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You're Ref: TP/IP/06549/2021 24th March 2021
Our Ref: CI/TPD21003582/P

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

MECHANICAL INSPECTION REPORT OF MOTOR CAR SMC 8216Y

1. I refer to your request on 5th March 2021 to conduct a physical inspection of a Motor Car bearing registration number SMC 8216Y (herein referred to as "**Motor Car**"), which was involved in a road traffic accident on 4th February 2021.

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 23th March 2021 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.

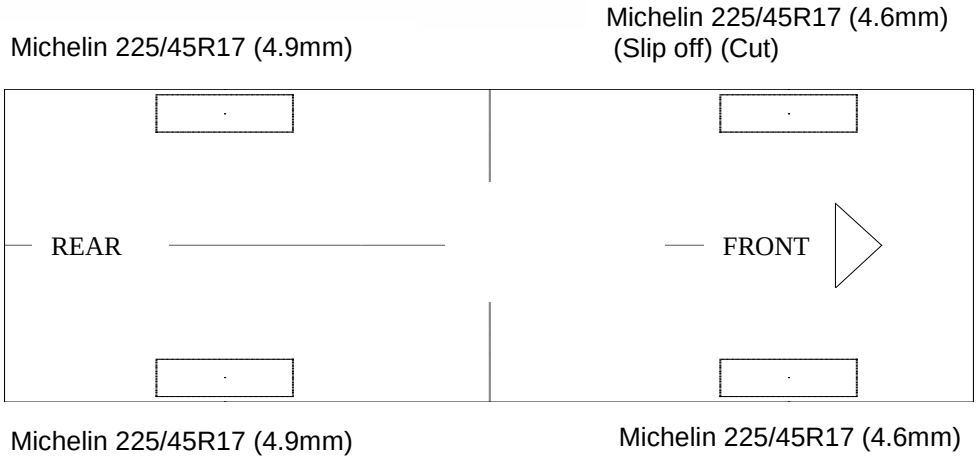
General Condition

4. The mileage of the Motor Car at the time of my inspection was 47,717km.

5. The Motor Car was observed to have sustained damage at its front, left and right portion. Its front bonnet, front bumper, front left headlamp, left fender, left door and right door was the body parts that were damaged as a result of the accident.

Tyres and Wheel Rims

6. The condition of the Motor Car's front left tyre was observed to be in unserviceable condition as the front left tyre had slip out of the wheel rim and cut as a result of the accident. However the 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 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 4 tyres were recorded as follows:-



7. The 4 tyres were observed to be wrapped around standard alloy wheel rims, the front left tyres and rims were found to be damaged as a result of the accident. However, the other 3 tyres and rims were found to be without any damage. See photo 1 – 13 below.

Photo 1 shows the mileage of the Motor Car at the time of my inspection. The mileage observed was 47,717km.

Photo 2 shows the general view of the Motor Car's rear body at the time of my inspection. The Motor Car rear was observed to be unaffected by the accident.

Photo 3 shows a general view of the Motor Car's front body at the time of my inspection. The front portion of the Motor Car was observed to have sustained damage. Its front bonnet, front bumper and front left headlamp was the body parts that were damaged 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 at its front bonnet (red circle), front bumper (red arrow) and front left headlamp (yellow arrow) as a result of the accident.

Photo 5 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 sustained damage at its left fender and left door as a result of the accident.

Photo 6 shows a close up 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 sustained damage at its left fender (red circle) and left door (yellow circle) as a result of the accident.

Photo 7 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 sustained damage at its right door as a result of the accident.

Photo 8 shows a close up 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 sustained damage at its right door (circled) as a result of the accident.

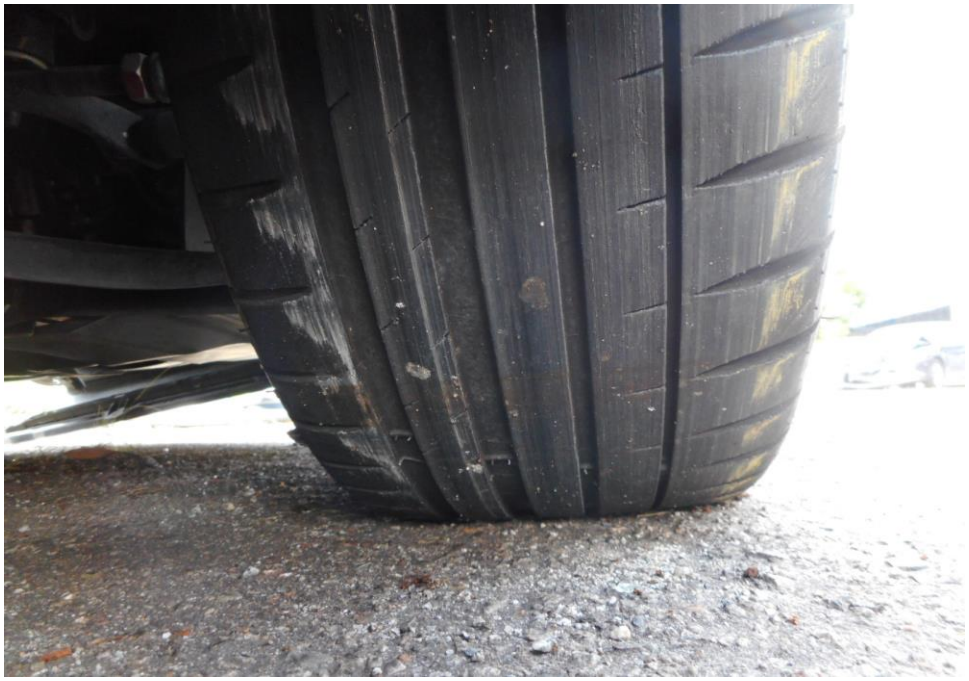


Photo 9 shows the condition of the front right tyre of the Motor Car, which was observed to be in serviceable condition with remaining tread depth of approximately 4.6mm.

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 4.9mm.

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 4.9mm. The tyre, which was wrapped around steel wheel rim, was also observed to be sufficiently inflated for vehicular operation.

Photo 12 shows the condition of the front left tyre of the Motor Car, which was observed to be in unserviceable condition with remaining tread depth of approximately 4.6mm. The tyre was observed to have slipped of the damaged wheel rim and deflated as a result of the accident.

Photo 13 shows the close up condition of the front right tyre of the Motor Car, which was observed to be in unserviceable condition. The tyre was observed to be cut and slipped of the damaged wheel rim (circled) and deflated as a result of the accident.

Engine Compartment & Operating Fluids

8. Upon examination of the engine compartment of the Motor Car, I 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.

9. 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.

10. My subsequent checks on the underside of the Motor Car also revealed no sign(s) or indication(s) of fluid leak and/or fluid stain(s). Visually, the various undercarriage components of the Motor Car were all observed to be intact and without any visible damage. See photo 14 – 18 below.

Photo 14 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 15 shows the brake fluid reservoir of the Motor Car at the time of my inspection. The brake fluid was observed to be of sufficient level (arrowed) and without any visible contamination.

Photo 16 shows checks being carried out to the engine coolant of the Motor Car at the time of my inspection. The engine coolant was observed to be of sufficient level (arrowed) and without any visible contamination.

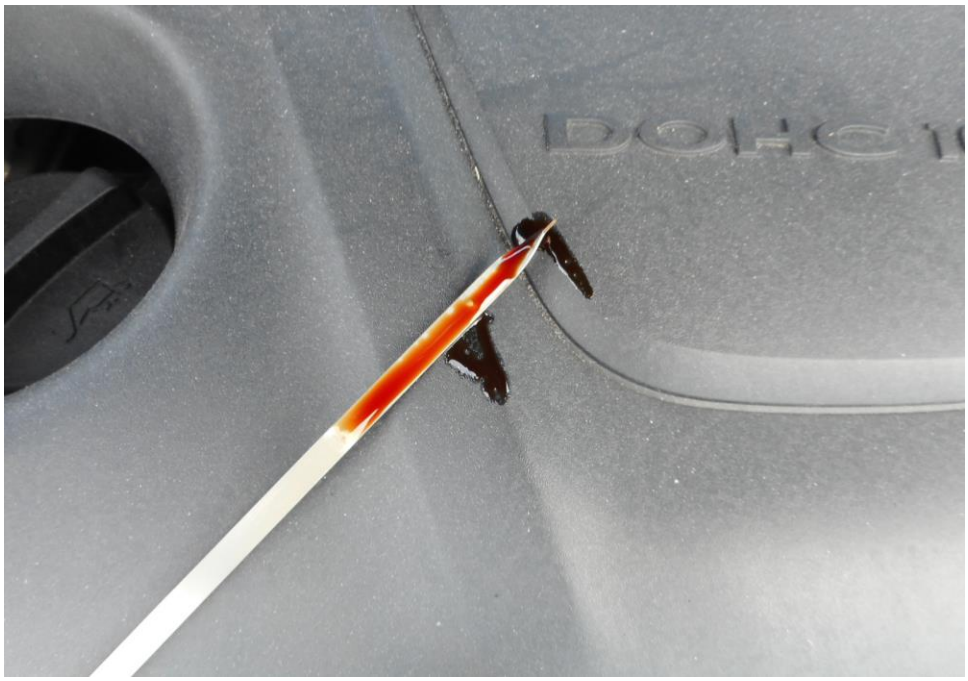


Photo 17 shows the engine oil dipstick of the Motor Car at the time of my inspection. The engine oil was observed to be of sufficient level and without any visible contamination.

Photo 18 shows the undercarriage of the Motor Car, at the area where the engine housing and transmission housing are located. I did not find any sign(s) or indication(s) of fluid leak and/or fluid stain(s) on the underside of the Motor Car.

Braking System & Steering System

11. Static brake tests conducted on the Motor Car revealed no abnormality. The brake booster had responded well to the various tests conducted. There was also no abnormal movement of the brake pedal when it was depressed. In general, the static brake tests had suggested that there was no internal leakage of pressure/vacuum in the braking system of the Motor Car. The braking system of the Motor Car was likely to be in serviceable condition at the material time. This was taking into consideration that the brake fluid was of sufficient level, and also that there was no sign(s) of brake fluid leakage along the brake hoses and brake pipes.

12. Static test on the steering system of the Motor Car also revealed no abnormality to the steering system. I did not experience any abnormal free play and/or other resistance when turning the steering wheel left and right to full lock positions. My 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. However, I observed that the front left tie rod of the Motor Car was damaged as a result of the accident. See photo 19 - 24 below.

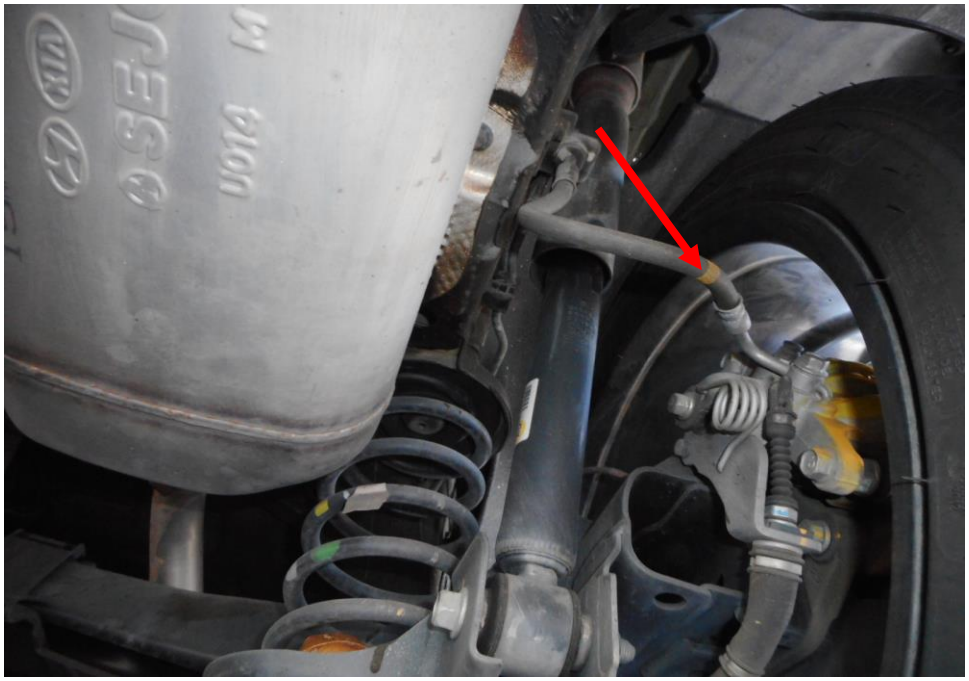


Photo 19 shows the brake hose/pipe (arrowed) at the rear right wheel of the Motor Car. No leakage of brake fluid was observed. Visual examination of the various components of the braking system like the drum brake, brake booster, brake pedal etc. had revealed all to be intact and without visible damage.

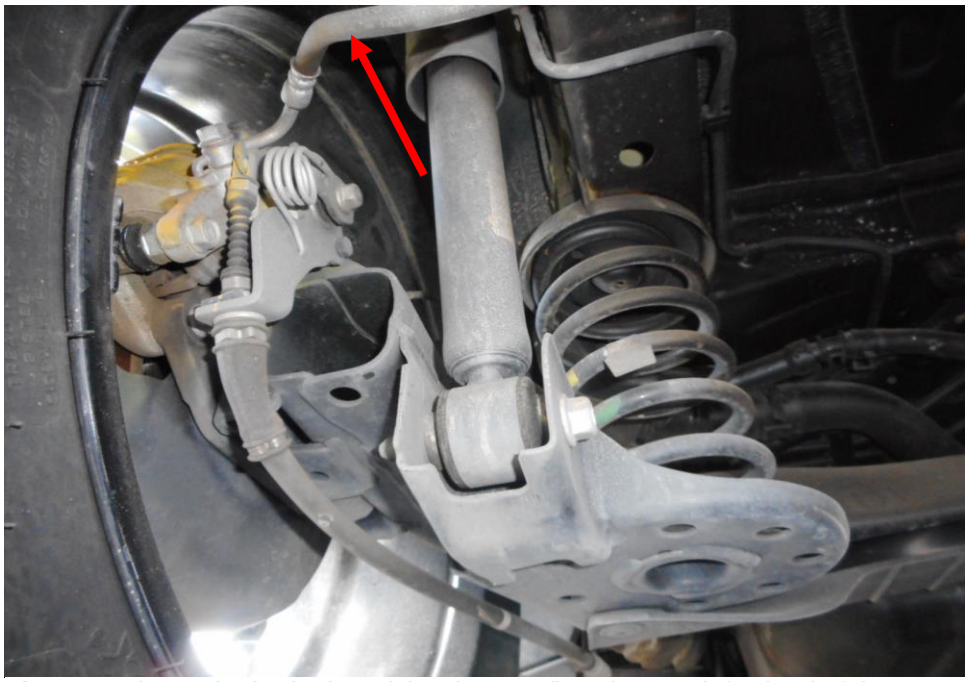


Photo 20 shows the brake hose/pipe (arrowed) at the rear left wheel of the Motor Car. I did not observe any leakage of brake fluid at the time of my inspection of the Motor Car. Static tests of the Motor Car's braking system had indicated that there was no internal leakage of pressure/vacuum. The undercarriage components of the Motor Car were also all found to be intact and without any visible damage.

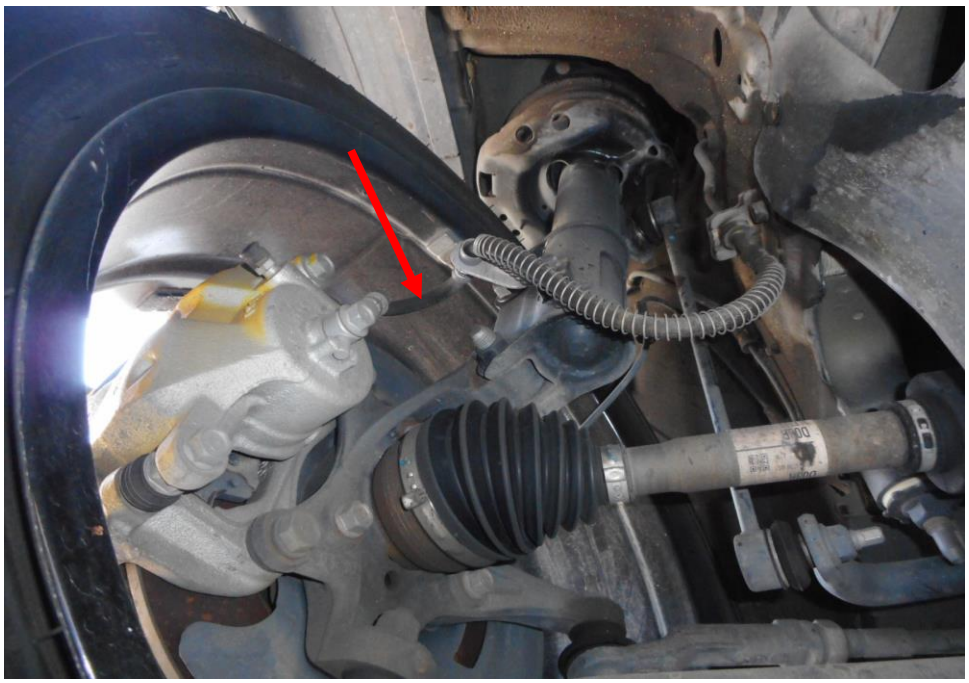


Photo 21 shows the brake hose/pipe (arrowed) at the front right wheel of the Motor Car. I did not observe any leakage of brake fluid at the time of my inspection of the Motor Car. Static tests of the Motor Car's braking system had indicated that there was no internal leakage of pressure/vacuum. The undercarriage components of the Motor Car were also all found to be intact and without any visible damage.

Photo 22 shows the various undercarriage components at the front right wheel of the Motor Car, which had included the steering tie rod (red arrowed) and the driveshaft (yellow arrowed). The various undercarriage components of the Motor Car were all found to be intact without any visible damage.

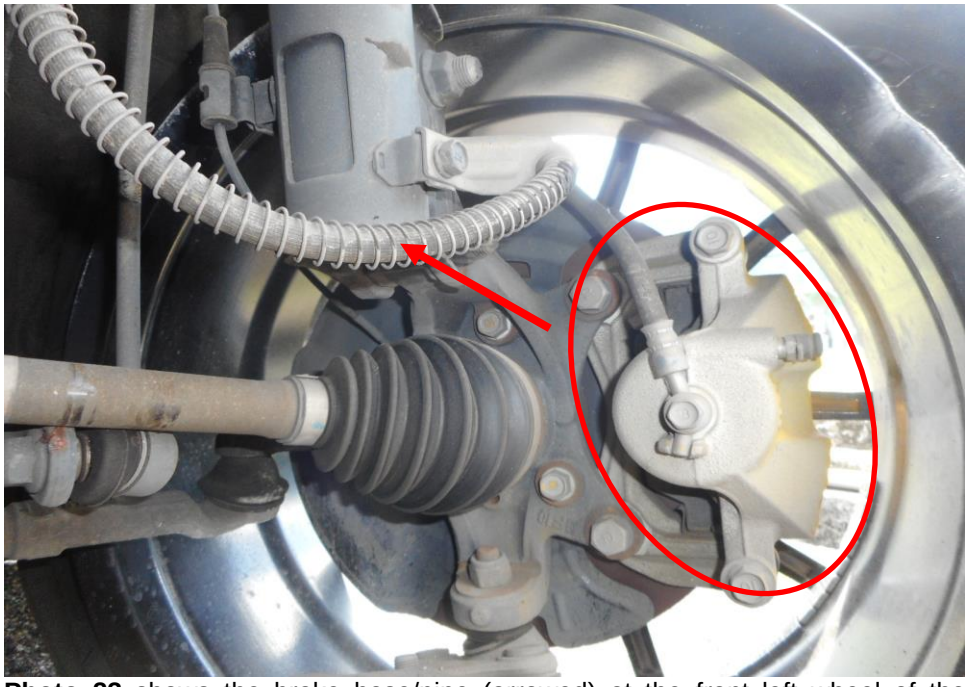


Photo 23 shows the brake hose/pipe (arrowed) at the front left wheel of the Motor Car. No leakage of brake fluid was observed. Visual examination of the various components of the braking system like the brake caliper (circled), brake booster, brake pedal etc had revealed all to be intact and without visible damage.

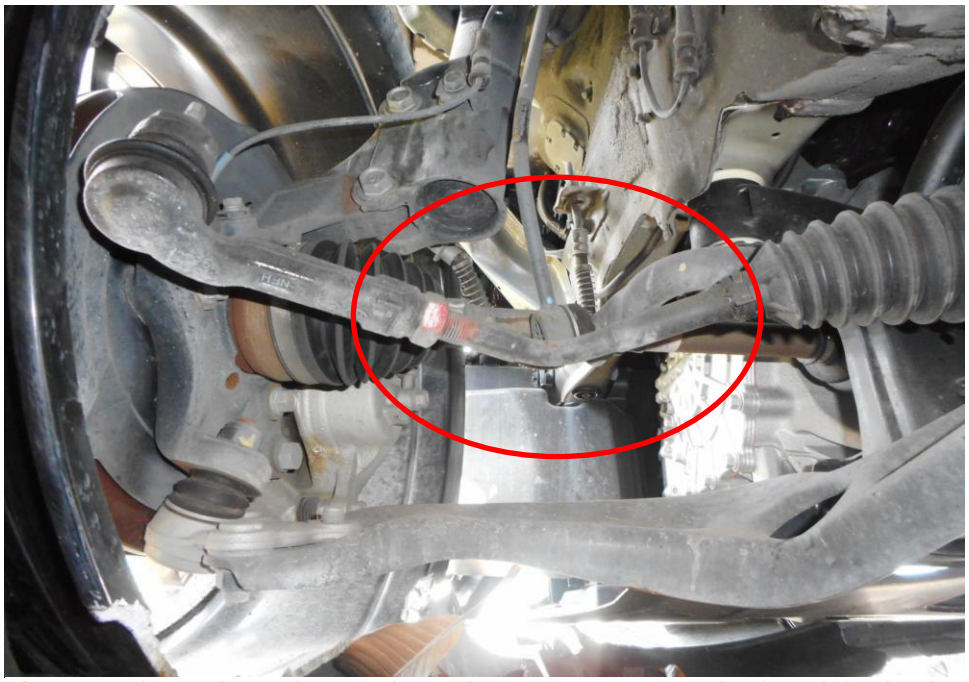


Photo 24 shows the various undercarriage components at the front left wheel of the Motor Car, in particular the steering tie rod was observed to have sustained damaged as a result of the accident (circled).

Electronic Safety / Warning Indicators

13. The Motor Car 's automatic self-test of the functionality of its electronic operating systems like the Anti-Lock Brake System (ABS) and Electric Power Steering System (EPS), Supplemental Restraint System (SRS) and Traction Control (TC) during cranking of the engine had indicated that the system were in working condition and without abnormality. This can be established from the warning lights disappearing from the instrument panel after the self-test. However, the Anti-Lock Brake System (ABS) and Traction Control (TC) remained illuminated up, this is caused by the damaged to the front left tyre and rim that had triggered the warming lights of the Motor Car. See photo 25 - 26 below.

Photo 25 shows the warning light for Anti-Lock Brake System (ABS) and Power Steering System (EPS), Supplemental Restraint System (SRS) and Traction Control (TC) (arrowed) appearing on the instrument panel of the Motor Car during the self-test of its various electronic operating systems when its engine was cranked.

Photo 26 shows only the ABS and TC warning lights illuminated on the instrument panel of the Motor Car after the engine was cranked. This was caused by the damaged front left tyre and rim as a result of the accident.

Seat Belts

14. The Front right, front left, rear right and rear left seat belts of the "Motor Car" were tested and all the seat belts were able to be fastened securely into the respective pre-tensioners that were fitted at the sides of each seat.

Operational Behaviour of the Motor Car

15. 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 as the damaged to the front left tyre and rim had prevented me from carrying out any operational test(s).

Conclusion

16. 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 by driving, as the extent of damage that it had sustained to its front left tyre and rim had prevented me from carrying out any operational test(s)

17. However, static brake and steering tests was able to be conducted and in general our visual inspection of the mechanical components of the Motor Car's braking system appear to suggest that its braking and steering system was in serviceable condition at the material time of accident and there was no leakage found at the braking and steering components of the Motor Car.

18. The front left tyre was deflated and cut as a result of the accident. However, the other 3 tyres was 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 3 tyres. The 4 tyres were also observed with remaining tread depth of approximately 4.6mm to 4.9mm.

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