



Your Ref: TP/IP/09695/2018
Our Ref :CI/TPD18010470/Z

20th March 2018

Fatal Accident Investigation Team

Traffic Police Department
Singapore Police Force
10 Ubi Avenue 3
Singapore 408865

MECHANICAL INSPECTION REPORT OF MOTORCYCLE MCU 4806

1. We refer to your request dated 07th March 2018 to conduct a physical inspection of a motorcycle bearing registration number MCU 4806 (herein referred to as "**Motorcycle**"), which was involved in a fatal road traffic accident on 11th February 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 20th 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 Motorcycle at the time of our inspection was 335352km.
5. The Motorcycle was observed to have sustained damages at the frontal portion, rear & along both its left side and right side. The body parts that were found to have been damaged include its handle bar, front brake lever, hand throttle, left & right side fairing, pillion right foot bracket and front rim amongst others. Its steering system was also observed to be misaligned as a result of the accident.
6. This was likely due to the consistency of the accident's case facts that a Motor Lorry was travelling straight on lane 3 of a 3 lane road along Tuas West Road towards the direction of Jalan Ahmad Ibrahim when out of a sudden, Motorcycle MCU 4806 made a right turn from the opposite direction & caused a collision. See photo 1 to 9 below.



Photo 1 shows the mileage at the time of inspection was recorded to be 33532km.



Photo 2 shows a general view of the front body of the Motorcycle at the time of our inspection. The Motorcycle was observed to be sustained with relatively minor impact due to the accident collision. Amongst the body parts damaged was its steering system (arrowed), which was observed to be misaligned.



Photo 3 shows a general view of the front right body of the Motorcycle at the time of our inspection. The Motorcycle was observed to be sustained with relatively minor impact due to the accident collision. Amongst the body parts damaged was its steering system (arrowed), which was observed to be misaligned.



Photo 4 shows a general view of the front left body of the Motorcycle at the time of our inspection. The Motorcycle was observed to be sustained with relatively minor impact due to the accident collision. Amongst the body parts damaged was its steering system, which was observed to be misaligned.



Photo 5 shows a general view of the rear body of the Motorcycle at the time of our inspection. The Motorcycle was observed to have sustained minor damages likely due to the accident.



Photo 6 shows a semi close-up view of the damage portion of the Motorcycle at the time of our inspection. The Motorcycle was observed to be sustained with relatively minor damages due to the accident collision.



Photo 7 shows a close-up view of the damage portion of the Motorcycle at the time of our inspection. The hand throttle & front brake lever was observed to be sustained with relatively minor damage due to the accident collision.



Photo 8 shows a close-up view of the damage portion of the Motorcycle at the time of our inspection. The passenger foot pedal bracket was observed to be broken likely due to the accident's collision.

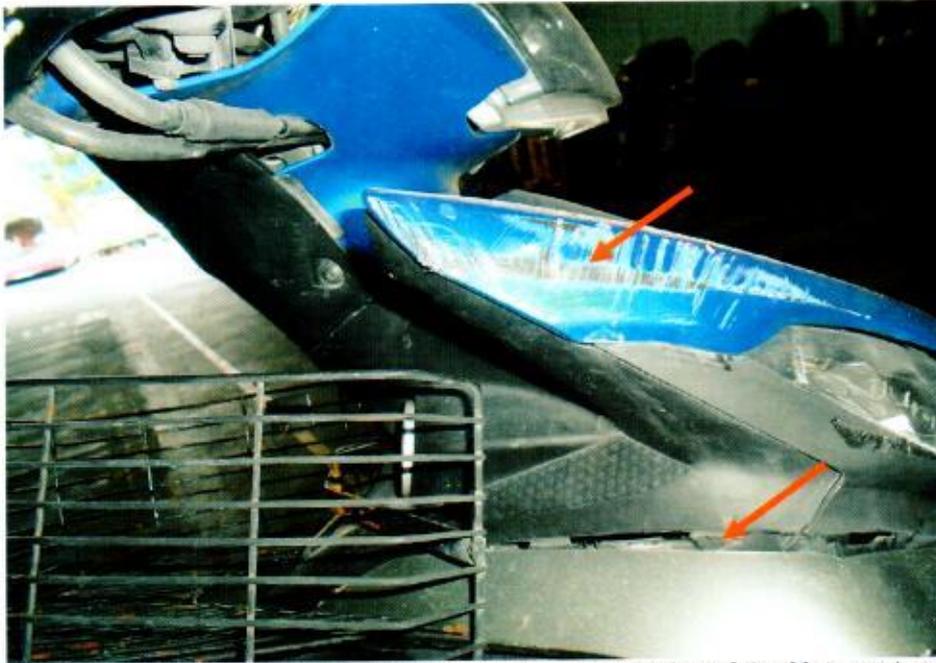
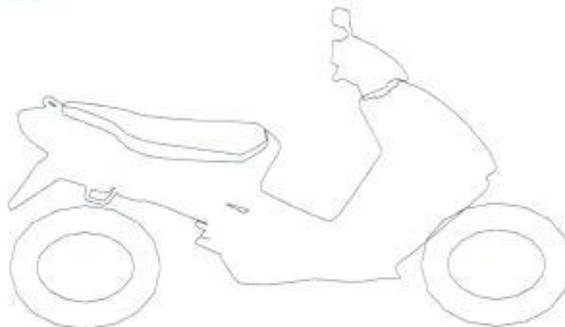


Photo 9 shows a semi close-up view of the damage portion of the Motorcycle at the time of our inspection. The Motorcycle was observed to be sustained with relatively minor damages due to the accident collision.

Tyres and Wheel Rims

7. The condition of the Motorcycle's rear tyre was observed to be in serviceable condition whereas the front tyre found to be deflated likely due to the accident impact. 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. Further observation on the front tyre that was deflated at time of our inspection which is due to a missing tyre plug (for air inlet) from the front rim likely caused by the accident's collision impact. The rear tyre was 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:-



Cheetah 70/90 - 17 (3mm)

Cheetah 70/90 - 17 (4mm)

8. The rear tyre was wrapped around alloy wheel rim that was found to be without any significant damage. Except for the front tyre that was wrapped around alloy wheel rim observed to be damage likely due to the accident's collision impact at the material time of the accident. See photo 10– 13 below



Photo 10 shows the rear tyre of the Motorcycle at the time of our inspection. 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. There was no significant damage observed on the rear wheel rim & tyre.



Photo 11 shows the front tyre of the Motorcycle. The pattern of the tread was clearly visible. There was no tear, burst mark(s) and/or punctured hole(s) on the sidewalls as well as across the tread of the front tyre. Except for it was observed to be deflated likely due to the accident's collision impact.

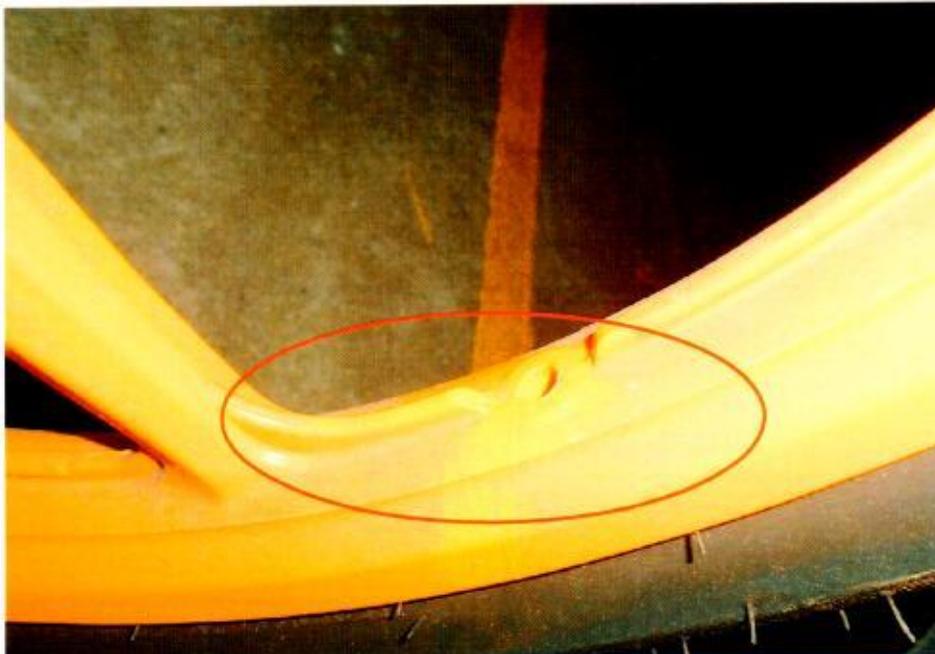


Photo 12 Further observation on the front tyre that was deflated due to missing tyre plug from the front rim likely caused by the accident collision impact.

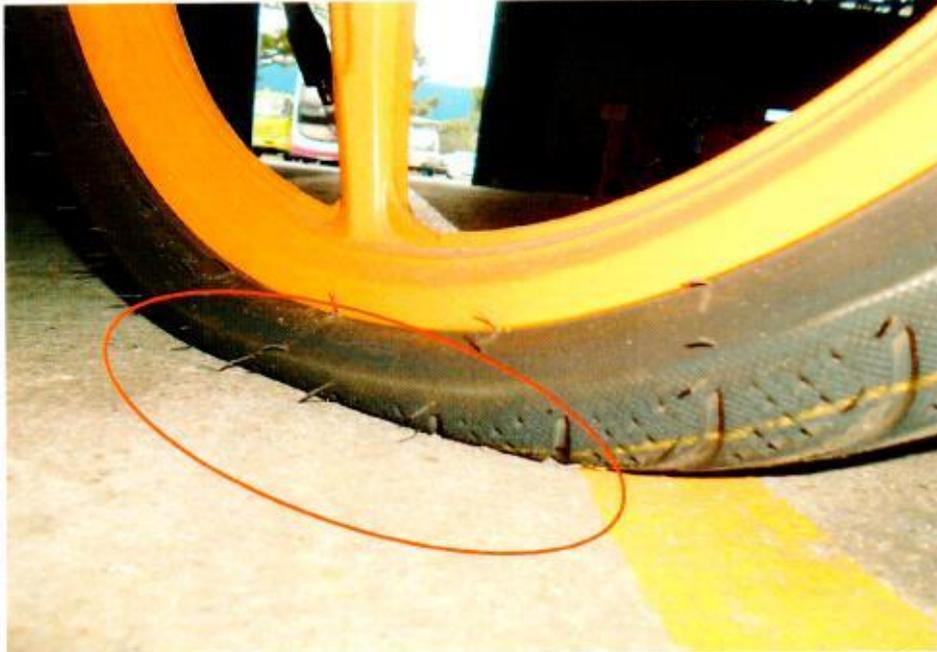


Photo 13 Further observation on the front tyre that was deflated at time of our inspection.

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 14 – 17 below.

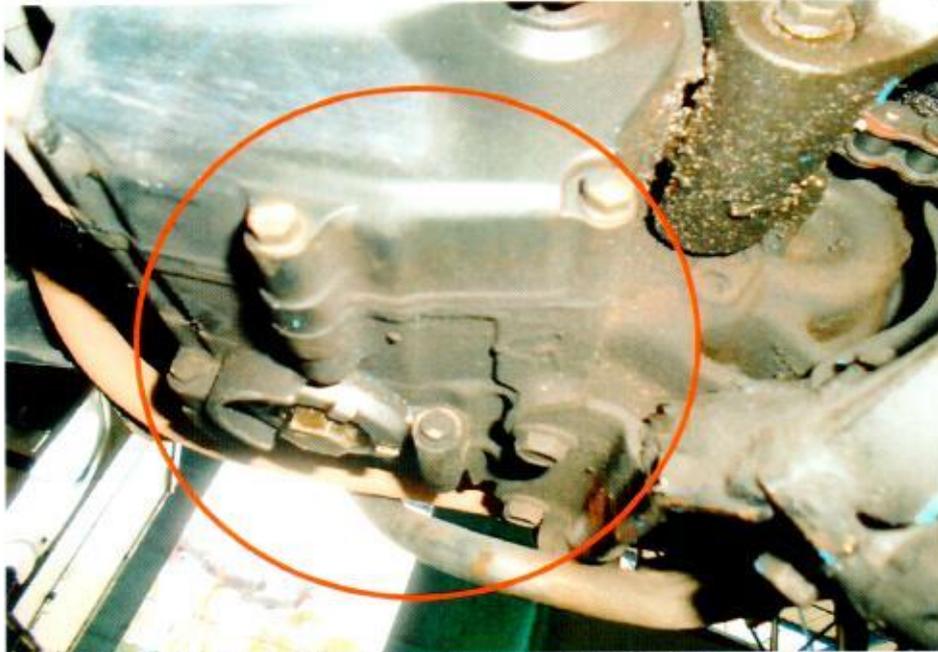


Photo 14 shows no sign(s) or indication(s) of fluid leakage stain around the engine undercarriage area of the Motorcycle.



Photo 15 shows no sign(s) or indication(s) of fluid leakage stain around the engine undercarriage area of the Motorcycle.



Photo 16 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 17 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. For this case, we were not able to conduct any test(s) on the steering system of the Motorcycle due to the damage on its steering system. It was found to be misaligned as a result of the accident. The front tyre was in deflated condition, hence causing the whole steering system to be in a state of immobility.
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). Our visual examination of the various components in the brake system, like the brake disc, brake calliper, drum and brake foot pedal, revealed all to be intact and without damage. There was also no visible tear or cut observed on the connecting hoses and cables.
13. Static brake tests conducted on the Motorcycle had appeared to indicate that the brake system of the Motorcycle was in serviceable condition. There was some resistance felt (spongy like feel) upon gripping the hand brake lever & stepping on the rear brake foot paddle. This would indicate that there was no leakage of pressure/vacuum in the brake system also on the rear brake drum mechanical parts. Our checks on the brake fluid had also indicated that the brake fluid was of sufficient level for operational purposes, and without contamination.
14. For this case, we were not able to carry out any operational tests to the steering system and brake system of the Motorcycle due to the damage of its steering system & ignition system, which had rendered the Motorcycle immobility for the operational tests. See photo 18 - 24 below.



Photo 18 shows the front tyre & handle bar was observed to be misaligned as a result of the accident. Hence, we are not able to conduct any tests on the steering system of the Motorcycle.



Photo 19 shows the front brake calliper, front brake disc and front brake hose of the Motorcycle (arrowed), which are all part of the components in the front brake system of the Motorcycle. Our visual checks of these various components had revealed all to be intact with no visible damage. No leakage of brake fluid was also observed.



Photo 20 shows the front brake fluid reservoir. Our visual checks had revealed it was intact & sufficient level with no visible damage. No leakage of brake fluid was also observed.



Photo 21 shows the front brake calliper, front brake disc and front brake hose of the Motorcycle, which are all part of the components in the front brake system of the Motorcycle. Our visual checks on the brake frictional pad and found to be still in serviceable condition.



Photo 22 shows the front brake static test was conducted at time of our inspection.

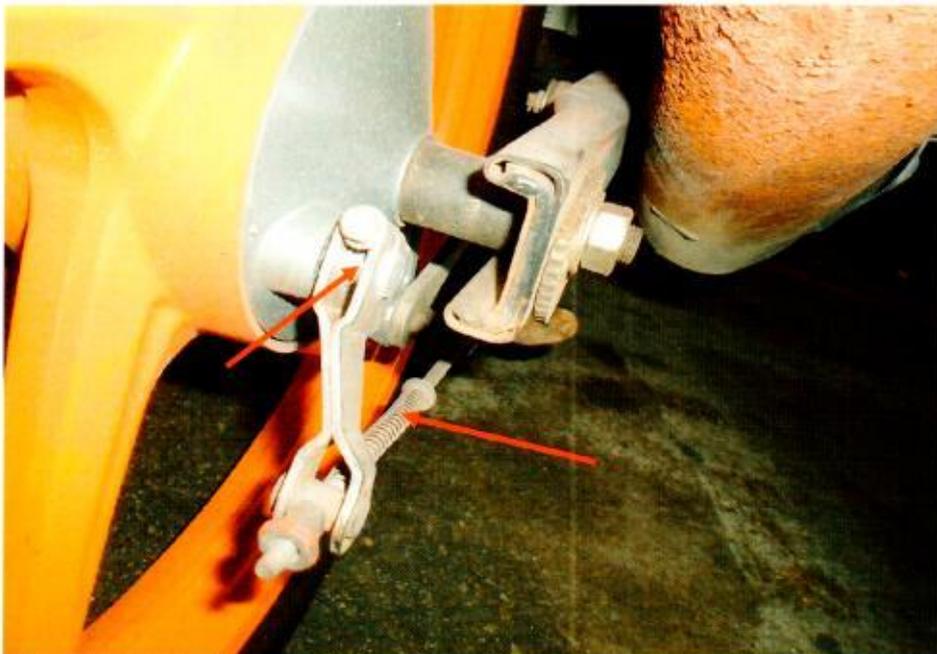


Photo 23 shows the rear wheel of the Motorcycle. The type of brake system for the rear wheel was of mechanical type, controlled by the brake foot pedal of the Motorcycle. Our checks of the cable (arrowed), spring and drum, which are all part of the components in the rear brake system of the Motorcycle reveal all to be intact and without damage.



Photo 24 shows the front brake static test was conducted at time of our inspection.

Conclusion

15. At the time of our inspection of the Motorcycle, its steering system could not be tested (due to damage as a result of the accident). Its brake system was however found to be in serviceable condition based on the static brake test conducted.
16. Notwithstanding that the steering system could not be tested, the observations gathered from our physical inspection of the Motorcycle had indicated no evidence to suggest possible mechanical failure to the Motorcycle that may have contributed to the accident.
17. The rear tyre of the Motorcycle was 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 mm. Except for the front tyre that was deflated at time of our inspection likely due to the missing tyre plug (air inlet) likely caused by the accident's collision impact. However, it was 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 & tread depth of approximately 4mm.

18. Our findings were based solely on a static and visual inspection of the Motorcycle. No operational test(s) could be carried out to the Motorcycle due to the damage of its steering system & ignition system (as a result of the accident), which had rendered the Motorcycle immobility.



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