



Your Ref: TP/IP/24523/2018
Our Ref : CI/TPD18013752/Z

10th August 2018

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

MECHANICAL INSPECTION REPORT OF MOTOR CAR SLD 3604A

1. We refer to your request on 10th May 2018 to conduct a physical inspection of a motor taxi bearing registration number SLD 3604A (herein referred to as "**Motor Car**"), which was involved in a fatal road traffic accident on 22nd April 2018.
2. The purpose of this inspection is to primarily determine if there was any possible mechanical failure to the Motor Car that may have contributed to the accident.
3. Following the request, we carried out a physical inspection of the Motor Car on 08th June 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 Car at the time of our inspection was not recorded due to the damages sustained as a result of the accident.
5. The Motor Car had sustained extensive impact damage at its frontal left & right portion, left portion (severe) & rear portion. The impact force was significant, causing the various parts and components of the Motor Car to be damaged. This had included its steering system and body structure, which were amongst the multiple parts and components that were pushed from the left side of the Motor Car.

6. Other body parts that were damaged had included a buckled front left lower bumper, buckled front left & right side fenders and misaligned rear boot lid amongst others. The left side of the interior compartment sustained minor damages as a result of the accident. See photo 1 to 10 below.



Photo 1 shows a general view of the frontal portion of the Motor Car at the time of our inspection. The Motor Car was observed to have sustained extensive impact damage at its frontal, left & rear portion. The impact force was significant, causing the various parts and components to be damaged as a result of the accident.



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



Photo 3 shows a general view of the front left portion of the Motor Car at the time of our inspection. The Motor Car was observed to have sustained extensive impact damage at its left portion.



Photo 4 shows a closer view of the damage sustained on the left portion of the Motor Car. The impact force was significant, causing the left portion of the Motor Car to be pushed inwards, towards the right of the Motor Car.



Photo 5 shows a closer view of the damage sustained on the front left of the Motor Car. The impact force was significant, causing the various parts and components inside the engine compartment to be damaged.



Photo 6 shows a closer view of the Motor Car roof top. The impact force was significant, causing it to be corrugated.



Photo 7 shows a closer view of the damaged rear boot lid. The impact force was significant, causing it to be misaligned due to the accident's impact.



Photo 8 shows the interior portion of the Motor Car. The impact force did not affect the interior portion.



Photo 9 shows the interior portion of the Motor Car. The impact force did not affect the interior portion.



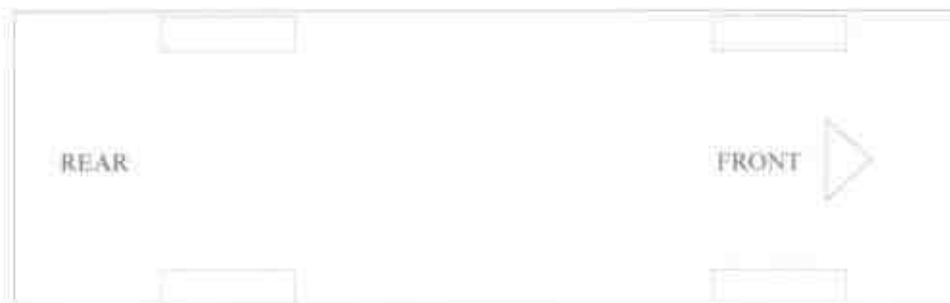
Photo 10 shows a general view of the rear right portion of the Motor Car at the time of our inspection. The rear portion was observed to have minor misalignment on the rear boot lid caused by the accident.

Tyres and Wheel Rims

7. The condition of 3 tyres (front left, front right & rear right) of the Motor Car were 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 3 tyres. The 3 tyres were sufficiently inflated for vehicular operation with remaining tread depth of approximately 5mm each. As for the rear left tyre, it was observed to be deflated likely due to the accident. A torn mark was found on the outer side wall of the tyre. However, the remaining tread depth was measured to be approximately around 6mm. The tyre brand, tyre size and remaining tread depth of the 4 tyres were recorded as follows:-

Yokohama 225/45R17 (6mm)(Deflated)

Pirelli Contura 225/45R17 (5mm)



Yokohama 225/45R17 (5mm)

Pirelli Contura 225/45R17 (5mm)

8. The 4 tyres were observed to be wrapped around alloy wheel rims that were found to be without any significant damage apart for some relatively minor kerb grazing type of damage on the rim covers. See photo 11 – 15 below.



Photo 11 shows the condition of the front right tyre of the Motor Car, 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 as well as across the tread of this tyre.



Photo 12 shows the condition of the front left tyre of the Motor Car, 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 as well as across the tread of this tyre, which was also sufficiently inflated for vehicular operation.



Photo 13 shows the condition of the rear right tyre of the Motor Car, 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 this tyre.



Photo 14 shows the condition of the rear left tyre of the Motor Car, which was observed to be in serviceable condition with remaining tread depth of approximately 6mm. It was also observed to be deflated due to the accident.



Photo 15 shows the torn mark on the rear left tyre of the Motor Car, which deflates the tyre caused by the accident.

Engine Compartment & Operating Fluids

9. Upon examination of the engine compartment of the Motor Car, 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 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 Car.
11. Our subsequent checks on the underside of the Motor Car 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 16 – 20 below.



Photo 16 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 17 shows the close up view of the engine coolant that was seen with sufficient level not affected by the accident's impact



Photo 18 shows the close up view of the brake fluid that was seen with sufficient level not affected by the accident's impact.



Photo 19 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 20 shows the undercarriage of the engine area. It was observed to sustained damages as a result of the accident's impact.

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Steering System & Braking System

12. We were not able to conduct any tests on the steering system of the Motor Taxi. This was due to the damages sustained as a result of the accident, as well as damage to several mechanical components of the steering system. See photo 21 & 23 below.



Photo 21 shows the misalignment at the front left wheel of the Motor Car.



Photo 22 shows the correct alignment at the right side of the Motor Car unaffected by the accident.



Photo 23 shows the steering rod that was observed to be with damages likely due to the accident's impact.

13. As for the braking system, our investigation reveals that there was no brake fluid leakage or damages to its supporting components. The brake hoses, brake booster, brake callipers and brake fluid reservoir was found to be intact and unaffected by the accident's impact. The brake fluid was noted to be of sufficient level without any contamination for operational purposes at time of our inspection. See photo 24 - 27 below.

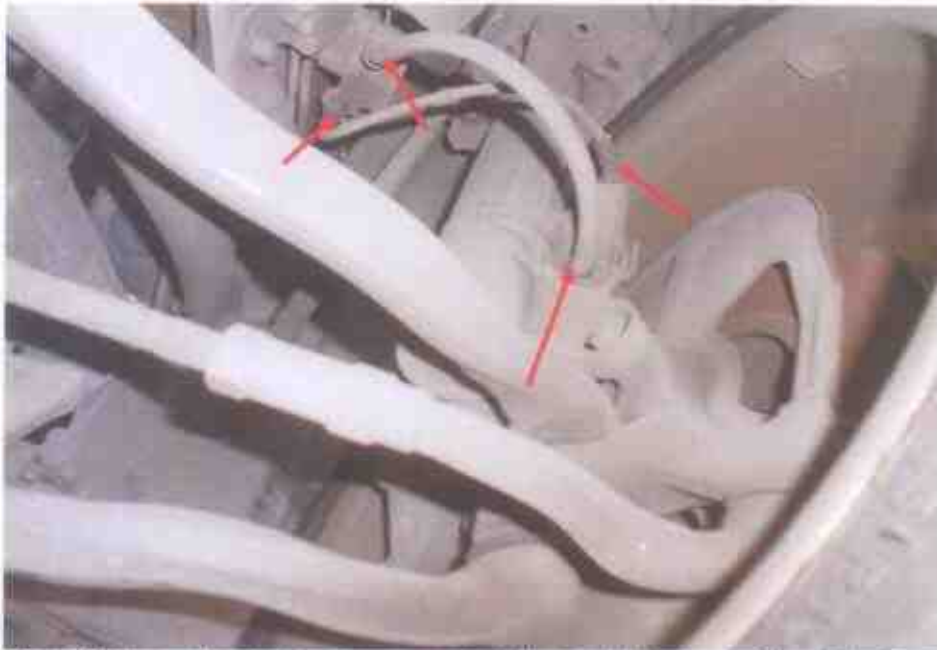


Photo 24 shows the braking components at the front left wheel of the Motor Taxi. We did not observe any leakage of brake fluid at the time of our inspection of the Motor Car.

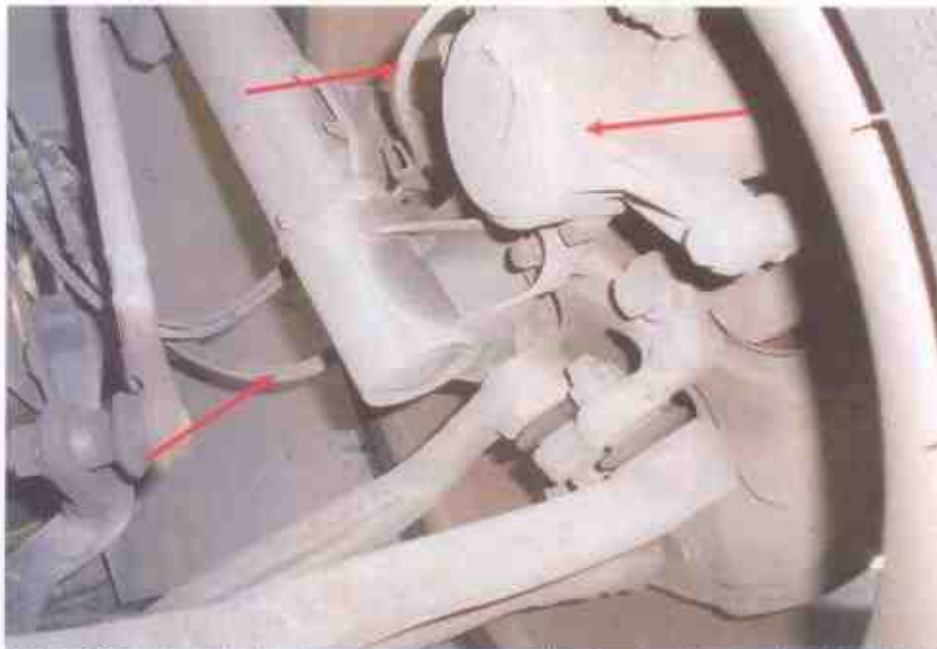


Photo 25 shows the braking components at the front right wheel of the Motor Car. We did not observe any leakage of brake fluid at the time of our inspection of the Motor Car.

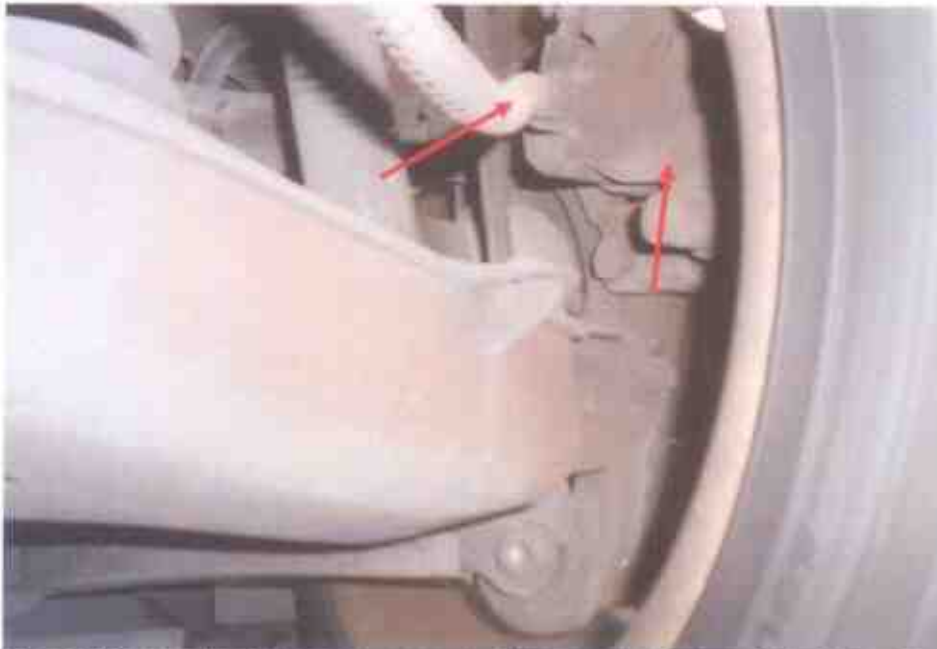


Photo 26 shows the braking components at the rear right wheel of the Motor Car. We did not observe any leakage of brake fluid at the time of our inspection of the Motor Car.



Photo 27 shows the braking components at the rear left wheel of the Motor Car. We did not observe any leakage of brake fluid at the time of our inspection of the Motor Car. Nevertheless, the tyre was found to be deflated likely due to the accident's impact.

Electronic Safety / Warning Indicators

14. The Motor Car's automatic self-test of the functionality of its various operating systems like the Anti-Brake Lock System (ABS) and Supplemental Restraint System (SRS) during cranking of the engine was not able to be initiated as the engine of the Motor Car could not be started due to damage sustained as a result of the accident.
15. The Supplemental Restraint System (SRS) of the Motor Car was however likely to be in normal operating condition at the material time of the accident. The evidence of the deployed window's airbag indicates that the impact sensors and control module of the Motor Car's SRS were all in serviceable condition at the material time of accident. See photo 28 below.



Photo 28 shows the Supplemental Restraint System (SRS) of the Motor Car was however likely to be in normal operating condition at the material time of the accident. The evidence of the deployed window's airbag indicates that the impact sensors and control module of the Motor Car's SRS were all in serviceable condition at the material time of accident.

Operational Behaviour of the Motor Car

16. No operational test to primarily determine whether there was any abnormality to the engine system, transmission system and steering system of the Motor Car could be conducted given the extent of damage that it had sustained.

Conclusion

17. For this particular case, we were unable to determine whether there was any possible mechanical failure to the Motor Car that may have contributed to the accident. This was mainly due to the extent of damage that it had sustained. Its engine system and steering system were damaged as a result of the accident.
18. 3 tyres (front left, front right & rear right) of the Motor Car were 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 3 tyres. The 3 tyres were sufficiently inflated for vehicular operation with remaining tread depth of approximately 5mm each. As for the rear left tyre, it was observed to be deflated likely due to the accident. A torn mark was found on the outer side wall of the tyre. However, the remaining tread depth was measured to approximately 6mm.
19. Our findings were based solely on a static and visual inspection of the Motor Car. No operational test could be carried out to the Motor Car given the extent of damage that it had sustained as a result of the accident.

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