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Your Ref: TP/IP/55045/2018
Our Ref : CI/TPD18019581/Z

08th November 2018

General Investigation Team D
Traffic Police Department
Singapore Police Force
10 Ubi Avenue 3
Singapore 408865

MECHANICAL INSPECTION REPORT OF MOTOR CAR SLR 4083Y

1. We refer to your request on 26th October 2018 to conduct a physical inspection of a motor car bearing registration number SLR 4083Y (herein referred to as "**Motor Car**"), which was involved in a road traffic accident on 26th September 2018.

2. The objective of the inspection is to determine if there was any possible mechanical failure to the Motor Car that may have contributed to the accident.

3. Following the request, we had carried out a physical inspection of the Motor Car on 07th November 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 45377 km.

5. The Motor Car had sustained a relatively minor impact damages that was confined to its left portion. Its left wing mirror was observed to have been broken; its front left door was observed to be corrugated; its front left fender was observed to be dented & the front left tyre was deflated with torn mark.

6. This was likely due to the consistency of the accident's case facts that the Motor Car was involved in an accident along BKE (Woodlands), 10.5km. The driver of the Motor Car claimed that he felt an unknown vibration on his steering wheel which caused him to filter to the left. See photo 1 to 8 below.

Photo 1 shows the mileage of the Motor Car was 45377 km.

Photo 2 shows a general view of the front body 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 collision.

Photo 3 shows a general view of the rear body 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 collision.

Photo 4 shows a semi close up view of the front left portion of the Motor Car at the time of our inspection. The Motor Car had sustained relatively minor impact at the front left of the Motor Car including the tyre that was observed to be deflated as a result of the accident.

Photo 5 shows a semi-close up view of the left front door of the Motor Car at the time of our inspection. It was observed to have sustained with damages consistent to the accident's case fact.

Photo 6 shows a semi-close up view of the front left tyre of the Motor Car at the time of our inspection. It was observed to be deflated as a result of the accident.

Photo 7 shows a general view of the front right of the Motor Car. It was observed to be in good condition & unaffected by the accident's collision.

Photo 8 shows a general view of the rear right of the Motor Car. It was observed to be in good condition & unaffected by the accident's collision.

Tyres and Wheel Rims

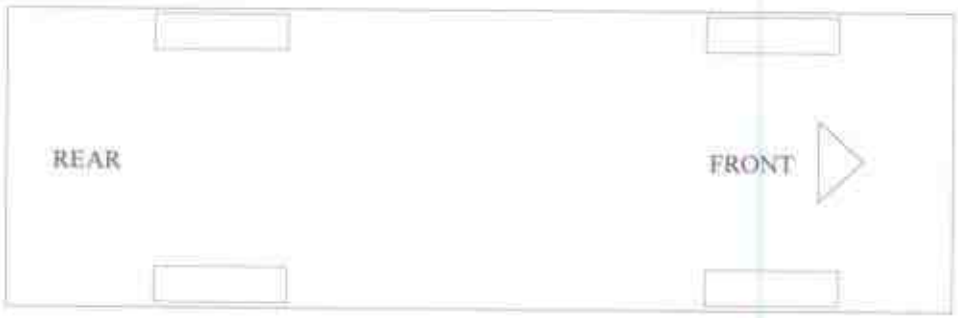
7. The condition for the Motor Car's front left tyre was found to be damaged as a result of the accident's impact collision. Further examination reveals that it was deflated & also sustained torn mark at the outer sidewall likely due to the accident. However, the tread pattern was visually clear across the tyre.

8. As for the Motor Car's 3 tyres (front right, rear left & right tyres), they were 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 3 tyres. Visually, the tread patterns were clear. The tyres were also observed to be sufficiently inflated for vehicular operation.

9. All tyre brand, tyre size and remaining tread depth of the 4 tyres were recorded as follows:-

Bridgestone Ecopia H/L 422
235/55R18 (7mm)

Bridgestone Dueler H/T 687
235/55R18 (6mm)(Deflated-
Outer sidewall torn)



Bridgestone Ecopia H/L 422
235/55R18 (7mm)

Bridgestone Dueler H/T 687
235/55R18 (6mm)

10. 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 left tyre of the Motor Car, which was observed to be deflated as a result of the accident. Torn mark was found at the outer sidewall. The remaining tread depth of approximately 6mm.

Photo 10 shows the condition of the front left tyre of the Motor Car, which was observed to be deflated as a result of the accident. Torn mark was found at the outer sidewall. The remaining tread depth of approximately 6mm.

Photo 11 shows the condition of the front left tyre of the Motor Car, which was observed to be deflated as a result of the accident. The remaining tread depth however found to be at approximately 6mm.

Photo 12 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 6mm. 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 left tyre of the Motor Car, 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 14 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 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

11. 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.

12. 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.

13. Our subsequent checks on the underside of the Motor Car also revealed no fluid stain. Visually, the various undercarriage components of the Motor Car 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 Car 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 coolant fluid in the radiator tank of the Motor Car at the time of our inspection. The 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 Car 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

14. The mechanical components of the Motor Car'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.

15. Static test on the steering system of the Motor Car 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 Car. We did not observe any leakage of brake fluid at the time of our inspection of the Motor Car. Our visual inspection of the various mechanical components of the Motor Car's braking system revealed all to be intact and without visible damages.

Photo 20 shows the brake hose (arrowed) 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. Our visual inspection of the various mechanical components of the Motor Car's braking system, including its brake calliper, revealed all to be intact and without visible damage.

Photo 21 shows the various undercarriage components at the front left wheel of the Motor Car, 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 Car was likely to be in serviceable condition.

Photo 22 shows the various undercarriage 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. Our visual inspection of the various mechanical components of the Motor Car'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

16. The Motor Car'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 23 & 24 below.

Photo 23 shows the warning lights for the various electronic operating systems of the Motor Car 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 no warning lights illuminated on the instrument panel of the Motor Car after the engine was cranked. This would suggest that there was no abnormality to the various electronic operating systems of the Motor Car, like the ABS and SRS.

Operational Behaviour of the Motor Car

17. A short operational test of the Motor Car, to primarily determine whether there was any abnormality to its engine system, its transmission system and braking system was subsequently carried out.

18. Notwithstanding that the front left tyre was deflated as a result of the accident, we were still able to conduct the operational test successfully as described on the next paragraph.

19. During the operational test, the transmission system of the Motor Car 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 Car'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 Car was able to slow down and come to a complete stop upon depressing of the brake pedal.

20. We had also focus on any abnormalities on the steering wheel while conducting the operational test. No abnormalities or any vibration was found while conducting the operational test. We were able to steer the steering wheel to the fullest left & right normally. See photo 25 to 27 below.

Photo 25 shows we conducted an operational test on the Motor Car. Reverse mode were engaged at time of our test. There was no abnormality observed at time of testing.

Photo 26 shows we conducted an operational test on the Motor Car. Drive mode were engaged at time of our test. There was no abnormality observed at time of testing.

Photo 27 shows we conducted an operational test on the Motor Car. The steering wheel was tested by steering it to the fullest left & right without any abnormalities observed.

Conclusion

21. From our physical inspection of the Motor Car, 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 Car that may have caused and/or contributed to the accident.

22. A short operational test of the Motor Car, 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.

23. We had also focus on any abnormalities on the steering wheel while conducting the operational test. No abnormalities such as abnormal sound appearing or any vibration to the steering wheel was detected while conducting the operational test. We were able to steer the steering wheel to the fullest left & right normally.

24. The condition for the Motor Car's front left tyre was found to be damaged as a result of the accident's impact collision. Further examination reveals that it was deflated & also sustained torn mark at the outer sidewall likely due to the accident. However, the tread pattern was visually clear across the tyre with remaining tread depth of approximately 6mm.

25. As for the Motor Car's 3 tyres (front right, rear left & right tyres), they were 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 3 tyres. Visually, the tread patterns were clear. The tyres were also observed to be sufficiently inflated for vehicular operation with remaining tread depth of approximately 6mm & 7mm each.

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