

Your Ref: TP/IP/10473/2021
Our Ref : CI/TPD21008295/N

5 August 2021

Fatal Accident Investigation Team

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

MECHANICAL INSPECTION REPORT OF MOTORCYCLE FBN 2822J

1. We refer to your request on 11 May 2021 to conduct a physical inspection of a motorcycle bearing registration number FBN 2822J (herein referred to as "**Motorcycle**"), which was involved in a fatal road traffic accident on 27 February 2021.
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 2 August 2021 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.

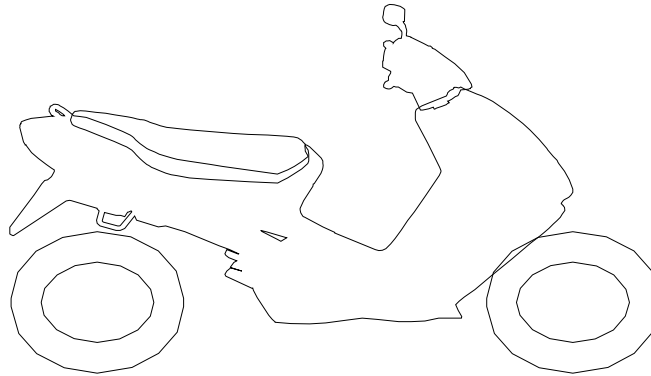
General Condition

4. The mileage of the Motorcycle could not be recorded at the time of our inspection as the engine could not be started due to a jammed gear shift pedal.
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 wheel rim, front mudguard, left side mirror, clutch lever, side cowlings, gear shift pedal and left front footrest, 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:-



Pirelli 100/80 - 17 (3mm)

Pirelli 80/90 - 17 (4mm)
(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 – 13 below.



Photo 1 shows the mileage of the Motorcycle which could not be recorded at the time of our inspection as the engine could not be started due to a jammed gear shift pedal (arrowed).



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 right 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 cowling, front fork assembly, front wheel rim, front mudguard, left side mirror, clutch lever, side cowlings, gear shift pedal and left front footrest, 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 damage as a result of the accident (arrowed).



Photo 5 shows a closer view of the front cowling which was 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 left side mirror, clutch lever and left handlebar end of the Motorcycle (arrowed). 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 right cowling 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 missing left cowling of the Motorcycle that as a result of the accident.



Photo 10 shows the dented rear number plate of the Motorcycle as a result of the accident (arrowed).



Photo 11 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 4mm. 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 12 shows a close up view of the deflated front tyre due to the broken front wheel rim of the Motorcycle at the time of our inspection (arrowed).



Photo 13 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 14 – 17 below.



Photo 14 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 15 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 16 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 17 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 fork assembly. The front forks were found to be bent inwards 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. The brake fluid for the front brake and rear brake was also found to be of sufficient level for operational purposes and without any contamination.

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 on the brake pedal. This would indicate that there was no leakage of pressure/vacuum in the brake system.
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 18 – 23 below.

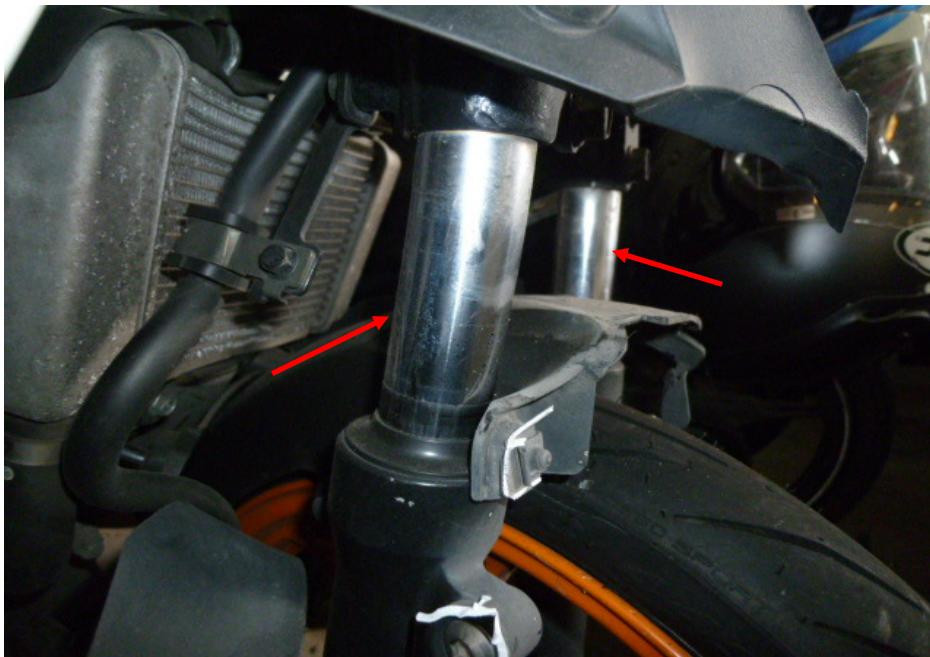


Photo 18 shows the front forks of the Motorcycle. The front forks were observed to be bent inwards as a result of the accident (arrowed). We were hence not able to conduct any tests on the steering system of the Motorcycle.

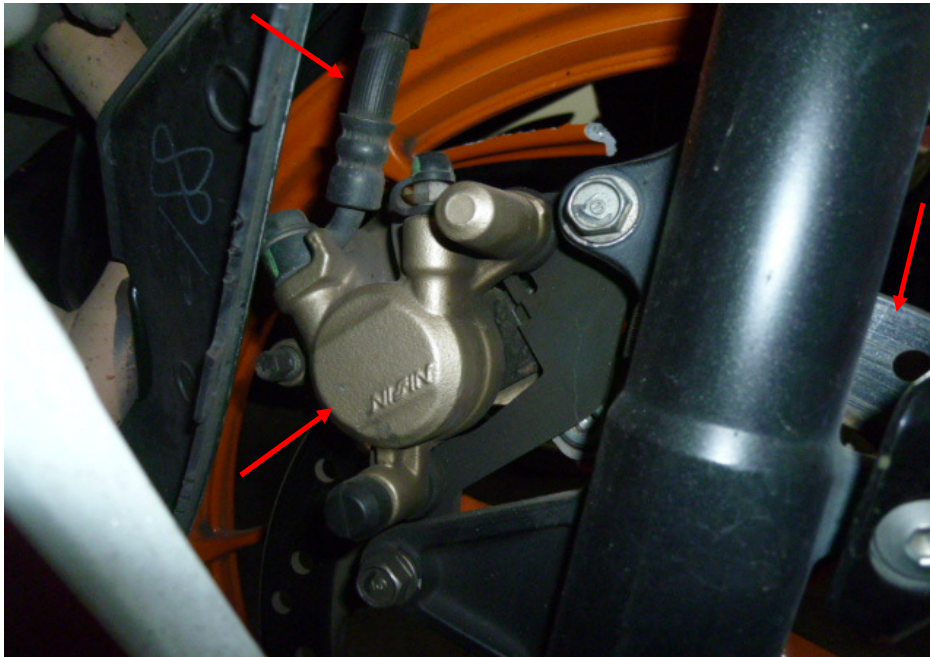


Photo 19 shows a close up view of the front brake caliper, front brake disc and front brake hose (arrowed) of the Motorcycle, which are all part of the components in the hydraulic front brake system of the Motorcycle. Our visual checks of these various components had revealed all to be intact with no visible damage. No leakage of brake fluid was also observed.



Photo 20 shows the brake fluid reservoir for the front brake of the Motorcycle. The brake fluid was observed to be of sufficient level for operational purposes and without contamination.



Photo 21 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.

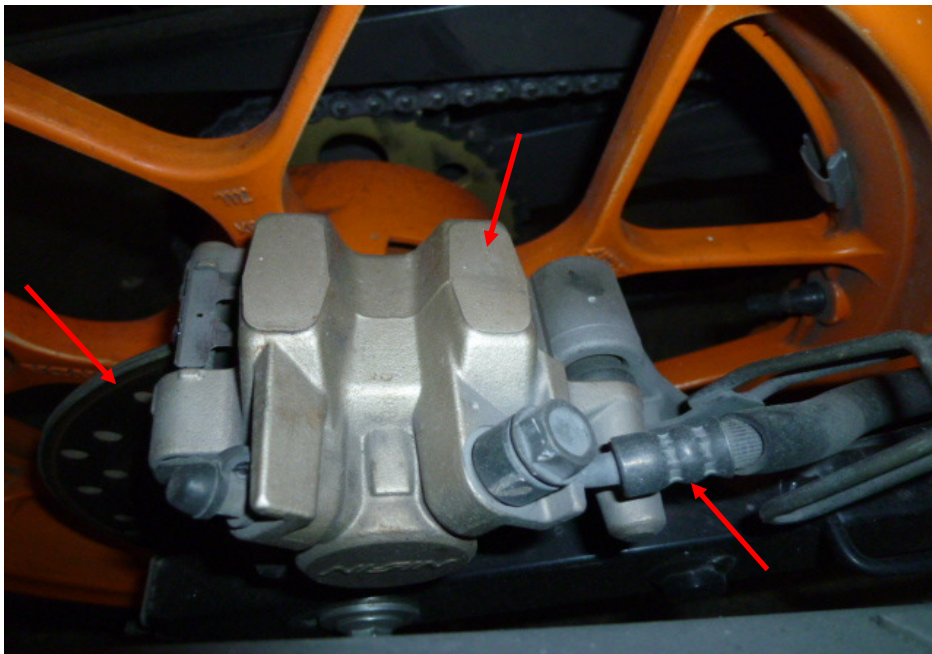


Photo 22 shows a close up view of the rear brake caliper, rear brake disc and rear brake hose (arrowed) of the Motorcycle, which are all part of the components in the hydraulic rear brake system of the Motorcycle. Our visual checks of these various components had revealed all to be intact with no visible damage. No leakage of brake fluid was also observed.



Photo 23 shows the brake fluid reservoir for the rear brake of the Motorcycle. The brake fluid was observed to be of sufficient level for operational purposes and without contamination.

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. The 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 with remaining tread depth of approximately 4mm and 3mm. This had included the deflated front tyre.

**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)*

DISCLAIMER OF LIABILITY TO THIRD PARTIES:- This Report is made solely for the use and benefit of the Client named on the front page of this Report. No liability or responsibility whatsoever, in contract or tort, is accepted to any third party who may rely on the Report wholly or in part. Any third party acting or relying on this Report, in whole or in part, does so at his or her own risk.