



Your Ref: TP/IP/67923/2017  
Our Ref :CI/TPD18002544/Z

14<sup>th</sup> February 2018

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

### **MECHANICAL INSPECTION REPORT OF MOTORCYCLE FBF 8025X**

1. We refer to your request dated 09<sup>th</sup> January 2018 to conduct a physical inspection of a Motorcycle bearing registration number FBF 8025X (herein referred to as "**Motorcycle**"), which was involved in a fatal road traffic accident on 25<sup>th</sup> December 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 09<sup>th</sup> 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 at the time of our inspection was not recorded due to the frontal portion of the motor cycle was badly damage including missing of speedo meter assembly.
5. The Motorcycle was observed to have sustained extensive damages at the frontal portion, along its left side and right side. The body parts that were found to have been damaged includes its front head lamp, ERP unit & bracket, handle bar (Inclusive brake), front wing mirrors, seat assembly and fuel tank amongst others as well as dislodged brake fluid reservoir. Its front forks assemblies & rear drive train support bar were also observed to be misaligned as a result of the accident.

6. This was likely due to the consistency of the accident's case facts that a Motor Cycle rider was travelling along Upper Changi Road East towards Bedok at a signalised junction of TPE (PIE). Skidded & collided with Motor Taxi whom was making a right turn from the Motor Cycle's left to right. See photo 1 to 5 below.



Photo 1 shows the Motorcycle number plate for identification.



**Photo 2** shows a general view of the right body of the Motorcycle at the time of our inspection. The Motorcycle was observed to have sustained with relatively extensive impact due to the accident collision. Amongst the body parts damaged was its front fork, brake pedal, fuel tank.



**Photo 3** 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 the frontal portion, along both its left side and right side.





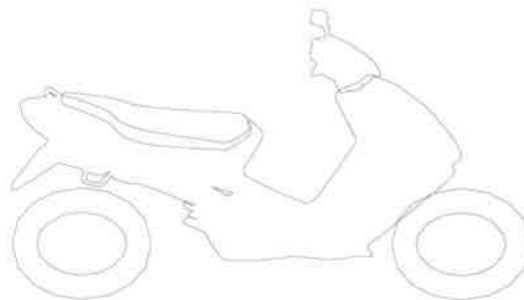
**Photo 4** shows a general view of the frontal portion of the Motorcycle at the time of our inspection. The Motorcycle was observed to have sustained relatively extensive impact due to the accident collision.



**Photo 5** shows a close-up view of the frontal portion of the Motorcycle at the time of our inspection. The Motorcycle was observed to have sustained relatively extensive impact including missing speedometer & dislodged brake fluid reservoir (circled) likely due to the accident collision.

## 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:-



Pirelli 140/70 - 17 (3mm)

Pirelli 110/70 - 17 (2mm)

8. The tyres were wrapped around alloy wheel rims that were found to be without any significant damage. See photo 6 – 7 below



**Photo 6** shows the rear tyre of the Motorcycle at the time of our inspection. 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. There was no significant damage observed on the rear wheel rim & tyre.



**Photo 7** shows the front tyre of the Motorcycle at the time of our inspection. 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.

### **Engine & Drive Train**

9. Upon examination of the engine area of the Motorcycle, we had observed that the various engine related parts and components were intact with no visible damage. The engine underside was however observed to be covered with fluid, suggesting leakage of fluid. There was no accumulation of dust and/or dirt particles on the engine housing where the fluid stains had formed. This would indicate that the fluid leakage was a fresh leak and likely to be a result of the accident.
10. Although the gear chain of the Motorcycle found to be intact but its drive train support bar was observed to be misalignment likely due to the accident. Free play tension test was conducted but found unacceptable due to its tension was too loose at time of our inspection. However, its gear chain was found adequately lubricated for operating purposes. See photo 8 – 11 below.





**Photo 8** shows sign(s) or indication(s) of fluid leakage observed around the engine's underside area of the Motorcycle.



**Photo 9** shows the misalignment of the drive train support bar likely due to the accident's collision impact.

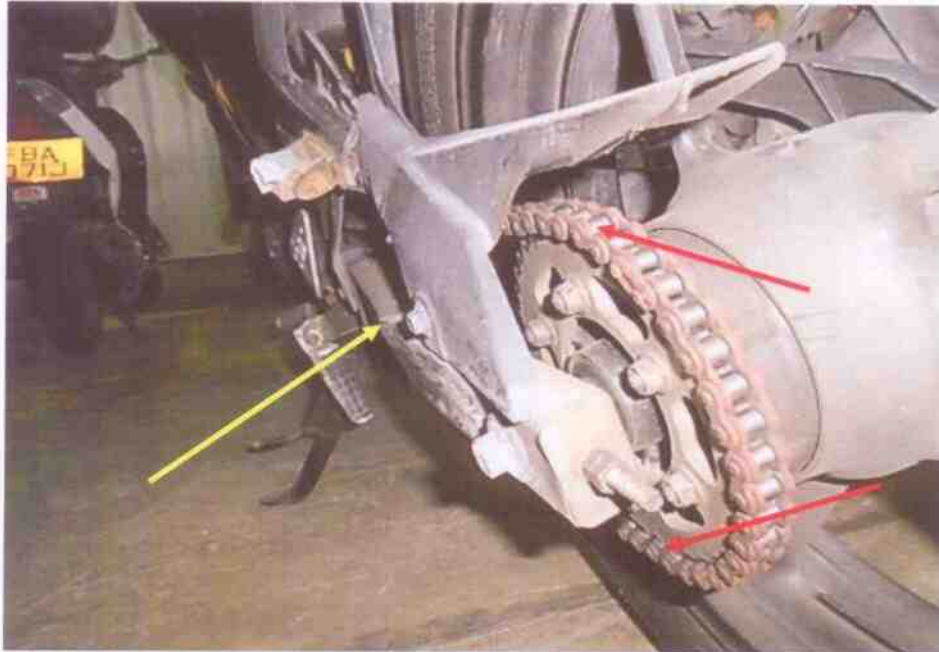


Photo 10 shows the general view of the chain gear (red arrowed) of the Motorcycle. It was adequately lubricated for operating purposes. However, misalignment of the drive train support bar (yellow arrowed) likely due to the accident's collision impact.



Photo 11 shows the general view of the chain gear (arrowed) of the Motorcycle. Free play tension test was conducted but found unacceptable due to its tension was too loose at time of our inspection. However, its gear chain was found adequately lubricated for operating purposes.



### **Steering System & Braking System**

11. For this case, we were not able to conduct any test(s) on the steering system of the Motorcycle due to the damages on its front fork & handle bar. The front fork was found to be misaligned & damaged handle bar as a result of the accident, hence causing the whole steering system to be in a state of immobility.
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. However, some braking components were noted to be extensively damaged such as hand brake lever, brake pedal & brake fluid reservoir at the material time of our inspection.
13. Static brake tests was unable to be conducted on the Motorcycle front & rear brake due to some braking components were noted to be extensively damaged such as hand brake lever, rear brake pedal & brake fluid reservoir at the material time of our inspection.
14. For this case, we were not able to carry out any operational tests to the steering system and brake system of the Motorcycle due to the damages on its front forks & handling, which had rendered the Motorcycle immobility for the operational tests. We were not able to push the Motorcycle manually forward and backward, simulating movement of the motorcycle, for the operational tests. See photo 12 - 15 below.



**Photo 12** shows the hand brake segment (circled) was observed to be broken off & separated from the handle bar likely due to the result of the accident. Hence, we are unable to conduct any tests on the steering system of the Motorcycle.



**Photo 13** shows the front fork (circled) was observed to be misaligned as a result of the accident. Hence, we are unable to conduct any tests on the steering system of the Motorcycle.



**Photo 14** shows the foot brake pedal of the Motorcycle (yellow circled), which observed to be buckled in as the result of the accidents. Hence, we are unable to conduct any brake test.



**Photo 15** shows the rear wheel of the Motorcycle. The type of brake system for the rear wheel was of mechanical type, controlled by the brake foot pedal of the motorcycle. Our checks of the cable spring and drum. This is all part of the components in the rear braking system of the Motorcycle reveal all to be intact and without damages.



## Conclusion

15. At the time of our inspection of the Motorcycle, its steering system & braking system could not be tested due to the damages as a result of the accident.
16. For this particular case, we were unable to determine whether there was any possible mechanical failure to the Motorcycle that may have contributed to the accident. This was mainly due to the extent of damage that it had sustained. Its engine system, steering system and braking system were all damaged as a result of the accident.
17. 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 tyre. It was sufficiently inflated for vehicular operation with remaining tread depth of approximately 2mm & 3mm each.
18. 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 damages of its front fork & handling (as a result of the accident), which had rendered the Motorcycle's immobility.



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