LKK Auto Consultants Pte Ltd

Company Registration No. 199607198R

51 UBI AVE 1, #01-25 PAYA UBI INDUSTRIAL PARK, SINGAPORE 408933 TEL : (065) 62563561 FAX : (065) 67414108

Your Ref: TP/IP/66629/2017
Our Ref : CI/TPD18001966/Z

01st February 2017

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

MECHANICAL INSPECTION REPORT OF MOTOR CAR SLB 1038H

1. We refer to your request on 09th January 2018 to conduct a physical inspection of a motor car bearing registration number SLB 1038H (herein referred to as "**Motor Car**"), which was involved in a fatal road traffic accident on 16th December 2017.

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 01st February 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 accident's collision impact.

5. The Motor Car had sustained extensive impact damages at its frontal 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, steering assembly and transmission assembly, which were amongst the multiple parts and components that were pushed inwards, towards the rear of the Motor Car.

6. Other body parts that were damaged had included the front windshield, front bonnet and front bumper amongst others. The interior compartment was also affected badly; the driver's airbag was also activated due to the extensive impact at time of the accident.

7. This was likely due to the consistency of the accident's case facts that the Motor Car driver was travelling along Cavenagh Road when he lost control of his Motor car and collided onto the rear gate pillar of The Istana. See photo 1 to 12 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 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 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 pushed inwards, towards the rear of the Motor Car.

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

Photo 6 shows a closer view of the damage at the frontal portion of the Motor Car. The impact force was significant, causing the various parts and components inside the engine compartment to be pushed inwards, towards the rear of the Motor Car.

Photo 7 shows a closer view of the left front passenger seat of the Motor Car. The impact force was significant, causing the components such as driver & passenger's seat, glove compartment, gear knob assembly amongst others to be damaged likely due to the accident's impact collision.

Photo 8 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 9 shows a closer view of the left front passenger seat of the Motor Car. The impact force was significant, causing the components such as driver & passenger's seat, glove compartment, gear knob assembly amongst others to be damaged likely due to the accident's impact collision.

Photo 10 shows a general view of the rear left portion of the Motor Car. The rear portion was observed to be in good condition, no damages found at time of our inspection.

Photo 11 shows a general view of the rear right portion of the Motor Car. The rear portion was observed to be in good condition, no damages found on the Motor Car's body at time of our inspection. However, we found that the rear right tyre was deflated due to the accident.

Photo 12 shows a general view of the rear left portion of the Motor Car. The rear portion was observed to be in good condition, no damages found at time of our inspection.

Tyres and Wheel Rims

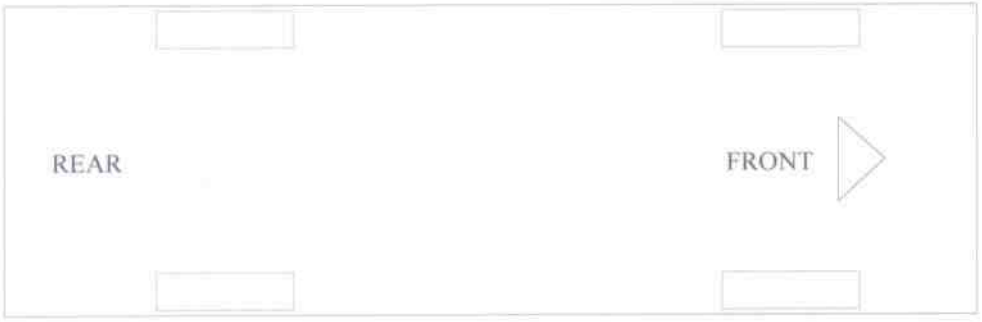
8. The rear right tyre was observed to be deflated likely due to the accident's impact. The front left & front right tyres were observed to be severely damaged likely due to the accidents impact. The conditions of the Motor Car's 4 tyres were observed to be in serviceable condition despite the severe damages & deflation that we found at time of inspection. The tread patterns were obvious visually. The remaining tread depth of the front left tyre was approximately 3mm, the front right tyre was approximately 3mm & the rear right tyre was approximately 3mm.

9. The rear left tyre 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 tyre. It was also observed to be sufficiently inflated for vehicular operation. The remaining tread depth of the rear left tyre was approximately 3mm.

10. The tyre brand, tyre size and remaining tread depth of the 4 tyres were recorded as follows:-

Toyo Proxes C1S 205/55R16 (3mm)
(Inflated - Sidewall torn)

Toyo Proxes C1S 205/55R16 (3mm)
(Damaged – Torn)



Toyo Proxes C1S 205/55R16 (3mm)
(Deflated)

Toyo Proxes C1S 205/55R16 (3mm)
(Damaged – Torn)

11. The 4 tyres were observed to be wrapped around alloy wheel rims. However, the 2 front alloy wheel rims were observed to have sustained with severe damages likely due to the accident's impact collision. See photo 13 to 20 below.

Photo 13 shows the condition of the front right tyre of the Motor Car. The tread patterns were obvious visually. The remaining tread depth of the front left tyre was approximately 3mm.

Photo 14 shows the condition of the front right tyre of the Motor Car, which was observed to be torn due to the accident's impact.

Photo 15 shows the condition of the front right wheel rim of the Motor Car, which was observed to be damaged due to the accident's impact.

Photo 16 shows the condition of the front left tyre of the Motor Car. The tread patterns were obvious visually. The remaining tread depth of the front left tyre was approximately 3mm.

Photo 17 shows the condition of the front left tyre of the Motor Car, which was observed to be torn due to the accident's impact.

Photo 18 shows the condition of the front left wheel rim of the Motor Car, which was observed to be damaged due to the accident's impact.

Photo 19 shows the condition of the rear left tyre of the Motor Car, which was observed to be in serviceable condition. The tyre was also observed to be sufficiently inflated for vehicular operation.

Photo 20 shows the condition of the rear right tyre of the Motor Car, which was observed to be deflated likely due to the accident's collision impact.

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 was therefore unable to comment whether these operating fluids were of sufficient level and without contamination for vehicular operation prior to the accident. See photo 21 to 24 below.

Photo 21 shows the close up view of the radiator's tank that was observed to be damaged likely due to the accident impact.

Photo 22 shows the close up view of the steering fluid reservoir that was broken likely due to the accident impact.

Photo 23 shows the close up view of the fluid leakage at the undercarriage area likely due to the accident impact.

Photo 24 shows the close up view of the fluid leakage at the undercarriage area likely 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 25 - 28 below.

Photo 25 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 this components, as well as leakage of power steering fluid.

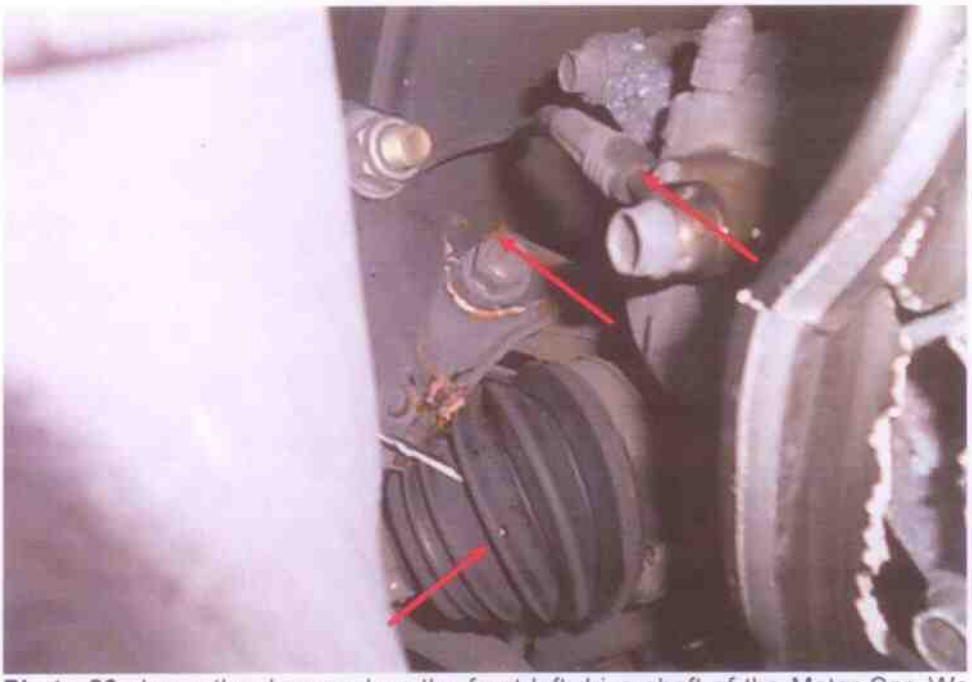


Photo 26 shows the damaged on the front left drive shaft of the Motor Car. We were not able to conduct any tests on the steering system of the Motor Car due to the damage to this components, as well as leakage of fluids.

Photo 27 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 28 shows the braking & steering components at the left 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.

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.

16. The Supplemental Restraint System (SRS) of the Motor Car was however likely to be in normal operating condition at the material time of the accident. The evidence of the deployed the driver's airbag indicates that the impact sensors and control module of the Motor Car's SRS were all in serviceable condition at the material time of accident. See photo 29 below.

Photo 29 shows the Supplemental Restraint System (SRS) of the Motor Car was however likely to be in normal operating condition at the material time of the accident. The evidence of the deployed driver's airbag indicates that the impact sensors and control module of the Motor Car's SRS were all in serviceable condition at the material time of accident.

Operational Behaviour of the Motor Car

17. 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

18. 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.

19. The rear right tyre was observed to be deflated likely due to the accident's impact. The front left & front right tyres were observed to be severely damaged likely due to the accidents impact. The conditions of the Motor Car's 4 tyres were observed to be in serviceable condition despite the severe damages & deflation that we found at time of inspection. The tread patterns were obvious visually. The remaining tread depth of the front left tyre was approximately 3mm, the front right tyre was approximately 3mm & the rear right tyre was approximately 3mm.

20. The rear left tyre 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 tyre. It was also observed to be sufficiently inflated for vehicular operation. The remaining tread depth of the rear left tyre was approximately 3mm.

21. 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 damages that it had sustained as a result of the accident.

Rohaizal A. Rahim
Technical Investigator

Ang Bryan Tani
AMSOE, AMIRTE, AFF SAE, M.MATAI, AFF.Inst.AEA
Senior Technical Investigator
Technical Investigation & Reconstructionist (SAE-A)