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Your Ref: TP/IP/07173/2018
Our Ref :CI/TPD18003133/Z

26th February 2018

General Investigation Team A
Traffic Police Department
Singapore Police Force
10 Ubi Avenue 3
Singapore 408865

MECHANICAL INSPECTION REPORT OF MOTORCYCLE JLB 8377

1. We refer to your request dated 13th February 2018 to conduct a physical inspection of a motorcycle bearing registration number JLB 8377 (herein referred to as "**Motorcycle**"), which was involved in a fatal road traffic accident on 31st January 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 14th February 2018 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 time of our inspection was 825,678km.

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 front visor, cracked front fairing & broken headlamp amongst others as a result of the accident.

6. This was likely due to the consistency of the accident's case facts that the Motor Cycle was travelling on lane 2 of a 3 lane road & was approaching a signalised pedestrian crossing. When traffic light changed from green to amber, the rider applied brake but informed that his brake was ineffective hence collided onto the pedestrian. See photo 1 to 7 below.

Photo 1 shows the mileage of the Motorcycle recorded at time of our inspection was 825,678km.

Photo 2 shows a general view of the front right body of the Motorcycle at the time of our inspection. The Motorcycle was observed to have sustained relatively minor damages at the frontal portion likely due to the accident's impact.

Photo 3 shows a general view of the rear left body of the Motorcycle at the time of our inspection. The Motorcycle was observed to be in good general condition at time of inspection.

Photo 4 shows a close-up view of the front visor of the Motorcycle at the time of our inspection. It was observed to be broken & missing likely due to the accident.

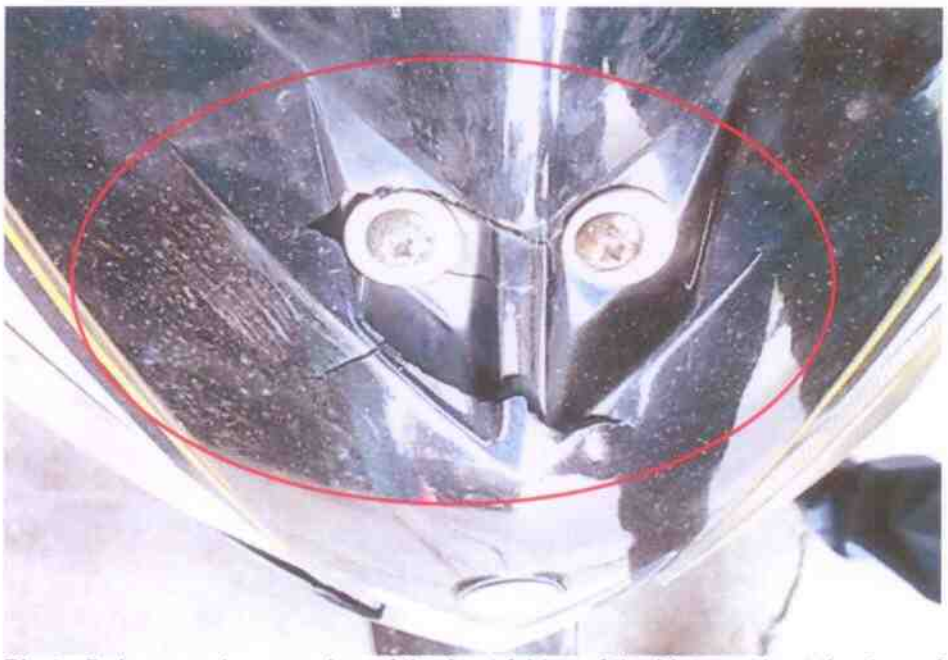


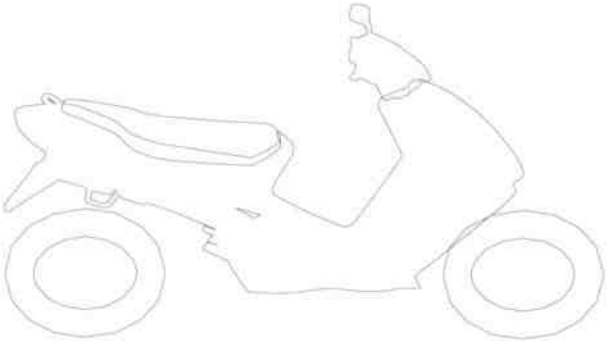
Photo 5 shows a close-up view of the front fairing of the Motorcycle at the time of our inspection. It was observed to be cracked likely due to the accident.

Photo 6 shows a closer view of the front right head lamp & front fairing of the Motorcycle at the time of our inspection. It was observed to be damage likely due to the accident. (Circled)

Photo 7 shows a general view of the rear portion of the Motorcycle. The Motorcycle was observed to be in good general condition at time of inspection.

Tyres and Wheel Rims

7. 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 Diamond MA-30
90/80 - R17 (1.6mm)

Maxxis Diamond MA-30
80/90 - R17 (4mm)

8. The rear tyre was wrapped around alloy wheel rims that were found to be without any significant damage. See photo 8 & 9 below.

Photo 8 shows the rear tyre of the Motorcycle. The rear tyre was observed to be in serviceable condition with remaining tread depth of approximately 1.6mm. The tyre was also observed to be sufficiently inflated for vehicular operation.

Photo 9 shows the front tyre of the Motorcycle. The front tyre was observed to be in serviceable condition with remaining tread depth of approximately 2mm. The tyre was also observed to be sufficiently inflated for vehicular operation.

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. Free play tension test was also conducted & found adequately acceptable. See photo 10 – 13 below.

Photo 10 shows no sign(s) or indication(s) of fluid leak observed around the underside of the engine area of the Motorcycle.

Photo 11 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 12 shows the general view of the gear train (arrowed) of the Motorcycle, which was prior the free play tension check.

Photo 13 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

11. Our checks on the various steering components of the Motorcycle had revealed that its steering system was in serviceable condition. Its front fork was found to be intact and undamaged.

12. 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 calliper, drum and brake foot pedal, revealed all to be intact and without damage. There was also no visible tear or cut observed on the connecting hoses and cables.

13. Static brake tests conducted on the Motorcycle front & rear brakes had appeared to indicate that the braking system of the Motorcycle was in serviceable condition. The Motorcycle's braking system like the brake discs, brake callipers, brake lever, brake foot pedal and brake hoses revealed all to be intact and without damage. 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 brake system.

14. We subsequently carried out an operational test of the Motorcycle's braking system. This was done by riding on the Motorcycle moving forward and backward, getting the Motorcycle in motion via 1st up to 4th gear, and thereafter engaging the front brake and rear brake of the Motorcycle.

15. At the end of the short operational test, we did not observe any abnormal behaviour from the Motorcycle's front brake. The front wheel of the Motorcycle was able to stop rotating immediately upon fully depressing the brake whereas for the rear brake we found that it was less effective. The Motorcycle wheel didn't stop rotating immediately upon stepping on the brake pedal but in drifting motion. However, it did stop eventually responding to the foot brake pedal's depression.

16. Although the observations gathered during the static brake test had indicated that both the front & rear brake of the Motorcycle was in serviceable condition. The operational test conducted revealed that the rear brake was found less effective. See photo 14 - 18 below.

Photo 14 shows an operational test was conducted on the steering system & braking system.

Photo 15 shows steering system test was conducted on the steering. It was observed to be in serviceable condition when we are able to turn the steering to the full left & right.

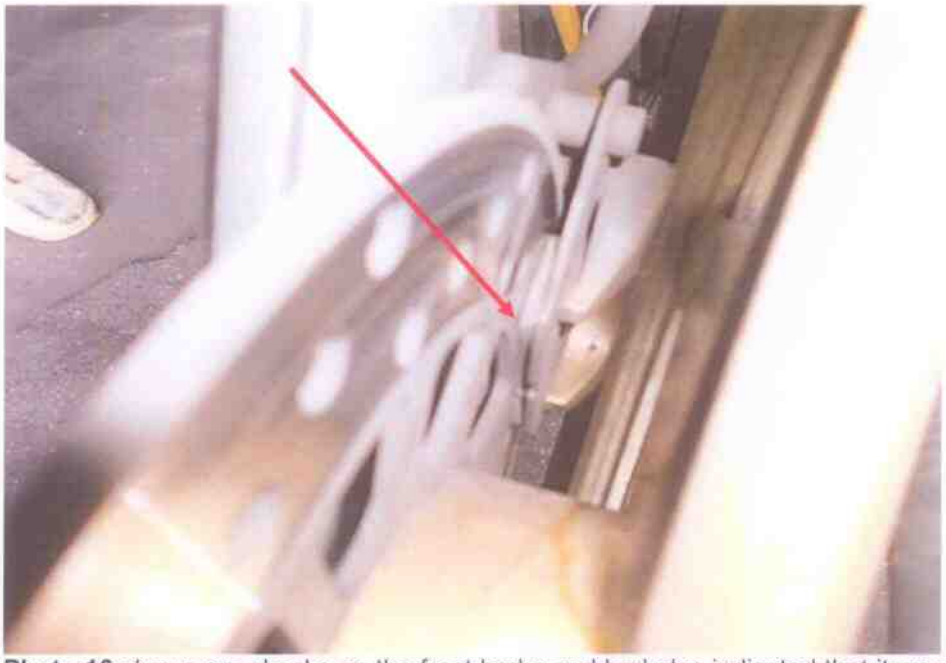


Photo 16 shows our checks on the front brake pad had also indicated that it was in serviceable condition.

Photo 17 shows static testing of the braking of the front brake in progress. There was some resistance felt (spongy like feel) upon pressing the brake lever.

Photo 18 shows testing of the braking of the rear brake in progress. There was some resistance felt (spongy like feel) upon stepping on the brake pedal.

Conclusion

17. Basing on our physical inspection of the Motorcycle, it appears that the steering system of the Motorcycle were 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.

18. As for the braking system, our observations gathered during the static brake test had indicated that both the front & rear brake of the Motorcycle was in serviceable condition. However, a short operational test conducted on the rear brake revealed that it was found to be less effective. The Motorcycle wheel didn't stop rotating immediately upon stepping on the brake pedal but in drifting motion. However, it did stop eventually responding to the foot brake pedal's depression.

19. 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 approximately 1.6mm & 4mm.

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