

Your Ref: TP/IP/72439/2019
Our Ref : CI/TPD20000112/N

6 January 2020

Fatal Accident Investigation Team

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

INSPECTION REPORT OF MOTORCYCLE FBM 4089B

1. We refer to your request dated 12 December 2019 to conduct a physical inspection of a motorcycle bearing registration number FBM 4089B (herein referred to as "**Motorcycle**"), which was involved in a fatal road traffic accident on 21 November 2019.
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 6 January 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.

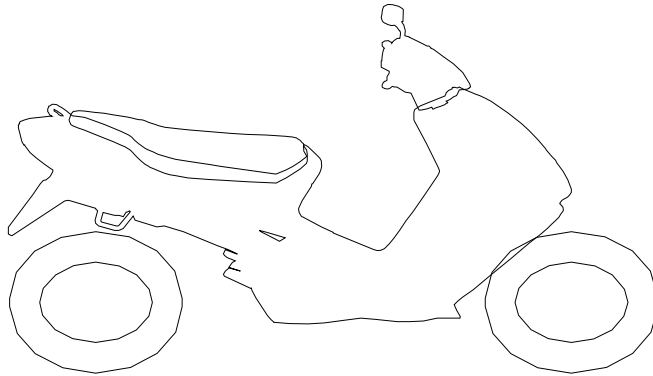
General Condition

4. The mileage of the Motorcycle at the time of our inspection was 38, 557km.
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, head cowling, right cowling, right handlebar end, front brake lever, rear brake pedal, right front footrest, petrol tank, right frame and rear exhaust muffler, 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:-



Bridgestone 190/55 - 17 (3mm)

Bridgestone 120/70 - 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 – 15 below.



Photo 1 shows the speedometer gauge of the Motorcycle where the mileage recorded at the time of our inspection was 38, 557km (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 left 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.



Photo 4 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. Amongst the body parts that were found to have been damaged include its headlight, head cowling, right cowling, right handlebar end, front brake lever, rear brake pedal, right front footrest, petrol tank, right frame and exhaust muffler, amongst others.



Photo 5 shows a close up view of the right front signal lamp which was amongst the body parts of the Motorcycle that had sustained damage as a result of the accident (circled).



Photo 6 shows a closer view of the head cowl which was amongst the body parts at the front body of the Motorcycle that had sustained damage as a result of the accident (circled).



Photo 7 shows a closer view of the right cowl 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 right frame slider of the Motorcycle that had sustained damages of grazing nature as a result of the accident (circled).



Photo 9 shows a closer view of the right handlebar end (yellow arrow) and front brake lever (circled) which were amongst the body parts of the Motorcycle that had sustained damage as a result of the accident.

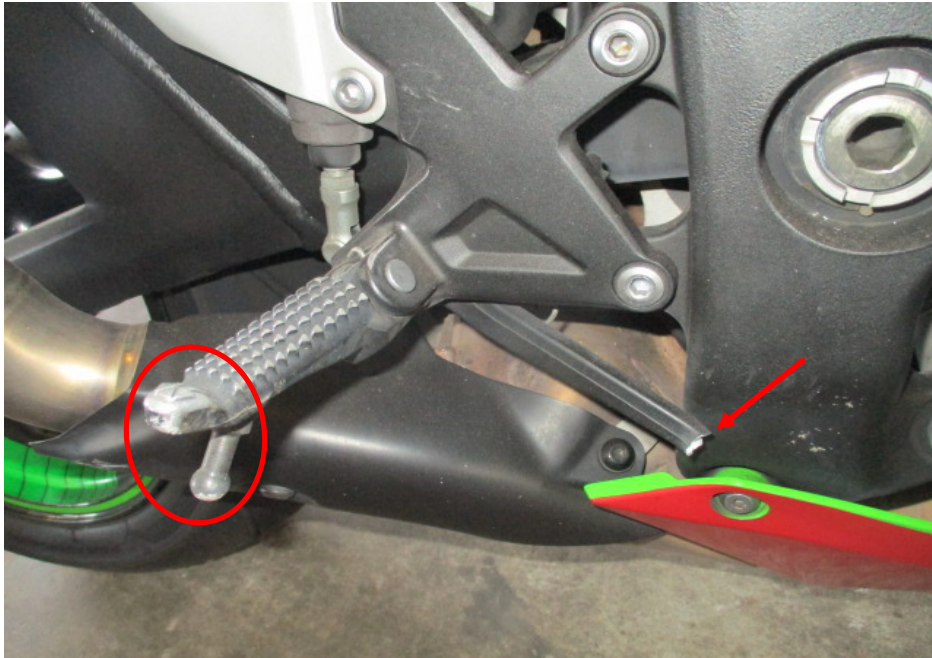


Photo 10 shows a closer view of the broken rear brake pedal (arrowed) and right front footrest (circled) which were amongst the body parts of the Motorcycle that had sustained damage as a result of the accident.



Photo 11 shows a closer view of the right frame 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 petrol tank which was amongst the body parts of the Motorcycle that had sustained damages of grazing nature as a result of the accident (circled).



Photo 13 shows a closer view of the rear exhaust muffler of the Motorcycle that had sustained damages of grazing nature as a result of the accident (circled).



Photo 14 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 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 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 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.

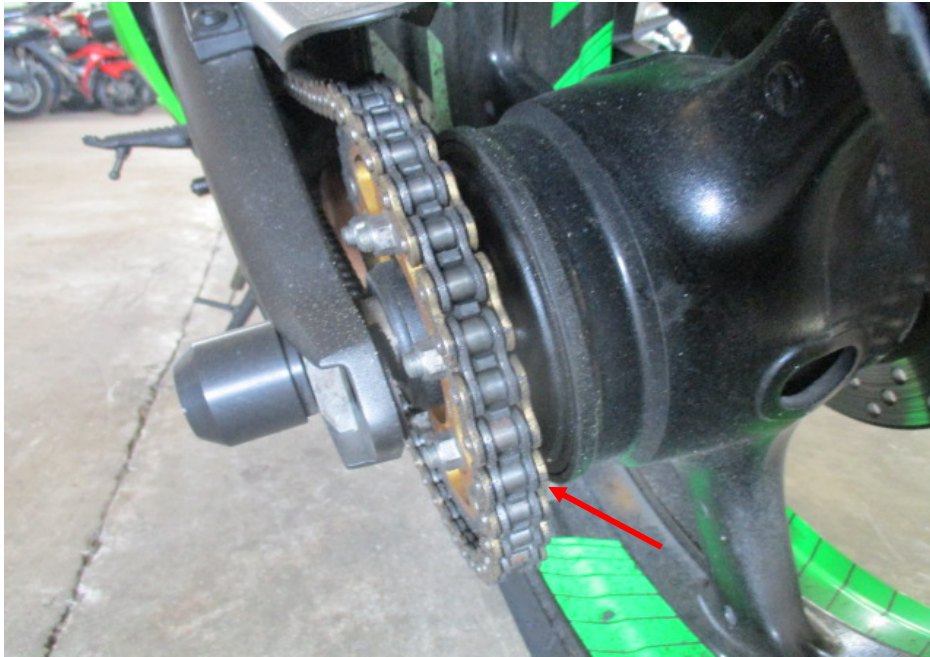


Photo 19 shows a closer view of the gear train (arrowed) of the Motorcycle, which was observed to be intact with no misalignment. It was also adequately lubricated for operating purposes.

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 fork 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 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. The brake fluid for the front brake and rear brake was also found to be of sufficiently level and without any contamination.

14. However we did observe that part of the brake foot pedal had broken off as a result of the accident. Hence static as well as operational brake tests could not be conducted on the Motorcycle's rear braking system. We were unable to determine if there was any leakage of pressure/vacuum in the rear braking system.
15. Static brake tests conducted on the Motorcycle had appear to indicate that the front braking system of the Motorcycle was in serviceable condition. There was some resistance felt (spongy like feel) upon pressing the brake lever. This would indicate that there was no leakage of pressure/vacuum in the front brake system.
16. We subsequently carried out an operational test of the Motorcycle's front braking system. This was done by manually pushing the Motorcycle forward and backward, simulating the Motorcycle in motion, and thereafter engaging the front 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. See photos 20 – 28 below.

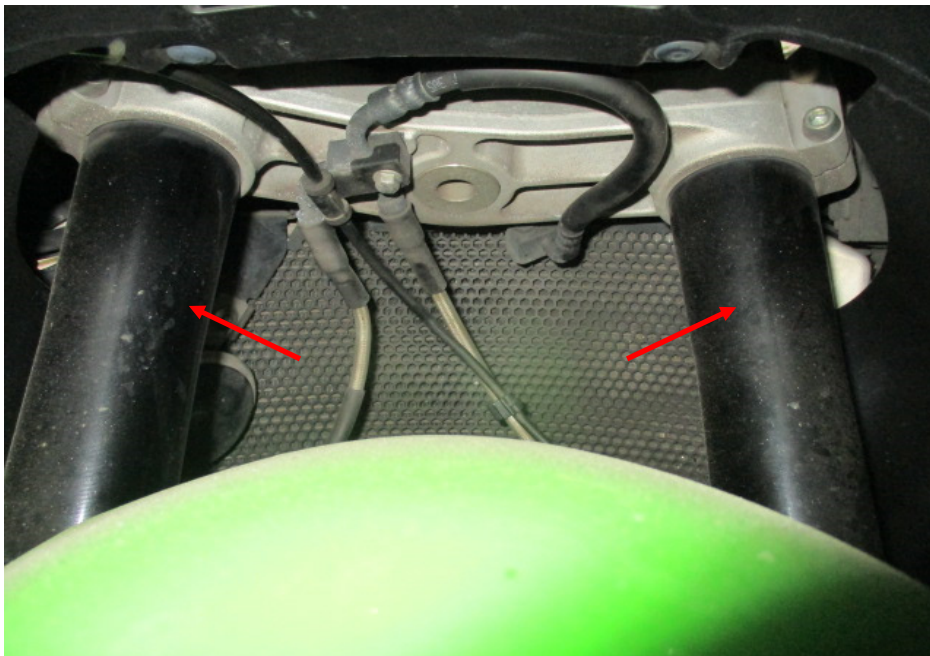


Photo 20 shows the front fork (arrowed) of the Motorcycle. The front fork and fork bracket of the Motorcycle were both found to be intact and undamaged. Turning the Motorcycle's handle bar towards the left and right did not produce any abnormal free play and/or resistance. The steering system of the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



Photo 21 shows the front wheel of the Motorcycle turned towards its full 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 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.

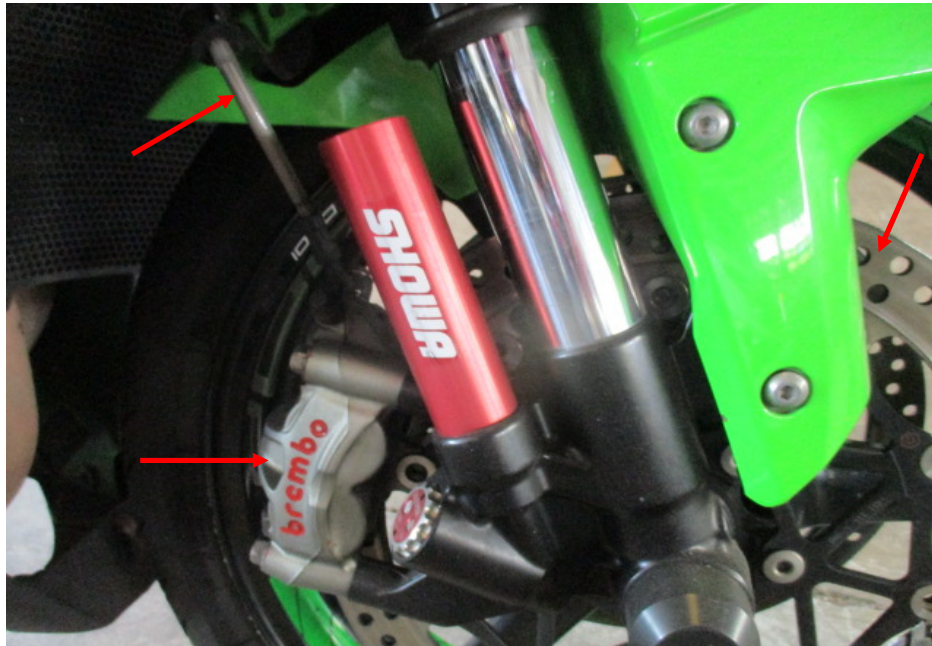


Photo 23 shows a close up view of the front brake caliper, front brake disc and front brake hose (arrowed) at the right side of the Motorcycle's front wheel, which are all part of the components in the hydraulic front brake system of the Motorcycle. Our visual checks of these various components had revealed 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.

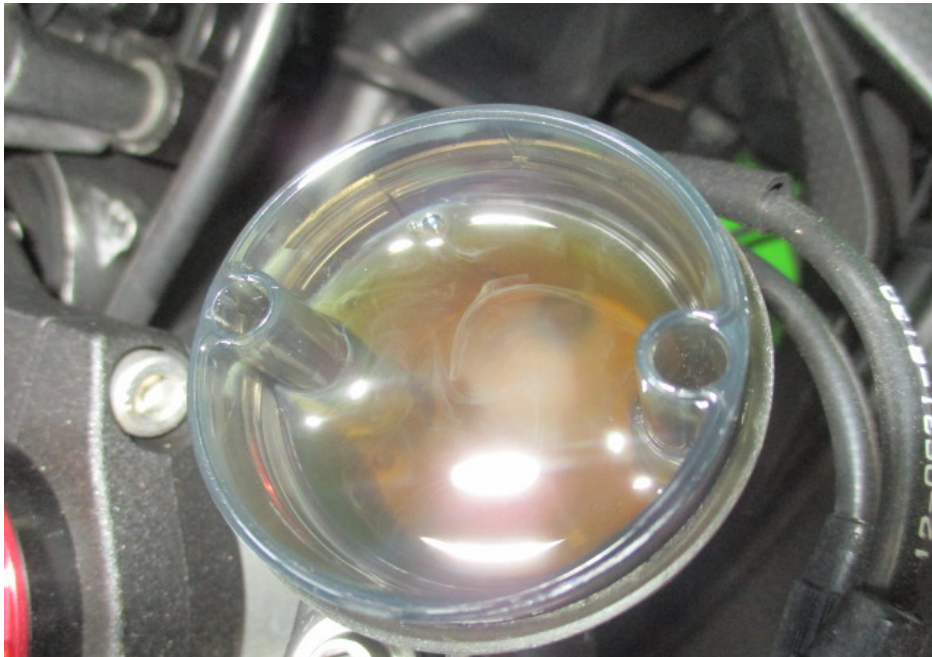


Photo 25 shows the brake fluid reservoir for the front brake of the Motorcycle. The brake fluid was observed to be of sufficient level and without contamination for operational purposes.

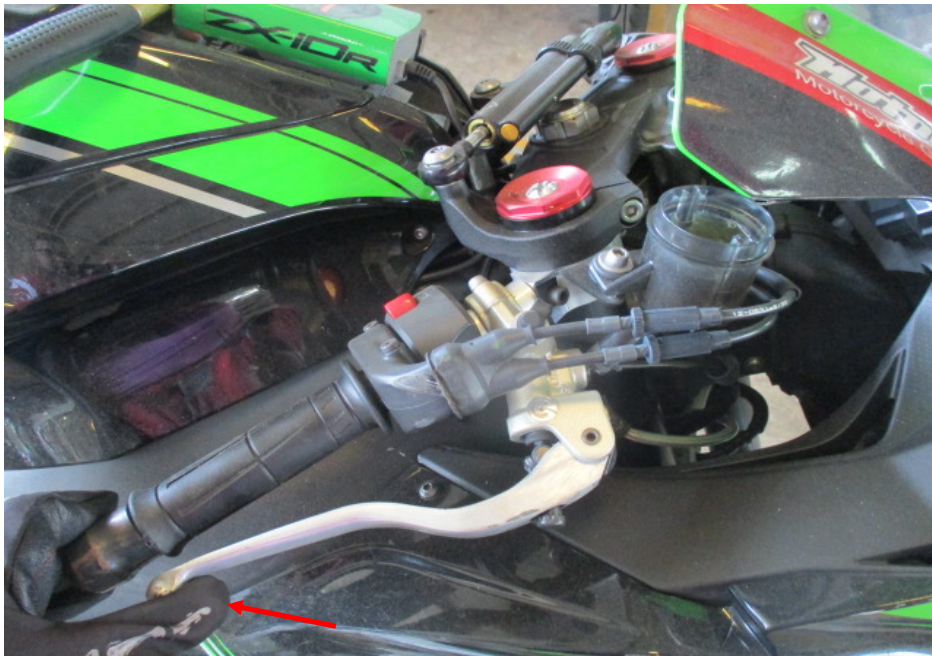


Photo 26 shows the front brake lever being depressed. There was some resistance felt (spongy like feel) upon pressing the front brake lever (arrowed). This would indicate that there is no leakage of pressure/vacuum in the brake system.



Photo 27 shows the brake fluid reservoir for the rear brake of the Motorcycle. The brake fluid was observed to be of sufficient level and without contamination for operational purposes.

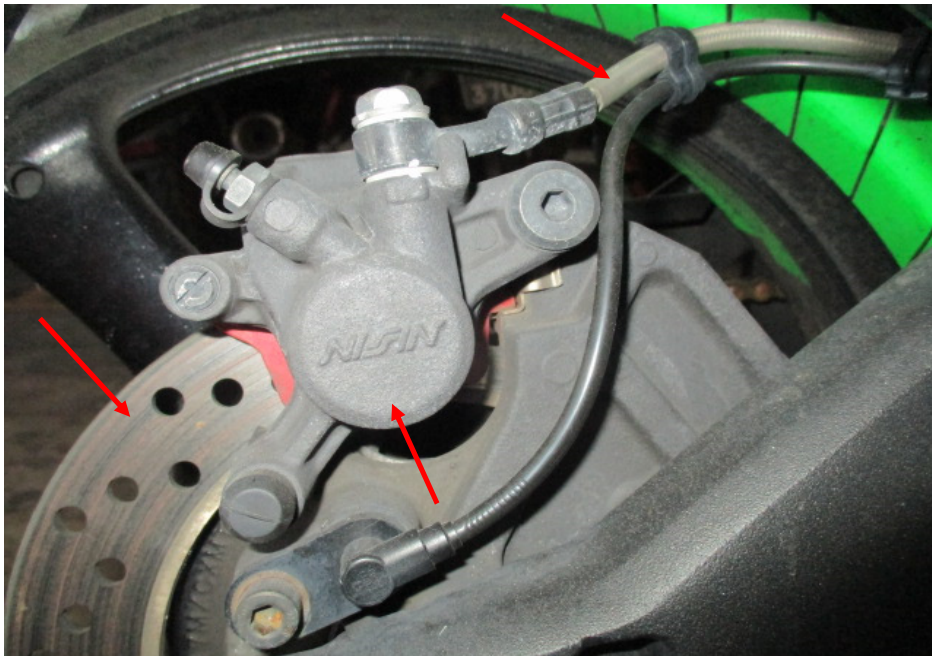


Photo 28 shows a close up view of the rear brake caliper, rear brake disc and rear brake hose (arrowed) of the Motorcycle, which are all part of the components in the hydraulic rear brake system of the Motorcycle. Our visual checks of these various components had revealed all to be intact with no visible damage. No leakage of brake fluid was also observed.

Conclusion

17. 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. However, the rear braking system could not be tested due to a broken brake pedal as a result of the accident.
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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