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Our Ref :CI/TPD18014211/Z

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

MECHANICAL INSPECTION REPORT OF MOTORCYCLE FQ 6299E

1. We refer to your request dated 02nd August 2018 to conduct a physical inspection of a motorcycle bearing registration number FQ 6299E (herein referred to as "**Motorcycle**"), which was involved in a fatal road traffic accident on 27th July 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 31st 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 653299km.

5. The Motorcycle was observed to have sustained minor damages at the frontal portion, left & right portion. The body parts that were found to have been damaged include its front fairing, rear brake pedal, wing mirrors, clutch lever, handle bar, left foot rest, dislodged IU, seat assembly and front mudguard amongst others as a result of the accident.

6. This was likely due to the consistency of the accident's case facts that on 27th July 2018 at or about 2046hrs, a Motor Car (SJW 6686S) was travelling on the centre lane of a 3 lanes road along Lentor Avenue towards Yishun Avenue 1. It then changed lane to the right and encroached into the travelling path of a motorcycle (FQ 6299E). Due to the encroachment, the motorcyclist lost control of the motorcycle and skidded to its right along the centre divider. See photo 1 to 7 below.

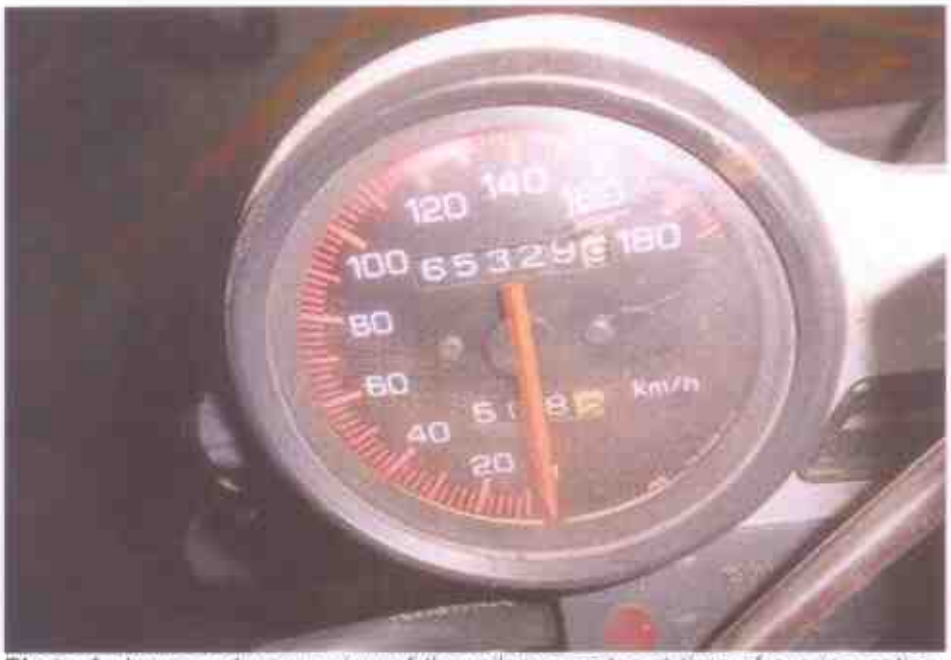

Photo 1 shows a close-up view of the mileage meter at time of our inspection. The mileage was recorded at 653299km.

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 damages at time of inspection.

Photo 3 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 on the right side fairing, rear brake pedal & mudguard at time of our inspection.

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.

Photo 5 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 on the front fairing, IU & foot rest amongst others at time of our inspection.

Photo 6 shows a closer view of the dented handle bar as a result of the accident.

Photo 7 shows a closer view of the damaged 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's 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:-

FKR RS-900 70/80 - R18 (3mm) FKR RS-900 70/80 - R18 (3mm)

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

Photo 8 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 9 shows the front tyre of the Motorcycle. The front 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.

Engine & Drive Train

9. Upon examination of the engine area of the Motorcycle, we had observed that the various engine related parts and components were intact with no visible damage. The engine underside was however observed to be covered with 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.

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 10 – 12 below.

Photo 10 shows sign(s) or indication(s) of fluid leak observed around the underside of the engine area of the Motorcycle. Traces of fluid leakage was also observed on the exhaust pipe.

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

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 slightly misaligned & its handle bar was observed to be bent as a result of 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). 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.

13. Static brake tests conducted on the Motorcycle front & rear brakes had appeared to indicate that the 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 was leakage of pressure/vacuum in the front brake system. Further investigation on the front braking system, we found that the leakage was on the brake fluid reservoir cover likely due to the accident's impact collision. However, our checks on the brake fluid had indicated that the brake fluid was of sufficient level for operational purposes, and without contamination. The Motorcycle's front braking system like the brake discs, brake callipers, brake pad, brake lever, and brake hoses revealed all to be intact and without damage.

14. As for the rear braking system, it was found that the rear brake pedal was damaged/ stuck likely due to the accident's impact collision. However, the Motorcycle's rear braking system like the brake spring, brake cable, and brake supports revealed all to be intact and without damage.

Operational Test

15. 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 sustained that effects the Motorcycle's ignition system for operational process, which had rendered the Motorcycle immobility for the operational tests. Despite the slight misaligned/dented handle bar & front fork we were still able to push the motorcycle manually forward and backward, simulating movement of the Motorcycle, for the operational tests. However, both brakes were unable to be tested due to the damages and it was observed not to be in serviceable condition.

    In general, the observations gathered during the static brake test & manual movement test had indicated that the steering system & braking system of the Motorcycle was not in serviceable condition. See photo 13 - 17 below.

Photo 13 shows our checks on the brake fluid (front) reservoir had indicated that the brake fluid was of sufficient level for operational purposes, and without contamination.

Photo 14 shows our checks on the brake fluid (front) reservoir. It was observed to sustained fluid leakage at the brake fluid reservoir cover. There was no spongy feeling when depressing the brake lever.

Photo 15 shows the front brake pad at time of our inspection. The frictional material was observed to be sufficient for operational purposes.

Photo 16 shows our checks on the rear brake component had indicated that the mechanical components were in serviceable condition unaffected by the accident's impact.

Photo 17 shows the rear brake pedal was stuck likely 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 of the Motorcycle were not in serviceable condition likely 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 prior 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 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 to the damages sustained that affects the Motorcycle's ignition system, which had rendered the Motorcycle's immobility.

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