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Our Ref : CI/TPD18018433/Z

19th November 2018

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

MECHANICAL INSPECTION REPORT OF MOTORCYCLE JQE 1418

1. We refer to your request dated 27th September 2018 to conduct a physical inspection of a motorcycle bearing registration number JQE 1418 (herein referred to as "**Motorcycle**"), which was involved in a fatal road traffic accident on 12th September 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 26th October 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 at the time of our inspection was 964987km.
5. The Motorcycle was observed to have sustained extensive damages at the frontal portion & along its left side and right side portion. The body parts that were found to have been damaged include its front fairing, headlamp, front wing mirrors, handle bar and dislodged front wheel sensor assembly amongst others. Its front fork assembly was also observed to be dislodged from the front wheel as a result of the accident.
6. This was likely to be the consistency of the accident's case facts that on 12th September 2018 at about 0522hrs, a Motor Car (SBY 6618Z) was driving along AYE towards Tuas on the 1st lane of a 3 lanes road when he swerved to his left and collided onto a Motor Cycle (JQE 1418) on 2nd lane before his front right portion collided onto the vehicle rear left portion on 1st lane. The impact caused the motorcyclist to fall onto 3rd lane and resulted another Motor Lorry front right tyre to run over him. See photo 1 to 6 below.



Photo 1 shows the mileage at the time of inspection was recorded to be 964987km.



Photo 2 shows a general view of the front left body of the Motorcycle at the time of our inspection. The Motorcycle was observed to be sustained with relatively extensive impact due to the accident collision. Amongst the body parts damaged was its front fork, which was observed to be dislodged from the front wheel.



Photo 3 shows a general view of the rear body of the Motorcycle at the time of our inspection. The Motorcycle was observed to be in generally good condition unaffected by the accident.



Photo 4 shows a general view of the frontal portion of the Motorcycle at the time of our inspection. The Motorcycle was observed to be sustained with relatively extensive impact due to the accident collision.



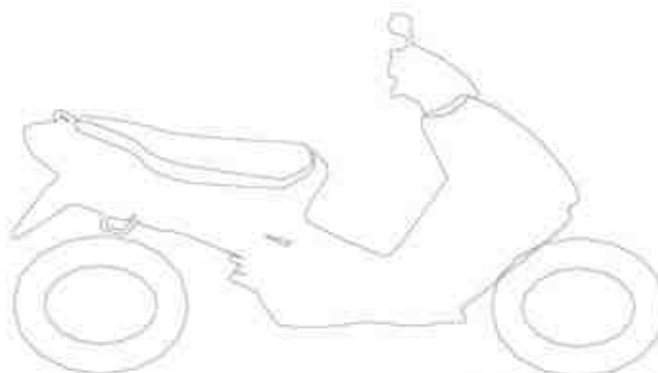
Photo 5 shows a semi close-up view of the frontal portion of the Motorcycle at the time of our inspection. The Motorcycle was observed to be sustained with relatively extensive impact due to the accident collision.



Photo 6 shows a general view of the front right portion of the Motorcycle at the time of our inspection. The Motorcycle was observed to be sustained with 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. The rear tyre was observed to be sufficiently inflated for vehicular operation.
8. Whereas the front tyre was found to be deflated & have sustained with torn mark on the left side of the front tyre near to the wheel rim due to the accident impact. However, the tread pattern of the rear tyre was clearly visible.
9. The tyre brand, tyre size and remaining tread depth of the 2 tyres were recorded as follows:-



Metzeler Sportee Street
80/90 - 17 (5mm)

Maxxis Diamond MA-3D
70/90 - 17 (3mm)-(Deflated –
torn mark on the left side near to
the wheel rim area)

10. The tyres were wrapped around alloy wheel rims that were found to be without any significant damage despite the front tyre was deflated likely due to the accident's collision impact at the material time of the accident. See photo 7– 9 below.



Photo 7 shows the front tyre of the Motorcycle at the time of our inspection. The front tyre was observed to be deflated with remaining tread depth of approximately 3mm as a result of the accident.



Photo 8 shows the rear tyre of the Motorcycle. The pattern of the tread was clearly visible with remaining tread depth of about 5mm. There was no tear, burst mark(s) and/or punctured hole(s) on the sidewalls as well as across the tread of the rear tyre unaffected by the accident's impact collision.



Photo 9 shows further observation on the front tyre that was deflated caused by torn mark at time of our inspection due to the accident's collision impact.

Engine & Drive Train

11. 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.
12. 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 10 to 12 below.



Photo 10 shows the undercarriage of the Motorcycle's engine. No signs or indication of any engine leakage at time of our inspection.



Photo 11 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 12 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

13. For this case, we were not able to conduct any test(s) on the steering system of the Motorcycle due to the damage on its front fork. The front fork was found to be dislodged from the front wheel 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 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). The brake for the front wheel is engaged by pulling 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.

15. 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 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

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 damage of its front fork, which had rendered the Motorcycle immobility for the operational tests. We were not able to push the motorcycle manually forward and backward, due to the damages sustained on the Motorcycle. See photo 13 to 17 below.



Photo 13 shows the front fork (circled & arrowed) was observed to be dislodged as a result of the accident. Hence, we are not able to conduct any tests on the steering system of the Motorcycle.



Photo 14 shows the front brake fluid reservoir had indicated that the brake fluid was of sufficient level for operational purposes, and without contamination.



Photo 15 shows the front brake calliper, front brake disc, front brake pad and front brake hose of the Motorcycle, which are all part of the components in the front brake system of the Motorcycle. Our observation found that the front braking components were unaffected by the accident.

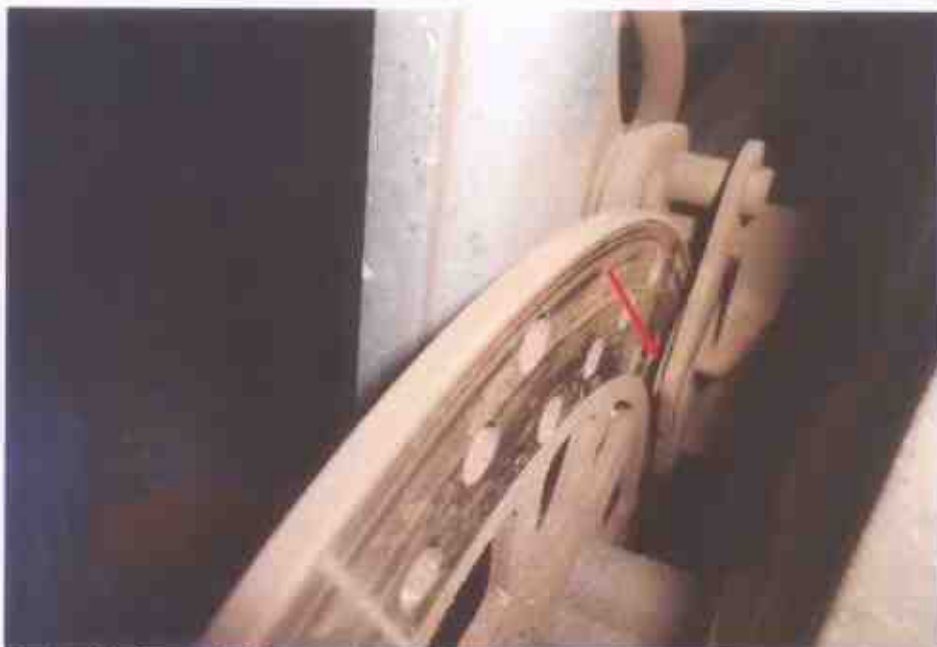


Photo 16 shows the front brake pad of the Motorcycle (arrowed), which are part of the components in the front brake system of the Motorcycle reveal to be adequately sufficient for operational purposes.



Photo 17 shows the rear brake cable and spring of the Motorcycle (arrowed), which are all part of the components in the rear brake system of the Motorcycle reveal all to be intact and without damage.

Conclusion

17. At the time of our inspection of the Motorcycle, its steering system & brake system could not be tested (due to damage as a result of the accident).
18. Notwithstanding that the steering & braking system could not be tested, the observations gathered from our physical inspection of the Motorcycle had indicated no evidence to suggest possible mechanical failure to the Motorcycle that may have contributed to the accident.
19. The rear tyre of the Motorcycle was 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 4mm.
20. Whereas the front tyre was found to be deflated & have sustained with torn mark on the left side of the front tyre near to the wheel rim due to the accident impact. However, the tread pattern of the front tyre was clearly visible with remaining tread depth of approximately 3mm.
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 damage of its steering system (as a result of the accident), which had rendered the Motorcycle immobility.



Rohaizal A. Rahim
Technical Investigator



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

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