



Your Ref: TP/IP/64573/2017  
Our Ref : CI/TPD18002088/Z

08<sup>th</sup> February 2018

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

**INSPECTION REPORT OF ELECTRIC SCOOTER - TRAFFIC POLICE POUND  
REPORT NO. 4996/17**

1. We refer to your request dated 24<sup>th</sup> January 2018 to conduct a physical inspection of an Electric Scooter bearing Traffic Police Pound Report no. 4996/17 (herein referred to as "**Electric Scooter**"), which was involved in a fatal road traffic accident on 30<sup>th</sup> November 2017.
2. The purpose of this inspection is to primarily determine if there was any possible mechanical failure to the Electric Scooter that may have contributed to the accident.
3. Following the request, we had carried out a physical inspection of the Electric Scooter on 06<sup>th</sup> February 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 Electric Scooter was observed to have sustained minor damages at the left portion. The body parts that were found to have been damaged include its left hand handle, left hand portion of the seat & left hand brake lever amongst others as a result of the accident. See photo 1 to 7 below.



Photo 1 shows the identification of the Electric Scooter with reference to Traffic Police Pound Report No. 4996/17.



Photo 2 shows the frontal portion of the Electric Scooter at time of inspection. Damage on the left hand handle, left hand portion of the seat & right hand brake lever was observed likely due to the accident.



**Photo 3** shows the right portion of the Electric Scooter at time of inspection. It was observed to be in good condition.



**Photo 4** shows the left portion of the Electric Scooter at time of inspection. Damage on the left hand handle, left hand portion of the seat & right hand brake lever was observed likely due to the accident.



**Photo 5** shows the rear portion of the Electric Scooter at time of inspection. It was observed to be in good condition.



**Photo 6** shows the left portion of the Electric Scooter at time of inspection. Damage on the left hand handle & brake lever was observed likely due to the accident.





Photo 7 shows the seat of the Electric Scooter at time of inspection. Damage on the right portion of the seat was observed likely due to the accident.

### Tyres and Wheel Rims

5. The condition of the Electric Scooter'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:-



CST 10 X 2.50 (1.6mm)

CST 10 X 2.50 (1.6mm)

51 UBI AVE 1, #01-25 PAYA UBI INDUSTRIAL PARK, SINGAPORE 408933 TEL : (065) 62563561 FAX : (065) 67414108

6. The tyres were wrapped around alloy wheel rim that was found to be without any significant damage. See photo 8 & 9 below



**Photo 8** shows the rear tyre of the Electric Scooter at the time of our inspection. 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.



**Photo 9** shows the front tyre of the Electric Scooter at the time of our inspection. 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.

### Drive Motor

7. The Electric Scooter was controlled by a motor to drive the rear tyre. The motor was originally installed on the rear portion at the rear tyre & found adequately acceptable. The motor of the Electric Scooter was found to be intact without any misalignment or damages. It was also observed to be in operational condition. See photo 10 below.



Photo 10 shows the general view of the drive motor (arrowed) of the Electric Scooter, which was observed to be intact with no misalignment.

### Steering System & Braking System

8. Our checks on the various steering components of the Electric Scooter had revealed that its steering system was in serviceable condition & its front fork was found to be intact and undamaged.
9. The braking system of the Electric Scooter was controlled by mechanical means (cables, callipers and springs). Our visual examination of the various components in the brake system, like the hand brake lever (left & right), brake callipers (front & rear), revealed some of the components sustained damages.

10. Further examination revealed that the left hand brake lever for rear brake was observed to be bent; it was also found to be stuck likely due to the accidents impact.
11. A static brake test was conducted only on the Electric Scooter's front brake. The test was conducted by lifting the rear tyre above ground & applies a little spinning action to it. The right hand brake lever was then gripped in order to stop the spinning rear tyre. The result was satisfactory. It stopped after gripping the right hand brake to the fullest. It shows that the front brake calliper was responding to the gripping action. This had appeared to indicate that the front brake was in a serviceable condition. See photo 11 & 12 below.



**Photo 11** shows the close-up view of the front brake calliper (circled) of the Electric Scooter, which was observed to be intact with no damages.





**Photo 12** shows the close-up view of the rear brake calliper (circled) of the Electric Scooter, which was observed to be intact with no damages.

### **Operational Test**

12. We were able to carry out an operational test to the steering system and braking system of the Electric Scooter partially. Which were includes pushing the Electric Scooter manually forward and backward & also applying only on the rear brake, simulating movement of the Electric Scooter, for the operational tests. See photo 13 & 14 below.



**Photo 13** shows a static brake test was conducted only on the Bicycle's rear brake. The test was conducted by lifting the rear 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 left hand brake to the fullest. It shows that the rear brake clamps was not responding to the gripping action. This had appeared to indicate that the rear brake was not in a serviceable condition.



**Photo 14** 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 stop the spinning front tyre. The result was satisfactory. It stops after gripping the hand brake to the fullest.

## Conclusion

13. At the time of our inspection of the Electric Scooter, its rear brake could not be tested (due to damages as a result of the accident). Its front brake was however found to be in serviceable condition based on the static brake test conducted at time of inspection.
14. The condition of the Electric Scooter'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.
15. Our findings were based partially on a static, operational and visual inspection of the Electric Scooter's steering system & braking system. We did not find any evidence(s) to suggest that there was possible mechanical failure to the Electric Scooter that may have caused and/or contributed to the accident.



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