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Your Ref: TP/IP/28539/2021 20 October 2021
Our Ref : CI/TPD21010812/N

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

MECHANICAL INSPECTION REPORT OF MOTORCYCLE FBE 1045P

1. We refer to your request on 22 September 2021 to conduct a physical inspection of a motorcycle bearing registration number FBE 1045P (herein referred to as **"Motorcycle"**), which was involved in a fatal road traffic accident on 11 June 2021.

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 20 October 2021 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.

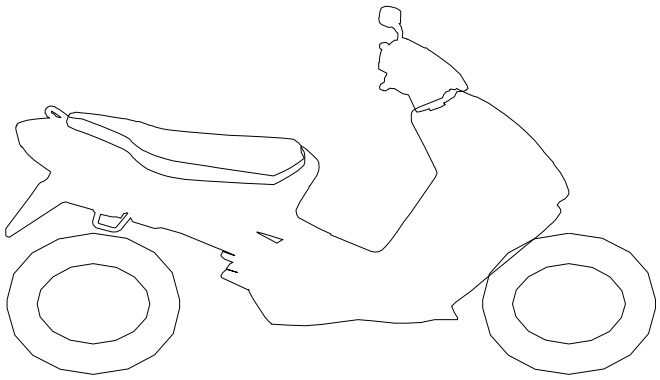
General Condition

4. The mileage of the Motorcycle at the time of our inspection was 549km.

5. The Motorcycle had sustained damages all around. Body parts that were found to have been damaged include its windshield, front cowling, side cowlings, front mudguard, right side mirror, right handlebar end, front brake lever, left rear side cover, rear brake pedal, right front footrest bracket, tail light assembly, exhaust muffler and right pillion foot peg bracket, 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:-



Maxxis 90/80 R17 (2mm) (Deflated)

Pirelli 80/90 R17 (5mm)

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 and rear wheel rim of the Motorcycle. See photos 1 – 17 below.

Photo 1 shows the speedometer gauge of the Motorcycle where the mileage recorded at the time of our inspection was 549km (circled).

Photo 2 shows a general view of the rear portion of the Motorcycle at the time of our inspection. The Motorcycle had sustained damages all around.

Photo 3 shows a general view of the frontal portion of the Motorcycle at the time of our inspection. The Motorcycle had sustained damages all around.

Photo 4 shows a general view of the right body of the Motorcycle at the time of our inspection. The Motorcycle had sustained damages all around. Body parts that were found to have been damaged include its windshield, front cowling, side cowlings, front mudguard, right side mirror, right handlebar end, front brake lever, left rear side cover, rear brake pedal, right front footrest bracket, tail light assembly, exhaust muffler and right pillion foot peg bracket, amongst others.

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

Photo 6 shows the general view of the front cowling of the Motorcycle which was amongst the body parts of the Motorcycle that had sustained damage as a result of the accident (arrowed).

Photo 7 shows the missing left cowling of the Motorcycle as a result of the accident.

Photo 8 shows the missing right cowling of the Motorcycle as a result of the accident.

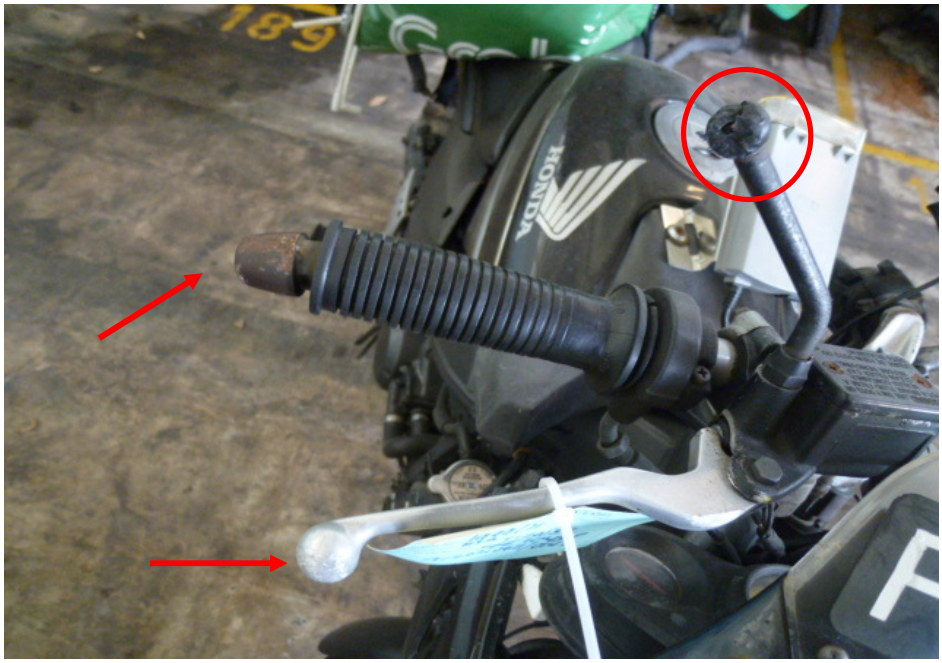


Photo 9 shows a close up view of the right handlebar end and front brake lever (arrowed) as well as the missing right side mirror (circled) of the Motorcycle. These parts were amongst the body parts of the Motorcycle which were damaged as a result of the accident.

Photo 10 shows a close up view of the cracked front mudguard of the Motorcycle as a result of the accident (arrowed).

Photo 11 shows a closer view of the cracked left rear side cover of the Motorcycle as a result of the accident (arrowed).

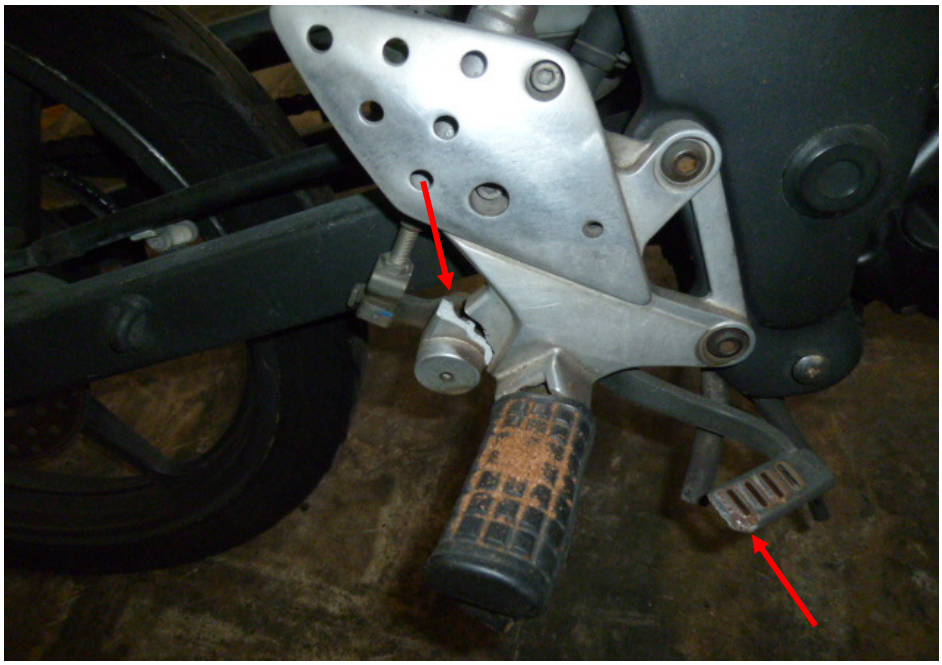


Photo 12 shows the bent rear brake pedal and broken right front footrest which were amongst the body parts of the Motorcycle that had sustained damage as a result of the accident (arrowed).

Photo 13 shows the broken tail light assembly which was amongst the body parts of the Motorcycle that had sustained damage as a result of the accident (arrowed).

Photo 14 shows the broken exhaust muffler and right pillion foot peg bracket (arrowed) of the Motorcycle as a result of the accident.

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 5mm. 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 front tyre was also observed to be sufficiently inflated for vehicular operation.

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 2mm. 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. However the front tyre was observed to be deflated as a result of the accident.

Photo 17 shows a closer view of the deflated rear tyre of the Motorcycle as a result of the accident (arrowed).

Engine & Drive Train

8. 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.

9. The gear train 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 18 - 21 below.

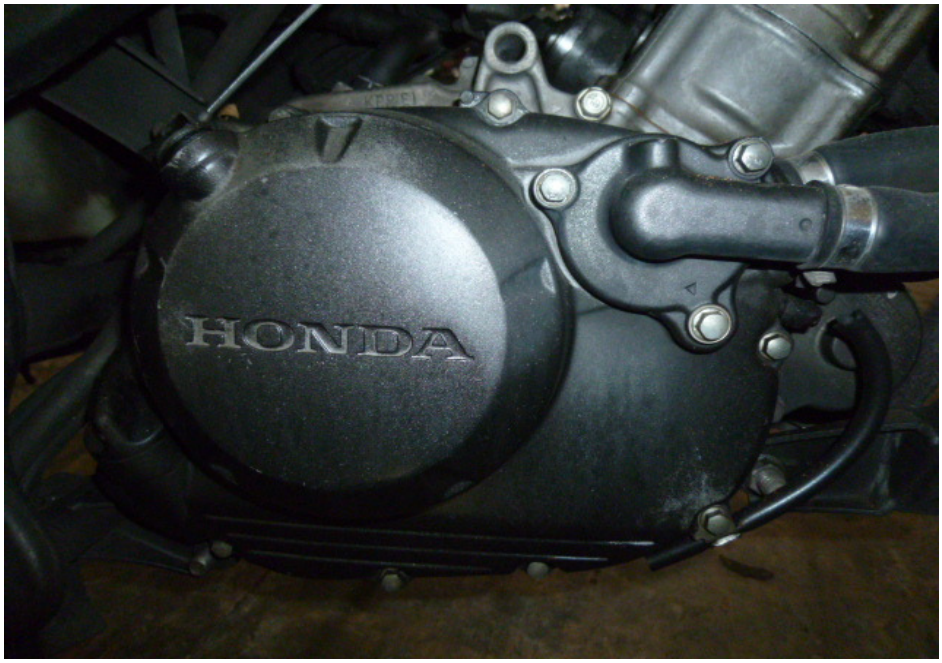


Photo 18 shows the right side of the engine of the Motorcycle at the time of our inspection. The various engine related parts and components were found to be intact with no visible damage. There was also no sign(s) or indication(s) of fluid leak observed around the right engine area of the Motorcycle.

Photo 19 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.

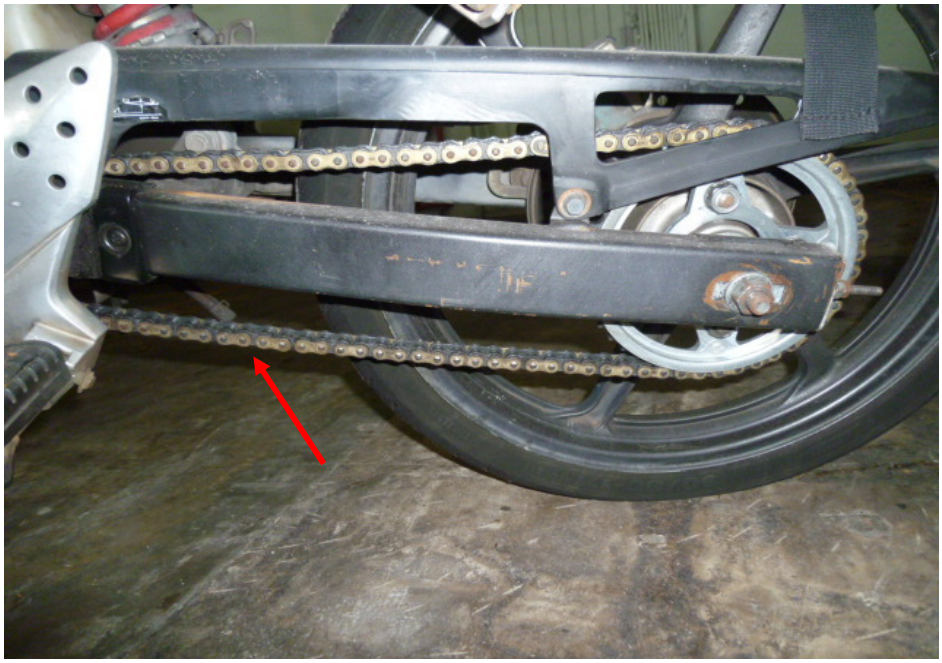


Photo 20 shows the general view of the gear train (arrowed) of the Motorcycle, which was observed to be intact with no misalignment. It was also adequately lubricated for operating purposes.

Photo 21 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 fork assembly. The left front fork was found to be bent as a result of the accident.

11. 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.

12. 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 rear brake was also found to be of sufficient level for operational purposes and without any contamination. However we were unable remove the front brake reservoir cover to examine whether the brake fluid was of sufficient level and without contamination for operational purposes due to a worn out screw.

13. 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.

14. We subsequently carried out an operational test of the Motorcycle's front braking system. This was done by manually pushing the Motorcycle forward and backward, simulating the Motorcycle in motion, and thereafter engaging the front brake of the Motorcycle. At the end of the short operational test, we observed that the front wheel of the Motorcycle was unable to stop rotating upon depressing the brake lever.

15. For this case, we were not able to carry out any operational tests to the rear braking system of the Motorcycle due to the broken right front footrest bracket. See photos 22 – 26 below.

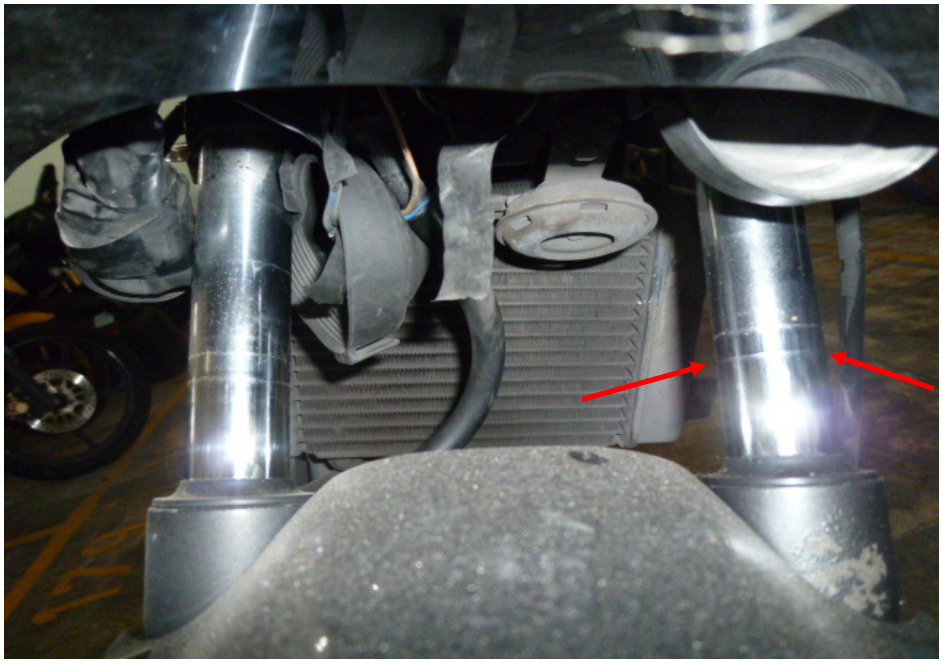


Photo 22 shows the front fork assembly of the Motorcycle. The front left fork (arrowed) was observed to be bent as a result of the accident. We were hence not able to conduct any tests on the steering system of the Motorcycle.

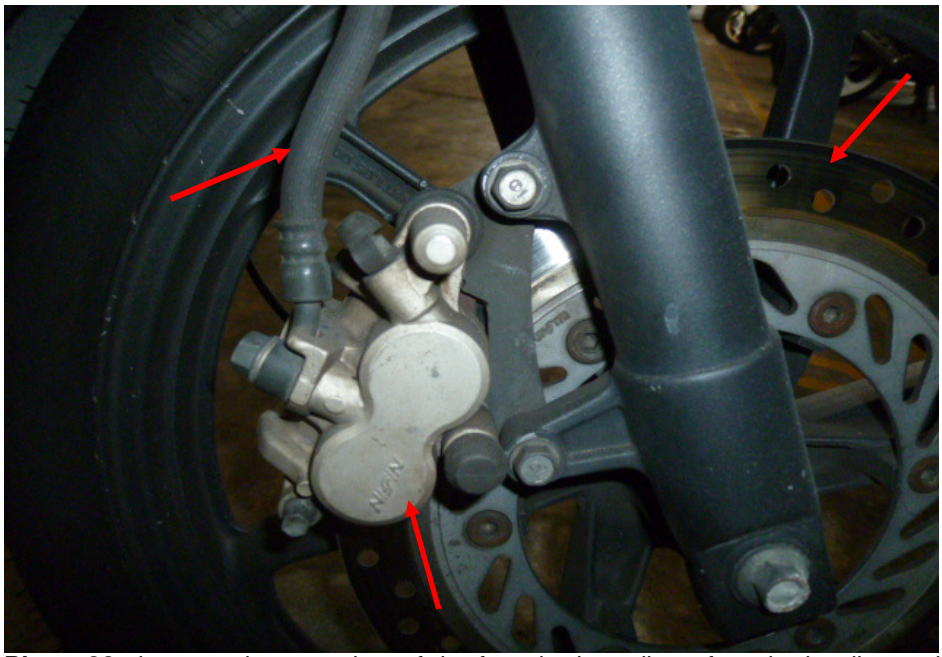


Photo 23 shows a close up view of the front brake caliper, front brake disc and front brake hose (arrowed) of the Motorcycle, which are all part of the components in the hydraulic front brake system of the Motorcycle. Our visual checks of these various components had revealed all to be intact with no visible damage. No leakage of brake fluid was also observed.

Photo 24 shows the brake fluid reservoir cover for the front brake of the Motorcycle. We were unable to examine whether the brake fluid was of sufficient level and without contamination for operational purposes due to the worn out screw (circled).

Photo 25 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 front brake system.

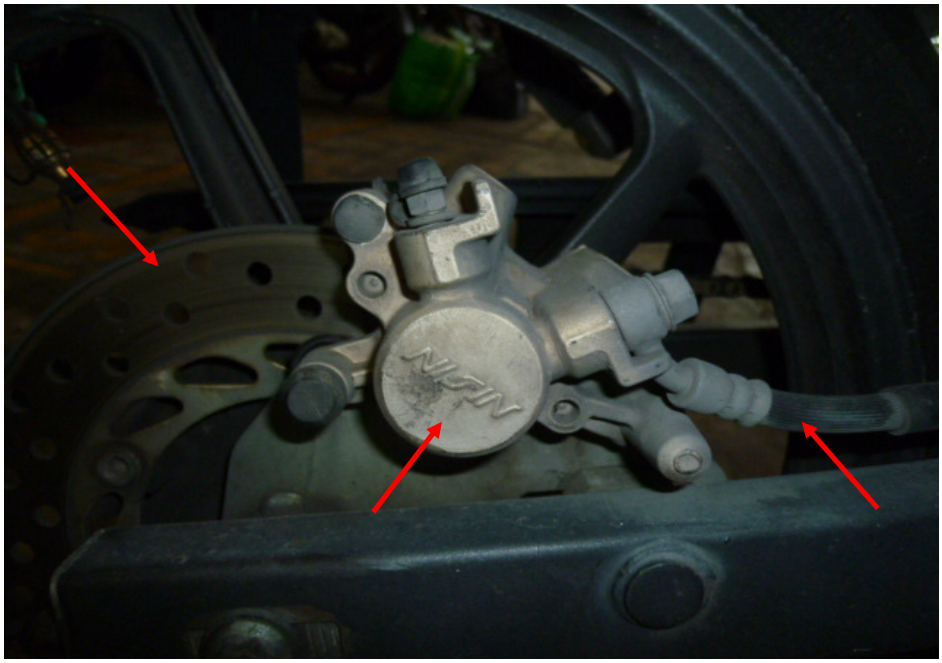
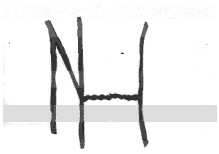


Photo 26 shows a close up view of the rear brake caliper, rear brake disc and rear brake hose (arrowed) of the Motorcycle, which are all part of the components in the hydraulic rear brake system of the Motorcycle. Our visual checks of these various components had revealed all to be intact with no visible damage. No leakage of brake fluid was also observed.

Conclusion

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 rear braking system were damaged as a result of the accident. Its front braking system was observed not to be in serviceable condition.

17. The 2 tyres of the Motorcycle were found to be in serviceable condition (which included the deflated rear tyre). 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 rear tyre was sufficiently inflated for vehicular operation. Both tyres had remaining tread depth of approximately 5mm and 2mm.



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