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Our Ref : CI/TPD20005418/N

12 May 2020

Fatal Accident Investigation Team

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

MECHANICAL INSPECTION REPORT OF MOTORCYCLE VM 5736

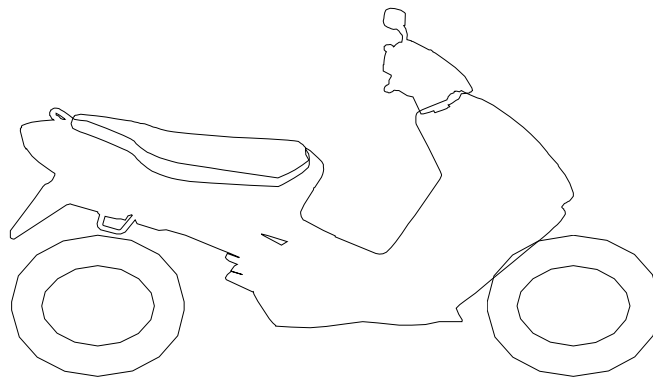
1. We refer to your request on 2 April 2020 to conduct a physical inspection of a motorcycle bearing registration number VM 5736 (herein referred to as "**Motorcycle**"), which was involved in a fatal road traffic accident on 19 February 2020.
2. The objective of the inspection is to determine if there 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 12 May 2020 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 48, 592km.
5. The Motorcycle had sustained damages all around. Body parts that were found to have been damaged include its headlight assembly, front cowling, front fork assembly, front mudguard, side cowlings, right side mirror, front brake lever, right handlebar end, brake foot pedal, right front footrest, tail light assembly and rear number plate, amongst others.

Tyres and Wheel Rims

6. The condition of the 2 tyres of the Motorcycle was observed to be in serviceable condition. 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. Both the tyres were observed to be sufficiently inflated for vehicular operation.
7. The tyre brand, tyre size and remaining tread depth of the 2 tyres were recorded as follows:-



Deestone 80/90 - 17 (3mm)

Maxxis 70/90 - 17 (3mm)

8. The 2 tyres were wrapped around alloy wheel rims. At the time of our inspection, we did not observe any visible damage on the rear wheel rim of the Motorcycle. However we did observe that the front wheel rim was broken. See photos 1 – 14 below.



Photo 1 shows the speedometer gauge of the Motorcycle where the mileage recorded at the time of our inspection was 48, 592km (circled).



Photo 2 shows a general view of the frontal portion of the Motorcycle at the time of our inspection. The Motorcycle had sustained damages all around.



Photo 3 shows a general view of the left body of the Motorcycle at the time of our inspection. The Motorcycle had sustained damages all around. Body parts that were found to have been damaged include its headlight assembly, front cowlings, front fork assembly, front mudguard, side cowlings, right side mirror, front brake lever, right handlebar end, brake foot pedal, right front footrest, tail light assembly and rear number plate, amongst others.



Photo 4 shows a closer view of the headlight assembly which was amongst the body parts at the front body of the Motorcycle that had sustained damages as a result of the accident (arrowed).



Photo 5 shows a closer view of the front brake lever, right side mirror and right handlebar end (arrowed) of the Motorcycle. These parts were amongst the body parts of the Motorcycle which were damaged as a result of the accident.



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



Photo 7 shows a closer view of the front cowling which was amongst the body parts at the front body of the Motorcycle that had sustained damages as a result of the accident.



Photo 8 shows a closer view of the right cowling which was amongst the body parts of the Motorcycle that had sustained damages as a result of the accident.



Photo 9 shows a closer view of the left cowling which was amongst the body parts of the Motorcycle that had sustained damages as a result of the accident.



Photo 10 shows the bent brake foot pedal and right front footrest (arrowed), which were amongst the body parts of the Motorcycle that had sustained damage as a result of the accident.



Photo 11 shows the broken tail light assembly and cracked rear number plate of the Motorcycle as a result of the accident.



Photo 12 shows the broken front wheel rim (arrowed) of the Motorcycle as a result of the accident at the time of our inspection.



Photo 13 shows the front tyre of the Motorcycle at the time of our inspection. The front tyre was observed to be in serviceable condition with remaining tread depth of approximately 3mm. The pattern of the tread was also 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.



Photo 14 shows the condition of the Motorcycle's rear tyre. 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. 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 15 – 18 below.



Photo 15 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 16 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 17 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.

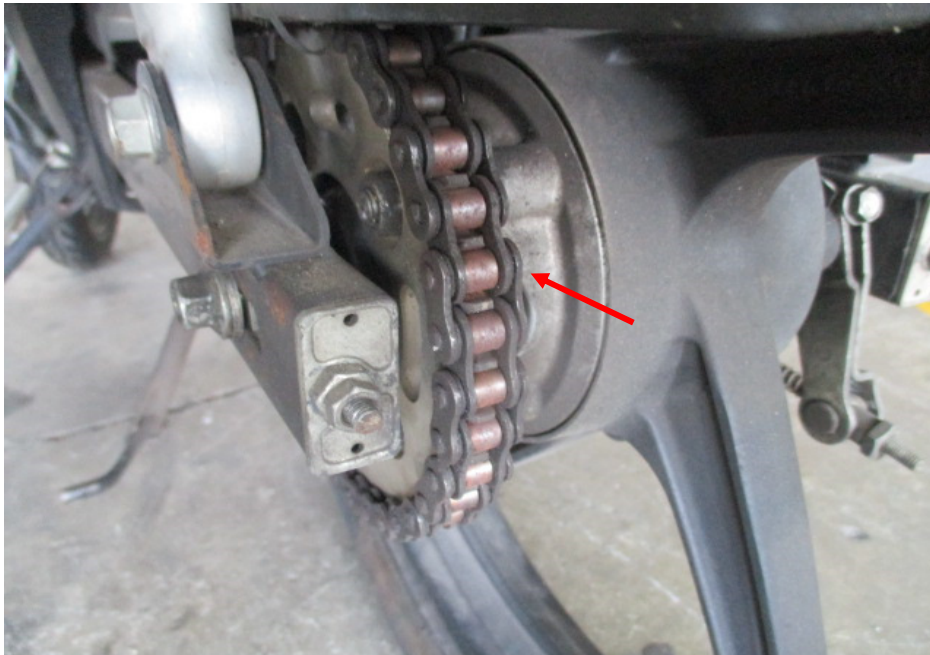


Photo 18 shows the closer view of the gear chain (arrowed) of the Motorcycle, which was observed to be intact with no misalignment. It was also adequately lubricated for operating purposes.

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 forks. The left 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, and brake lever revealed all to be intact and without damage. There was also no leakage of brake fluid observed along the front brake hose. This was from the respective front brake fluid reservoir to the front brake caliper of the Motorcycle. The brake fluid for the front brake was found to be of sufficient level for operating purposes. However the brake fluid was found to be slightly contaminated. There was also no visible tear or cut observed on the connecting hoses and cables. However the brake foot pedal was observed to be bent as a result of the accident.

13. Static brake tests conducted on the Motorcycle had appeared to indicate that the front braking system of the Motorcycle was in serviceable condition. There was some resistance felt (spongy like feel) upon pressing the front brake lever. This would indicate that there's no leakage of pressure/vacuum in the front braking system.
14. Static brake tests could not be conducted on the rear braking system of the Motorcycle due to the bent brake foot pedal.
15. 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 forks 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 19 – 23 below.



Photo 19 shows the front forks of the Motorcycle. The front left fork (arrowed) was observed to be bent as a result of the accident. We were hence not able to conduct any tests on the steering system of the Motorcycle.

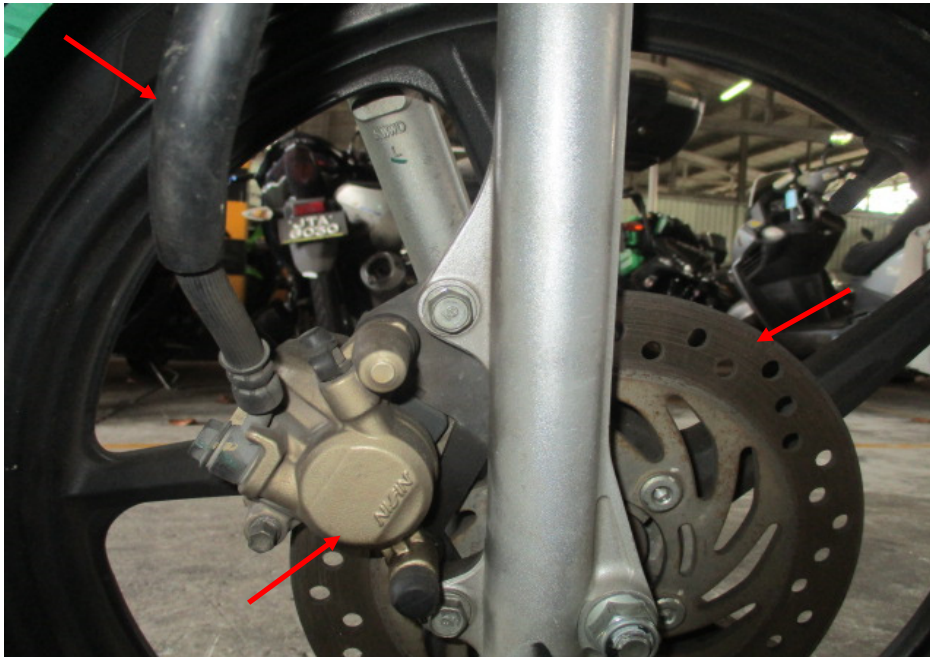


Photo 20 shows a close up view of the front brake caliper, front brake disc and front brake hose (arrowed) of the Motorcycle, which are all part of the components in the hydraulic front brake system of the Motorcycle. Our visual checks of these various components had revealed all to be intact with no visible damage. No leakage of brake fluid was also observed.

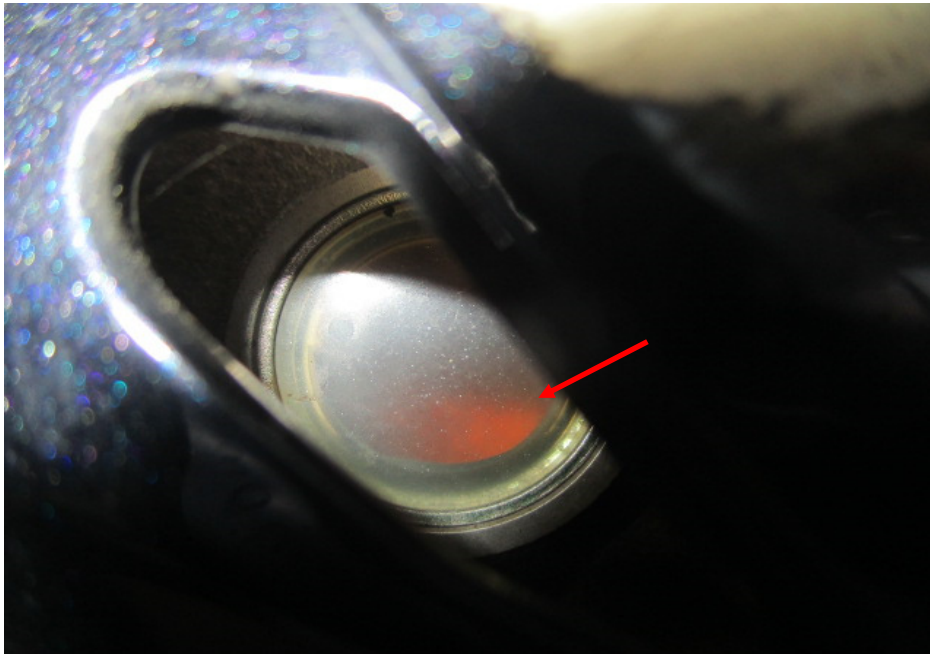


Photo 21 shows the brake fluid reservoir for the front brake of the Motorcycle. The brake fluid was found to be of sufficient level for operating purposes. However the brake fluid was found to be slightly contaminated (arrowed).



Photo 22 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.

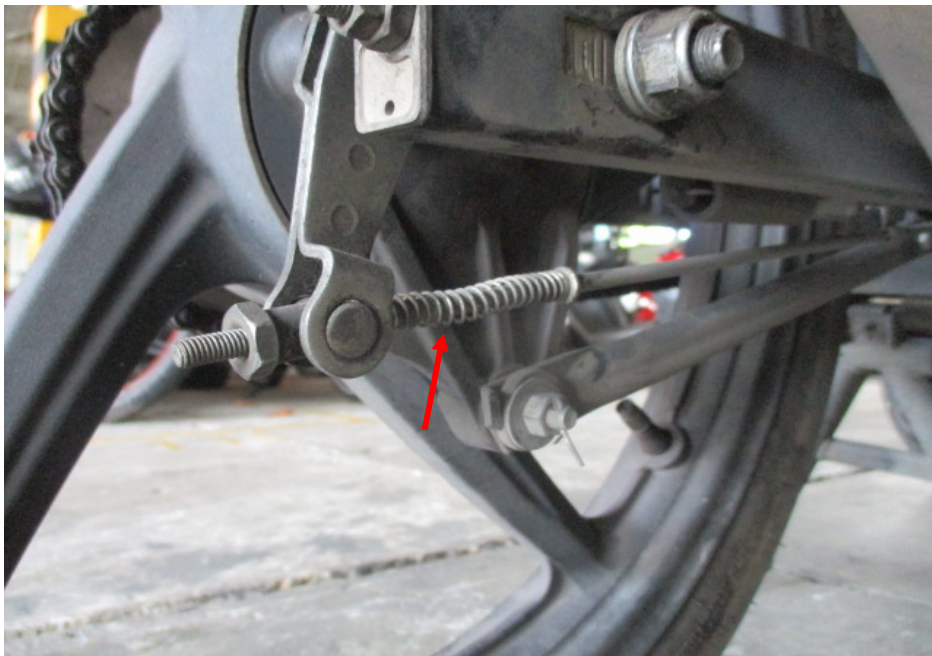



Photo 23 shows the rear wheel of the Motorcycle. The type of brake system for the rear wheel was of a mechanical type, controlled by the brake foot pedal of the Motorcycle. Our checks of the cable (arrowed), spring and drum which are all part of the components in the rear brake system of the Motorcycle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

Conclusion

16. 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 and rear braking system was damaged as a result of the accident. The front braking system of the Motorcycle was observed to be in serviceable condition.
17. The 2 tyres of the Motorcycle were 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 2 tyres. The 2 tyres were sufficiently inflated for vehicular operation with remaining tread depth of approximately 3mm each.
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 front forks (as a result of the accident), which had rendered the Motorcycle immobile.

**Muhd Nazril***Senior Technical Investigator***Ang Bryan Tani***AMSOE, AMIRTE, AFF SAE, M.MATAI, AFF.Inst.AEA**Senior Technical Investigator**Technical Investigation & Reconstructionist (SAE-A)*

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