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Our Ref :CI/TPD18022476/Z

18th January 2019

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

MECHANICAL INSPECTION REPORT OF MOTORCYCLE FBC 9140E

1. We refer to your request dated 06th December 2018 to conduct a physical inspection of a Motorcycle bearing registration number FBC 9140E (herein referred to as "**Motorcycle**"), which was involved in a fatal road traffic accident on 24th October 2018.
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 06th January 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 was not recorded at time of inspection due to the severe damages to the ignition system as a result of the accident.
5. The Motorcycle was observed to have sustained severe damages at the frontal portion & along both its left side and right side. The body parts that were found to have been damaged includes its missing front head lamp, ERP unit & bracket, handle bar, front wing mirrors, seat assembly, fuel tank, radiator, exhaust manifold and broken front wheel rim amongst others. Its front forks assemblies were also observed to be dislodged as a result of the accident.

6. This was likely due to the consistency of the accident's case fact that on 24th October 2018 about 2100hrs, a Motor Car (SJH 4642K) was making a right turn from the left of 3 lanes along Old Chua Chu Kang Road into track 14 when the Motorcyclist (FBC 9140E) travelling on the centre lane collided onto the Motor Car while it was in a midst of making the right turn. See photos 1 to 10.



Photo 1 shows the speedo meter of the Motorcycle. The mileage was not recorded at time of inspection due to the severe damages to the ignition system as a result of the accident.



Photo 2 shows the Motorcycle number plate for identification.



Photo 3 shows a general view of the front body of the Motorcycle at the time of our inspection. The Motorcycle was observed to have sustained with relatively extensive impact due to the accident collision. Amongst the body parts damaged was its front fork (arrowed), which was observed to be dislodged from the Motorcycle body.



Photo 4 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 at the frontal portion, rear portion, along both its left side and right side.



Photo 5 shows a general view of the right body of the Motorcycle at the time of our inspection. The Motorcycle was observed to have sustained damages at the frontal portion, rear portion, along both its left side and right side.



Photo 6 shows a close-up view of the Motorcycle steering system at the time of our inspection. The Motorcycle was observed to have sustained relatively extensive damages on the handle bar due to the accident collision.



Photo 7 shows a close-up view of the in-vehicle unit of the Motorcycle at the time of our inspection. It was observed to have sustained relatively extensive impact damages to the in-vehicle unit due to the accident collision.



Photo 8 shows a close-up view of the fuel tank of the Motorcycle at the time of our inspection. It was observed to have sustained relatively extensive impact including damages to the fuel tank due to the accident collision.



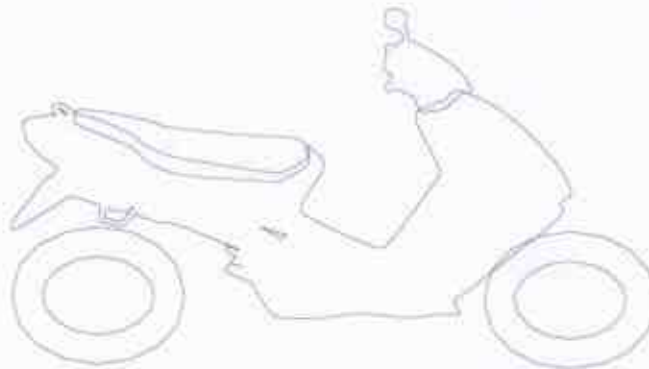
Photo 9 shows a close-up view of the front portion of the Motorcycle at the time of our inspection. The Motorcycle engine components such as radiator, front fork & other components were observed to have sustained relatively extensive impact due to the accident collision.



Photo 10 shows a close-up view of the front portion of the Motorcycle at the time of our inspection. The Motorcycle's engine components such as exhaust manifold observed to have sustained relatively extensive impact due to the accident collision.

Tyres and Wheel Rims

7. The condition of the Motorcycle's rear tyre was observed to be in serviceable condition. The tread pattern of the rear tyre was clearly visible. 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.
8. As for the front tyre it was found to be dislodged from the broken wheel rim likely due to the accident impact. However, the tread pattern of the front tyre was clearly visible. 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 tyre brand, tyre size and remaining tread depth of the 2 tyres were recorded as follows:-



Bridgestone 160/70 ZR 17(5mm)

Bridgestone 120/70 ZR 18(4mm)

9. The rear tyre was observed to be wrapped around alloy wheel rims that were found to be without any significant damage. It was found to be in serviceable condition with adequately inflated for operational purpose.
10. As for the front wheel rim, it was noted to have sustained with damages (broken) at time of our inspection. The front tyre was still found to be intact despite the broken wheel rim as a result of the accident's collision. See photo 11 – 13 below



Photo 11 shows the rear tyre of the Motorcycle at the time of our inspection. The rear tyre was observed to be in serviceable condition with remaining tread depth of approximately 5mm. The tyre was also observed to be sufficiently inflated for vehicular operation. There was no significant damage observed on the rear wheel rim & tyre.



Photo 12 shows the front tyre of the Motorcycle and the tread pattern was clearly visible. There was no tear, burst mark(s) and/or punctured hole(s) on the sidewalls as well as across the tread of the front tyre with remaining tread depth of approximately 4mm. However, the wheel rim was observed to be broken & deflated as a result of the accident.



Photo 13 shows the cracked wheel rim on front tyre of the Motorcycle at the time of our inspection.

Engine & Drive Train

11. Upon examination of the engine area of the Motorcycle, we had observed that the various engine related parts and components were intact but with visible damages such as damaged radiator, exhaust manifold, fuel tank and engine pan amongst others. The engine underside was also observed to be covered with reddish fluid, suggesting leakage of fluid. There was no accumulation of dust and/or dirt particles on the engine housing where the fluid stains had formed. This would indicate that the fluid leakage was a fresh leak and likely to be a result of the accident.
12. The gear chain of the Motorcycle was found to be intact without any misalignment. It was also adequately lubricated for operating purposes. See photo 14 – 17 below.

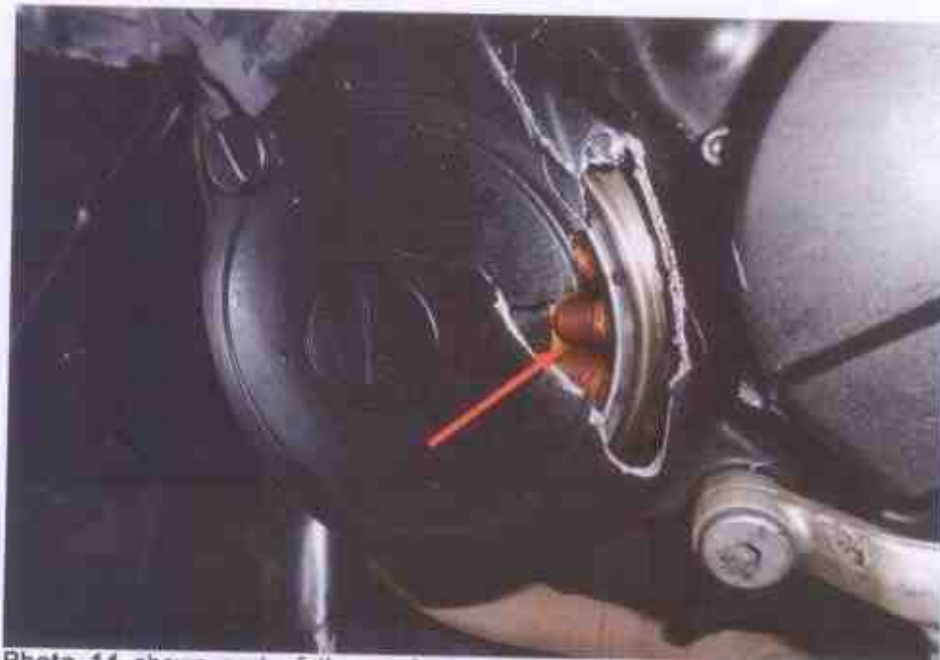


Photo 14 shows part of the engine compartment was damaged due to the accident's impact collision.



Photo 15 shows the exhaust manifold that was damaged due to the accident's impact collision.



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 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.

Steering System & Braking System

13. For this case, we were not able to conduct any test(s) on the steering system of the Motorcycle due to the damages on its front fork & handle bar. The front fork was found to be damaged (dislodged) & the handle bar was bent inwards as a result of the accident, hence causing the whole steering system to be in a state of immobility.
14. The brake system of the Motorcycle was of a fully-hydraulic type, where hydraulic (brake fluid) pressure controls the brake for the front & rear wheel. Our visual examination of the various components in the braking system, like the brake disc, brake calliper, brake hoses, brake pad and brake foot pedal revealed all to be unaffected by the accident.

15. Static brake tests was unable to be conducted on the Motorcycle braking system due to the braking components were noted to be extensively damaged such as damaged hand brake lever, dislodged front wheel, fluid leakage and dislodged front fork at the material time of our inspection. As for the rear brake, we were unable to conduct any static brake test due to the Motorcycle's inability to be parked normally due to the extensive damages sustained to its body structure.
16. 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 damages on its front forks, which had rendered the Motorcycle immobility for the operational tests. See photo 18 to 24 below.



Photo 18 shows the hand brake lever (arrowed) was observed to be broken due to the result of the accident. Hence, we are unable to conduct any tests on the braking system of the Motorcycle.



Photo 19 shows the front wheel rim (arrowed) was observed to be broken as a result of the accident. Hence, we are unable to conduct any tests on the braking system of the Motorcycle.



Photo 20 shows the front fork (circled) was observed to be dislodged as a result of the accident. Hence, we are unable to conduct any tests on the steering system of the Motorcycle.



Photo 21 shows the front brake pad, which is part of the components in the front brake system of the Motorcycle. Our visual checks had revealed that it was still in serviceable condition, intact with no visible damage & sufficient frictional padding.



Photo 22 shows the front brake fluid reservoir of the Motorcycle. Our visual checks had revealed that it was still at a sufficient level & without contamination at time of our examination.



Photo 23 shows the rear brake pad of the Motorcycle which was observed to be in serviceable condition. No damages were found at time of our inspection to the rear braking components.



Photo 24 shows the rear brake fluid reservoir of the Motorcycle. Our visual checks had revealed that it was still at a sufficient level & without contamination at time of our examination.

Conclusion

17. At the time of our inspection of the Motorcycle, its steering system & braking system could not be tested due to the extensive damages sustained as a result of the accident.
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 engine system, steering system and braking system were all damaged as a result of the accident.
19. The condition of the Motorcycle's rear tyre was observed to be in serviceable condition. The tread pattern of the rear tyre was clearly visible. 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. Its tread depth was measured & found to be around approximately 5mm.
20. As for the front tyre, it was found to be deflated due to the cracked wheel rim as a result of the accident's collision. However, the tread pattern of the front tyre was clearly visible with tread depth of 4mm. 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.
21. 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 damages on its steering system & braking system (as a result of the accident), which had rendered the Motorcycle's immobility.



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