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Our Ref : CI/TPD19021038/N

28 November 2019

Fatal Accident Investigation Team

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

MECHANICAL INSPECTION REPORT OF MOTORCYCLE FBJ 1030E

1. We refer to your request on 14 November 2019 to conduct a physical inspection of a motorcycle bearing registration number FBJ 1030E (herein referred to as “**Motorcycle**”), which was involved in a fatal road traffic accident on 5 November 2019.
2. The objective of the inspection is to 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 28 November 2019 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.

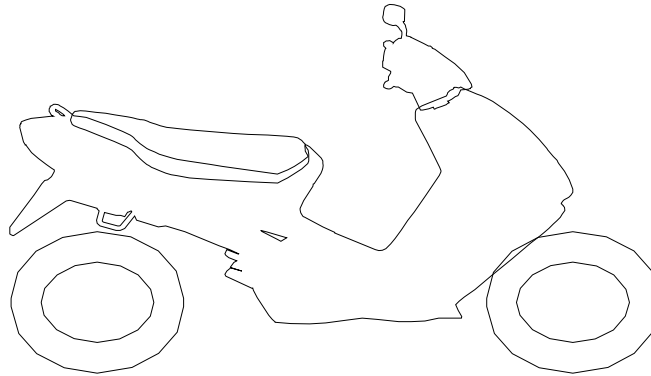
General Condition

4. The mileage of the Motorcycle could not be recorded at the time of our inspection due to the damages sustained to the speedometer gauge.
5. The Motorcycle had sustained damages at its frontal portion and right body. Body parts that were found to have been damaged include its headlamp assembly, front fork assembly, front wheel rim, side mirrors, clutch lever, fuel tank, right rear side cover, rear brake pedal and exhaust muffler, amongst others.

Tyres and Wheel Rims

6. 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 rear tyre. However we did observe that the front tyre was deflated.

7. The tyre brand, tyre size and remaining tread depth of the 2 tyres of the Motorcycle were recorded as follows:-



Metzeler 140/70 - 17 (3mm)

Metzeler 110/70 - 17 (3mm)
(Deflated)

8. The 2 tyres were wrapped around alloy wheel rims. At the time of our inspection, we observed that front wheel rim was broken. See photos 1 – 15 below.



Photo 1 shows a general view of the rear body of the Motorcycle at the time of our inspection. The Motorcycle had sustained damages at its frontal portion and right body.



Photo 2 shows a general view of the right front body of the Motorcycle at the time of our inspection. Body parts that were found to have been damaged include its headlamp assembly, front fork assembly, front wheel rim, side mirrors, clutch lever, fuel tank, right rear side cover, rear brake pedal and exhaust muffler, amongst others.



Photo 3 shows the speedometer gauge of the Motorcycle. The mileage of the Motorcycle could not be recorded at the time of our inspection due to the damages sustained to the speedometer gauge (circled).



Photo 4 shows a general view of the front body of the Motorcycle at the time of our inspection. Body parts that were found to have been damaged include its headlamp assembly, fork assembly and speedometer gauge amongst others.



Photo 5 shows a closer view of the front forks (arrowed) which were amongst the body parts at the front body of the Motorcycle that had sustained damage as a result of the accident.



Photo 6 shows a closer view of the front mudguard which was amongst the body parts at the front body of the Motorcycle that had sustained damage as a result of the accident.



Photo 7 shows a closer view of the side mirrors, clutch lever, front brake lever, handlebars, handlebar grips and handlebar ends of the Motorcycle. These parts were amongst the body parts of the Motorcycle which were damaged as a result of the accident.



Photo 8 shows a closer view of the petrol tank which was amongst the body parts of the Motorcycle that had sustained damage as a result of the accident.



Photo 9 shows a closer view of the right rear side cover, which was amongst the body parts of the Motorcycle that had sustained damages of grazing nature as a result of the accident.



Photo 10 shows a closer view of the rear brake pedal and right front footrest which were amongst the body parts of the Motorcycle that had sustained damage as a result of the accident.



Photo 11 shows a closer view of the broken right pillion footrest which was amongst the body parts of the Motorcycle that had sustained damage as a result of the accident (circled).



Photo 12 shows the exhaust muffler of the Motorcycle which had sustained damage as a result of the accident (arrowed).



Photo 13 shows the front tyre of the Motorcycle at the time of our inspection. The pattern of the tread was clearly visible with remaining tread depth of approximately 3mm. 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 front tyre. However we did observe that the front tyre was deflated due to the broken front wheel rim.



Photo 14 shows the broken front wheel rim of the Motorcycle at the time of our inspection (arrowed).



Photo 15 shows the condition of the Motorcycle's rear tyre. The pattern of the tread was clearly visible with remaining tread depth of approximately 3mm. 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 rear tyre.

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. See photos 16 – 19 below.

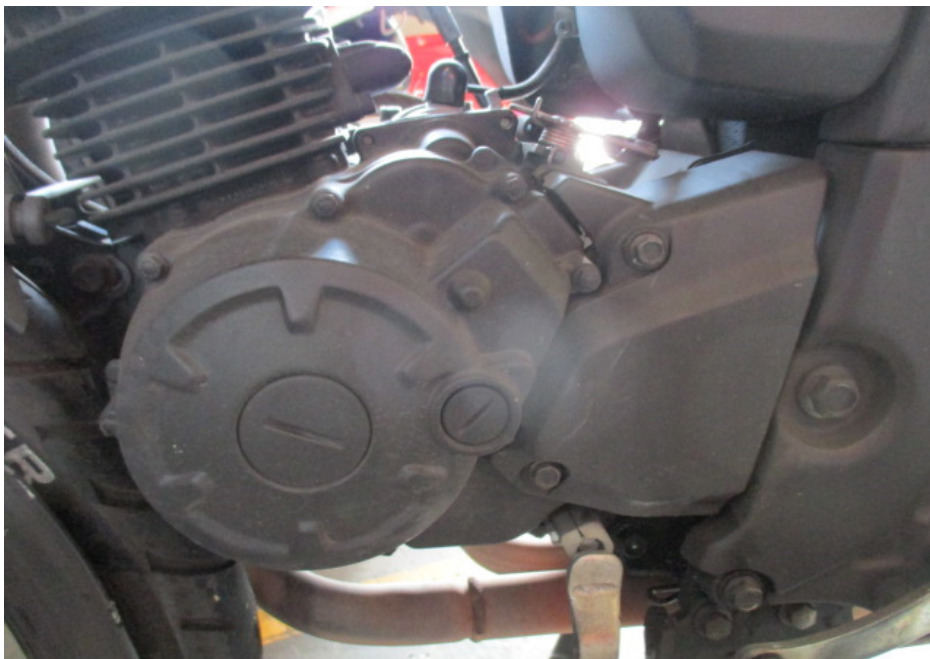


Photo 16 shows the left side of the engine of the Motorcycle at the time of our inspection. The various engine related parts and components were found to be intact with no visible damage. There was also no sign(s) or indication(s) of fluid leak observed around the left engine area of the Motorcycle.

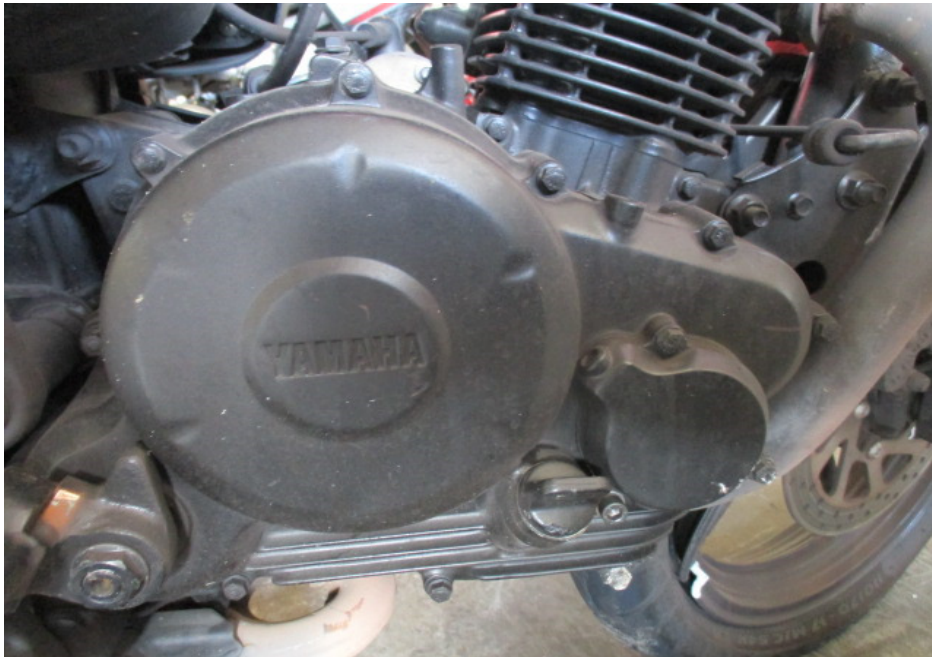


Photo 17 shows the right side of the engine of the Motorcycle at the time of our inspection. The various engine related parts and components were found to be intact with no visible damage. There was also no sign(s) or indication(s) of fluid leak observed around the right engine area of the Motorcycle.



Photo 18 shows the gear chain (arrowed) of the Motorcycle, which was observed to be intact with no misalignment. It was also adequately lubricated for operating purposes. The gear chain rotates the rear wheel of the Motorcycle.

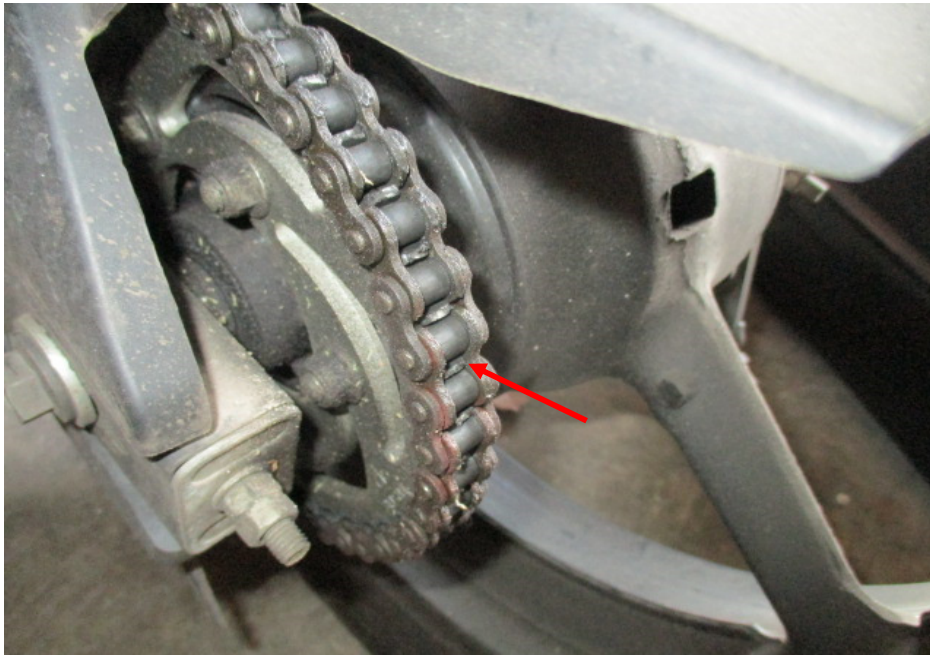


Photo 19 shows the closer view of the gear chain (arrowed) of the Motorcycle, which was observed to be intact with no misalignment. It was also adequately lubricated for operating purposes.

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 of its front fork. The front fork was found to be bent as a result of the accident.
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 caliper, drum, brake lever and brake foot pedal, revealed all to be intact and without damage. There was also no visible tear or cut observed on the connecting cables. The brake fluid for the front brake was also found to be of sufficiently level and without any contamination.
13. Static brake tests conducted on the Motorcycle had appear to indicate that the braking system of the Motorcycle was in serviceable condition. 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.

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 damage of its front fork, which had rendered the Motorcycle immobile for the operational tests. We were not able to push the motorcycle manually forward and backward, simulating movement of the Motorcycle, for the operational tests. See photos 20 – 24 below.



Photo 20 shows the front left fork of the Motorcycle. The front left fork was observed to be bent as a result of the accident (arrowed). We were hence not able to conduct any tests on the steering system of the Motorcycle.



Photo 21 shows a close up view of the front brake caliper, front brake disc and front brake hose (arrowed) of the Motorcycle, which are all part of the components in the hydraulic 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 22 shows the brake fluid reservoir for the front brake of the Motorcycle. The brake fluid was observed to be without contamination and of sufficient level for operational purposes.



Photo 23 shows the front brake lever being depressed. There was some resistance felt (spongy like feel) upon pressing the front brake lever (arrowed). This would indicate that there is no leakage of pressure/vacuum in the brake system.



Photo 24 shows the rear wheel of the Motorcycle. The type of brake system for the rear wheel was of a 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.

Conclusion

15. For this particular case, we were unable to determine whether there was any possible mechanical failure to the Motorcycle that may have contributed to the accident. This was mainly due to the extent of damage that it had sustained. Its steering system was damaged as a result of the accident.
16. The 2 tyres of the Motorcycle were found to be in serviceable condition with remaining tread depth of approximately 3mm each. This had included the deflated front tyre.

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