



Your Ref: TP/IP/38117/2018  
Our Ref : CI/TPD18013735/Z

14<sup>th</sup> September 2018

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

### **MECHANICAL INSPECTION REPORT OF MOTORCYCLE FBH 5117Z**

1. We refer to your request dated 19th July 2018 to conduct a physical inspection of a Motorcycle bearing registration number FBH 5117Z (herein referred to as "**Motorcycle**"), which was involved in a fatal road traffic accident on 30<sup>th</sup> June 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 13<sup>th</sup> August 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 missing speedo meter as a result of the accident.
5. The Motorcycle was observed to have sustained severe damages at the frontal portion, rear portion & along both its left side and right side. The body parts that were found to have been damaged includes its missing front head lamp & speedo meter, handle bar, left & right wing mirrors, chassis structure, rear brake pedal, seat assembly and rear portion amongst others. Its front forks assemblies were also observed to be severely damaged as a result of the accident.

6. This was likely due to the consistency of the accident's case fact that on 30<sup>th</sup> June 2018 about 0104hrs, a Malaysian Motor Lorry (JRV 1328) was travelling straight along the 1<sup>st</sup> lane at Woodlands Crossings after Sultan Iskandar CIQ (Malaysian Checkpoint) towards Singapore Checkpoint suddenly veered to the right towards the centre divider, drove through the opening along the centre divider into the opposite direction against the flow of traffic. The Motor Lorry continued to travel forward and collided into 02 malaysian motorcycles, JSA 5371 and JRY 7606 and a Singapore motorcycle, FBH 5117Z that were travelling along the 3<sup>rd</sup> lane of the opposite direction. See photos 1 to 6.



**Photo 1** shows the mileage of the Motorcycle was not recorded due to missing speedo meter as a result of the accident.



Photo 2 shows the Motorcycle number plate for identification.



Photo 3 shows a general view of the front wheel 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 & broken rim (arrowed), which was observed to be broken.





**Photo 4** shows a general view of the left body of the Motorcycle at the time of our inspection. The Motorcycle was observed to have sustained damages at the frontal portion, rear portion, along both its left side and right side.



**Photo 5** shows a general view of the right 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 6 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 damages to the steering system to the accident collision.

### **Tyres and Wheel Rims**

7. The condition of the Motorcycle's rear tyre was observed to be in serviceable condition. The tread pattern of the rear tyre 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 rear tyre.
8. As for the front tyre it was found to be deflated. The wheel rim was observed to be broken due to the accident impact. However, the tread pattern of the front tyre 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 front tyre. The tyre brand, tyre size and remaining tread depth of the 2 tyres were recorded as follows:-



Pirelli Ngel CT 140/80 – 17(5mm)

Pirelli Ngel CT 100/80 – 17(4mm)

9. The rear tyre was observed to be wrapped around alloy wheel rims that were found to be without any significant damage. It was found to be in serviceable condition with adequately inflated for operational purpose.
10. As for the front wheel rim, it was noted to have sustained with damages (broken) at time of our inspection. However, was still observed to be intact & wrapped around the alloy wheel rims unaffected by the broken wheel rim that was damaged by the accident. See photo 7 & 8 below



**Photo 7** 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 4mm. 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 8 shows the front tyre of the Motorcycle at the time of our inspection. The pattern of the tread was clearly visible with remaining tread depth of approximately 5mm. 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. However, the wheel rim was observed to be broken as a result of the accident.

### Engine & Drive Train

11. 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 engine fluid leak observed around the engine area of the Motorcycle. Our checks on the engine fluid had also indicated that the engine fluid was of sufficient level for operational purposes, and without contamination.
12. The gear chain of the motorcycle was found to be intact, lubricated without any misalignment and in serviceable condition. Free play tension was tested by pushing the gear chain in upright position feeling some allowance to the gear chain tension. As a result, free play tension test was found to be adequately acceptable. See photo 9 – 12 below.



**Photo 9** shows no sign(s) or indication(s) of fluid leakage observed around the engine's underside area of the Motorcycle.



**Photo 10** shows no sign(s) or indication(s) of fluid leakage observed around the engine's undercarriage 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 observed to be intact with no misalignment. It was also adequately lubricated for operating purposes.

### Steering System & Braking System

13. 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 handle bar, front fork and broken front wheel rim. It was found to be damaged as a result of the accident, hence causing the whole steering system to be in a state of immobility.
14. 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 front brake system, like the brake disc, & brake calliper, revealed to be damaged as a result of the accident. Braking components such as foot rest & brake foot pedal for the rear brake was noted to be damaged by the accident at the material time of our inspection.
15. Static brake tests was unable to be conducted on the Motorcycle front & rear braking system due to some braking components were noted to be extensively damaged as a result of the accident's impact collision.
16. 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 handle bar, front forks, brake calliper & brake disc which had rendered the Motorcycle immobility for the operational tests. See photo 13 to 18 below.



Photo 13 shows the handle bar (arrowed) was observed to be damaged as a result of the accident.



Photo 14 shows the front brake pad (arrowed). It was observed to be with sufficient frictional material at the time of our inspection.



Photo 15 shows the front wheel rim that was observed to be damaged by the accident.



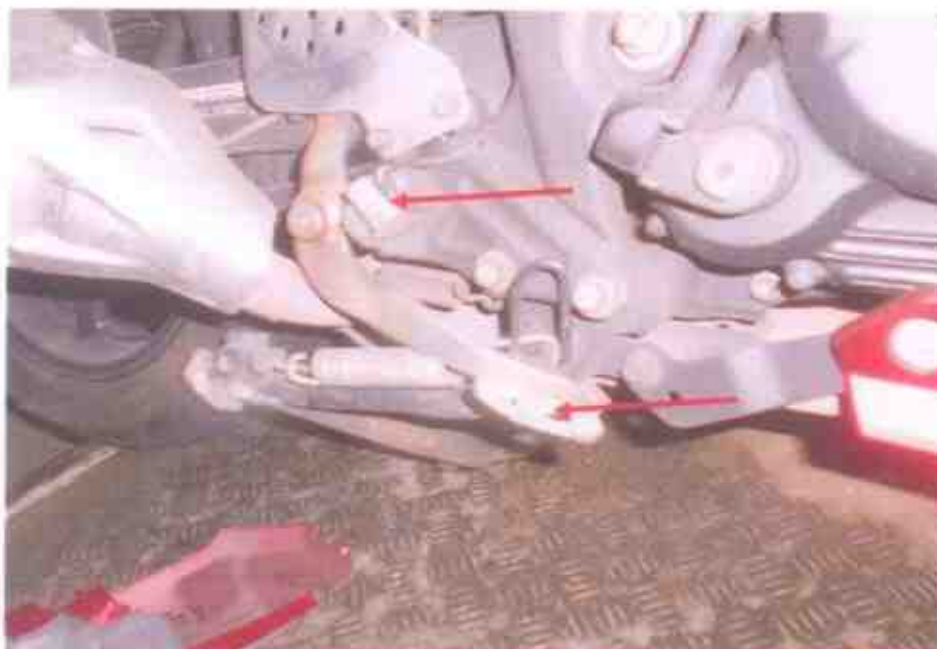


Photo 16 shows the rear brake pedal & foot rest (arrowed) that was observed to be in damaged due to the accident's impact collision.



Photo 17 shows the rear brake drum spring & cable was observed to be in serviceable condition unaffected by the accident despite the damage sustained on the foot brake pedal.



Photo 18 shows the front fork (circled) was observed to be damaged as a result of the accident. Hence, we are unable to conduct any tests on the steering system of the Motorcycle.

## Conclusion

17. At the time of our inspection of the Motorcycle, its steering system & braking system could not be tested likely due to the damages as a result of the accident.
18. The condition of the Motorcycle's rear tyre was observed to be in serviceable condition. The tread pattern of the rear tyre 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 rear tyre. Its tread depth was measured & found to be around approximately 5mm.
19. As for the front tyre, it was found to be deflated likely due to the broken wheel rim as a result of the accident's collision. However, the tread pattern of the front tyre was clearly visible with tread depth of 4mm. 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 front tyre.

20. Notwithstanding that the steering system & braking system could not be tested, the observations gathered from our physical inspection of the Motorcycle had indicated no evidence to suggest possible mechanical failure to the Motorcycle that may have contributed to the accident.
21. 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 on its steering system & braking system (as a result of the accident), which had rendered the Motorcycle's immobility.



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