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Your Ref: TP/IP/11235/2018
Our Ref : CI/TPD18010464/Z

23rd March 2018

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

MECHANICAL INSPECTION REPORT OF MOTOR CAR WYT 6311

1. We refer to your request on 07th March 2018 to conduct a physical inspection of a motor car bearing registration number WYT 6311 (herein referred to as "**Motor Car**"), which was involved in a fatal road traffic accident on 16th February 2018.

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 14th March 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 recorded as 88078km.

5. The Motor Car had 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. This had included its engine assembly and transmission assembly, which were both amongst the multiple parts and components inside the engine compartment that were pushed inwards, towards the rear of the Motor Car.

6. Other body parts that were damaged had included a dislodged front lower bumper, buckled front left & right side fenders amongst others. The interior compartment was not affected badly. The driver's airbag and front left passenger airbag however were observed to be activated.

7. This was likely due to the consistency of the accident's case facts that the Motor Car driver was travelling along AYE (MCE) on lane 1 of a 4 lane road near to 10.5km. He was seen veered to his left into lane 4 and collided onto the rear of Motor Bus who was traveling on the lane. See photo 1 to 10 below.

Photo 1 shows a close-up view of the Motor Car's mileage digital meter at time of our inspection. It was recorded as 88078km.

Photo 2 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 3 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 4 shows a general view of the front portion of the Motor Car at the time of our inspection. Its radiator was observed to have sustained extensive impact damage due to the accident's impact.

Photo 5 shows a closer view of the dislodged lower bumper 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 engine compartment of the Motor Car from the left hand side of the bonnet opening. 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 engine compartment of the Motor Car from the right hand side of the bonnet opening. 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 8 shows the interior portion of the Motor Car. The impact force was significant causing the driver's airbag & front passenger's airbag to be dislodged.

Photo 9 shows a general view of the rear left portion of the Motor Car at the time of our inspection. The rear portion was observed to be relatively unaffected by the accident.

Photo 10 shows a general view of the rear right portion of the Motor Car at the time of our inspection. The rear portion was observed to be relatively unaffected by the accident.

Tyres and Wheel Rims

8. 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:-

Dunlop SP Sport J5 185/65R15 (6mm)	Dunlop SP Sport J5 185/65R15 (7mm)
REAR	FRONT
Dunlop SP Sport J5 185/65R15 (6mm)	Dunlop SP Sport J5 185/65R15 (7mm)

9. The 4 tyres were observed to be wrapped around alloy wheel rims that were found to be without any significant damage apart for some relatively minor kerb grazing type of damage on the rim covers. See photo 11 – 14 below.

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. There was no tear, cut or burst mark(s) on the outer and the inner sidewalls as well as across the tread of this tyre.

Photo 12 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. There was no tear, cut or burst mark(s) on the outer and the inner sidewalls as well as across the tread of this tyre, which was also 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 6mm. There was also no tear, cut or burst mark(s) on the outer and the inner sidewalls as well as across the tread of this tyre.

Photo 14 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 6mm. There was also no tear, cut or burst mark(s) on the outer and the inner sidewalls as well as across the tread of this tyre.

Engine Compartment & Operating Fluids

10. The engine compartment of the Motor Car was severely affected by the collision. Major parts and components inside the engine compartment were badly damaged. Parts like the radiator, air intake system, exhaust manifold, steering system amongst others were found to be damaged.

11. Leakage of the various operating fluids such as power steering 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. We was therefore unable to comment whether these operating fluids were of sufficient level and without contamination for vehicular operation prior to the accident.

12. However, operating fluids such as engine coolant fluid and brake fluid were observed to be of sufficient level unaffected by the accident's impact. As for engine fluid, we were unable to access due to the buckled front bonnet due to the accident's impact. See photo 15 – 18 below.

Photo 15 shows the close up view of the steering rack of the Motor Car. Leakage of the various operating fluids like the power steering fluid was seen.

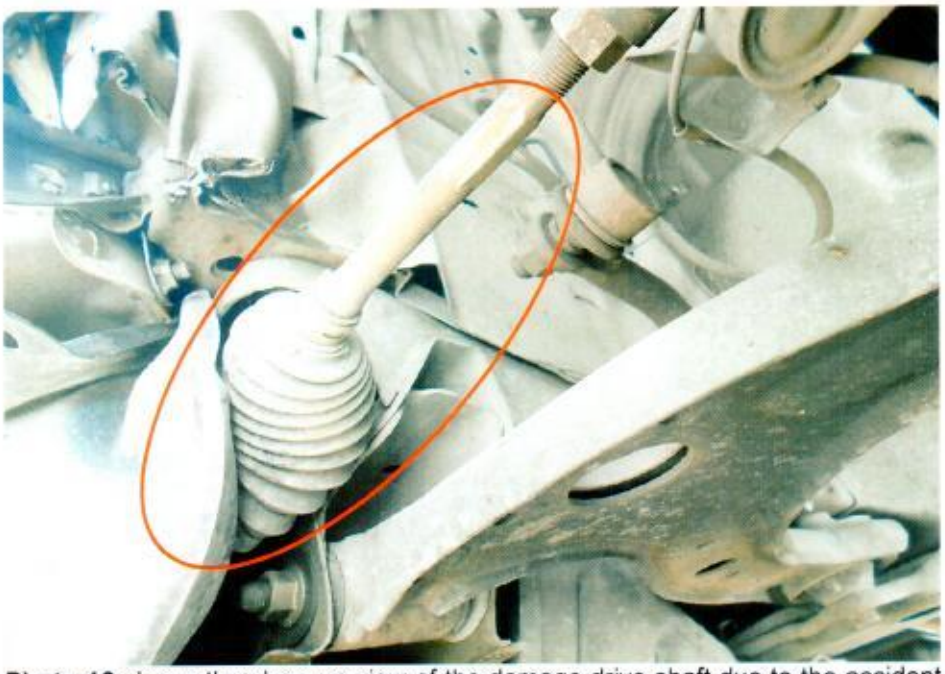

Photo 16 shows the close up view of the damage drive shaft due to the accident impact.

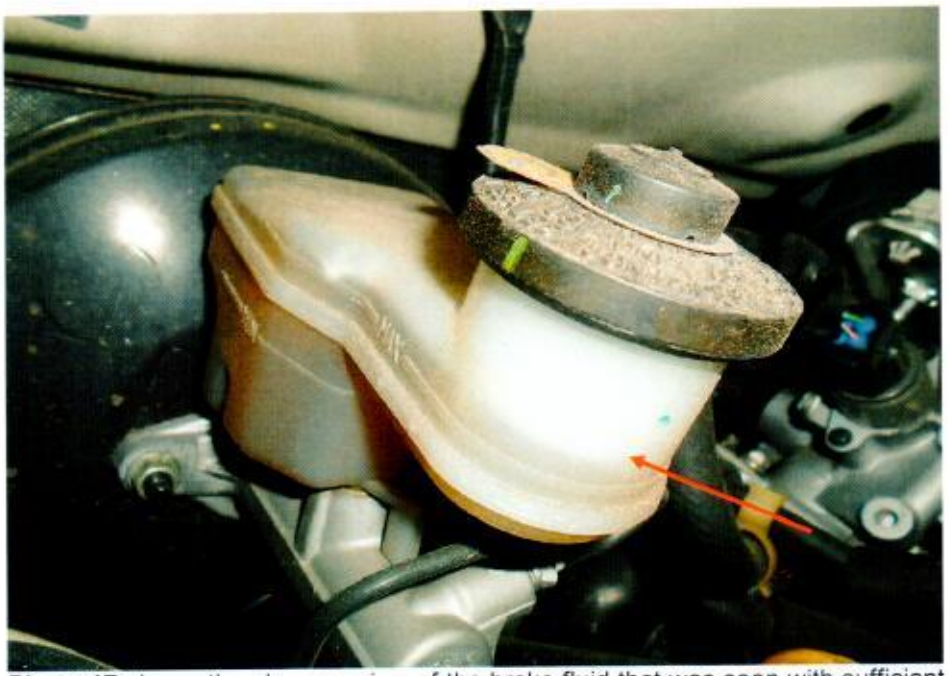

Photo 17 shows the close up view of the brake fluid that was seen with sufficient level not affected by the accident's impact.

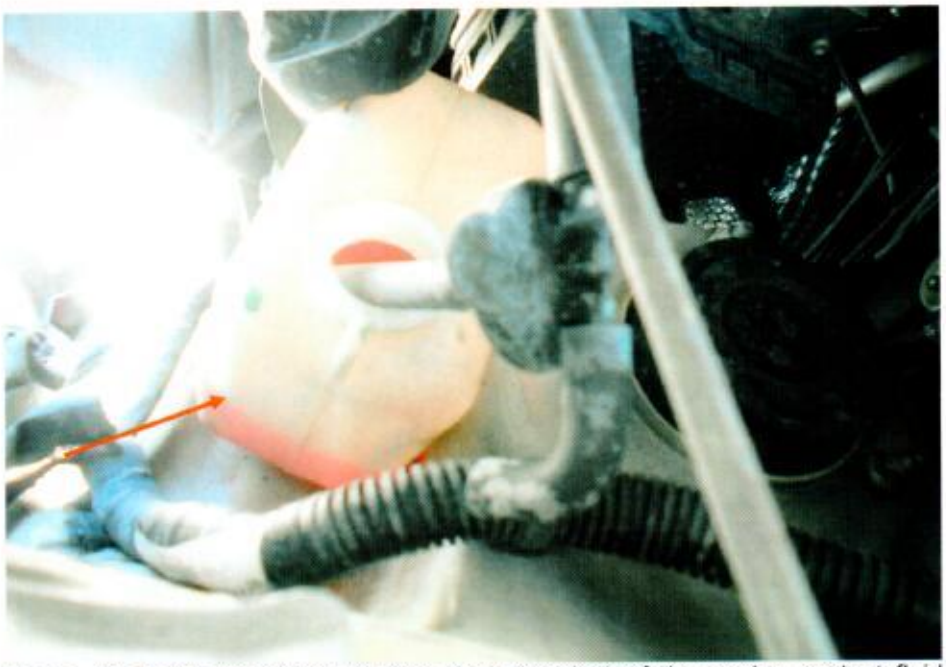

Photo 18 shows the close up view (top elevation) of the engine coolant fluid which was with sufficient level un affected by the accident's impact.

Steering System & Braking System

13. We were not able to conduct any tests on the steering system of the Motor Car. This was due to leakage of power steering fluid, as a result of the accident, as well as damage to several mechanical components of the steering system & engine system.

14. As for the braking system, our investigation reveals that there was no brake fluid leakage or damages to its supporting components. The brake hoses, brake booster, brake callipers and brake fluid reservoir was found to be intact and unaffected by the accident's impact. The brake fluid was noted to be of sufficient level without any contamination for operational purposes at time of our inspection. See photo 19 - 24 below.

Photo 19 shows the damaged on the steering rack 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.

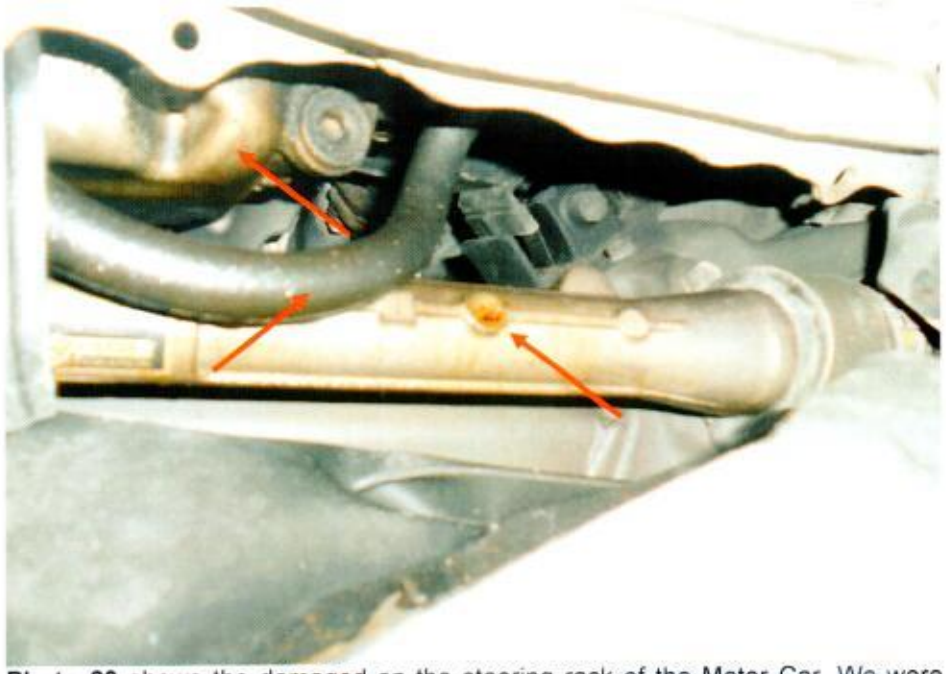

Photo 20 shows the damaged on the steering rack of the Motor Car. We were not able to conduct any tests on the steering system of the Motor Car due to the damage to this components, as well as leakage of power steering fluid.

Photo 21 shows the braking components at the front left wheel of the Motor Car. We did not observe any leakage of brake fluid at the time of our inspection of the Motor Car.

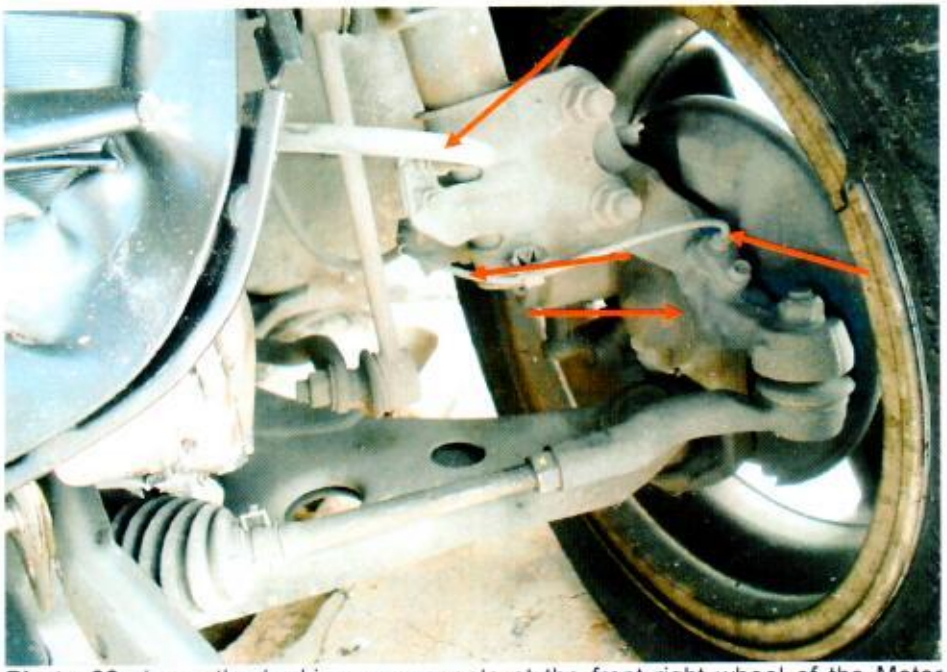

Photo 22 shows the braking components at the front right wheel of the Motor Car. We did not observe any leakage of brake fluid at the time of our inspection of the Motor Car.

Photo 23 shows the braking 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 24 shows the braking components at the rear left 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. Notwithstanding that the ignition system was able to display the Electronics Safety /Warning Indicators, 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) but during cranking of the engine it was not able to be initiated due to damage of the ignition system and engine system of the Motor Car as a result of the accident.

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 driver's & front seat passenger'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 25 & 26 below.

Photo 25 shows 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.

Photo 26 shows the evidence of the deployed front passenger'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 steering system of the Motor Car could 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 and steering system were all damaged as a result of the accident.

19. However, from our detailed observation on the braking system, it shows that there's no brake fluid leakage or damages to its supporting components. The brake fluid was noted to be of sufficient level without any contamination for operational purposes at time of our inspection.

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 6 & 7mm each.

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 damage that it had sustained as a result of the accident.

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