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27th September 2018

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

MECHANICAL INSPECTION REPORT OF MOTORCYCLE FBF 228E

1. We refer to your request dated 02nd August 2018 to conduct a physical inspection of a motorcycle bearing registration number FBF 228E (herein referred to as "**Motorcycle**"), which was involved in a fatal road traffic accident on 19th 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 not recorded due to unavailability of the key to start the Motorcycle.
5. The Motorcycle was observed to have sustained damages at the frontal portion and right portion. The body parts that were found to have been damaged include its front top fairing, left & right hand wing mirror, handle bar, side right & left fairing amongst others as a result of the accident.
6. This was likely due to the consistency of the accident's case facts that the Motorcycle was riding along Bartley Road East towards Tampines Avenue 10, near to lamp post 29/1AF, when he lost control & skidded. See photo 1 to 8 below.



Photo 1 shows a general view of the front portion of the Motorcycle at the time of our inspection. The Motorcycle was observed to have sustained with relatively minor impact due to the accident collision.



Photo 2 shows a general view of the left body of the Motorcycle at the time of our inspection. The Motorcycle was observed to have sustained with relatively minor impact due to the accident collision.



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 minor damages at the frontal portion, along its right side. (Circled)



Photo 4 shows a closer view of the frontal portion of the Motorcycle at the time of our inspection. The Motorcycle was observed to have sustained relatively minor impact due to the accident collision. (Circled)



Photo 5 shows a closer view of the frontal portion of the Motorcycle at the time of our inspection. The Motorcycle was observed to have sustained broken front top fairing due to the accident collision. (Circled)



Photo 6 shows a close-up view of the front portion of the Motorcycle at the time of our inspection was observed to sustained damages on the outer cover due to the accident collision. (Circled)



Photo 7 shows a closer view of the right side engine cover of the Motorcycle at the time of our inspection. It was observed to have sustained damages due to the accident collision. (Circled)



Photo 8 shows a view of the rear portion of the Motorcycle at the time of our inspection. It was observed to be in generally good condition unaffected by the accident.

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:-



Michelin 140/60 - 13 (4mm)

Michelin 120/70 - 14 (4mm)

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 4mm. The tyre was also observed to be sufficiently inflated for vehicular operation.



Photo 10 shows the front tyre of the Motorcycle. The pattern of the tread 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.

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 drive train of the motorcycle was found to be intact without any misalignment. There was also no visible tear or cut observed on the connecting belt. 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 leak observed around the underside of the engine area of the Motorcycle.



Photo 13 shows the drive train of the motorcycle was found to be intact without any misalignment.



Photo 14 shows the drive train of the motorcycle was found to be intact without any misalignment.

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 and fork bracket were both found to be intact and undamaged. Turning the handle bar towards the left and right also did not produce any abnormal free play and/or resistance.
12. 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 gripping the brake lever at the left side of the Motorcycle's handle bar while the brake for the rear wheel is engaged by pulling the brake lever at the right side of the Motorcycle's handle bar.
13. Static brake tests conducted on the Motorcycle front & rear brake had appeared to indicate that the brake system of the Motorcycle was in serviceable condition. There was some resistance felt (spongy like feel) upon gripping the brake levers at the left & right side of the handle bar. This would indicate that there's 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 non-availability of the key to start the Motorcycle, which had rendered the Motorcycle immobility for the operational tests. However, we were able to push the motorcycle manually forward and backward, simulating movement of the Motorcycle, for the operational tests. Both brakes were engaged simultaneously while conducting the manual movements and it was observed to be in serviceable condition.
15. 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 in serviceable condition. See photo 15 - 19 below.



Photo 15 shows the front brake static test. Static braking test was conducted to the front braking system & found to be in serviceable condition.



Photo 16 shows the rear brake static test. Static braking test was conducted to the rear braking system & found to be in serviceable condition.



Photo 17 shows the brake fluid reservoir on the right hand handle however was noted to be of sufficient level for operational purposes, and without contamination.



Photo 18 shows the front brake pad of the front wheel was noted to be of sufficient frictional material for operational purposes.



Photo 19 shows the rear brake pad of the rear wheel was noted to be of sufficient frictional material for operational purposes.

Conclusion

16. Basing on our physical inspection of the Motorcycle, it appears that the steering system and braking system of the Motorcycle were all in serviceable condition. 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 4mm.
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 non-availability of the key to start the Motorcycle, 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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