

Your Ref: TP/IP/28545/2019  
Our Ref : CI/TPD19011292/P

11<sup>th</sup> July 2019

**General Investigation Team**

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

**MECHANICAL INSPECTION REPORT OF MOTOR CAR SJW 3449E**

1. I refer to your request on 20<sup>th</sup> June 2019 to conduct a physical inspection of a Motor car bearing registration number SJW 3449E (herein referred to as "**Motor Car**"), which was involved in a road traffic accident on 5<sup>th</sup> May 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 9<sup>th</sup> July 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**

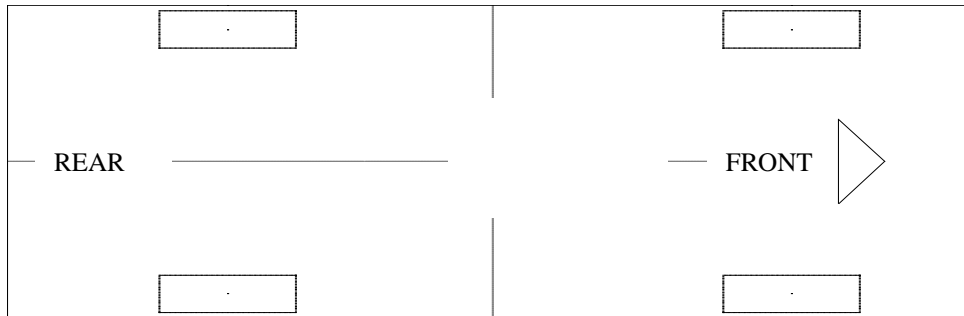
4. The mileage of the Motor car at the time of my inspection was not recorded due to the damage to the battery and engine system as a result of the accident.
5. The Motor car was observed to have sustained moderate damage at its front portion. Its front windscreen, front bonnet, bonnet locking mechanism, front bumper, front number plate, front reinforcement and radiator was amongst the body parts that were damaged as a result of the accident.

**Tyres and Wheel Rims**

6. 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:-

Westlake 205/45R16 (4.8mm)

Hankook 205/45R16 (4.5mm)



Falken 205/45R16 (5.2mm)

Falken 205/45R16 (5.9mm)

7. The 4 tyres were observed to be wrapped around alloy wheel rims that were found to be without any damage. See photo 1 – 12 below.



**Photo 1** 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 unaffected by the accident.



**Photo 2** 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 moderate damage at its front portion. Its front windscreen, front bonnet, bonnet lock mechanism, front bumper, front number plate, front reinforcement and radiator was amongst the body parts that were damaged as a result of the accident.



**Photo 3** 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 its front windscreen (arrowed) as a result of the accident.





**Photo 4** 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, its front bonnet, front bumper; front number plate (arrowed) was amongst the body parts that were damaged as a result of the accident.



**Photo 5** shows a close up view of the front portion of the Motor Car at the time of my inspection. The battery (arrowed) of the Motor Car was observed to have been damaged as a result of the induced impact as a result of the accident

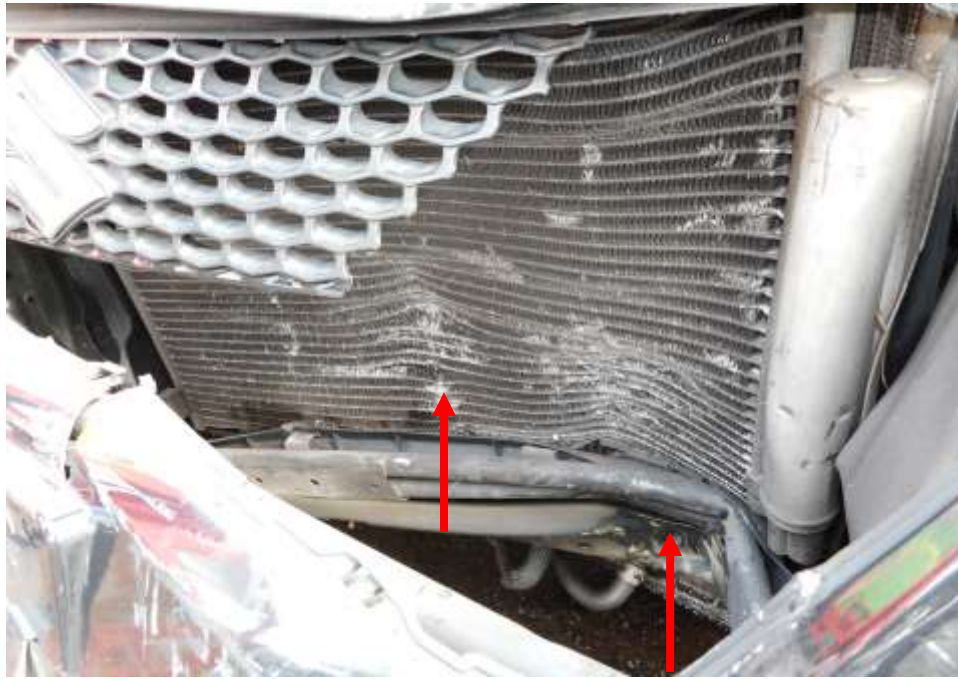


**Photo 6** shows a general view of the Motor Car's right body at the time of my inspection. The right portion of the Motor Car was observed to have been unaffected by the accident.



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





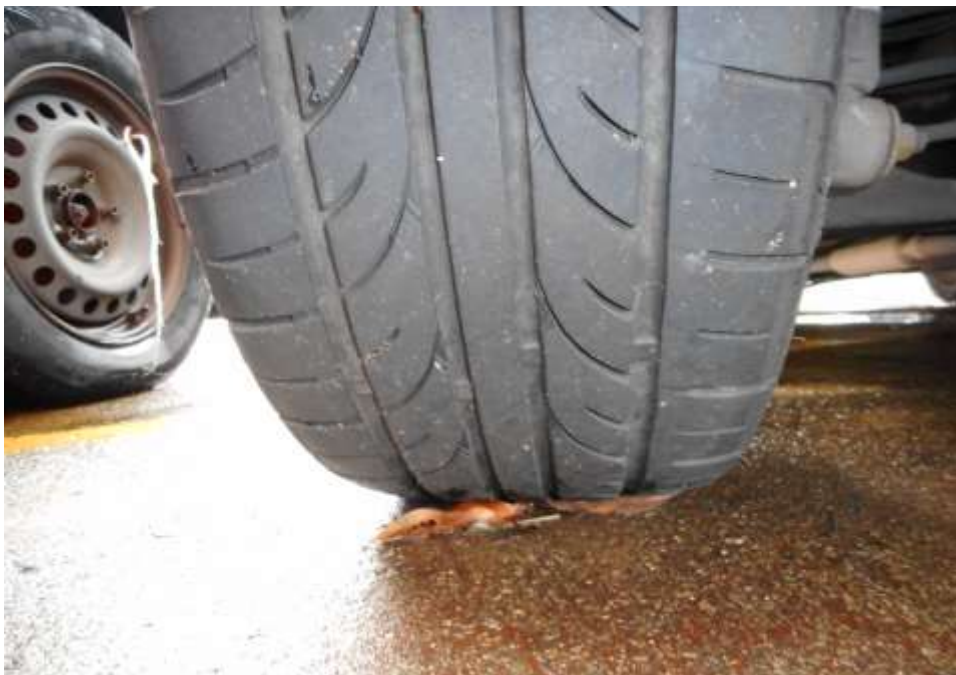
**Photo 8** shows a close up view of the front portion of the Motor Car at the time of my inspection. The radiator and the front reinforcement (arrowed) of the Motor Car was observed to have been damaged by an induced impact as a result of the accident



**Photo 9** 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 4.9mm. The tyre was sufficiently inflated for vehicular operation with no tear, cut or burst mark(s) on the outer and the inner sidewalls as well as across the tread. The 4 tyres of the Motor Car were wrapped around standard alloy wheel rims without any damage.



**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 5.2mm. 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 4.8mm. The tyre, which was wrapped around alloy wheel rim, was also observed to be sufficiently inflated for vehicular operation. The 4 tyres of the Motor Car were wrapped around standard alloy wheel rims.



**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 4.5mm. There was also no tear, cut or burst mark(s) on the outer and the inner sidewalls as well as across the tread of the Motor Car's 4 tyres.

### Engine Compartment & Operating Fluids

8. 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 bonnet locking mechanism of the Motor Car's front bonnet was 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. See photo 13 below.





**Photo 13** shows the damage to the locking mechanism (arrowed) Motor Car's front bonnet, rendering it unable to be unlocked and lifted up to carry out examination of the Motor Car's engine compartment as a result of the accident.

### Braking System & Steering System

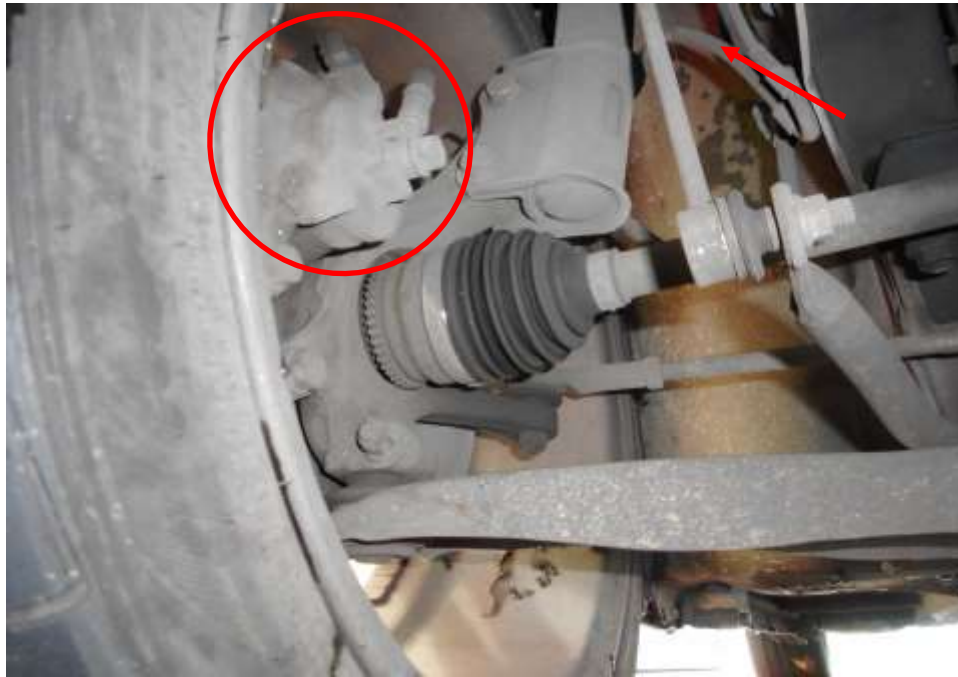
9. For this inspection, I was not able to conduct any tests on the steering system of the Motor Car due to damage to ignition system and the damage to the engine system.
10. My subsequent checks on the underside of the various steering components which had included the steering rack and pinion, tie rods, tie rod ends and ball joints revealed that these components were all generally in good condition.
11. 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 14 - 19 below.



**Photo 14** shows the brake hose/pipe (arrowed) at the rear left wheel of the Motor Car. I did not observe any leakage of brake fluid at the time of my inspection of the Motor Car. Static tests of the Motor Car's braking system had indicated that there was no internal leakage of pressure/vacuum. The undercarriage components of the Motor Car were also all found to be intact and without any visible damage.



**Photo 15** shows the brake hose/pipe (arrowed) at the rear right wheel of the Motor Car. No leakage of brake fluid was observed. Visual examination of the various components of the braking system like the drum brake, brake booster, brake pedal etc had revealed all to be intact and without visible damage.

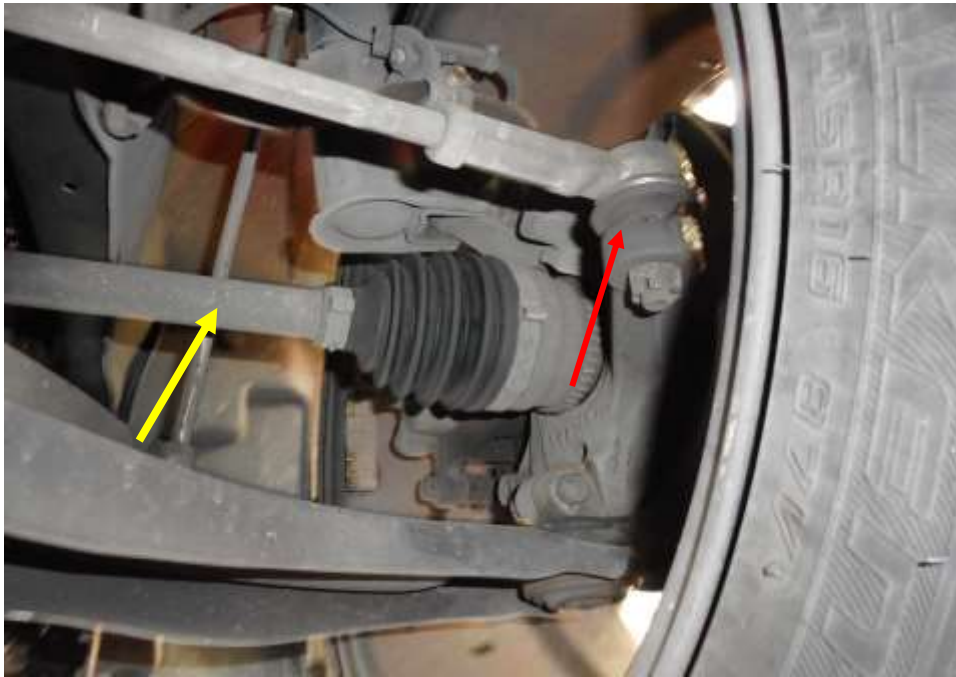


**Photo 16** shows the brake hose/pipe (arrowed) at the front right wheel of the Motor Car. No leakage of brake fluid was observed. Visual examination of the various components of the braking system like the brake caliper (circled), brake booster, brake pedal etc had revealed all to be intact and without visible damage.



**Photo 17** shows the brake hose/pipe (arrowed) at the front left wheel of the Motor Car. I did not observe any leakage of brake fluid at the time of my inspection of the Motor Car. Static tests of the Motor Car's braking system had indicated that there was no internal leakage of pressure/vacuum. The undercarriage components of the Motor Car were also all found to be intact and without any visible damage.





**Photo 18** shows the various undercarriage components at the front right wheel of the Motor Car, in particular the steering tie rod (red arrow) and drive shaft (yellow arrow). 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 at the material time of accident. There was also no sign of fluid stain observed on the various undercarriage components at the front right wheel of the Motor Car.



**Photo 19** shows the various undercarriage components at the front left wheel of the Motor Car, which had included the steering tie rod (red arrow). The various undercarriage components of the Motor Car were all found to be intact without any visible damage.

### **Electronic Safety / Warning Indicators**

12. 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 battery and engine system arising from the accident.

### **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 (engine could not be started due to damage to the battery and engine system).

### **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, braking system and suspension system.

15. The 4 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 4 tyres were also observed to be sufficiently inflated for vehicular operation with remaining tread depth of approximately 4.5mm to 5.9mm.

**Sherwin Beh**

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