

Your Ref: TP IP/04948/2023
Our Ref : CI/TPD23005726/N

20 June 2023

Fatal Accident Investigation Team

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

INSPECTION REPORT OF MOTORCYCLE FY 1785J

1. We refer to your request dated 7 March 2023 to conduct a physical inspection of a motorcycle bearing registration number FY 1785J (herein referred to as "**Motorcycle**"), which was involved in a fatal road traffic accident on 16 February 2023.
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 19 June 2023 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.

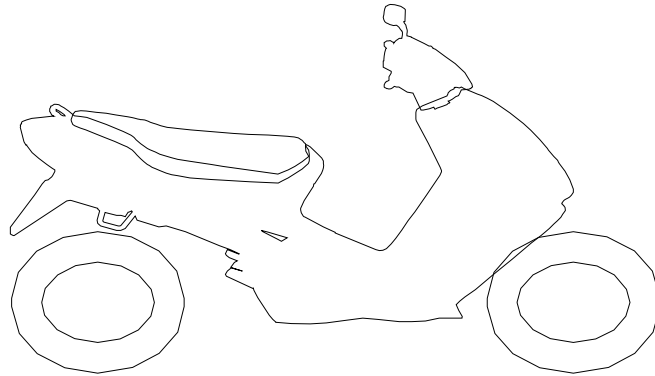
General Condition

4. The mileage of the Motorcycle at the time of our inspection was 230, 658km.
5. The Motorcycle was observed to have sustained damages at its frontal portion and right body. The body parts that were found to have been damaged include its headlight, front mudguard, right handlebar end, front brake lever, petrol tank and right engine crashbar, 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:-



Michelin 180/55 - 17 (8mm)

Michelin 120/70 - 17 (6mm)

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 – 15 below.



Photo 1 shows the speedometer gauge of the Motorcycle where the mileage recorded at the time of our inspection was 230, 658km (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 at its frontal portion and right body.



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 at its frontal portion and right body. The body parts that were found to have been damaged include its headlight, front mudguard, right handlebar end, front brake lever, petrol tank, and right engine crashbar, amongst others.



Photo 4 shows a closer view of the broken headlight (arrowed) and broken right front signal lamp (circled) of the Motorcycle as a result of the accident.



Photo 5 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 (arrowed).



Photo 6 shows a closer view of the front brake lever, right side mirror and right handlebar end (arrowed) which were amongst the body parts at the front body of the Motorcycle that had sustained damage as a result of the accident.

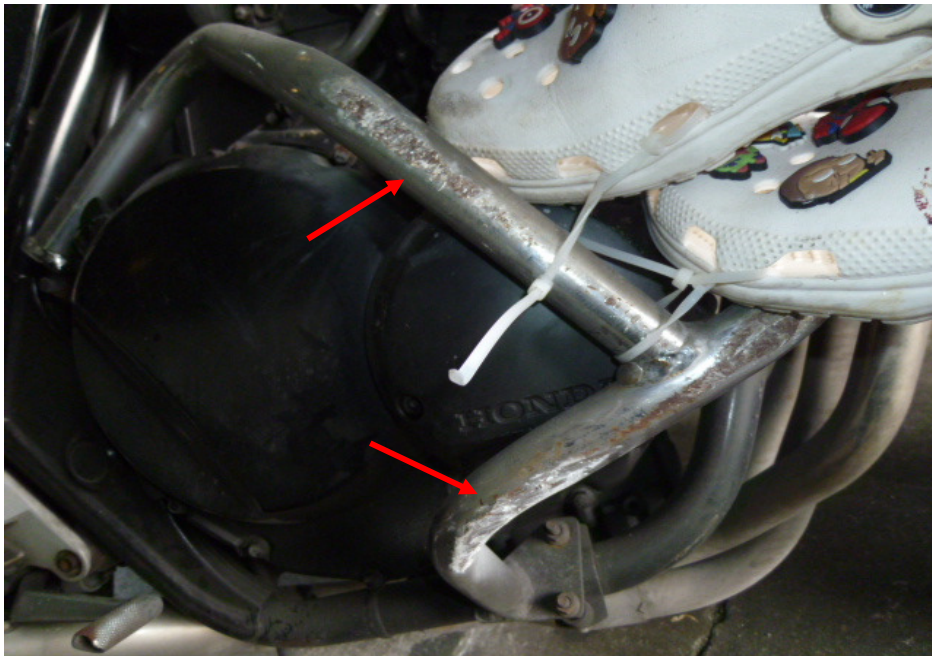


Photo 7 shows the grazed right engine crashbar of the Motorcycle as a result of the accident (arrowed).



Photo 8 shows the bent handlebar of the Motorcycle (arrowed) at the time of our inspection.



Photo 9 shows the dented petrol tank (arrowed) of the Motorcycle as a result of the accident.



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



Photo 11 shows the cracked right rear side cover (arrowed) of the Motorcycle as a result of the accident.



Photo 12 shows a closer view of the dented rear number plate (arrowed) of the Motorcycle as a result of the accident.



Photo 13 shows a closer view of the grazed exhaust muffler guard (arrowed) which was amongst the body parts at the rear body of the Motorcycle that had sustained damage as a result of the accident.



Photo 14 shows the front tyre of the Motorcycle at the time of our inspection. The front tyre was observed to be in serviceable condition with remaining tread depth of approximately 6mm. The pattern of the tread was also clearly visible. 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 15 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 8mm. 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 train which rotates the rear wheel of the Motorcycle was found to be intact without any misalignment. It was also adequately lubricated for operating purposes. See photos 16 – 19 below.



Photo 16 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 17 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 18 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.

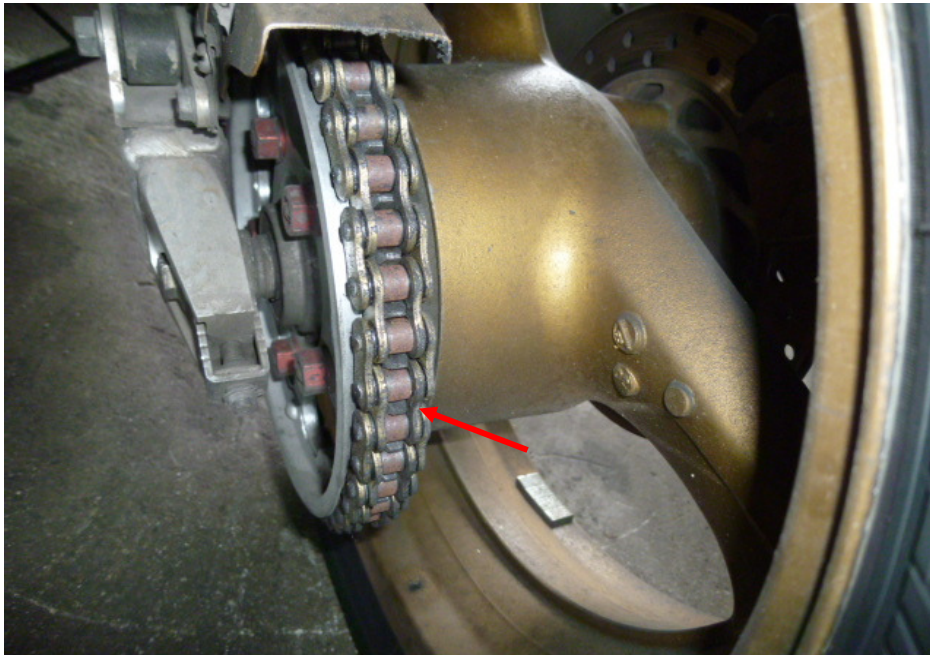


Photo 19 shows a closer view of the gear train (arrowed) of the Motorcycle, which was observed to be intact with no misalignment. It was also adequately lubricated for operating purposes.

Steering System & Braking System

11. Our checks on the various steering components of the Motorcycle revealed that its steering system was in serviceable condition. Its front forks were 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.
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 calipers and rear brake caliper of the Motorcycle.

14. The front brake fluid reservoir was found to be empty. Upon closer examination, we observed the reservoir hose was detached from the front brake master cylinder as a result of the accident. The brake fluid for the rear brake was found to be of sufficient level for operational purposes and without any contamination.
15. For this case, we were not able to determine whether the front braking system of the Motorcycle was in serviceable condition. The accident had caused the throttle cable housing of the Motorcycle to rotate. Hence we were unable to fully depress the front brake lever to determine if there was any resistance felt (spongy like feel) and if there is any 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 rear braking system. This was done by manually pushing the Motorcycle forward and backward, simulating the Motorcycle in motion, and thereafter engaging the 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.
18. In general, the observations gathered during the brake test had indicated that the rear braking system of the Motorcycle was in serviceable condition. See photos 20 – 29 below.

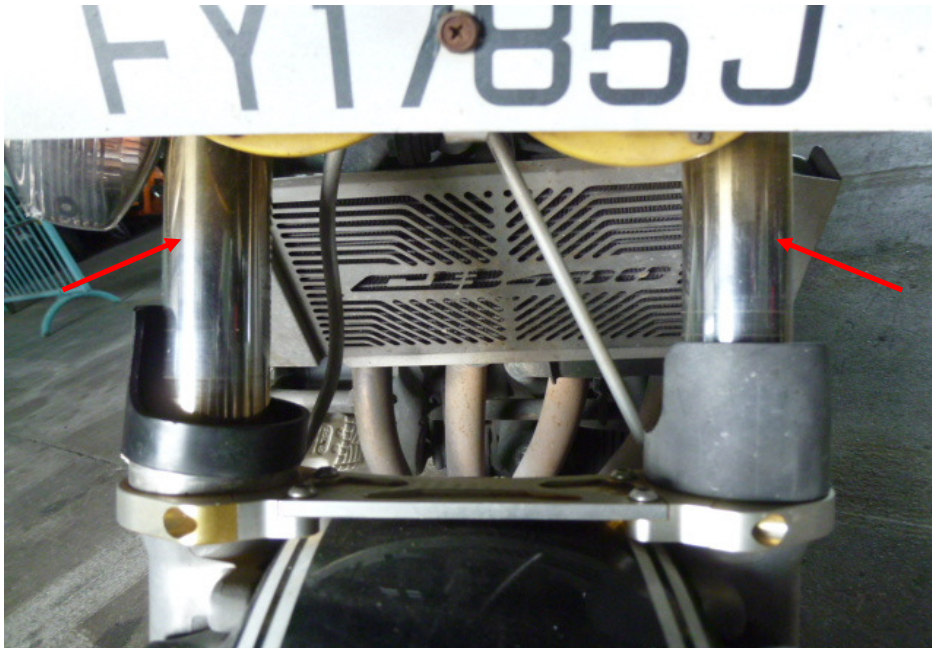


Photo 20 shows the front fork (arrowed) of the Motorcycle. The front fork and fork bracket of the Motorcycle were both found to be intact and undamaged. Turning the Motorcycle's handle bar towards the left and right did not produce any abnormal free play and/or resistance. The steering system of the Motorcycle was in serviceable condition at the time of our inspection.



Photo 21 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 22 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.

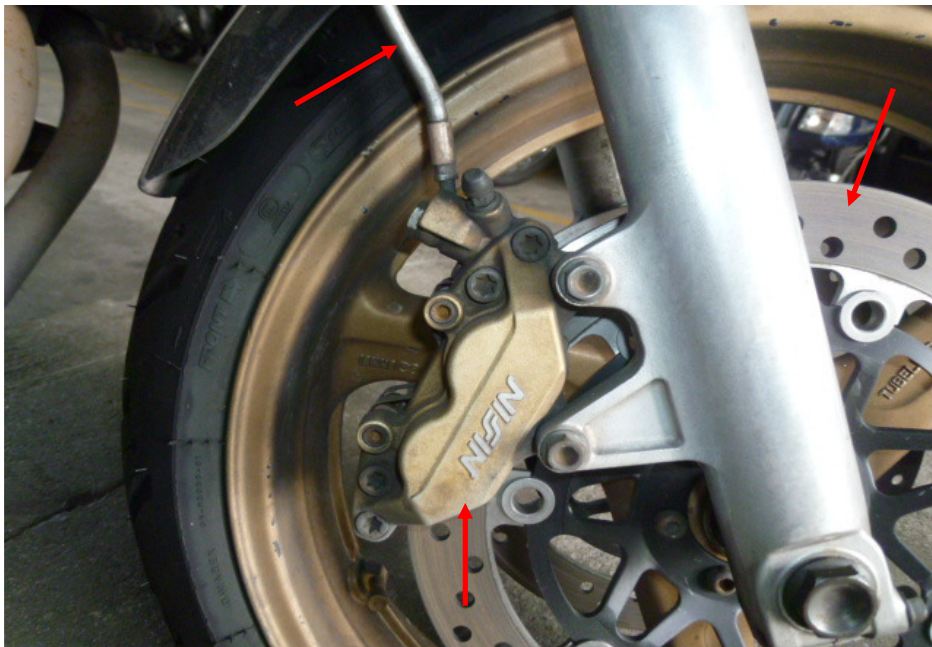


Photo 23 shows a close up view of the front brake caliper, front brake disc and front brake hose (arrowed) at the right side of the Motorcycle's front wheel, which are all part of the components in the hydraulic front brake system of the Motorcycle. Our visual checks of these various components had revealed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

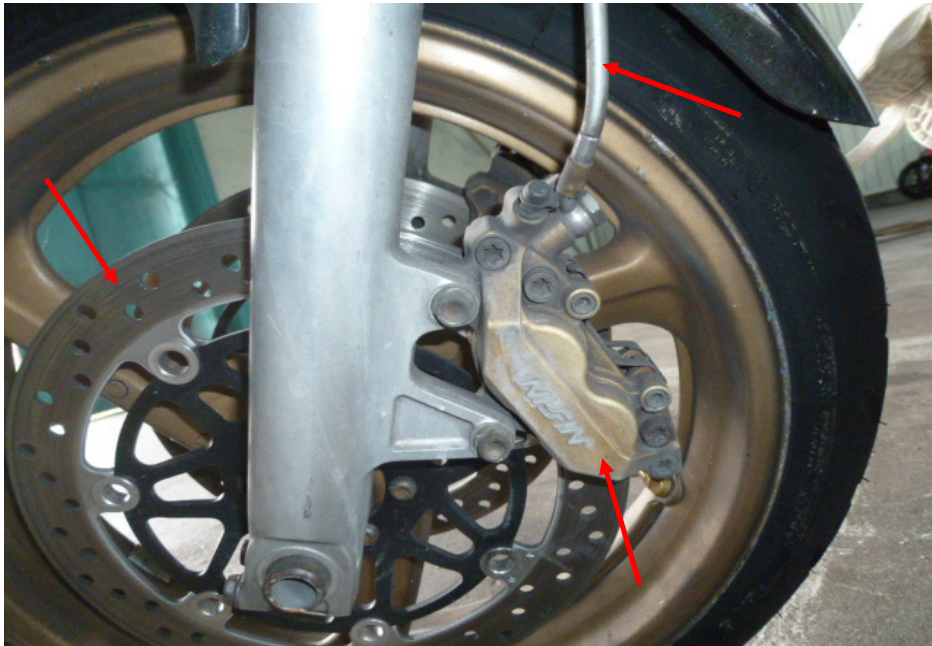


Photo 24 shows a close up view of the front brake caliper, front brake disc and front brake hose (arrowed) at the left side of the Motorcycle's front wheel, which are all part of the components in the hydraulic front brake system of the Motorcycle. Our visual checks of these various components had revealed 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 was observed to be of insufficient level for operational purposes (arrowed).



Photo 26 shows upon closer examination, we observed the reservoir hose was detached from the front brake master cylinder (arrowed) as a result of the accident.

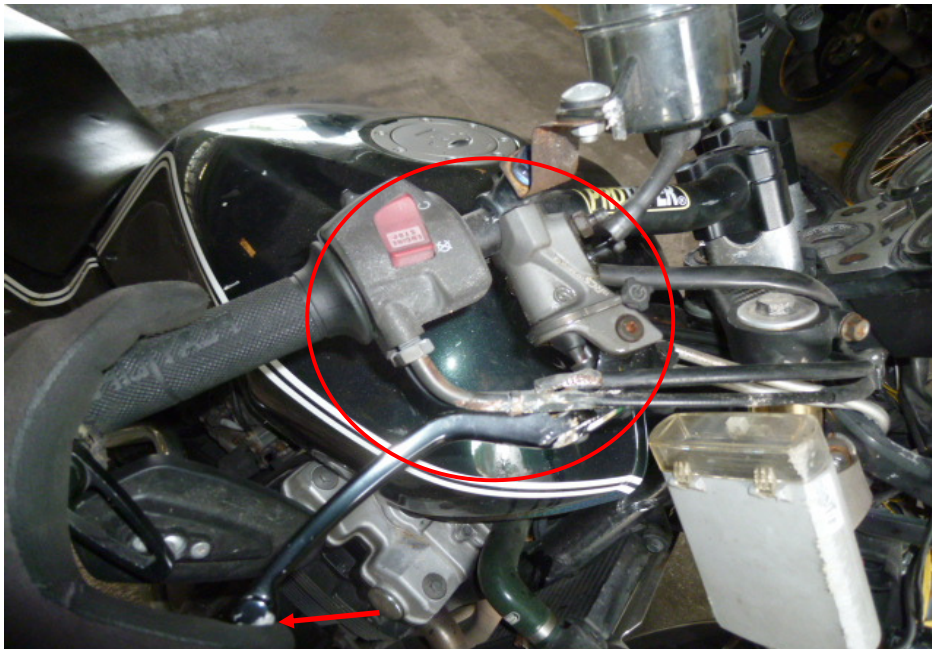


Photo 27 shows the front brake lever being depressed (arrowed). We were not able to determine whether the front braking system of the Motorcycle was in serviceable condition. The accident had caused the throttle cable housing of the Motorcycle to rotate (circled). Hence we were unable to fully depress the front brake lever to determine if there was any resistance felt (spongy like feel) and if there is any leakage of pressure/vacuum in the front brake system.



Photo 28 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 29 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 any contamination.

Conclusion

19. 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 front braking system was damaged as a result of the accident. The steering system and rear braking system of the Motorcycle was observed to be in serviceable condition.
20. 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 6mm and 8mm.

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