

Your Ref: TP/IP/04581/2022
Our Ref : CI/TPD22004870/N

15 July 2022

Fatal Accident Investigation Team

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

**INSPECTION REPORT OF BICYCLE (ORANGE) - TRAFFIC POLICE POUND
REPORT NO. 0720/22**

1. We refer to your request dated 15 March 2022 to conduct a physical inspection of a Bicycle bearing Traffic Police Pound Report no. 0720/22 (herein referred to as "**Bicycle**"), which was involved in a fatal road traffic accident on 2 March 2022.
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 15 July 2022 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 Bicycle was observed to have sustained damages all around. The body parts that were found to have been damaged include its front basket, rear sub frame, pedals, braking components, gear train and rack, amongst others as a result of the accident. See photos 1 – 9 below.

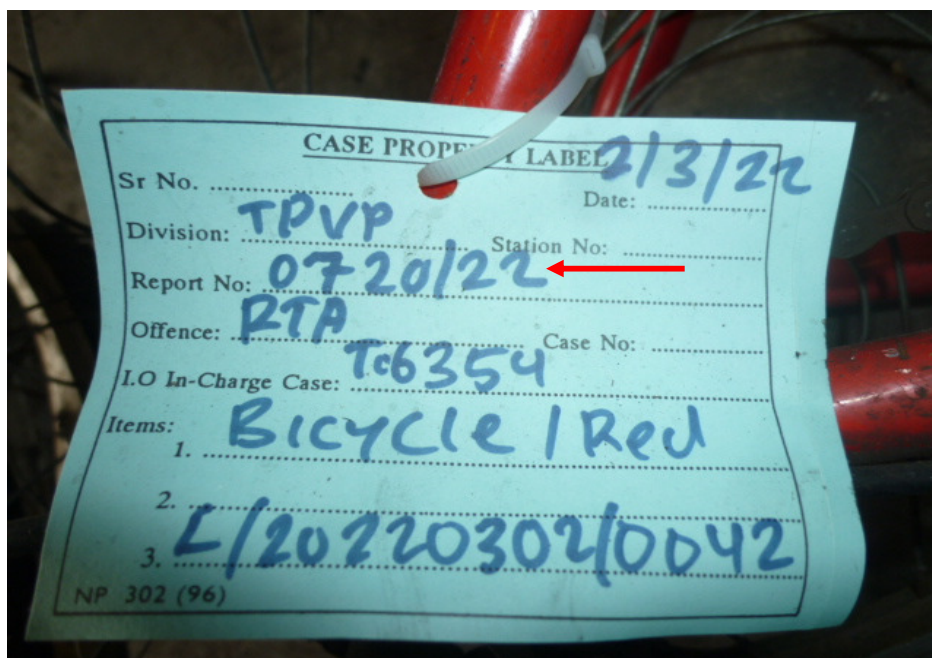


Photo 1 shows the identification of the Bicycle with reference to Traffic Police Pound Report No. 0720/22 (arrowed).



Photo 2 shows the right body of the Bicycle at time of our inspection. The Bicycle had sustained damages all around. The body parts that were found to have been damaged include its front basket, rear sub frame, pedals, braking components, gear train and rack, amongst others as a result of the accident.

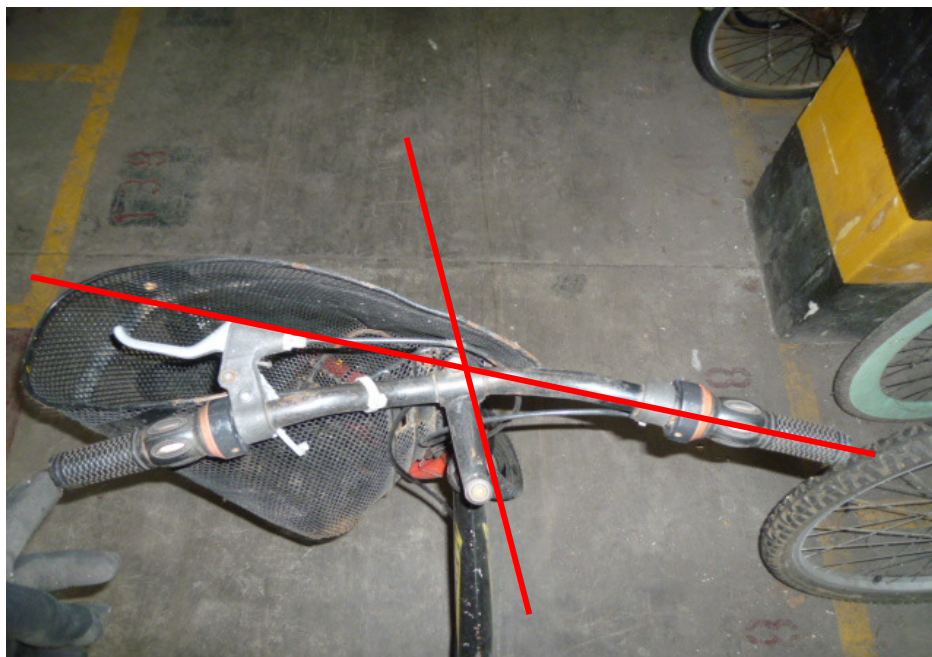


Photo 3 shows the frontal portion of the Bicycle (top view) at the time of our inspection. A misalignment of the handle bar & front tyre was observed.



Photo 4 shows the damaged front basket of the Bicycle at the time of our inspection.



Photo 5 shows the grazed seat of the Bicycle at the time of our inspection (arrowed).



Photo 6 shows a close-up view of the bent side stand of the Bicycle due to the accident (arrowed).



Photo 7 shows the broken left pedal of the Bicycle as a result of the accident (arrowed).



Photo 8 shows a close-up view of the broken right pedal of the Bicycle as a result of the accident (arrowed).



Photo 9 shows the grazed rear sub frame of the Bicycle as a result of the accident (arrowed).

Tyres and Wheel Rims

5. The condition of the Bicycle's front & rear 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 front tyre was observed to be sufficiently inflated for vehicular operation. However the rear tyre was observed to be deflated as a result of the accident. The tyre brand, tyre size and remaining tread depth of the 2 tyres were recorded as follows:-



Cheng Shin Tyre (26 x 1.95 / 50 - 559)
(Deflated)

Cheng Shin Tyre (26 x 1.75)
(Deflated)

6. Both tyres were wrapped around alloy spoke wheel rims. At the time of our inspection, we did not observe any visible damage on the front wheel rim of the Bicycle. However we did observe that the rear wheel rim was bent and the spokes on the rear wheel rim were bent as a result of the accident. See photos 10 - 13 below.



Photo 10 shows the deflated front tyre of the Bicycle most likely as a result of the accident. 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.



Photo 11 shows the bent spokes and bent front wheel rim of the Bicycle at the time of our inspection (arrowed).



Photo 12 shows the deflated rear tyre of the Bicycle most likely as a result of the accident. 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 rear tyre.



Photo 13 shows the bent spokes and bent rear wheel rim of the Bicycle at the time of our inspection (arrowed).

Drive Train

7. The gear train of the Bicycle was found to be severely damaged as a result of the accident. The chain was also observed to be dislodged from the gear train most likely as a result of the accident. No free play tension test can be conducted due to the extensive damages. See photos 14 & 15 below.



Photo 14 shows the general view of the gear train of the Bicycle which was found to be severely damaged as a result of the accident. The chain was also observed to be dislodged from the gear train most likely as a result of the accident (arrowed).



Photo 15 shows a close up view of the gear train of the Bicycle, which was observed to have sustained severe damages as a result of the accident (arrowed). No free play tension test can be conducted due to the extensive damages.

Steering System & Braking System

8. 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 forks. The front forks were found to be bent as a result of the accident, hence causing the whole steering system to be out of alignment and rendering the Bicycle immobile for any static or operational tests.
9. 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 levers (left & right), brake clamps (front & rear), revealed some of the components sustained damages. The hand brake levers (left & right) were observed to be intact without any damages. The front and rear brake clamp assembly of the Bicycle were intact however were found to be misaligned as a result of the accident. We did not observe any visible tear or cut on the connecting cables.
10. A static brake test was conducted on the front brake of the Bicycle. There was some resistance felt upon pressing the left hand brake lever. This was further confirmed by looking at the front brake clamps while we pressed the left hand brake lever. It shows that the front brake clamps responded to the gripping action. However due to the misalignment of the front brake clamp assembly as a result of the accident, the rubber brake blocks pressed against the front tyre instead of the front wheel rim.
11. A static brake test was conducted on the rear brake of the Bicycle. There was some resistance felt upon pressing the right hand brake lever. This was further confirmed by looking at the rear brake clamps while we pressed the right hand brake lever. It shows that the rear brake clamps responded to the gripping action. However due to the misalignment of the rear brake clamp assembly as a result of the accident, the rubber brake blocks pressed against the rear tyre instead of the rear wheel rim.

Operational Test

12. We were unable to carry out an operational test of the Bicycle's braking system due to the damages sustained to the steering and braking components as a result of the accident. See photos 16 - 19 below.



Photo 16 shows a static brake test conducted on the Bicycle's front brake. There was some resistance felt upon pressing the left hand brake lever (arrowed). It also shows that the front brake clamps responded to the gripping action (circled) after depressing the left hand brake lever.



Photo 17 shows a close up view of the front brake clamps responding to the gripping action. The rubber brake blocks pressed against the front wheel rim upon depressing the left hand brake lever. However due to the misalignment of

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

the front brake clamp assembly as a result of the accident, the rubber brake blocks pressed against the front tyre instead of the front wheel rim (arrowed).



Photo 18 shows a static brake test conducted on the Bicycle's rear brake. There was some resistance felt upon pressing the right hand brake lever (arrowed). It also shows that the rear brake clamps responded to the gripping action (circled) after depressing the right hand brake lever.



Photo 19 shows a close up view of the rear brake clamps responding to the gripping action. The rubber brake blocks pressed against the rear wheel rim upon depressing the right hand brake lever. However due to the misalignment of the

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

rear brake clamp assembly as a result of the accident, the rubber brake blocks pressed against the rear tyre instead of the rear wheel rim (arrowed).

Conclusion

13. At the time of our inspection of the Bicycle, its steering system & braking system could not be tested due to the damages as a result of the accident.
14. The 2 tyres of the Bicycle were found to be in serviceable condition (which included the deflated front tyre and rear tyre). There was no tear, cut or burst mark(s) on the outer and the inner sidewalls as well as across the tread of the 2 tyres.
15. 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 steering system and braking system as a result of the accident which had rendered the Bicycle immobile.



Muhd Nazril

Senior Technical Investigator



Ang Bryan Tani

AMSOE, AMIRTE, AFF SAE, M.MATAI, AFF.Inst.AEA

Senior Technical Investigator

Technical Investigation & Reconstructionist (SAE-A)

DISCLAIMER OF LIABILITY TO THIRD PARTIES:- This Report is made solely for the use and benefit of the Client named on the front page of this Report. No liability or responsibility whatsoever, in contract or tort, is accepted to any third party who may rely on the Report wholly or in part. Any third party acting or relying on this Report, in whole or in part, does so at his or her own risk.