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Your Ref: TP/IP/12567/2019 13 June 2019
Our Ref : CI/TPD19008252/N

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

MECHANICAL INSPECTION REPORT OF MOTORCYCLE JJG 4808

1. We refer to your request on 29 April 2019 to conduct a physical inspection of a motorcycle bearing registration number JJG 4808 (herein referred to as **"Motorcycle"**), which was involved in a fatal road traffic accident on 4 March 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 30 May 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

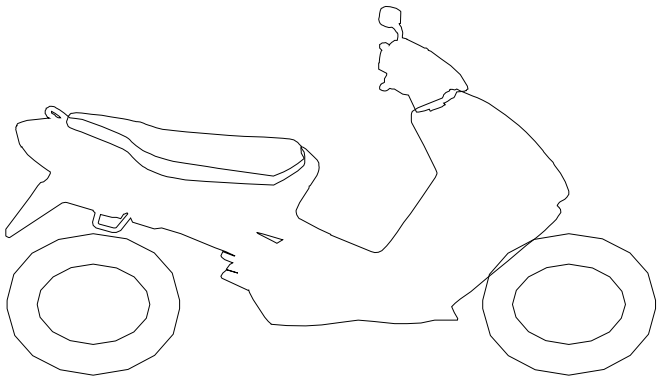
4. The mileage of the Motorcycle at the time of our inspection was 62, 800km.

5. The Motorcycle had sustained damages at its frontal and left portion. Body parts that were found to have been damaged include its front fork assembly, headlight assembly, speedometer gauge, front mudguard, front wheel rim, side mirrors, front brake lever, handlebars, left side cowling, left front footrest, left pillion footrest bracket, left pillion grab rail and seat, amongst others.

Tyres and Wheel Rims

6. The condition of the Motorcycle's rear tyre was observed to be in serviceable condition. The tread pattern of the front tyre 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 front tyre. The rear tyre was observed to be sufficiently inflated for vehicular operation.

7. However we did observe that the front tyre was punctured as a result of the accident. The tread pattern of the front tyre was clearly visible.



Crystal 80/90 R17 (3mm) Maxxis 70/90 R17 (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 – 17 below.

Photo 1 shows a closer view of the speedometer gauge of the Motorcycle which was damaged as a result of the accident. The mileage of the Motorcycle at the time of our inspection was 62, 800 (circled).

Photo 2 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 and left portion.

Photo 3 shows a general view of the left rear body of the Motorcycle at the time of our inspection. Body parts that were found to have been damaged include its front fork assembly, headlight assembly, speedometer gauge, front mudguard, front wheel rim, side mirrors, front brake lever, handlebars, left side cowling, left front footrest, left pillion footrest bracket, left pillion grab rail and seat, amongst others.

Photo 4 shows a closer view of the headlamp assembly of the Motorcycle. These parts were amongst the body parts of the Motorcycle which were damaged as a result of the accident.

Photo 5 shows a closer view of the speedometer gauge, side mirrors and handlebars 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 close up view of the broken front mudguard (arrowed) of the Motorcycle which was amongst the body parts at the front body of the Motorcycle that had sustained damage as a result of the accident.

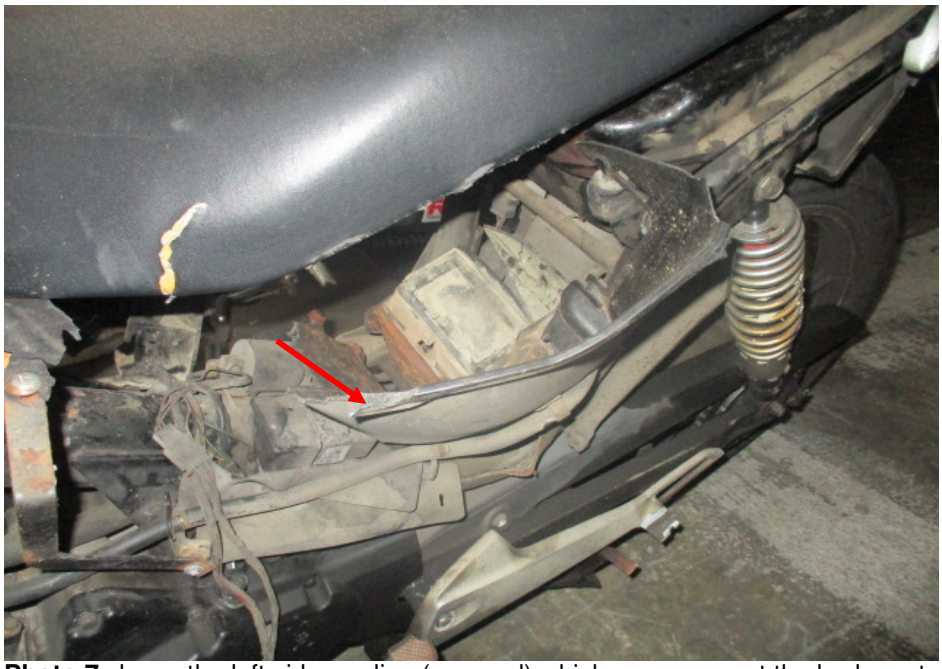


Photo 7 shows the left side cowling (arrowed) which was amongst the body parts of the Motorcycle damaged as a result of the accident.

Photo 8 shows a close up view of the broken front brake lever (arrowed) of the Motorcycle which was amongst the body parts of the Motorcycle damaged as a result of the accident.

Photo 9 shows the damaged gear shift pedal, left front footrest and left front footrest bracket, which were amongst the body parts of the Motorcycle that had sustained damage as a result of the accident.

Photo 10 shows a closer view of the left pillion footrest bracket (circled), which was amongst the body parts of the Motorcycle that had sustained damage as a result of the accident.

Photo 11 shows a close up view of the shock absorber on the left side of the Motorcycle which was amongst the body parts at the rear body of the Motorcycle damaged as a result of the accident (circled).

Photo 12 shows a closer view of the pillion grab rail of the Motorcycle which sustained damages of grazing nature (arrowed) as a result of the accident.

Photo 13 shows the seat of the Motorcycle which was observed to be torn as a result of the accident (circled).

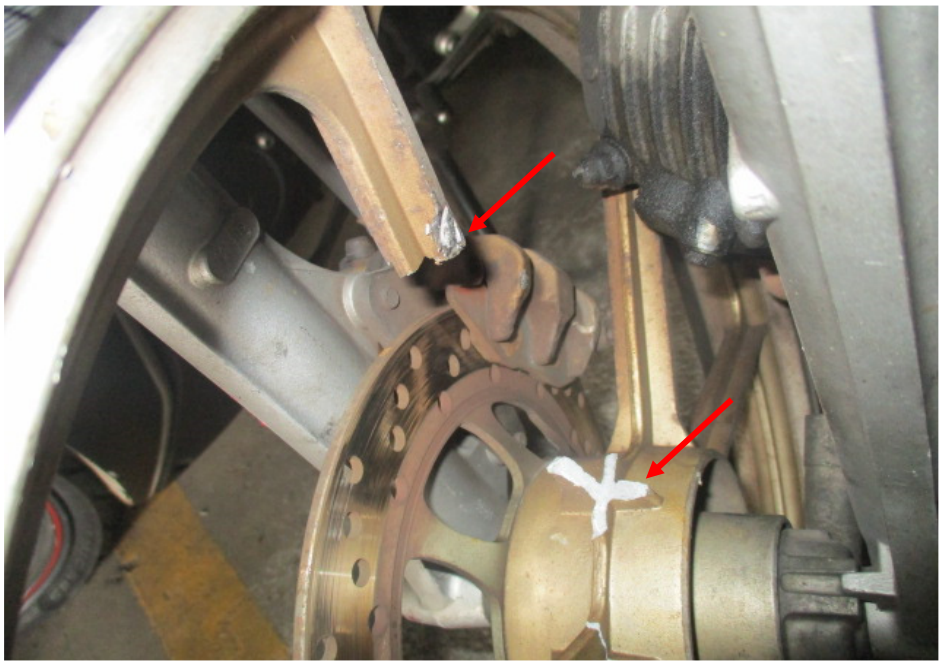


Photo 14 shows the broken front wheel rim (arrowed) of the Motorcycle at the time of our inspection.

Photo 15 shows the front tyre of the Motorcycle at the time of our inspection. We observed that the front tyre was punctured (arrowed).

Photo 16 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 3mm. The tyre was observed to be punctured. However we did not observe any tear and/or burst mark(s) on the sidewalls as well as across the tread of the front tyre.

Photo 17 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 engine area of the Motorcycle, we had observed that the various engine related parts and components on the right side of the Motorcycle were intact with no visible damage. There was also no fluid leak and/or fluid stain found around the right engine area of the Motorcycle. The various left 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 left 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 18 - 21 below.

Photo 18 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 19 shows the left side of the engine of the Motorcycle at the time of our inspection. The various left 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 left engine area of the Motorcycle.

Photo 20 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.

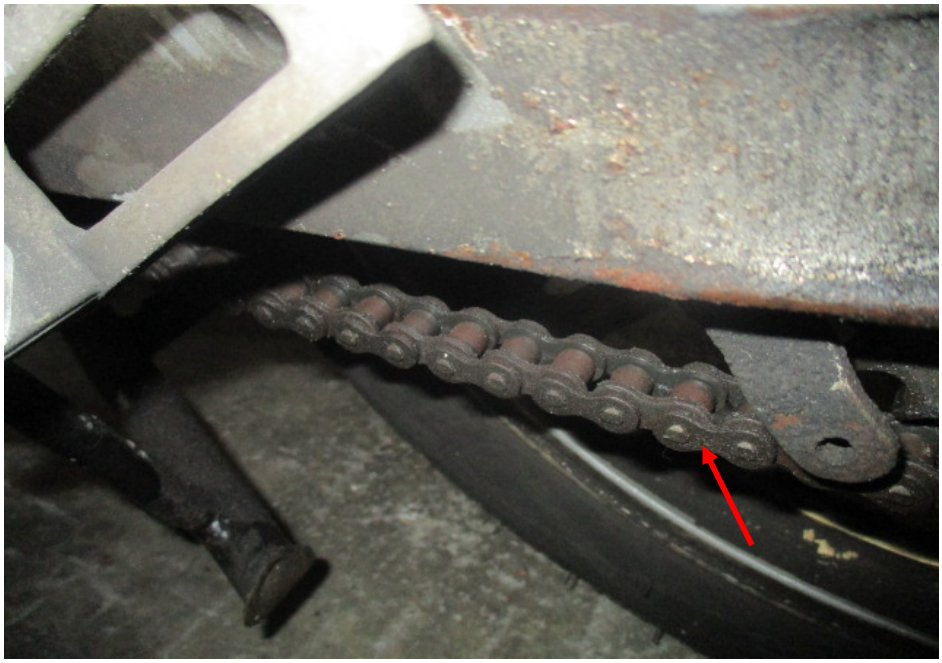


Photo 21 shows a closer view of the gear train (arrowed) of the Motorcycle, which was observed to be intact with no misalignment. It was also adequately lubricated for operating purposes.

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 of its front fork. The front fork was found to be bent inwards 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 hoses and cables.

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. Our checks on the brake fluid for the front brake of the Motorcycle was revealed to be of sufficient level and without contamination for operational purposes.

14. For this case, we were not able to carry out any operational tests to the steering system and front braking system of the Motorcycle due to the damage of its front fork and front wheel rim, 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.

15. We subsequently carried out an operational test of the Motorcycle's rear braking system. This was done by firstly putting the Motorcycle on its main stand. We then proceeded to turn the rear wheel, allowing it to spin freely, simulating the Motorcycle in motion. We thereafter engaged the rear brake pedal 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 depressing the brake pedal. See photos 22 - 26 below.

Photo 22 shows the front fork of the Motorcycle. The front fork (arrowed) was observed to be bent inwards as a result of the accident. We were hence not able to conduct any tests on the steering system of the Motorcycle.

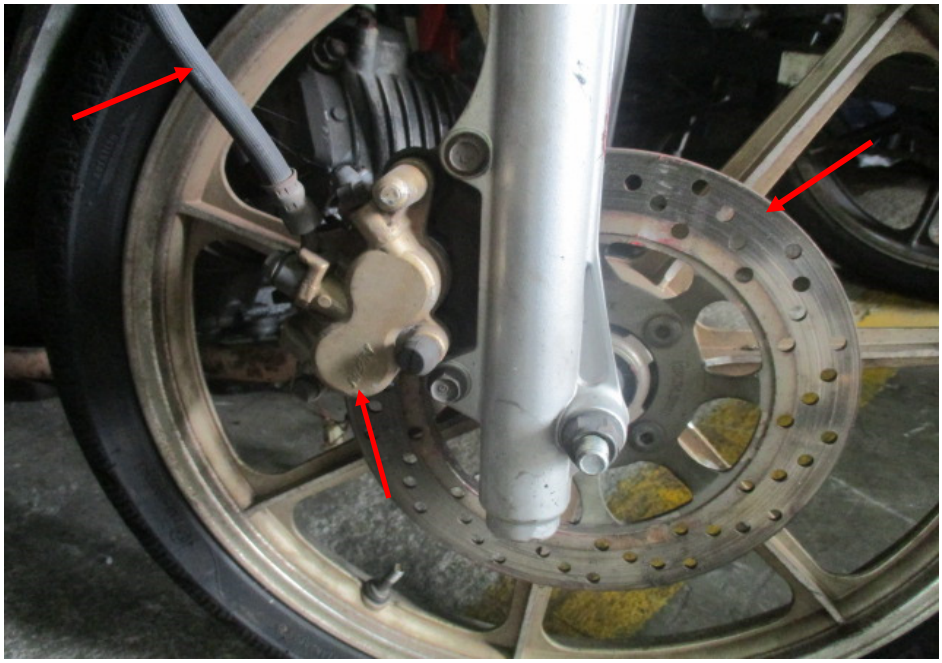


Photo 23 shows a close up view of the front brake caliper, front brake disc and front brake hose (arrowed) of the Motorcycle, which are all part of the components in the hydraulic front brake system of the Motorcycle. Our visual checks of these various components had revealed all to be intact with no visible damage. No leakage of brake fluid was also observed.

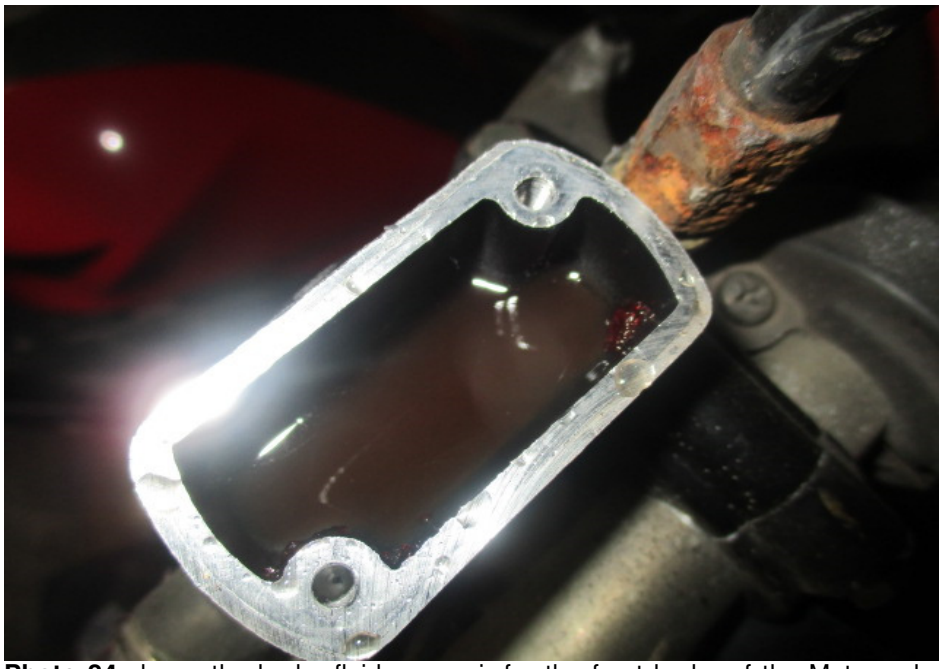


Photo 24 shows the brake fluid reservoir for the front brake of the Motorcycle. The brake fluid was observed to be of sufficient level and without contamination for operational purposes.

Photo 25 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.

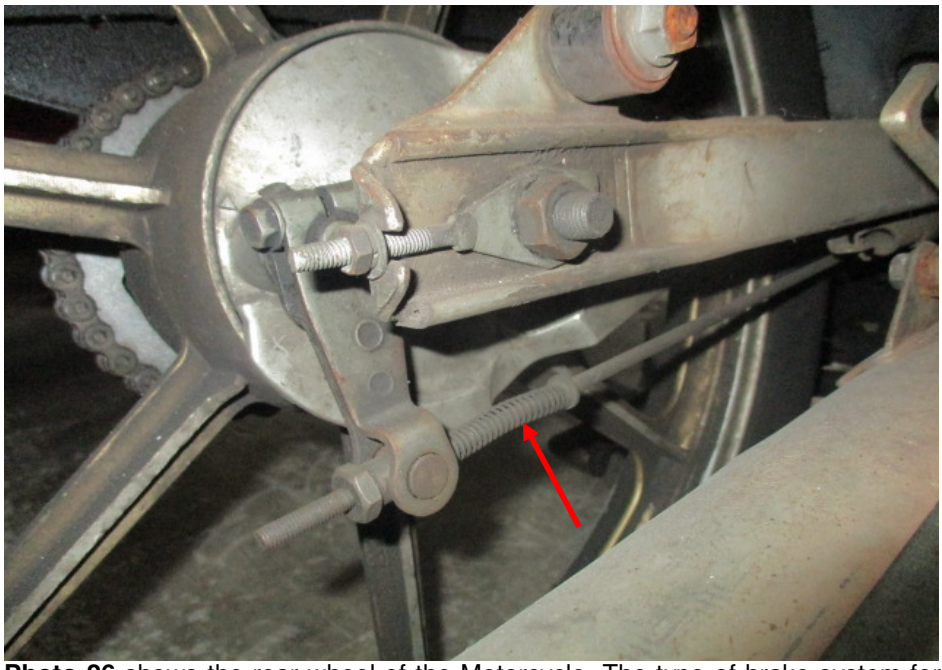


Photo 26 shows the rear wheel of the Motorcycle. The type of brake system for the rear wheel was of a mechanical type, controlled by the brake foot pedal of the Motorcycle. Our checks of the cable (arrowed), spring and drum which are all part of the components in the rear brake system of the Motorcycle 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 was damaged as a result of the accident.

17. The rear tyre of the Motorcycle was 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 its tread. The front tyre was sufficiently inflated for vehicular operation with remaining tread depth of approximately 3mm.

18. The front tyre on the other hand was observed to be punctured as a result of the accident. There was no tear, cut or burst mark(s) on the outer and the inner sidewalls as well as across its tread. The front tyre had sufficient remaining tread depth of approximately 3mm.

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