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Your Ref: TP/IP/26025/2020 12 November 2020
Our Ref : CI/TPD20012514/N

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

INSPECTION REPORT OF MOTORCYCLE JTL 4346

1. We refer to your request dated 11 November 2020 to conduct a physical inspection of a motorcycle bearing registration number JTL 4346 (herein referred to as **"Motorcycle"**), which was involved in a fatal road traffic accident on 16 June 2020.

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 12 November 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

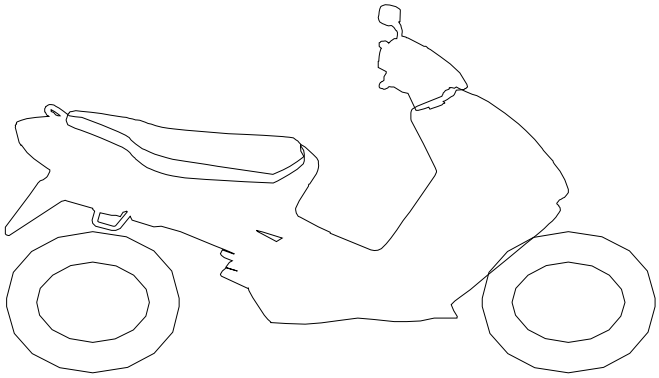
4. The mileage of the Motorcycle could not be recorded at the time of our inspection due to damages sustained to the speedometer gauge.

5. The Motorcycle was observed to have sustained damages all around. The body parts that were found to have been damaged include its speedometer gauge, front cowling, side cowlings, handlebars, handlebar ends, right fog light, right front signal lamp, front brake lever, gear shift pedal, rear brake pedal, right front footrest, right front footrest bracket, right rear side cover, exhaust muffler and top box rack, 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:-



IRC 140/70 - 17 (4mm)

IRC 110/70 - 17 (4mm)

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 front and rear wheel rim of the Motorcycle. See photos 1 – 18 below.

Photo 1 shows the speedometer gauge of the Motorcycle. The mileage of the Motorcycle could not be recorded at the time of our inspection due to damages sustained to the speedometer gauge.

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

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 damages all around.

Photo 4 shows a general view of the left body of the Motorcycle at the time of our inspection. The Motorcycle was observed to have sustained damages all around. Amongst the body parts that were found to have been damaged include its speedometer gauge, front cowling, side cowlings, handlebars, handlebar ends, right fog light, right front signal lamp, front brake lever, gear shift pedal, rear brake pedal, right front footrest, right front footrest bracket, right rear side cover, exhaust muffler and top box rack, amongst others.

Photo 5 shows a closer view of the cracked front cowling (arrowed) of the Motorcycle as a result of the accident.

Photo 6 shows a close up view of the damaged right fog light of the Motorcycle as a result of the accident (circled).

Photo 7 shows a closer view of the damaged right cowling of the Motorcycle as a result of the accident.

Photo 8 shows a closer view of the deformed handlebars which were 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 broken right front signal lamp of the Motorcycle as a result of the accident (arrowed).

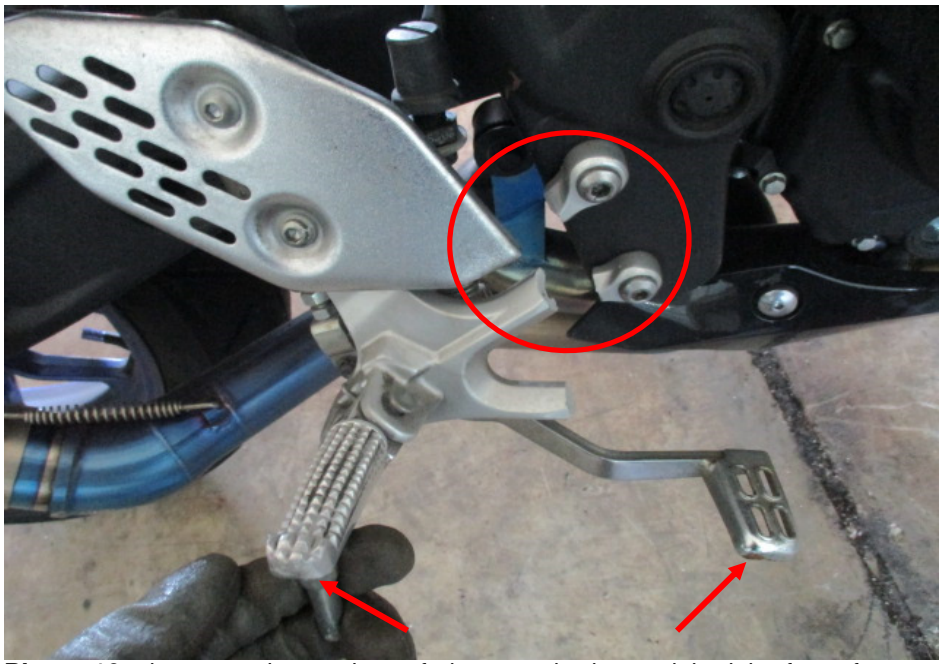


Photo 10 shows a closer view of the rear brake pedal, right front footrest (arrowed) and broken right front footrest bracket (circled) which were amongst the body parts of the Motorcycle that had sustained damage as a result of the accident.

Photo 11 shows a closer view of the gear shift pedal (circled) which was amongst the body parts of the Motorcycle that had sustained damage as a result of the accident.

Photo 12 shows the damaged top box rack of the Motorcycle as a result of the accident (arrowed).

Photo 13 shows a closer view of the right rear side cover of the Motorcycle that had sustained damages of grazing nature as a result of the accident (circled).

Photo 14 shows a closer view of the cracked left cowling of the Motorcycle as a result of the accident (arrowed).

Photo 15 shows a closer view of the right handlebar end, right side mirror and front brake lever which were amongst the body parts of the Motorcycle that had sustained damage as a result of the accident (arrowed).

Photo 16 shows a closer view of the exhaust muffler which was amongst the body parts of the Motorcycle that had sustained damage as a result of the accident.

Photo 17 shows the condition of the Motorcycle's front tyre. The front tyre was observed to be in serviceable condition with remaining tread depth of approximately 4mm. 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 18 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 4mm. 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 engine area of the Motorcycle, we had observed that the various engine related parts and components on the left side of the Motorcycle were intact with no visible damage. There was also no fluid leak and/or fluid stain found around the left engine area of the Motorcycle. The various right engine components had sustained damage of grazing nature as a result of the accident however the engine components were still intact. There was also no fluid leak and/or fluid stain found around the right engine area of the Motorcycle.

10. The gear chain of the Motorcycle, which rotates the rear wheel of the Motorcycle, was found to be in serviceable condition and without any misalignment. It was also adequately lubricated for operating purposes. See photos 19 – 22 below.

Photo 19 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 20 shows the right side of the engine of the Motorcycle at the time of our inspection. The various right engine components had sustained damage of grazing nature as a result of the accident (circled) however the engine components were still intact. There was also no fluid leak and/or fluid stain found around the right engine area of the Motorcycle.

Photo 21 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.

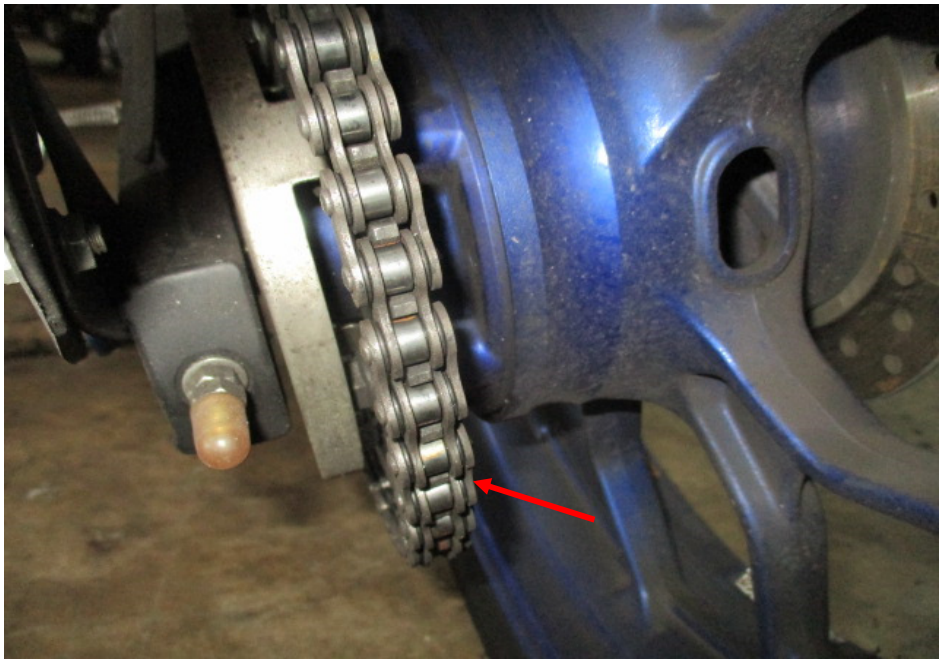


Photo 22 shows a closer view of the gear train (arrowed) of the Motorcycle, which was observed to be intact with no misalignment. It was also adequately lubricated for operating purposes.

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 to its handlebars. The right handlebar was observed to be broken as a result of the accident.

12. The braking system of the Motorcycle was observed to be of a full hydraulic type, where hydraulic (brake fluid) pressure controls the brake for the front wheel and rear wheel. The brake for the front wheel is engaged by pressing 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. Our visual examination of the various components in the Motorcycle's braking system like the brake discs, brake calipers, brake lever, brake foot pedal and brake hoses revealed all to be intact and without damage. There was also no leakage of brake fluid observed along the brake hoses. This was from the respective brake fluid reservoirs to the front brake caliper and rear brake caliper of the Motorcycle.

14. The brake fluid for the rear brake was also found to be of sufficient level for operating purposes and without any contamination. However the front brake reservoir was found to empty. Upon closer examination, we observed a crack in the front brake reservoir as a result of the accident.

15. Static brake tests conducted on the Motorcycle had appear to indicate that the front braking system of the Motorcycle was not in serviceable condition. There was no resistance felt (spongy like feel) upon pressing the brake lever. This would indicate that there may be a leakage of pressure/vacuum in the front brake system.

16. Static brake tests conducted on the Motorcycle had appear to indicate that the rear braking system of the Motorcycle was in serviceable condition. There was some resistance felt (spongy like feel) upon stepping on the brake pedal. This would indicate that there was no leakage of pressure/vacuum in the rear brake system.

17. We subsequently carried out an operational test of the Motorcycle's braking system. This was done by manually pushing the Motorcycle forward and backward, simulating the Motorcycle in motion, and thereafter engaging rear brake of the Motorcycle. At the end of the short operational test, we did not observe any abnormal behaviour of the Motorcycle's rear braking system. The rear wheel of the Motorcycle was able to stop rotating immediately upon stepping on the brake pedal. The front wheel of the Motorcycle was unable to stop rotating immediately upon depressing the brake lever. See photos 23 – 29 below.

Photo 23 shows the right handlebar of the Motorcycle which was observed to be broken as a result of the accident (circled). We were hence not able to conduct any tests on the steering system of the Motorcycle.

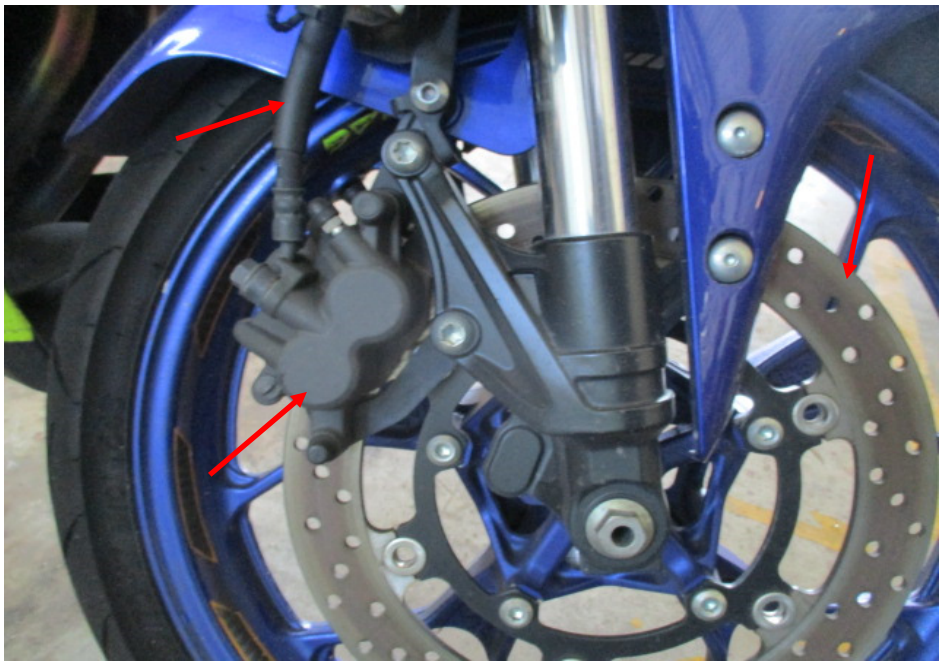


Photo 24 shows a close up view of the front brake caliper, front brake disc and front brake hose (arrowed) of the Motorcycle, which are all part of the components in the hydraulic front brake system of the Motorcycle. Our visual checks of these various components had revealed all to be intact with no visible damage. No leakage of brake fluid was also observed.

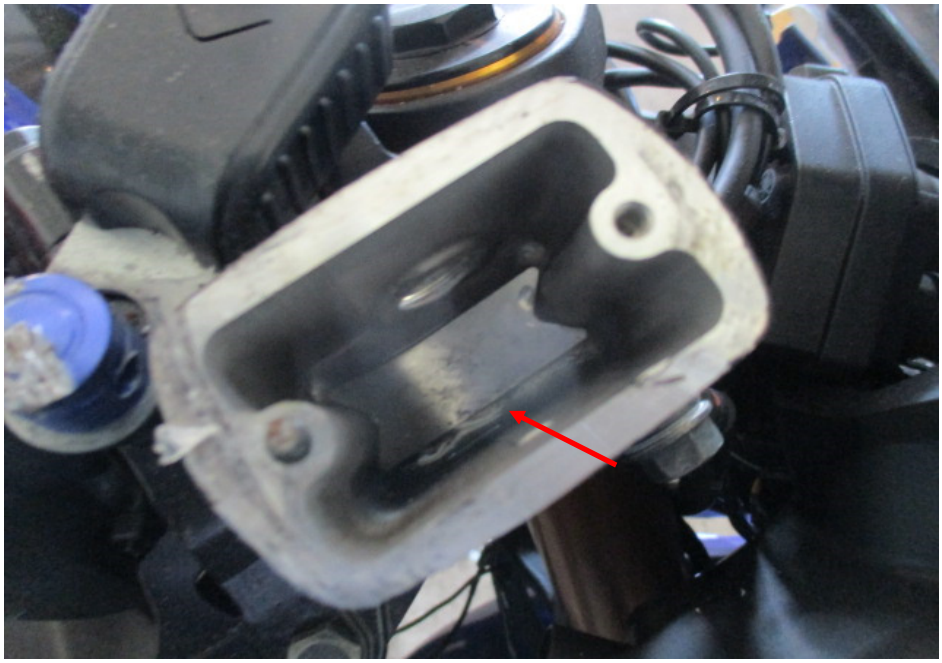


Photo 25 shows the brake fluid reservoir for the front brake of the Motorcycle. The brake fluid reservoir was observed to be empty (arrowed).

Photo 26 shows the front brake lever being depressed. There was no resistance felt (spongy like feel) upon pressing the front brake lever (arrowed). This would indicate that there may be a leakage of pressure/vacuum in the front brake system.

Photo 27 shows upon closer examination of the front brake reservoir, we observed a crack in the front brake reservoir as a result of the accident (circled).

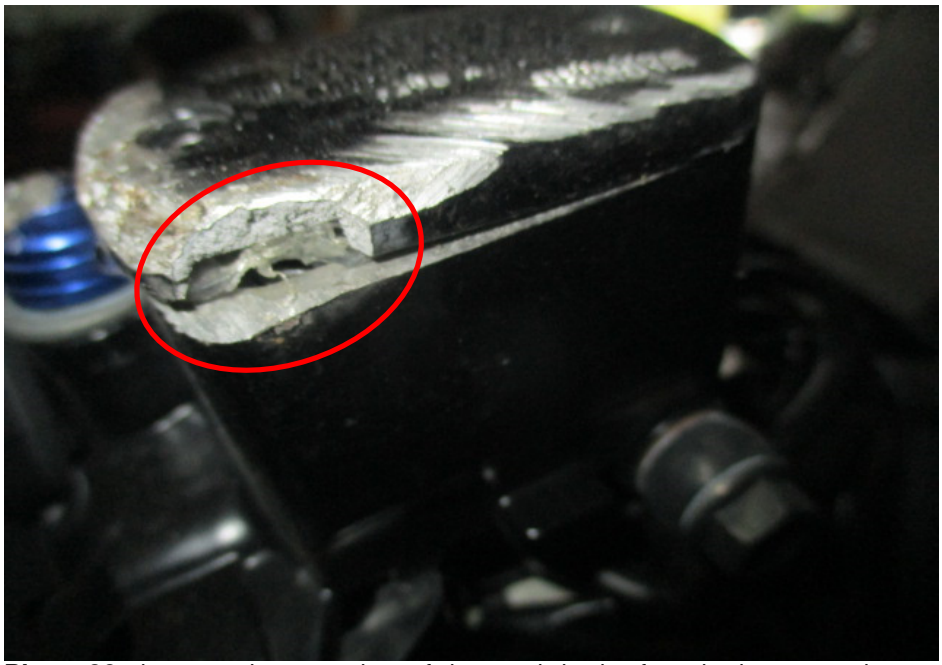


Photo 28 shows a close up view of the crack in the front brake reservoir as a result of the accident (circled).

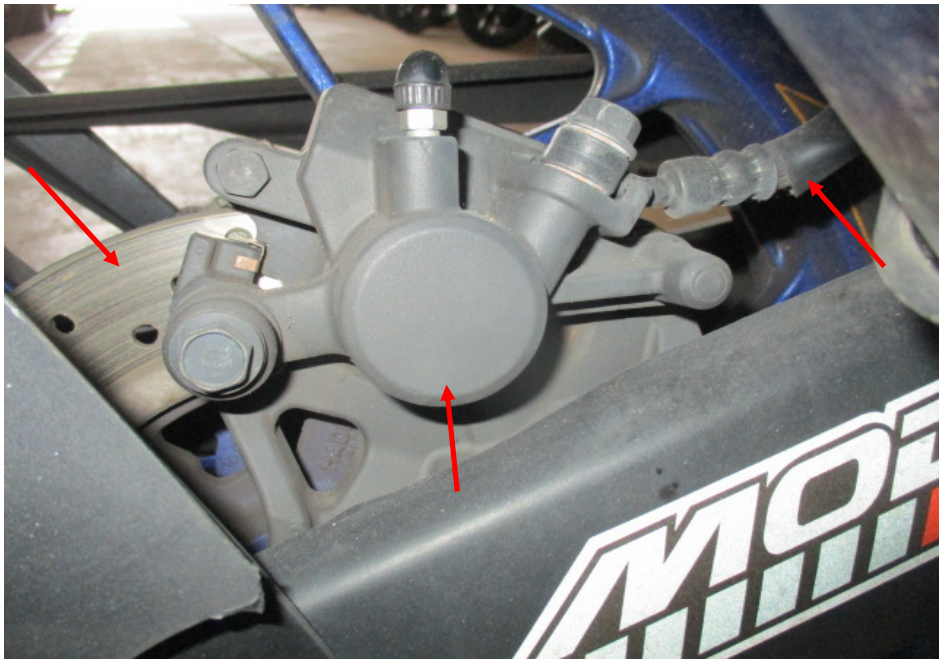


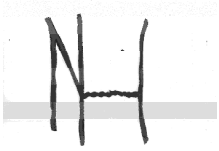
Photo 29 shows a close up view of the rear brake caliper, rear brake disc and rear brake hose (arrowed) of the Motorcycle, which are all part of the components in the hydraulic rear brake system of the Motorcycle. Our visual checks of these various components had revealed all to be intact with no visible damage. No leakage of brake fluid was also observed.

Photo 30 shows the brake fluid reservoir for the rear brake of the Motorcycle. The brake fluid was observed to be of sufficient level and without contamination for operational purposes.

Conclusion

18. Basing on our physical inspection of the Motorcycle, it appears that the rear braking system of the Motorcycle was in serviceable condition. Its front braking system and steering system were damaged as a result of the accident.

19. 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 4mm each.



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