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Your Ref: TP/IP/38117/2018
Our Ref :CI/TPD18013732/Z

12th September 2018

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

MECHANICAL INSPECTION REPORT OF MOTORCYCLE JSA 5371

1. We refer to your request dated 19th July 2018 to conduct a physical inspection of a Motorcycle bearing registration number JSA 5371 (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 14th 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 at the time of our inspection was recorded at 405288km.

5. The Motorcycle was observed to have sustained severe damages at the frontal portion, rear 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, chassis structure, seat assembly and rear portion amongst others. Its front forks assemblies were also observed to be severely damaged as a result of the accident.

6. This was likely due to the consistency of the accident's case fact that on 30th June 2018 about 0104hrs, a Malaysian Motor Lorry (JRV 1328) was travelling straight along the 1st lane at Woodlands Crossings after Sultan Iskandar CIQ (Malaysian Checkpoint) towards Singapore Checkpoint suddenly veered to the right towards the centre divider, drove through the opening along the centre divider into the opposite direction against the flow of traffic. The Motor Lorry continued to travel forward and collided into 02 malaysian motorcycles, JSA 5371 and JRY 7606 and a Singapore motorcycle, FBH 5117Z that were travelling along the 3rd lane of the opposite direction. See photos 1 to 6.

Photo 1 shows the mileage of the Motorcycle at the time of our inspection was recorded at 405288km.

Photo 2 shows the Motorcycle number plate for identification.

Photo 3 shows a general view of the front wheel 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 & broken rim (arrowed), which was observed to be broken.

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 portion of the Motorcycle at the time of our inspection. The Motorcycle was observed to have sustained relatively extensive impact due to the accident collision.

Photo 6 shows a close-up view of the frontal portion of the Motorcycle at the time of our inspection. The Motorcycle was observed to have sustained relatively extensive impact including damages to the steering system 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 deflated. The wheel rim was observed to be broken 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:-

Maxxis 70/90 – 17(2mm)

Maxxis 70/90 – 17(1.6mm)

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 found to be deflated due to the broken wheel rim as a result of the accident's collision. See photo 7 & 8 below

Photo 7 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 2mm. 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 8 shows the front tyre of the Motorcycle at the time of our inspection. 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. However, the wheel rim was observed to be broken as a result of the accident.

Engine & Drive Train

11. Upon examination of the Motorcycle's engine area, we had observed that the engine block had sustained with extensive damages due to the accident's collision impact. Hence, causing the operating fluids such as engine fluid to leak from the cracked/ damage areas.

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 9 – 12 below.

Photo 9 shows sign(s) or indication(s) of fluid leakage observed around the engine's underside area of the Motorcycle.

Photo 10 shows sign(s) or indication(s) of fluid leakage observed around the engine's area & fluid stain on the floor right under the engine pan of the Motorcycle.

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.

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 handle bar, front fork and broken front wheel rim. It was found to be damaged 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). Our visual examination of the various components in the front brake system, like the brake disc & brake calliper, revealed to be damaged & the whole front brake assembly noted to be dislodged from the original installation. However, braking components for the rear brake was noted to be unaffected by the accident at the material time of our inspection.

15. Static brake tests was unable to be conducted on the Motorcycle front braking system due to some braking components were noted to be extensively damaged such as front brake calliper & brake disc at the material time of our inspection. As for the rear brake, static brake test was conducted successfully. It was observed to be in serviceable condition unaffected by the accident's impact collision.

16. For this case, we were not able to carry out any operational tests to the steering system and brake system of the Motorcycle due to the damages on its handle bar, front forks, brake calliper & brake disc which had rendered the Motorcycle immobility for the operational tests. See photo 13 to 18 below.

Photo 13 shows the hand brake lever (arrowed) was observed to be unaffected by the accident. However, we are unable to conduct any tests on the braking system of the Motorcycle due to some other braking system were damaged as a result of the accident.

Photo 14 shows the front brake fluid reservoir (arrowed) was observed to be unaffected by the accident. It was observed to be of sufficient level & not contaminated at the time of our inspection.

Photo 15 shows the front brake was observed to be dislodged from the original installation affected by the accident.

Photo 16 shows the rear brake pedal (arrowed) was observed to be in serviceable unaffected by the accident.

Photo 17 shows the rear brake pedal (arrowed) was observed to be in serviceable unaffected by the accident.

Photo 18 shows the front fork (circled) was observed to be broken & the brake disc was damaged as a result of the accident. Hence, we are unable to conduct any tests on the steering system of the Motorcycle. However, the brake pad was noted to be with sufficient frictional material at time of our inspection.

Conclusion

17. At the time of our inspection of the Motorcycle, its steering system & braking system could not be tested likely due to the damages as a result of the accident.

18. 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 2mm.

19. As for the front tyre, it was found to be deflated likely due to the broken 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 1.6mm. 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.

20. Notwithstanding that the steering system & 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.

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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