



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/33771/2018  
Our Ref : CI/TPD18011458/Z

11<sup>th</sup> September 2018

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

### **MECHANICAL INSPECTION REPORT OF MOTOR TAXI SHC 4347M**

1. We refer to your request on 20<sup>th</sup> June 2018 to conduct a physical inspection of a motor taxi bearing registration number SHC 4347M (herein referred to as "**Motor Taxi**"), which was involved in a fatal road traffic accident on 07<sup>th</sup> June 2018.
2. The objective of the inspection is to determine if there was any possible mechanical failure to the Motor Taxi that may have contributed to the accident.
3. Following the request, we had carried out a physical inspection of the Motor Taxi on 20<sup>th</sup> July 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 taxi at the time of our inspection was 515767 km.
5. The Motor taxi had sustained a relatively minor impact damages that was confined to its frontal left portion. Its front left hand lower bumper was observed to be cracked & misaligned; its front left headlamp was observed to be broken & its front lower left portion of the windshield was found to be cracked due to the accident's impact collision.
6. This was likely due the consistency of the accident's case facts that on 07<sup>th</sup> June 2018 at about 0919hrs, the Motor Taxi was driving along South Bridge Road towards Neil Road on lane 1 of the 4 lanes road when a pedestrian crossed ahead of the Motor Taxi from his left to right. He was unable to brake in time hence collided onto the pedestrian. See photo 1 to 8 below.



Photo 1 shows the mileage of the Motor Taxi was 515767 km.



Photo 2 shows a general view of the front body of the Motor Taxi at the time of our inspection. The Motor Taxi was observed to be in good general condition except for minor damages at the frontal left portion.



**Photo 3** shows a general view of the rear body of the Motor Taxi at the time of our inspection. The Motor Taxi was observed to be in good general condition.



**Photo 4** shows a general view of the front left body of the Motor Taxi at the time of our inspection. The Motor Taxi was observed to be in good general condition except for minor damages at the front left portion.



**Photo 5** shows a general view of the front right body of the Motor Taxi at the time of our inspection. The Motor Taxi was observed to be in good general condition except for minor damages at the front right portion.



**Photo 6** shows a close up view of the front left windshield of the Motor Taxi at the time of our inspection. The Motor Taxi had sustained shattering cracks on its lower left of the windshield.





**Photo 7** shows a close up view of the front left headlamp of the Motor Taxi at the time of our inspection. The Motor Taxi had sustained relatively minor impact at the front left headlamp as a result of the accident.



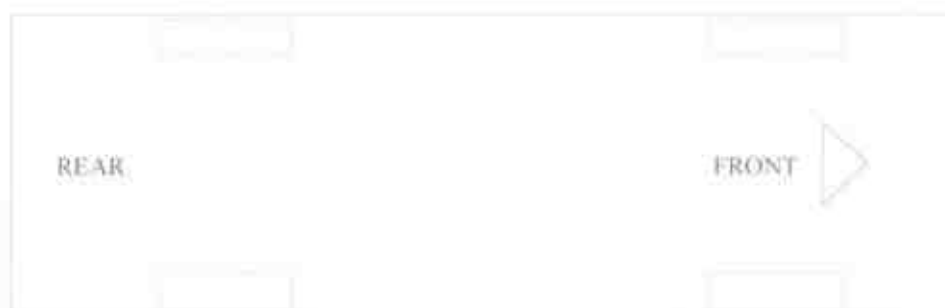
**Photo 8** shows a close up view of the front left lower bumper of the Motor Taxi at the time of our inspection. The Motor Taxi had sustained relatively minor cracks at the front left lower bumper portion.

## 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:-

Falken Sincera SN832  
195/65R15 (5mm)

Achilles 122  
195/65R15 (5mm)



Falken Sincera SN832  
195/65R15 (5mm)

Achilles 122  
195/65R15 (6mm)

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 9 – 12 below:



**Photo 9** shows the condition of the front right tyre of the Motor Taxi, which was observed to be in serviceable condition with remaining tread depth of approximately 6mm. There was no tear, cut or burst mark(s) on the outer and the inner sidewalls.



**Photo 10** shows the condition of the front left tyre of the Motor Taxi, which was observed to be in serviceable condition with remaining tread depth of approximately 5mm. The tyre, which was wrapped around alloy wheel rim, was also observed to be sufficiently inflated for vehicular operation.



**Photo 11** shows the condition of the rear left tyre of the Motor Taxi, which was observed to be in serviceable condition with remaining tread depth of approximately 5mm. The tyre, which was wrapped around alloy wheel rim, was also observed to be sufficiently inflated for vehicular operation.



**Photo 12** shows the condition of the rear right tyre of the Motor Taxi, which was observed to be in serviceable condition with remaining tread depth of approximately 5mm. There was also no tear, cut or burst mark(s) on the outer and the inner sidewalls as well as across the tread of the 4 tyres.



### Engine Compartment & Operating Fluids

9. Upon examination of the engine compartment of the Motor Taxi, we 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.
10. 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 Taxi.
11. Our subsequent checks on the underside of the Motor Taxi also revealed no fluid stain. Visually, the various undercarriage components of the Motor Taxi were all observed to be intact and without any visible damage. See photo 13 – 16 below.



**Photo 13** 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 14** shows the brake fluid reservoir of the Motor Taxi at the time of our inspection. The brake fluid was observed to be of sufficient level (arrowed) and without any visible contamination.



**Photo 15** shows the engine coolant fluid reservoir of the Motor Taxi at the time of our inspection. The engine coolant fluid was observed to be of sufficient level and without any visible contamination.



**Photo 16** shows the engine oil dip stick of the Motor Taxi at the time of our inspection. The engine oil was observed to be of sufficient level and without any visible contamination.

### Steering System & Braking System

12. The mechanical components of the Motor Taxi's steering system and braking system were all found to be visually intact and undamaged. Our visual examination of the various steering components, which had included the rack and pinion, tie rods, tie rod ends and ball joints, revealed that these components were all generally in good condition. Components of the braking system like the brake master pump, brake booster, brake callipers and brake hoses amongst others were also found to be without any damage upon our visual inspection.
13. Static test on the steering system of the Motor Taxi also revealed no abnormality to the steering system. We did not experience any abnormal free play and/or other resistance when turning the steering wheel left and right to full lock positions. Our 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. See photo 17 - 20 below.

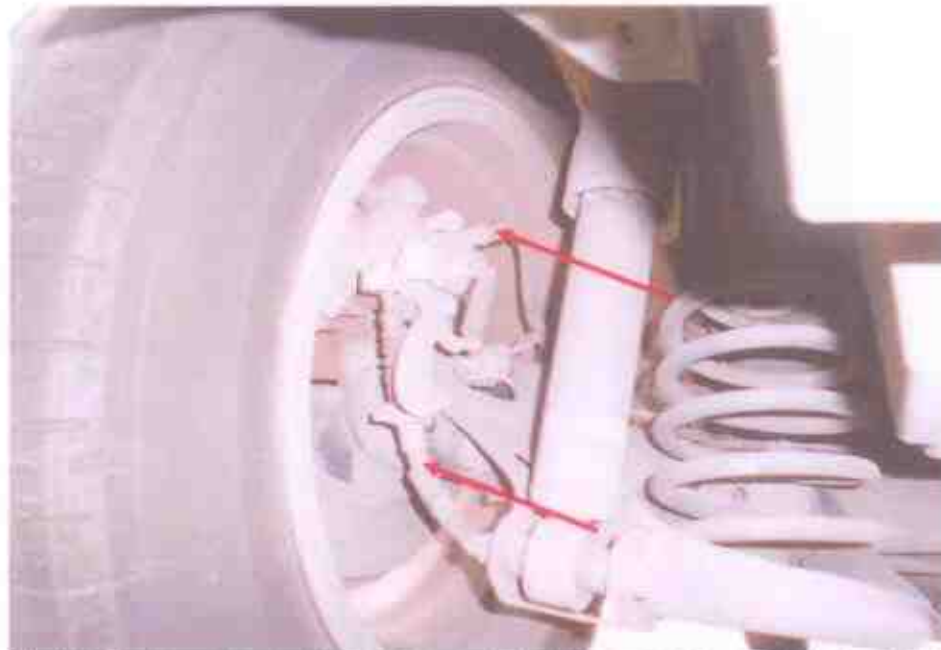


Photo 17 shows the brake hose (arrowed) at the rear left wheel of the Motor Taxi. We did not observe any leakage of brake fluid at the time of our inspection of the Motor Taxi. Our visual inspection of the various mechanical components of the Motor Taxi's braking system revealed all to be intact and without visible damage.

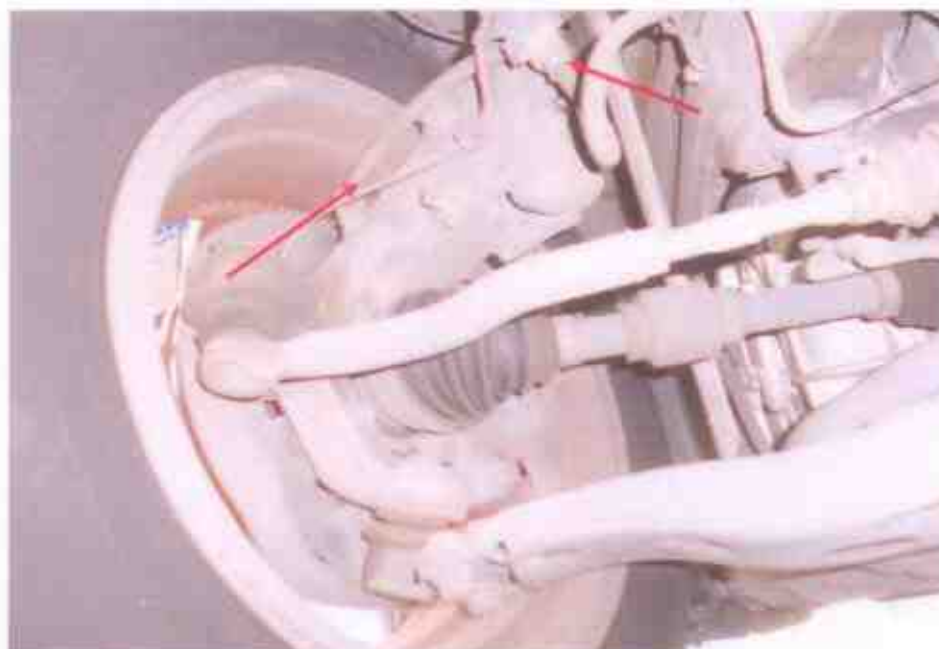


Photo 18 shows the brake hose (arrowed) at the rear right wheel of the Motor Taxi. We did not observe any leakage of brake fluid at the time of our inspection of the Motor Taxi. Our visual inspection of the various mechanical components of the Motor Taxi's braking system, including its brake calliper (circled), revealed all to be intact and without visible damage.





**Photo 19** shows the various undercarriage components at the front right wheel of the Motor Taxi, 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 Taxi was likely to be in serviceable condition.



**Photo 20** shows the steering system at the front left wheel of the Motor Taxi. We did not observe any leakage of brake fluid (arrowed) at the time of our inspection of the Motor Taxi. Our visual inspection of the various mechanical components of the Motor Taxi'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 Taxi's automatic self-test of the functionality of its various electronic operating systems such as the Anti-Brake Lock System (ABS), traction light and Steering System warning light amongst others during cranking of the engine had lighted up indicating that these systems were initialized upon system start-up.
15. However, electronics system errors such as 'Traction Battery Power Low' were indicated on the instrument panel after the engine was crank. See photo 21 & 22 below.



**Photo 21** shows the warning lights for the various electronic operating systems of the Motor Taxi appearing on its instrument panel during the self-test when the engine is cranked, in particular the ABS light and steering warning light.



**Photo 22** shows warning indicators illuminated on the instrument panel of the Motor Taxi after the engine was cranked. This would suggest that there was abnormality to the electronic operating systems of the Motor Taxi likely due to low battery power.

### Operational Behaviour of the Motor Taxi

16. Notwithstanding that electronic warning indicator appeared such as 'Traction Battery Power Low' & other warning lights not disappearing from the Motor taxi panel, a short operational test of the Motor Taxi, to primarily determine whether there was any abnormality to its engine system, its transmission system and braking system was subsequently carried out.
17. During the operational test, the transmission system of the Motor Taxi was able to be shifted to parking mode, neutral mode, drive mode and reverse mode without any difficulty. There were no abnormal sounds heard and/or abnormal behaviour of the Motor Taxi's engine system. It was able to move forward and backward normally. The braking system was also found to be in working condition as the Motor Taxi was able to slow down and come to a complete stop upon depressing of the brake pedal. The presence of the electronics warning indicators did not affect the operation of the braking system & steering system of the Motor Taxi. See photo 23 to 25 below.



**Photo 23** shows reverse sensor camera on the LCD panel of the Motor Taxi while performing operational test. This would suggest that it was able to move forward and backward normally



**Photo 24** shows neutral mode on the LCD panel of the Motor Taxi while performing operational test. This would suggest that it was able to move forward and backward normally





**Photo 25** shows a short operational test were conducted on the Motor Taxi to primarily determine whether there was any abnormality to its engine system, its transmission system and braking system

## Conclusion

18. From our physical inspection of the Motor Taxi, it appears that its engine system, transmission system, steering system and braking system were all in serviceable condition. We did not find any evidence(s) to suggest that there was possible mechanical failure to the Motor Taxi that may have caused and/or contributed to the accident.
19. Notwithstanding that electronic warning indicator appeared such as 'Traction Battery Power Low' & other warning lights not disappearing on the Motor taxi panel, a short operational test of the Motor Taxi, which we had conducted, did not produce any sign(s) or symptom(s) to suggest that there was any abnormality to its engine system, its transmission system and braking system.

20. 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 from 5mm to 6mm each.



**Rohaizal A. Rahim**  
*Technical Investigator*



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

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