

Your Ref: TPIP/05401/2023
Our Ref : CI/TPD23005739/N

14 June 2023

Fatal Accident Investigation Team

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

INSPECTION REPORT OF MOTORCYCLE JSH 6448

1. We refer to your request dated 7 March 2023 to conduct a physical inspection of a motorcycle bearing registration number JSH 6448 (herein referred to as "**Motorcycle**"), which was involved in a fatal road traffic accident on 21 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 13 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.

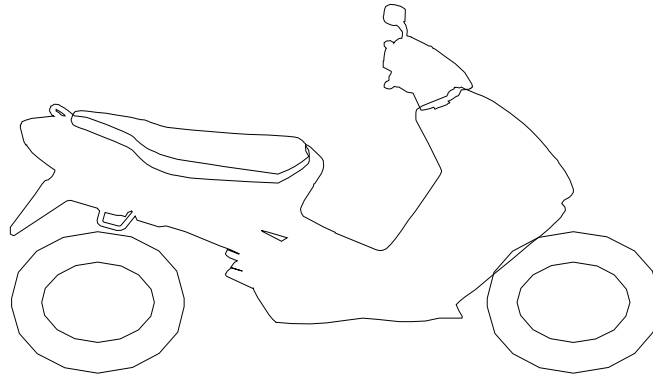
General Condition

4. The mileage of the Motorcycle could not be recorded at the time of our inspection due to unavailability of the ignition key.
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, headlight, side cowlings, left side mirror, clutch lever, left handlebar end, rear brake pedal, right front footrest and rear side covers, 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:-



Maxxis 120/70 - 17 (1mm)

Michelin 90/80 - 17 (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 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. The mileage of the Motorcycle could not be recorded at the time of our inspection due to unavailability of the ignition key.



Photo 2 shows a general view of the left body 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.



Photo 4 shows a general view of the rear portion 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 cowlings, headlight, side cowlings, left side mirror, clutch lever, left handlebar end, rear brake pedal, right front footrest and rear side covers, amongst others.



Photo 5 shows a closer view of grazed front cowlings (arrowed) of the Motorcycle at the time of our inspection.



Photo 6 shows the head cowling and headlight (arrowed), which was amongst the body parts of the Motorcycle that had sustained damage at the time of our inspection.



Photo 7 shows a closer view of grazed front mudguard (arrowed) of the Motorcycle at the time of our inspection.



Photo 8 shows the left handlebar end, clutch lever and left side mirror (arrowed), which were amongst the body parts of the Motorcycle that had sustained damage at the time of our inspection.



Photo 9 shows a closer view of grazed left cowling and dislodged left front signal lamp (arrowed) of the Motorcycle at the time of our inspection.



Photo 10 shows a closer view of grazed right cowling (arrowed) of the Motorcycle at the time of our inspection.



Photo 11 shows a closer view of the grazed right rear side cover of the Motorcycle at the time of our inspection (arrowed).



Photo 12 shows a closer view of the grazed left rear side cover of the Motorcycle at the time of our inspection (arrowed).



Photo 13 shows the rear brake pedal and right front footrest of the Motorcycle that had sustained damage at the time of our inspection (arrowed).



Photo 14 shows a closer view of the broken top box of the Motorcycle at the time of our inspection.



Photo 15 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 3mm. 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 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 1mm. 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 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 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 20 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 fork assembly was 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 caliper and rear brake caliper of the Motorcycle. The brake fluid for the front brake was observed to be of sufficient level for operational purposes. However it was found to be slightly contaminated. The brake fluid for the rear brake was 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. 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 front braking system. The front wheel of the Motorcycle was able to stop rotating immediately upon depressing the brake lever. However the rear wheel of the Motorcycle was unable to stop rotating upon stepping on the brake pedal. Upon closer examination, we observed leakage of brake fluid from the rear brake caliper of the Motorcycle every time the rear brake pedal was stepped on. See photos 21 – 30 below.



Photo 21 shows the front forks (arrowed) of the Motorcycle. The front forks 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. 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 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 right. Turning the Motorcycle's handle bar towards the 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 the brake fluid reservoir for the front brake of the Motorcycle. The brake fluid was observed to be of sufficient level for operational purposes. However it was found to be slightly contaminated (arrowed).



Photo 26 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 front brake system.

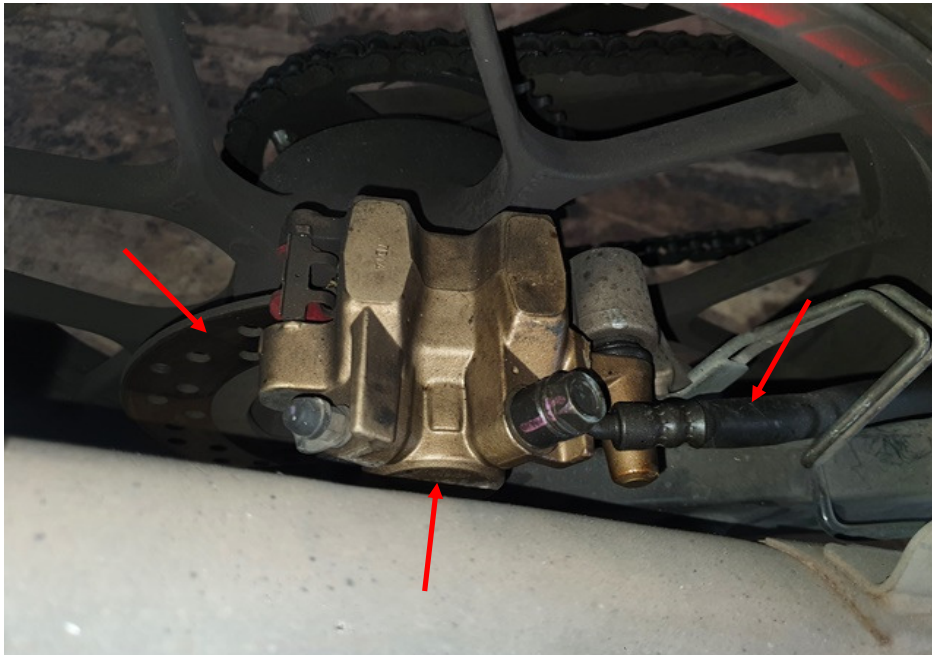


Photo 27 shows a close up view of the rear brake caliper, rear brake disc and rear brake hose (arrowed) of the Motorcycle, which are all part of the components in the hydraulic rear brake system of the Motorcycle. Our visual checks of these various components had revealed all to be intact with no visible damage. No leakage of brake fluid was also observed.



Photo 28 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.



Photo 29 shows the rear wheel of the Motorcycle which was unable to stop rotating upon stepping on the brake pedal during the operational test of the rear braking system. Upon closer examination, we observed leakage of brake fluid (circled) from the rear brake caliper (arrowed) of the Motorcycle.

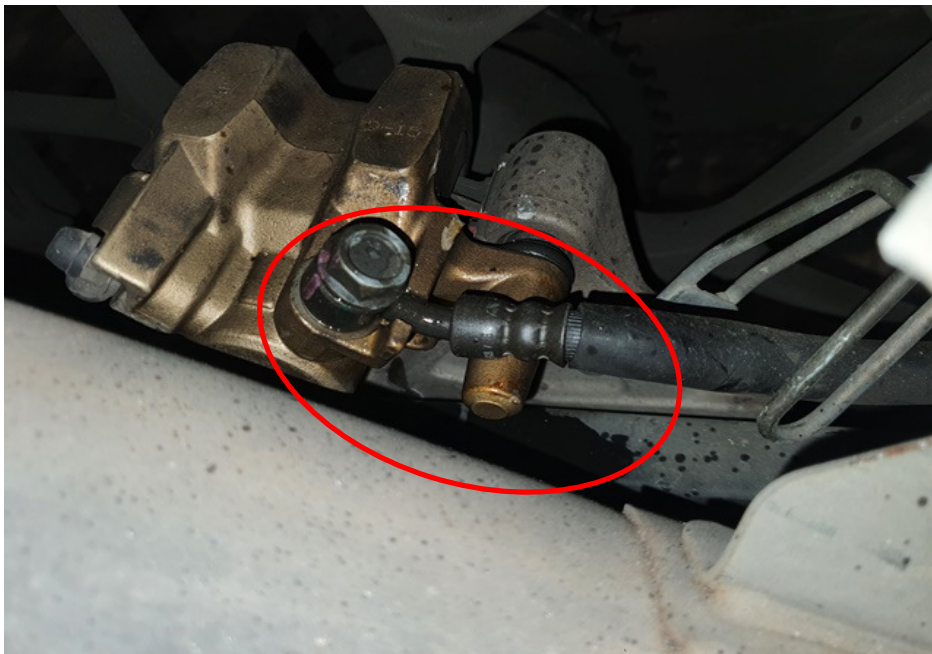


Photo 30 shows a close up view of the rear brake caliper of the Motorcycle. Upon closer examination, we observed leakage of brake fluid (circled) from the rear brake caliper of the Motorcycle every time the rear brake pedal was stepped on.

Conclusion

16. Basing on our physical inspection of the Motorcycle, it appears that the steering system and front braking system of the Motorcycle were all in serviceable condition. The rear braking system of the Motorcycle was observed not to be in serviceable condition.
17. 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 and 1mm.

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