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/60191/2018 30th January 2019
Our Ref : CI/TPD18022477/Z

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

**MECHANICAL INSPECTION REPORT OF MOTOR CAR SJH 4642K**

1. We refer to your request on 06th December 2018 to conduct a physical inspection of a motor car bearing registration number SJH 4642K (herein referred to as "**Motor Car**"), which was involved in a fatal road traffic accident on 24th October 2018.

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, we had carried out a physical inspection of the Motor Car on 04th January 2019 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 due to the extensive damages which affects the ignition system of the Motor Car as a result of the accident.

5. The Motor Car had sustained a relatively extensive impact damages that was confined to its frontal right & left portion. Its front right headlamp was observed to have been crushed; its front right lower bumper was observed to be pushed inwards; its front bonnet was observed to be buckled; its windshield was noted to be cracked; buckle right side fender; its radiator, air intake & its left front re-inforcement bar was observed to be damaged amongst others.

6. This was likely due to the consistency of the accident's case fact that on 24th October 2018 about 2100hrs, a Motor Car (SJH 4642K) was making a right turn from the left of 3 lanes along Old Chua Chu Kang Road into track 14 when the Motorcyclist (FBC 9140E) travelling on the centre lane collided onto the Motor Car while it was in a midst of making the right turn. See photo 1 to 9 below.


**Photo 1** shows the mileage of the Motor Car at the time of our inspection was not recorded due to the extensive damage which affects the ignition system of the Motor Car as a result of the accident


**Photo 2** shows a general view of the front body of the Motor Car at the time of our inspection. The Motor Car was observed to have sustained extensive damages at the front right portion.


**Photo 3** shows a general view of the right front body of the Motor Car at the time of our inspection. The Motor Car was observed to have sustained extensive damages at the front right portion.


**Photo 4** shows a general view of the front left body of the Motor Car at the time of our inspection. The Motor Car was observed to have sustained minor damages at the left frontal portion.

**Photo 5** shows a close up view of the front right headlamp of the Motor Car at the time of our inspection. It had sustained damages likely due to the accident.

**Photo 6** shows a close up view of the right side fender of the Motor Car at the time of our inspection. It had sustained damages likely due to the accident.

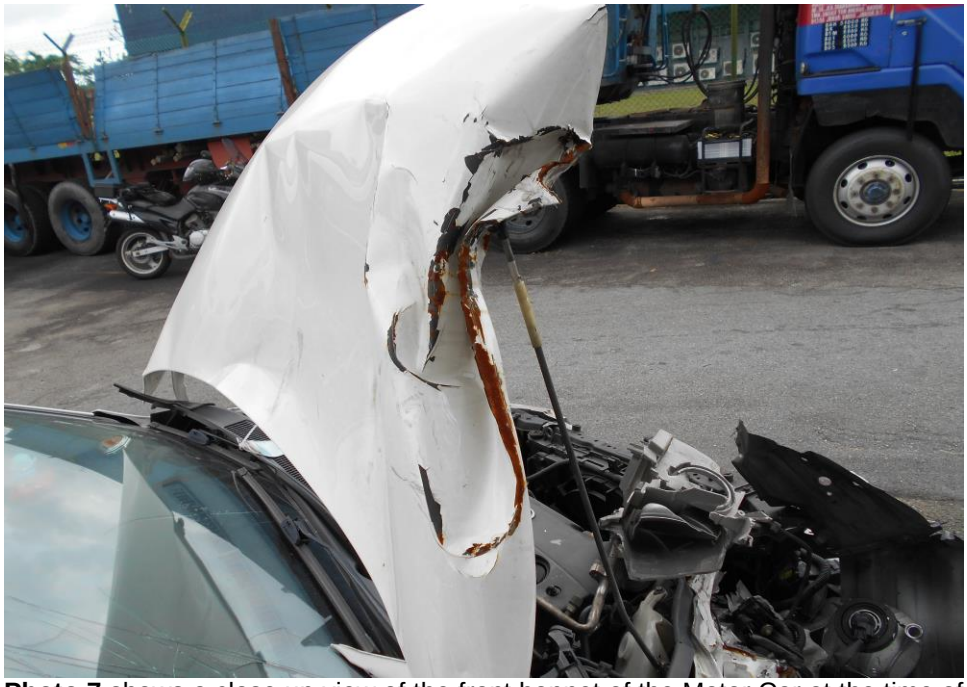


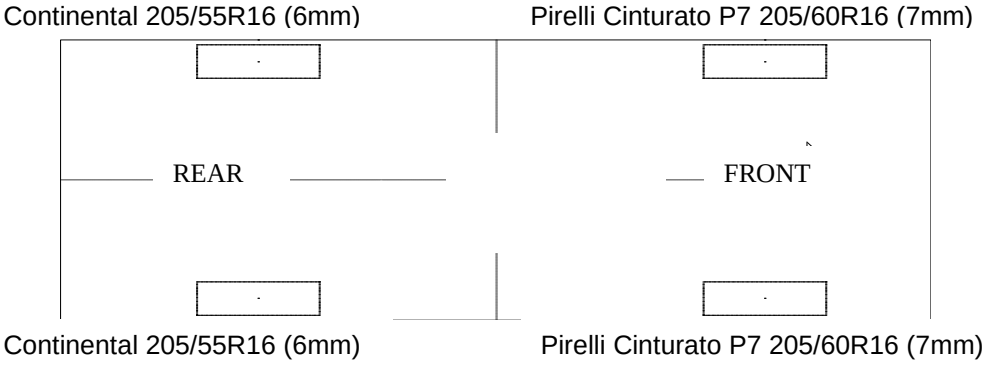
**Photo 7** shows a close up view of the front bonnet of the Motor Car at the time of our inspection. It had sustained damages at the right front bonnet of the Motor Car.

**Photo 8** shows a close up view of the shattering cracked of the Motor Car's windshield at the time of our inspection.


**Photo 9** shows a general view of the rear body of the Motor Car at the time of our inspection. The Motor Car was observed to be in good general condition.

## Tyres and Wheel Rims

7. The condition of the Motor Car's 4 tyres 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 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:-




8. The 4 tyres were observed to be wrapped around alloy wheel rims that were found to be without any significant damage except for some marks of grazing nature on the outer spokes of the wheel rims, which are commonly associated to grazing against a road kerb. See photo 10 – 13 below.

**Photo 10** 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 7mm. The tyre was also observed to be sufficiently inflated for vehicular operation.

**Photo 11** 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 7mm. The tyre was also observed to be sufficiently inflated for vehicular operation.

**Photo 12** 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 7mm. The tyre was also observed to be sufficiently inflated for vehicular operation.

**Photo 13** 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 7mm.

## Engine Compartment & Operating Fluids

9. Upon examination of the engine compartment of the Motor Car, we had observed most parts and components inside the engine compartment to be intact. However, some components such as radiator, air-intake component, compressor/ alternator belting amongst other were observed to sustained impact damages as a result of the accident.

10. The engine fluid was found to be of sufficient level for operating purposes. Visually, there was also no contamination found to the fluid. Leakage of the various operating fluids such as engine coolant & brake fluid was noted. Given the extent of damages to the engine compartment, the engine undercarriage was also observed to be covered with reddish fluid, suggesting leakage of fluid leakages were likely due to the accident. 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 were therefore unable to comment whether these operating fluids were of sufficient level and without contamination for vehicular operation prior to the accident. See photo 14 – 21 below.


**Photo 14** shows a general view of the Motor Car's top engine compartment. Some parts and components inside the engine compartment were affected by the accident.

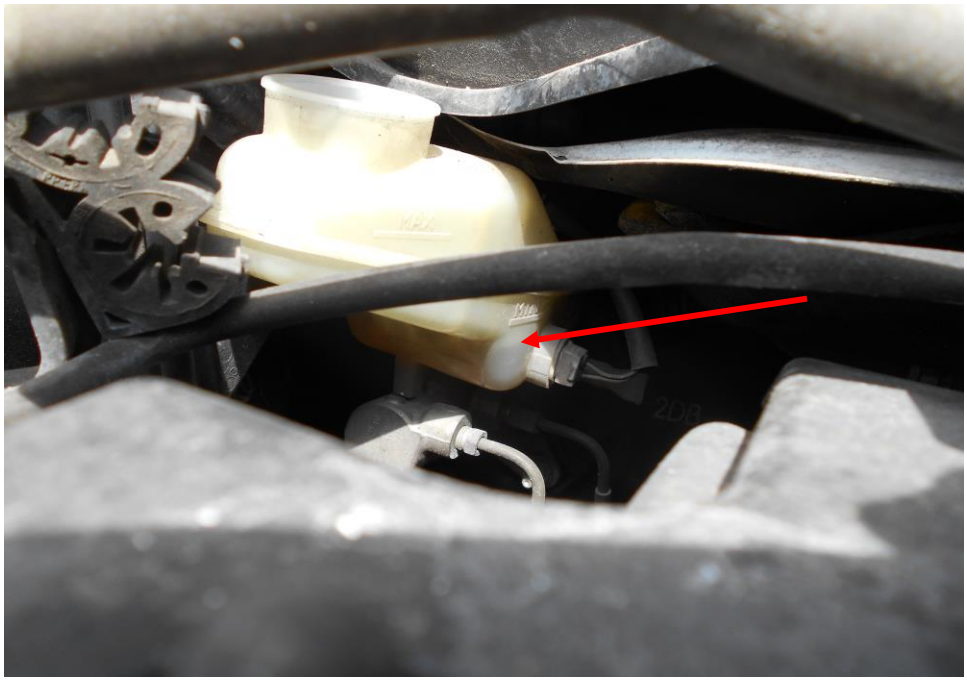


**Photo 15** shows the brake fluid reservoir of the Motor Car at the time of our inspection. The brake fluid was observed to be of insufficient level (arrowed) falls below the minimum mark as a result of the accident.

**Photo 16** shows the coolant fluid reservoir of the Motor Car at the time of our inspection. The coolant fluid reservoir was observed to be damaged due to the accident's impact.


**Photo 17** shows the coolant fluid tank of the Motor Car at the time of our inspection. The coolant fluid was observed to be of insufficient level as a result of the damaged radiator due to the accident.

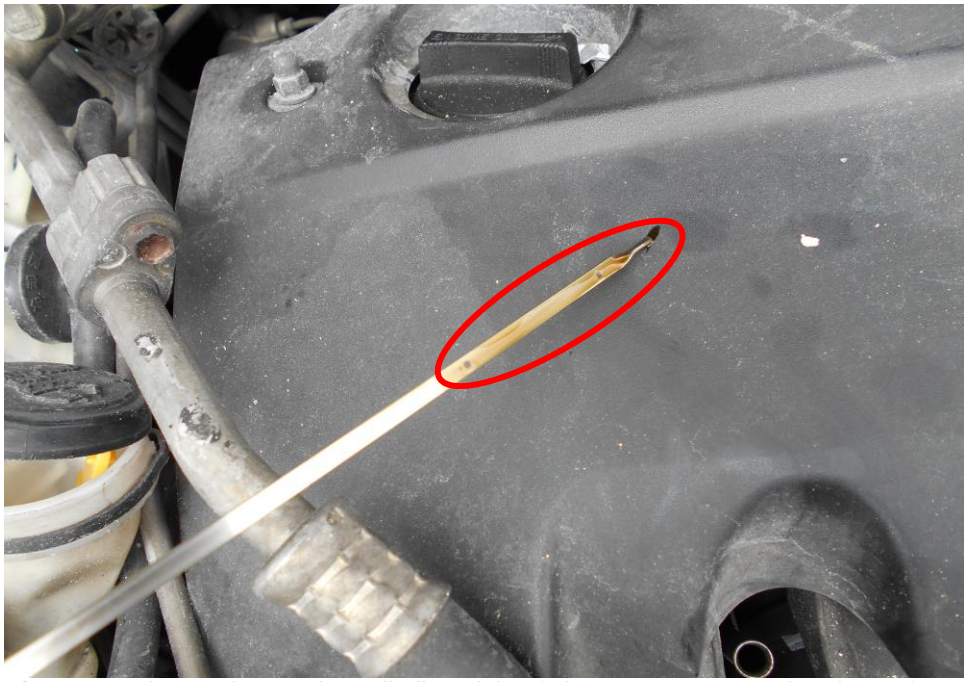


**Photo 18** shows the engine oil dip stick of the Motor Car at the time of our inspection. The engine oil was observed to be of sufficient level and without any visible contamination.

**Photo 19** shows leakage of the various operating fluids such as engine fluid & brake fluid was 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 reddish 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.

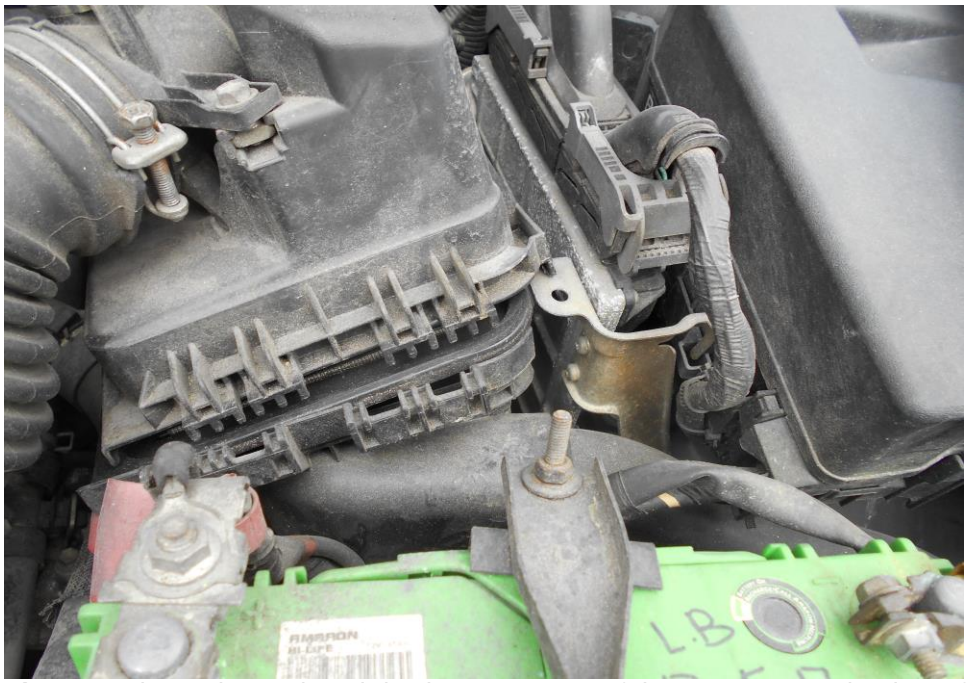


**Photo 20** shows the engine air-intake component of the Motor Car at the time of our inspection. It was observed to be damaged due to the accident's impact.

**Photo 21** shows the belting of the Motor Car at the time of our inspection. It was observed to be damaged due to the accident's impact.

## Steering System & Braking System

11. We were not able to conduct any tests on the steering system and braking system of the Motor Car.

12. This was mainly due to the extensive damage of the Motor Car's front portion, which had affected several mechanical components of the steering system like the steering lower arm and drive shaft amongst others. The drive shaft and steering lower arm of the Motor Car were observed to be intact and securely attached to the front right wheel. The steering ball joints were also observed to be in a serviceable condition. However, both components (drive shaft and steering lower arm) which were located at the front right side wheel were found to be sustained with dents & misalignment likely due to the accident's impact collision.

13. As for the braking system, the brake fluids were observed to be insufficient in the brake fluid reservoir tank. There was possible brake fluid leakage as a result of the accident. See photo 22 - 25 below.

**Photo 22** shows the brake hose (arrowed) at the rear left wheel of the Motor Car. Our visual inspection of the various mechanical components of the Motor Car's braking system revealed all to be intact and without visible damage, indicating that the braking system was likely to be in serviceable condition at the material time of accident.

**Photo 23** shows the brake hose (arrowed) at the front right wheel of the Motor Car. Our visual inspection of the various mechanical components of the Motor Car's braking system, including its brake calliper (circled), revealed all to be intact and without visible damage, indicating that the braking system was likely to be in serviceable condition at the material time of accident.

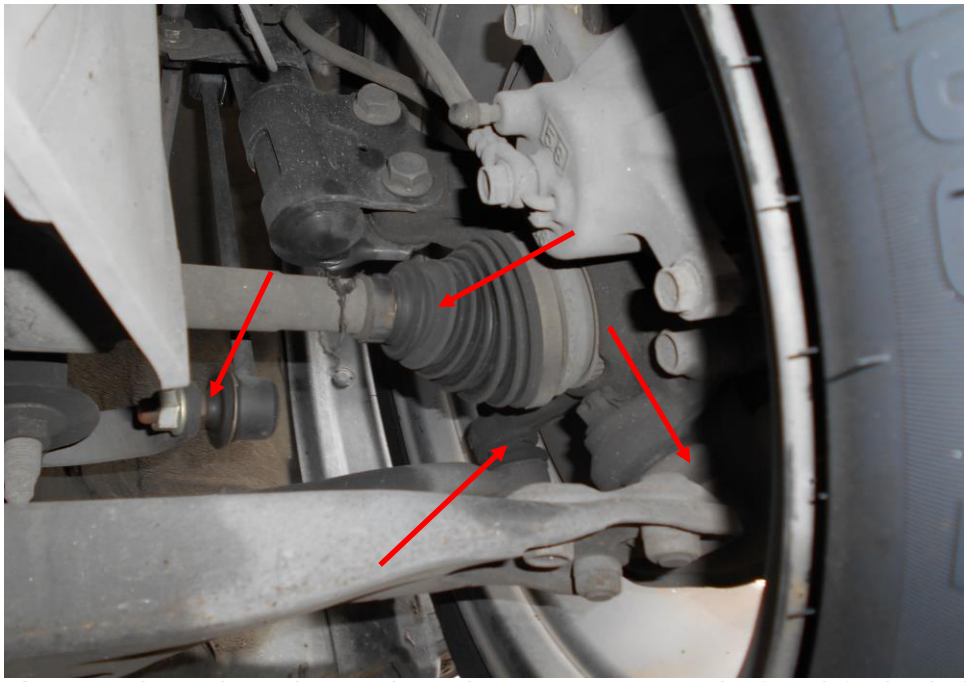


**Photo 24** shows the various undercarriage components at the front left wheel of the Motor Car, in particular the steering tie rod (arrowed). The various steering components were all found to be intact, suggesting that the steering system of the Motor Car was likely to be in serviceable condition.

**Photo 25** shows the various undercarriage 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. Our visual inspection of the various mechanical components of the Motor Car's braking system revealed all to be intact and without visible damage, indicating that the braking system was likely to be in serviceable condition at the material time of accident.

## Electronic Safety / Warning Indicators

14. 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 as the engine of the Motor Car could not be started due to damage of the ignition system and engine system of the Motor Car as a result of the accident. See photo 26 below.

**Photo 26** shows a general view of the interior cabin of the Motor Car. It was observed to be slightly affected by the accident which likely to cause the engine unable to be started.

## Operational Behaviour of the Motor Car

15. No operational test to primarily determine whether there was any abnormality to the engine system, transmission system and steering system of the Motor Car could be conducted given the extent of damage that it had sustained.

## Conclusion

16. 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, steering system and braking system were all damaged as a result of the accident.

17. The 4 tyres of the Motor Car were also found to be in serviceable condition. There was no 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 sufficiently inflated for vehicular operation with remaining tread depth of approximately 6mm & 7mm each.

18. 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)*