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Our Ref : CI/TPD18013739/Z

18th September 2018

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

MECHANICAL INSPECTION REPORT OF MOTORCYCLE JQS 5167

1. We refer to your request dated 19th July 2018 to conduct a physical inspection of a motorcycle bearing registration number JQS 5167 (herein referred to as "**Motorcycle**"), which was involved in a fatal road traffic accident on 30th June 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 17th August 2018 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 recorded at time of our inspection was 707229km.
5. The Motorcycle was observed to have sustained minor damages at the frontal portion. The body parts that were found to have been damaged include its front left hand side fairing, left handle, scratched headlamp and left side foot rest amongst others as a result of the accident.
6. This was likely due to the consistency of the accident's case facts that the Motor Cycle (JQS 5167) rider was travelling straight along BKE towards Woodlands Checkpoint on lane 2 of the 4 lanes road when all of a sudden he collided into the rear of a motorcycle (JSJ 7950). Due to the collision, both fell off their respective motorcycle. See photo 1 to 8 below.



Photo 1 shows a close-up view of the mileage meter at time of our inspection. The mileage was recorded at 707229km.



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 relatively minor damages at time of inspection. The damages were observed to be confined to its left side of the Motorcycle.



Photo 3 shows a general view of the right body of the Motorcycle at the time of our inspection. The Motorcycle was observed to sustained with damaged rear brake pedal.



Photo 4 shows a general view of the rear body of the Motorcycle at the time of our inspection. The Motorcycle was observed to be in good condition unaffected by the accident's impact.



Photo 5 shows a semi close-up view of the left body of the Motorcycle at the time of our inspection. The Motorcycle was observed to have sustained relatively minor damages on the left side handle at time of our inspection.



Photo 6 shows a closer view of the left foot rest of the Motorcycle at the time of our inspection. The Motorcycle was observed to have sustained with relatively minor damages due to the accident collision. (Circled)



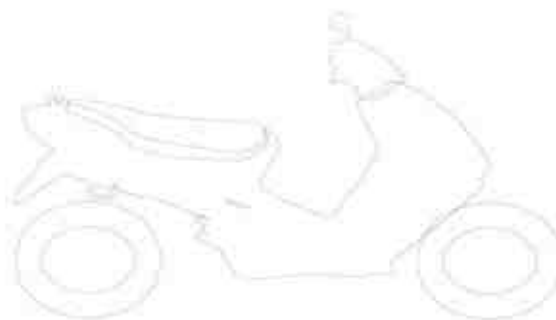
Photo 7 shows a closer view of the right rear brake pedal of the Motorcycle at the time of our inspection. The Motorcycle was observed to have sustained with relatively minor damages due to the accident collision. (Circled)



Photo 8 shows a closer view of the left side of the Motorcycle at the time of our inspection. The Motorcycle was observed to have sustained with relatively minor damages due to the accident collision. (Circled)

Tyres and Wheel Rims

7. The condition of the Motorcycle's 2 tyres was observed to be in serviceable condition. The tread pattern of the 2 tyres 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 2 tyres. The 2 tyres were both observed to be sufficiently inflated for vehicular operation. The tyre brand, tyre size and remaining tread depth of the 2 tyres were recorded as follows:-



Quick GR 629
80/90 - 17 (3mm)

TMax T-Sport
70/90 - 17 (2mm)

8. The rear tyre was wrapped around alloy wheel rims that were found to be without any significant damage. See photo 9 & 10 below



Photo 9 shows the rear tyre of the Motorcycle. 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.



Photo 10 shows the front tyre of the Motorcycle. The front tyre was observed to be in serviceable condition with remaining tread depth of approximately 2mm. The tyre was also observed to be sufficiently inflated for vehicular operation.

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. Free play tension test was also conducted & found adequately acceptable. See photo 11 – 14 below.



Photo 11 shows no sign(s) or indication(s) of fluid leak observed around the underside of the engine area of the Motorcycle.



Photo 12 shows no sign(s) or indication(s) of fluid leakage stain observed around the engine area of the Motorcycle.



Photo 13 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 14 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. Free play tension was also observed & found adequately acceptable.

Steering System & Braking System

11. Our checks on the various steering components of the Motorcycle had revealed that its steering system was in serviceable condition. Its front fork was found to be intact and undamaged not affected by the accident's impact.
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 calliper, drum 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. Static brake tests conducted on the Motorcycle front & rear brakes had appeared to indicate that the braking system of the Motorcycle was in serviceable condition. The Motorcycle's braking system like the brake discs, brake callipers, brake lever, brake pads, brake foot pedal and brake hoses revealed all to be intact and without damage. 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. Our checks on the brake fluid had also indicated that the brake fluid was of sufficient level for operational purposes, and without contamination.

Operational Test

14. 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 mechanical failure likely due to the accident which hinder the operational tests. Notwithstanding several cranking attempt to start the engine for operational test but failed. However, we were still able to push the motorcycle manually forward and backward, simulating movement of the Motorcycle, for the operational tests. For the front brake, it was engaged while conducting the manual movements and it was observed to be in serviceable condition. As for the rear brake, it was observed to have sustained with damage brake foot pedal due to the accident's collision.
15. In general, the observations gathered during the static brake test & manual movement test had indicated that the steering system & braking system (only for the front brake) of the Motorcycle was in serviceable condition. The rear brake foot pedal sustained damage as a result of the accident. See photo 15 - 19 below.



Photo 15 shows our checks on the brake fluid (front) reservoir had also indicated that the brake fluid was of sufficient level for operational purposes, and without contamination.



Photo 16 shows our checks on the rear brake cables & springs which was part of the rear braking system had also indicated that it was serviceable for operational purposes.



Photo 17 shows a close-up view our checks on the brake pad (front). The frictional material was observed to be in a sufficient level for operational purposes.



Photo 18 shows testing of the braking of the front brake in progress. There was some resistance felt (spongy like feel) upon pressing the brake lever.



Photo 19 shows testing of the braking of the rear brake in progress. The rear brake was observed to be jammed due to the accident's impact collision.

Conclusion

16. Basing on our physical inspection of the Motorcycle, it appears that the steering system and braking system (front brake only) of the Motorcycle were all in serviceable condition. As for the rear brake, it was observed to be damaged due to the accident's impact collision. However, 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.
17. The tyres of the Motorcycle were found to be in a 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 tyre. It was sufficiently inflated for vehicular operation with remaining tread depth of approximately 2 & 3mm.

18. Our findings were based solely on a static test, visual inspection and manual test of the Motorcycle simulating its movement. No operational test(s) could be carried out to the Motorcycle due failure to crank start the engine likely due to the accident's impact, which had rendered the Motorcycle's immobility.



Rohaizal A. Rahim
Technical Investigator



Ang Bryan Tani
AMSQE, AMIRTE, AFF SAE, M.MATAI, AFF Inst.AEA
Senior Technical Investigator
Technical Investigation & Reconstructionist (SAE-A)

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