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Your Ref: TP/IP/13597/2019 30 May 2019
Our Ref : CI/TPD19008262/N

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

INSPECTION REPORT OF MOTORCYCLE FW 672T

1. We refer to your request dated 29 April 2019 to conduct a physical inspection of a motorcycle bearing registration number FW 672T (herein referred to as **"Motorcycle"**), which was involved in a fatal road traffic accident on 7 March 2019.

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 24 May 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

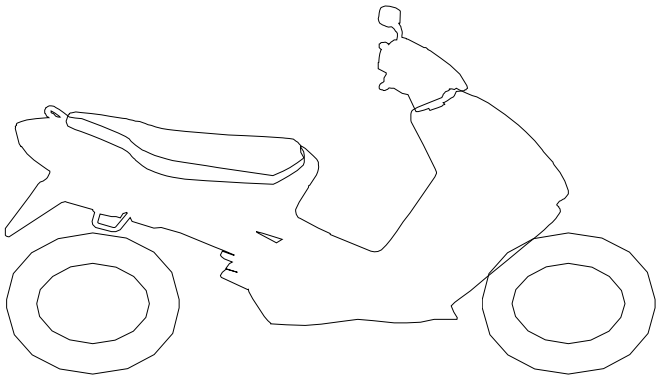
4. The mileage of the Motorcycle at the time of our inspection was 37, 589km.

5. The Motorcycle was observed to have sustained damages all around. The body parts that were found to have been damaged include its speedometer gauge, headlamp assembly, headlight, front mudguard, side mirrors, clutch lever, front brake lever, handlebars, petrol tank, right front footrest, exhaust muffler, exhaust muffler heat shield and rear side covers, 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. 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:-

7. The tyre brand, tyre size and remaining tread depth of the 2 tyres were recorded as follows:-



Dunlop 80/80 - 18 (3mm)

Dunlop 80/80 - 18 (4mm)

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 front and rear wheel rim of the Motorcycle. See photos 1 – 13 below.

Photo 1 shows a general view of the left rear body of the Motorcycle at the time of our inspection. The Motorcycle was observed to have sustained damages all around. The mileage at the time of inspection was recorded to be 37, 589km.

Photo 2 shows a general view of the right front body of the Motorcycle at the time of our inspection. The Motorcycle was observed to have sustained damages all around. The body parts that were found to have been damaged include its speedometer gauge, headlamp assembly, headlight, front mudguard, side mirrors, clutch lever, front brake lever, handlebars, petrol tank, right front footrest, exhaust muffler, exhaust muffler heat shield and rear side covers, amongst others.

Photo 3 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.

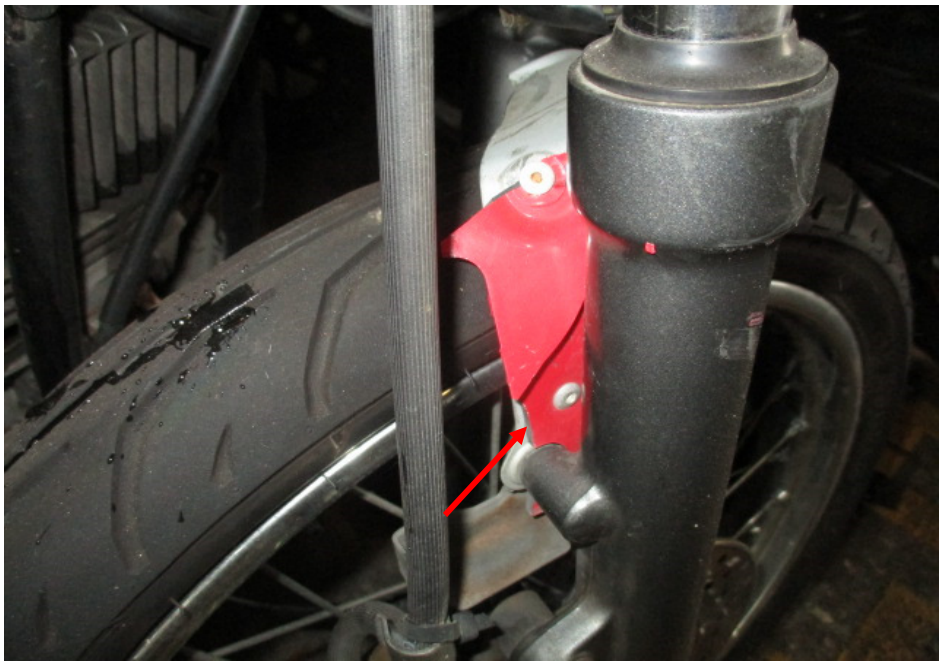


Photo 4 shows a closer view of the front mudguard (arrowed) which was amongst the body parts at the front body of the Motorcycle that had sustained damage as a result of the accident.

Photo 5 shows a close up view of the side mirrors, clutch lever, front brake lever, handlebars and right handlebar end of the Motorcycle. These parts were amongst the body parts of the Motorcycle which were damaged as a result of the accident.

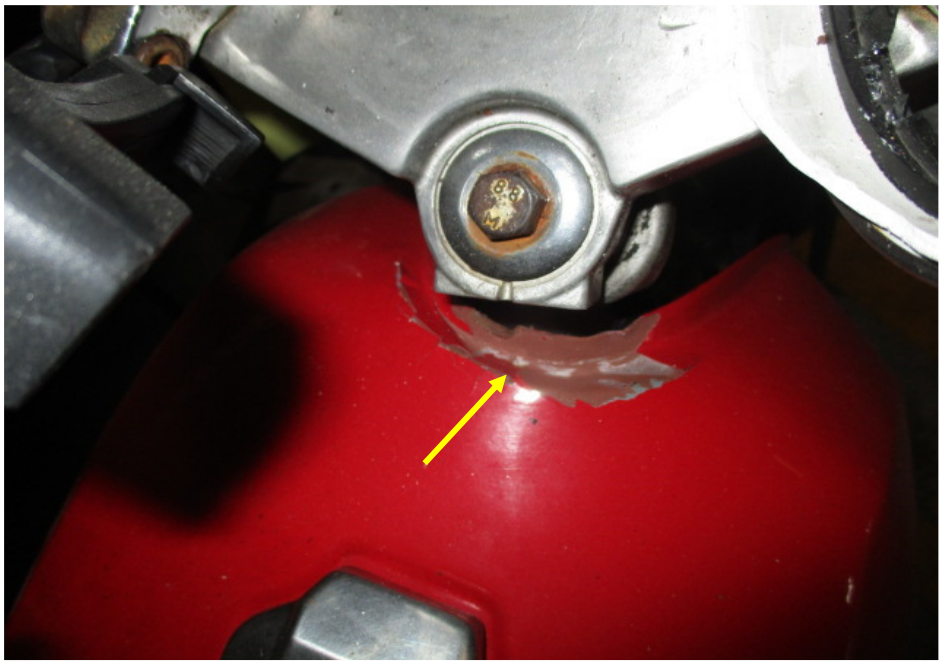


Photo 6 shows a closer view of the petrol tank, which was amongst the body parts of the Motorcycle that had sustained damage as a result of the accident (arrowed).

Photo 7 shows a closer view of the right front footrest (arrowed) which was amongst the body parts of the Motorcycle that had sustained damage as a result of the accident.

Photo 8 shows the damaged left rear side cover (circled) which was amongst the body parts of the Motorcycle that had sustained damage as a result of the accident.

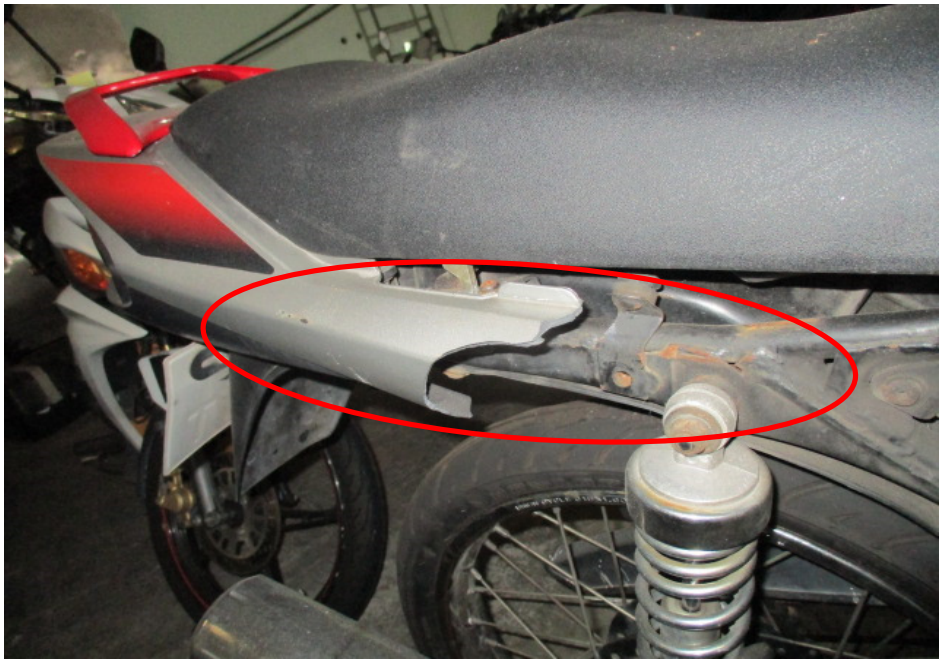


Photo 9 shows the damaged right rear side cover (circled) which was amongst the body parts of the Motorcycle that had sustained damage as a result of the accident.

Photo 10 shows the exhaust muffler heat shield (circled) which was amongst the body parts of the Motorcycle that had sustained damage as a result of the accident.

Photo 11 shows the exhaust muffler (circled) which was amongst the body parts of the Motorcycle that had sustained damage as a result of the accident.

Photo 12 shows the front tyre of the Motorcycle at the time of our inspection. The front 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. 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 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 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 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 fluid leak observed around the engine area of the Motorcycle.

10. The gear chain of the motorcycle was found to be intact without any misalignment. It was also adequately lubricated for operating purposes. See photos 14 – 17 below.

Photo 14 shows the left 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 left engine area of the Motorcycle.

Photo 15 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 16 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 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

11. For this case, we were not able to conduct any test(s) on the steering system of the Motorcycle due to the damage of its front fork. The front fork was found to be bent inwards as a result of the accident.

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 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.

13. The brake fluid for the front brake was found to be of sufficient level and without any contamination. However a leakage of brake fluid from the front brake fluid reservoir was observed when the front brake lever was depressed. The leakage of brake fluid from the front brake fluid reservoir could have been due to the accident as the front brake fluid reservoir was found to be bent inwards causing a crack to the front brake fluid reservoir.

14. For this case, we were not able to carry out any operational tests to the steering system and front braking system of the Motorcycle due to the damage of its front fork, which had rendered the Motorcycle immobile 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.

15. We subsequently carried out an operational test of the Motorcycle's rear braking system. This was done by firstly putting the Motorcycle on its main stand. We then proceeded to turn the rear wheel, allowing it to spin freely, simulating the Motorcycle in motion. We thereafter engaged the rear brake pedal of the Motorcycle. The rear wheel of the Motorcycle was able to stop rotating immediately upon depressing the brake pedal. At the end of the short operational test, we did not observe any abnormal behaviour of the Motorcycle's rear braking system. See photos 18 – 23 below.

Photo 18 shows the front right fork of the Motorcycle. The front right fork (arrowed) was observed to be bent inwards as a result of the accident. We were hence not able to conduct any tests on the steering system of the Motorcycle.

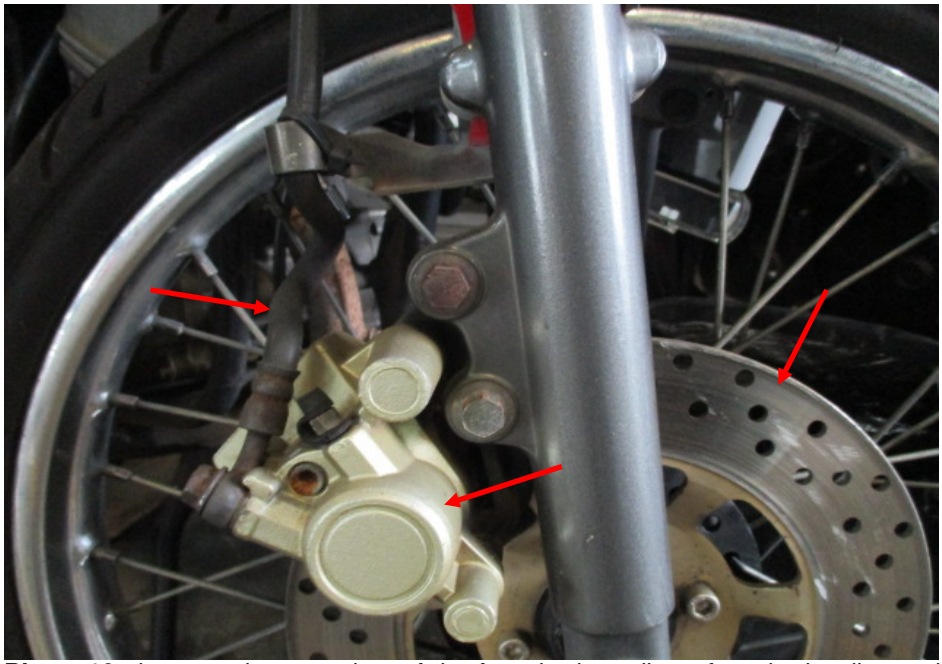


Photo 19 shows a close up view of the front brake caliper, front brake disc and front brake hose (arrowed) of the Motorcycle, which are all part of the components in the hydraulic front brake system of the Motorcycle. Our visual checks of these various components had revealed all to be intact with no visible damage. No leakage of brake fluid was also observed.

Photo 20 shows the brake fluid reservoir for the front brake of the Motorcycle. A leakage of brake fluid from the front brake fluid reservoir was observed (circled) when the front brake lever was depressed (arrowed).

Photo 21 shows the front brake lever being depressed. There was no resistance felt (spongy like feel) upon pressing the front brake lever (arrowed). This would indicate that there is leakage of pressure/vacuum in the brake system.

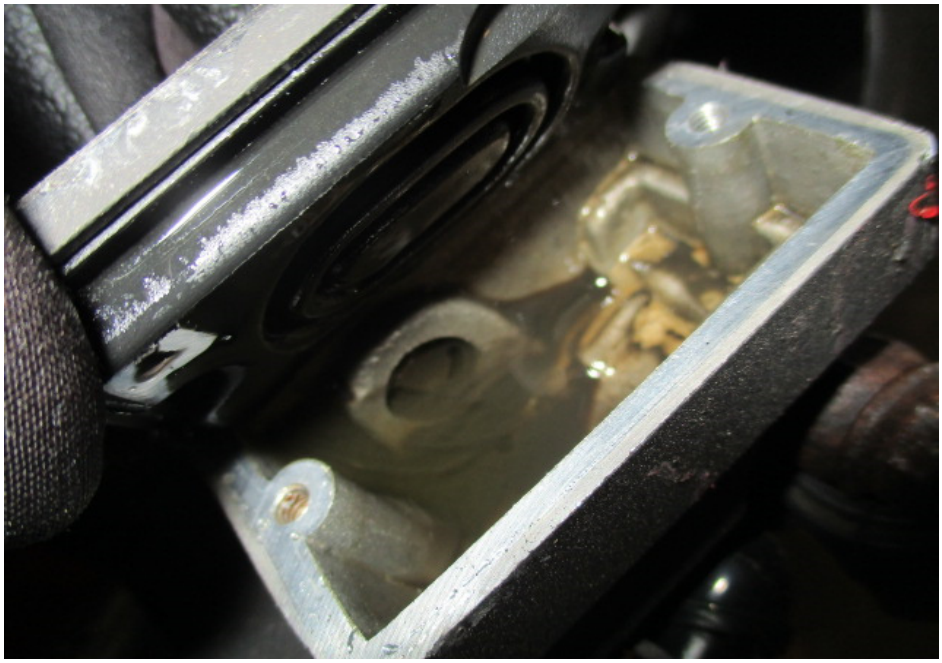


Photo 22 shows the brake fluid reservoir for the front brake of the Motorcycle. The brake fluid was observed to be of sufficient level and without contamination for operational purposes.

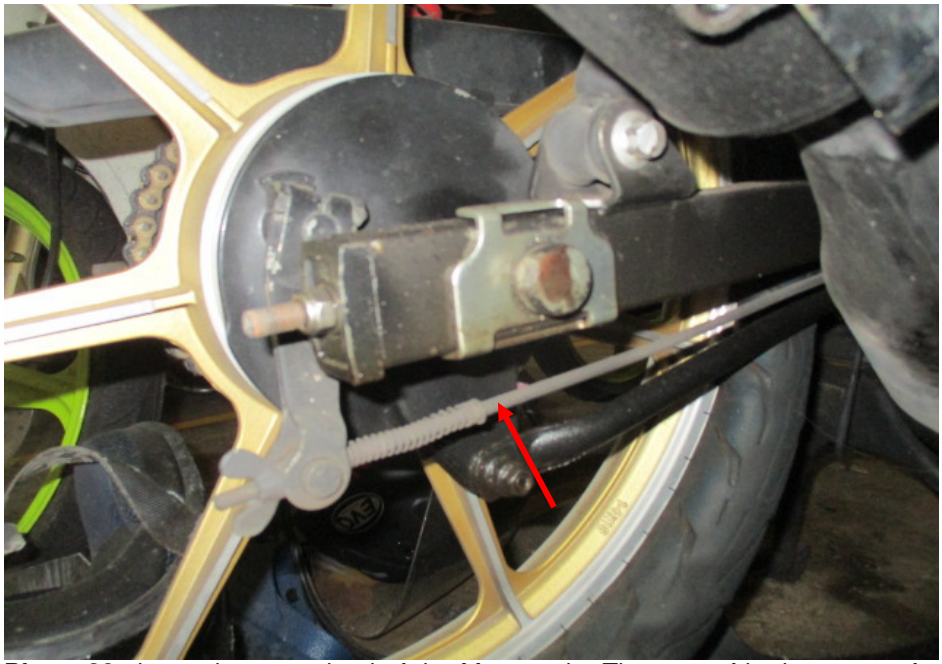


Photo 23 shows the rear wheel of the Motorcycle. The type of brake system for the rear wheel was of a mechanical type, controlled by the brake foot pedal of the Motorcycle. Our checks of the cable (arrowed), spring and drum which are all part of the components in the rear brake system of the Motorcycle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

Conclusion

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 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 2 tyres. The 2 tyres were sufficiently inflated for vehicular operation with remaining tread depths of approximately 3mm and 4mm each.

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