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Your Ref: TP/IP/69599/2018 04th April 2018
Our Ref :CI/TPD19000760/Z

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

MECHANICAL INSPECTION REPORT OF MOTORCYCLE FBB 8612Y

1. We refer to your request dated 28th December 2018 to conduct a physical inspection of a motorcycle bearing registration number FBB 8612Y (herein referred to as "**Motorcycle**"), which was involved in a fatal road traffic accident on 18th 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 28th January 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 was not recorded at time of inspection due to the severe damages to the ignition system as a result of the accident.

5. The Motorcycle was observed to have sustained extensive damages at the frontal portion, rear portion & along its right side. The body parts that were found to have been damaged include its bent handle bar, damaged in-vehicle unit, broken engine, dislodged meter/headlamp, corrugated fuel tank, radiator, front mudguard, crash bar, rear left & 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 on 18th December 2018 at about 1903hrs, a Motor Lorry (GBF 7327S) was travelling along Tuas West Drive towards the direction of Tuas Checkpoint, on the right lane of a 2 lanes road. At the junction of Tuas Link 4, the Motor Lorry made a right turn after he noticed the traffic light on his direction was red with a green right turning arrow. While he was making the turn, a motorcycle (FBB 8612Y), who was travelling on the opposite direction, failed to conform to the red light signal and collided onto the front portion of the Motor Lorry. See photo 1 to 6.

Photo 1 shows the speedo-meter of the Motorcycle where it was found dislodged from the original installation.

Photo 2 shows a general view of the front portion of the Motorcycle at the time of our inspection. The Motorcycle was observed to be sustained with damages due to the accident collision.

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 extensive damages at the frontal, rear portion & along its right side. (Circled)

Photo 4 shows a closer view of the right side of the engine of the Motorcycle at the time of our inspection that was observed to have sustained with extensive damages due to the accident collision. (Circled)

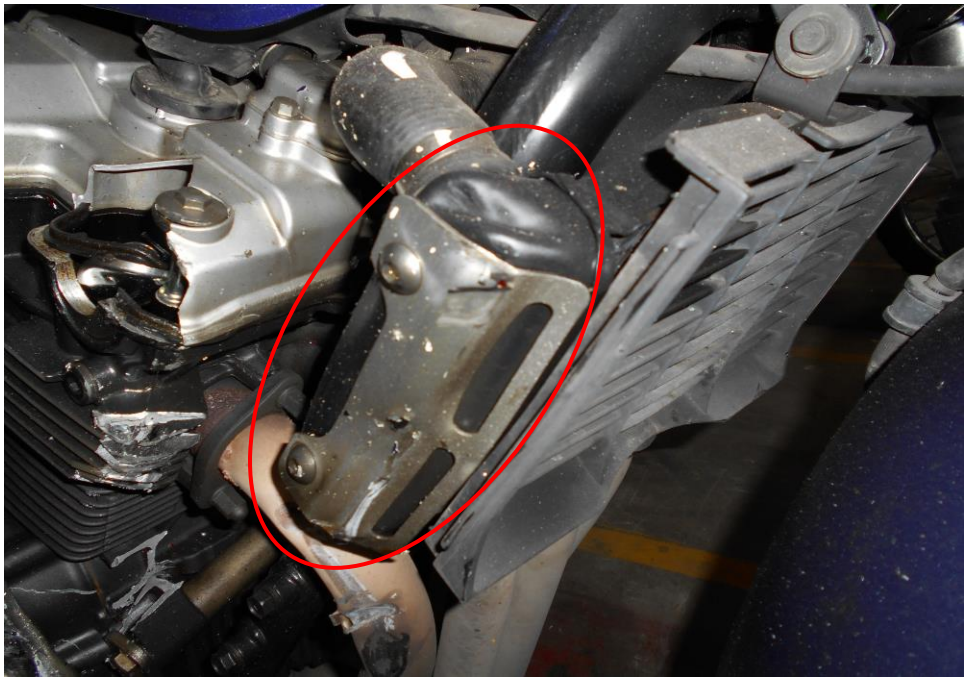
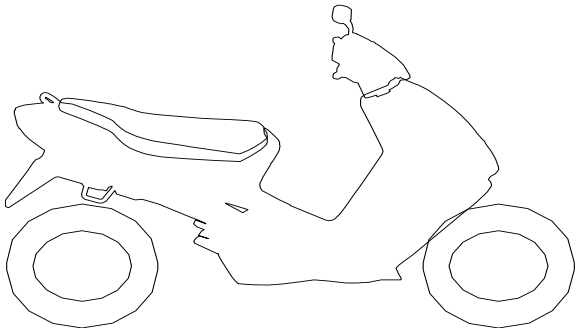


Photo 5 shows the damaged radiator as a result of the accident.(Circled)

Photo 6 shows a rear view of the Motorcycle at the time of our inspection. It was observed to sustain damages caused by the accident.

Tyres and Wheel Rims

7. The condition of the Motorcycle's front tyre was observed to be in serviceable condition whereas the rear tyre was found to be deflated likely due to the accident impact. However, 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 front tyre was 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:-



Bridgestone Battlax160/60 - 17 (4mm)-(Deflated) Bridgestone Battlax120/60 - 17 (4mm)

8. The tyres were wrapped around alloy wheel rim that was found to be without any significant damage. See photo 7 & 8 below.

Photo 7 shows the rear tyre of the Motorcycle. The rear tyre was observed to be in serviceable condition with remaining tread depth of approximately 4mm. However, it was observed to be deflated likely due to the accident's impact.

Photo 8 shows the front tyre of the Motorcycle. The pattern of the tread was 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 with thread depth of 4mm.

Engine & Drive Train

9. Upon examination of the Motorcycle's engine area, we had observed that the engine block had sustained with extensive damages due to the accident's collision impact. Hence, causing the operating fluids such as engine fluid to leak from the cracked/ damage areas.

10. The gear chain of the motorcycle was found to be intact at time of our examination. However, it was observed to be misaligned likely due to the accident's impact collision. Free play tension test was unable to be conducted due to the misalignment of the gear train system. Hence, it was unacceptable for operating purposes. See photo 9 – 12 below.

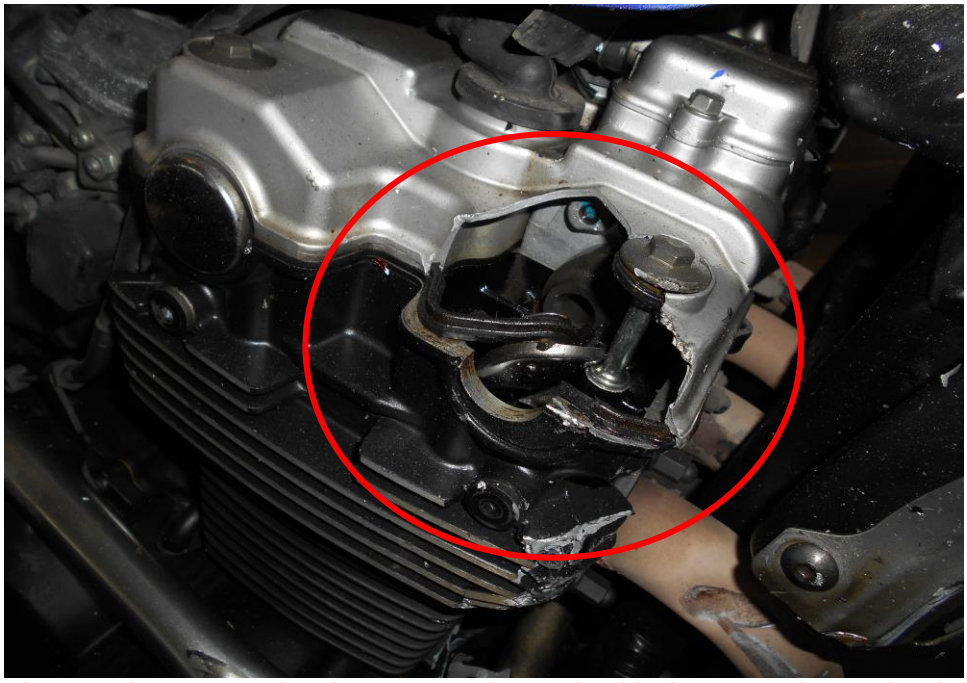


Photo 9 shows extensive damages on the engine block. It was observed to be damaged as a result of the accident.

Photo 10 shows the damaged crash bar as a result of the accident.

Photo 11 shows the gear chain of the motorcycle was found to sustained slight misalignment due to the accident's impact. However, it was observed to be adequately lubricated for operating purposes.

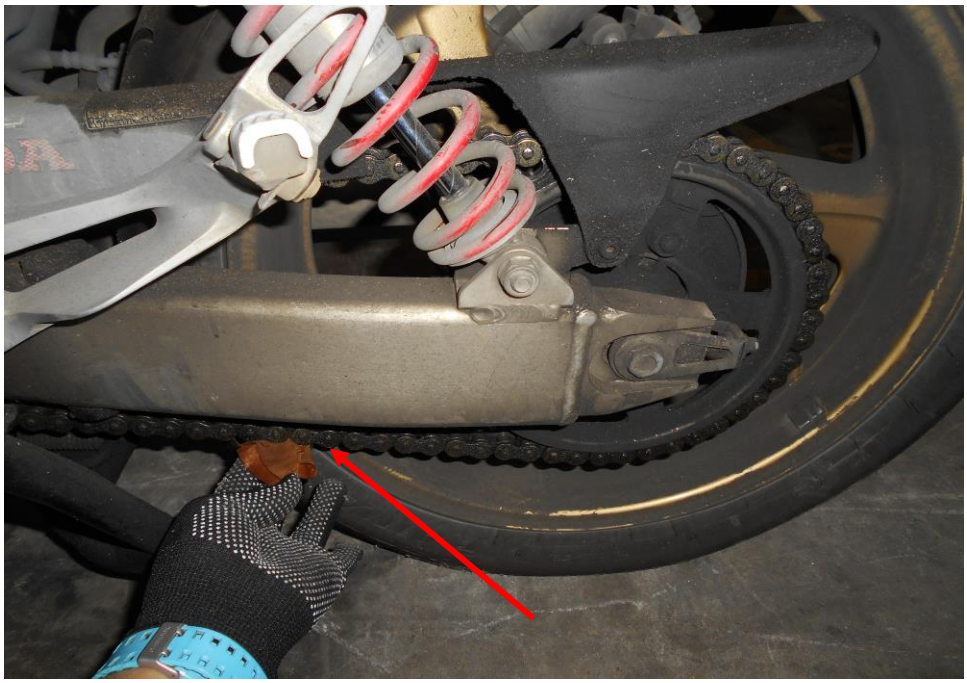


Photo 12 shows the general view of the gear train (arrowed) of the Motorcycle, which was observed to be tight due to the misalignment. Free play tension was unable to be established. Conclusively, it was unacceptable for operating purposes.

Steering System & Braking System

11. Our checks on the various steering components of the Motorcycle had revealed that its steering system was not in serviceable condition. Its handle bar was found to be bent/ damage likely due to the accident's impact collision.

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 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's front and rear brake had appeared to indicate that it was in serviceable condition. The Motorcycle's braking system like the brake discs, brake callipers, brake pad and brake foot pedal revealed all to be intact and without damage. There was some resistance felt (spongy like feel) upon gripping the hand brake lever and stepping on the rear brake pedal. This would indicate that there was no leakage of pressure/vacuum in the braking system. Our checks on the brake fluid had also indicated that the brake fluid was of sufficient level for operational purposes, and without contamination.

14. For this case, we were unable to carry out operational test of the Motorcycle's braking system. This was due to the damage steering system as a result of the accident's collision impact.

    In general, our observations gathered during the static brake test which indicated that both the front and rear brake of the Motorcycle was in serviceable condition. See photo 13 - 18 below.

Photo 13 shows the handle bar was observed to be damaged by the accident's impact. It was observed to be misaligned likely due to the accident's impact.

Photo 14 shows the steering system was observed to be damaged likely due to the accident's impact.

Photo 15 shows the fluid brake reservoir for the front brake that was observed to be unaffected by the accident. It was observed to be with sufficient level of brake fluid without any contamination.

Photo 16 shows the brake fluid reservoir for the rear brake. It was observed to be at sufficient level not affected by the accident.

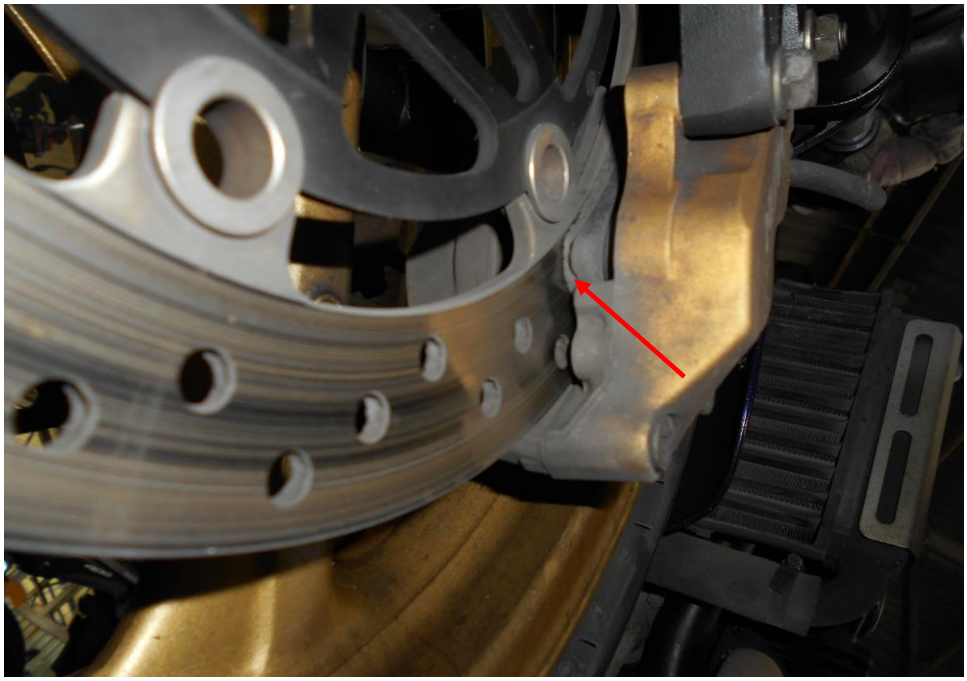


Photo 17 shows the brake pad for the front brake, observed to be in serviceable condition at time of our inspection. The frictional material found to be sufficient for operational purposes.

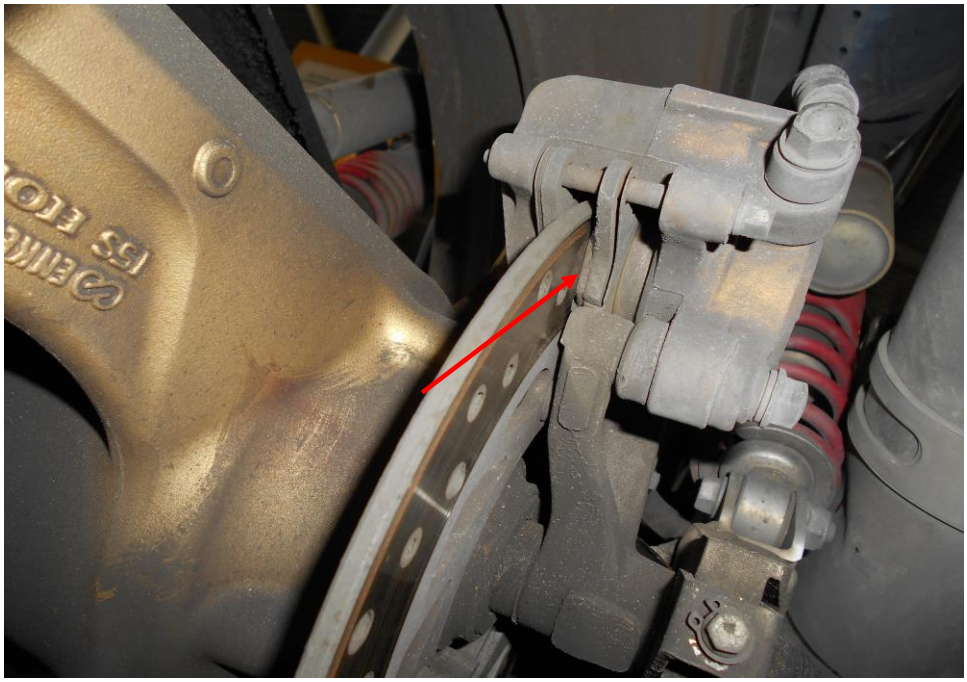


Photo 18 shows the brake pad for the rear brake observed to be in serviceable condition at time of our inspection. The frictional material found to be sufficient for operational purposes.

Conclusion

15. Basing on our physical inspection of the Motorcycle, it appears that the steering system was not in serviceable condition. Its handle bar was found to be bent/ damaged due to the accident's impact collision.

16. The braking systems of the Motorcycle was however were observed to be in serviceable condition based on our physical examination and static test. Further observation reveal that the brake components such as brake cables, brake calliper, brake hoses and brake pad amongst others were in serviceable condition unaffected by the accident.

17. 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. The condition of the Motorcycle's front tyre was observed to be in serviceable condition whereas the rear tyre was found to be deflated likely due to the accident impact. However, 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 front tyre was observed to be sufficiently inflated for vehicular operation. Both tyres remaining tread depth was measured at approximately 4 mm each.

19. Our findings were based solely on a static and visual inspection of the Motorcycle. No operational test(s) could be carried out to the Motorcycle due to the damage of its steering system, engine system and ignition system (as a result of the accident), which had rendered the Motorcycle immobility.

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