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Our Ref : CI/TPD17022962/Z

01<sup>st</sup> December 2017

**Fatal Accident Investigation Team**

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

**MECHANICAL INSPECTION REPORT OF MOTOR TAXI SHA 8770H**

1. We refer to your request on 09<sup>th</sup> November 2017 to conduct a physical inspection of a motor taxi bearing registration number SHA 8770H (herein referred to as "**Motor Taxi**"), which was involved in a fatal 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 01<sup>st</sup> December 2017 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 43,504 km.
5. The Motor taxi had sustained a relatively minor impact damages that was confined to its frontal portion. Its front left hand outer pillar was observed to have been dented; its front left hand lower bumper was observed to have scratches & broken clips; its number plate & base was observed to have been dented; its front plastic grille was noted to be deformed & its front left windshield was observed to have cracks.



**Photo 1** shows the mileage of the Motor Taxi was 43,504 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 be in good general condition except for minor damages at the frontal portion.





**Photo 3** 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 4** shows a close up view of the front number plate/base of the Motor Taxi at the time of our inspection. The Motor Taxi had sustained relatively minor impact at the front number plate/base of the Motor Car.



**Photo 5** shows a close up view of the windshield & left hand door outer pillar of the Motor Taxi at the time of our inspection. It was observed to have sustained relatively minor impact at the highlighted area of the Motor Taxi.



**Photo 6** shows a close up view of the front bumper of the Motor Taxi at the time of our inspection. The Motor Taxi had sustained relatively minor impact at the front bumper of the Motor Taxi.





**Photo 7** shows a close up view of the lower bumper of the Motor Taxi at the time of our inspection. The Motor Taxi had sustained relatively minor impact at the lower bumper of the Motor Taxi.



**Photo 8** shows a close up view of the front plastic grille of the Motor Taxi at the time of my inspection. The Motor Taxi had sustained relatively minor scratch at the headlight of the Motor Taxi.



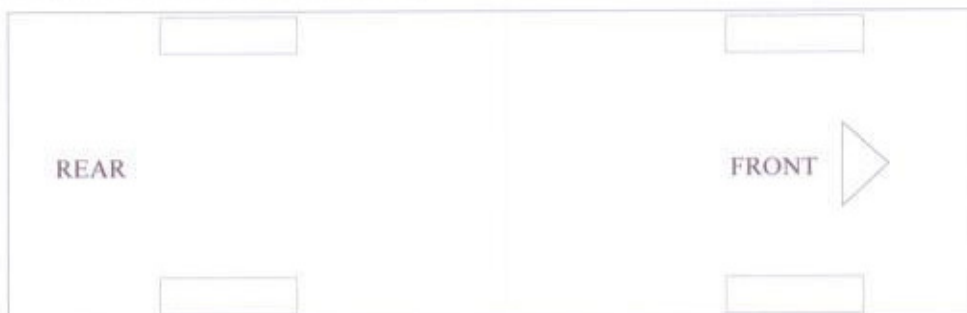
**Photo 9** shows a close up view of the front bumper of the Motor Taxi at the time of our inspection. The Motor Taxi had sustained relatively minor scratch at the front bumper of the Motor Taxi.

### 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:-

Yokohama ASPEC 195/65R175(5mm)

Yokohama ASPEC 195/65R175(4mm)



Yokohama ASPEC 195/65R175(5mm)

Yokohama ASPEC 195/65R175(3mm)

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 10 – 13 below.



**Photo 10** 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 3mm. There was no tear, cut or burst mark(s) on the outer and the inner sidewalls.





**Photo 11** 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 4mm. The tyre, which was wrapped around alloy wheel rim, was also observed to be sufficiently inflated for vehicular operation.



**Photo 12** 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. The tyre, which was wrapped around alloy wheel rim, was also observed to be sufficiently inflated for vehicular operation.





**Photo 13** 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 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 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 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 14 – 17 below.



**Photo 14** 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.

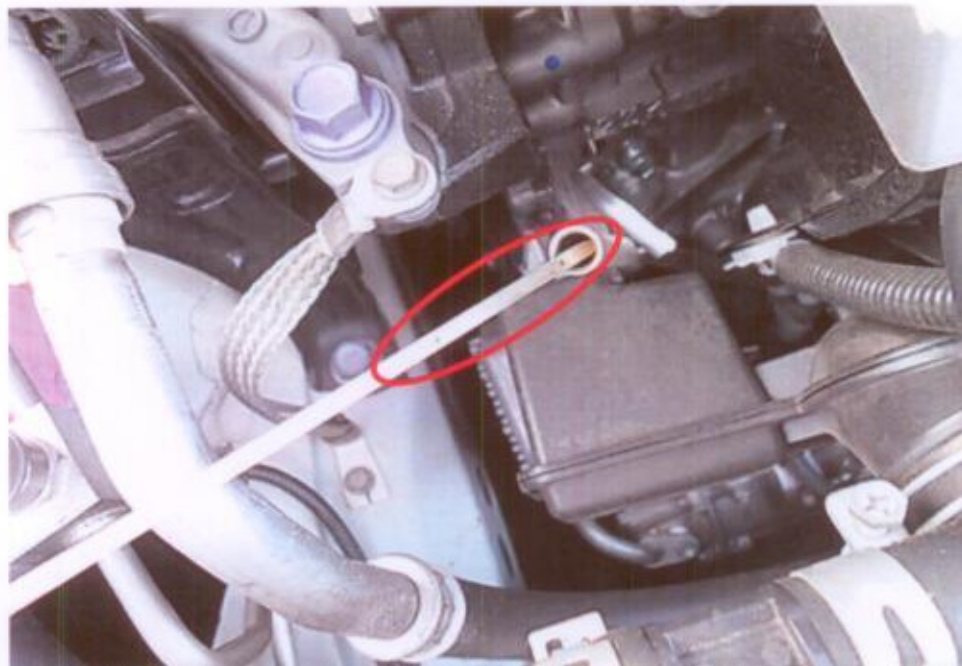


**Photo 15** shows the brake fluid reservoir of the Motor Taxi at the time of our inspection. The brake fluid was observed to be of sufficient level (arrowed) and without any visible contamination.





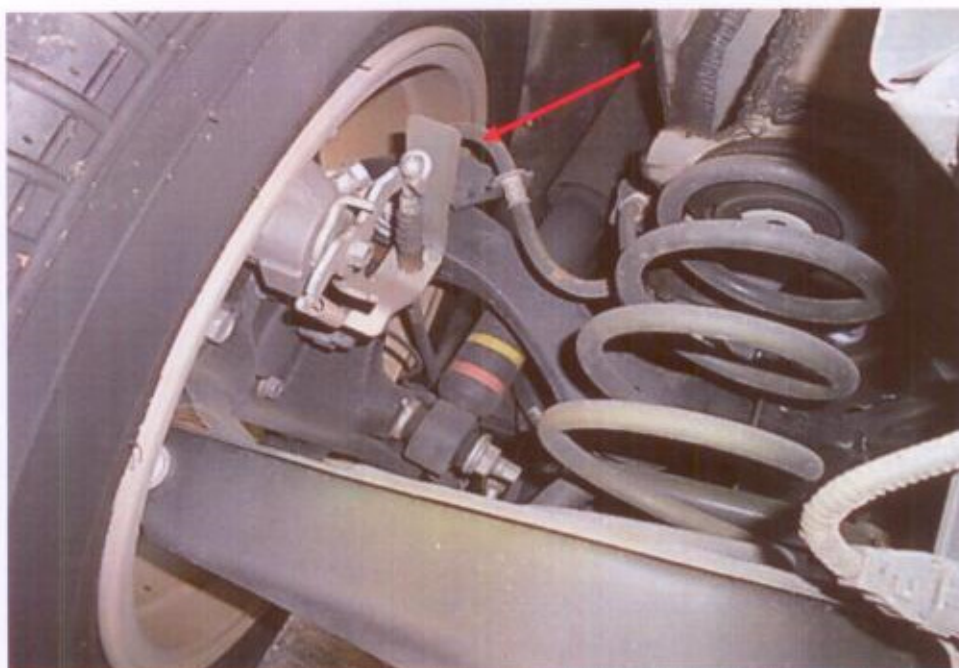
**Photo 16** shows the engine coolant fluid reservoir of the Motor Taxi at the time of our inspection. The engine coolant fluid was observed to be of sufficient level and without any visible contamination.



**Photo 17** 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.

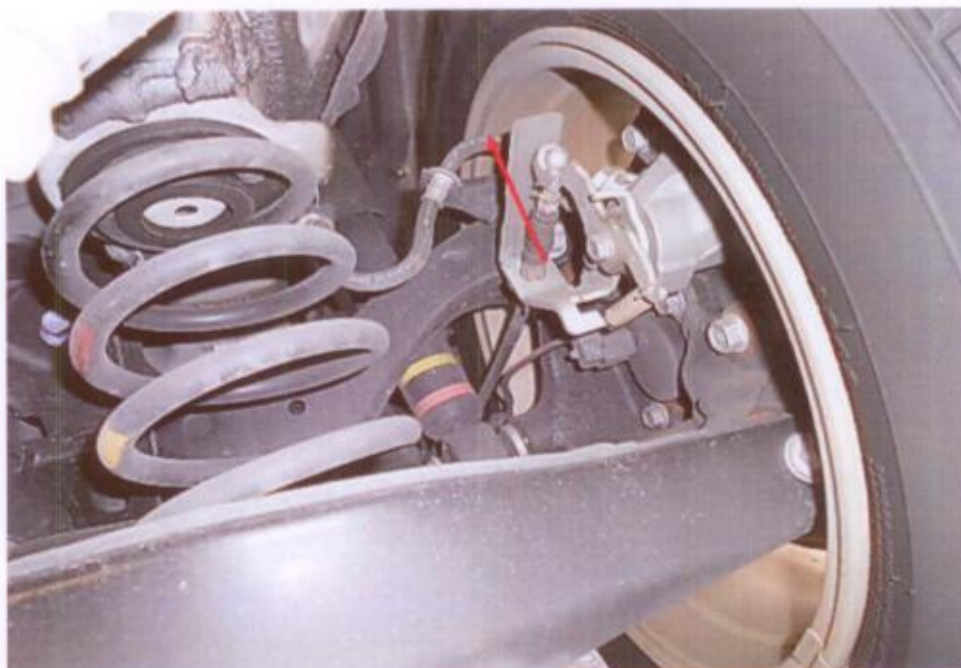
## Steering System & Braking System

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 18 - 21 below.

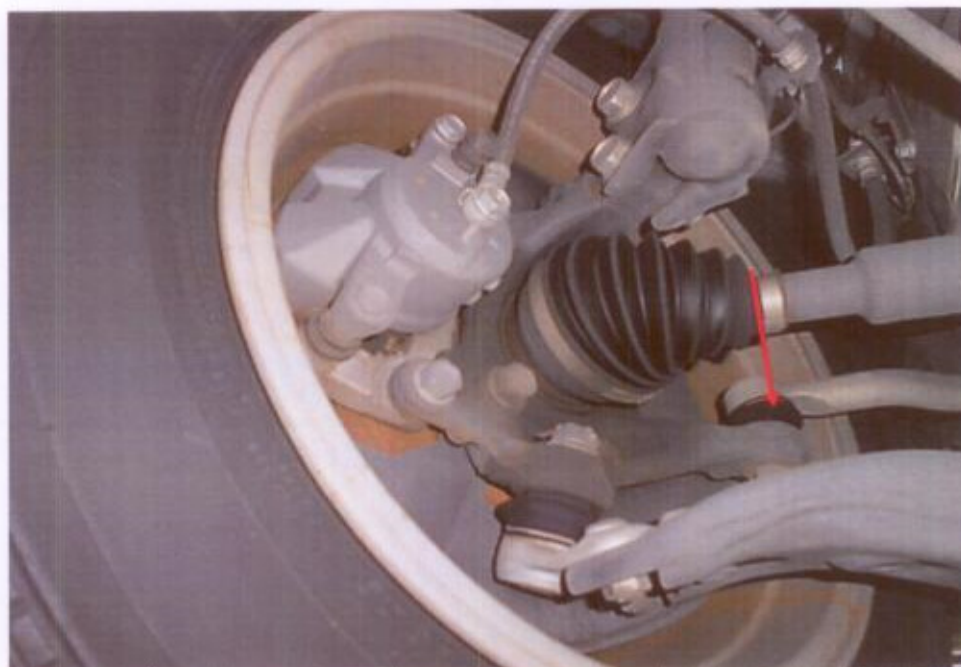


**Photo 18** shows the brake hose (arrowed) at the rear left wheel of the Motor Taxi. We did not observe any leakage of brake fluid at the time of our inspection of the Motor Taxi. Our visual inspection of the various mechanical components of the Motor Taxi's braking system revealed all to be intact and without visible damage, indicating that the braking system was likely to be in serviceable condition at the material time of accident.

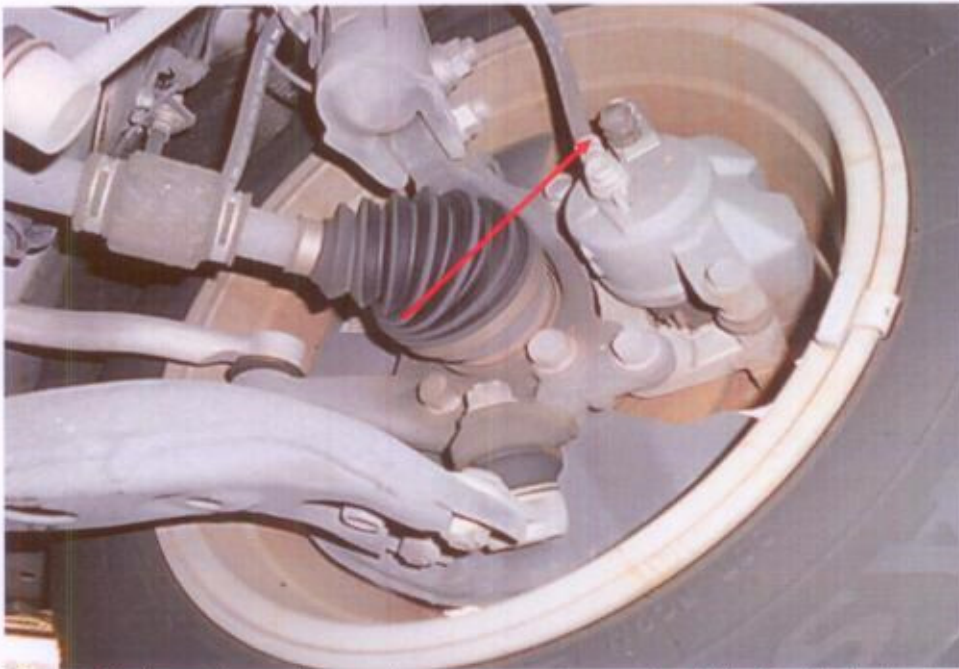




**Photo 19** shows the brake hose (arrowed) at the rear right wheel of the Motor Taxi. We did not observe any leakage of brake fluid at the time of our inspection of the Motor Taxi. Our visual inspection of the various mechanical components of the Motor Taxi's braking system, including its brake calliper (circled), 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 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

13. The Motor Taxi's automatic self-test of the functionality of its various electronic operating systems like the Anti-Brake Lock System (ABS) 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 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 and SRS light.



**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 and SRS.

### 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.



**Photo 24** 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.

### 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. 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 3 to 5mm each.



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