

Your Ref: TP/IP/21061/2020
Our Ref : CI/TPD20005598/P

17th July 2020

Fatal Accident Investigation Team

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

MECHANICAL INSPECTION REPORT OF MOTOR CAR SLB 1471P

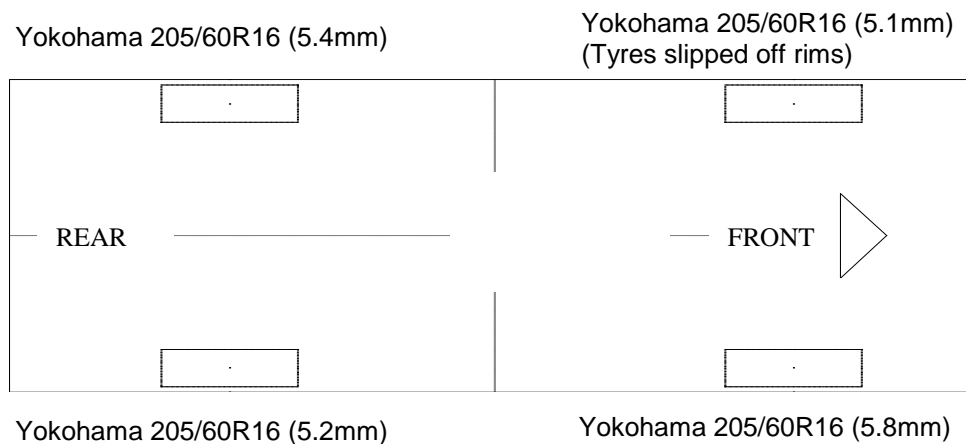
1. I refer to your request on 28th April 2020 to conduct a physical inspection of a Motor car bearing registration number SLB 1471P (herein referred to as "**Motor Car**"), which was involved in a road traffic accident on 25th April 2020.
2. The objective of the inspection is to determine if there was 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 15th July 2020 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 its ignition system was damaged as a result of the accident.
5. The Motor car was observed to have sustained damage at its front left portion. Its front windscreen, front bonnet, front bumper, front left fender and front left headlamp was amongst the body parts and various components in the engine compartments were also damaged as a result of the accident.

Tyres and Wheel Rims

6. The front left tyre was observed to slip off the rims 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 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 3 tyres were observed to be wrapped around standard 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 front body at the time of my inspection. The Motor car was observed to have sustained damage at its front left portion. Its front windscreen, front bonnet, front bumper, front left fender and front left headlamp was amongst the body parts and various components in the engine compartments were also damaged as a result of 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 damage at its front left portion. Its front windscreen (circled) 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 general view of the Motor Car's left portion at the time of my inspection. The Motor car was observed to have sustained damage at its front left portion. Its front windscreen, front bonnet, front bumper, front left fender and front left headlamp was amongst the body parts 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 left portion at the time of my inspection. The Motor car was observed to have sustained damage at its front left portion. Its front bonnet (red arrow) and front left fender (yellow arrow) was amongst the body parts 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 left portion at the time of my inspection. The Motor car was observed to have sustained damage at its front left portion. Its front bumper (arrowed) and front left headlamp (circled) was amongst the body parts and various components in the engine compartments were also damaged as a result of the accident.

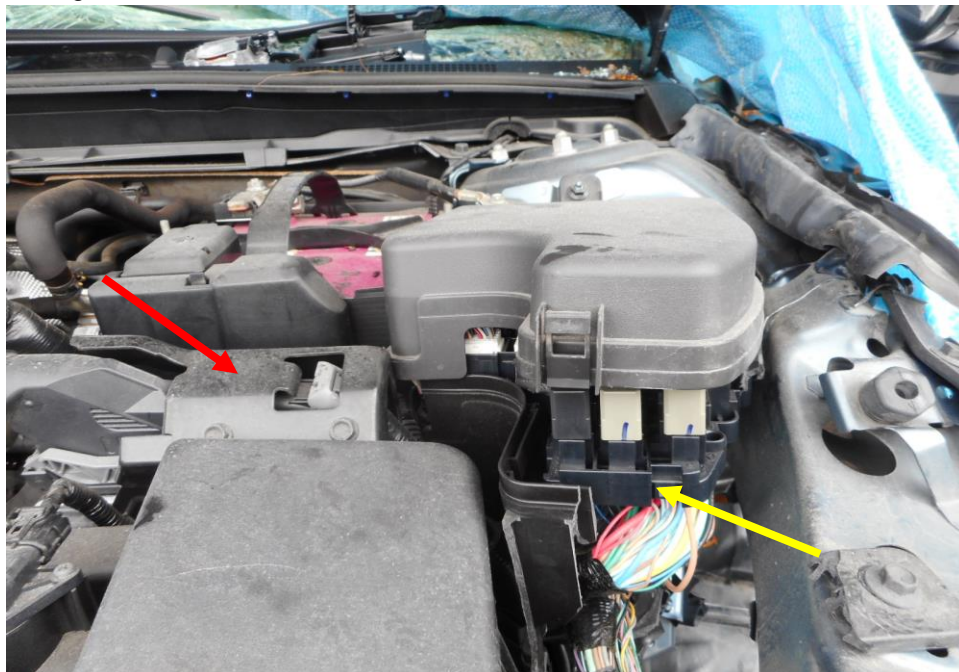


Photo 6 shows a close up view of the Motor Car's engine compartment at the time of my inspection. The Motor car was observed to have sustained damage at its engine compartment portion. Its various components in the engine compartments as the fuse box (yellow arrow), Electronic computing unit (red arrow) and ignition system were also damaged 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 been undamaged by 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, which was observed to be in serviceable condition with remaining tread depth of approximately 5.8mm. The tyre, which was wrapped around alloy wheel rim, was also observed to be sufficiently inflated for vehicular operation.



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 5.4mm. 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 unserviceable condition as the tyres had slipped off the rim as a result of the accident. The remaining tread depth of approximately 5.1mm. The tyre was also observed with no tear, cut or burst mark(s).

Engine Compartment & Operating Fluids

8. Upon examination of the Motor Car's engine compartment, I had observed most of 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, there was no sign(s) or indication(s) of fresh 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 fluid stain. Visually, the various undercarriage components of the Motor Car were all observed to be intact and without any visible damage. See photo 13 – 17 below.



Photo 13 shows a general view of the Motor Car's engine compartment, which was accessed by lifting the front cabin 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 14 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 15 shows the engine coolant reservoir 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 16 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 17 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. 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 up (Engine unable to be started up)
12. 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.
13. My visual examination of the various steering and braking components which had included the rack and pinion, tie rods, tie rod ends and ball joints, brake hoses and brake pipes had revealed that these components were all generally intact. See photo 18 - 23 below.

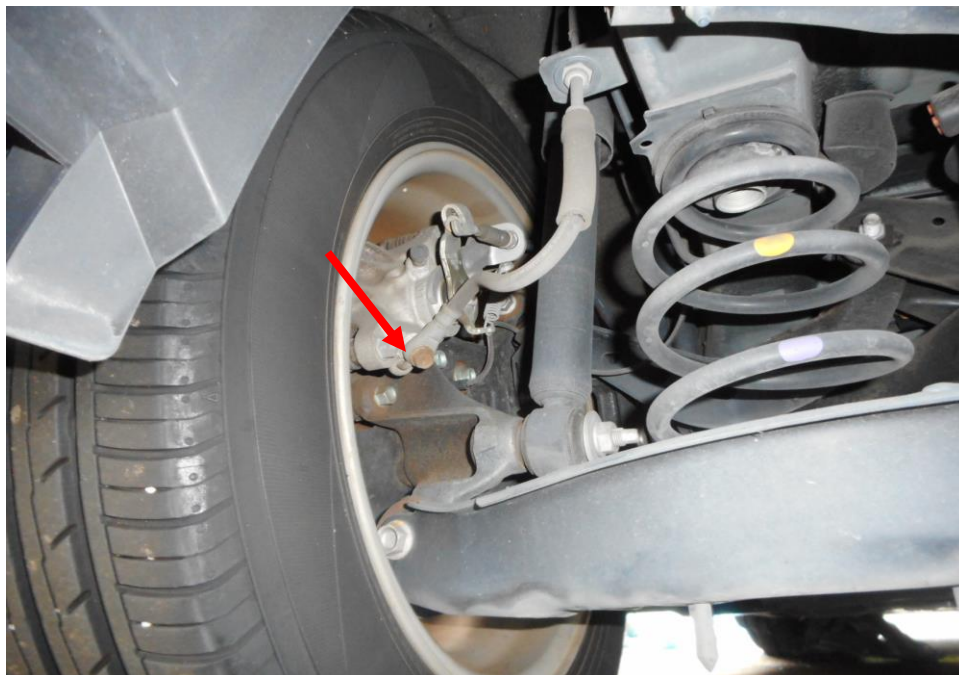


Photo 18 shows the brake hose/pipe (arrowed) at the rear left wheel of the Motor Car. No leakage of brake fluid was observed. Visual examination of the various components of the braking system like the drum brake, brake booster, brake pedal etc. had revealed all to be intact and without visible damage.

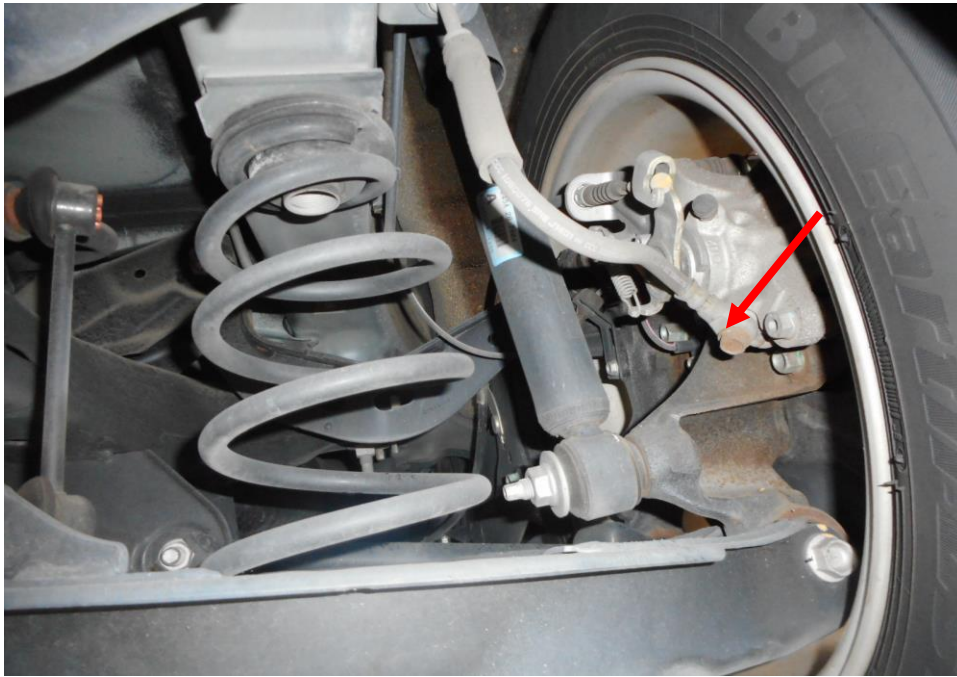


Photo 19 shows the brake hose/pipe (arrowed) at the rear right wheel of the Motor Car. No leakage of brake fluid was observed. Visual examination of the various components of the braking system like the drum brake, brake booster, brake pedal etc. had revealed all to be intact and without visible damage.



Photo 20 shows the brake hose/pipe (arrowed) at the 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 at the time of accident. There was also no sign of fluid stain(s) observed on the various undercarriage components.

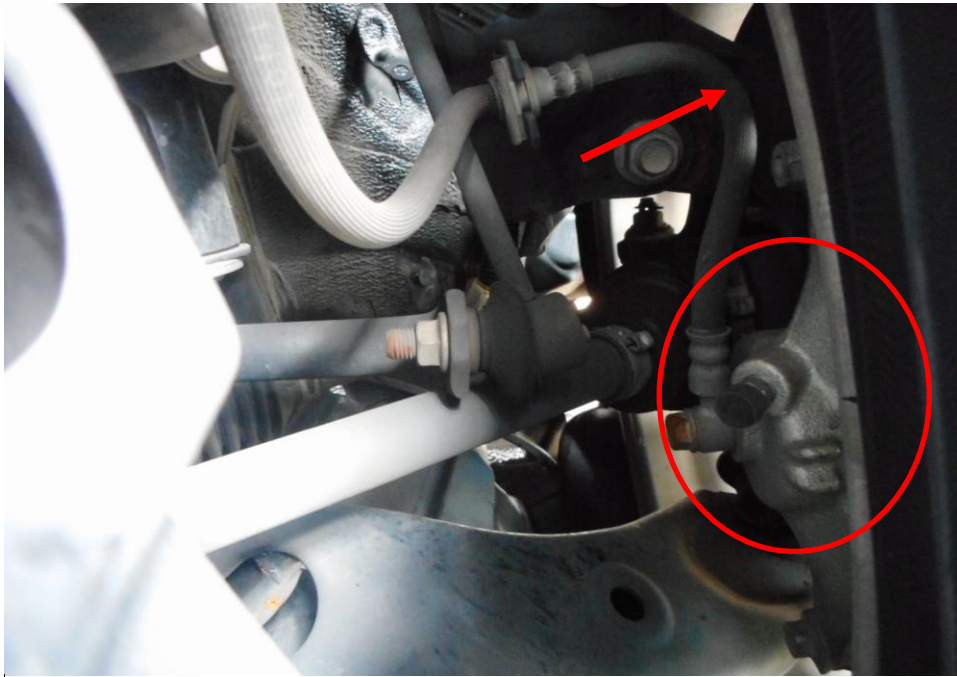


Photo 21 shows the brake hose/pipe (arrowed) at the front left wheel of the Motor Car. No leakage of brake fluid was observed. Visual examination of the various components of the braking system like the brake caliper (circled), brake booster, brake pedal etc had revealed all to be intact and without visible damage at the time of accident. There was also no sign of fluid stain(s) observed on the various undercarriage components.

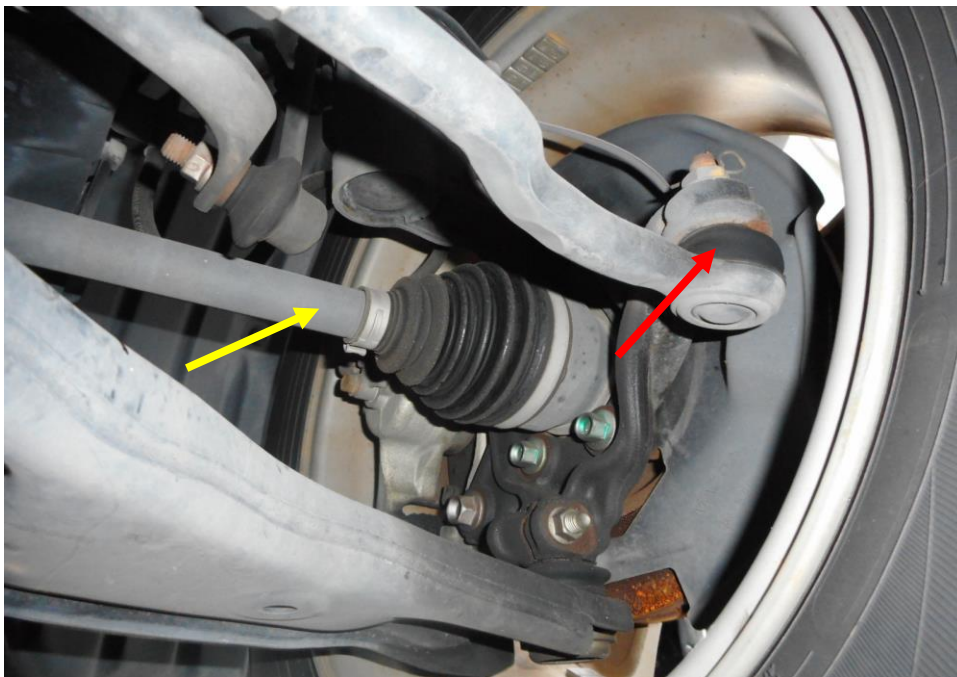


Photo 22 shows the various undercarriage components at the front right wheel of the Motor Car, in particular the steering tie rod end (arrowed) and drive shaft (yellow arrow). The various steering components were all found to be intact, suggesting that the steering system of the Motor Car was likely to be in serviceable condition at the material time of accident. There was also no sign of fluid stain(s) observed on the various undercarriage components.



Photo 23 shows the various undercarriage components at the front left wheel of the Motor Car, in particular the steering tie rod end (arrowed). The various Undercarriage components of the Motor Car were all found to be intact without any visible damage. There was also no sign of fluid stain(s) observed on the various undercarriage components.

14. Static steering were not conducted on the Motor Car due to the damages that cause the engine unable to be started up. However static brake tests 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 system was in serviceable condition at the material time of accident.

Electronic Safety / Warning Indicators

15. 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 and engine system as a result of the accident. (unable to be started)

Seat Belts

16. 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

17. 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 (unable to be started).

Conclusion

18. 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.
19. However static brake tests 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 system was in serviceable condition at the material time of accident and there was no leakage found at the braking components of the Motor Car.
20. The front left tyres was found to be slipped off the rims as a result of the accident, however the other 3 tyres of the Motor Car were 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 3 tyres were also observed to be sufficiently inflated for vehicular operation with remaining tread depth of approximately 5.2mm to 5.8mm and 5.1mm for the front left tyre.



Sherwin Beh

Technical Investigator



Ang Bryan Tani

AMSOE, AMIRTE, AFF SAE, M.MATAI, AFF.Inst.AEA

Senior Technical Investigator

Technical Investigation & Reconstructionist (SAE-A)

DISCLAIMER OF LIABILITY TO THIRD PARTIES: - This Report is made solely for the use and benefit of the Client named on the front page of this Report. No liability or responsibility whatsoever, in contract or tort, is accepted to any third party who may rely on the Report wholly or in part. Any third party acting or relying on this Report, in whole or in part does so at his or her own risk.