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Your Ref: TP/IP/67145/2018 7 May 2019
Our Ref : CI/TPD19002518/N

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

MECHANICAL INSPECTION REPORT OF MOTOR TAXI SHA 8661P

1. We refer to your request on 1 February 2019 to conduct a physical inspection of a motor taxi bearing registration number SHA 8661P (herein referred to as **"Motor Taxi"**), which was involved in a fatal road traffic accident on 5 December 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 2 May 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.

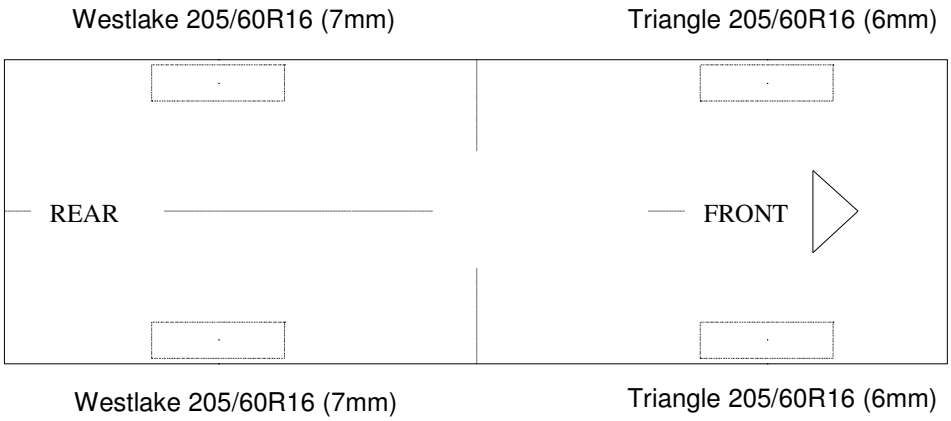
General Condition

4. The mileage of the Motor Taxi at the time of our inspection was 315, 415km.

5. The Motor Taxi had sustained relatively minor impact damage that was confined to its frontal portion. Paint scratches were observed on its front bumper, front bumper grille and front bumper lower grille.

Tyres and Wheel Rims

6. 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:-



7. The 4 tyres were observed to be wrapped around alloy wheel rims that were found to be without any damage. See photos 1 – 9 below.

Photo 1 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 general condition except for some relatively minor impact damage at its frontal portion. The mileage of the Motor Taxi was recorded to be 315, 415km.

Photo 2 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 be in good general condition. However we had observed relatively minor impact damage that was confined to its frontal portion. Paint scratches were observed on its front bumper, front bumper grille and front bumper lower grille.

Photo 3 shows a closer view of the paint scratches on the front bumper of the Motor Taxi at the time of our inspection (circled).

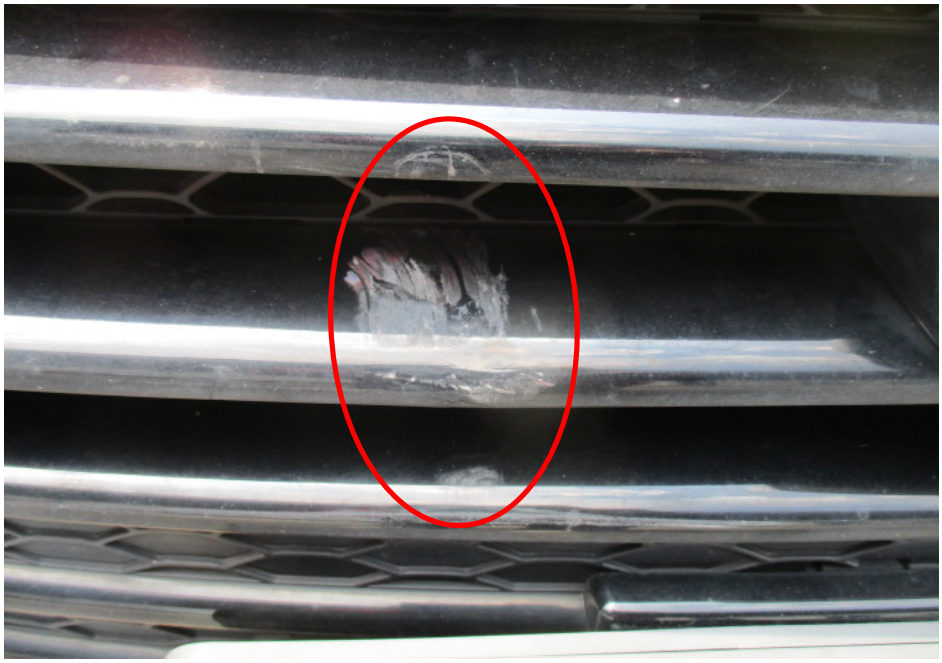


Photo 4 shows a closer view of the scratches on the front bumper grille of the Motor Taxi at the time of our inspection (circled).

Photo 5 shows a closer view of the scratches on the front bumper lower grille 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 6mm. The tyre, which was wrapped around alloy 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 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 alloy 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 7mm. The tyre, which was wrapped around alloy wheel rim, was also observed to be sufficiently inflated for vehicular operation. There was also no damage found on the 4 wheel rims of the Motor Taxi.

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 7mm. 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 oil and engine coolants 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 stains. Visually, the various undercarriage components of the Motor Taxi were all observed to be intact and without any visible damage. See photos 10 – 12 below.

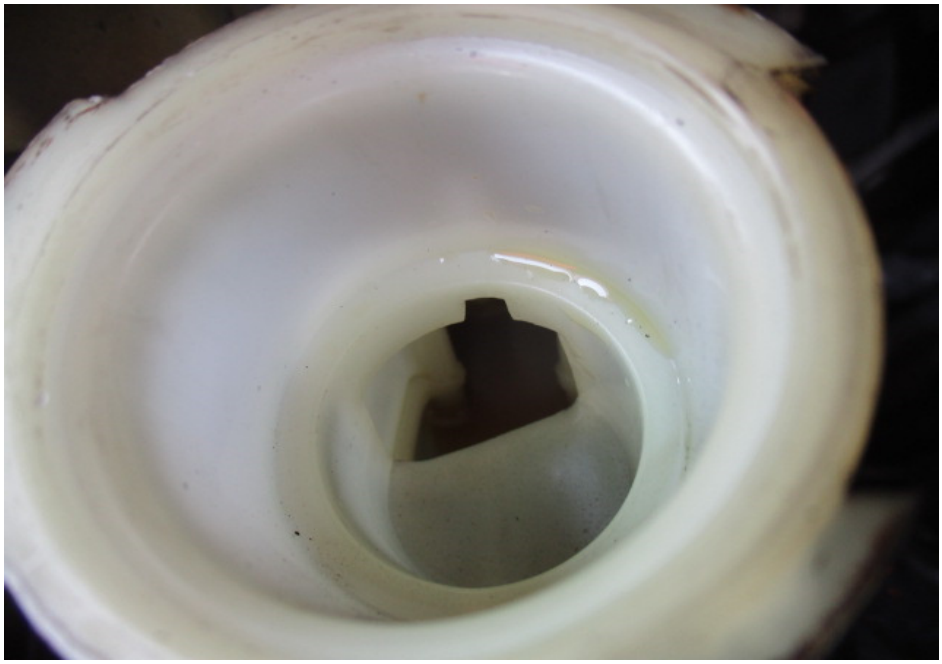


Photo 10 shows the brake fluid reservoir of the Motor Taxi at the time of our inspection. The brake fluid was observed to be of sufficient level and without any visible contamination.

Photo 11 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 12 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.

Braking System & Steering System

11. Static brake tests conducted on the Motor Taxi revealed no abnormality. There was 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 Taxi. The braking system of the Motor Taxi 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.

12. 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 photos 13 - 18 below.

Photo 13 shows the brake hose/pipe (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. Static tests of the Motor Taxi's braking system had indicated that there was no internal leakage of pressure/vacuum. Hence the braking system was likely to be in serviceable condition at the material time of accident. The undercarriage components of the Motor Taxi were also all found to be intact and without any visible damage.

Photo 14 shows the brake hose/pipe (arrowed) at the front right wheel of the Motor Taxi. No leakage of brake fluid was observed. Visual examination of the various components of the braking system like the brake caliper (circled), brake pedal etc. had revealed all to be intact and without visible damage.

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. There was also no sign of fluid stain observed on the various undercarriage components at the front right wheel of the Motor Taxi.

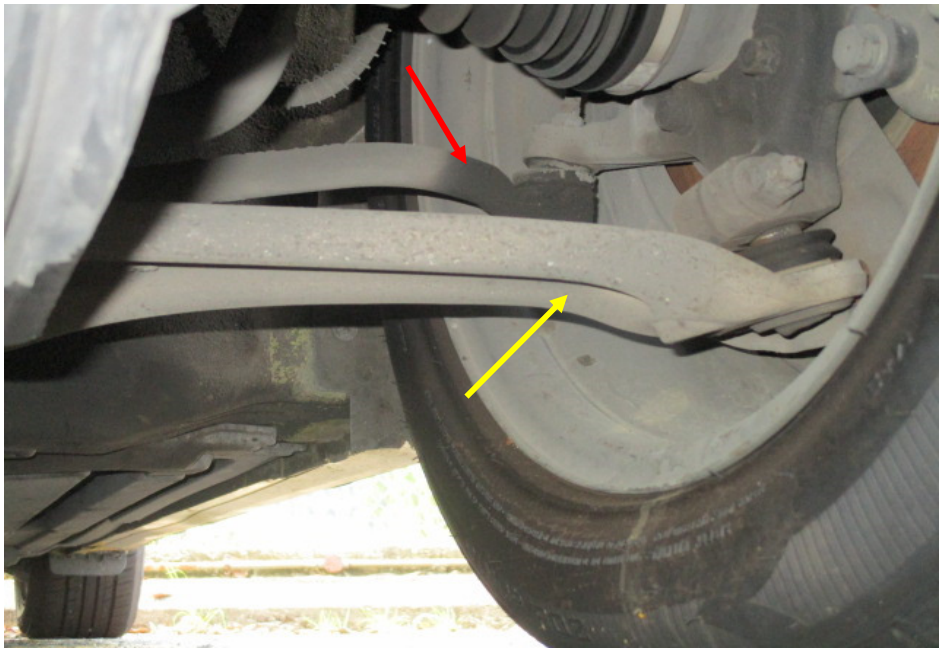


Photo 16 shows the various undercarriage components at the front left wheel of the Motor Taxi, which had included the steering tie rod (red arrow) and left drive shaft (yellow arrow). The various undercarriage components of the Motor Taxi were all found to be intact without any visible damage.

Photo 17 shows the front left wheel of the Motor Taxi turned to its full left. During our steering system test, we did not experience any abnormal free play and/or resistance when we had turned the steering wheel towards the left and right. This would suggest that the steering system of the Motor Taxi was likely to be in serviceable condition at the material time of accident.

Photo 18 shows the front right wheel of the Motor Taxi turned to its full right. During our steering system test, we did not experience any abnormal free play and/or resistance when we had turned the steering wheel towards the left and right. This would suggest that the steering system of the Motor Taxi was likely to be in serviceable condition at the material time of accident.

Electronic Safety / Warning Indicators

13. The Motor Taxi's automatic self-test of the functionality of its various electronic operating systems like the Electronic Power Steering (EPS), Anti-Brake Lock System (ABS), Electronic Stability Control (ESC) and Supplemental Restraint System (SRS) 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 photos 19 & 20 below.

Photo 19 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 EPS light, ABS light, ESC light and SRS light (arrowed).

Photo 20 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 EPS, ABS, ESC and SRS etc.

Operational Behaviour of the Motor Taxi

14. 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.

15. 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.

Conclusion

16. 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.

17. 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.

18. The 4 tyres of the Motor Taxi were also found 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 with remaining tread depth of approximately 6mm each.

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