

Your Ref: TP/IP/19813/2021
Our Ref: CI/TPD21007273/P

22nd July 2021

Fatal Accident Investigation Team

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

MECHANICAL INSPECTION REPORT OF MOTOR LORRY YP 6143B

1. We refer to your request on 30th June 2021 to conduct a physical inspection of a motor lorry bearing registration number YP 6143B (herein referred to as "**Motor Lorry**"), which was involved in a road traffic accident on 20th April 2021.
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 21st July 2021 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 cabin & rear portion as well as its left door as a result of the accident.

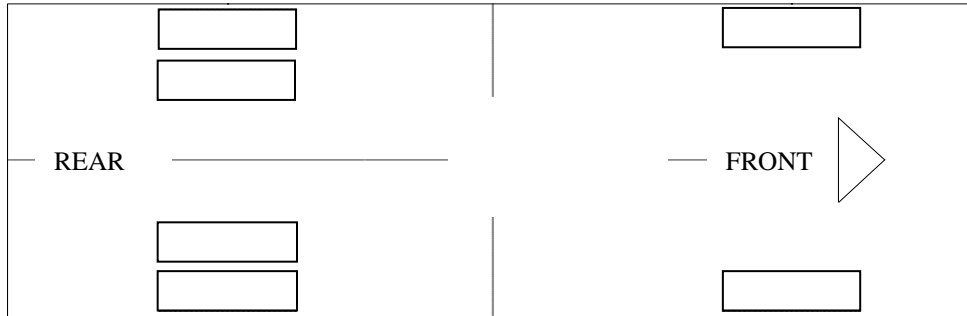
Tyres and Wheel Rims

6. The condition of the Motor Lorry's 6 tyres was observed 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. The tyre brand, tyre size and remaining tread depth of the 6 tyres were recorded as follows:-

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Bridgestone 195/85R15 (2.5mm)

Bridgestone 195/85R15 (5.1mm)



Bridgestone 195/85R15 (4mm)

Bridgestone 195/85R15 (7.4mm)

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



Photo 1 shows a general view of the front windscreen and body panel of the Motor Lorry at the time of our inspection. The Motor Lorry was observed sustained major damages at its front and rear cabin portion as well as its left door 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) and its front cabin (arrowed) that was crushed due to 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 (circled) that was damaged as a result of the accident's impact.

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Photo 4 shows the close up view of the left door of the Motor Lorry at the time of our inspection. The Motor Lorry was observed to have sustained damages to its left door (circled) as a result of the accident's impact.



Photo 5 shows a left general view of the rear cabin portion of the Motor Lorry at the time of my inspection, its rear cabin body panel (circled) was observed to have been damaged as a result of the accident's impact.

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Photo 6 shows a right general view of the rear cabin portion of the Motor Lorry at the time of my inspection, its rear cabin body panel (circled) was observed to have been damaged as a result of the accident's impact.



Photo 7 shows a rear general view of the rear cabin portion of the Motor Lorry at the time of my inspection, its rear cabin body panel (circled) was observed to have been damaged as a result of the accident's impact.

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Photo 8 shows the close up view of the front interior cabin of the Motor Lorry. It was observed to have sustained extensive induced damages to the dashboard as a result of the accident.



Photo 9 shows the condition of the front right tyre of the Motor Lorry, which was observed to be in serviceable condition with remaining tread depth of approximately 7.4mm. The tyre, which was wrapped around standard steel wheel rim, was also observed to be sufficiently inflated for vehicular operation.

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Photo 10 shows the condition of the rear right tyres of the Motor Lorry, which observed to be in serviceable condition with remaining tread depth of approximately 4mm. The tyres, which were wrapped around standard steel wheel rim, were also observed to be sufficiently inflated for vehicular operation.



Photo 11 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 2.5mm. See above.



Photo 12 shows the condition of the front right tyre of the Motor Lorry, which was observed to be in serviceable condition with remaining tread depth of approximately 5.5mm. The tyre, which was wrapped around standard steel wheel rim, was also observed to be sufficiently inflated for vehicular operation.

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 inspected as due to the damage induced has crushed and deformed the cabin of the Motor Lorry which immobilized its opening and viewing, however we are able to observe the brake fluid of the Motor Lorry and was observed to be sufficient level without any visible contamination.
9. Our subsequent checks on the underside of the Motor Lorry also revealed no fluid stain. Visually, the various undercarriage components of the Motor Lorry were all observed to be intact and without any visible damage. See photo 13 – 15 below.

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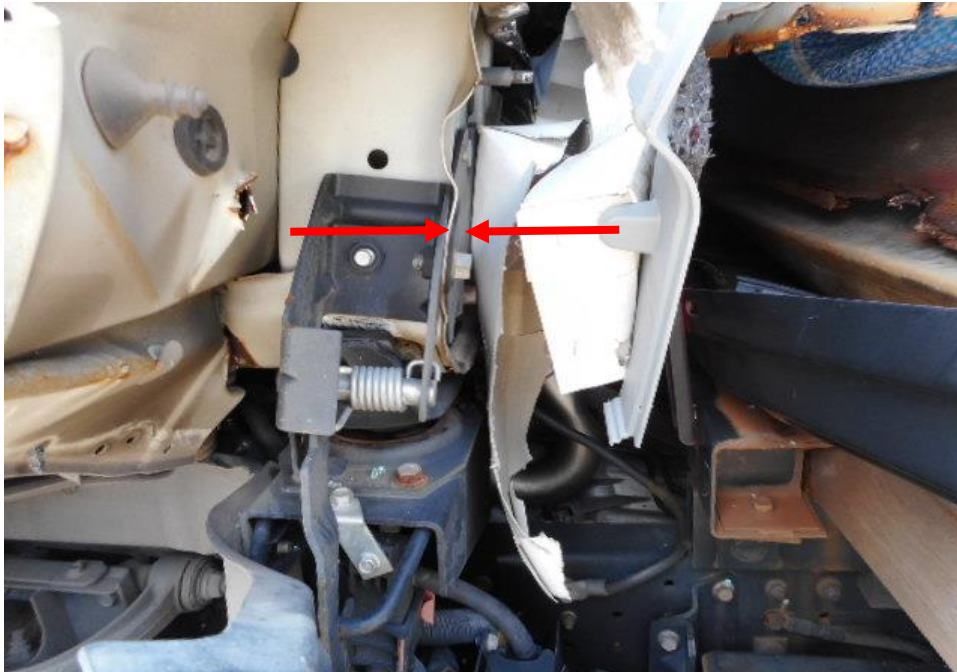


Photo 13 shows the induced damage to the cabin (arrowed) of the Motor Lorry's which immobilised the opening and viewing of the various parts and components inside the engine compartment, a result of the accident.

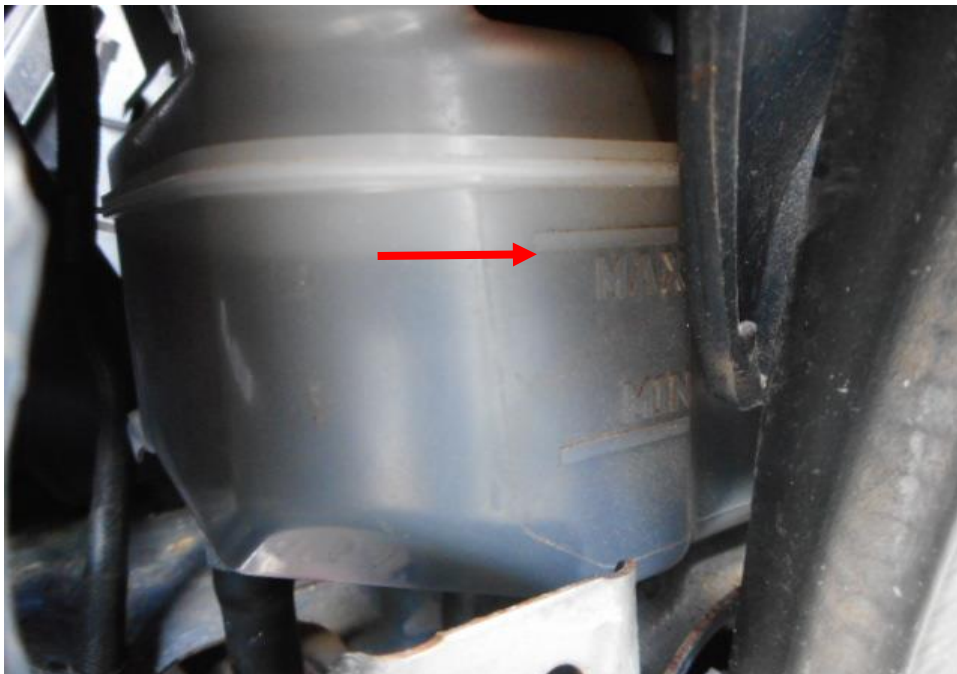


Photo 14 shows the brake fluid reservoir of the Motor Lorry at the time of our inspection. The brake fluid was observed to be of sufficient level and without any visible contamination (arrowed).



Photo 15 shows the undercarriage of the engine of the Motor Lorry at the time of our inspection. There was also sign(s) and indication(s) of old fluid stain within the engine undercarriage area.

Steering System & Braking System

10. Static steering tests was not conducted on the Motor Lorry as the steering controls in the cabin had sustained major damages as the result of the accident. Our visual inspection of the mechanical components of the Motor Lorry's observed that its undercarriage steering and braking system components was intact.
11. However, Static brake tests was able to be conducted on the Motor Lorry revealed no abnormality. The brake booster had responded well to the various tests conducted. There was also no abnormal movement of the brake pedal when it was depressed. In general, the static brake tests had suggested that there was no internal leakage of pressure/vacuum in the braking system of the Motor Lorry. The braking system of the Motor Lorry was likely to be in serviceable condition at the material time. This was also taking into consideration that the brake fluid was of sufficient level, and also that there was no sign(s) of brake fluid leakage along the brake hoses and brake pipes. See photo 16 - 21 below.



Photo 16 shows the various undercarriage components at the front right wheel of the Motor Lorry, in particular the steering tie rod end and ball joints (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.

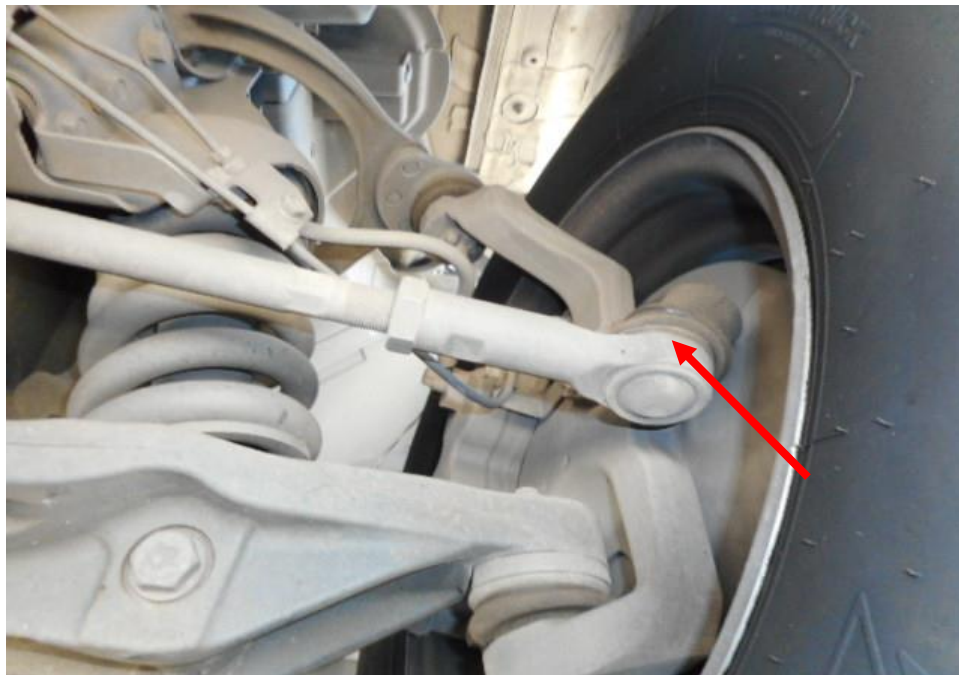


Photo 17 shows the various undercarriage components at the front left wheel of the Motor Lorry, in particular the steering tie rod end and ball joints (arrowed) were observed to be damaged.



Photo 18 shows the various undercarriage components at the front right wheel of the Motor Lorry, in particular the brake hose (arrowed) and callipers (circled). 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 19 shows the various undercarriage components at the front left wheel of the Motor Lorry, in particular the brake hose (arrowed) and callipers (circled). 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 20 shows the various undercarriage components at the rear left wheel of the Motor Lorry, in particular the brake hose and drum brake (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 21 shows the various undercarriage components at the rear right wheel of the Motor Lorry, in particular the brake hose and drum brake (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.

Electronic Safety / Warning Indicators

12. 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.

Seat Belts

13. The front right seat belt of the "Motor Lorry" were tested and the seat belt were able to be fastened securely into the respective pre-tensioners that were fitted at the sides of each seat.

Operational Behaviour of the Motor Lorry

14. An operational test of the Motor Lorry was not conducted as the Motor lorry was unsafe to operate as the cabin was crushed at the time of inspection.

Conclusion

15. 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 and suspension system.
16. However, static brake tests was able to be conducted and In general our visual inspection of the mechanical components of the Motor Lorry's braking system appear to suggest that its braking system was in serviceable condition at the material time of accident and there was no leakage found at the braking components of the Motor Lorry.

17. 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. All 6 tyres were observed to be sufficiently inflated for vehicular operation with remaining tread depth of approximately 2.5mm to 7.4mm.



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