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Our Ref : CI/TPD21000488/N

3 March 2021

Fatal Accident Investigation Team

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

INSPECTION REPORT OF MOTORCYCLE FBR 1272G

1. We refer to your request dated 5 January 2021 to conduct a physical inspection of a motorcycle bearing registration number FBR 1272G herein referred to as "**Motorcycle**"), which was involved in a fatal road traffic accident on 18 December 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 3 March 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 recorded at the time of our inspection was 14, 838km.
5. The Motorcycle was observed to have sustained damages all around. The body parts that were found to have been damaged include its head cowlings, side mirrors, side cowlings, front mudguard, brake levers, drive train cover, bottom cowlings, rear side covers and top box, amongst others as a result of the accident. 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 14, 838km (circled).



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. The body parts that were found to have been damaged include its head cowling, side mirrors, side cowlings, front mudguard, brake levers, drive train cover, bottom cowlings, rear side covers and top box, amongst others as a result of the accident.



Photo 4 shows a closer view of the grazed head cowling (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 front mudguard (circled) 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 brake lever, right side mirror and right handlebar end of the Motorcycle which were observed to be damaged due to the accident (arrowed).



Photo 7 shows a closer view of the right 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 8 shows a closer view of the cracked right bottom cowling of the Motorcycle as a result of the accident.



Photo 9 shows a closer view of the deformed left rear side cover (circled) of the Motorcycle at the time of our inspection.



Photo 10 shows a closer view of the left 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 11 shows a closer view of the rear brake lever, left side mirror and left handlebar grip of the Motorcycle which were observed to be damaged due to the accident (arrowed).



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



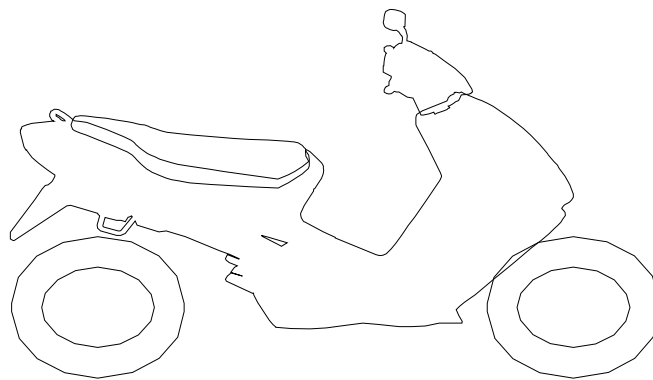
Photo 13 show a closer view of the left bottom cowling of the Motorcycle which was observed to be damaged due to the accident.



Photo 14 shows a closer view of the grazed right rear side cover (circled) of the Motorcycle at the time of our inspection.

Tyres and Wheel Rims

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



Dunlop 110/70 - 14 (3mm)

IRC 110/80 - 14 (3mm)

7. 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 15 & 16 below.



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. 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 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

8. 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.
9. The drive train cover of the Motorcycle had sustained damages of grazing nature as a result of the accident however the engine components were still intact. There was no visible tear or cut observed on the connecting hoses and cables. The shock absorbers of the Motorcycle were also found to be intact without any misalignment. See photos 17 - 20 below.



Photo 17 shows the radiator of the Motorcycle at the time of our inspection. The radiator was found to be intact with no visible damage. There was also no sign(s) or indication(s) of fluid leak observed around the radiator of the Motorcycle.



Photo 18 shows the drive train cover of the Motorcycle which had sustained damages of grazing nature as a result of the accident (circled) however the engine components were still intact.



Photo 19 shows the left shock absorber of the Motorcycle which was found to be intact without any misalignment.

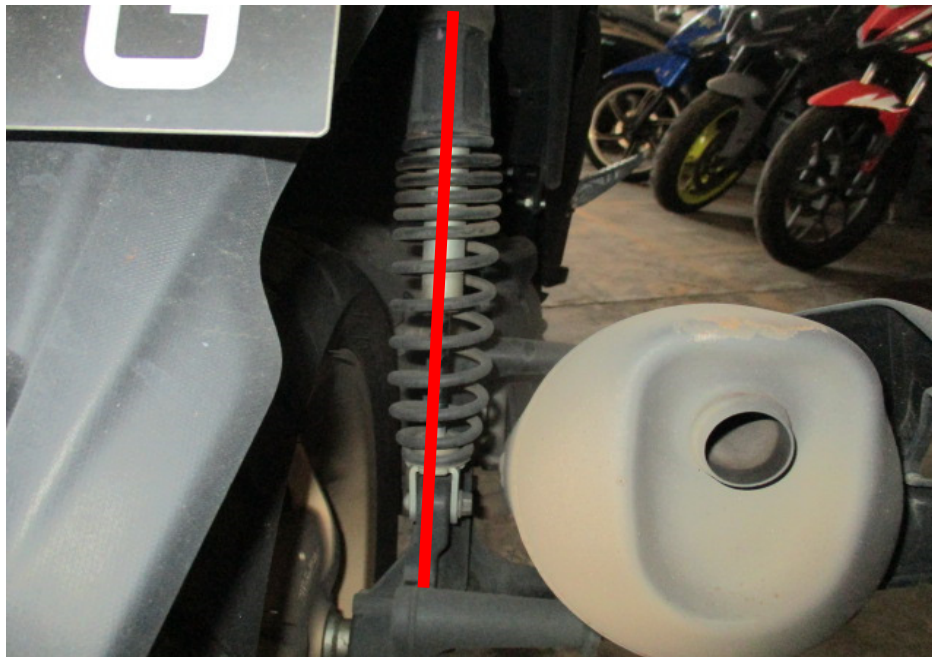


Photo 20 shows the right shock absorber of the Motorcycle which was found to be intact without any misalignment.

Steering System & Braking System

10. Our checks on the various steering components of the Motorcycle had revealed that its steering system was in serviceable condition. Its front forks and fork brackets were both found to be intact and undamaged. Turning the handle bar towards the left and right also did not produce any abnormal free play and/or resistance.
11. 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 left hand 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 without any contamination and of sufficient level for operating purposes. There was also no visible tear or cut observed on the connecting hoses and cables. However, the right hand brake lever was observed to be broken as a result of the accident.

12. We were unable to conduct static brake tests on the front braking system of the Motorcycle due to the broken right hand lever. Hence we were unable to indicate if there was any leakage of pressure/vacuum in the front brake system.
13. 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 the front brake and 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 depressing the left hand brake lever. However the front wheel of the Motorcycle was unable to stop rotating immediately upon depressing the right hand brake lever.
14. In general, the observations gathered during the brake test had indicated that only the rear braking system of the Motorcycle was in serviceable condition. See photos 21 – 27 below.



Photo 21 shows the front forks (arrowed) of the Motorcycle. The front forks and fork brackets of the Motorcycle were both found to be intact and undamaged. Turning the Motorcycle's handle bar towards the left and right did not produce any abnormal free play and/or resistance. The steering system of the Motorcycle was in serviceable condition at the time of our inspection.



Photo 22 shows the front wheel of the Motorcycle turned towards its full right. Turning the Motorcycle's handle bar towards the left and right did not produce any abnormal free play and/or resistance. This would indicate that the steering system of the Motorcycle was in serviceable condition at the time of our inspection.



Photo 23 shows the front wheel of the Motorcycle turned towards its full left. Turning the Motorcycle's handle bar towards the left and right did not produce any abnormal free play and/or resistance. This would indicate that the steering system of the Motorcycle was in serviceable condition at the time of our inspection.

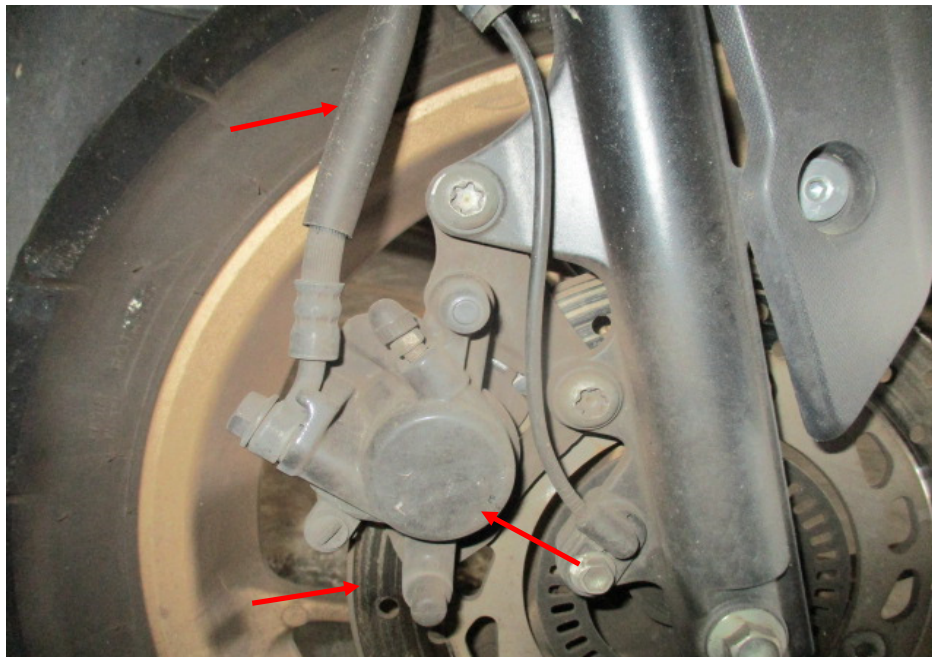


Photo 24 shows a close up view of the front brake caliper, front brake disc and front brake hose (arrowed) of the Motorcycle, which are all part of the components in the hydraulic front brake system of the Motorcycle. Our visual checks of these various components had revealed all to be intact with no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

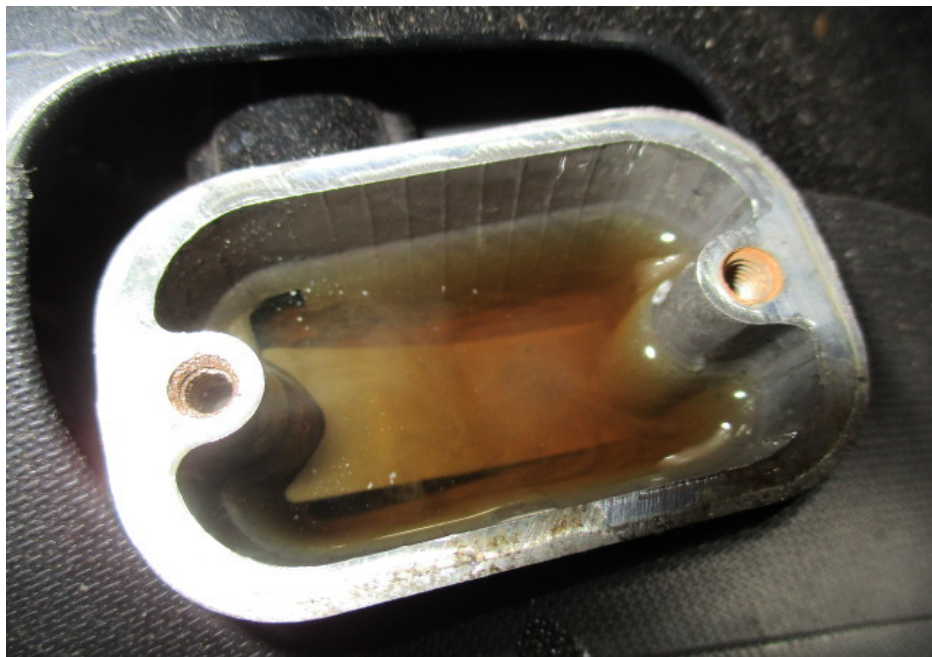


Photo 25 shows a close up view of the brake fluid reservoir for the front brake of the Motorcycle. The brake fluid was observed to be of sufficient level and without contamination for operational purposes.



Photo 26 shows the broken right hand brake lever as a result of the accident (arrowed). We were unable to conduct static brake tests on the front braking system of the Motorcycle due to the broken right hand lever. Hence we were unable to indicate if there was any leakage of pressure/vacuum in the front brake system.

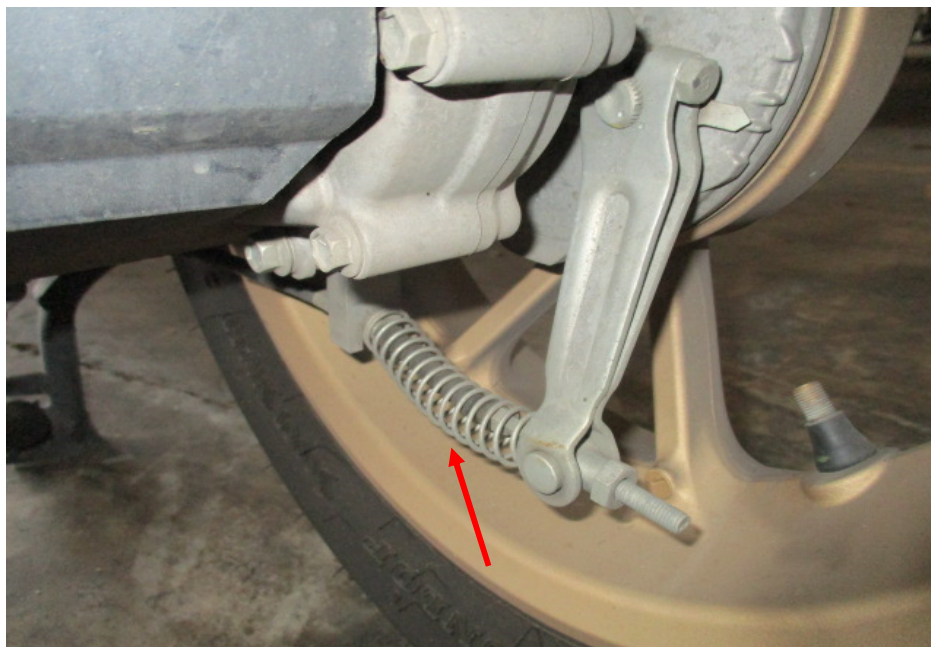


Photo 27 shows the rear wheel of the Motorcycle. The type of brake system for the rear wheel was of a mechanical type, controlled by the brake foot pedal of the Motorcycle. Our checks of the cable (arrowed), spring and drum which are all part of the components in the rear brake system of the Motorcycle reveal all to be intact and without damage.

Conclusion

15. Basing on our physical inspection of the Motorcycle, it appears that the steering system and rear braking system of the Motorcycle were all in serviceable condition. However the front braking system of the Motorcycle was damaged as a result of the accident.
16. The tyres of the Motorcycle were found to be in a 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 tyres. It was sufficiently inflated for vehicular operation with remaining tread depth of approximately 3mm each.



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