



Your Ref: TP/IP/16203/2018  
Our Ref :CI/TPD18011297/Z

21<sup>st</sup> June 2018

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

### **MECHANICAL INSPECTION REPORT OF MOTORCYCLE FBG 7253E**

1. We refer to your request dated 20<sup>th</sup> June 2018 to conduct a physical inspection of a motorcycle bearing registration number FBG 7253E (herein referred to as "**Motorcycle**"), which was involved in a fatal road traffic accident on 11<sup>th</sup> March 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 20<sup>th</sup> June 2018 at the premises of Traffic Police vehicle pound, 517 Airport Road Singapore 539942. We now set out below my observations and comments with respect to this inspection.

#### **General Condition**

4. The mileage of the Motorcycle at the time of our inspection was 674321km.
5. The Motorcycle was observed to have sustained extensive damages at the frontal portion & along its left side, right side and rear portion. The body parts that were found to have been damaged include its front fairing, ERP unit, front wing mirrors, seat assembly, gear pedal and rear box bracket amongst others. Its front fork assembly was also observed to be buckled inwards as a result of the accident.



**Photo 1** shows the mileage at the time of inspection was recorded to be 674321km.



**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 (arrowed), which was observed to be bent inwards.





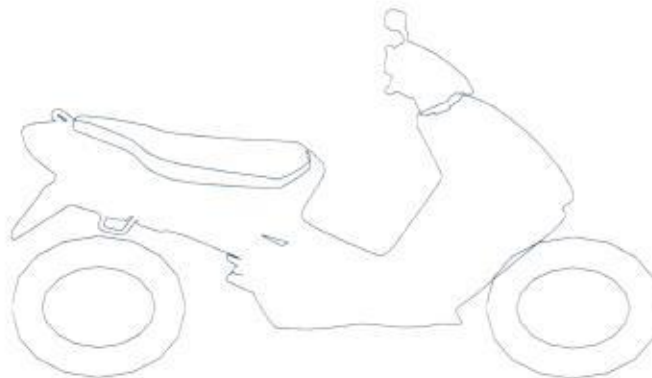
**Photo 3** shows a general view of the rear left body of the Motorcycle at the time of our inspection. The Motorcycle was observed to have sustained damages at the frontal portion, along both its left side, right side and rear portion.



**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.

### **Tyres and Wheel Rims**

6. The condition of the Motorcycle's front tyre was observed to be in serviceable condition whereas the rear tyre was found to be deflated likely due to the accident impact. However, 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 front tyre was 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:-



Maxxis 80/90 - 17 (4mm)

Maxxis 90/80 - 17 (4mm)

7. The tyres were wrapped around alloy wheel rims that were found to be without any significant damage despite the rear tyre was deflated likely due to the accident's collision impact at the material time of the accident. See photo 5- 7 below





**Photo 5** shows the front 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 4mm. 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 6** shows the rear 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. Except further observation found that the rear tyre that was deflated likely due to the accident's collision impact.



**Photo 7** shows further observation on the rear tyre that was deflated at time of our inspection due to damage front rim likely caused by the accident collision impact.

### **Engine & Drive Train**

8. 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.
9. 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 8 – 10 below.





**Photo 8** shows no sign(s) or indication(s) of fluid leakage stain observed around the engine undercarriage area of the Motorcycle.



**Photo 9** 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.



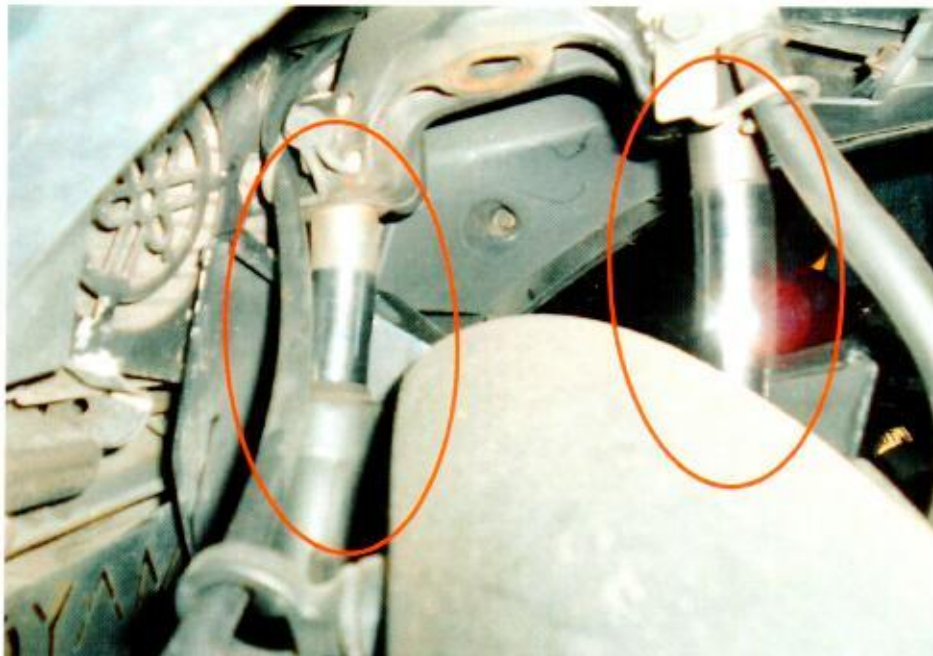
Photo 10 shows the general view of the gear train (arrowed) of the Motorcycle, which was observed to be intact with no misalignment. It was also adequately lubricated for operating purposes. Free play tension was also observed & found adequately acceptable.

### Steering System & Braking System

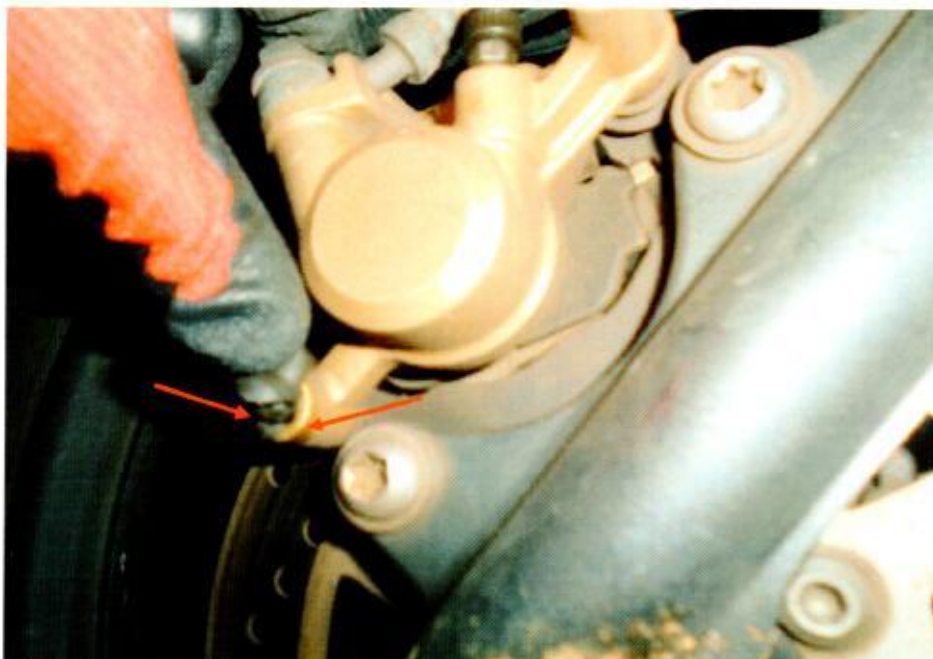
10. For this case, we were not able to conduct any test(s) on the steering system of the Motorcycle due to the damage on its front fork. The front fork was found to be buckled inwards as a result of the accident, hence causing the whole steering system to be in a state of immobility.
11. The braking 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 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.



12. A static brake test was only able to be conducted on the Motorcycle's rear brake. A little spin to the rear tyre by hand followed by stepping on the rear pedal brake resulted in the tyre stop spinning. This would indicate that the rear brake responded to the braking action hence to be in serviceable condition. Our checks on the brake fluid had also indicated that the brake fluid was of sufficient level for operational purposes, and without contamination. Whereas for the front brake, we were unable to conduct any static test due to the brake fluid leakage that was found on the front brake calliper due to the accident.
13. 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 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 11 - 14 below.



**Photo 11** shows the front fork (arrowed) was observed to be buckled inwards as a result of the accident. Hence, we are not able to conduct any tests on the steering system of the Motorcycle.

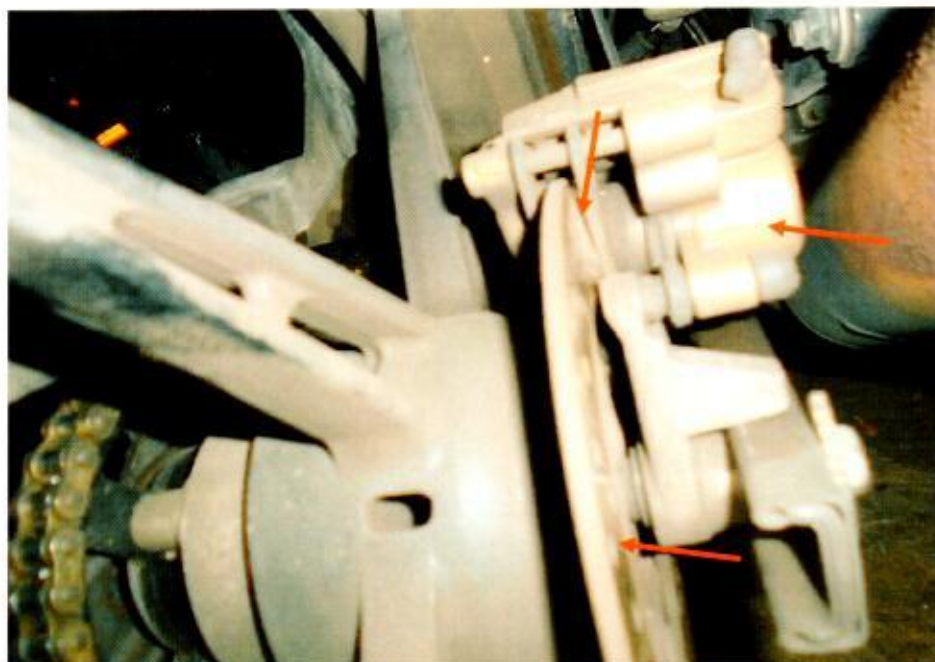


**Photo 12** shows the front brake calliper, front brake disc and front brake hose of the Motorcycle, which are all part of the components in the front brake system of the Motorcycle. Our further observation had revealed that leakage to the brake fluid was found at the brake calliper area (arrowed) due to the accident.



**Photo 13** shows the rear brake fluid reservoir of the Motorcycle. It was found to be at a sufficient level at time our inspection.





**Photo 14** shows the rear brake calliper, brake disc and brake hose 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

14. At the time of our inspection of the Motorcycle, its steering system could not be tested (due to damage as a result of the accident). However, only its rear brake system was found to be in serviceable condition whereas the front brake fluid was found to be leaking from the brake calliper area due to the accident's collision impact.
15. 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.

16. The front 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. Except for the rear tyre that was deflated at time of our inspection likely due to the accident's collision impact. However, it 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 & tread depth of approximately 4mm.
17. 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 front fork & front brake fluid leakage (as a result of the accident), which had rendered the Motorcycle immobile.



**Rohaizal A. Rahim**  
Technical Investigator



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

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