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Your Ref: TP/IP/52725/2018
Our Ref :CI/TPD18018431/Z

20th November 2018

Fatal Accident Investigation Team
Traffic Police Department
Singapore Police Force
10 Ubi Avenue 3
Singapore 408865

MECHANICAL INSPECTION REPORT OF MOTORCYCLE FBA 2867Z

1. We refer to your request dated 27th September 2018 to conduct a physical inspection of a motorcycle bearing registration number FBA 2867Z (herein referred to as "**Motorcycle**"), which was involved in a fatal road traffic accident on 13th September 2017.

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 24th October 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 188986km.

5. The Motorcycle was observed to have sustained minor damages at the frontal portion, rear portion and its left & right portion. The body parts that were found to have been damaged include its left & right handle bar, headlamp, mudguard, licence plate, rear tail lamp, rear left signal lamp, left rider foot rest & front right signal lamp 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 rider was travelling along Circuit Road on the left most lane of a 3 lanes road, when suddenly a pedestrian started crossing the road from left to right of the rider's view. Rider was unable to brake in time and collided onto the pedestrian. See photo 1 to 9 below.

Photo 1 shows the mileage of the Motorcycle recorded at time of our inspection was 188986km.

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 time of inspection.

Photo 3 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 time of inspection.

Photo 4 shows a general view of the rear right body of the Motorcycle at the time of our inspection. The Motorcycle was observed to have sustained relatively minor damages at time of inspection.

Photo 5 shows a general view of the front left body of the Motorcycle at the time of our inspection. The Motorcycle was observed to have sustained minor damages at time of inspection (circled).

Photo 6 shows a closer view of the misaligned mudguard & dented licence plate of the Motorcycle at the time of our inspection. It was observed to have sustained with relatively minor damages due to the accident collision. (Circled)

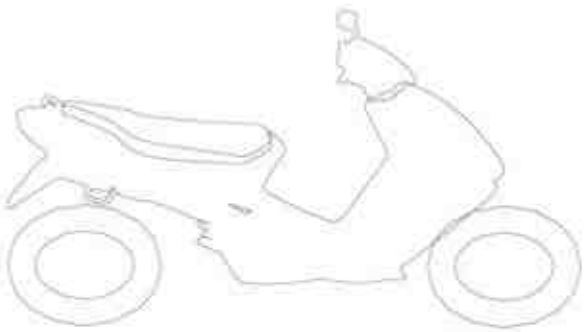
Photo 7 shows a closer view of the front left side handle bar of the Motorcycle at the time of our inspection. It was observed to be damage likely due to the accident. (Circled)

Photo 8 shows a closer view of the headlamp of the Motorcycle at the time of our inspection. It was observed to be damage likely due to the accident. (Circled)

Photo 9 shows a closer view of the front right signal lamp of the Motorcycle at the time of our inspection. It was observed to be damage likely due to the accident. (Circled)

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:-



Dunlop 3.50-19 4 P.R (5mm) Dunlop 3.25-19 4 P.R (5mm)

8. The rear tyre was wrapped around alloy wheel rims that were found to be without any significant damage. See photo 10 & 11 below

Photo 10 shows the rear tyre of the Motorcycle. The rear tyre was observed to be in serviceable condition with remaining tread depth of approximately 5mm. The tyre was also observed to be sufficiently inflated for vehicular operation.

Photo 11 shows the front tyre of the Motorcycle. The front tyre was observed to be in serviceable condition with remaining tread depth of approximately 7mm. 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. However, the engine pan was observed to sustained deep scratch due to the accident's impact collision. Hence, fluid leakage was 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 12 – 16 below.

Photo 12 shows sign(s) or indication(s) of fluid leakage was observed around the underside of the engine area of the Motorcycle.

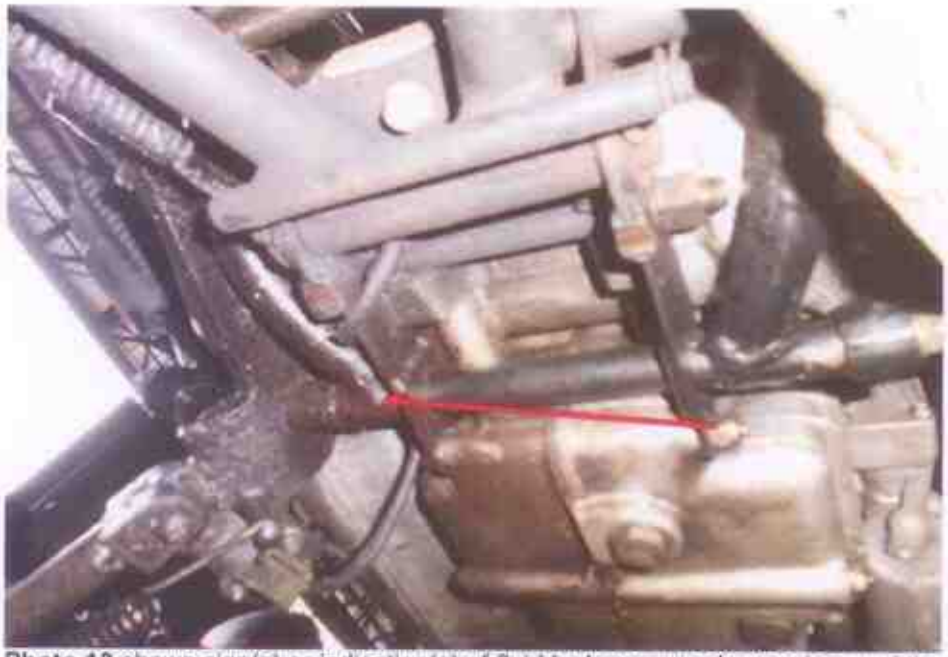


Photo 13 shows sign(s) or indication(s) of fluid leakage was observed around the underside of the engine area of the Motorcycle.

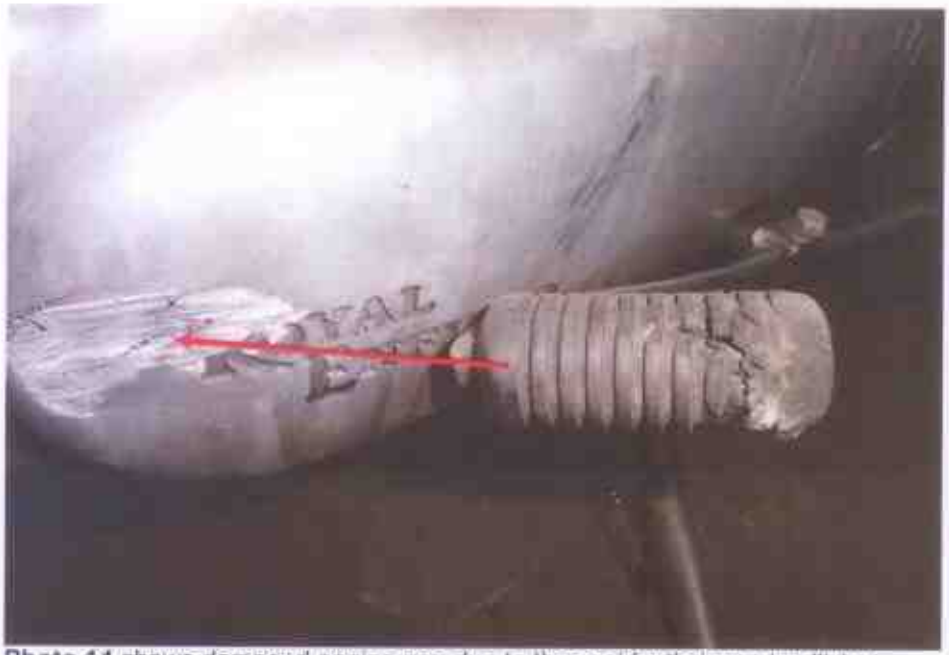


Photo 14 shows damaged engine pan due to the accident's impact collision.

Photo 15 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 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. 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 not affected by the accident's impact. However, its handle bar was found to be slightly bent due to the accident.

12. 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 rear wheel was controlled by mechanical components such as cables & springs. The brake for the front wheel is engaged by pulling 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. 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, brake cables, brake spring 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. Our checks on the brake fluid had also indicated that the brake fluid was of sufficient level for operational purposes, and without contamination.

Operational Test

14. For this case, we were not able to carry out any operational tests to the steering system and braking system of the Motorcycle due to non-availability of the key to start the Motorcycle, which had rendered the Motorcycle immobility for the operational tests. However, we were able to push the motorcycle manually forward and backward, simulating movement of the Motorcycle, for the operational tests. Both brakes were engaged simultaneously while conducting the manual movements and it was observed to be in serviceable condition.

    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 - 21 below.

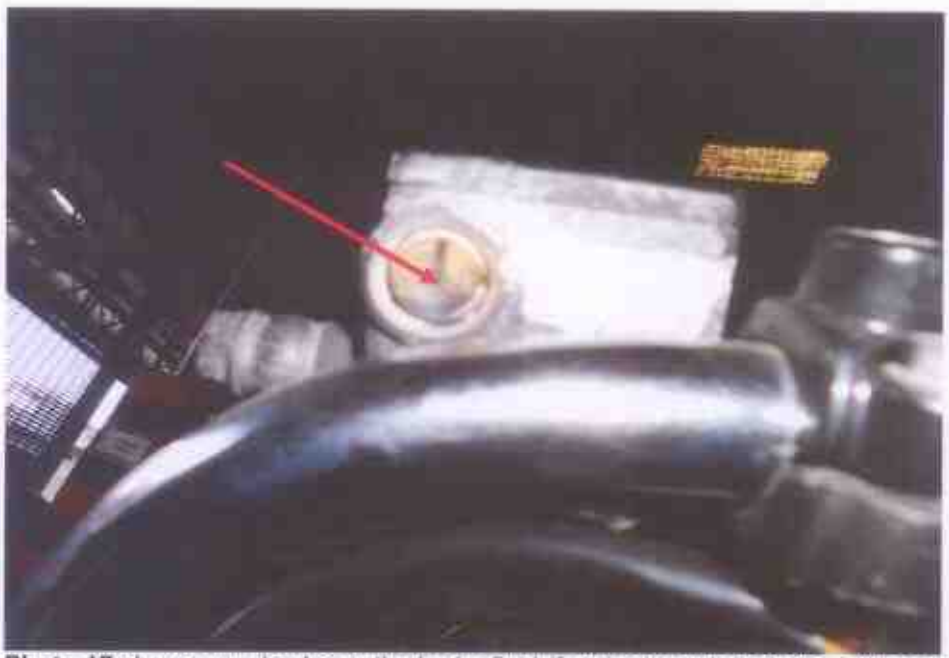


Photo 17 shows our checks on the brake fluid (front) reservoir had also indicated that the brake fluid was of sufficient level for operational purposes, and without contamination.

Photo 18 shows testing of the braking of the front brake in progress. There was some resistance felt (spongy like feel) upon pressing the brake lever.

Photo 19 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.

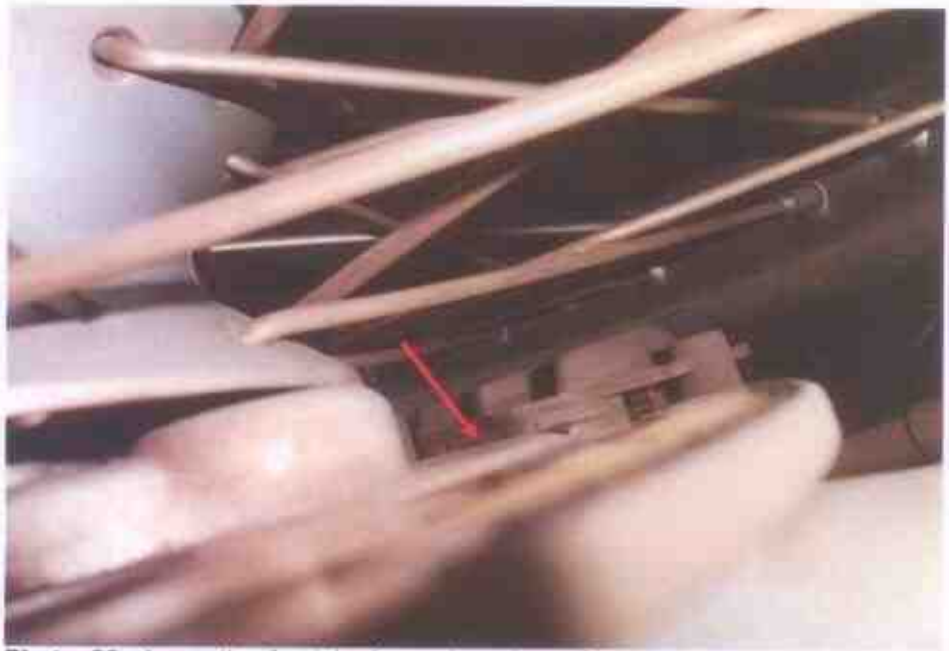


Photo 20 shows the front brake pad at time of our inspection. The frictional material was observed to be sufficient for operational purposes.

Photo 21 shows the manual operational test conducted on the Motor Cycle's braking system.

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 approximately 5mm & 7mm.

17. Our findings were based solely on a static test, visual inspection and manual test of the Motorcycle simulating its movement. No operational test(s) could be carried out to the Motorcycle due to non-availability of the key to start the Motorcycle, which had rendered the Motorcycle's immobility.

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