29 shows the braking components at the front left wheel of the Motor Taxi. We did not observe any leakage of brake fluid at the time of our inspection of the Motor Car.

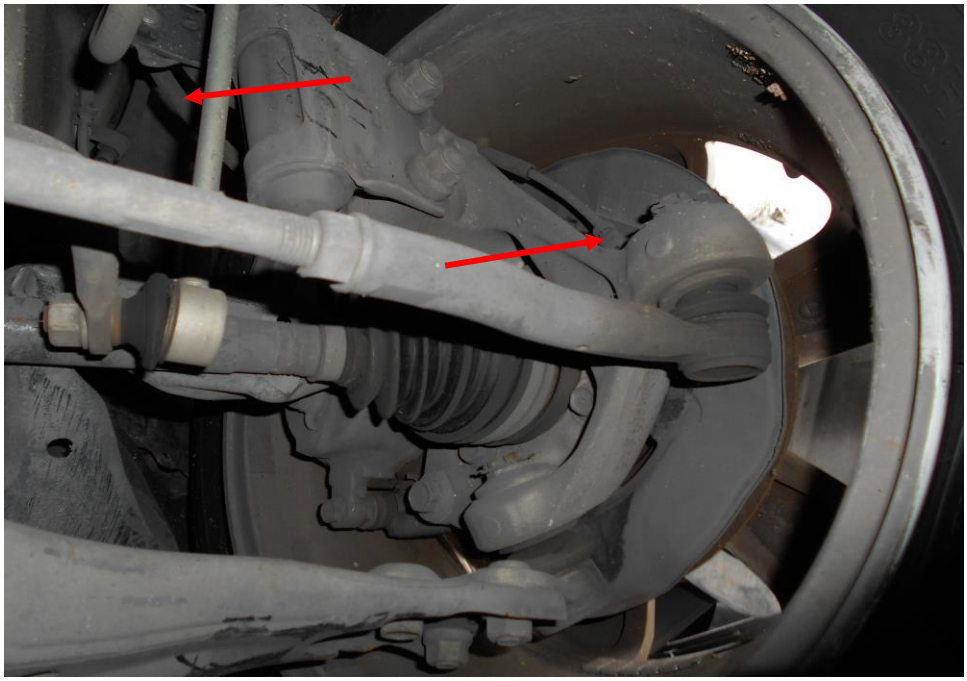


Photo 30 shows the braking components at the front right wheel of the Motor Taxi. We did not observe any leakage of brake fluid at the time of our inspection of the Motor Taxi.

Photo 31 shows the braking components at the rear right wheel of the Motor Taxi. We did not observe any leakage of brake fluid at the time of our inspection of the Motor Taxi.

Photo 32 shows the braking components at the rear left wheel of the Motor Taxi. We did not observe any leakage of brake fluid at the time of our inspection of the Motor Taxi.

Electronic Safety / Warning Indicators

21. The Motor Car's automatic self-test of the functionality of its various operating systems like the Anti-Brake Lock System (ABS) and Supplemental Restraint System (SRS) during cranking of the engine was not able to be initiated as the engine of the Motor Car could not be started due to damage sustained as a result of the accident.

22. The Supplemental Restraint System (SRS) of the Motor Car was however likely to be in normal operating condition at the material time of the accident. The evidence of the deployed driver's & front passenger's airbag indicates that the impact sensors and control module of the Motor Car's SRS were all in serviceable condition at the material time of accident. See photo 33 below.

Photo 33 shows the Supplemental Restraint System (SRS) of the Motor Taxi was however likely to be in normal operating condition at the material time of the accident. The evidence of the deployed front driver & passenger's airbag indicates that the impact sensors and control module of the Motor Taxi's SRS were all in serviceable condition at the material time of accident.

Operational Behaviour of the Motor Car

23. No operational test to primarily determine whether there was any abnormality to the engine system, transmission system and steering system of the Motor Car could be conducted given the extent of damage that it had sustained.

Conclusion

24. For this particular case, we were unable to determine whether there was any possible mechanical failure to the Motor Car that may have contributed to the accident. This was mainly due to the extent of damage that it had sustained. Its engine system was damaged as a result of the accident.

25. However, for the malfunction claim on the steering system (Driver turn steering wheel to left but vehicle going right). We had conducted an extended examination on the steering system, we had arranged for the Motor Taxi to be lifted-up via a towing crane lifting jib. We had turned the steering wheel to the left & right to the fullest, the steering system responded to our turning action without any abnormalities. This shows that the steering system was in serviceable condition prior to the accident.

26. The condition of the Motor Taxi's rear left, rear right and front left tyres was observed to be in serviceable condition. We 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 3 tyres. The 3 tyres were also observed to be sufficiently inflated for vehicular operation.

27. The condition of the front left tyre was observed with 2 small bloated marks on the outer wall likely due to the accident's impact. However, it was observed to be sufficiently inflated for vehicular operation.

28. As for the front right tyre, it was observed to be deflated due to the accident's impact collision. We did found dent on the outer side of the alloy rim and also a small puncture mark measuring about 15mm in length which was likely caused by the accident.

29. The 4 tyres remaining tread depth were measured to an approximately of 4mm to 6mm each.

30. Our findings were based solely on a static and visual inspection of the Motor Car. No operational test could be carried out to the Motor Car given the extent of damage that it had sustained as a result of the accident.

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