

Your Ref: TP/IP/51353/2017  
Our Ref :CI/TPD17023257/Z

08<sup>th</sup> December 2017

**Fatal Accident Investigation Team**

Traffic Police Department  
Singapore Police Force  
10 Ubi Avenue 3  
Singapore 408865

**INSPECTION REPORT OF BICYCLE (GREEN) - TRAFFIC POLICE POUND  
REPORT NO. PR3995/17**

1. We refer to your request dated 30<sup>th</sup> October 2017 to conduct a physical inspection of a Bicycle bearing Traffic Police Pound Report no. PR3995/17 (herein referred to as "**Bicycle**"), which was involved in a fatal road traffic accident on 23<sup>rd</sup> September 2017.
2. The purpose of this inspection is to primarily determine if there was any possible mechanical failure to the Bicycle that may have contributed to the accident.
3. Following the request, we had carried out a physical inspection of the Bicycle on 30<sup>th</sup> November 2017 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 Bicycle was observed to have sustained 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 include its handle & fork connecting bar, front & rear braking components & gear train amongst others as a result of the accident.

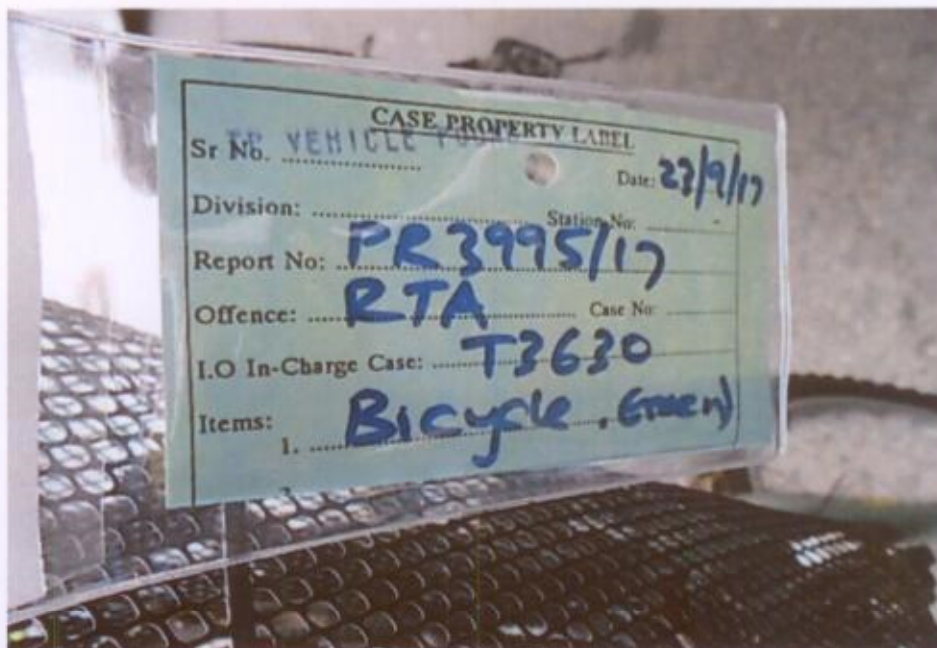


Photo 1 shows the identification of the Bicycle with reference to Traffic Police Pound Report No. PR3995/17.



Photo 2 shows the frontal portion of the Bicycle at time of inspection. Damage on the handle & fork connecting bar was observed likely due to the accident.





Photo 3 shows the front basket of the Bicycle at time of inspection. Damage on the front basket was observed likely due to the accident.



Photo 4 shows the frontal portion of the Bicycle (top view) at time of inspection. Misalignment of the handle bar & front tyre was observed.



**Photo 5** shows a close-up view of the chain gear of the Bicycle at the time of our inspection. It was observed to be out of tension at time of our inspection (circled). The rear brake clamp was also found to be dislodging from the original assembly.



**Photo 6** shows a close-up view of the rear brake lever of the Bicycle at the time of our inspection. It was observed to be damage at the rear brake lever of the Bicycle likely due to the accident.





Photo 7 shows a close-up view of the rear tyre of the Bicycle at the time of our inspection. It was observed to be pushed against the rear fork of the Bicycle likely due to the accident.

### **Tyres and Wheel Rims**

5. The condition of the Bicycle's front & rear tyres was observed not to be in serviceable condition. The tread pattern of the 2 tyres was observed only visible on the sides of both tyres, the middle section of the 2 tyres was observed to be bald.
6. Further examination on the rear tyre revealed that the inner core of the tyre was found to be exposed at the middle section of the tyre. Having said that, 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.
7. The front tyre was observed to be deflated at time of our inspection whereas the rear tyre was sufficiently inflated for vehicular operation. The tyre brand, tyre size and remaining tread depth of the 2 tyres were recorded as follows:-



Wandaking 53-559 26 X 1.95 (0mm on the middle section )

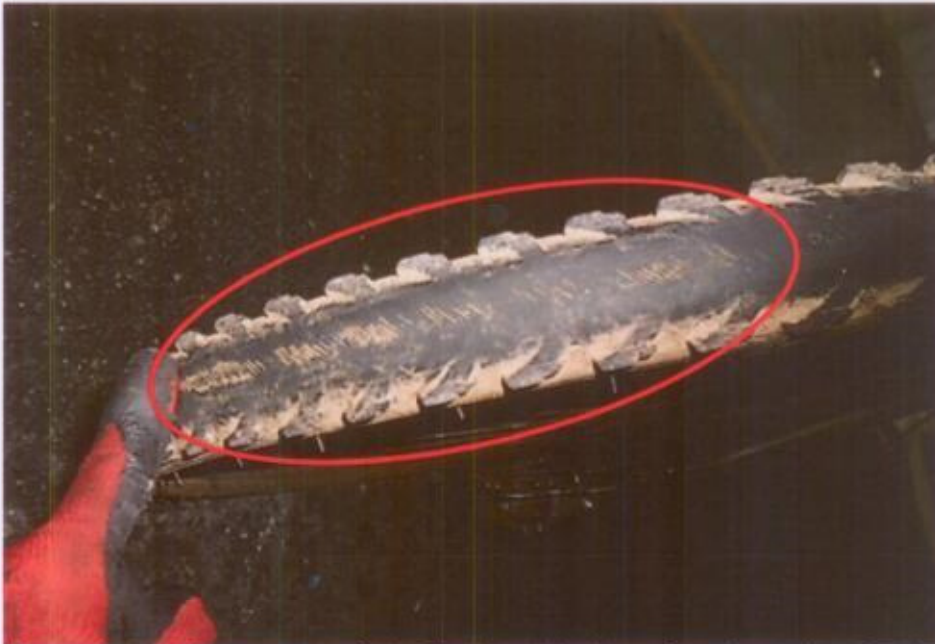
Wandaking 53-559 26 X 1.95 (0mm on the middle section )

8. The tyres were wrapped around alloy spork wheel rim that was found to be without any significant damage. See photo 8 & 11 below



**Photo 8** shows the rear tyre of the Bicycle at the time of our inspection. The tread pattern of the rear tyre was observed only visible on the sides of the tyre, the middle section of the tyre was observed to be bald.





**Photo 9** shows the rear tyre of the Bicycle at the time of our inspection. Further examination on the rear tyre revealed that the inner core of the tyre was found to be exposed at the middle section of the tyre.



**Photo 10** shows the front tyre of the bicycle. The tread pattern of the front tyre was observed only visible on the sides of the tyre, the middle section of the tyre was observed to be bald.

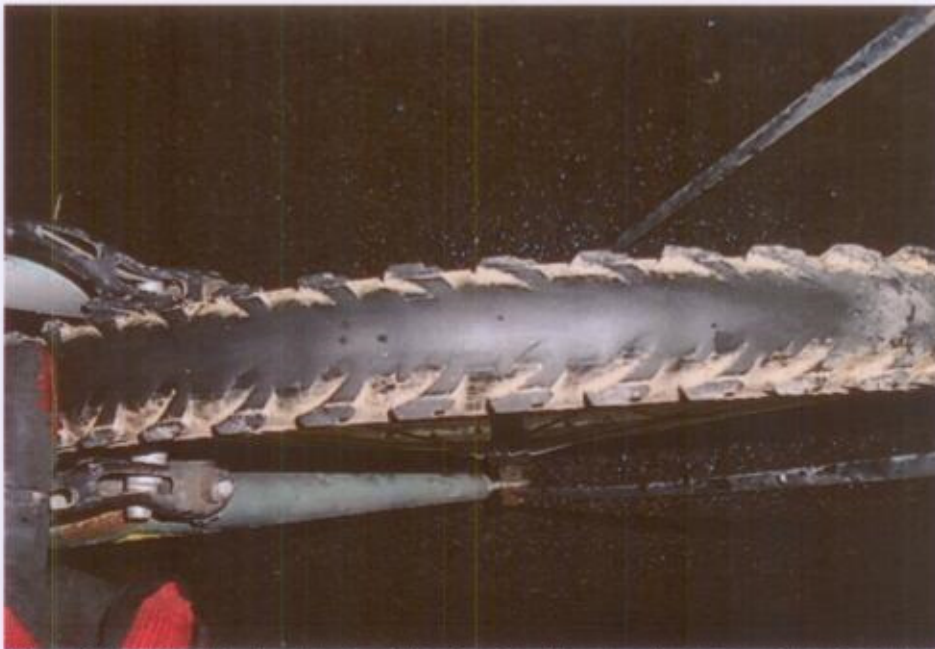


Photo 11 shows the front tyre of the bicycle. The tread pattern of the front tyre was observed only visible on the sides of the tyre, the middle section of the tyre was observed to be bald.

### Drive Train

9. The gear chain of the Bicycle was found to be out of tension likely due to the accident. Free play tension test was found to be unacceptable (too loose to be in an operational condition). See photo 12 below.





**Photo 12** shows a close-up view of the rear chain of the Bicycle at the time of our inspection. It was observed to be out of tension at time of our inspection.

### **Steering System & Braking System**

10. For this case, we were not able to conduct any test(s) on the steering system of the Bicycle due to the damages on its front fork. The front fork was found to be misaligned as a result of the accident, hence causing the whole steering system to be out of alignment.
11. The brake system of the Bicycle was controlled by mechanical means (cables and springs). Our visual examination of the various components in the brake system, like the hand brake lever (left & right), brake clamps (front & rear), revealed some of the components sustained damages.
12. Further examination revealed that the hand brake lever for rear brake was observed to be broken; the cable at the end of the rear brake clamp was dislodged from its original assembly. The rear brake clamp assembly was seen to be broken likely due to the accidents impact.

13. The front brake clamp on the other hand, was observed to have worn out rubber brake pad. However, the hand brake lever & connecting cables was in undamaged condition.
14. A static brake test was conducted only on the Bicycle's front brake. The test was conducted by lifting the front tyre above ground & applies a little spinning action to it. The hand brake lever was then gripped in order to stop the spinning front tyre. The result was unsatisfactory. It didn't stop after gripping the hand brake to the fullest. It shows that the front brake clamps was not responding to the gripping action. Further to this, a close examination on the rubber brake pad revealed that a thin gap was noted when even a full grip to the brake lever was performed. This had appeared to indicate that the brake system was not in a serviceable condition.

### Operational Test

15. For this case, we was not able to carry out any operational tests to the steering system and brake system of the Bicycle due to the damage of its front handle & fork connecting bar & rear fork which had rendered the Bicycle's immobility for the operational tests. We were not able to push the Bicycle manually forward and backward, simulating movement of the Bicycle, for the operational tests. See photo 13 – 18 below.



**Photo 13** shows the front fork that was observed to have sustained damages likely due to the accidents impact.





Photo 14 shows the rear fork that was observed to have sustained damages likely due to the accidents impact.

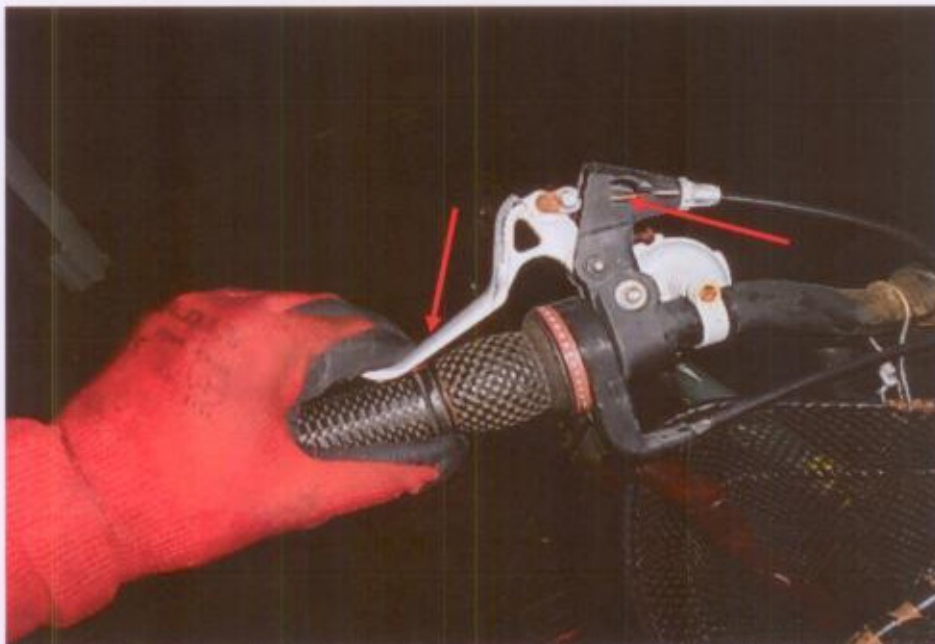
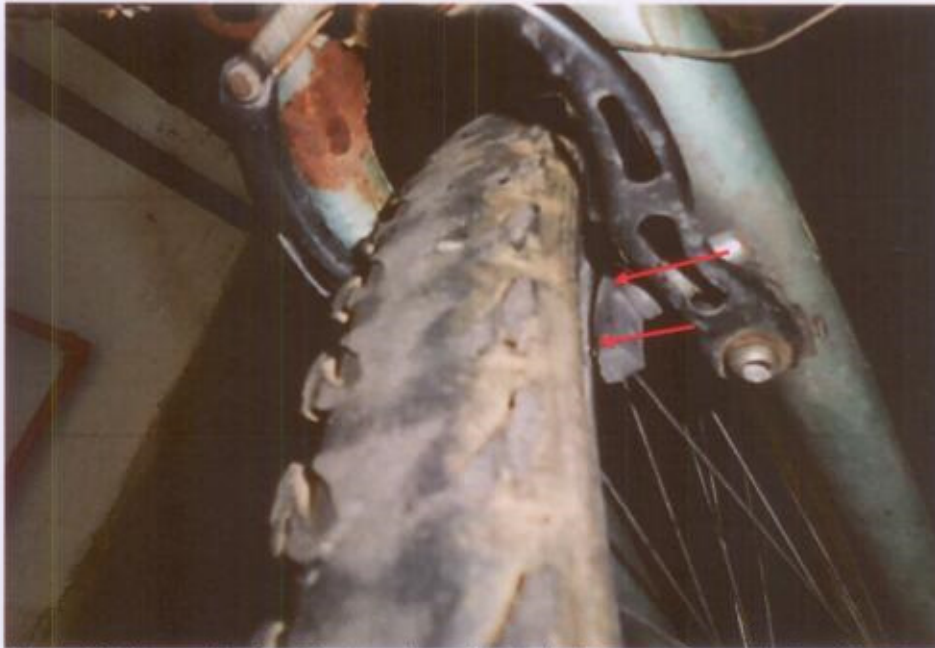


Photo 15 shows a static brake test was conducted only on the Bicycle's front brake. The test was conducted by lifting the front tyre in the air & applies a little spinning action to it. The hand brake lever was then gripped in order to the stop the spinning front tyre. The result was unsatisfactory. It didn't stop after gripping the hand brake to the fullest.



**Photo 16** shows the front brake clamp that failed to stop the spinning front tyre. The result was unsatisfactory. It didn't stop after gripping the hand brake to the fullest. Likely due to the worn out rubber pad. A thin gap was noted when gripping the brake lever to the fullest.



**Photo 17** shows the rear brake clamp cable that was seen dislodged from the original assembly.





**Photo 18** shows the rear brake clamp that was seen dislodged from the original assembly.

## Conclusion

16. At the time of our inspection of the Bicycle, its steering system & rear brake could not be tested (due to damages as a result of the accident). Its front brake was however found not to be in serviceable condition based on the static brake test conducted at time of inspection.
17. The condition of the Bicycle's front & rear tyres was observed not to be in serviceable condition. The tread pattern of the 2 tyres was observed only visible on the sides of both tyres, the middle section of the 2 tyres was observed to be bald. The tyre brand, tyre size and remaining tread depth was recorded. Remaining tread depth of 0mm (at tyres middle section) for both tyres.

18. Our findings were based solely on a static and visual inspection of the Bicycle. No operational test(s) could be carried out to the Bicycle due to the damage of its front fork (as a result of the accident), which had rendered the Bicycle's immobility.



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