

Your Ref: TP/IP/66447/2018
Our Ref: CI/TPD19000754/P

26th April 2019

Fatal Accident Investigation Team

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

MECHANICAL INSPECTION REPORT OF MOTORCYCLE JSM 2826

1. We refer to your request dated 28th December 2018 to conduct a physical inspection of a motorcycle bearing registration number JSM 2826 (herein referred to as "**Motorcycle**"), which was involved in a fatal road traffic accident on 01st December 2018.
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 4th March 2019 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 was 17,921km recorded at time of our inspection.
5. The Motorcycle was observed to have sustained minor damages at the frontal portion. The body parts that were found to have been damaged include its left and right side fairing, front fender; both headlamps and both rear signal lamps are amongst others as a result of the accident. See photo 1 – 6.

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Photo 1 shows a general view of the mileage 17,921KM at time of our inspection.



Photo 2 shows a general view of the front body of the Motorcycle at the time of our inspection. The Motorcycle was observed to have sustained relatively minor damages at time of inspection. The damages were observed to be confined to its front & both sides of the Motorcycle.



Photo 3 shows a general view of the front body of the Motorcycle at the time of our inspection. The Motorcycle was observed to have sustained relatively minor damages at time of inspection. The damages were observed to be confined to its front & both sides of the Motorcycle.



Photo 4 shows a close up view of the front right body of the Motorcycle at the time of our inspection. The Motorcycle was observed to have sustained damages at time of inspection. The damages were observed to be at its right headlamp & side fairing of the Motorcycle.



Photo 5 shows a close up view of the front right body of the Motorcycle at the time of our inspection. The Motorcycle was observed to have sustained damages at time of inspection. The damages were observed to be at its left headlamp & side fairing of the Motorcycle.



Photo 6 shows a general view of the rear body of the Motorcycle at the time of our inspection. The Motorcycle was observed to have sustained damages at time of inspection. The damages were observed to be at its left & right signal lamps of the Motorcycle.



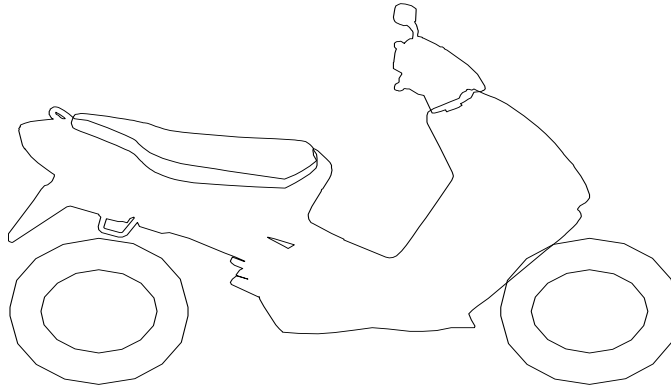
Photo 7 shows a close up view of the left signal lamp of the Motorcycle at the time of our inspection. The Motorcycle was observed to have sustained relatively minor damages at time of inspection.



Photo 8 shows a close up view of the right signal lamp of the Motorcycle at the time of our inspection. The Motorcycle was observed to have sustained relatively minor damages at time of 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:-



Maxxis Volans
80/ 70/ 90 - 17 (4.2mm)

Maxxis Volans
70/90 - 17 (3.2mm)

7. The rear & front tyre was wrapped around alloy wheel rims that were found to be without any significant damage. See photo 9 – 12.



Photo 9 shows the rear tyre of the Motorcycle. The rear tyre was observed to be in serviceable condition & was also observed to be sufficiently inflated for vehicular operation.



Photo 10 shows the rear tyre of the Motorcycle. The rear tyre was observed remaining tread depth of 4.2mm. The tyre was also observed to be sufficiently inflated for vehicular operation.



Photo 11 shows the rear tyre of the Motorcycle. The front tyre was observed to be in serviceable condition & was also observed to be sufficiently inflated for vehicular operation.



Photo 12 shows the front tyre of the Motorcycle. The front tyre was observed remaining tread depth of 3.2mm & was also observed to be sufficiently inflated for vehicular operation.

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 gear chain of the motorcycle was found to be intact without any misalignment. It was also adequately lubricated for operating purposes. Free play tension test was also conducted & found adequately acceptable. See photo 13 – 17.



Photo 13 shows no sign(s) or indication(s) of fluid leak observed around the undercarriage of the engine area of the Motorcycle.



Photo 14 shows no sign(s) or indication(s) of fluid leakage stain observed around the right side engine area of the Motorcycle.



Photo 15 shows no sign(s) or indication(s) of fluid leakage stain observed around the left engine area of the Motorcycle.



Photo 16 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.

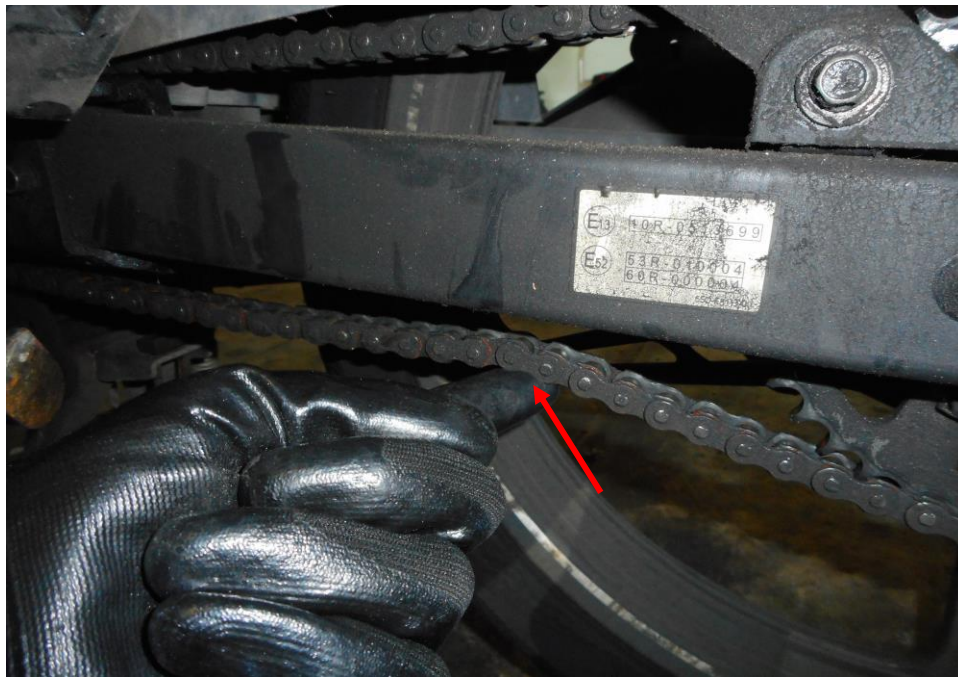


Photo 17 shows the general view of the gear train (arrowed) of the Motorcycle, which was observed to be intact with no misalignment. It was also adequately lubricated for operating purposes. Free play tension was also observed & found adequately acceptable.

Steering System & Braking System

10. My checks on the various steering components of the Motorcycle revealed that its steering system was in serviceable condition. Its front fork and fork bracket 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 braking system of the Motorcycle was observed to be of a Semi hydraulic type, where hydraulic (brake fluid) pressure controls the brake for the front wheel and the drum brake for the 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.
12. My 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 sufficiently level and without any contamination.
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, I did not observe any abnormal behaviour of the Motorcycle's braking system. The front wheel and rear wheel of the Motorcycle were able to stop rotating immediately upon depressing the brake lever and stepping on the brake pedal.
14. In general, the observations gathered during the static brake test & manual movement test had indicated that the steering system & braking system of the Motorcycle was in serviceable condition. See photo 17 - 22 below.



Photo 17 shows our checks on the brake fluid (front) reservoir had also indicated that the brake fluid was of sufficient level for operational purposes, and without contamination.

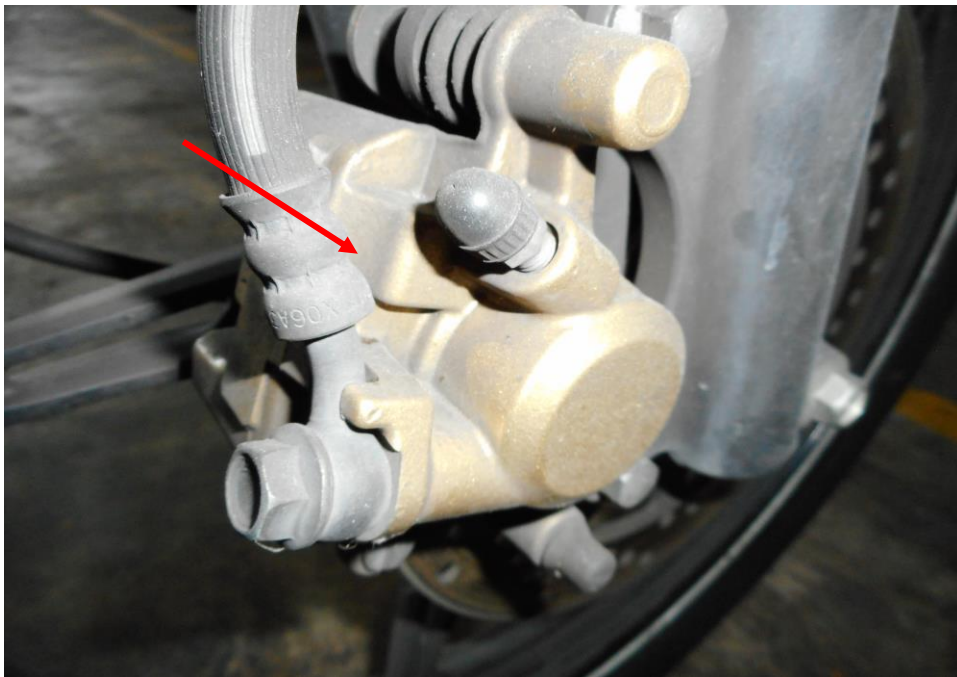


Photo 18 shows our checks on the brake callipers housing (front). There was also no sign(s) or indication(s) of fluid leak observed around the Motorcycle.

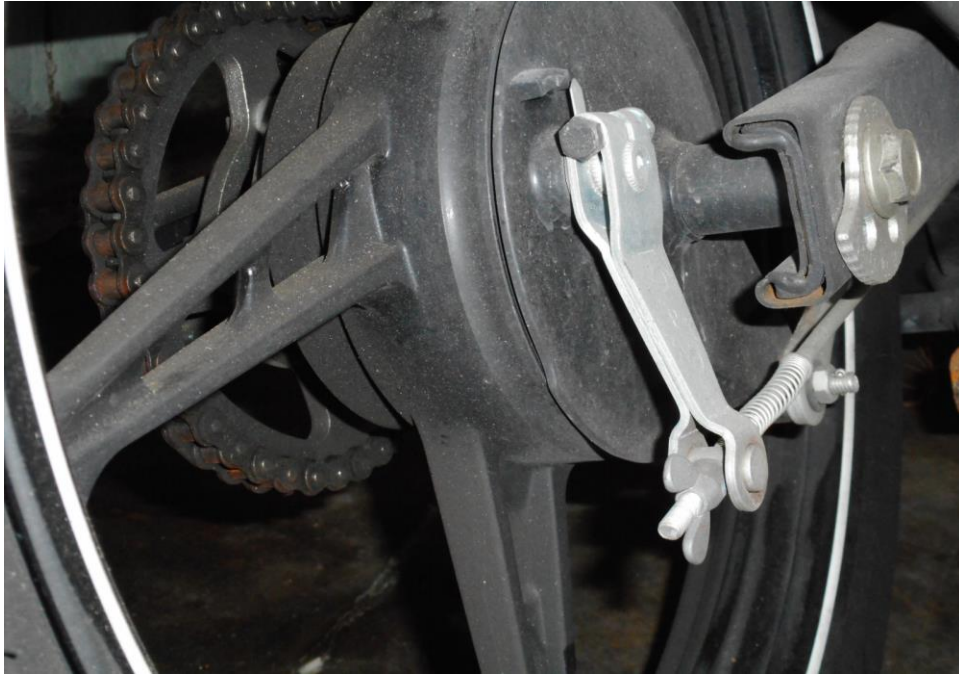


Photo 19 shows our checks on the drum brake housing (rear) no leakage or fluids is found present around it, and without contamination.

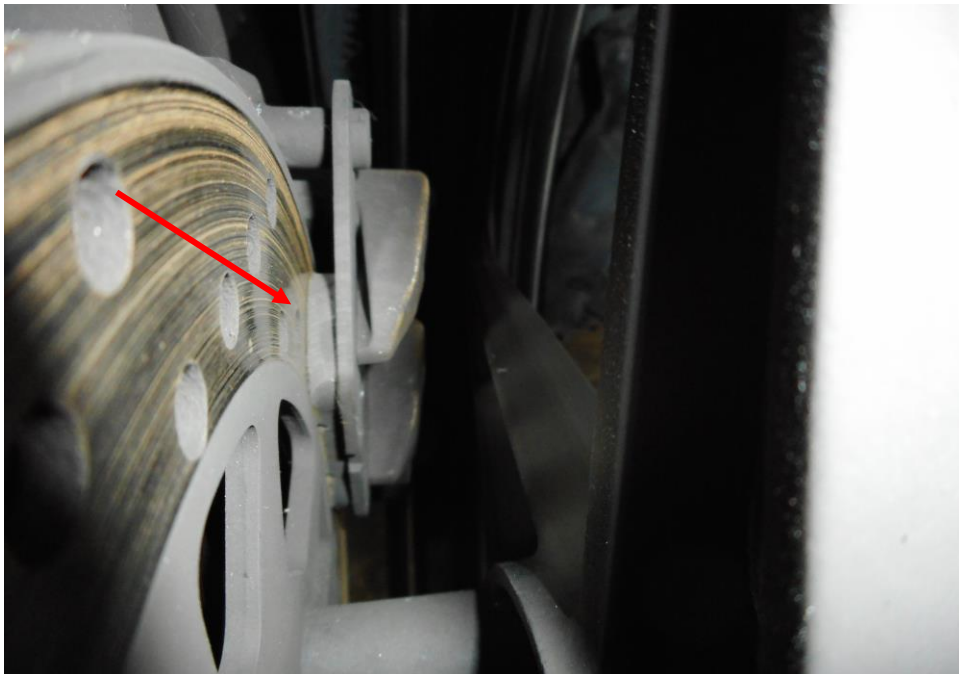


Photo 20 shows a close-up view our checks on the brake pad (front). The frictional material was observed to be in a sufficient level for operational purposes.



Photo 21 shows testing of the braking of the front brake in progress. The braking force was felt upon pressing the brake lever. The brakes is in serviceable condition



Photo 22 shows testing of the braking of the rear brake in progress. The braking force was felt upon pressing the brake lever. The brakes are in serviceable condition.

Conclusion

15. Basing on our physical inspection of the Motorcycle, it appears that the steering system and braking system of the Motorcycle were all in serviceable condition. We did not find any evidence(s) to suggest that there was possible mechanical failure to the Motorcycle that may have caused and/or contributed to 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 tyre. It was sufficiently inflated for vehicular operation with remaining tread depth of Rear 4.2mm & Front 3.2mm each.

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