

Your Ref: TP/IP/05243/2020
Our Ref: CI/TPD20005586/P

11th May 2020

General Investigation Team

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

MECHANICAL INSPECTION REPORT OF MOTOR LORRY GBD 8155P

1. We refer to your request on 27th April 2020 to conduct a physical inspection of a motor lorry bearing registration number GBD 8155P (herein referred to as "**Motor Lorry**"), which was involved in a road traffic accident on 29th January 2020.
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 11th May 2020 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 was not able to be recorded as the odometer in the instrument cluster has been damage due to the accident at the time of our inspection.
5. The Motor Lorry was observed to have sustained major damage at its front cabin & windscreen portion as well as its left and right doors, was likely due to a result of the accident. See photo 1 and 9 below.

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Photo 1 shows no mileage readings were recorded due to the damaged odometer in the instrument cluster of the Motor Lorry at the time of our inspection.



Photo 2 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 to its frontal likely due to the accident's impact.

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Photo 4 shows a general view of the left body of the Motor Lorry at the time of our inspection. The Motor Lorry was observed to have sustained major damages to its doors that was crushed and dislodged due to the accident's impact.



Photo 5 shows a general view of the right body of the Motor Lorry at the time of our inspection. The Motor Lorry was observed to have sustained major damages to its doors that was crushed and dislodged due to the accident's impact.

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Photo 6 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 major damages to its doors that was crushed and dislodged due to the accident's impact.



Photo 7 shows the close up view of the right door of the Motor Lorry at the time of our inspection. The Motor Lorry was observed to have sustained major damages to its doors that was crushed and dislodged due to the accident's impact.

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Photo 8 shows the number plate and the general view of the rear portion of the Motor Lorry at the time of our inspection. The Motor Lorry was observed sustained major damages to its rear which the tailgate was shifted out of place, likely due to the accident's impact.

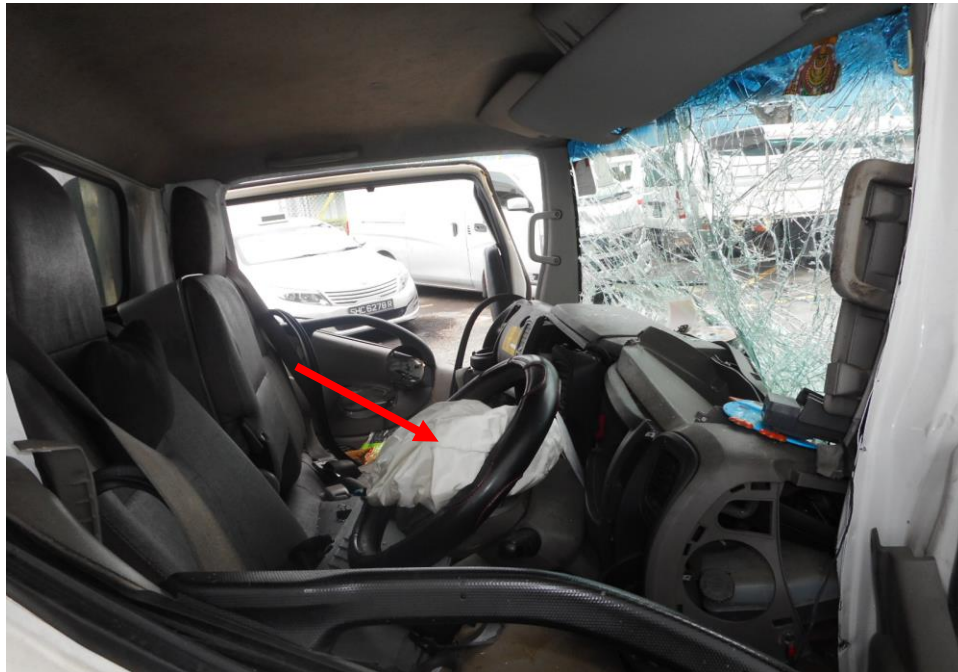


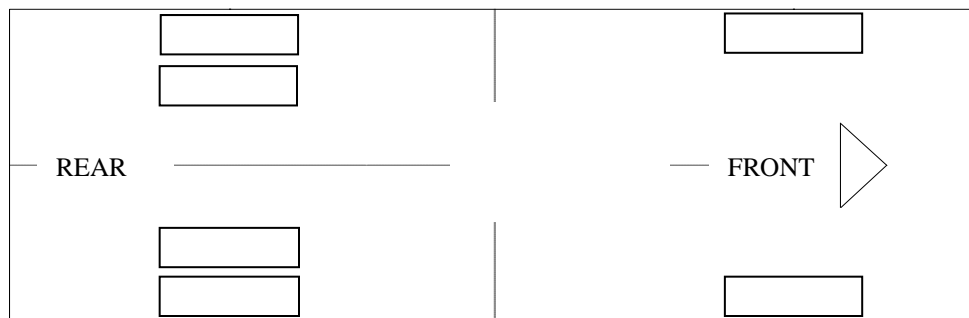
Photo 9 shows the close up view of the interior cabin of the Motor Lorry. It was observed to have sustained extensive induced damages to the dashboard, foot well and triggering the driver's (SRS) airbags (arrowed) to be deployed as a result of the accident.

Tyres and Wheel Rims

6. The front right tyre of the Motor Lorry were observed cut and deflated. However, the other tyres were observed to be in serviceable condition and sufficiently inflated for vehicular operation and we 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 5 tyres. The tyre brand, tyre size and remaining tread depth of the 6 tyres of the Motor Lorry were recorded as follows:-

Condor 155/ R13 (1.7mm)

Rivo 195/ R15 (4.8mm) (Cut)



Condor 155/ R13 (1.7mm)

Rivo 195/ R15 (4.7mm)

7. The 5 tyres were observed to be wrapped around standard steel wheel rims were found to be without any damages however the front left steel wheel rims was observed to be damaged as a result of the accident. See photo 10 – 13 below.

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Photo 10 shows the condition of the front left tyre of the Motor Lorry, which was observed to be in unserviceable condition as it was observed with a cut on the sidewall (arrowed) with remaining tread depth of approximately 4.8mm. The tyre, which was wrapped around standard steel wheel rim.



Photo 11 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 4.7mm. 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 12 shows the condition of the rear left tyres of the Motor Lorry, which observed to be in serviceable condition with remaining tread depth of approximately 1.7mm. The tyres, which were wrapped around standard steel wheel rim, were also observed to be sufficiently inflated for vehicular operation.



Photo 13 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 1.7mm. See above.

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 reservoir of the Motor Lorry and it was observed to be sufficient level without any visible contamination.
9. Our subsequent checks on the underside of the Motor Lorry also revealed sign of old fluid stain. Visually, the various undercarriage components of the Motor Lorry were all observed to be intact and without any visible damage. See photo 14 – 16 below.



Photo 14 shows the induced damage to the cabin 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.

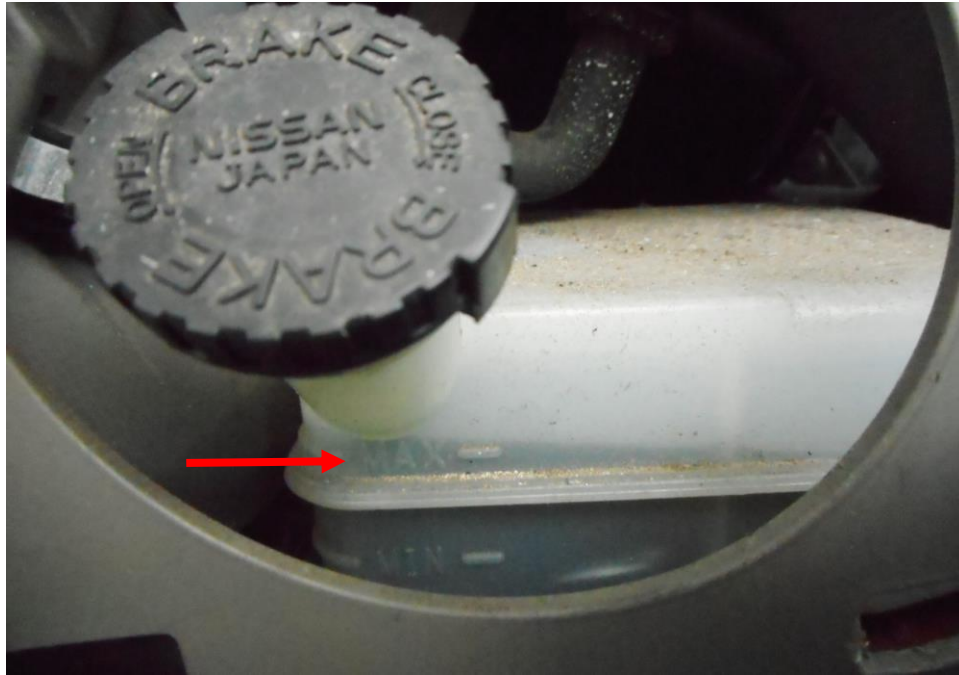


Photo 15 shows the brake fluid reservoir of the Motor Lorry at the time of our inspection. The brake fluid was observed to be of sufficient level and without any visible contamination (arrowed).



Photo 16 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. The mechanical components of the Motor Lorry steering system for the right side were all found to be visually intact and undamaged, however the components on the left side were observed to be damaged. See photo 17 - 22 below.



Photo 17 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.

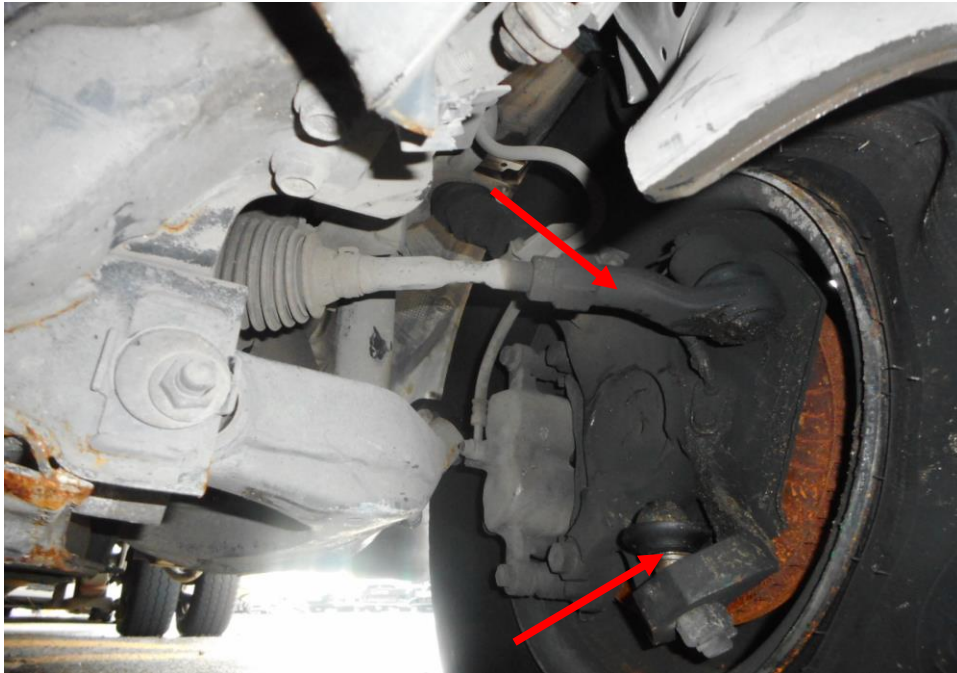


Photo 18 shows the various undercarriage components at the front left wheel of the Motor Lorry, in particular the steering tie rod end and ball joints (arrowed) were observed to be damaged.



Photo 19 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 20 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.



Photo 21 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 22 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.

14. Static steering & brake tests were not conducted on the Motor Lorry due to the damages that was induced onto the cabin and various instruments caused the immobilization of the Motor Lorry. 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.

Electronic Safety / Warning Indicators

15. 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

16. Both front right and left, seat belts of the "Motor lorry" were worn at the material time of accident as the respective pre-tensioners that were fitted at the sides of each seat was activated upon the material time. See photo 23 & 24 below.

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Photo 23 shows that the seat belt on the left 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 belts to be locked into the last position of the user.

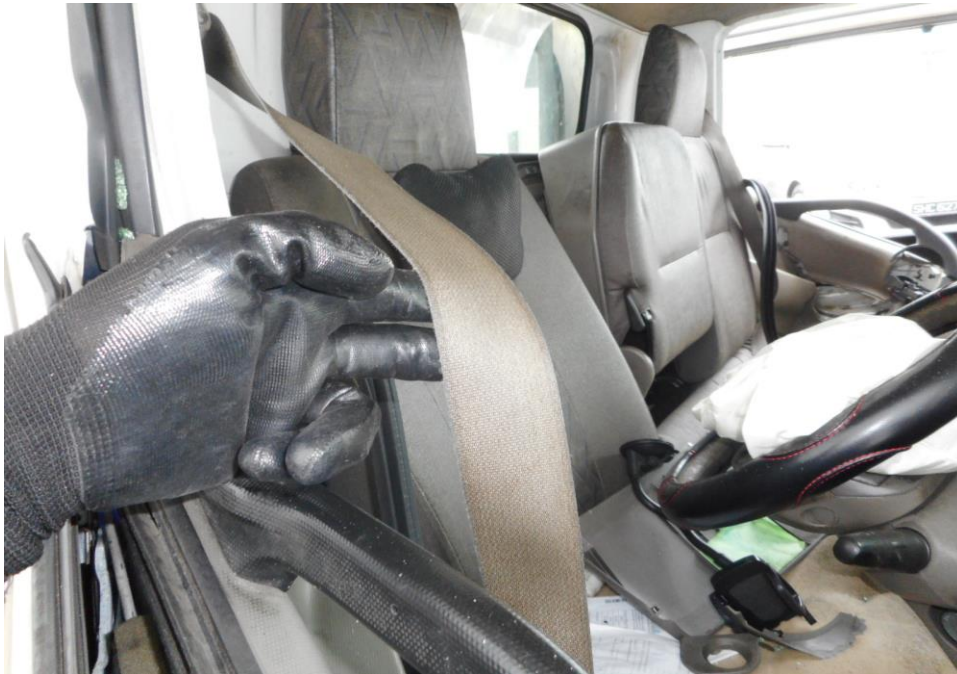


Photo 24 shows that the seat belt on the right seat was worn at the material time of accident as the safety pre-tensioners was activated at the moment of impact and caused the seat belts to be locked into the last position of the user.

Operational Behaviour of the Motor Lorry

17. An operational test of the Motor Lorry was not done due to the damages induced by the accident rendering all the major components of the Motor lorry unserviceable to conduct an operational test at the time of inspection.

Conclusion

18. 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.
19. The 5 tyres of the Motor Lorry were 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 5 tyres and were observed to be sufficiently inflated for vehicular operation. However, the front left tyre was observed to be cut & deflated as a result of the accident. All 6 tyres were observed with remaining tread depth of approximately 1.7mm to 4.8mm.



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