

Your Ref: TP/IP/20435/2022  
Our Ref: CI/TPD22008182/P

9<sup>th</sup> September 2022

**Fatal Accident Investigation Team**

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

**MECHANICAL INSPECTION REPORT OF MOTOR LORRY YJ 5050Z**

1. We refer to your request on 16<sup>th</sup> August 2022 to conduct a physical inspection of a motor Lorry bearing registration number YJ 5050Z (herein referred to as "**Motor Lorry**"), which was involved in a road traffic accident on 4<sup>th</sup> August 2022.
2. The objective of this inspection is to determine if there was any possible mechanical failure to the Motor Lorry that may have contributed to the accident.
3. Following the request, we had carried out a physical inspection of the Motor Lorry on 8<sup>th</sup> September 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**

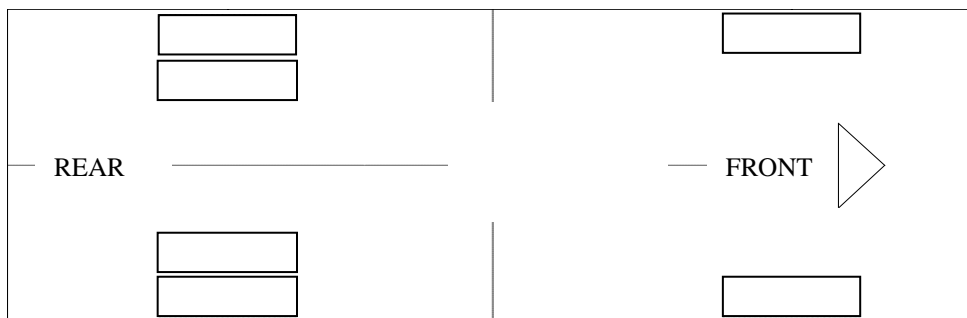
4. The mileage of the Motor Lorry at the time of my inspection was not recorded as the dashboard of the Motor Lorry was damaged as a result of the accident.
5. The Motor Lorry was observed to have sustained major damage at its front and rear cabin, its front windscreen, front body panel, front bumper, front left door as well as its rear cabin were also damaged as a result of the accident. The Supplemental Restraint System (SRS) was activated as a result of the accident.

## Tyres and Wheel Rims

6. The 6 tyres of the Motor Lorry were observed to be in serviceable condition and sufficiently inflated for vehicular operation. I did not find any tear, cut or burst mark(s) on the outer and the inner sidewalls as well as across the tread of the 6 tyres. The tyre brand, tyre size and remaining tread depth of the 6 tyres of the Motor Lorry were recorded as follows:-

Ohtsu 7.00/R16 (2.3mm)

Ohtsu 7.00/R16 (6.5mm)



Ohtsu 7.00/R16 (4mm)

Ohtsu 7.00/R16 (4.1mm)

7. The 6 tyres were observed to be wrapped around standard steel wheel rims that were found to be without any damage. See photo 1 - 12 below.

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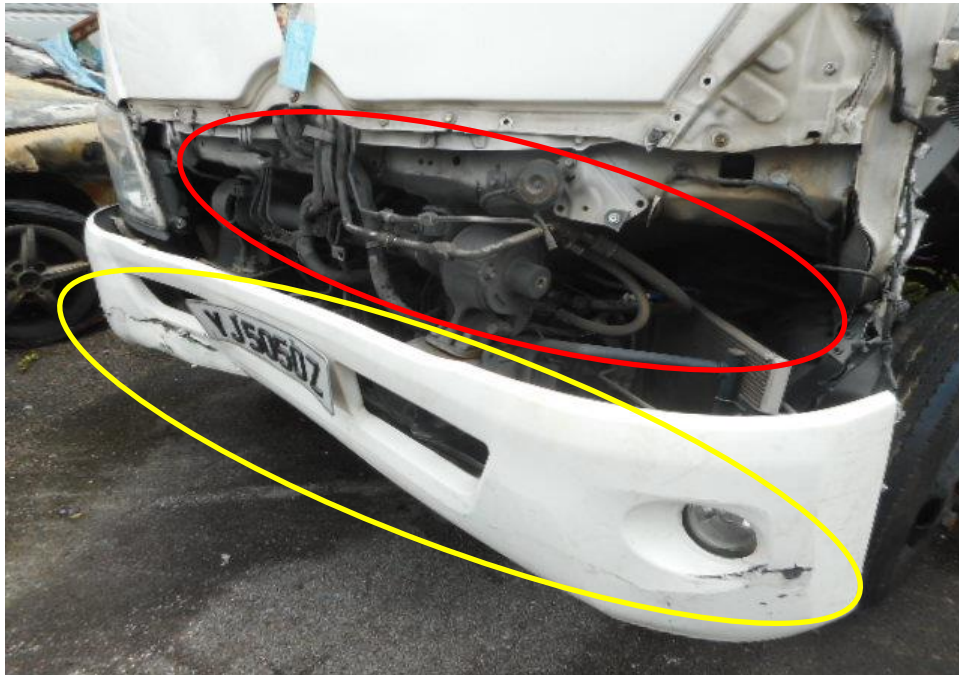


**Photo 1** shows a general view of the front portion of the Motor Lorry at the time of our inspection. The Motor Lorry was observed to sustained major damage at its front and rear cabin, its front windscreen, front body panel, front bumper, front left door as well as its rear cabin were also damaged as a result of the accident.



**Photo 2** shows the close up view of the front portion of the Motor Lorry at the time of our inspection. The Motor Lorry was observed to have sustained major damages to its front windscreen (circled) that was damaged as a result of the accident's impact.





**Photo 3** shows the close up view of the front portion of the Motor Lorry at the time of our inspection. The Motor Lorry was observed to have sustained major damages to its front body panel (red circle) and front bumper (yellow circle) that was damaged as a result of the accident's impact.



**Photo 4** shows the close up view of the front portion of the Motor Lorry at the time of our inspection. The Motor Lorry was observed to have sustained major damages to its front left door (circled) and its front cabin (arrowed) that was crushed due to the accident's impact.



**Photo 5** shows a general view of the Motor Lorry's right body at the time of my inspection. The right body panel of the rear cabin (circled) of the Motor Lorry was observed to sustain damage as a result of the accident.



**Photo 6** shows a general view of the Motor Lorry's left body at the time of my inspection. The left body panel of the rear cabin (circled) of the Motor Lorry was observed to sustain damage as a result of the accident.



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**Photo 7** shows the general view of the Motor Lorry's rear body at the time of my inspection. The rear body panel of the rear cabin (circled) of the Motor Lorry was observed to sustain damage as a result of the accident.



**Photo 8** shows the condition of the front right tyre of the Motor Lorry, which were observed to be in serviceable condition with remaining, tread depth of approximately 4.1mm. The tyre, which was wrapped around standard steel wheel rim, it was observed to be sufficiently inflated for vehicular operation.

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**Photo 9** shows the condition of the rear right tyres of the Motor Lorry, which were observed to be in serviceable condition with remaining, tread depth of approximately 4mm. The tyre, which was wrapped around standard steel wheel rim, it was observed to be sufficiently inflated for vehicular operation.



**Photo 10** shows the condition of the rear left tyres of the Motor Lorry, which were observed to be in serviceable condition with remaining, tread depth of approximately 2.3mm.



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**Photo 11** shows the condition of the front left tyre of the Motor Lorry, which were observed to be in serviceable condition with remaining, tread depth of approximately 6.5mm. There was also no tear, cut or burst mark(s) on the outer and the inner sidewalls as well as across the tread of the 6 tyres that were fitted on the Motor Lorry.

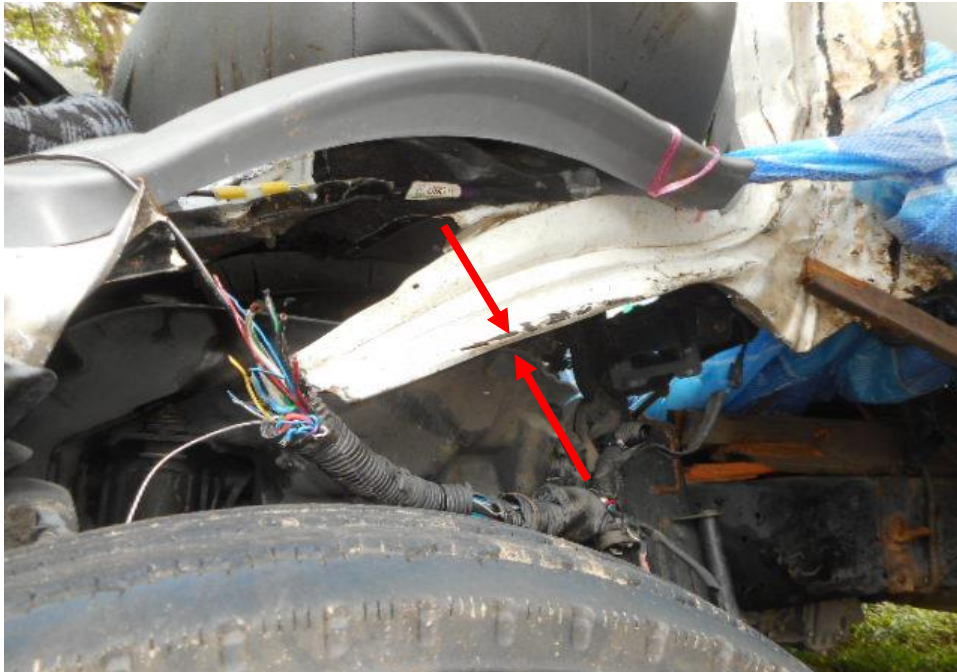


**Photo 12** shows the deployment of the Supplemental Restraint System (SRS) airbag in the Motor Car as a result of the accident.



### Engine Compartment & Operating Fluids

8. Upon examination of the Motor Lorry's engine compartment, we had observed that all the parts, components and fluids could not be inspection as due to the damage induced has crushed and deformed the cabin of the Motor Lorry which immobilized its opening and viewing. However, we were able to view the brake fluid and it was of a sufficient level and without contamination. See photo 13 to 14 below.



**Photo 13** shows the induced damage to the front engine cover (arrowed) of the Motor Lorry's which had immobilised the opening and viewing of the various parts and components inside the engine compartment a result of the accident.



**Photo 14** shows the brake fluid reservoir of the Motor Lorry at the time of my inspection. The brake fluid was observed to be of sufficient level (arrowed) and without any visible contamination.

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

9. Static braking and steering tests was not conducted on the Motor Lorry as the braking and steering controls in the cabin had sustain major damage as the result of the accident. Our visual inspection of the mechanical components of the Motor Lorry's observed that its undercarriage braking system components was intact.
10. My visual examination of the various steering components which had included the rack and pinion, tie rods, tie rod ends and ball joints had revealed that these components were all generally in good condition. See photo 15 – 21 below.



**Photo 15** shows the various undercarriage components at the front right wheel of the Motor Lorry, in particular the steering tie rod end (arrowed). The various steering components were all found to be intact, suggesting that the steering system of the Motor Lorry was likely to be in serviceable condition at the material time of accident. There was also no sign of fluid stain(s) observed on the various undercarriage components.



**Photo 16** shows the various undercarriage components at the front left wheel of the Motor Lorry, in particular the steering tie rod end (arrowed). The various undercarriage components of the Motor Lorry were all found to be intact without any visible damage. There was also no sign of fluid stain(s) observed on the various undercarriage components.



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**Photo 17** shows the various undercarriage components at the front right wheel of the Motor Lorry, in particular the steering box (arrowed). The various undercarriage components of the Motor Lorry were all found to be intact without any visible damage. There was also no sign of fluid stain(s) observed on the various undercarriage components.



**Photo 18** shows the brake pipe (arrowed) at the rear right wheel of the Motor Lorry. I did not observe any leakage of brake fluid at the time of my inspection of the Motor Lorry. My visual examination of the various mechanical components in the braking system and they were all found to be intact without any visible damage.

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**Photo 19** shows the brake pipe (arrowed) at the rear left wheel of the Motor Lorry. I did not observe any leakage of brake fluid at the time of my inspection of the Motor Lorry. My visual examination of the various mechanical components in the braking system and they were all found to be intact without any visible damage.



**Photo 20** shows the brake hose/pipe (arrowed) at the front right wheel of the Motor Lorry. No leakage of brake fluid was observed. Visual examination of the various components of the braking system like the brake caliper (circled), brake booster, brake pedal etc had revealed all to be intact and without visible damage at the time of accident. There was also no sign of fluid stain(s) observed on the various undercarriage components.



**Photo 21** shows the brake hose/pipe (arrowed) at the front left wheel of the Motor Lorry. No leakage of brake fluid was observed. Visual examination of the various components of the braking system like the brake caliper (circled), brake booster, brake pedal etc had revealed all to be intact and without visible damage at the time of accident. There was also no sign of fluid stain(s) observed on the various undercarriage components.

### **Electronic Safety / Warning Indicators**

11. The static test of the Motor Lorry electronic safety system could not be inspected as the instrument cluster was damaged due to the induce impact from the accident. See photo 22 below





**Photo 22** shows instrument cluster and dashboard of the Motor Lorry at the time of our inspection. The instrument cluster and dashboard was observed to be damaged as a result of the accident.

### **Seat Belts**

12. The front right seat belt was worn and tested to be able to fasten securely into the respective pre-tensioners that were fitted at the sides of each seat. However, the left seat belt was not worn at the material time of accident as the respective pre-tensioners that were fitted at the side of each seat was activated upon the material time. See photos 23 – 24 below.

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**Photo 23** shows that the seat belt on the right seat was worn at the material time of accident as the safety pre-tensioners was activated at the moment of impact and caused the seat belt to be locked into the last position.



**Photo 24** shows that the seat belt on the left seat was not worn at the material time of accident as the safety pre-tensioners was activated at the moment of impact and caused the seat belt to be locked into the last position.

## Operational Behaviour of the Motor Lorry

13. An operational test of the Motor Lorry was not conducted as the Motor Lorry was unsafe and unable to operate at the time of inspection.

## Conclusion

14. For this particular case, I was unable to determine whether there was any possible mechanical failure to the Motor Lorry that may have contributed to the accident. The extent of damage that it had sustained had prevented me from Carrying out any operational test(s) and/or static test(s) to its engine system, transmission system, steering system, braking system and suspension system.
15. In general our visual inspection of the mechanical components of the Motor Lorry's braking and steering system appears to be intact and was not damaged by the accident.
16. The 6 tyres of the Motor Lorry were also found to be in serviceable condition. I did not find any tear, cut or burst mark(s) on the outer and the inner sidewalls as well as across the tread of the 6 tyres. The 6 tyres were also observed to be sufficiently inflated for vehicular operation with remaining tread depth of approximately 2.3mm to 6.5mm.



**Sherwin Beh,**  
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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