



Your Ref: TP/IP/59407/2018  
Our Ref :CI/TPD18019566/Z

11<sup>th</sup> January 2019

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

### **MECHANICAL INSPECTION REPORT OF MOTORCYCLE JRU 5542**

1. We refer to your request dated 26<sup>th</sup> October 2018 to conduct a physical inspection of a motorcycle bearing registration number JRU 5542 (herein referred to as "**Motorcycle**"), which was involved in a fatal road traffic accident on 19<sup>th</sup> October 2018.
2. The purpose of this inspection is to primarily determine if there was any possible mechanical failure to the Motorcycle that may have contributed to the accident.
3. Following the request, we had carried out a physical inspection of the Motorcycle on 26<sup>th</sup> November 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 Motorcycle recorded at time of our inspection was 565824km.
5. The Motorcycle was observed to have sustained minor damages at the frontal portion. The body parts that were found to have been damaged include its front left hand side fairing and left foot rest amongst others as a result of the accident.
6. This was likely due to the consistency of the accident's case facts that the Motor Cycle rider was travelling on the lane 2 of a 3 lanes road where due to unknown reason, he had skidded and fall onto the road along SLE (CTE) 6.5km. See photo 1 to 5 below.



**Photo 1** shows a close-up view of the mileage meter at time of our inspection. The mileage was recorded at 565824km.



**Photo 2** shows a general view of the front body of the Motorcycle at the time of our inspection. The Motorcycle was observed to have sustained relatively minor damages at time of inspection. The damages were observed to be confined to its left side which includes scratches on the left fairing & foot rest.



**Photo 3** shows a general view of the right body of the Motorcycle at the time of our inspection. The Motorcycle was observed to have sustained relatively minor damages on the right side fairing at time of our inspection.



**Photo 4** shows a general view of the rear body of the Motorcycle at the time of our inspection. The Motorcycle was observed to be in good condition unaffected by the accident.

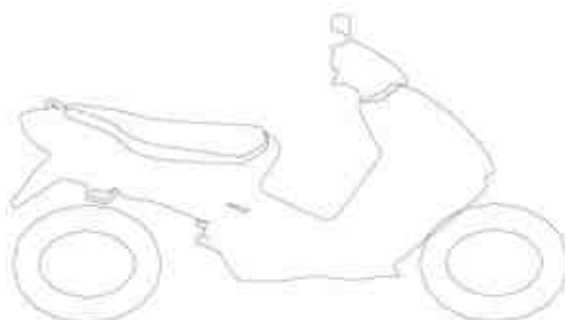




Photo 5 shows a general view of the left body of the Motorcycle at the time of our inspection. The Motorcycle was observed to have sustained relatively minor damages on the left side at time of our inspection.

### Tyres and Wheel Rims

7. The condition of the Motorcycle's 2 tyres was observed to be in serviceable condition. The tread pattern of the 2 tyres was clearly visible. We did not observe any tear, burst mark(s) and/or punctured hole(s) on the sidewalls as well as across the tread of the 2 tyres. The 2 tyres were both observed to be sufficiently inflated for vehicular operation. The tyre brand, tyre size and remaining tread depth of the 2 tyres were recorded as follows:-



Maxxis Diamond MA-3D 80/90 - R17 (3mm)

Maxxis Diamond MA-3D 70/90 - R17 (4mm)

8. The rear tyre was wrapped around alloy wheel rims that were found to be without any significant damage. See photo 6 & 7 below



**Photo 6** shows the rear tyre of the Motorcycle. The rear tyre was observed to be in serviceable condition with remaining tread depth of approximately 3mm. The tyre was also observed to be sufficiently inflated for vehicular operation.



**Photo 7** shows the front tyre of the Motorcycle. The front tyre was observed to be in serviceable condition with remaining tread depth of approximately 4mm. The tyre was also observed to be sufficiently inflated for vehicular operation.

### Engine & Drive Train

9. Upon examination of the Motorcycle's engine area, we had observed that the various engine related parts and components were intact with no visible damage. There was also no sign(s) or indication(s) of fluid leak observed around the engine area of the Motorcycle.
10. The gear chain of the motorcycle was found to be intact without any misalignment. It was also adequately lubricated for operating purposes. Free play tension test was also conducted & found adequately acceptable. See photo 8 – 11 below.



**Photo 8** shows no sign(s) or indication(s) of fluid leak observed around the underside of the engine area of the Motorcycle.



Photo 9 shows no sign(s) or indication(s) of fluid leakage stain observed around the engine area of the Motorcycle.



Photo 10 shows the general view of the gear train (arrowed) of the Motorcycle, which was observed to be intact with no misalignment. It was also adequately lubricated for operating purposes.





Photo 11 shows the general view of the gear train (arrowed) of the Motorcycle, which was observed to be intact with no misalignment. It was also adequately lubricated for operating purposes. Free play tension was also observed & found adequately acceptable.

### Steering System & Braking System

11. Our checks on the various steering components of the Motorcycle had revealed that its steering system was in serviceable condition. Its front fork was found to be intact and undamaged not affected by the accident's impact.
12. The brake system of the Motorcycle was of a semi-hydraulic type, where hydraulic (brake fluid) pressure controls the brake for the front wheel while the brake for the rear wheel is controlled by mechanical means (cables and springs). The brake for the front wheel is engaged by pulling the brake lever at the right side of the Motorcycle's handle bar while the brake for the rear wheel is engaged by stepping on the brake pedal at the right side foot rest of the Motorcycle.



13. Static brake tests conducted on the Motorcycle front & rear brakes had appeared to indicate that the braking system of the Motorcycle was in serviceable condition. The Motorcycle's braking system like the brake discs, brake callipers, brake lever, brake foot pedal and brake hoses revealed all to be intact and without damage. There was some resistance felt (spongy like feel) upon pressing the brake lever. This would indicate that there was no leakage of pressure/vacuum in the brake system. Our checks on the brake fluid had also indicated that the brake fluid was of sufficient level for operational purposes, and without contamination.

#### **Operational Test**

14. For this case, we were not able to carry out any operational tests to the steering system and braking system of the Motorcycle due to the damages sustained that effects the Motorcycle's ignition system, which had rendered the Motorcycle immobility for the operational tests. However, we were able to push the motorcycle manually forward and backward, simulating movement of the Motorcycle, for the operational tests. Both brakes were engaged simultaneously while conducting the manual movements and it was observed to be in serviceable condition.

In general, the observations gathered during the static brake test & manual movement test had indicated that the steering system & braking system of the Motorcycle was in serviceable condition. See photo 12 - 16 below.



**Photo 12** shows our checks on the brake fluid (front) reservoir had also indicated that the brake fluid was of sufficient level for operational purposes, and without contamination.



**Photo 13** shows our checks on the rear brake components had also indicated that the brake mechanism was in serviceable condition at the material time of the accident.



Photo 14 shows testing of the braking of the front brake in progress. There was some resistance felt (spongy like feel) upon pressing the brake lever.



Photo 15 shows testing of the braking of the rear brake in progress. There was some resistance felt (spongy like feel) upon stepping on the brake pedal.



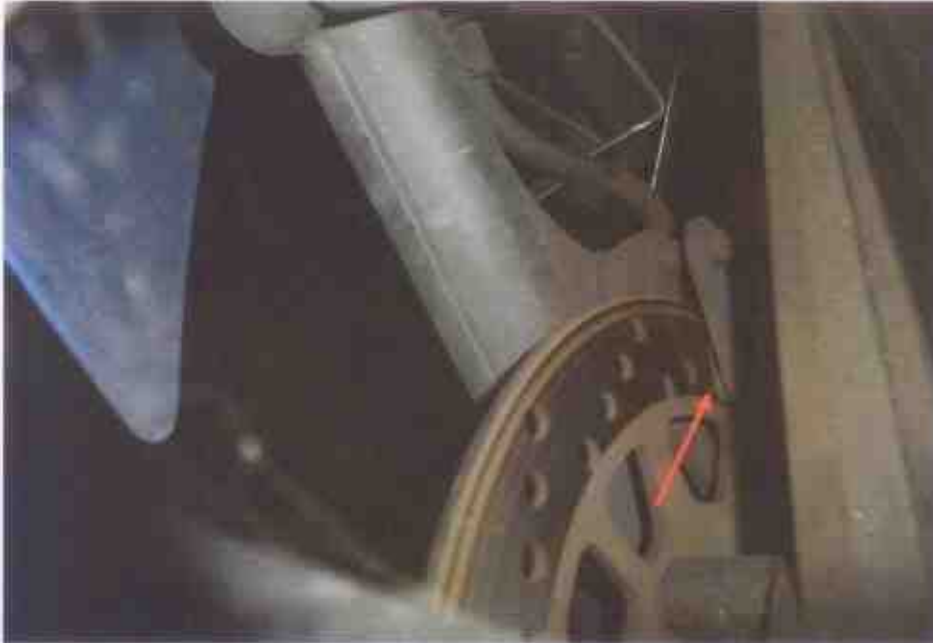
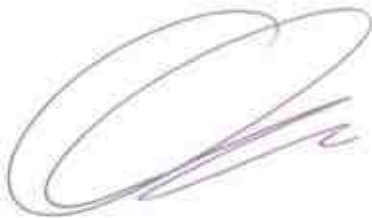


Photo 16 shows the front brake pad at time of our inspection. The frictional material was observed to be sufficient for operational purposes.

## Conclusion

15. Basing on our physical inspection of the Motorcycle, it appears that the steering system and braking system of the Motorcycle were all in serviceable condition. We did not find any evidence(s) to suggest that there was possible mechanical failure to the Motorcycle that may have caused and/or contributed to the accident.
16. The tyres of the Motorcycle were found to be in a 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 tyre. It was sufficiently inflated for vehicular operation with remaining tread depth of approximately 3 & 4mm.

17. Our findings were based solely on a static test, visual inspection and manual test of the Motorcycle simulating its movement. No operational test(s) could be carried out to the Motorcycle due the damages sustained that affects the Motorcycle's ignition system, which had rendered the Motorcycle's immobility.



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