

Your Ref: TP/IP/39437/2019  
Our Ref : CI/TPD19017390/N

8 October 2019

**Fatal Accident Investigation Team**

Traffic Police Department  
Singapore Police Force  
10 Ubi Avenue 3  
Singapore 408865

**MECHANICAL INSPECTION REPORT OF MOTORCYCLE FY 8874P**

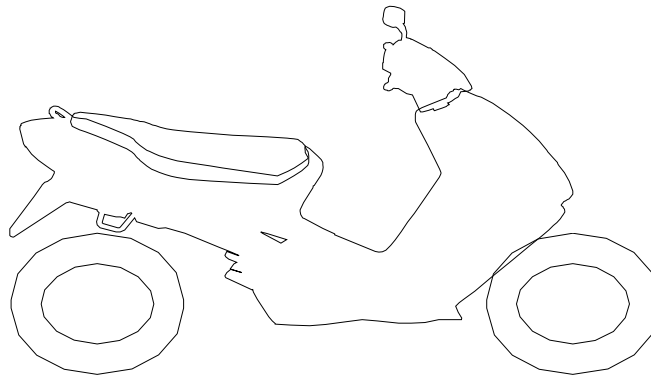
1. We refer to your request on 25 September 2019 to conduct a physical inspection of a motorcycle bearing registration number FY 8874P (herein referred to as "**Motorcycle**"), which was involved in a fatal road traffic accident on 23 June 2019.
2. The objective of the inspection is to determine if there 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 8 October 2019 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 the time of our inspection was 58, 177km.
5. The Motorcycle had sustained damages all around, significantly at its front and rear portion. Body parts that were found to have been damaged include its headlamp assembly, front fork assembly, speedometer gauge, left side mirror, clutch lever, petrol tank, seat, rear side covers, rear wheel rim and top box rack, amongst others.

**Tyres and Wheel Rims**

6. The condition of the 2 tyres of the Motorcycle was observed to be in serviceable condition. 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. However the rear tyre was observed to be deflated. The tyre brand, tyre size and remaining tread depth of the 2 tyres of the Motorcycle were recorded as follows:-



Zeneos 90/80 R17 (4mm)  
(Deflated)

Zeneos 80/80 R17 (3mm)

7. The 2 tyres were wrapped around alloy wheel rims. At the time of our inspection, we did not observe any visible damage on the front wheel rim of the Motorcycle. However we did observe that the rear wheel rim was broken. See photos 1 – 13 below.



**Photo 1** shows a general view of the rear body of the Motorcycle at the time of our inspection. The Motorcycle had sustained damages all around, significantly at its front and rear portion. The mileage of the Motorcycle recorded at the time of our inspection was 58, 177km.



**Photo 2** shows a general view of the left body of the Motorcycle at the time of our inspection.



**Photo 3** shows a general view of the front body of the Motorcycle at the time of our inspection. The Motorcycle had sustained damages all around, significantly at its front and rear portion. Body parts that were found to have been damaged include its headlamp assembly, front fork assembly, speedometer gauge, left side mirror, clutch lever, petrol tank, seat, rear side covers, rear wheel rim and top box rack, amongst others.

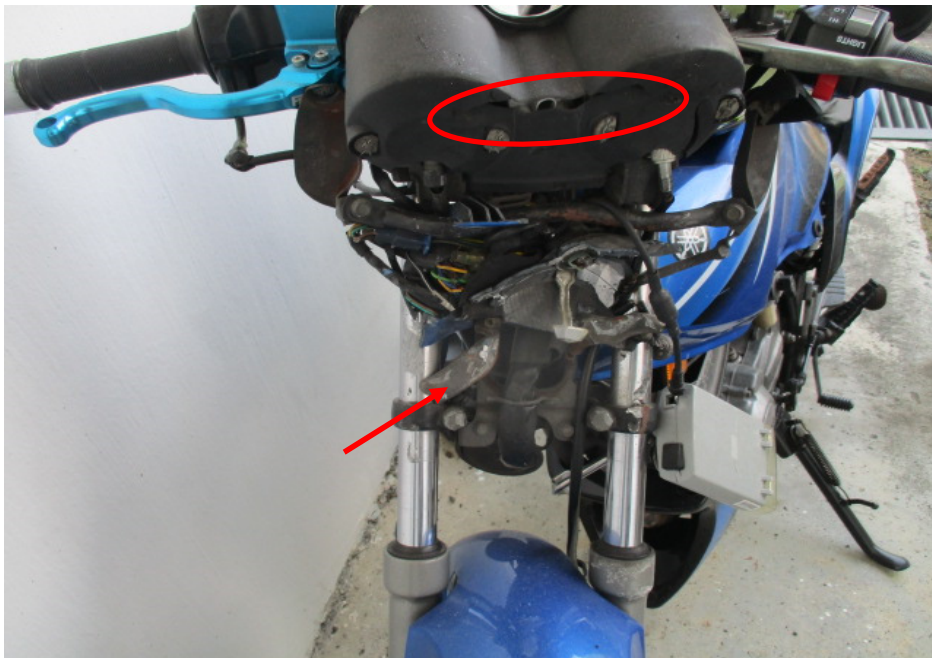


**Photo 4** shows the closer view of the rear body of the Motorcycle at the time of our inspection. Body parts that were found to have been damaged include the seat and rear side covers, amongst others.





**Photo 5** shows the general view of the cracked front mudguard (arrowed) of the Motorcycle as a result of the accident.



**Photo 6** shows a close up view of the headlamp assembly (arrowed) and speedometer cover (circled) of the Motorcycle. These parts were amongst the body parts of the Motorcycle which were damaged as a result of the accident.



**Photo 7** shows a close up view of the broken speedometer gauge of the Motorcycle as a result of the accident.



**Photo 8** shows a closer view of the dented petrol tank, which was amongst the body parts of the Motorcycle that had sustained damage as a result of the accident.





**Photo 9** shows the clutch lever, left handlebar end and left side mirror which were amongst the body parts of the Motorcycle that had sustained damages of grazing nature as a result of the accident (arrowed).



**Photo 10** shows the bent top box rack (arrowed) of the Motorcycle as a result of the accident.



**Photo 11** shows the condition of the Motorcycle's front tyre. The front 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. 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.



**Photo 12** shows the broken rear wheel rim (arrowed) of the Motorcycle at the time of our inspection.

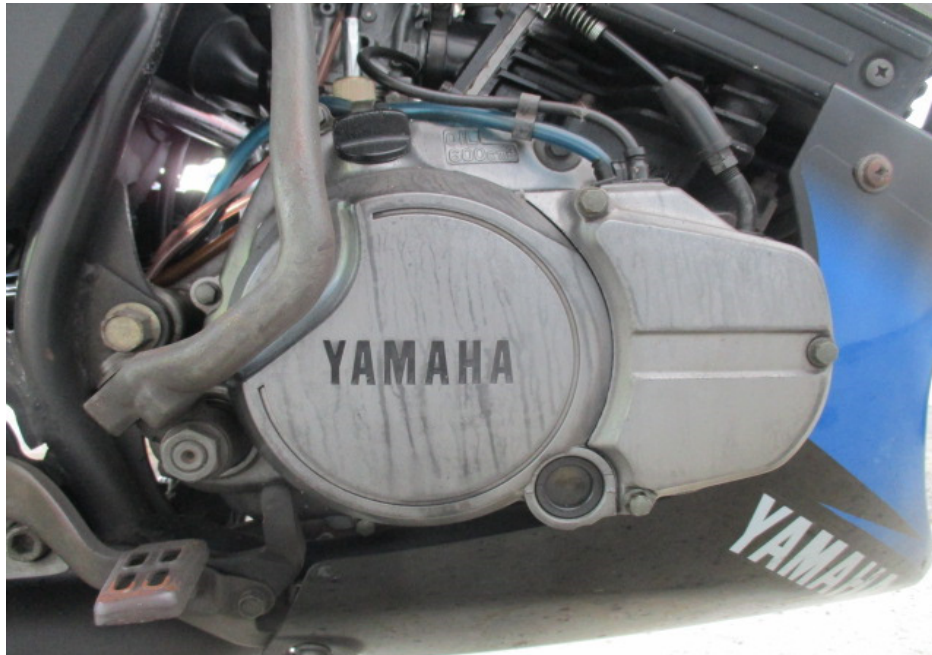




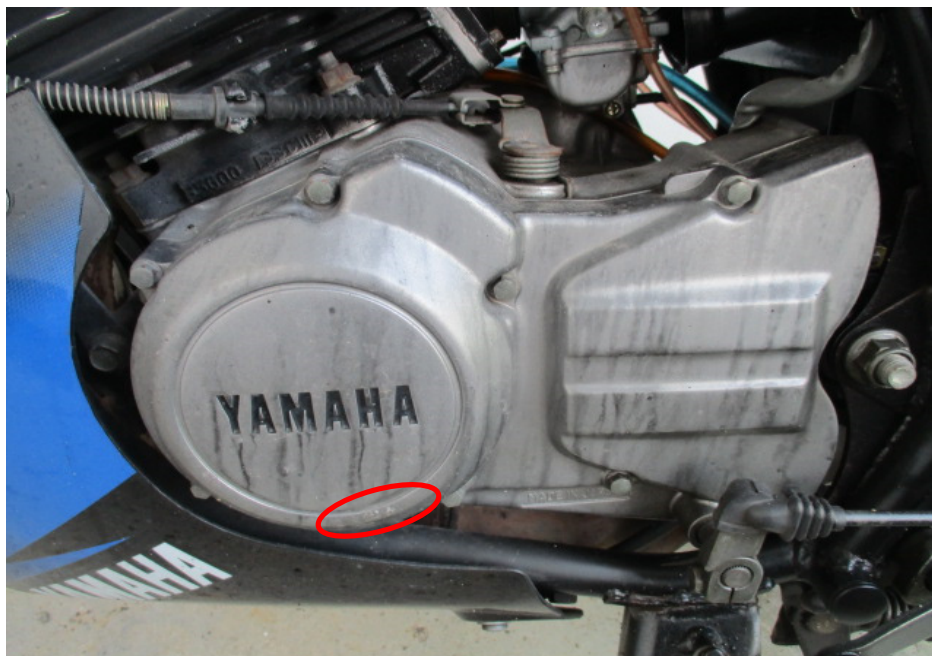
**Photo 13** shows the condition of the Motorcycle's rear tyre. The rear tyre was observed to be in serviceable condition with remaining tread depth of approximately 4mm. However the rear tyre was observed to be deflated as a result of the broken rear wheel rim. We did not observe any tear, burst mark(s) and/or punctured hole(s) on the sidewalls as well as across the tread of the rear tyre.

### **Engine & Drive Train**

8. Upon examination of the engine area of the Motorcycle, we had observed that the various engine related parts and components on the right side of the Motorcycle were intact with no visible damage. There was also no fluid leak and/or fluid stain found around the right engine area of the Motorcycle. The various left engine components had sustained damage of grazing nature as a result of the accident however the engine components were still intact. There was also no fluid leak and/or fluid stain found around the left engine area of the Motorcycle.
9. The gear chain of the Motorcycle, which rotates the rear wheel of the Motorcycle, was found to be in serviceable condition and without any misalignment. It was also adequately lubricated for operating purposes. See photos 14 - 17 below.



**Photo 14** shows the right side of the engine of the Motorcycle at the time of our inspection. The various engine related parts and components were found to be intact with no visible damage. There was also no sign(s) or indication(s) of fluid leak observed around the right engine area of the Motorcycle.



**Photo 15** shows the left side of the engine of the Motorcycle at the time of our inspection. The various left engine components had sustained damage of grazing nature as a result of the accident (circled) however the engine components were still intact. There was also no fluid leak and/or fluid stain found around the left engine area of the Motorcycle.





**Photo 16** shows the general view of the gear train of the Motorcycle, which was observed to be intact with no misalignment. It was also adequately lubricated for operating purposes.



**Photo 17** shows a closer 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.

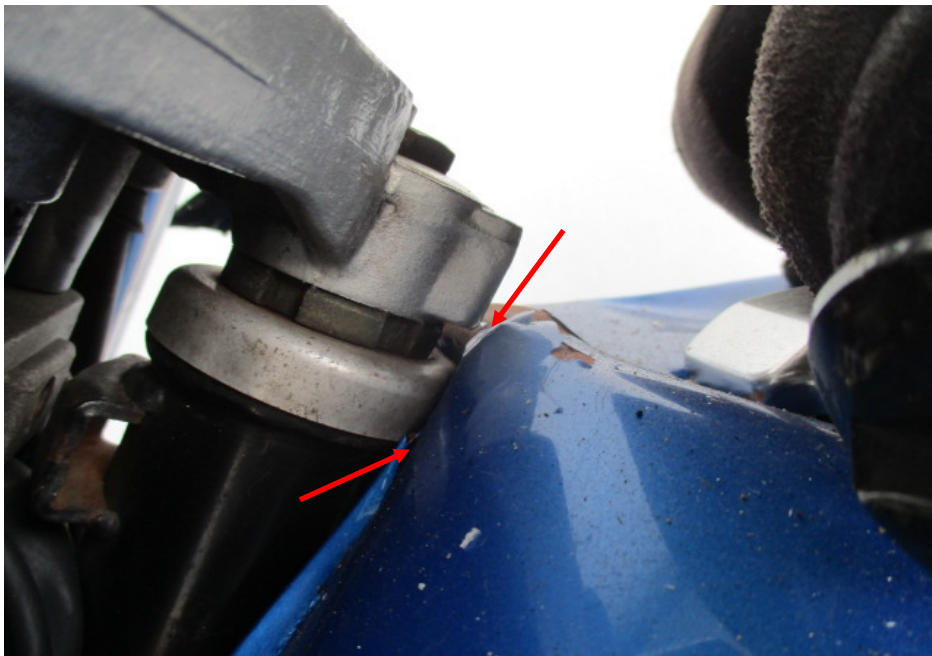


**Steering System & Braking System**

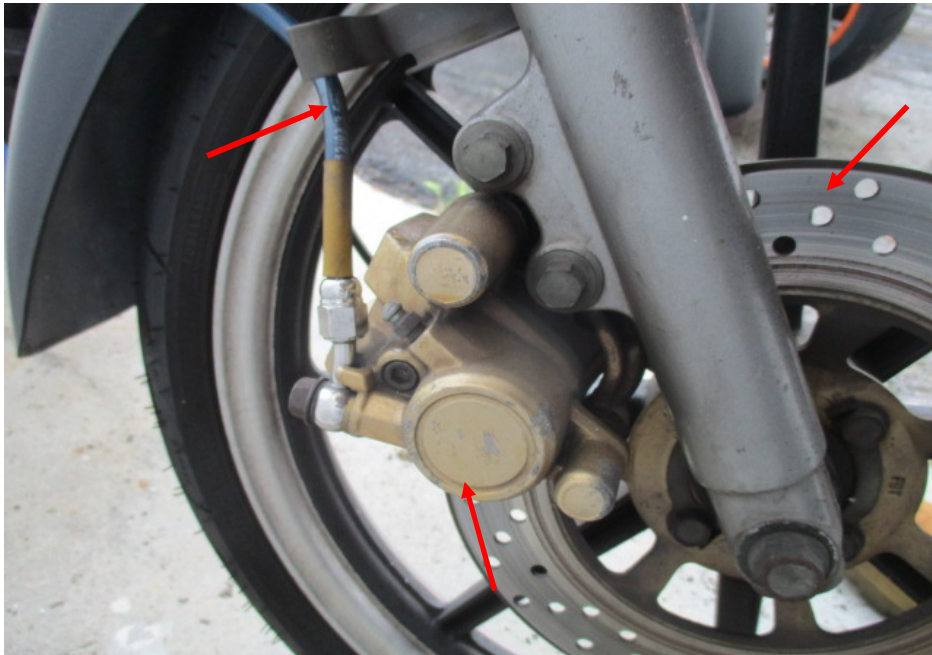
10. For this case, we were not able to conduct any test(s) on the steering system of the Motorcycle due to the damage to its front forks. The inner tube of the front forks and fork brackets were damaged as a result of the accident. The impact of the accident had also caused the petrol tank to be pushed towards the front fork stem. Hence we were unable to turn the handle bar towards the left or right.
11. 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 caliper, drum, brake lever 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.
12. Static brake tests conducted on the Motorcycle had appear to indicate that the front braking system of the Motorcycle was in serviceable condition. 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 front brake system.
13. We subsequently carried out an operational test of the Motorcycle's braking system. This was done by manually pushing the Motorcycle forward and backward, simulating the Motorcycle in motion, and thereafter engaging the front brake and rear brake of the Motorcycle. At the end of the short operational test, we did not observe any abnormal behaviour of the Motorcycle's braking system. The front wheel and rear wheel of the Motorcycle were able to stop rotating immediately upon depressing the brake lever and stepping on the brake pedal.
14. In general, the observations gathered during the brake test had indicated that the braking system of the Motorcycle was in serviceable condition. See photos 18 – 23 below.



**Photo 18** shows the front forks of the Motorcycle. The inner tube of the front forks and fork brackets were damaged as a result of the accident (arrowed). We were hence not able to conduct any tests on the steering system of the Motorcycle.



**Photo 19** shows the front fork stem of the Motorcycle. The petrol tank had been pushed towards the front fork stem as a result of the accident (arrowed). We were hence not able to turn the handle bar of the Motorcycle towards the left or right.



**Photo 20** shows a close up view of the front brake caliper, front brake disc and front brake hose (arrowed) of the Motorcycle, which are all part of the components in the hydraulic front brake system of the Motorcycle. Our visual checks of these various components had revealed all to be intact with no visible damage. No leakage of brake fluid was also observed.

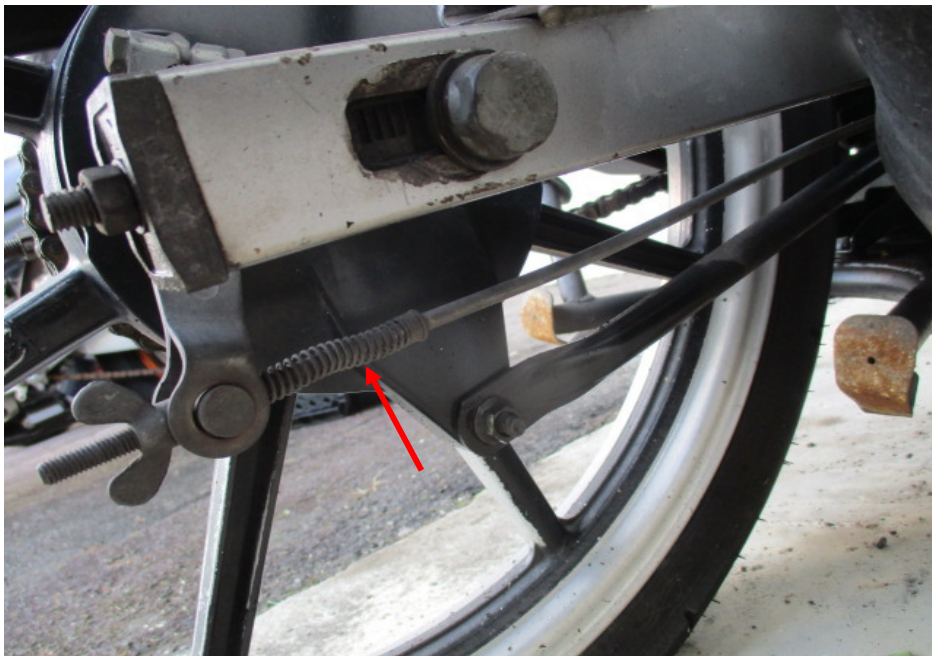


**Photo 21** shows the brake fluid reservoir for the front brake of the Motorcycle. The brake fluid was observed to be of sufficient level and without contamination for operational purposes.





**Photo 22** shows the front brake lever being depressed. There was some resistance felt (spongy like feel) upon pressing the front brake lever (arrowed). This would indicate that there is no leakage of pressure/vacuum in the brake system.



**Photo 23** shows the rear wheel of the Motorcycle. The type of brake system for the rear wheel was of a mechanical type, controlled by the brake foot pedal of the Motorcycle. Our checks of the cable (arrowed), spring and drum which are all part of the components in the rear brake system of the Motorcycle reveal all to be intact and without damage.

**Conclusion**

15. For this particular case, we were unable to determine whether there was any possible mechanical failure to the steering system of the Motorcycle due to the extent of damage that it had sustained. However the braking system of the Motorcycle was found to be in serviceable condition upon our operational test.
16. 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 2 tyres. The front tyre was sufficiently inflated for vehicular operation with remaining tread depth of approximately 3mm. The deflated rear tyre had remaining tread depth of 4mm.

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