



Your Ref: TP/IP/15479/2018  
Our Ref : CI/TPD18011871/Z

19<sup>th</sup> July 2018

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

### **MECHANICAL INSPECTION REPORT OF MOTOR CAR SGH 1678M**

1. We refer to your request on 26<sup>th</sup> June 2018 to conduct a physical inspection of a motor car bearing registration number SGH 1678M (herein referred to as "**Motor Car**"), which was involved in a fatal road traffic accident on 07<sup>th</sup> March 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 11<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 Car at the time of our inspection was 21458 km.
5. The Motor Car had sustained a relatively minor impact damages that was confined to its right portion. Their right side portions which consist of driver's & passenger's doors were observed to have been corrugated amongst others.
6. This was likely due to the consistency of the accident's case facts that a Motorcycle that was travelling along Nicoll Drive towards the direction of Changi Coast Road was unable to brake in time had collided onto the Motor Car (SGH 1678M) which was driving out of carpark no. 5, making a right turn into Nicoll Drive towards Loyang Avenue. See photo 1 to 6 below.



**Photo 1** shows the mileage of the Motor Car was 21458 km.



**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 be in good general condition except for minor damages at the right side 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 be in good general condition except for minor damages at the right side 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 be in good condition unaffected by the accident.





**Photo 5** shows a semi-close up view of the right driver's & passenger's door of the Motor Car at the time of our inspection. It had sustained damages due to the accident.



**Photo 6** 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 7 – 10 below.



**Photo 7** 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 5mm. The tyre was also observed to be sufficiently inflated for vehicular operation.



**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 6mm. The tyre was also observed to be sufficiently inflated for vehicular operation.



**Photo 9** 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 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 7mm.



### Engine Compartment & Operating Fluids

9. Upon examination of the engine compartment of the Motor Car, 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 Car.
11. Our 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 11 – 14 below.



**Photo 11** 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 12** shows the brake fluid reservoir of the Motor Car at the time of our inspection. The brake fluid was observed to be of sufficient level (arrowed) and without any visible contamination.



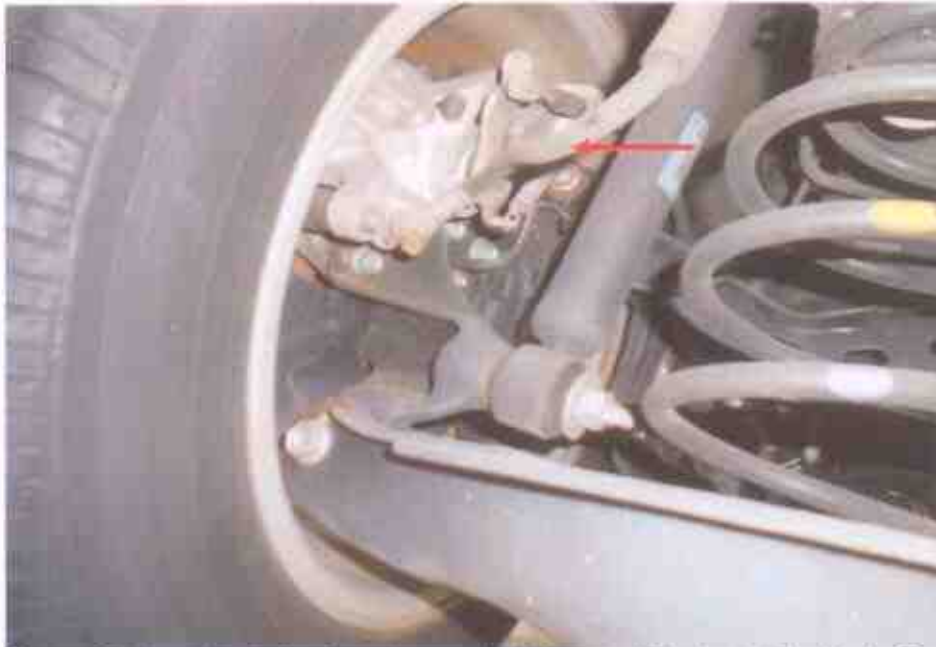
**Photo 13** shows the coolant fluid reservoir of the Motor Car at the time of our inspection. The coolant fluid was observed to be of sufficient level and without any visible contamination.



**Photo 14** 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.

### Steering System & Braking System

12. The mechanical components of the Motor Car'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 Car 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 15 - 18 below.

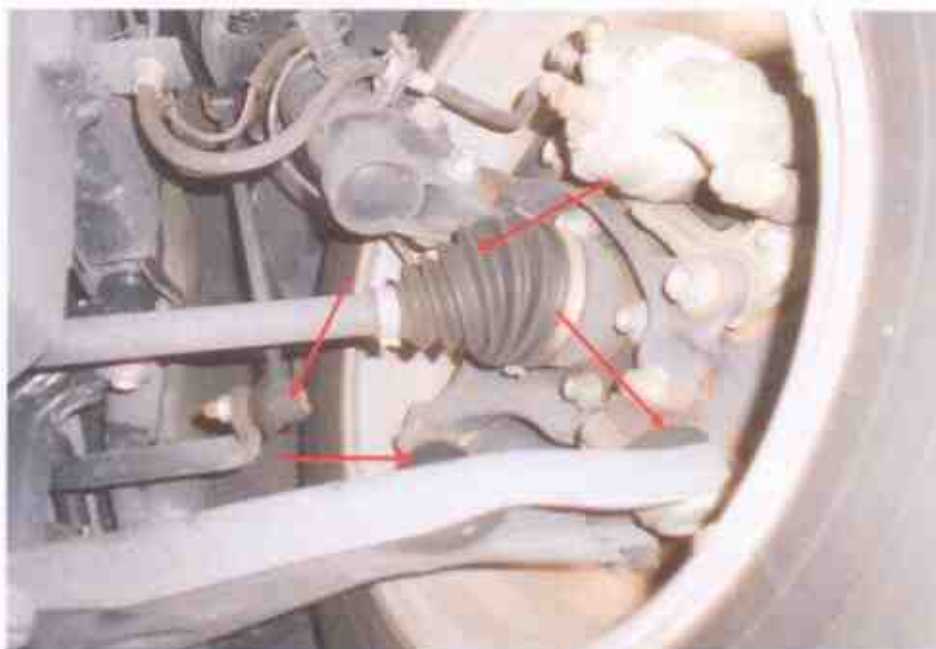


**Photo 15** shows the brake hose (arrowed) at the rear left wheel of the Motor Car. Our visual inspection of the various mechanical components of the Motor Car's braking system revealed all to be intact and without visible damage, indicating that the braking system was likely to be in serviceable condition at the material time of accident.



**Photo 16** 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 17** 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 18** 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 electronic operating systems like the Anti-Brake Lock System (ABS) and Supplemental Restraint System (SRS) during cranking of the engine had indicated that these systems were in working condition and without abnormality. This can be established from the warning lights disappearing from the instrument panel after the self-test. See photo 19 & 20 below.



Photo 19 shows the warning lights for the various electronic operating systems of the Motor Car appearing on its instrument panel during the self-test when the engine is cranked, in particular the ABS light and SRS light.



Photo 20 shows no warning lights illuminated on the instrument panel of the Motor Car after the engine was cranked. This would suggest that there was no abnormality to the various electronic operating systems of the Motor Car, like the ABS and SRS.

### Operational Behaviour of the Motor Car

15. A short operational test of the Motor Car, to primarily determine whether there was any abnormality to its engine system, its transmission system and braking system was subsequently carried out.
16. During the operational test, the transmission system of the Motor Car was able to be shifted to drive mode and reverse mode without any difficulty. There were no abnormal sounds heard and/or abnormal behaviour of the Motor Car'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 Car was able to slow down and come to a complete stop upon depressing of the brake pedal. See photo 21 & 22 below.



**Photo 21** shows a short operational test of the Motor Car, to primarily determine whether there was any abnormality to its engine system, its transmission system and braking system was subsequently carried out.



**Photo 22** shows a short operational test of the Motor Car, to primarily determine whether there was any abnormality to its engine system, its transmission system and braking system was subsequently carried out.

## Conclusion

17. From our physical inspection of the Motor Car, 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 Car that may have caused and/or contributed to the accident.
18. A short operational test of the Motor Car, 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.
19. 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 each.



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