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Your Ref: TP/IP/62415/2019
Our Ref : CI/TPD19022293/N

15 July 2019

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

MECHANICAL INSPECTION REPORT OF MOTORCYCLE FBH 347J

1. We refer to your request on 21 November 2019 to conduct a physical inspection of a motorcycle bearing registration number FBH 347J (herein referred to as **"Motorcycle"**), which was involved in a fatal road traffic accident on 5 October 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 February 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

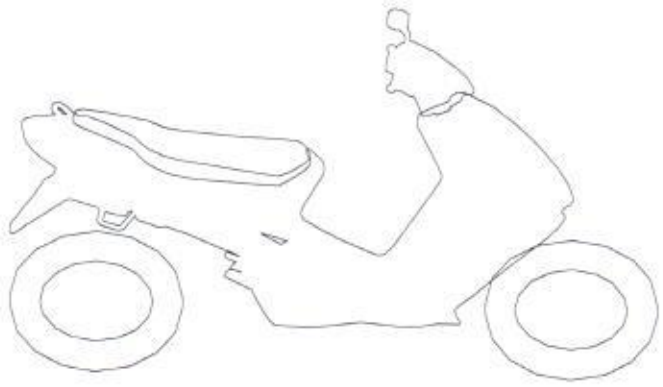
4. The mileage of the Motorcycle at the time of our inspection was 53, 054km.

5. The Motorcycle had sustained damages all around. Body parts that were found to have been damaged include its headlight, head cowling, front fork assembly, steering stem, side cowlings, left side mirror, clutch lever, gear shift pedal, left front footrest, left pillion footrest bracket 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 of the Motorcycle were recorded as follows:-



Maxxis 90/80 R17 (3mm)

Maxxis 80/90 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 front and rear wheel rim of the Motorcycle. See photos 1 – 16 below.

Photo 1 shows the speedometer gauge of the Motorcycle where the mileage recorded at the time of our inspection was 53, 054km (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. Body parts that were found to have been damaged include its headlight, head cowling, front fork assembly, steering stem, side cowlings, left side mirror, clutch lever, gear shift pedal, left front footrest, left pillion footrest bracket and rear number plate, amongst others.

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

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

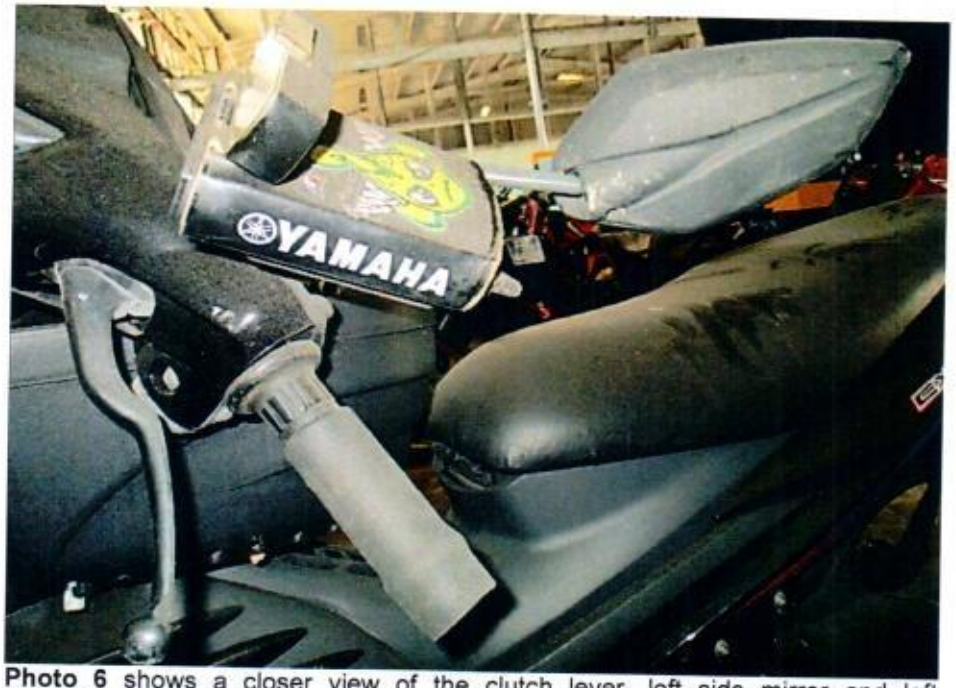


Photo 6 shows a closer view of the clutch lever, left side mirror and left handlebar grip of the Motorcycle. These parts were amongst the body parts of the Motorcycle which were damaged as a result of the accident.

Photo 7 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 8 shows a closer view of the head 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 9 shows a closer view of the right cowling which was amongst the body parts at the front body of the Motorcycle that had sustained damages as a result of the accident.

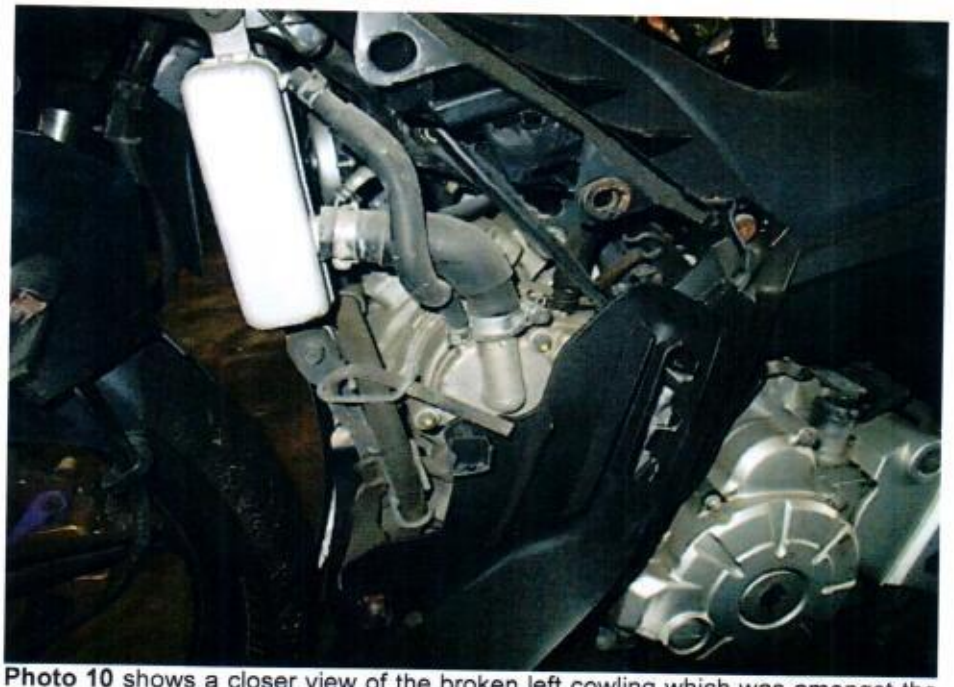


Photo 10 shows a closer view of the broken left cowling which was amongst the body parts at the front body of the Motorcycle that had sustained damages as a result of the accident.

Photo 11 shows a closer view of the left 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 (circled).

Photo 12 shows a closer view of the left pillion footrest bracket and left pillion foot peg, which were amongst the body parts of the Motorcycle that had sustained damage as a result of the accident (circled).

Photo 13 shows a closer view of the gear shift pedal and left front footrest which were amongst the body parts of the Motorcycle that had sustained damage as a result of the accident.

Photo 14 shows the dented rear number plate of the Motorcycle at the time of our inspection (arrowed).

Photo 15 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 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 front tyre.

Photo 16 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 17 – 20 below.

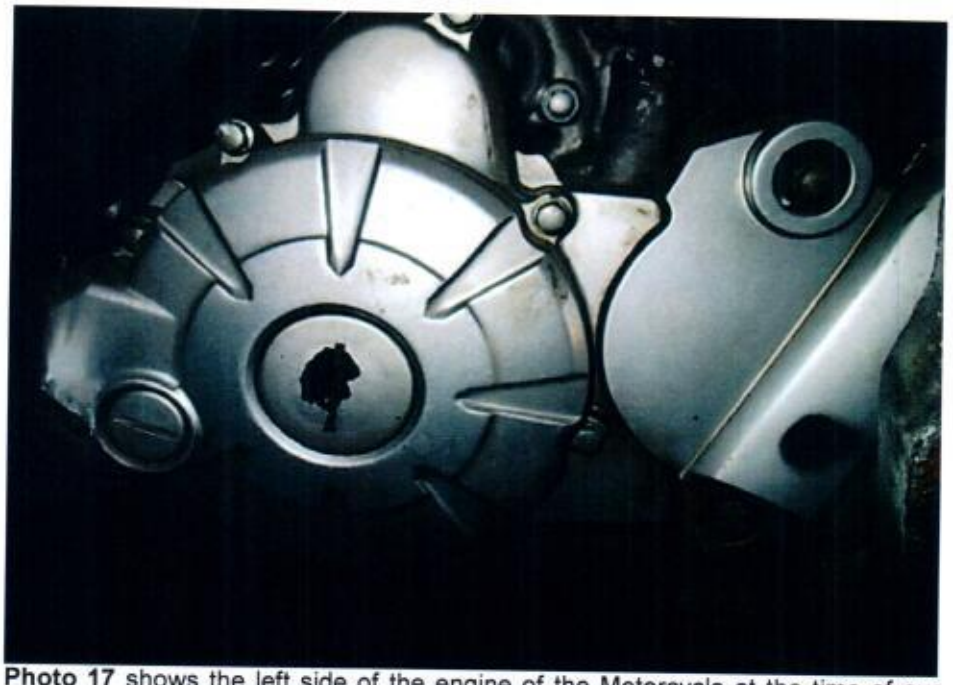


Photo 17 shows the left side of the engine of the Motorcycle at the time of our inspection. The various engine related parts and components were found to be intact with no visible damage. There was also no sign(s) or indication(s) of fluid leak observed around the left engine area of the Motorcycle.

Photo 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 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.

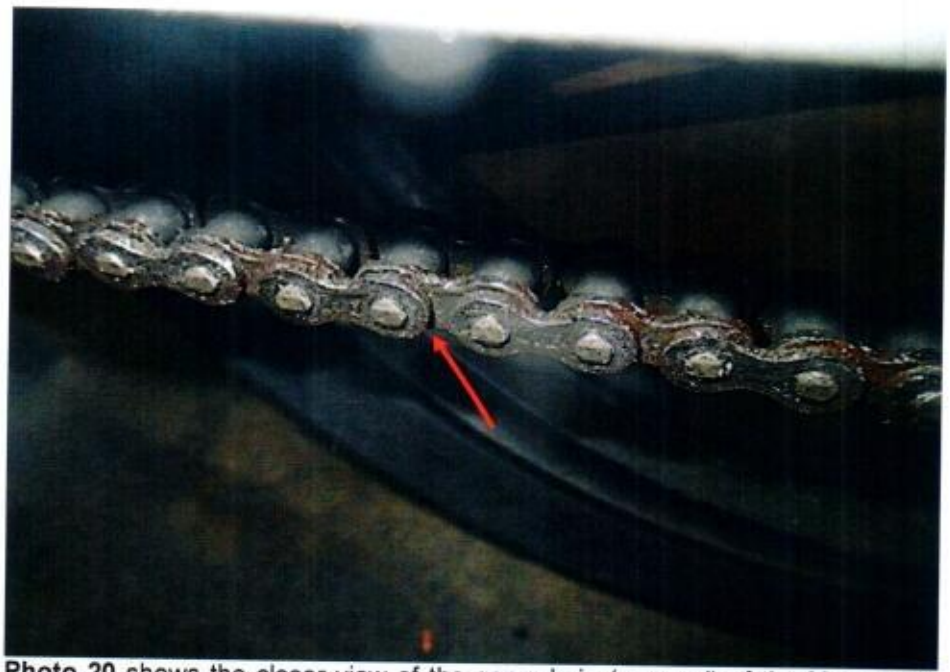


Photo 20 shows the closer view of the gear chain (arrowed) of the Motorcycle, which was observed to be intact with no misalignment. It was also adequately lubricated for operating purposes.

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 and steering stem. The front forks were found to be bent inwards as a result of the accident. The steering system 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 lever, rear brake pedal, brake calipers 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. The brake fluid for the front brake was found to be of sufficiently level and without any contamination. However the rear brake fluid reservoir was observed to be empty at the time of our inspection.

14. 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 and upon stepping the brake pedal. This would indicate that there was no leakage of pressure/vacuum in the braking system.

15. 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 forks and steering stem, 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.

16. 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. The rear wheel of the Motorcycle was able to stop rotating immediately upon depressing the brake pedal. At the end of the short operational test, we did not observe any abnormal behaviour of the Motorcycle's rear braking system. See photos 21 – 27 below.

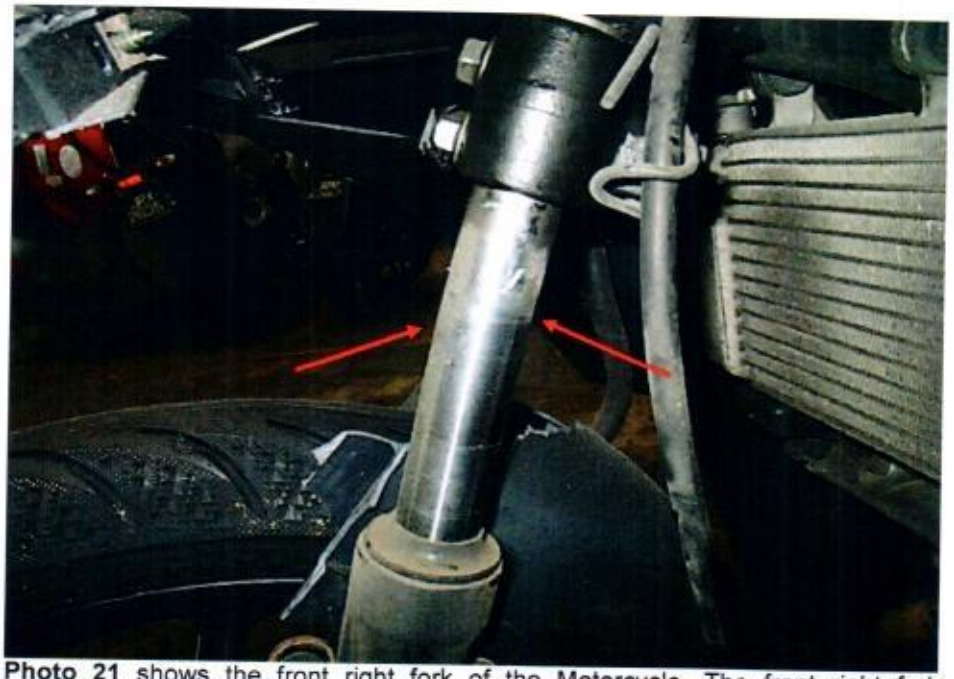


Photo 21 shows the front right fork of the Motorcycle. The front right fork (arrowed) was observed to be bent inwards as a result of the accident. We were hence not able to conduct any tests on the steering system of the Motorcycle.

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

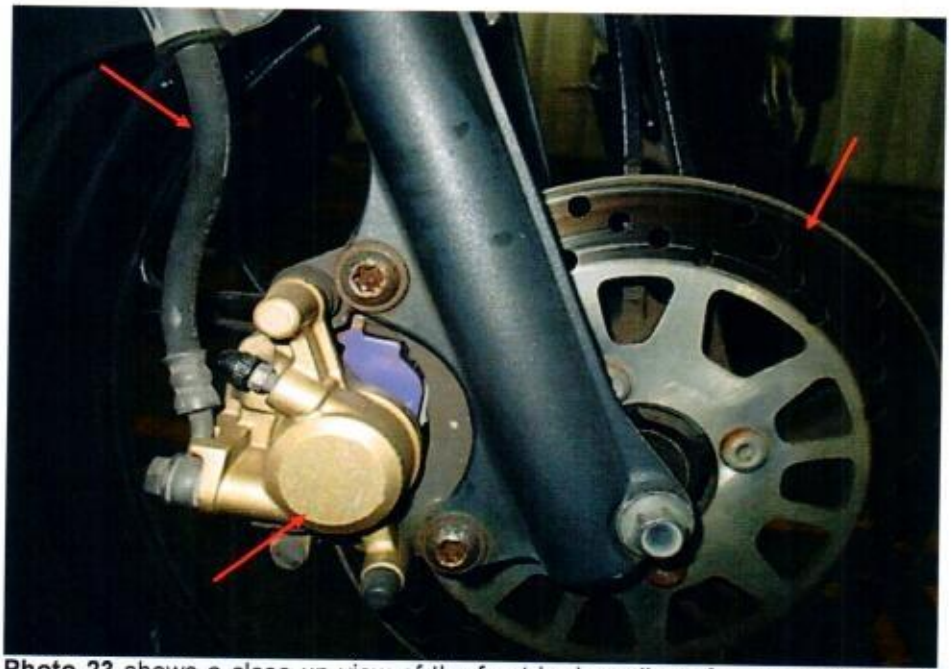


Photo 23 shows a close up view of the front brake caliper, front brake disc and front brake hose (arrowed) of the Motorcycle, which are all part of the components in the hydraulic front brake system of the Motorcycle. Our visual checks of these various components had revealed all to be intact with no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

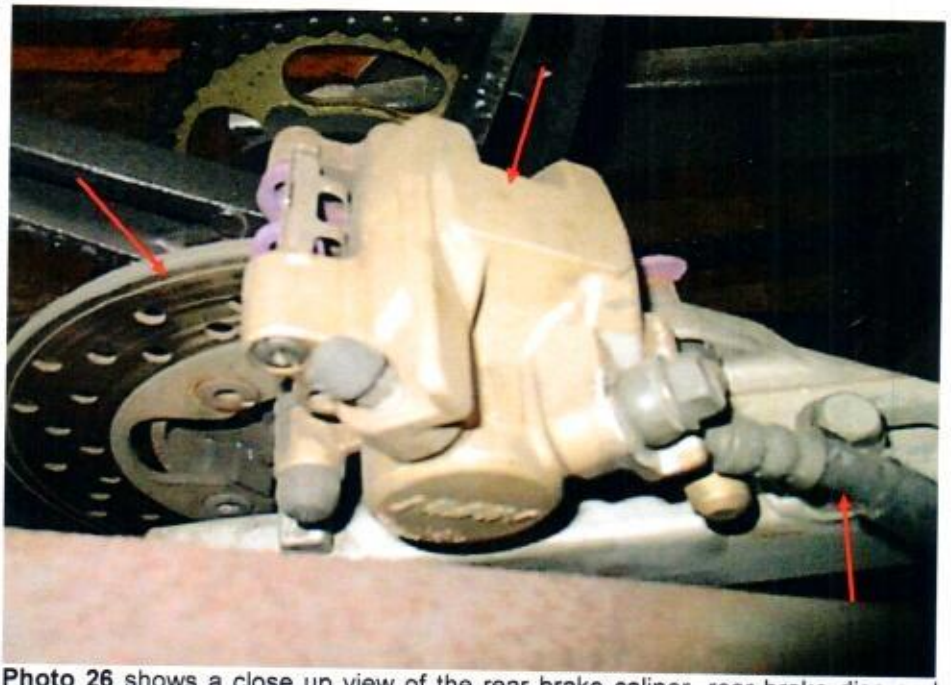


Photo 26 shows a close up view of the rear brake caliper, rear brake disc and rear brake hose (arrowed) of the Motorcycle, which are all part of the components in the hydraulic rear brake system of the Motorcycle. Our visual checks of these various components had revealed all to be intact with no visible damage. No leakage of brake fluid was also observed.

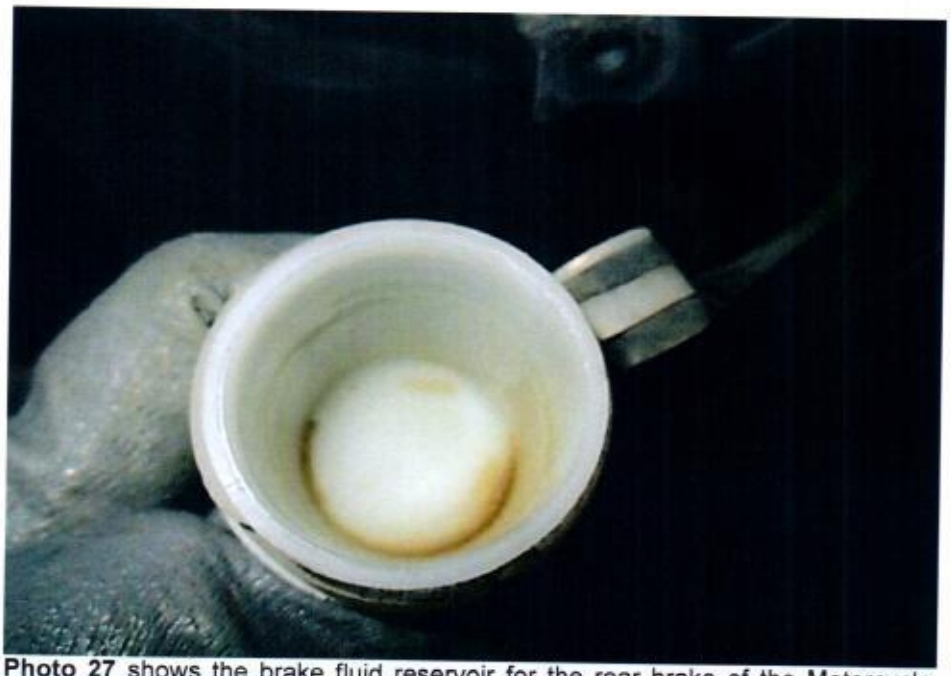


Photo 27 shows the brake fluid reservoir for the rear brake of the Motorcycle. The rear brake fluid reservoir was observed to be empty at the time of our inspection.

Conclusion

17. 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. The braking system of the Motorcycle was observed to be in serviceable condition.

18. 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.

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