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Your Ref: TP/IP/69085/2018
Our Ref: CI/TPD19000756/P

26th April 2019

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

MECHANICAL INSPECTION REPORT OF MOTOR LORRY UU 8651

1. We refer to your request on 28th December 2018 to conduct a physical inspection of a motor lorry bearing registration number UU 8651 (herein referred to as "**Motor Lorry**"), which was involved in a fatal road traffic accident on 14th December 2018.

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 6th February 2019 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, front 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.

Photo 1 shows no mileage readings were recorded due to the damaged to the instrument cluster which holds the odometer 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.

Photo 3 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 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 front windscreen, doors that was crushed and dislodged due to the accident's impact.

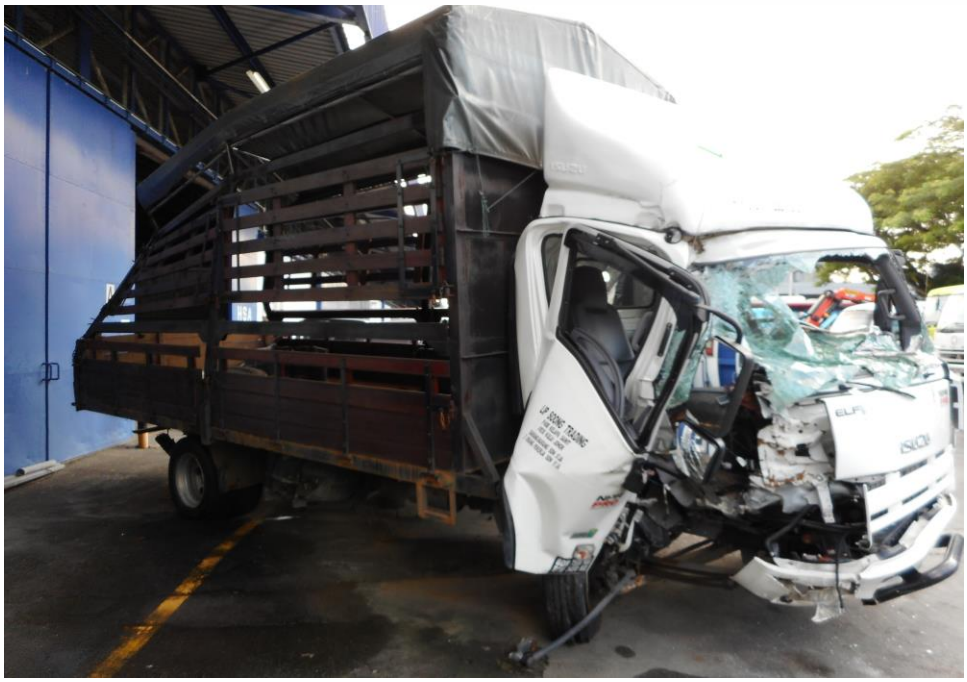


Photo 5 shows a general view of the right body of the Motor Lorry at the time of our inspection. The Motor Lorry was observed to have sustained major damages to its front windscreen, doors that was crushed and dislodged due to the accident's impact.

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 front windscreen, 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 front windscreen, doors that was crushed and dislodged due to the accident's impact.

Photo 8 shows the general view of the cabin from the rear of the Motor Lorry. It was observed to have sustained damages due to the induced impact as a result of the accident.

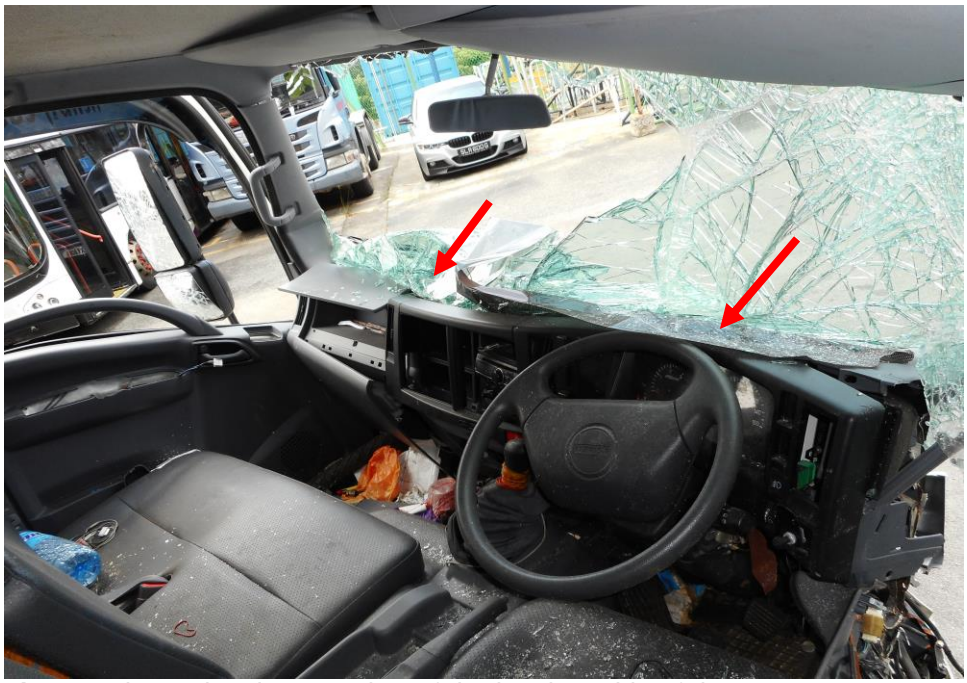


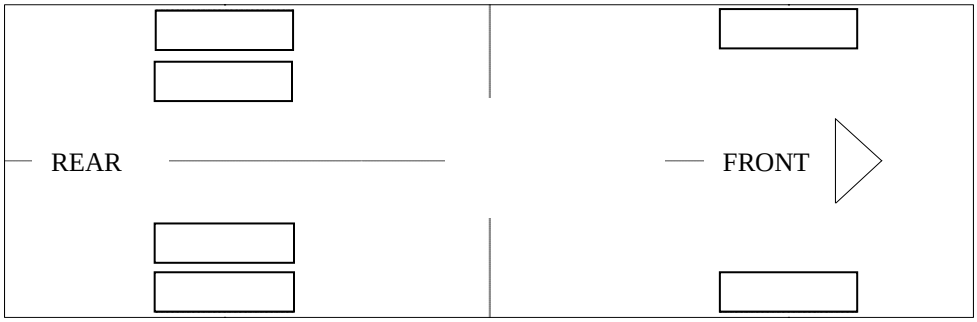
Photo 9 shows the close up view of the interior cabin of the Motor Lorry. It was observed to have sustained extensive induced damages to the dashboard and foot well which caused the whole to shift inwards the cabin.

Tyres and Wheel Rims

6. The right front tyre and rear outer tyre were found to sustain cuts & puncture due to the accident, the rest of the tyres of the Motor Lorry were observed to be in serviceable condition and sufficiently inflated for vehicular operation. 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 tyres. The tyre brand, tyre size and remaining tread depth of the 6 tyres of the Motor Lorry were recorded as follows:-

Bridgestone 215/75 R17.5 (8.6mm)

Bridgestone 215/75 R17.5 (10.7mm)



Bridgestone 215/75 R17.5 (8.7mm)
PUNCTURED

Bridgestone 215/75 R17.5 (9.1mm)
PUNCTURED

7. The 6 tyres were observed to be wrapped around standard steel wheel rims. See photo 10 – 14 below.

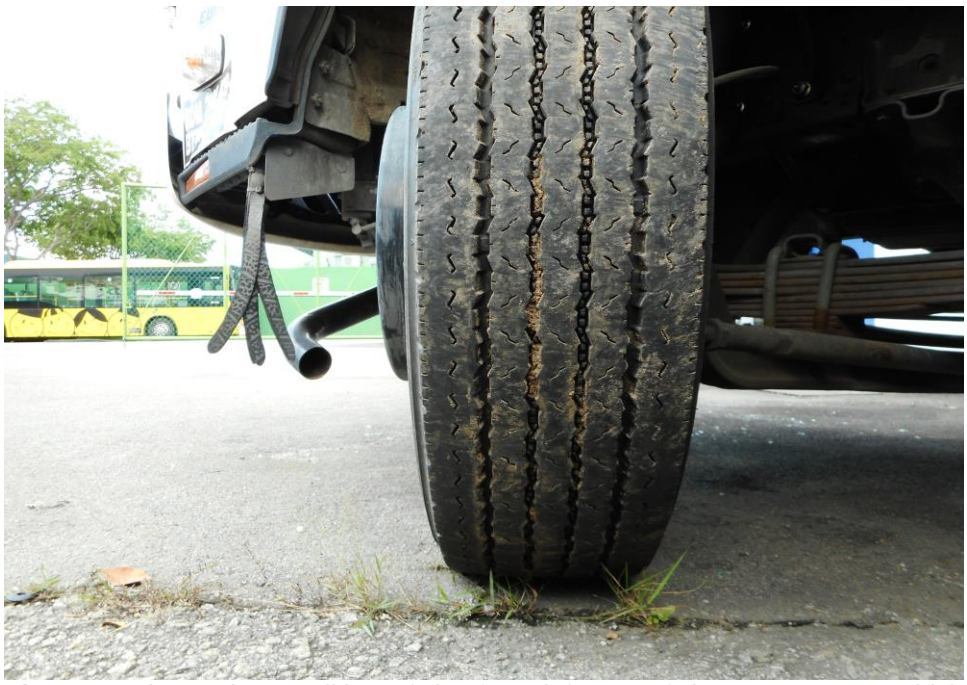


Photo 10 shows the condition of the front left tyre of the Motor Lorry, which observed to be in serviceable condition with remaining tread depth of approximately 10.7mm. The tyre, which was wrapped around standard alloy wheel rim, was also observed to be sufficiently inflated for vehicular operation.

Photo 11 shows the condition of the front right tyre of the Motor Lorry, which was observed to have been cut and delated likely caused by the accident with remaining tread depth of approximately 9.1mm.The tyre was wrapped around standard alloy wheel rim.

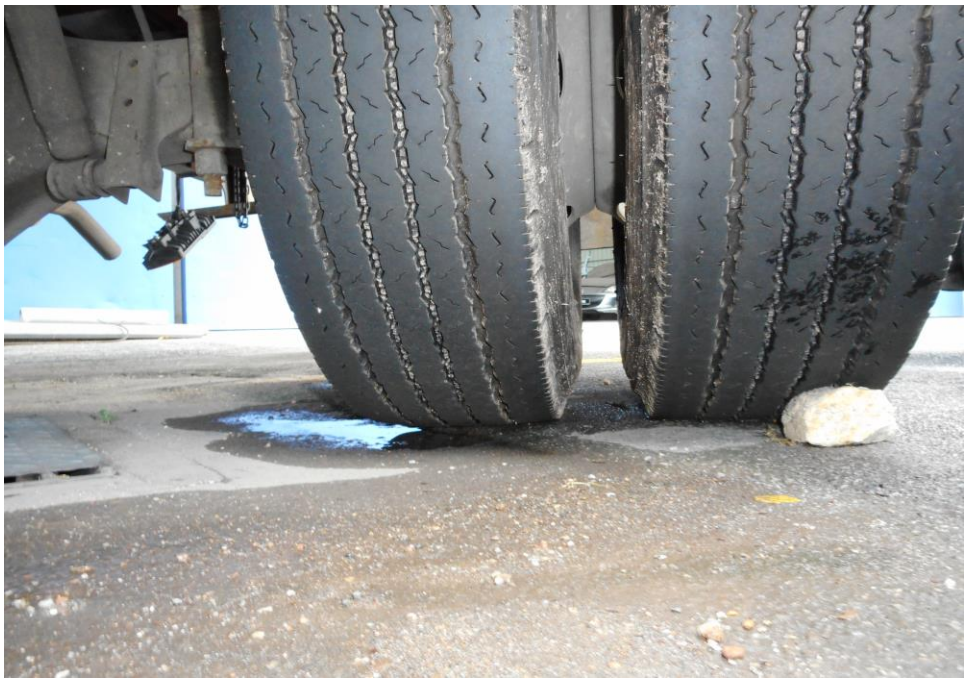


Photo 12 shows the condition of the front left tyre of the Motor Lorry, which observed to be in serviceable condition with remaining tread depth of approximately 8.6mm. The tyre, which was wrapped around standard alloy wheel rim, was also observed to be sufficiently inflated for vehicular operation.

Photo 13 shows the condition of the rear right tyre of the Motor Lorry, which was observed to have been cut and delated likely caused by the accident with remaining tread depth of approximately 8.7mm.The tyre was wrapped around standard alloy wheel rim.

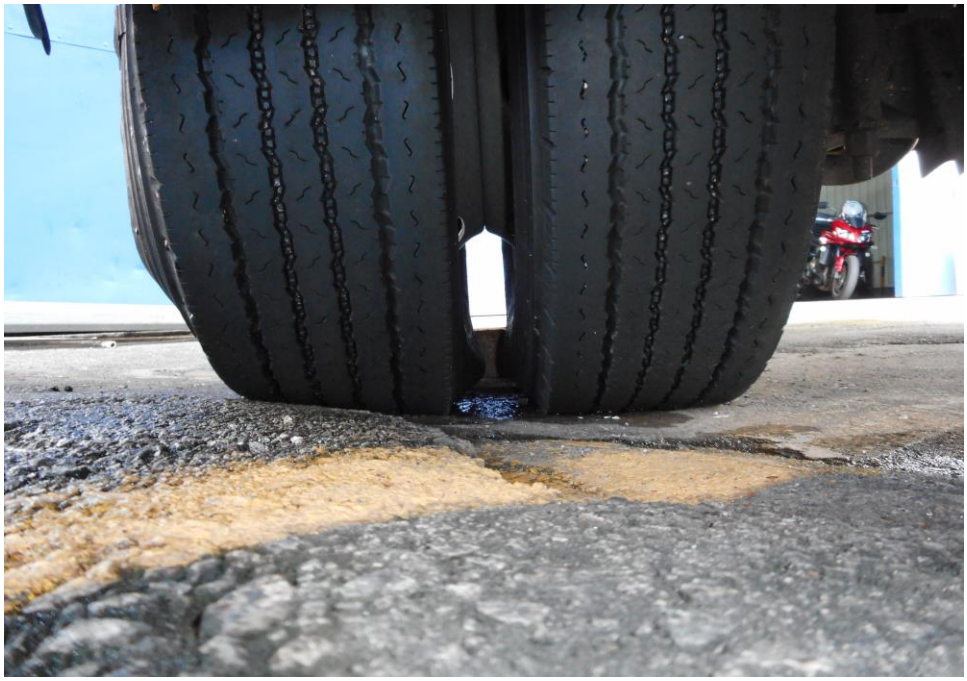


Photo 14 shows the condition of the rear right tyre of the Motor Lorry, which was observed to have been cut and delated likely caused by the accident with remaining tread depth of approximately 8.7mm.The tyre was wrapped around standard alloy wheel rim.

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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.

9. Our subsequent checks on the underside of the Motor Lorry also revealed no sign of fluid stain. Visually, the various undercarriage components of the Motor Lorry were all observed to be intact and without any visible damage. See photo 15 &16 below.

Photo 15 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.

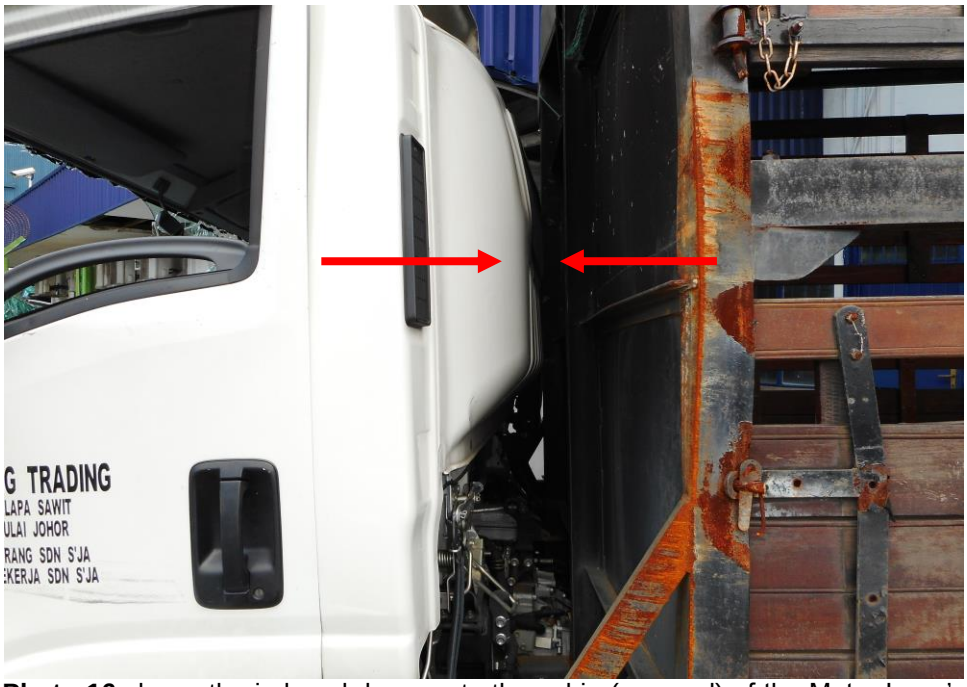

Photo 16 shows the induced damage to the cabin (arrowed) of the Motor Lorry's which immobilised the opening and viewing of the various parts and components inside the engine compartment, a result of the accident.

Photo 17 shows the engine coolant reservoir (arrowed) of the Motor Lorry crushed and emptied at the time of our inspection due to the induced damage from the accident.

Photo 18 shows the undercarriage of the engine of the Motor Lorry at the time of our inspection. There was also no sign(s) or indication(s) of fresh fluid leakage and/or fluid stain within the engine area.

Steering System & Braking System

10. The mechanical components of the Motor Lorry's right steering tie rods were found to be damaged and dislodged off from the steering box. The drive shafts and ball joints of the Motor Lorry were observed to be intact and securely attached to the front left wheel and front right wheel.

11. Static test on the steering system of the Motor Lorry could not be inspection due to the damages that immobilized the movement. Our visual examination of the various steering components of the left side which had included the, tie rods, tie rod ends and ball joints had revealed that these components were all generally in good condition, the damage on the right side is as shown. See photo 17 - 20 below.

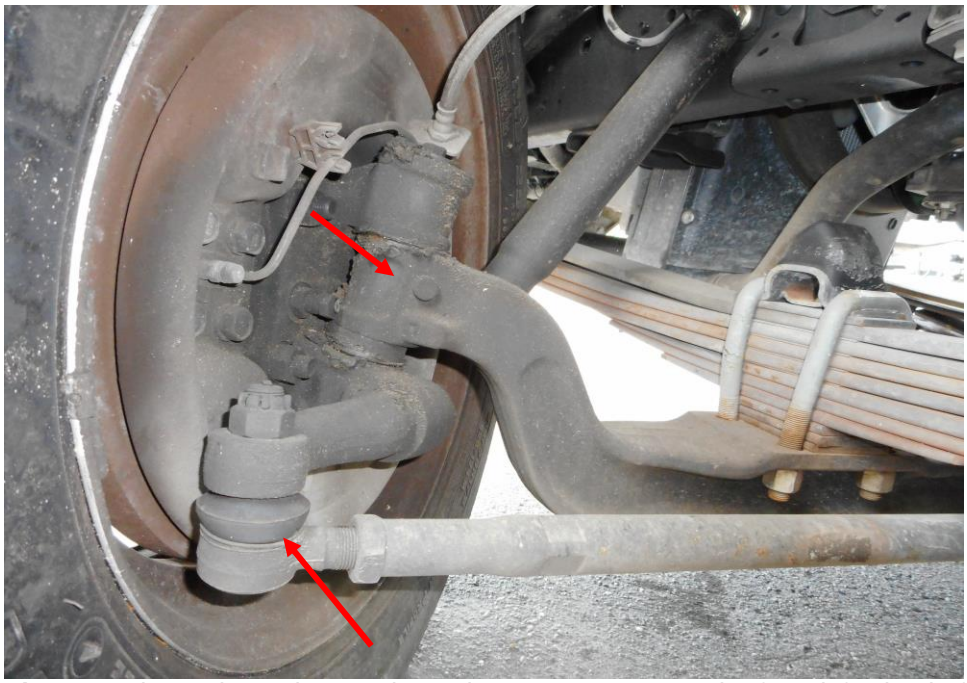

Photo 19 shows the various undercarriage components at the front left wheel of the Motor Lorry, in particular the steering tie rod end and ball joints (arrowed). The various undercarriage components of the Motor Lorry were all found to be intact without any visible damage. There was also no sign of fluid stain(s) observed on the various undercarriage components.

Photo 20 shows the various undercarriage components at the front right wheel of the Motor Lorry, in particular the steering tie rod end and ball joints (arrowed). were all found to be damage and dislodged from the steering box.

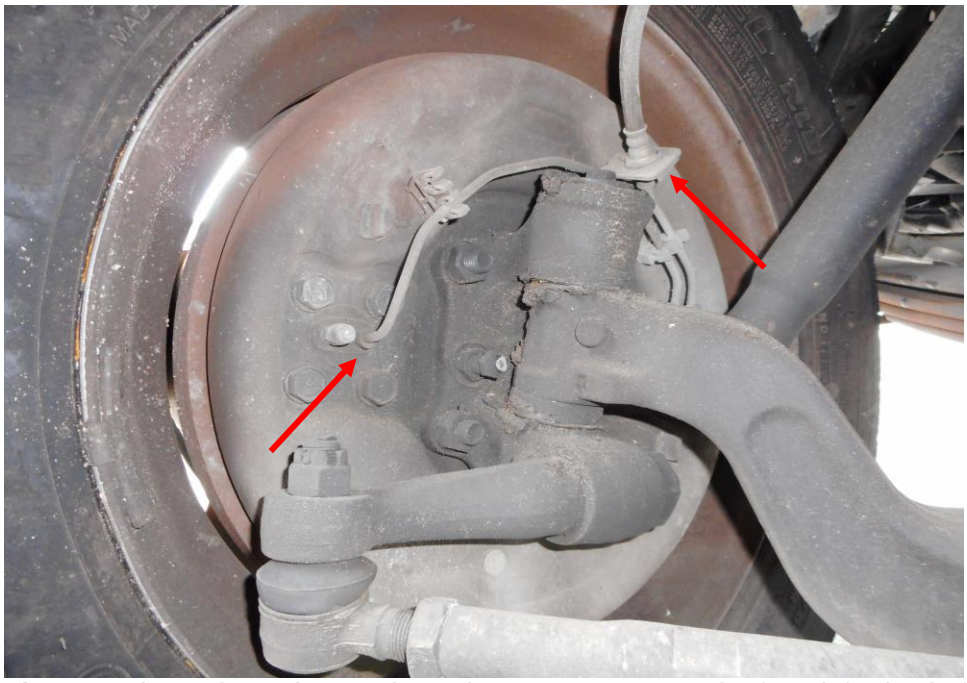

Photo 21 shows the various undercarriage components at the front left wheel of the Motor Lorry, in particular the brake hose and callipers (arrowed). The various undercarriage components of the Motor Lorry were all found to be intact without any visible damage. There was also no sign of fluid stain(s) observed on the various undercarriage components.

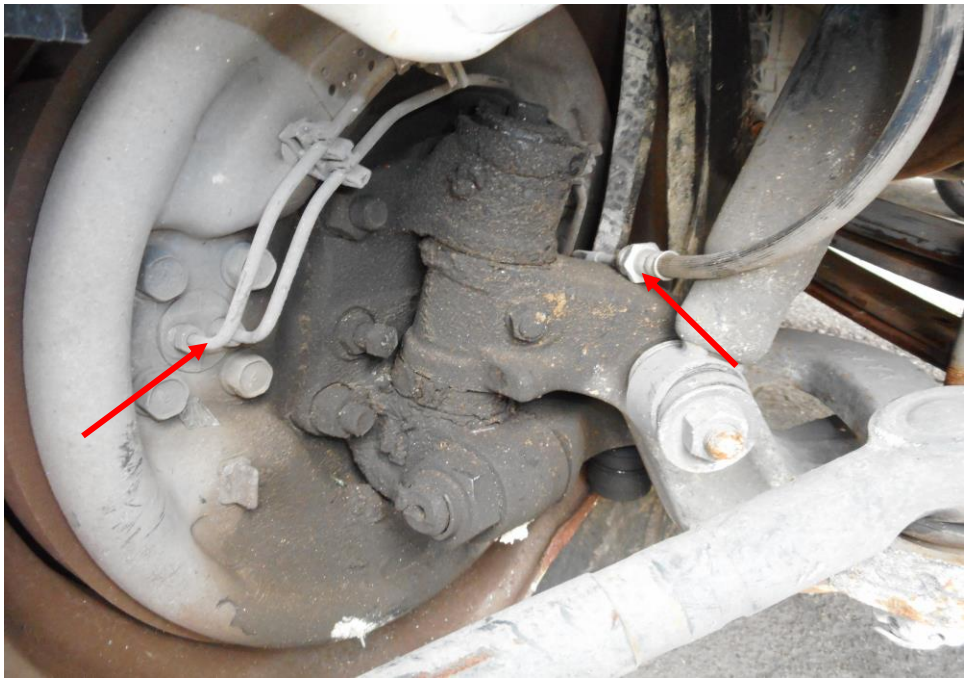

Photo 22 shows the various undercarriage components at the front right wheel of the Motor Lorry, in particular the drum brake covered in fluid stain and brake hose cut (arrowed) likely caused by the accident.

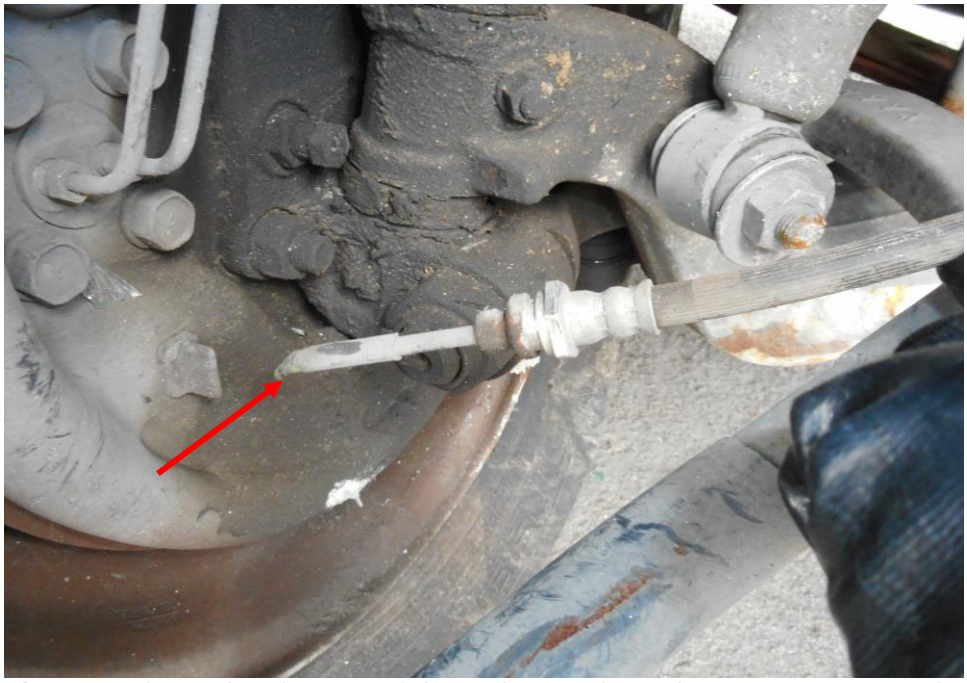

Photo 23 shows the close up of the various undercarriage components at the front right wheel of the Motor Lorry, in particular the drum brake covered in fluid stain and brake hose cut (arrowed) likely caused by the accident. See above.

Photo 24 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.

Photo 25 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.

14. Static 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.

Photo 26 shows the damages on the Motor Lorry's instrument cluster induce impact from the accident rendering it not serviceable at the time of inspection. (Unable to operate)

Operational Behaviour of the Motor Lorry

16. 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

17. From our physical inspection of the Motor Lorry, it appears that its, steering system, braking system were all in serviceable condition. Due to the damages on the Motor Lorry hindering, we were not able to inspect the engine, transmission systems and unable conduct an operational test. From our findings, we did not find any evidence(s) to suggest that there was possible mechanical failure to the Motor Lorry that may have caused and/or contributed to the accident.

18. The right side front & rear tyre were found to be cut & puncture was due caused by the accident. The other tyres fitted on the Motor Lorry were also found to be in serviceable condition. 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 6 tyres. The 6 tyres were also observed to be sufficiently inflated for vehicular operation with remaining tread depth of 8.6mm to 10.7mm.

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