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Our Ref : CI/TPD18010660/Z

10th May 2018

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

MECHANICAL INSPECTION REPORT OF MOTOR TAXI SHC 4294G

1. We refer to your request on 26th March 2018 to conduct a physical inspection of a motor taxi bearing registration number SHC 4294G (herein referred to as "**Motor Taxi**"), which was involved in a road traffic accident.
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 26th April 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 579861 km.
5. The Motor taxi had sustained impact damages that were confined to its frontal & rear portion. Its front lower bumper was observed to be misaligned/damaged, cracked left hand headlamp, corrugated left hand side fender, missing licence plate & its rear bumper was observed to have been sustained with multiple scratches. See photo 1 to 8 below.



Photo 1 shows the mileage of the Motor Taxi was 579861 km.



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 have sustained with damages on the frontal portion as a result of the accident.



Photo 3 shows a general view of the rear body of the Motor Taxi at the time of our inspection. The Motor Taxi rear portion was observed to sustain multiple scratches likely due to the accident.



Photo 4 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 have sustained with damages on the front left portion as a result of the accident.



Photo 5 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 with damages on the front left portion as a result of the accident.



Photo 6 shows a semi close up view of the front left bumper of the Motor Taxi at the time of our inspection. The Motor Taxi had sustained damages at the front left bumper of the Motor Taxi.



Photo 7 shows a semi close up view of the front right lower bumper of the Motor Taxi at the time of our inspection. The Motor Taxi had sustained damages at the front right lower bumper of the Motor Taxi as a result of the accident.



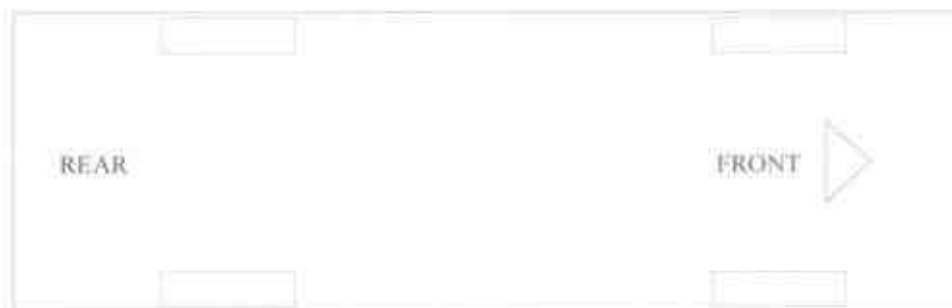
Photo 8 shows a deflated rear left tyre likely due to the accident's impact.

Tyres and Wheel Rims

6. The conditions of the Motor Taxi's 3 tyres (front left, right & rear right tyres) were observed to be in serviceable condition with sufficiently inflated for vehicular operation. 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. As for the rear left tyre, it was found to be deflated likely due to the accident. Further observation found that the tyre was torn on the outer sidewalls. The tyre brand, tyre size and remaining tread depth of the 4 tyres were recorded as follows:-

Falken Sincera SM832
195/65R175 (7mm) (Deflated)

Falken Sincera SM832
195/65R175 (7mm)



Falken Sincera SM832
195/65R175 (5mm)

Falken Sincera SM832
195/65R175 (7mm)

7. The 4 tyres were observed to be wrapped around alloy wheel rims that were found to be without any significant damage except for some marks of grazing nature on the outer spokes of the wheel rims, which are commonly associated to grazing against a road kerb. See photo 9 – 14 below.



Photo 9 shows the condition of the front right tyre of the Motor Taxi, which was observed to be in serviceable condition. The remaining tread depth measured approximately around 7mm. 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 7mm. 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 deflated as a result of the accident. The remaining tread depth was approximately 5mm.



Photo 12 shows the condition of the rear left tyre of the Motor Taxi, which was observed to be deflated as a result of the accident. The remaining tread depth was approximately 5mm.



Photo 13 shows the close-up view of the rear left tyre of the Motor Taxi, which was observed to be deflated. Further observation found that the tyre was torn on the outer sidewalls as a result of the accident.



Photo 14 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.

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 coolant were all found to be of sufficient level for operating purposes. Visually, there was also no contamination found to these 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 all observed to be intact and without any visible damage. See photo 15 – 18 below.



Photo 15 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 16 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 17 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 18 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.

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 callipers and brake hoses amongst others were also found to be without any damage upon our visual inspection.
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 photo 19 - 22 below.



Photo 19 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.



Photo 20 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, including its brake calliper (circled), revealed all to be intact and without visible damage.

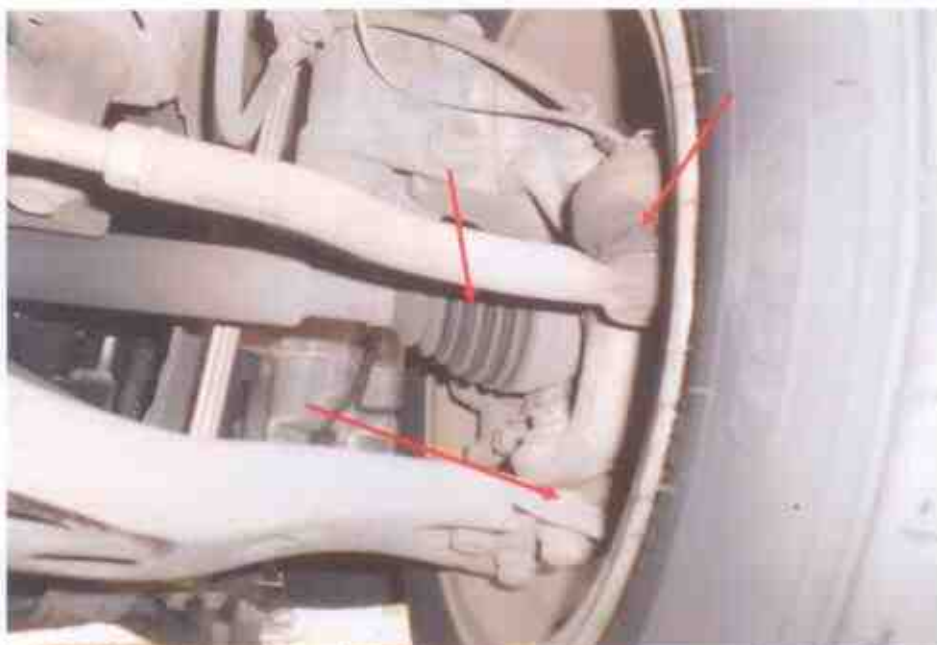


Photo 21 shows the various undercarriage components at the front right wheel of the Motor Taxi, in particular the steering tie rod (arrowed). The various steering components were all found to be intact, suggesting that the steering system of the Motor Taxi was likely to be in serviceable condition.

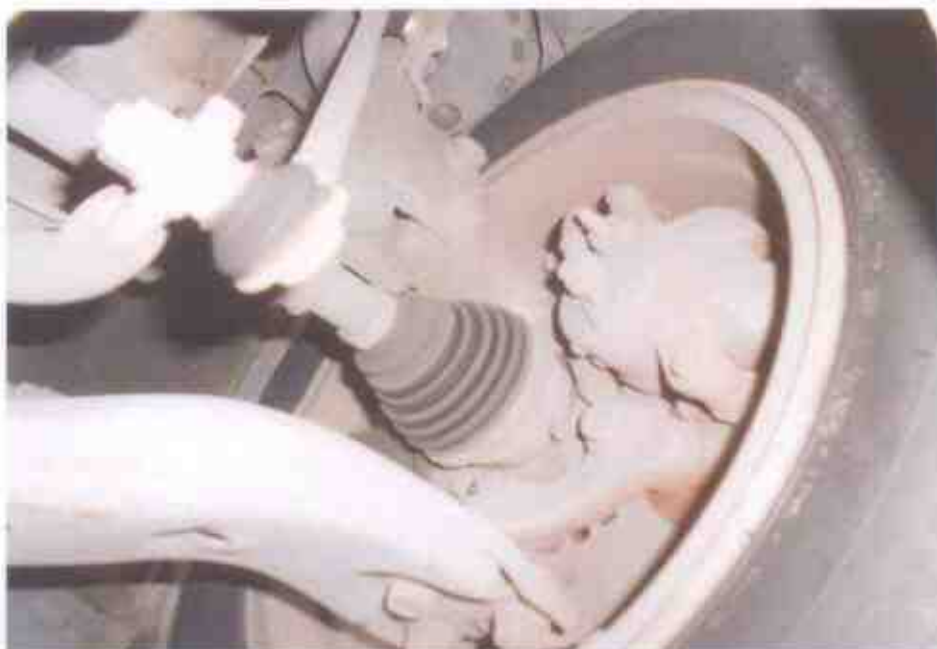


Photo 22 shows the steering system at the front left wheel of the Motor Taxi. We did not observe any leakage of brake fluid at the time of our inspection of the Motor Taxi. Our visual inspection of the various mechanical components of the Motor Taxi's braking system revealed all to be intact and without visible damage, indicating that the braking system was likely to be in serviceable condition at the material time of accident.

Electronic Safety / Warning Indicators

13. The Motor Taxi's automatic self-test of the functionality of its various electronic operating systems such as the Anti-Brake Lock System (ABS) and Supplemental Restraint System (SRS) during cranking of the engine had lighted up indicating that these systems were initialized upon system start-up, hence reveals that the systems were in working condition without any abnormalities. This can be established from the warning lights disappearing from the instrument panel after the self-test. See photo 23 to 24 below.



Photo 23 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 and SRS light.



Photo 24 shows warning indicators disappearing from the instrument panel of the Motor Taxi after the engine was cranked. This would suggest that the electronic operating systems of the Motor Taxi were successfully initiated normally.

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 parking mode, neutral mode, 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 slightly forward and backward normally. The braking system was also found to be in working condition as the Motor Taxi was able to come to a complete stop upon depressing of the brake pedal. See photo 25 & 26 below.



Photo 25 shows reverse sensor camera on the LCD panel of the Motor Taxi while performing operational test. This would suggest that it was able to move forward and backward normally.



Photo 26 shows drive mode on the LCD panel of the Motor Taxi while performing operational test. This would suggest that it was able to move forward and backward normally.

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 conditions of the Motor Taxi's 3 tyres (front left, right & rear right tyres) were observed to be in serviceable condition with sufficiently inflated for vehicular operation. 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. As for the rear left tyre, it was found to be deflated likely due to the accident. Further observation found that the tyre was torn on the outer sidewalls. The 4 tyres remaining tread depth were measured and found to be approximately around 5 to 7mm each.



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