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Our Ref : CI/TPD18019565/Z

22nd February 2019

Fatal Accident Investigation Team

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

MECHANICAL INSPECTION REPORT OF MOTOR CAR SJU 4355X

1. We refer to your request on 26th October 2018 to conduct a physical inspection of a motor car bearing registration number SJU 4355X (herein referred to as "**Motor Car**"), which was involved in a fatal road traffic accident.
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 21st 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 not recorded as its ignition system was severely damaged by the collision.
5. The Motor Car had sustained extensive impact damage at its frontal portion, left, right, top & rear portion. The impact force was significant, causing the various parts and components inside the engine compartment to be damaged. This had included its engine assembly and transmission assembly, which were both amongst the multiple parts and components inside the engine compartment that were pushed inwards from left hand side, towards the right side of the Motor Car.

6. Other body parts that were damaged had included the front windshield, front bonnet, front bumper and rear bumper amongst others. The interior compartment was also affected badly.
7. This was likely to be the consistency of the accident's case facts that on 07th October 2018, sometime before 0131hrs., the driver of Motor Car SJU 4355X was travelling along Upper Bukit Timah Road towards the direction of Clementi Road, when he lost control, skidded and hit a tree on the on the centre divider median. See photo 1 to 13 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 portion. The impact force was significant, causing the various parts and components inside the engine compartment to be damaged.



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 have sustained extensive impact damage at its frontal, left, right, top and rear portion.



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 with extensive impact damage at its frontal, left, right, top and rear portion.



Photo 4 shows a closer view of the damage at the frontal portion of the Motor Car's engine. The impact force was significant, causing the various parts and components inside the engine compartment to be damaged.



Photo 5 shows a closer view of the damage at the frontal left portion of the Motor Car. The impact force was significant, causing the various parts and components inside the engine compartment to be pushed inwards from left, towards the right of the Motor Car.



Photo 6 shows a closer view of the damage at the frontal left portion of the Motor Car. The impact force was significant, causing the various parts and components inside the engine compartment to be damaged as a result of the accident.



Photo 7 shows a closer view of the damage at the engine portion of the Motor Car. The impact force was significant, causing the various parts and components inside the engine compartment to be damaged as a result of the accident.



Photo 8 shows a semi-close up view of the damaged roof top of the Motor Car. The impact force was significant, causing the roof portion to be buckled as a result of the accident.



Photo 9 shows a closer view of the right driver & passenger seat of the Motor Car. The impact force was significant, causing the interior cabin to sustained extensive damages as a result of the accident.



Photo 10 shows a closer view of the damage at the windscreen area of the Motor Car. The impact force was significant, causing the windscreen to sustain a shattering cracked.



Photo 11 shows a closer view of the damages at the interior portion of the Motor Car due to the extensive impact collision at time of the accident.

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Photo 12 shows a general view of the rear left portion of the Motor Car at the time of our inspection. The rear portion was observed to have sustained with major impact by the accident that caused the rear portion body structure to be distorted.



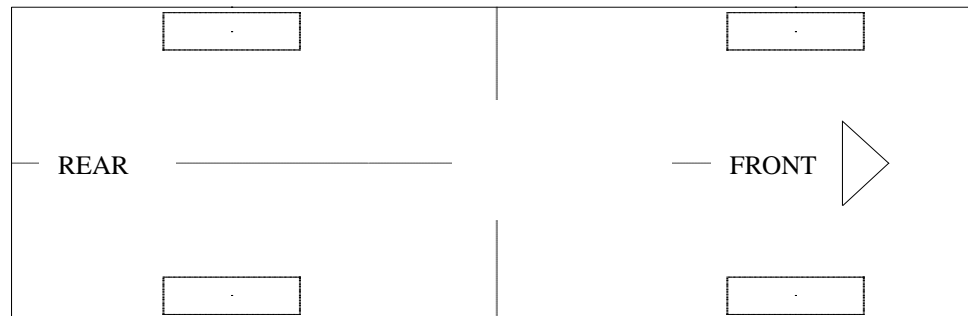
Photo 13 shows a general view of the rear undercarriage portion of the Motor Car at the time of our inspection. The body structure was observed to be distorted and buckled as a result of the accident.

Tyres and Wheel Rims

8. The Motor Car's front right tyre was found deflated due to the damaged rim as a result of the accident's impact collision.
9. As for the condition of the other 3 Motor Car's tyres, it 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 3 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 3 tyres were recorded as follows:-

Yokohama Advan Neova AD08
195/55R15 (6mm)

Yokohama Advan Neova AD08
195/55R15 (6mm)



Yokohama Advan Neova AD08
195/55R15 (6mm)

Yokohama Advan Neova AD08
195/55R15 (6mm) - Deflated due to damaged rim

10. The tyres were observed to be wrapped around alloy wheel rims. However, the front left & right wheel rims were found to be dented as a result of the accident. As for the rear left wheel rim, it was found to sustain chipped edge due to the accident but still in a serviceable condition.
11. To conclude our findings on the tyres which were affected due to damaged wheel rims, only front tyre was found to be deflated as a result of the accident. See photo 14 – 18 below.



Photo 14 shows the condition of the front right portion of the Motor Car, which was observed to be deflated due to the damages on the wheel rim as a result of the accident's impact.



Photo 15 shows the condition of the front right portion of the Motor Car, which was observed to be deflated due to the damages on the wheel rim as a result of the accident's impact.



Photo 16 shows the condition of the front left tyre of the Motor Car, which was observed to be in serviceable condition. The 4 tyres were also observed to be sufficiently inflated for vehicular operation.



Photo 17 shows the condition of the rear left tyre of the Motor Car, which was observed to be in serviceable condition. The 4 tyres were also observed to be sufficiently inflated for vehicular operation.



Photo 18 shows the condition of the rear right tyre of the Motor Car, which was observed to be in serviceable condition. The 4 tyres were also observed to be sufficiently inflated for vehicular operation.

Engine Compartment & Operating Fluids

12. The engine compartment of the Motor Car was severely affected by the collision. Almost all the parts and components inside the engine compartment were badly damaged. Parts like the radiator, air intake system, fuel rails, exhaust manifold, fuse box and control modules amongst others were found to be damaged.
13. Leakage of the various operating fluids like the engine oil, engine coolant, power steering fluid and brake fluid was also noted. Given the extent of damages to the engine compartment, the leakages were likely due to the accident. The engine undercarriage was however observed to be covered with fluid, suggesting leakage of fluid. There was no accumulation of dust and/or dirt particles on the engine housing where the fluid stains had formed. This would indicate that the fluid leakage was a fresh leak and likely to be a result of the accident. We were therefore unable to comment whether these operating fluids were of sufficient level and without contamination for vehicular operation prior to the accident. See photo 19 to 22 below.

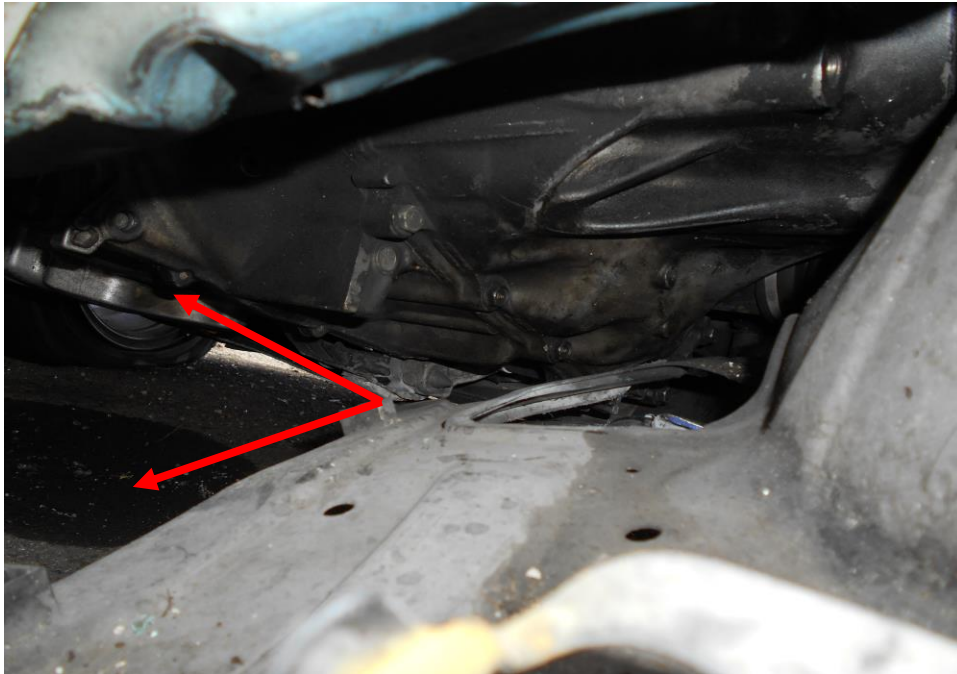


Photo 19 shows the close up view of the undercarriage of the Motor Car. Signs of fluid leakage were observed due to the accident's impact.



Photo 20 shows the close up view of the radiator's tank that was observed to be damaged likely due to the accident impact.



Photo 21 shows the close up view of the empty brake fluid reservoir due to the accident impact.



Photo 22 shows the close up view of the damage engine compartment due to the accident impact.

Steering System & Braking System

14. We were not able to conduct any tests on the steering system and braking system of the Motor Car. This was due to leakage of power steering fluid and brake fluid, both of which were a result of the accident, as well as damage to several mechanical components of the steering system and braking system. See photo 23 to 28 below.



Photo 23 shows a close up view on the front right drive shaft of the Motor Car. We were not able to conduct any tests on the steering system of the Motor Car due to the damage to these components.

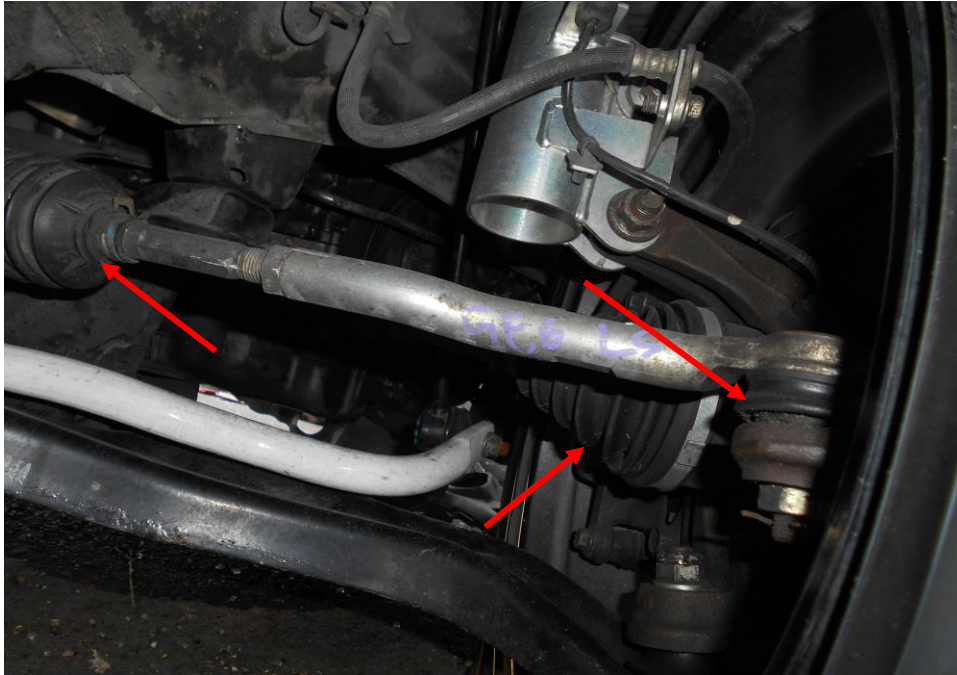


Photo 24 shows the damaged on the front left drive shaft of the Motor Car. We were not able to conduct any tests on the steering system of the Motor Car due to the damage to this components, as well as leakage of fluids due to the accident.



Photo 25 shows the braking & steering 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 26 shows the undercarriage components of the Motor Car. It was observe to sustain an extensive damage inclusively affects the body structure of the Motor Car due to the accident.



Photo 27 shows the damaged brake pedal of the Motor Car. It was observe to sustained extensive damages at the time of our inspection of the Motor Car due to the accident.

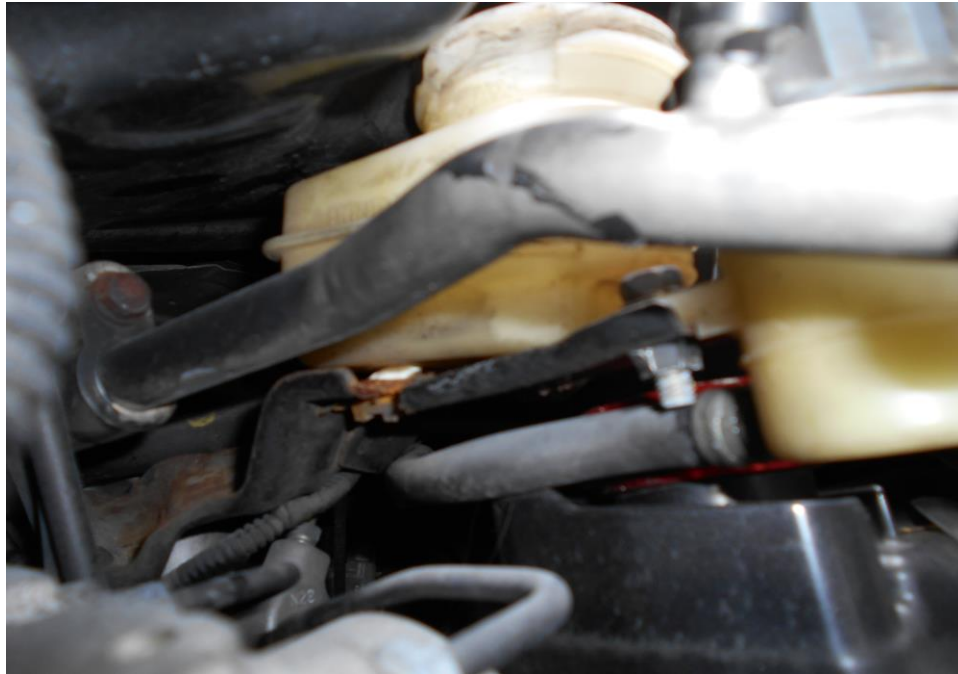


Photo 28 shows the brake fluid reservoir of the Motor Car. We observe the brake fluid reservoir was empty at the time of our inspection due to the accident.

Electronic Safety / Warning Indicators

15. 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) was not able to be initiated due to major mechanical damages which includes its ignition system and engine system of the Motor Car.

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 braking system of the Motor Car could not 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, transmission system, steering system and braking system were all damaged as a result of the accident.
18. The Motor Car's front right tyre was found deflated due to the damaged rim as a result of the accident's impact collision.
19. As for the condition of the other 3 Motor Car's tyres, it 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 3 tyres. The 3 tyres were also observed to be sufficiently inflated for vehicular operation with remaining tread depth of approximately 6mm each.
20. 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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