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Your Ref: TP/IP/66301/2018 17th May 2019
Our Ref : CI/TPD19002521/P

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

MECHANICAL INSPECTION REPORT OF MOTOR CAR SJH 9201S

1. I refer to your request on 1st February 2019 to conduct a physical inspection of a motor car bearing registration number SJH 9201S (herein referred to as "**Motor Car**"), which was involved in a road traffic accident on 06th January 2019.

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, I had carried out a physical inspection of the Motor Car on 15th April 2019 at the premises of Traffic Police vehicle pound, 517 Airport Road Singapore 539942. I now set out below my observations and comments with respect to this inspection.

General Condition

4. The mileage of the Motor Car at the time of my inspection was not recorded as its ignition system was affected by the collision.

5. The Motor Car had sustained extensive impact damage. Body parts at the front portion, left right side portion and rear left portion were observed to have been damaged. As a result of the accident.

6. Parts towards the front of the engine compartment were also damaged. This had included the front bonnet, front bonnet hinges, front bumper, left and right fenders, engine system and radiator. The driver's air bag, were deployed as a result of the accident. See photo 1 – 8 below.

Photo 1 shows a general view of the front portion of the Motor Car at the time of my inspection. The Motor Car was also observed to have sustained extensive impact damage at its frontal portion. Its front bumper, front bonnet, front bonnet lock mechanism, engine system and radiator were amongst the body parts that were observed to have been damaged as a result of the accident.

Photo 2 shows a close up view of the left bonnet hinge of the Motor Car at the time of my inspection. The left bonnet hinge of the Motor Car was observed to have been damaged as a result of the accident rendering the bonnet unable to be opened (arrowed)

Photo 3 shows a close up view of the right bonnet hinge of the Motor Car at the time of my inspection. The left bonnet hinge of the Motor Car was observed to have been damaged as a result of the accident rendering the bonnet unable to be opened (arrowed)

Photo 4 shows a general view of the left portion of the Motor Car at the time of my inspection. The left side fender, front windscreen and the rear portion of the Motor Car was observed to have been damaged as a result of the accident.

Photo 5 shows a general view of the right portion of the Motor Car at the time of my inspection. The right side fender of the Motor Car was observed to have been damaged as a result of the accident.

Photo 6 shows a general view of the rear portion of the Motor Car at the time of my inspection. The rear portion of the Motor Car was observed to have been damaged as a result of the accident.

Photo 7 shows a general view of the rear portion of the Motor Car at the time of my inspection. The rear portion of the Motor Car was observed to have been unaffected by the accident.

Photo 8 shows a general view of the Motor Car's interior compartment. The driver's air bag, were also deployed as a result of the accident.

Tyres and Wheel Rims

7. The condition of the Motor car's 4 tyres was observed to be in serviceable condition. I 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:-

8. The 4 tyres were observed to be deflated due to damage to the rims. I 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 remaining tread depth of the 4 tyres was approximately 5.1 – 6.9mm.

9. All 4 tyres of the Motor Car were wrapped around alloy wheel rims. The front left wheel rim found to be slightly dented however, the front right wheel rim, rear left and right wheel rim were observed to be cracked due to the collision. See photo 9 – 16 below.

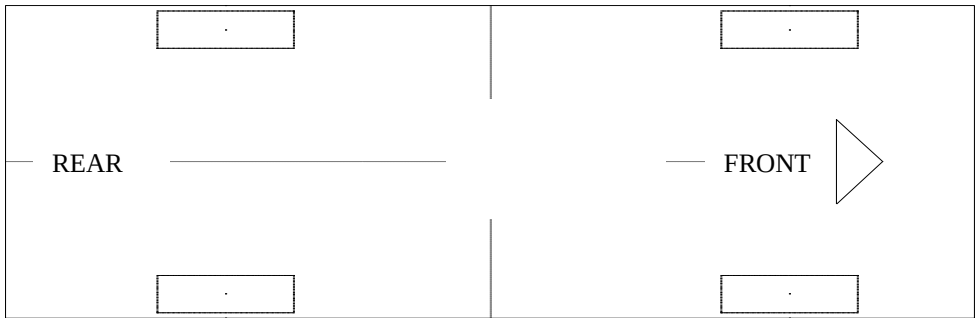

Photo 9 shows the condition of the rear left tyre of the Motor Car, which was observed to be in serviceable condition with remaining tread depth of approximately 5.1mm. There was no tear, cut or burst mark(s) on the outer and the inner sidewalls as well as across the tread of this tyre, however observed to be deflated due to damage to the rims.

Photo 10 shows the condition of the rear left wheel rim of the Motor Car, The tyre, which was wrapped around alloy wheel rim which was observed to be cracked as a result of the accident.

Photo 11 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 5.2mm. 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, however observed to be deflated due to damage to the rims.

Photo 12 shows the condition of the rear right wheel rim of the Motor Car, The tyre, which was wrapped around alloy wheel rim which was observed to be cracked as a result of the accident.

Photo 13 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 6.9mm. 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, however observed to be deflated due to damage to the rims.

Photo 14 shows the condition of the front right wheel rim of the Motor Car, The tyre, which was wrapped around alloy wheel rim which was observed to be cracked as a result of the accident.

Photo 15 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 6.3mm. 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, however observed to be deflated due to damage to the rims.

Photo 16 shows the condition of the rear right wheel rim of the Motor Car, The tyre, which was wrapped around alloy wheel rim which was observed to be dented as a result of the accident.

Engine Compartment & Operating Fluids

10. The impact from the collision had affected the engine compartment of the Motor Car. Parts towards the front of the engine compartment were observed to be damaged. The locking mechanism and the hinges of the Motor Car's front bonnet were also affected and I was unable to unlock and lift the front bonnet to carry out examination of the Motor Car's engine compartment. The various operating fluids like its engine coolant, brake fluid and transmission fluid etc were hence unable to be inspected.

11. My subsequent checks on the underside 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. However, the front right lower arm of the Motor Car was damaged. See photo 17 & 18 below.

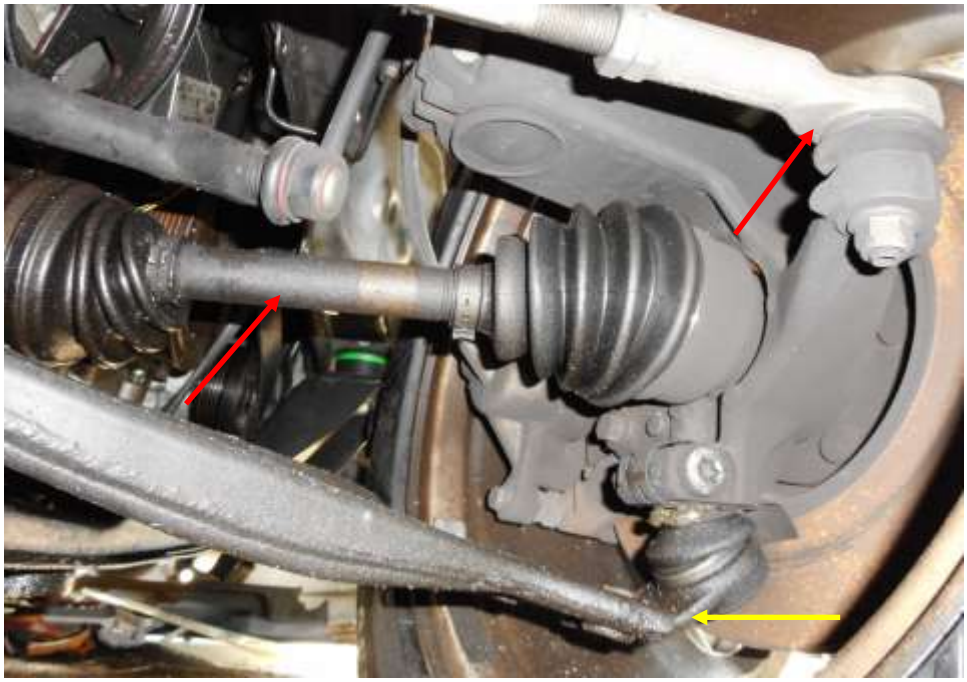

Photo 17 shows the undercarriage components at the front right wheel of the Motor Car. My checks on the underside of the Motor Car revealed damage to the various undercarriage components, the steering rack and pinion, tie rods, tie rod ends and ball joints (red arrow) revealed that these components were all generally in good condition. However, the front right lower arm (yellow arrow) of the Motor Car was damaged.

Photo 18 shows the various undercarriage components at the front left wheel of the Motor Car, which had included the steering tie rod (arrow) and front left drive shaft (arrowed). The various undercarriage components of the Motor Car were all found to be intact without any visible damage.

Steering System & Braking System

12. For this inspection, I was not able to conduct any tests on the steering system of the Motor Car due to damage to ignition system and the damage to the engine system (refer to photograph 1 above).

13. With regard to the braking system, although I was also not able to carry out any tests given that the Motor Car's engine could not be started due to damage to its ignition and steering system as a result of the accident, my visual inspection of the various mechanical components of the braking system to the parts like the, brake calipers and brake hoses at the 4 wheels are amongst others were all observed to be intact and undamaged. There was also no sign(s) or indication(s) of brake fluid leak observed at the 4 wheels of the Motor Car. See photo 19 & 20 below.

Photo 18 shows the brake hose (arrowed) at the front left wheel of the Motor Car. I did not observe any leakage of brake fluid at the 4 wheels of the Motor Car. My visual inspection of the various mechanical components of the Motor Car's braking system, including its brake caliper (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.

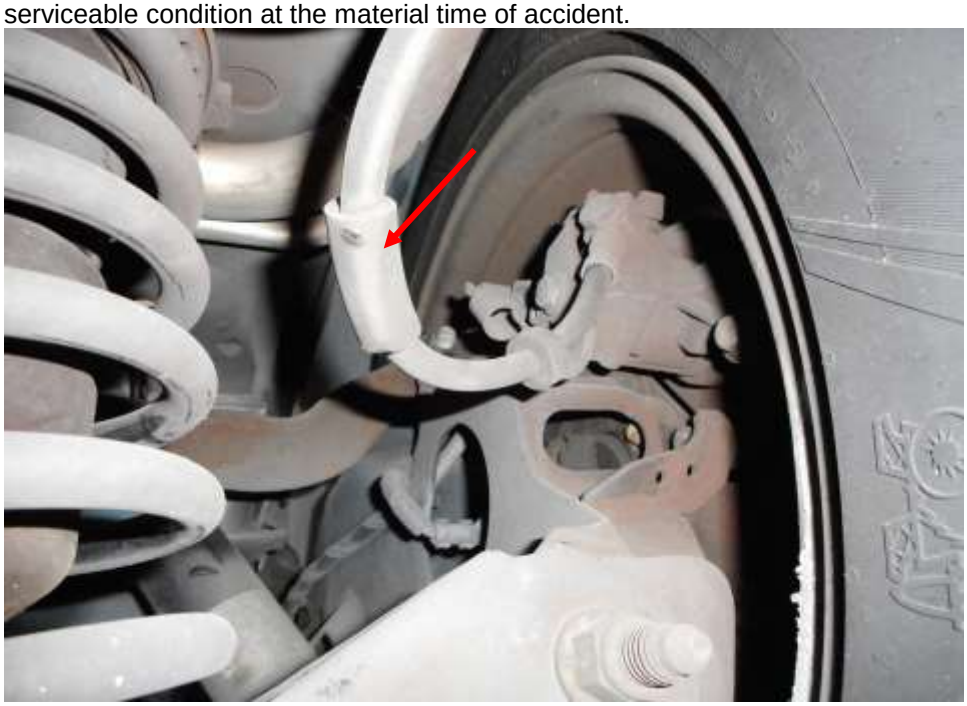

Photo 19 shows the various undercarriage components at the rear right wheel of the Motor Car, in particular the brake hose (arrowed). I did not observe any leakage of brake fluid at the 4 wheels of the Motor Car. My visual inspection of the various mechanical components of the Motor Car's braking system 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

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 to its ignition system arising from 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. The evidence of the deployed driver's air bag, indicate 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. Operational test to primarily determine whether there was any abnormality to the engine system, transmission system and braking system of the Motor Car could not be conducted given the extent of damage that it had sustained (engine could not be started and undercarriage components affected).

Conclusion

17. For this particular case, I was unable to determine whether there was any possible mechanical failure to the Motor Car that may have contributed to the accident. The extent of damage that it had sustained had prevented me from carrying out any operational test(s) and/or static test(s) to its engine system, transmission system, steering system, braking system and suspension system.

18. The 4 tyres of the Motor Car were found to be in serviceable condition with remaining tread depth of approximately 5.1mm to 6.9mm which were deflated as a result of the accident.

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