

Your Ref: TP/IP/11513/2020
Our Ref : CI/TPD20005428/N

4 August 2020

Fatal Accident Investigation Team

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

MECHANICAL INSPECTION REPORT OF MOTORCYCLE FU 200H

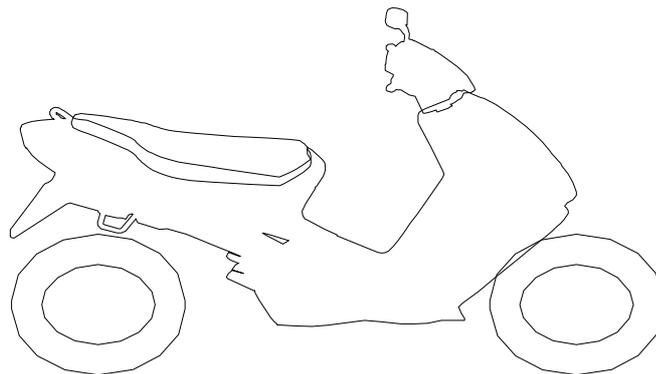
1. We refer to your request dated 2 April 2020 to conduct a physical inspection of a motorcycle bearing registration number FU 200H (herein referred to as “**Motorcycle**”), which was involved in a fatal road traffic accident on 29 February 2020.
2. The purpose of this inspection is to primarily determine 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 4 August 2020 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 missing speedometer gauge as a result of the accident.
5. The Motorcycle was observed to have sustained damages all around. The body parts that were found to have been damaged include its headlight assembly, front forks, front mudguard, engine crashbars, left engine cover, handlebar, side mirrors, clutch lever, front brake lever, petrol tank, left rear side cover, tail light assembly, top box rack, rear mudguard and exhaust muffler, amongst others.

Tyres and Wheel Rims

6. The condition of the rear tyre 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 rear tyre. The tread pattern of the rear tyre was clearly visible. The rear tyre was observed to be sufficiently inflated for vehicular operation.
7. We found the front tyre to be deflated most likely as a result of the accident. The front tyre of the Motorcycle was found to be cut as a result of the accident. The tread pattern of the front tyre was clearly visible.
8. The tyre brand, tyre size and remaining tread depth of the 2 tyres were recorded as follows:-



Shinko 150/70 - 18 (4mm)

Shinko 90/90 - 21 (3mm)
(Deflated)

9. 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. However the front wheel rim was observed to be bent. See photos 1 – 15 below.

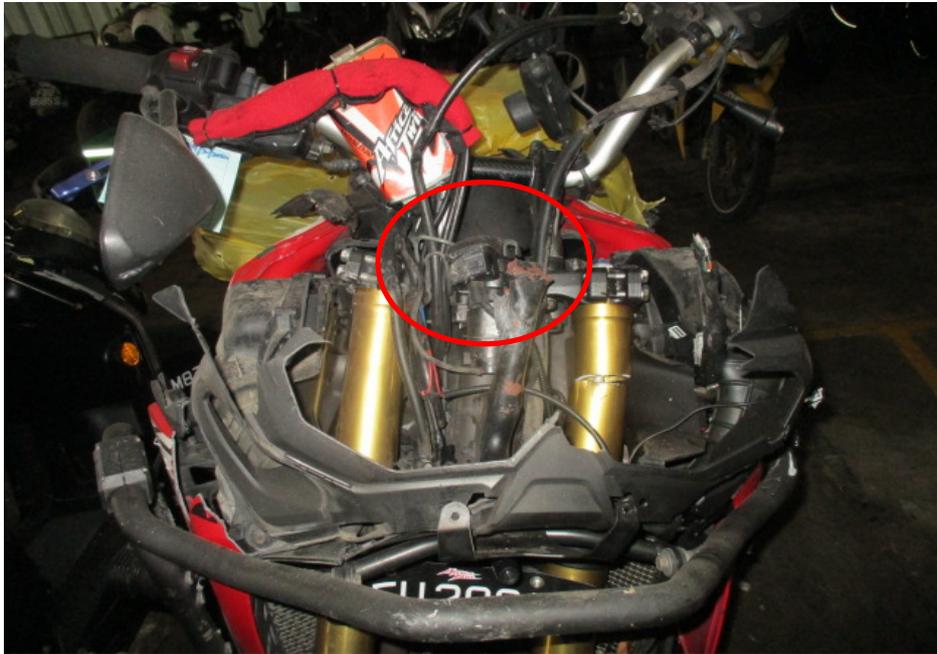


Photo 1 shows the mileage of the Motorcycle at the time of our inspection was not recorded due to a missing speedometer gauge as a result of the accident (circled).



Photo 2 shows a general view of the frontal portion of the Motorcycle at the time of our inspection. The Motorcycle was observed to have sustained damages all around.



Photo 3 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 all around. The body parts that were found to have been damaged include its headlight assembly, front forks, front mudguard, engine crashbars, left engine cover, handlebar, side mirrors, clutch lever, front brake lever, petrol tank, left rear side cover, tail light assembly, top box rack, rear mudguard and exhaust muffler, amongst others.



Photo 4 shows a closer view of the missing headlight assembly and deformed front crash bar (arrowed) of the Motorcycle as a result of the accident.



Photo 5 shows a closer view of the front mudguard which was amongst the body parts at the front body of the Motorcycle that had sustained damage as a result of the accident (arrowed).



Photo 6 shows a closer view of the handlebar, front brake lever, side mirrors and clutch lever (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 7 shows the dented exhaust header of the Motorcycle as a result of the accident (arrowed).



Photo 8 shows the right engine crashbar of the Motorcycle that had sustained damages of grazing nature as a result of the accident (arrowed).



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.



Photo 10 shows a closer view of the tail light assembly, rear mudguard and top box rack which were 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 a closer view of the cracked left rear side cover (arrowed) which was amongst the body parts at the rear body of the Motorcycle that had sustained damage as a result of the accident.



Photo 13 shows the front tyre of the Motorcycle at the time of our inspection. The front tyre was observed to be deflated (red arrow) with remaining tread depth of approximately 3mm. The pattern of the tread was also clearly visible. The front tyre of the Motorcycle was found to be cut (yellow arrow) as a result of the accident.



Photo 14 shows the bent front wheel rim of the Motorcycle as a result of the accident (arrowed).



Photo 15 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. 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

10. 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 left engine cover was observed to be cracked as a result of the accident. However there was no sign(s) or indication(s) of fluid leak observed around the left engine area of the Motorcycle.
11. 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 16 – 19 below.

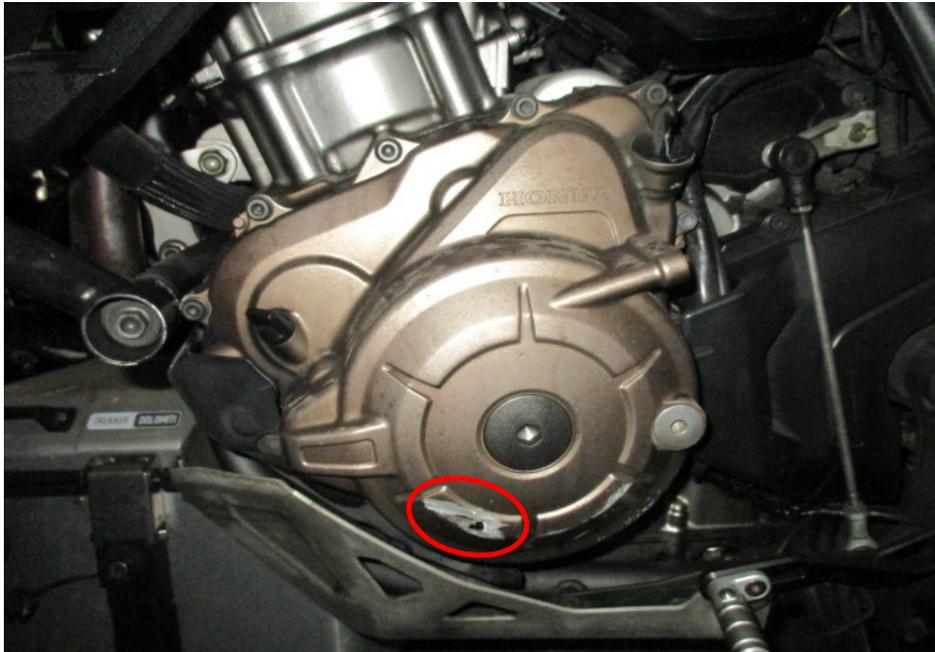


Photo 16 shows the left side of the engine of the Motorcycle at the time of our inspection. The left engine cover was observed to be cracked as a result of the accident (circled). However there was no sign(s) or indication(s) of fluid leak observed around the left engine area of the Motorcycle.

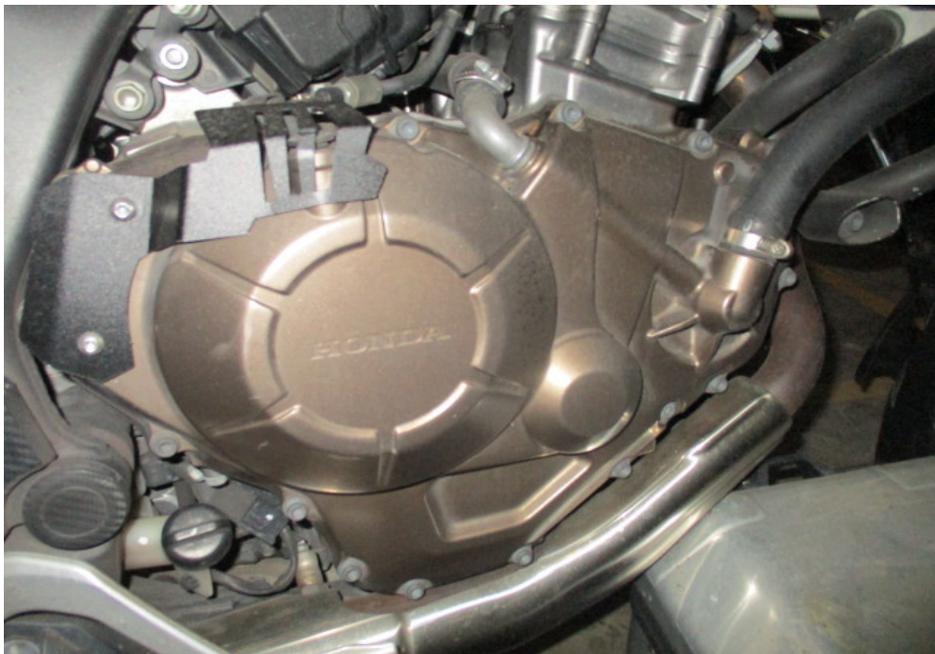


Photo 17 shows the right side of the engine of the Motorcycle at the time of our inspection. The various engine related parts and components were found to be intact with no visible damage. There was also no sign(s) or indication(s) of fluid leak observed around the right engine area of the Motorcycle.



Photo 18 shows the 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.

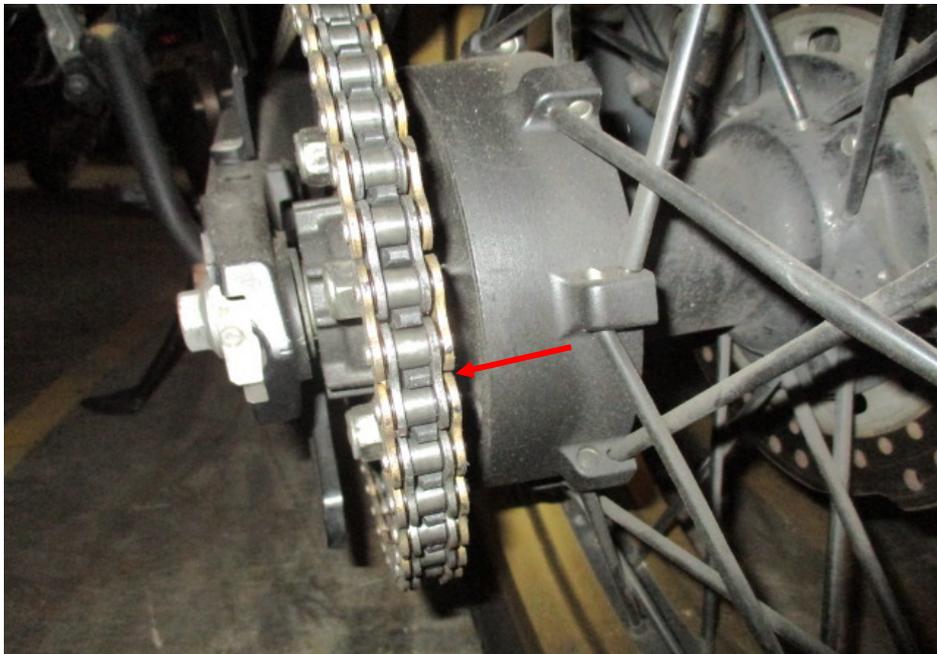


Photo 19 shows a closer view of the gear train (arrowed) of the Motorcycle, which was observed to be intact with no misalignment. It was also adequately lubricated for operating purposes.

Steering System & Braking System

12. 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 forks. The left front fork was observed to be broken as a result of the accident which had rendered the Motorcycle immobile.
13. 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.
14. 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 calipers 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 for operating purposes and without any contamination.
15. Static brake tests conducted on the Motorcycle had appear to indicate that the front braking system of the Motorcycle was not in serviceable condition. There was no resistance felt (spongy like feel) upon pressing the brake lever. This would indicate that there may be a leakage of pressure/vacuum in the front brake system.
16. Static brake tests conducted on the Motorcycle had appear to indicate that the rear braking system of the Motorcycle was in serviceable condition. There was some resistance felt (spongy like feel) upon stepping on the brake pedal. This would indicate that there was no leakage of pressure/vacuum in the rear brake system.
17. For this case, we were not able to carry out any operational tests to the steering system and braking system of the Motorcycle due to the damage of its front forks, 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. See photos 20 – 25 below.



Photo 20 shows the front forks of the Motorcycle. The left front fork was observed to be broken as a result of the accident (arrowed). We were hence not able to conduct any tests on the steering system of the Motorcycle.



Photo 21 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.

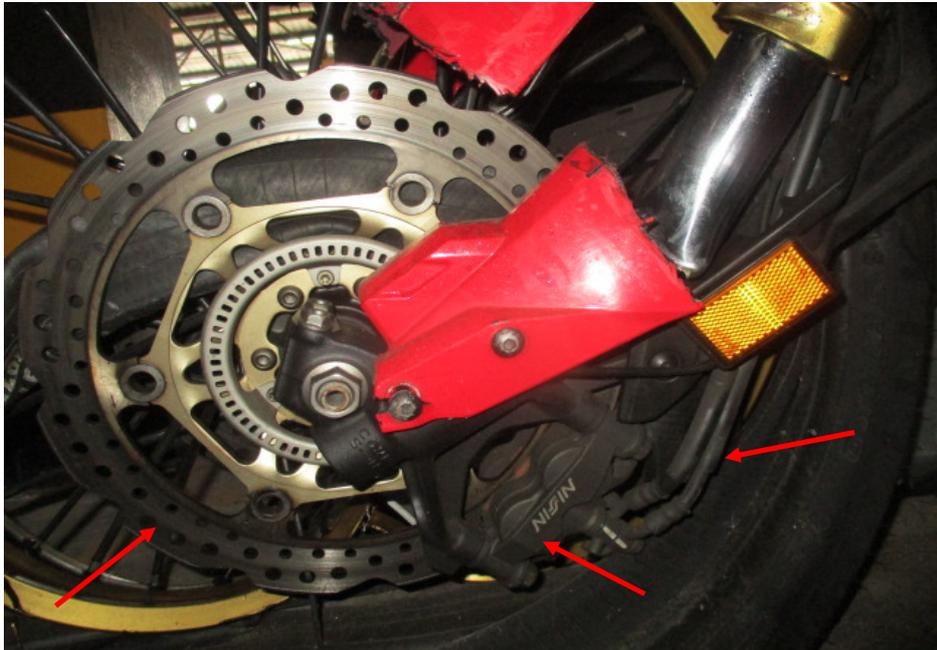


Photo 22 shows a close up view of the front brake caliper, front brake disc and front brake hose (arrowed) at the left side of the Motorcycle's front wheel, which are all part of the components in the hydraulic front brake system of the Motorcycle. Our visual checks of these various components had revealed all to be intact with no visible damage. No leakage of brake fluid was also observed.



Photo 23 shows the brake fluid reservoir for the front brake of the Motorcycle. The brake fluid was observed to be of sufficient level for operational purposes and without contamination (arrowed).



Photo 24 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 may be a leakage of pressure/vacuum in the brake system.



Photo 25 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.

Conclusion

18. 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 was damaged as a result of the accident. The front braking system was observed not to be in serviceable condition. The rear braking system was observed to be in serviceable condition.
19. The rear tyre of the Motorcycle was found to be in serviceable condition with remaining tread depth of approximately 4mm. The rear tyre was sufficiently inflated for vehicular operation. The front tyre had remaining tread depth of approximately 3mm. However the front tyre was observed to be deflated and cut as a result of the accident.
20. 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 damage of its front forks (as a result of the accident), which had rendered the Motorcycle immobile.



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