

Your Ref: TP/IP/60763/2018
Our Ref : CI/TPD18022199/Z

19th March 2019

Fatal Accident Investigation Team

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

MECHANICAL INSPECTION REPORT OF MOTOR TAXI SHA 9324G

1. We refer to your request on 28th November 2018 to conduct a physical inspection of a motor taxi bearing registration number SHA 9324G (herein referred to as "**Motor Taxi**"), which was involved in a fatal road traffic accident on 27th October 2018.
2. The objective of the inspection is to determine if there was any possible mechanical failure to the Motor Taxi that may have contributed to the accident.
3. Following the request, we had carried out a physical inspection of the Motor Taxi on 21st December 2018 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 recorded at 655266km.
5. The Motor taxi had sustained an impact damages that was confined to its right portion. Its driver & passenger's door was observed to be pushed inwards towards the left side; its right wing mirror was damaged and rear right quarter glass found cracked likely due to the accident's collision impact.
6. This was likely due to the consistency of the accident's case facts that on 27th October 2018 at about 0827hrs, the motorcycle was travelling on lane 1 of a 2 lanes road where a Motor Taxi ahead of him in-between 2 lanes suddenly made an illegal U-turn along Eng Neo Avenue X Eng Neo Avenue towards Duneran Road. Motorcycle unable to stop in time and collided onto the right side of the Motor Taxi on lane 1. See photo 1 to 8 below.

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Photo 1 shows the mileage of the Motor taxi at the time of our inspection was recorded at 655266km.



Photo 2 shows a general view of the front body of the Motor Taxi at the time of our inspection. The Motor Taxi was observed to be in good condition unaffected by the accident's impact collision.

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Photo 3 shows a general view of the front left body of the Motor Taxi at the time of our inspection. The Motor Taxi was observed to be in good condition unaffected by the accident's impact collision.



Photo 4 shows a general view of the front right body of the Motor Taxi at the time of our inspection. The Motor Taxi was observed to have sustained an impact damages that was confined to its right portion.

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Photo 5 shows a general view of the rear body of the Motor Taxi at the time of our inspection. The Motor Taxi was observed to be in good general condition.



Photo 6 shows a general view of the rear right body of the Motor Taxi at the time of our inspection. The Motor Taxi was observed to have sustained an impact damages that was confined to its right portion.

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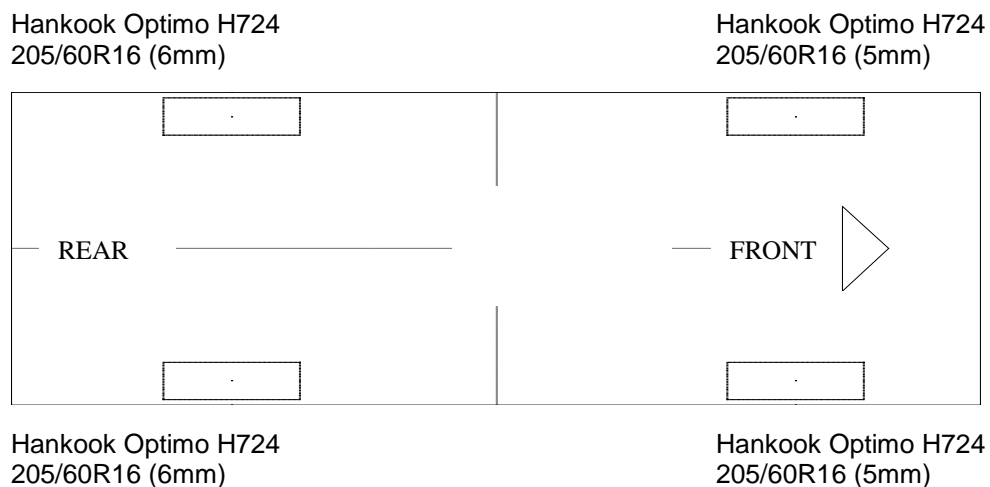
Photo 7 shows a semi close up view of the driver and passenger's door, rear quarter glass of the Motor Taxi at the time of our inspection. It had sustained damages likely due to the accident.



Photo 8 shows a close up view of the right side wing mirror of the Motor Taxi. It was observed to sustained damages at the time of our inspection.

Tyres and Wheel Rims

7. The condition of the Motor Taxi's 4 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 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:-



8. The 4 tyres were observed to be wrapped around standard steel wheel rims that were found to be without any significant damage except for some marks of grazing nature on the wheel rims, which are commonly associated to grazing against a road kerb. See photo 9 to 12 below.



Photo 9 shows the condition of the front right tyre of the Motor Taxi, which was observed to be in serviceable condition with remaining tread depth of approximately 5mm. There was no tear, cut or burst mark(s) on the outer and the inner sidewalls.



Photo 10 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. The tyre, which was wrapped around alloy wheel rim, was also observed to be sufficiently inflated for vehicular operation.



Photo 11 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 6mm.

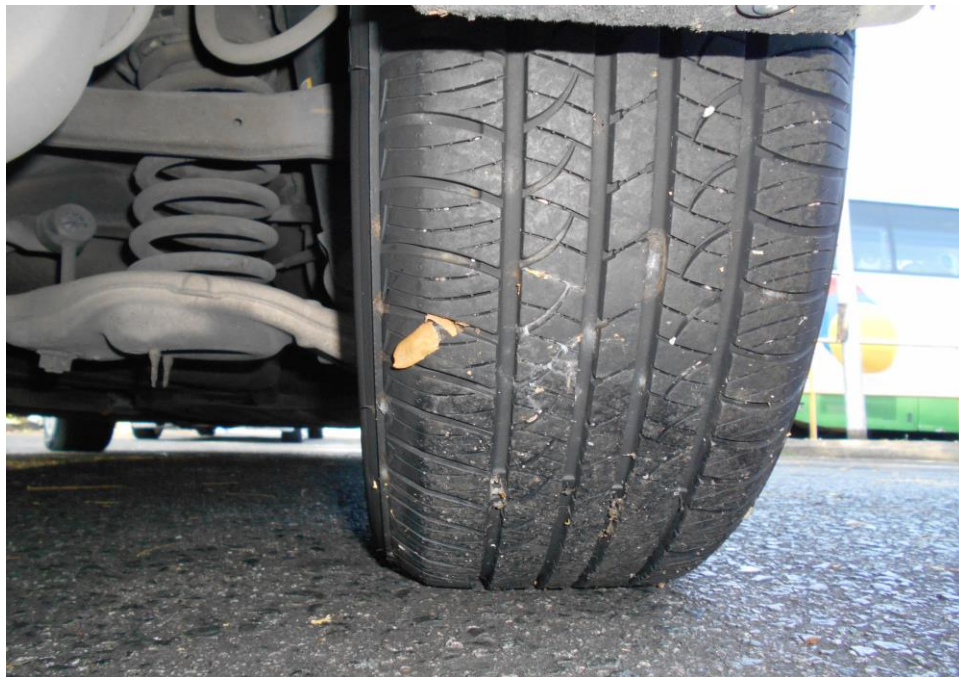


Photo 12 shows the condition of the rear right tyre of the Motor Taxi, which was observed to be in serviceable condition with remaining tread depth of approximately 6mm.

Engine Compartment & Operating Fluids

9. Upon examination of the engine compartment of the Motor Taxi, we had observed all the parts and components inside the engine compartment to be intact and unaffected by the accident. The brake fluid, engine oil and engine coolant were all found to be of sufficient level for operating purposes. Visually, there was also no contamination found to these fluids.
10. Further investigation of the engine compartment revealed no sign(s) or indication(s) of fluid leakage and/or fluid stain within the engine compartment of the Motor Taxi.
11. Our subsequent checks on the underside of the Motor Taxi revealed no fluid leakage was observed. Our checks on the engine fluid had also indicated that the engine fluid was of sufficient level for operational purposes, and without contamination. Visually, the various undercarriage components of the Motor Taxi were all observed to be intact and without any visible damage. See photo 13 – 17 below.



Photo 13 shows a general view of the Motor Car's engine compartment. The various parts and components inside the engine compartment were unaffected by the accident. There was also no sign(s) or indication(s) of fluid leakage and/or fluid stain within the engine compartment.

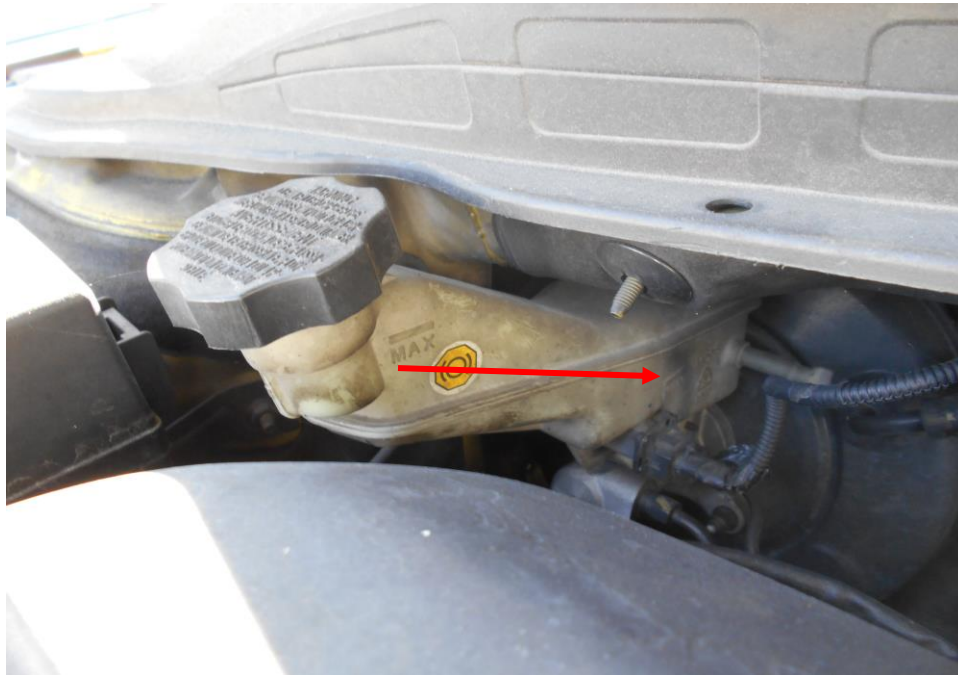


Photo 14 shows the brake fluid reservoir of the Motor Taxi at the time of our inspection. The brake fluid was observed to be of sufficient level (arrowed) and without any visible contamination.



Photo 15 shows the engine coolant fluid reservoir of the Motor Taxi at the time of our inspection. The engine coolant fluid was observed to be of sufficient level and without any visible contamination.



Photo 16 shows the engine oil dip stick of the Motor Taxi at the time of our inspection. The engine oil was observed to be of sufficient level and without any visible contamination.



Photo 17 shows the engine underside of the Motor Taxi engine. The engine was observed to be free from fluid leakage at time of our inspection.

Steering System & Braking System

12. The mechanical components of the Motor Taxi's steering system and braking system were all found to be visually intact and undamaged. Our visual examination of the various steering components, which had included the rack and pinion, tie rods, tie rod ends and ball joints, revealed that these components were all generally in good condition. Components of the braking system like the brake master pump, brake booster, brake callipers and brake hoses amongst others were also found to be without any damage upon our visual inspection.
13. Static test on the steering system of the Motor Taxi also revealed no abnormality to the steering system. We did not experience any abnormal free play and/or other resistance when turning the steering wheel left and right to full lock positions. Our visual examination of the various steering components which had included the steering rack and pinion, tie rods, tie rod ends and ball joints revealed that these components were all generally in good condition.. See photo 18 - 21 below.



Photo 18 shows 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. Our visual inspection of the various mechanical components of the Motor Taxi's braking system revealed all to be intact without visible damage.



Photo 19 shows the brake hose (arrowed) 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. Our visual inspection of the various mechanical components of the Motor Taxi's braking system revealed all to be intact without visible damage.

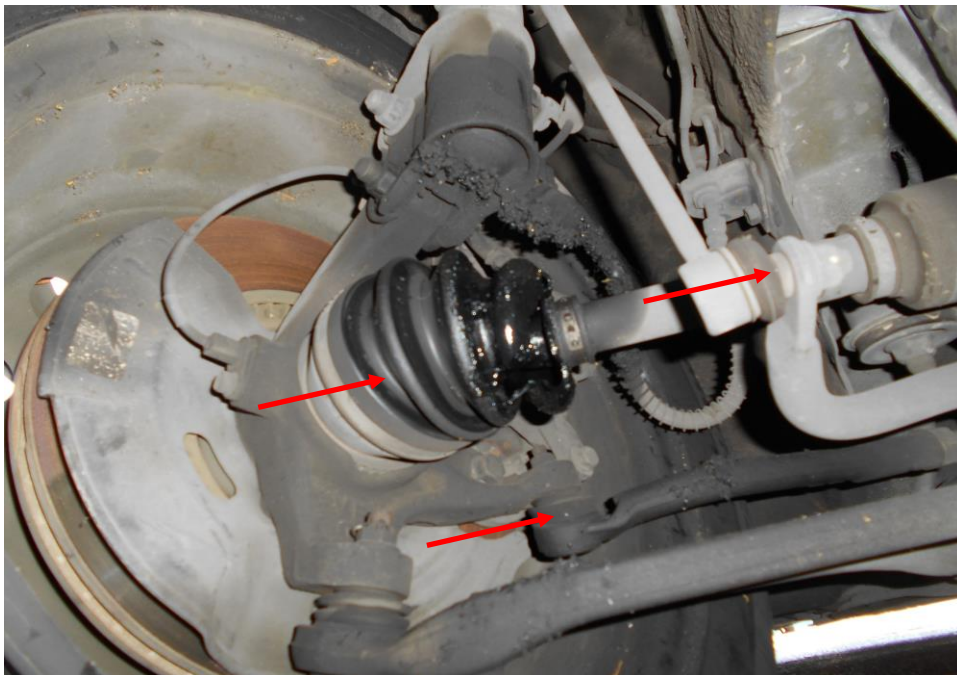


Photo 20 shows the various undercarriage components at the front right wheel of the Motor Taxi, in particular the steering tie rod (arrowed). The various steering components were all found to be intact, suggesting that the steering system of the Motor Taxi was likely to be in serviceable condition.

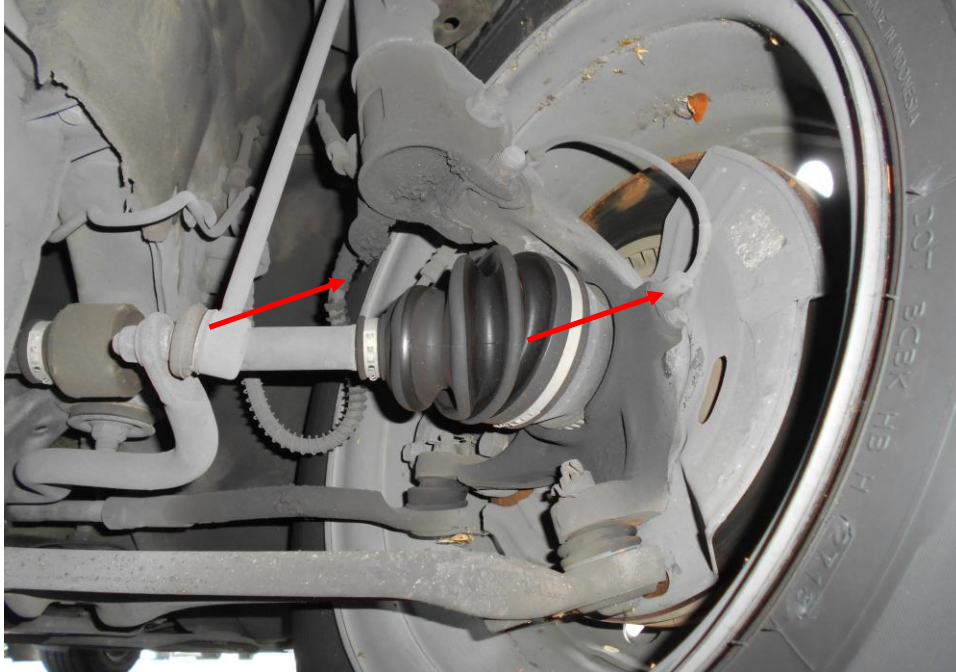


Photo 21 shows the various undercarriage components at the front left wheel of the Motor Taxi. We did not observe any leakage of brake fluid (arrowed) at the time of our inspection of the Motor Taxi. Our visual inspection of the various mechanical components of the Motor Taxi's braking system revealed all to be intact and without visible damage, indicating that the braking system was likely to be in serviceable condition at the material time of accident.

Electronic Safety / Warning Indicators

14. The Motor Taxi's automatic self-test of the functionality of its various electronic operating systems like the Anti-Brake Lock System (ABS), SRS, engine check light, battery light and diesel glow plug during cranking of the engine had indicated that these systems were in working condition and without abnormality. This can be established from the warning lights disappearing from the instrument panel after the self-test. See photo 22 & 23 below.



Photo 22 shows the warning lights for the various electronic operating systems of the Motor Taxi appearing on its instrument panel during the self-test when the engine is cranked, in particular the ABS light, SRS light, engine check light, battery light and diesel glow plug amongst others.



Photo 23 shows no warning lights illuminated on the instrument panel of the Motor Taxi after the engine was cranked. This would suggest that there was no abnormality to the various electronic operating systems of the Motor Taxi, like the ABS light engine check light, battery light and diesel glow plug.

Operational Behaviour of the Motor Taxi

15. A short operational test of the Motor Taxi, to primarily determine whether there was any abnormality to its engine system, its transmission system and braking system was subsequently carried out.
16. During the operational test, the transmission system of the Motor Taxi was able to be shifted to drive mode and reverse mode without any difficulty. There were no abnormal sounds heard and/or abnormal behaviour of the Motor Taxi's engine system. It was able to move forward and backward normally. The braking system was also found to be in working condition as the Motor Taxi was able to slow down and come to a complete stop upon depressing of the brake pedal. See photo 24 & 25 below.



Photo 24 shows an operational test of the Motor Taxi. We were able to move the vehicle reverse, forward and backward normally.



Photo 25 shows an operational test of the Motor Taxi. We were able to move the vehicle reverse, forward and backward normally.

Conclusion

17. From our physical inspection of the Motor Taxi, it appears that its engine system, transmission system, steering system and braking system were all in serviceable condition. We did not find any evidence(s) to suggest that there was possible mechanical failure to the Motor Taxi that may have caused and/or contributed to the accident.
18. A short operational test of the Motor Taxi, which we had conducted, did not produce any sign(s) or symptom(s) to suggest that there was any abnormality to its engine system, its transmission system and braking system.

19. The 4 tyres of the Motor Taxi were also found to be in serviceable condition. There was no 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 sufficiently inflated for vehicular operation with remaining tread depth of approximately 5mm to 6mm each.

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