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25 January 2018

Fatal Accident Investigation Team

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

MECHANICAL INSPECTION REPORT OF MOTOR TAXI SH 8506M

1. We refer to your request on 9 January 2018 to conduct a physical inspection of a motor taxi bearing registration number SH 8506M (herein referred to as "**Motor Taxi**"), which was involved in a fatal road traffic accident on 21 November 2017.
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 25 January 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 not recorded as its engine could not be started despite attempts to jump start the engine.
5. The Motor Taxi was observed to be in good general condition except for a dented front number plate holder. At the time of our inspection, we observed damage marks of grazing nature at both corners of the front bumper of the Motor Taxi. Similar graze marks were also observed on the left side of its rear bumper.

Tyres and Wheel Rims

6. The condition of the Motor Taxi's 4 tyres was observed to be in serviceable condition. We did not found 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 standard wheel rims that were found to be without any significant damage apart for some relatively minor kerb grazing type of damage. See photos 1 – 9 below.



Photo 1 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 general condition except for a damaged front number plate holder. At the time of our inspection, we observed damage marks of grazing nature at both corners of the front bumper of the Motor Taxi. Similar graze marks were also observed on the left side of its rear bumper. The mileage of the Motor Taxi was not recorded as its engine could not be started despite attempts to jump start the engine.



Photo 2 shows a closer view of the damaged front number plate holder of the Motor Taxi at the time of our inspection (circled).



Photo 3 shows a closer view of the damage marks of grazing nature observed at the right corner of the front bumper of the Motor Taxi at the time of our inspection (circled).



Photo 4 shows a closer view of the damage marks of grazing nature observed at the left corner of the front bumper of the Motor Taxi at the time of our inspection (circled).



Photo 5 shows a closer view of the damage marks of grazing nature observed at the left side of the rear bumper of the Motor Taxi at the time of our inspection (circled).



Photo 6 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 standard wheel rim, was also observed to be sufficiently inflated for vehicular operation. There was no tear, cut or burst mark(s) on the outer and the inner sidewalls as well as across the tread of the Motor Taxi's 4 tyres.



Photo 7 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 6mm. The tyre, which was wrapped around standard wheel rim, was also observed to be sufficiently inflated for vehicular operation.



Photo 8 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. The tyre, which was wrapped around standard wheel rim, was also observed to be sufficiently inflated for vehicular operation. There was no significant damage observed on the 4 wheel rims of the Motor Taxi apart for some relatively minor kerb grazing type of damage found on all the 4 wheel rims.



Photo 9 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 4mm. There was also no tear, cut or burst mark(s) on the outer and the inner sidewalls as well as across the tread of the 4 tyres.

Engine Compartment & Operating Fluids

8. 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 coolant and engine oil were all found to be of sufficient level for operating purposes. Visually, there was also no contamination found to these operating fluids.
9. Further examination 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.
10. Our subsequent checks on the underside of the Motor Taxi also revealed no fluid stain. Visually, the various undercarriage components of the Motor Taxi were found to be intact and without any visible damage. See photos 10 – 13 below.



Photo 10 shows a general view of the Motor Taxi'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 11 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 and without any visible contamination.



Photo 12 shows checks being carried out to the engine coolant of the Motor Taxi at the time of our inspection. The engine coolant was observed to be of sufficient level and without any visible contamination.



Photo 13 shows the engine oil dipstick 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.

Steering System & Braking System

11. 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 calipers and brake hoses amongst others were also found to be without any damage upon our visual inspection.
12. Static tests of the steering system and braking system could not be conducted as the engine of the Motor Taxi was not able to start. However basing on our visual inspection of the various mechanical components, it would appear that the steering system and braking system of the Motor Taxi were in serviceable condition. See photos 14 - 16 below.



Photo 14 shows the brake hose (arrowed) 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. 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.

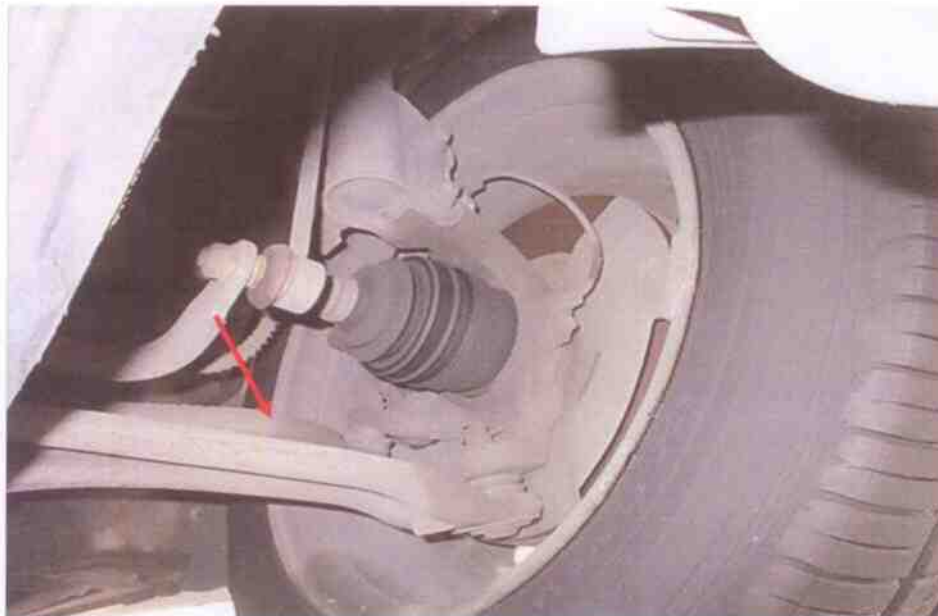


Photo 15 shows the various undercarriage components at the front right wheel of the Motor Taxi, in particular the steering tie rod (arrowed). The various steering components were all found to be intact, suggesting that the steering system of the Motor Taxi was likely to be in serviceable condition at the material time of accident.

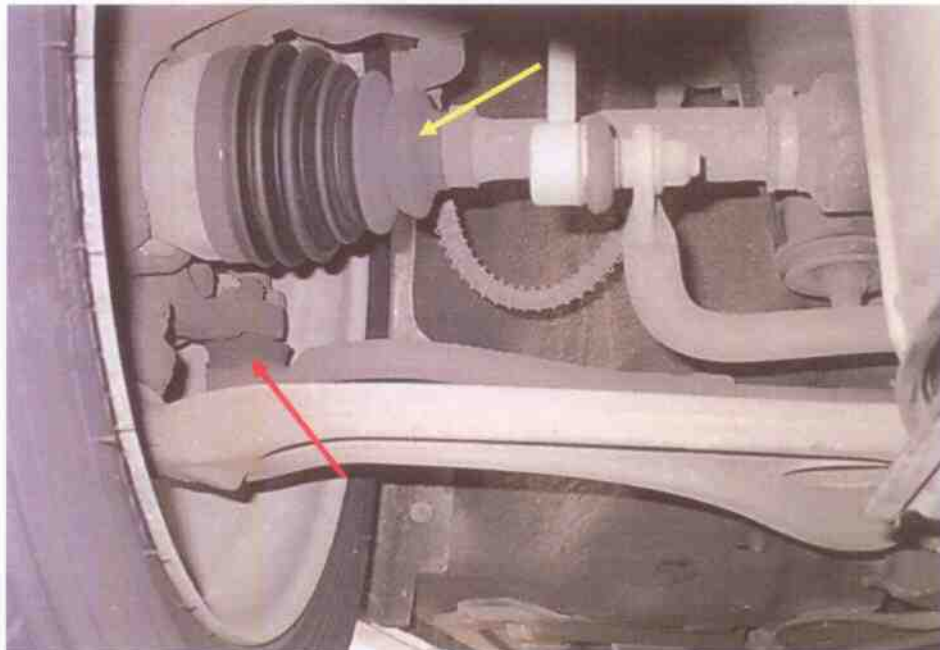


Photo 16 shows the various undercarriage components at the front left wheel of the Motor Taxi, which had included the steering tie rod (red arrow) and left drive shaft (yellow arrow). The various undercarriage components of the Motor Taxi were all found to be intact without any visible damage. There was also no sign of fluid stain observed on the various undercarriage components.

Electronic Safety / Warning Indicators

13. We were not able to initiate the Motor Taxi's automatic self-test of the functionality of its various operating systems like the Anti-Brake Lock System (ABS) and Supplemental Restraint System (SRS) as the self-test would involve cranking of the Motor Taxi's engine, and despite our attempts to jump start its engine, the Motor Taxi's engine could not be started.

Operational Behaviour of the Motor Taxi

14. For similar reason, we were also not able to carry out any operational test to primarily determine whether there was any operational abnormality to the engine system, transmission system, steering system and braking system of the Motor Taxi.

Conclusion

15. At the time of our inspection of the Motor Taxi, its steering system and braking system could not be tested as the Motor Taxi's engine could not be started despite attempts to jump start the engine. However basing on our observations, it would appear that the steering system and braking system of the Motor Taxi were in serviceable condition. This is taking into consideration that all the various mechanical components were found to be intact and undamaged.
16. Notwithstanding that the steering system and braking system could not be tested, the observation gathered from our physical inspection of the Motor Taxi had indicated no evidence to suggest possible mechanical failure to the Motor Taxi that may have contributed to the accident.
17. 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 4mm each.
18. Our findings were based solely on a static and visual inspection of the Motor Taxi. No operational test(s) could be carried out to the Motor Taxi as its engine could not be started at the time of our inspection.


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