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Your Ref: TP TP/10622/2023
Our Ref : CI/TPD23006809/P

31st July 2023

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

MECHANICAL INSPECTION REPORT OF MOTOR CAR SMQ 539U

1. I refer to your request on 10th June 2023 to conduct a physical inspection of a Motor car bearing registration number SMQ 539K (herein referred to as "**Motor Car**"), which was involved in a road traffic accident on 13th April 2023.

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 24th July 2023 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.

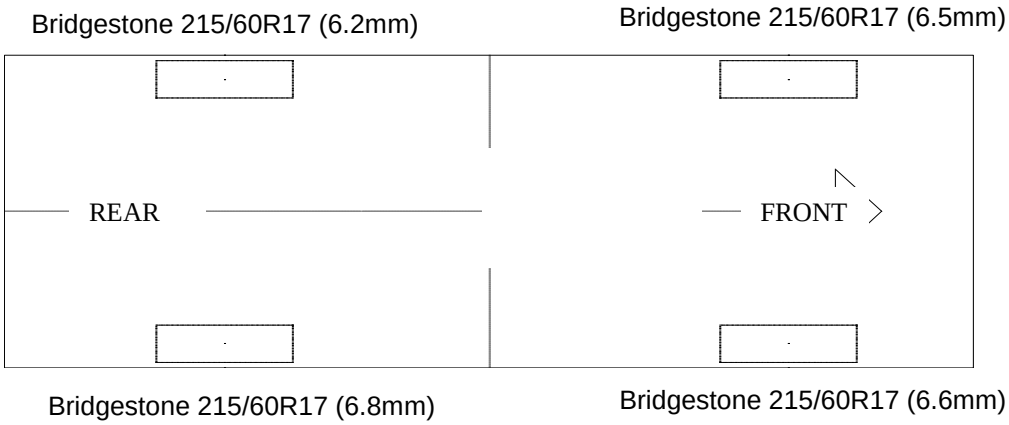
General Condition

4. The mileage of the Motor Car at the time of my inspection was 18,449KM.

5. The Motor car was observed to have sustained damage at. Its left front door and left rear view mirror was the body parts that were 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 4 tyres of the Motor Car were observed to be in serviceable condition and sufficiently inflated for vehicular operation. 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 tyre brand, tyre size and remaining tread depth of the 4 tyres of the Motor Car were recorded as follows:-



7. The 4 tyres were observed to be wrapped around standard alloy wheel rims that were found to be without any damage. See photo 1 – 10 below.

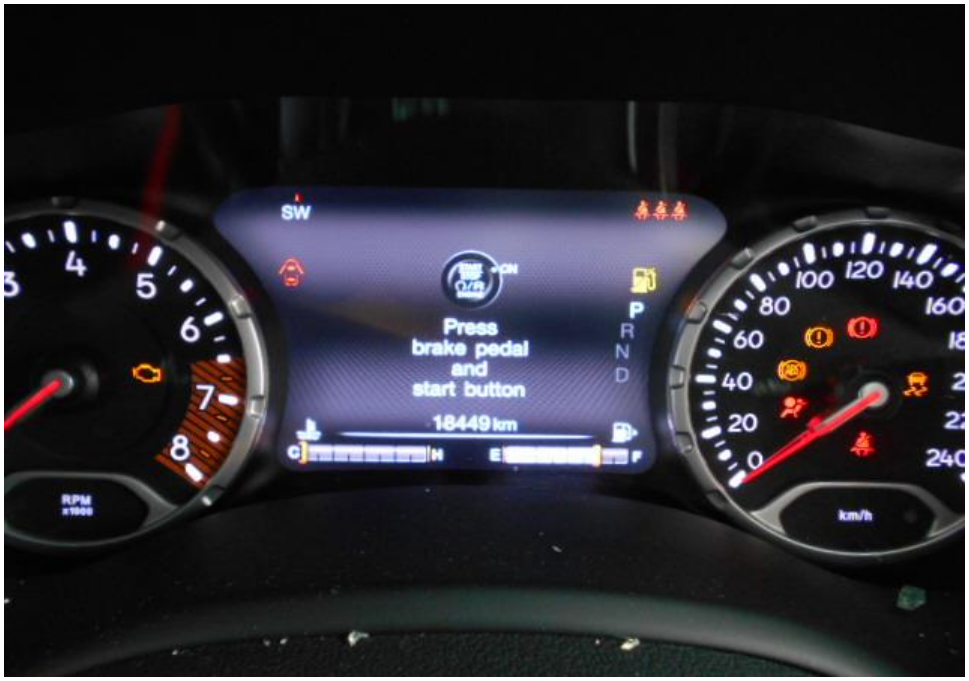


Photo 1 shows a general view of the instrument cluster of the Motor Van at the time of my inspection. The mileage of the Motor Car was 18,449km.

Photo 2 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 been undamaged by the accident.

Photo 3 shows the general view of the Motor Car's left body at the time of my inspection. The Motor Car was observed to sustained damage at its left front door and left rear view mirror were amongst the body parts that were damaged as a result of the accident. The Supplemental Restraint System (SRS) was activated as a result of the accident.

Photo 4 shows the close up view of the Motor Car's left body at the time of my inspection. The motor car was observed to have sustained damage at its left portion. Its left rear view mirror (circled) was damaged as a result of the accident.

Photo 5 shows the close up view of the Motor Car's left body at the time of my inspection. The Motor Car was observed to have sustained damage at its left portion. Its left front door (circled) was damaged 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 undamaged by the accident.

Photo 7 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 8 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 6.6mm. The tyre was also observed to be sufficiently inflated for vehicular operation with no tear, cut or burst mark(s).

Photo 9 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 6.8mm. The tyre was also observed to be sufficiently inflated for vehicular operation with no tear, cut or burst mark(s).

Photo 10 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 6.2mm. The tyre was also observed to be sufficiently inflated for vehicular operation with no tear, cut or burst mark(s).

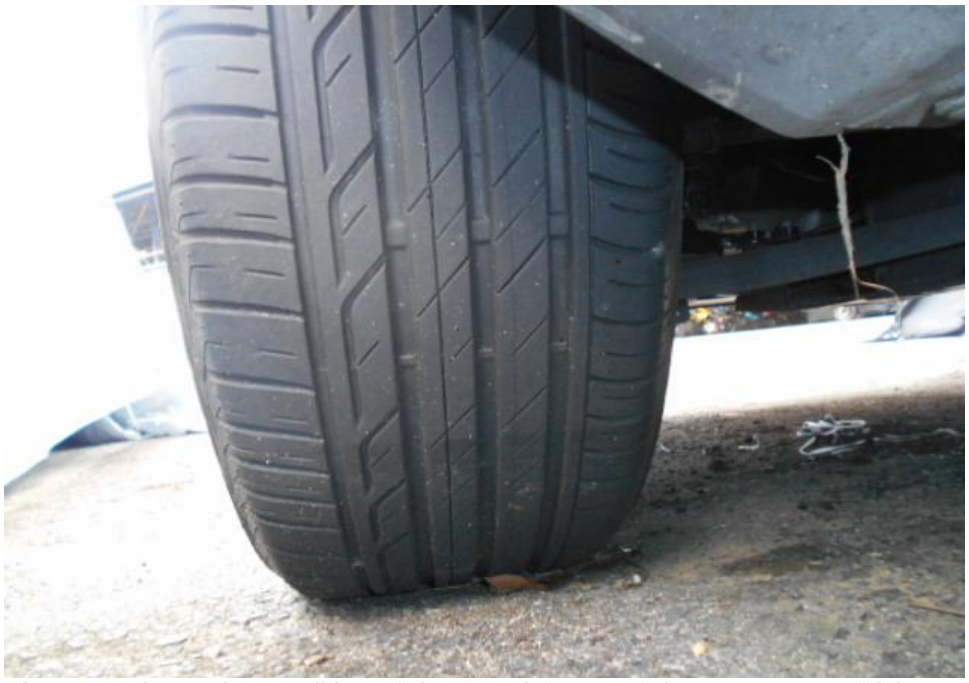


Photo 11 shows the condition of the front left tyre of the Motor Car, which was observed to be in serviceable condition with remaining tread depth of approximately 6.5mm. The tyre was also observed to be sufficiently inflated for vehicular operation with no tear, cut or burst mark(s).

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 12 -16 below.

Photo 12 shows a general view of the Motor Car's engine compartment, which was accessed by lifting the front bonnet of the Motor Car. The various parts and components inside the engine compartment were unaffected by the accident. There was also no sign(s) or indication(s) of fresh fluid leakage and/or fluid stain within the engine compartment.

Photo 13 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.

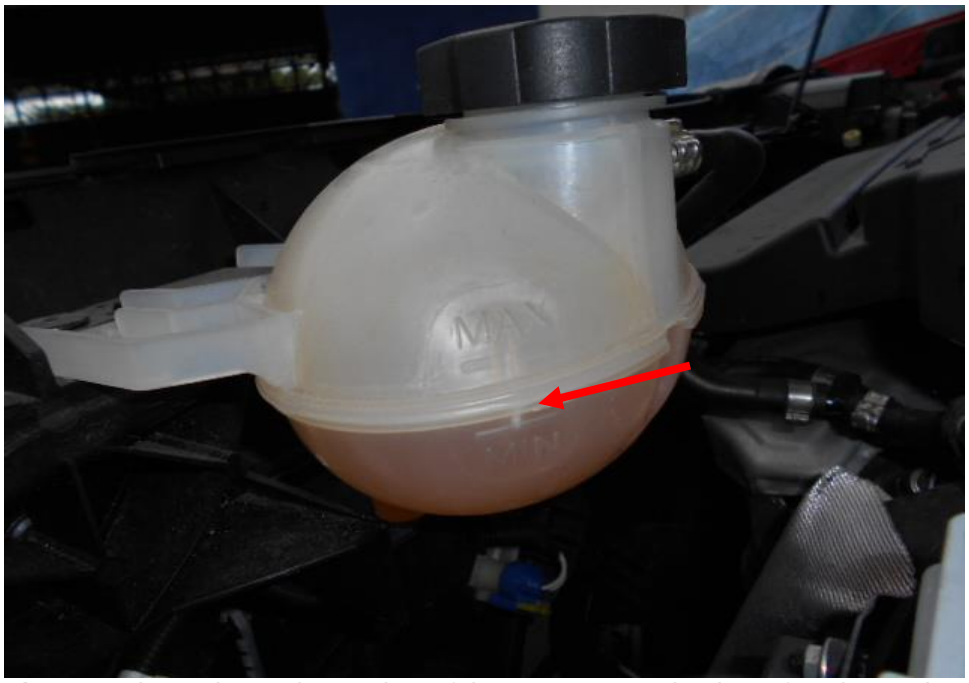


Photo 14 shows the engine coolant of the Motor Car at the time of my inspection. The engine coolant was observed to be of sufficient level.

Photo 15 shows the engine oil dip stick 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 16 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 test on the braking system was unable to be conducted on the Motor Car as the fuel was cut off due to the result of the accident, a triggered warning message for the fuel cut-off on the instrumental panel was observed at the material time of inspection. However, a visual examination was conducted and 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 steering test on the steering system was unable to be conducted on the Motor Car as the fuel was cut off due to the result of the accident, a triggered warning message for the fuel cut-off on the instrumental panel was observed at the material time of inspection. However, a 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 intact without damages. See photo 17 - 22 below.

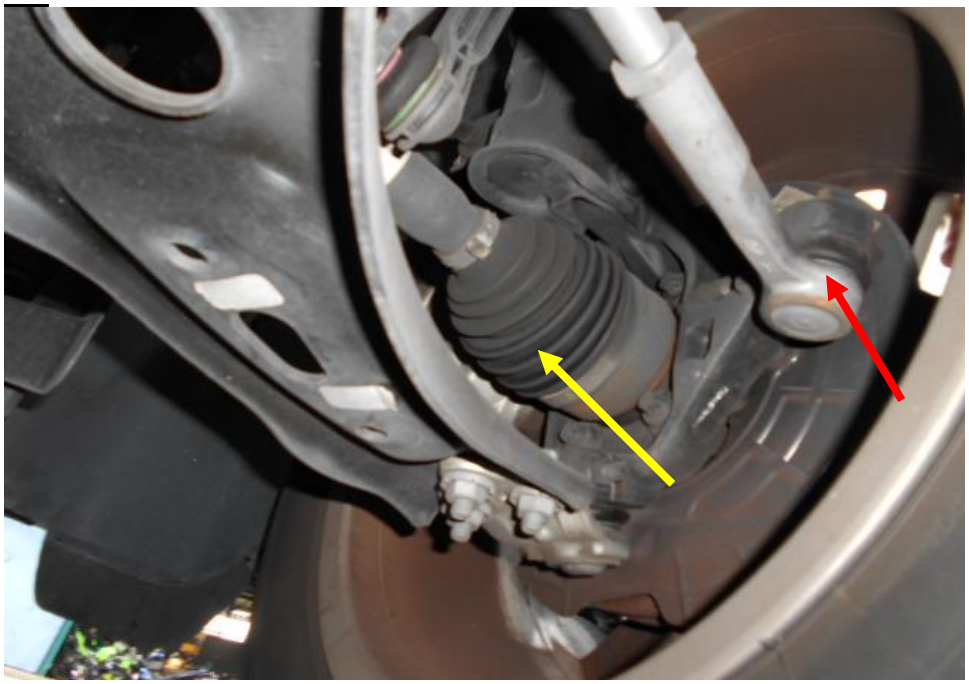


Photo 17 shows the various undercarriage components at the front right wheel of the Motor Car, in particular the steering tie rod (red arrow) and the driveshaft (yellow arrow). The various steering components were all found to be intact, suggesting that the steering system of the Motor Car was likely 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.

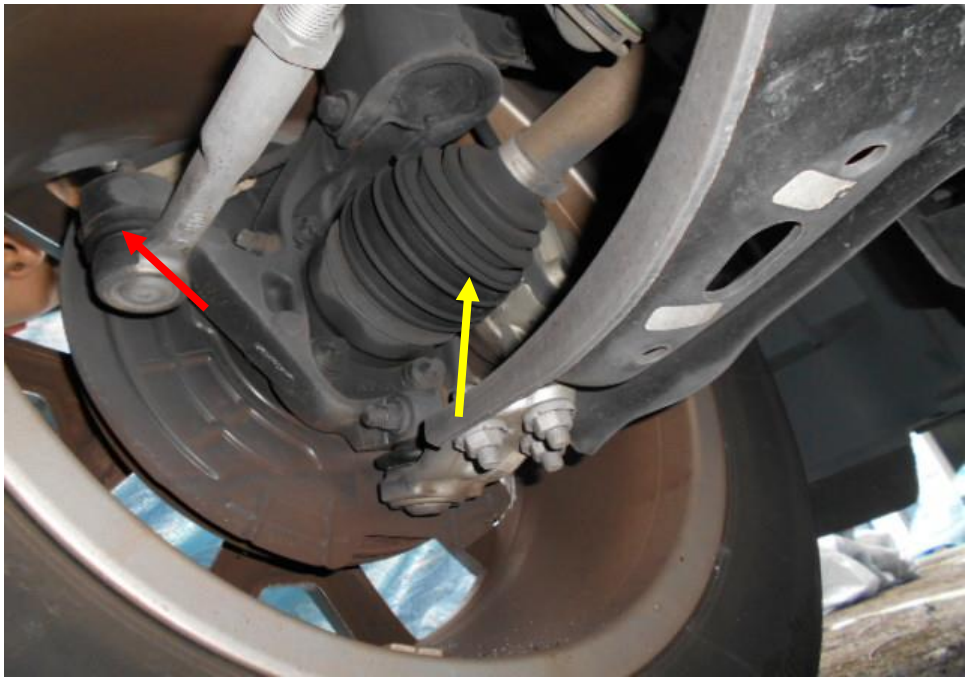


Photo 18 shows the various undercarriage components at the front left wheel of the Motor Car, in particular the steering tie rod (red arrow) and the driveshaft (yellow arrow). The various steering components were all found to be intact, suggesting that the steering system of the Motor Car was likely 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.

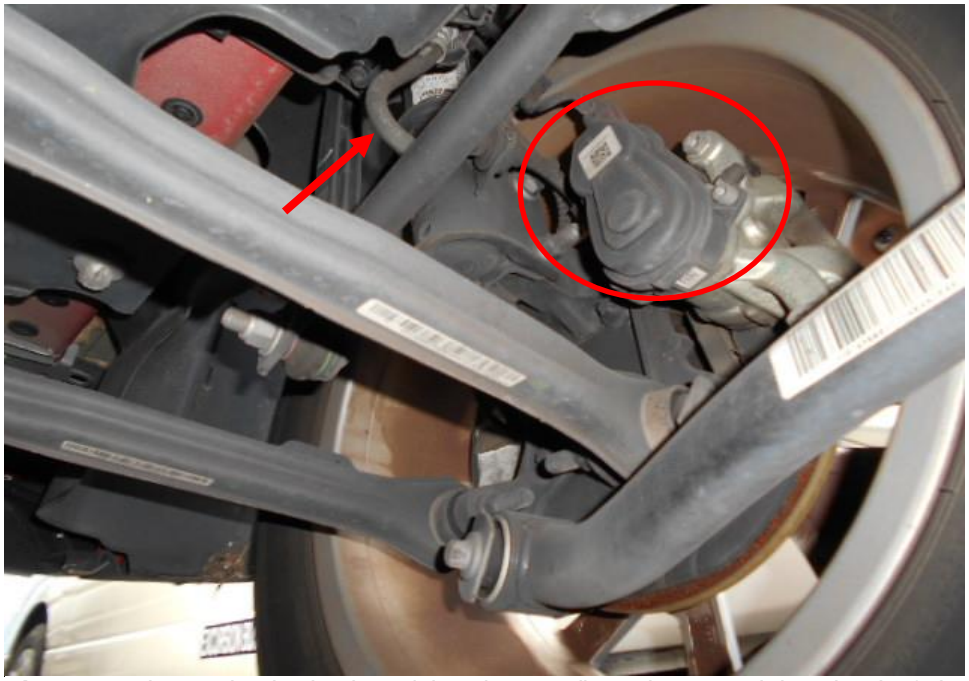


Photo 19 shows the brake hose/pipe (arrowed) at the rear right wheel of the Motor Car. No leakage of brake fluid was observed. Visual examination of the various components of the braking system like the brake caliper (circled), brake booster, brake pedal etc had revealed all to be intact and without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

Photo 20 shows the brake hose/pipe (arrowed) at the rear left wheel of the Motor Car. 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.

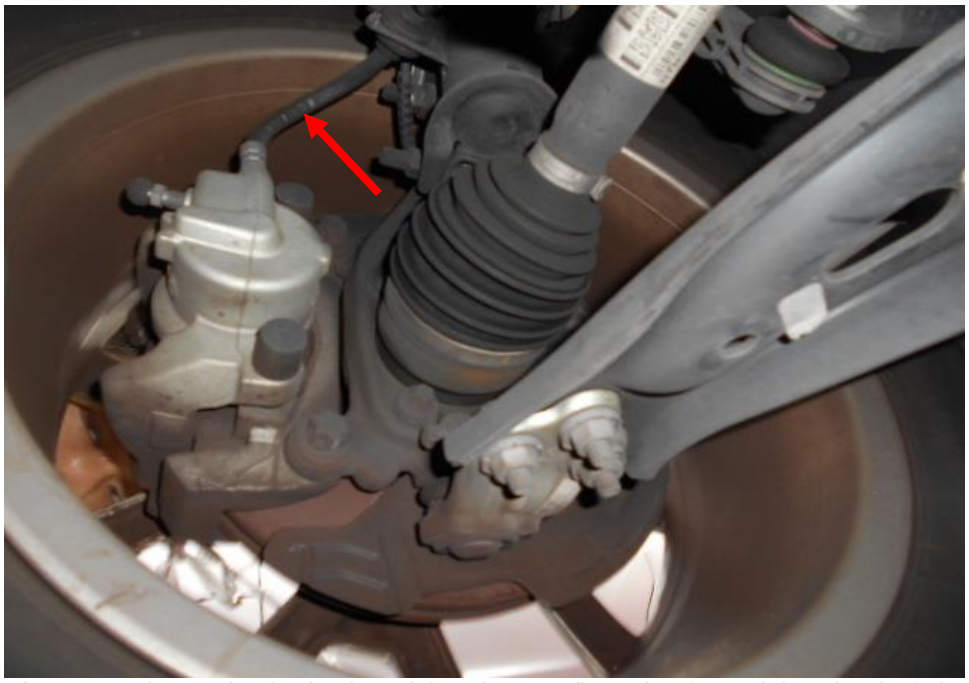


Photo 21 shows the brake hose/pipe (arrowed) at the front right wheel of the Motor Car. No leakage of brake fluid was observed. Visual examination of the various components of the braking system like the disc brake, brake booster, brake pedal etc. had revealed all to be intact and without visible damage.

Photo 22 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 disc brake, brake booster, brake pedal etc. had revealed all to be intact and without visible damage.

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), Traction Control System (TCS) and Supplemental Restraint System (SRS) was unable to be conducted as the engine of the Motor Car was unable to be started up as the fuel was cut off due to the result of the accident. A warning message for the fuel cut-off was triggered and shown on the instrumental panel at the material time of inspection. This prevented me from starting up the Motor Car. See photo 23 & 24 below.

Photo 23 shows the warning light for Supplemental Restraint System (SRS), Traction Control System (TCS) and Anti-Lock Brake System (ABS) (arrowed) appearing on the instrument panel of the Motor Car during the self-test of its various electronic operating systems before the engine was cranked.

Photo 24 shows the Fuel cut-off Triggered warning lights illuminated on the instrument panel as a result of the accident, this had prevented me from starting up the Motor Car to conduct the automatic self-test of the functionality of its electronic operating systems like the ABS, TCS, SRS and etc.

Operational Behaviour of the Motor Car

14. .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 engine of the Motor Car was unable to be started due to the accident triggering a Fuel cut-off to the engine of the Motor Car. See photo 24 above.

Conclusion

15. 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. Due to the accident triggering a Fuel cut-off to the engine of the Motor Car and that had prevented me from carrying out any operational test(s) and/or static test(s) to its engine system, braking system, transmission system, steering system and suspension system.

16. The 4 tyres fitted on 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 6.2mm – 6.8mm.

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