

Your Ref: TP/IP/26131/2019  
Our Ref : CI/TPD19009626/N

24 June 2019

**Fatal Accident Investigation Team**

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

**MECHANICAL INSPECTION REPORT OF MOTORCYCLE FBC 7337T**

1. We refer to your request on 28 May 2019 to conduct a physical inspection of a motorcycle bearing registration number FBC 7337T (herein referred to as "**Motorcycle**"), which was involved in a fatal road traffic accident on 22 April 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 10 June 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.

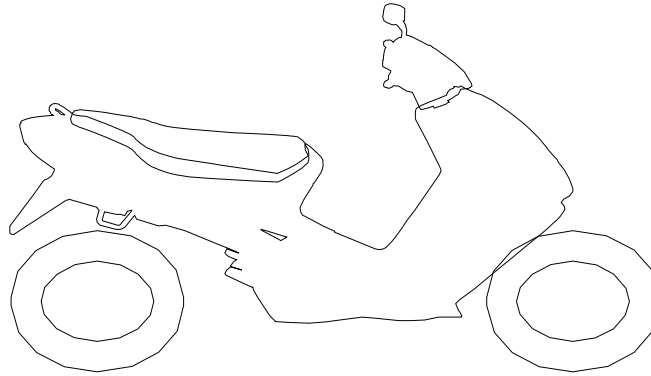
**General Condition**

4. The mileage of the Motorcycle at the time of our inspection was 105, 456km.
5. The Motorcycle had sustained damages significantly at its frontal portion and left body. Body parts that were found to have been damaged include its headlamp assembly, head cowling, speedometer gauge, side mirrors, handlebars, petrol tank, left side cowling, frame sliders, gear shift pedal, left signal lamps and rear number plate, 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.

7. Both the tyres were observed to be sufficiently inflated for vehicular operation. The tyre brand, tyre size and remaining tread depth of the 2 tyres of the Motorcycle were recorded as follows:-



Pirelli 180/55 R17 (3mm)

Pirelli 120/70 R17 (3mm)

8. The 2 tyres were wrapped around alloy wheel rims. At the time of our inspection, we did not observe any visible damage on the rear wheel rim of the Motorcycle. We had however found some relatively minor marks of grazing nature on the edges of the front wheel rim, at the left side of the Motorcycle. See photos 1 – 16 below.



**Photo 1** shows a closer view of the speedometer gauge of the Motorcycle. The mileage of the Motorcycle at the time of our inspection was 105, 456km (circled).



**Photo 2** shows a general view of the front body of the Motorcycle at the time of our inspection. The Motorcycle was observed to have sustained damages at its frontal and left portion.





**Photo 3** shows a general view of the left front body of the Motorcycle at the time of our inspection. The Motorcycle was observed to have sustained damages at its frontal and left portion. The body parts that were found to have been damaged include its headlamp assembly, head cowling, speedometer gauge, side mirrors, handlebars, petrol tank, left side cowling, frame sliders, gear shift pedal, left signal lamps and rear number plate, amongst others.



**Photo 4** shows a closer view of the head cowling and windshield (arrowed) of the Motorcycle which had sustained damages as a result of the accident.



**Photo 5** shows a closer view of the headlamp assembly (circled) and speedometer gauge (arrowed) which were amongst the body parts at the front body of the Motorcycle that had sustained damage as a result of the accident.



**Photo 6** shows a close up view of the front brake lever, front brake fluid reservoir, side mirrors, clutch lever, handlebars and handlebar ends 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 closer view of the clutch lever (arrowed) and broken left handlebar (circled) which were amongst the body parts at the front body of the Motorcycle that had sustained damage as a result of the accident.



**Photo 8** shows the broken IU unit of the Motorcycle as a result of the accident.

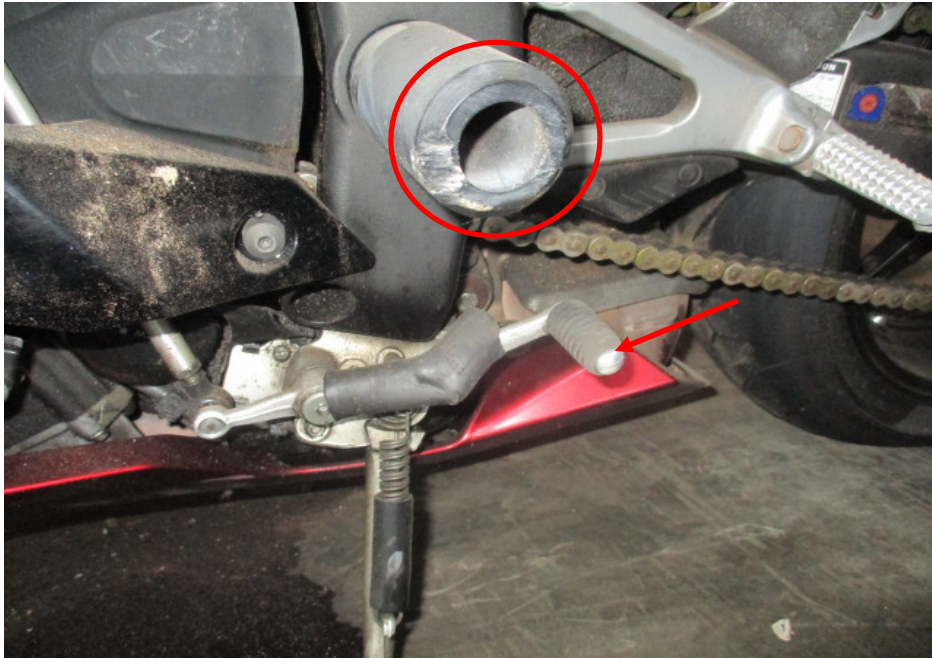


**Photo 9** shows a closer view of the petrol tank, which was amongst the body parts of the Motorcycle that had sustained damage as a result of the accident (circled).

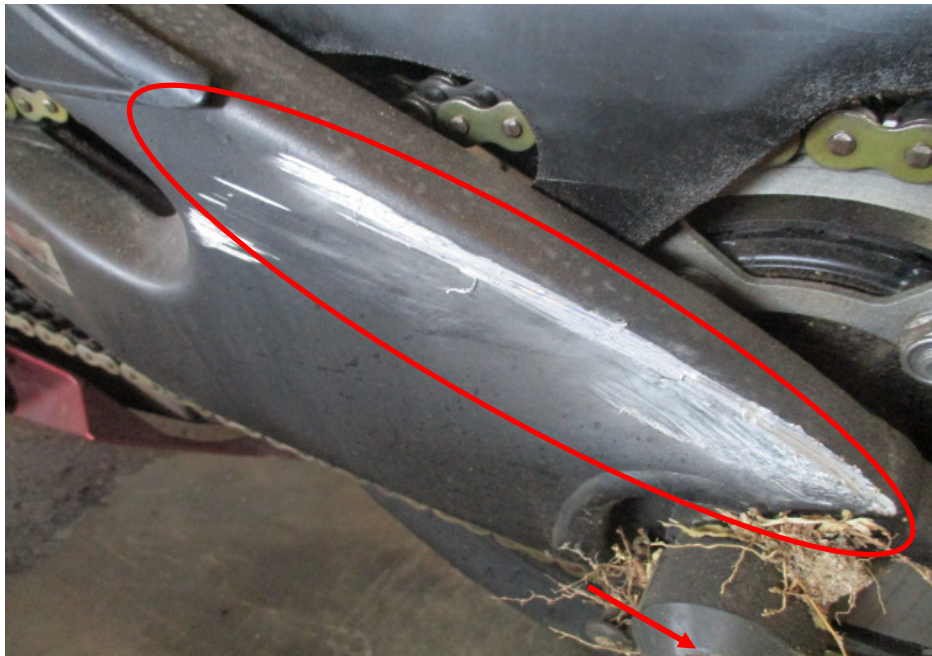


**Photo 10** shows a closer view of the left side cowling and left front frame slider (circled), which were amongst the body parts of the Motorcycle that had sustained damage as a result of the accident.





**Photo 11** shows a closer view of the left engine frame slider (circled) and gear shift pedal (arrowed) which was amongst the body parts of the Motorcycle that had sustained damage as a result of the accident.



**Photo 12** shows a closer view of the left rear slider (arrowed) and swingarm (circled) which was amongst the body parts of the Motorcycle that had sustained damages of grazing nature as a result of the accident.





**Photo 13** shows the dislodged left rear signal lamp (circled) and dented rear number plate of the Motorcycle as a result of the accident.



**Photo 14** shows the front wheel rim of the Motorcycle at the time of our inspection. Some relatively minor marks of grazing nature were observed on the edges of the front wheel rim (circled), at the left side of the Motorcycle.



**Photo 15** 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 16** 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 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 rear 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 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. Wet fluid stains were observed on the underside of the damaged left engine cover of the Motorcycle as well as on the ground, indicating that a fluid leak had occurred as a result of the accident.
10. 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 17 – 21 below.



**Photo 17** 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 18** 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 (arrowed). Wet fluid stains were observed on the underside of the damaged left engine cover of the Motorcycle (circled).

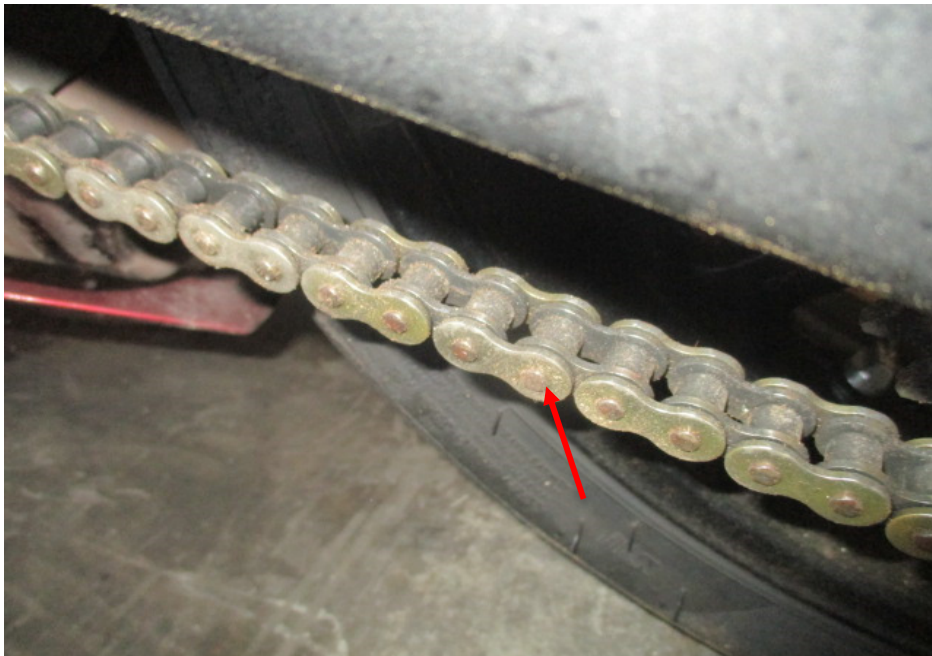


**Photo 19** shows wet fluid stains observed on the ground (circled) directly below the damaged left engine cover of the Motorcycle (arrowed), indicating that a fluid leak had occurred as a result of the accident.





**Photo 20** shows the gear chain (arrowed) of the Motorcycle, which was observed to be intact with no misalignment. It was also adequately lubricated for operating purposes. The gear chain rotates the rear wheel of the Motorcycle.



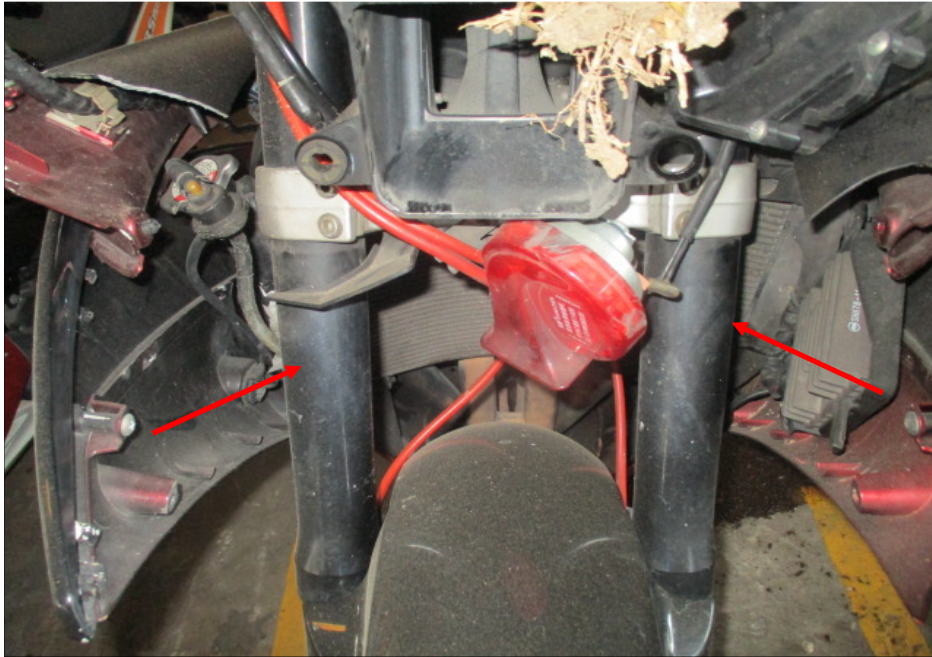
**Photo 21** shows the closer view of the gear chain (arrowed) of the Motorcycle, which was observed to be intact with no misalignment. It was also adequately lubricated for operating purposes.

**Steering System & Braking System**

11. Our checks on the various steering components of the Motorcycle revealed that its steering system was in serviceable condition. Its front fork was found to be intact and undamaged. Turning the handle bar towards the left did not produce any abnormal free play and/or resistance. We were unable to fully turn the handle bar towards the right due to the resistance from the broken components of the head cowl which were found to be pushed inwards as a result of the accident.
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 pressing 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. Our visual examination of the various components in the Motorcycle's braking system like the brake discs, brake calipers, brake lever, brake foot pedal and brake hoses revealed all to be intact and without damage. There was also no leakage of brake fluid observed along the brake hoses. This was from the respective brake fluid reservoirs to the front brake caliper and rear brake caliper of the Motorcycle. The brake fluid for the front brake and rear brake was also found to be of sufficiently level and without any contamination.
14. Static brake tests conducted on the Motorcycle had appear to indicate that the 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 brake system.
15. 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.



16. In general, the observations gathered during the brake test had indicated that the braking system of the Motorcycle was in serviceable condition. See photos 22 – 30 below.



**Photo 22** shows the front fork (arrowed) of the Motorcycle. The front fork and fork bracket of the Motorcycle were both found to be intact and undamaged. Turning the Motorcycle's handle bar towards the left and right did not produce any abnormal free play. The steering system of the Motorcycle was in serviceable condition at the time of our inspection.

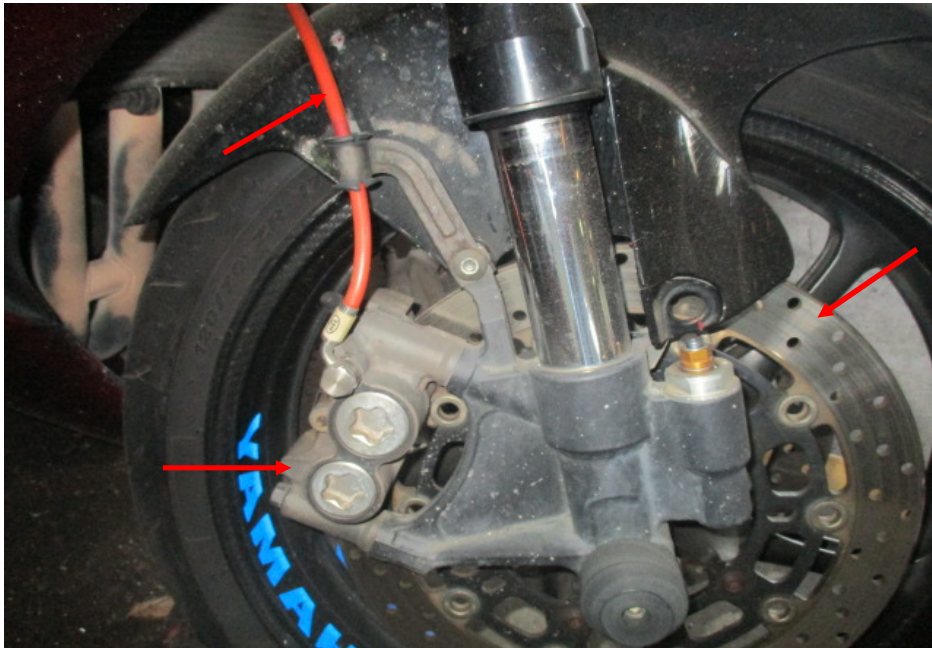


**Photo 23** shows the front wheel of the Motorcycle turned slightly towards the right. We were unable to fully turn the handle bar towards the right due to the resistance from the broken components of the head cowl which were found to be pushed inwards as a result of the accident.



**Photo 24** shows the front wheel of the Motorcycle turned towards its full left. Turning the Motorcycle's handle bar towards the left did not produce any abnormal free play and/or resistance. This would indicate that the steering system of the Motorcycle was in serviceable condition at the time of our inspection.





**Photo 25** shows a close up view of the front brake caliper, front brake disc and front brake hose (arrowed) at the right side of the Motorcycle's front wheel, 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 26** shows a close up view of the front brake caliper, front brake disc and front brake hose (arrowed) at the left side of the Motorcycle's front wheel, 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.

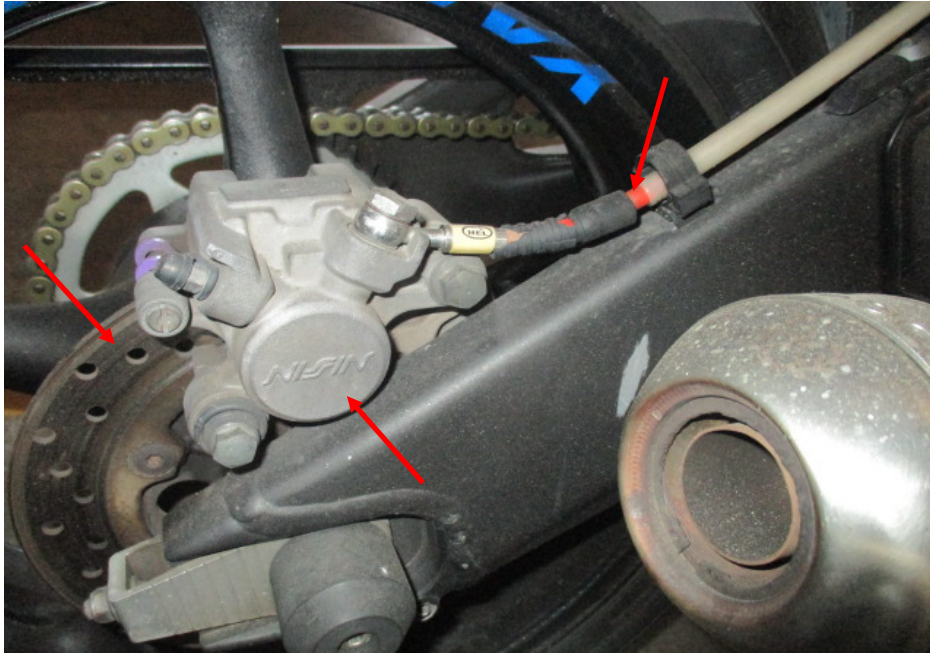


**Photo 27** shows the brake fluid reservoir for the front brake of the Motorcycle. The brake fluid was observed to be of sufficient level and without contamination for operational purposes.



**Photo 28** 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 29** shows a close up view of the rear brake caliper, rear brake disc and rear brake hose (arrowed) of the Motorcycle, which are all part of the components in the hydraulic rear 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 30** shows the brake fluid reservoir for the rear brake of the Motorcycle. The brake fluid was observed to be of sufficient level and without contamination for operational purposes.

**Conclusion**

17. 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.
18. 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 2 tyres were sufficiently inflated for vehicular operation with remaining tread depth of approximately 3mm each.

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