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Our Ref : CI/TPD19016941/P

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

MECHANICAL INSPECTION REPORT OF MOTOR CAR SDJ 5565D

1. I refer to your request on 25th September 2019 to conduct a physical inspection of a Motor car bearing registration number SDJ 5565D (herein referred to as "**Motor Car**"), which was involved in a road traffic accident on 15th August 2019.

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, I had carried out a physical inspection of the Motor Car on 27th September 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.

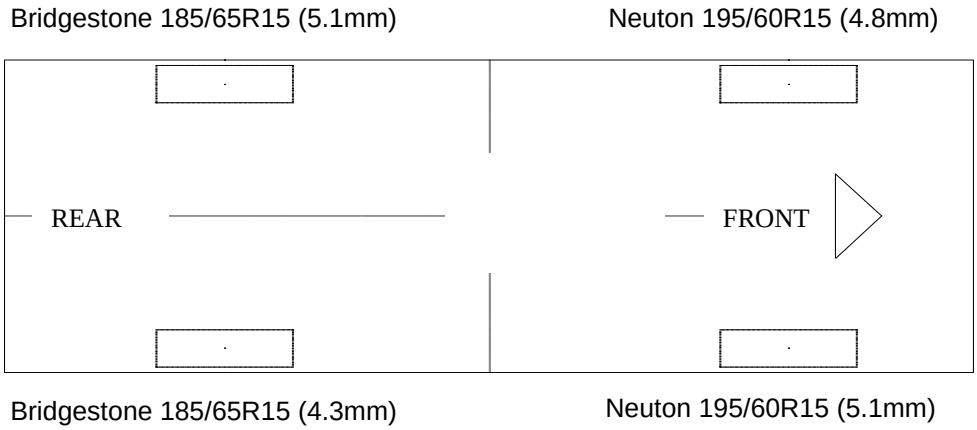
General Condition

4. The mileage of the Motor car was not recorded due to the missing battery, damage to the ignition system and engine system as a result of the accident.

5. The Motor car was observed to have sustained damage at its front portion. Its front bonnet, front bumper, both front headlamp, both front fender was amongst the body parts and various components in the engine compartments were also damaged as a result of the accident. The Supplemental Restraint System (SRS) was activated as a result of the accident.

Tyres and Wheel Rims

6. The front right tyre was observed to be delated as a result of the accident. However the condition of the Motor car's other 3 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 3 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:-



7. The 4 tyres were observed to be wrapped around alloy wheel rims however the front right rim was found to be damaged as a result of the accident. See photo 1 – 13 below.

Photo 1 shows a general view of the Motor Car's front body at the time of my inspection. The Motor car was observed to have sustained damage at its front portion. Its front bonnet, front bumper, both front headlamp, both front fender was amongst the body parts and various components in the engine compartments were also damaged as a result of the accident. The Supplemental Restraint System (SRS) was activated as a result of the accident.

Photo 2 shows the close up view of the Motor Car's front body at the time of my inspection. The Motor car was observed to have sustained damage at its front portion. Its front bonnet (circled), front bumper (red arrow) and both front headlamp (yellow arrow) was amongst the body parts and various components in the engine compartments were also damaged as a result of the accident.

Photo 3 shows a close up view of the Motor Car's engine compartment at the time of my inspection. Its battery was missing (yellow circle). Due to the induced impact of the accident, the Motor Car's engine system, ignition system, cooling system (red arrows) and various components in the engine compartments were also damaged as a result of the accident.

Photo 4 shows a close up view of the Motor Car's engine compartment at the time of my inspection. Due to the induced impact of the accident, the Motor Car's braking system (yellow circle), cooling system (red circle) and various components in the engine compartments were also damaged as a result of the accident.

Photo 5 shows a close up view of the Motor Car's engine compartment at the time of my inspection. Due to the induced impact of the accident, the Motor Car's ignition system (red circle) and various components in the engine compartments were also damaged as a result of the accident.

Photo 6 shows the general view of the Motor Car's right body at the time of my inspection. Its front right fender (red circle) and right rear mirror (red arrow) was amongst the body parts that were damaged as a result of the accident.

Photo 7 shows the general view of the Motor Car's left body at the time of my inspection. Its front left fender (red circle) and left rear mirror (red arrow) was amongst the body parts that were damaged as a result of the accident.

Photo 8 shows a general view of the Motor Car's rear body at the time of my inspection. The rear portion of the Motor Car was observed to have been undamaged by the accident.

Photo 9 shows the condition of the front right tyre of the Motor Car, the rim was observed to be damaged (circled) as a result of the accident and the tyre was observed to be in deflated condition due to the air leakage from the damaged rim. The remaining tread depth of the tyre was approximately 5.1mm. 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 Motor Car's 4 tyres.

Photo 10 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 4.3mm. The tyre was also observed to be sufficiently inflated for vehicular operation with no tear, cut or burst mark(s).

Photo 11 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 3.2mm. The tyre was also observed to be sufficiently inflated for vehicular operation with no tear, cut or burst mark(s).

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 4.8mm. The tyre, which was wrapped around alloy wheel rim, was also observed to be sufficiently inflated for vehicular operation. There were minor scratches on the surface of the wheel rim as a result of the accident.

Photo 13 shows the deployment of the Supplemental Restraint System (SRS) airbag (arrowed), as a result of the accident.

Engine Compartment & Operating Fluids

8. Upon examination of the engine compartment of the Motor Car, I had observed the parts and components inside the engine compartment to be affected by the accident. The engine coolant and brake fluid were all found to be of insufficient level for operating purposes and the engine oil dip stick was stuck as a result of the accident. See photo 14 and 15 below.

Photo 14 shows a general view of the Motor Car's engine compartment and the various parts and components inside the engine compartment. The brake fluid reservoir (circled) and the engine oil dip stick (arrowed) was insufficient and stuck as a result of the accident

Photo 15 shows coolant reservoir of the Motor Car at the time of my inspection. The coolant level was observed to be of insufficient as a result of the accident.

Braking System & Steering System

9. For this inspection, I was not able to conduct any tests on the steering system of the Motor Car due to the Motor Car running on electric power steering (EPS) which requires the Motor Car to be started and ignition system was damaged as a result of the accident. (Unable to be started)

10. My subsequent checks on the underside of the various steering and braking components were observed that the front left wheel steering tie rod was intact but however the front right steering components and braking components was unable to be inspected as it was blocked by the damaged parts a result of the accident.

11. Static brake tests conducted on the Motor Car show that as there was internal leakage of pressure/vacuum due to insufficient brake fluid in the braking system of the Motor Car as result of the accident. See photo 16 - 19 below.

Photo 16 shows the brake hose/pipe (arrowed) at the rear left wheel of the Motor Car and it was observed to be intact

Photo 17 shows the brake hose/pipe (arrowed) at the rear right wheel of the Motor Car and it was observed to be intact

Photo 18 shows the various undercarriage components at the front left wheel of the Motor Car, the driveshaft (red arrow) was found to be intact.

Photo 19 shows the various undercarriage components at the front left wheel of the Motor Car, the steering tie rod (red arrow) was found to be intact.

Electronic Safety / Warning Indicators

12. The Motor Car's automatic self-test of the functionality of its various electronic operating systems was not able to be conducted as there was damaged ignition system, engine system and missing battery as a result of the accident. (unable to be started)

Operational Behaviour of the Motor Car

13. 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 (Major systems of the Motor Car damage as a result of the accident.).

Conclusion

14. 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 and suspension system.

15. The 3 tyres of the Motor Car were also found 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 front right tyre was deflated because of the damaged to the rim as a result of the accident. However the other 3 tyres were observed to be sufficiently inflated for vehicular operation. All 4 tyres were observed with remaining tread depth of approximately 4.3mm to 5.1mm.

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