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Your Ref: TP/IP/43633/2020 3rd November 2020
Our Ref: CI/TPD20011429/P

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

MECHANICAL INSPECTION REPORT OF MOTOR LORRY GBJ 5550U

1. We refer to your request on 21st October 2020 to conduct a physical inspection of a motor lorry bearing registration number GBJ 5550U (herein referred to as "**Motor Lorry**"), which was involved in a road traffic accident on 7th October 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 1st December 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 at the time of my inspection was not recorded.

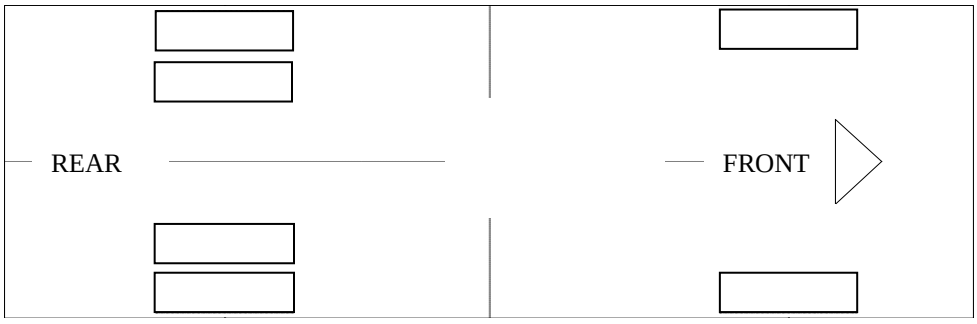
5. The Motor Lorry was observed to have sustained damage at its front cabin, front windscreen, front bumper, both front headlamps, left and right doors as well as its left rear body panel were damaged as a result of the accident.

Tyres and Wheel Rims

6. We observed that the front left was deflated and its rear left tyres were observed to be cut by its rims and deflated as a result of the accident.

7. However, the condition of the Motor Lorry' front right and rear right 3 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 tyres. The 3 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:-

Bridgestone 155/R12 (2.2mm) (Deflated) Yokohama 195/R15 (2.1mm) (Deflated)



Bridgestone 155/R12 (2mm) Yokohama 195/R15 (2.3mm)

8. The 6 tyres were observed to be wrapped around standard steel wheel rims. 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 to have sustained damage at its front cabin, front windscreen, front bumper, both front headlamps, left and right doors as well as its rear left body panel were 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 damages to its front cabin (red arrow) and its front windscreen (yellow arrow) 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 damages to front bumper (red arrow) and its front left and right headlamps (yellow arrow) due to the accident's impact.

Photo 4 shows the close up view of the right door of the Motor Lorry at the time of our inspection. The Motor Lorry right door (arrowed) was observed to have sustained damages due to the accident.

Photo 5 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 (arrowed) as result of the accident.

Photo 6 shows a close up view of the Motor Lorry's rear left body at the time of my inspection. The left rear body panel (arrowed) of the Motor Lorry was observed to have been damaged as a result of the accident.

Photo 7 shows a general view of the Motor Lorry's right body at the time of my inspection. The right portion of the Motor Lorry was observed to have been unaffected by the accident.

Photo 8 shows the general view of the Motor Lorry's rear body at the time of my inspection. The Motor Lorry rear was observed to be unaffected by 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 2.3mm. The tyre, which was wrapped around standard steel wheel rim, was also observed to be sufficiently inflated for vehicular operation.

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 2mm. 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 cut by its rims (arrowed) and deflated as a result of the accident, tread depth of approximately 2.2mm.

Photo 12 shows the condition of the front right tyre of the Motor Lorry, the tyre were observed to have slipped off the rim and deflated as a result of the accident, tread depth of approximately 2.1mm.

Engine Compartment & Operating Fluids

9. 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 are able to observed the brake fluid and engine coolant reservoir of the Motor Lorry and was observed to be sufficient level without any visible contamination.

10. 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 13 – 16 below.

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 engine coolant reservoir of the Motor Lorry at the time of our inspection. The coolant fluid was observed to be of sufficient level and without any visible contamination.

Photo 16 shows the undercarriage of the engine of the Motor Lorry at the time of our inspection. There was no sign(s) and indication(s) of fluid stain within the engine undercarriage area.

Steering System & Braking System

11. For this inspection, I was not able to conduct any tests on the steering system of the Motor Lorry due to the Motor lorry running on power steering (PS) which requires the Motor Lorry's engine to be started. And it was unsafe to operate due to the slipped off front left tyre.

12. Static brake tests 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. See photo 17 - 23 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.

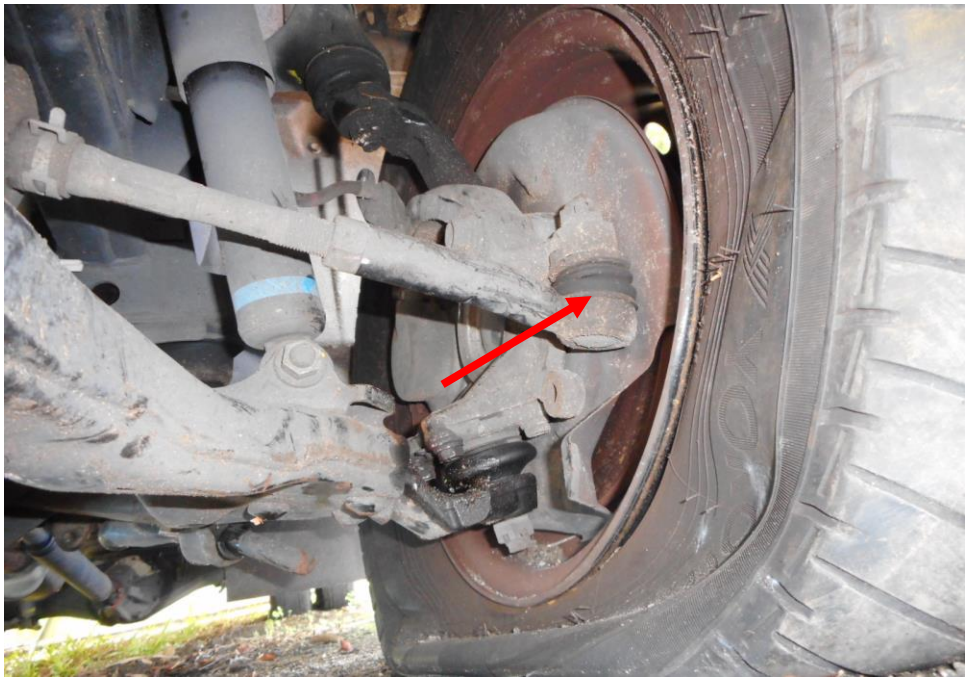


Photo 18 shows the various undercarriage components at the front left wheel of the Motor Lorry, in particular the steering tie rod end and ball joints (arrowed) were observed to be damaged.

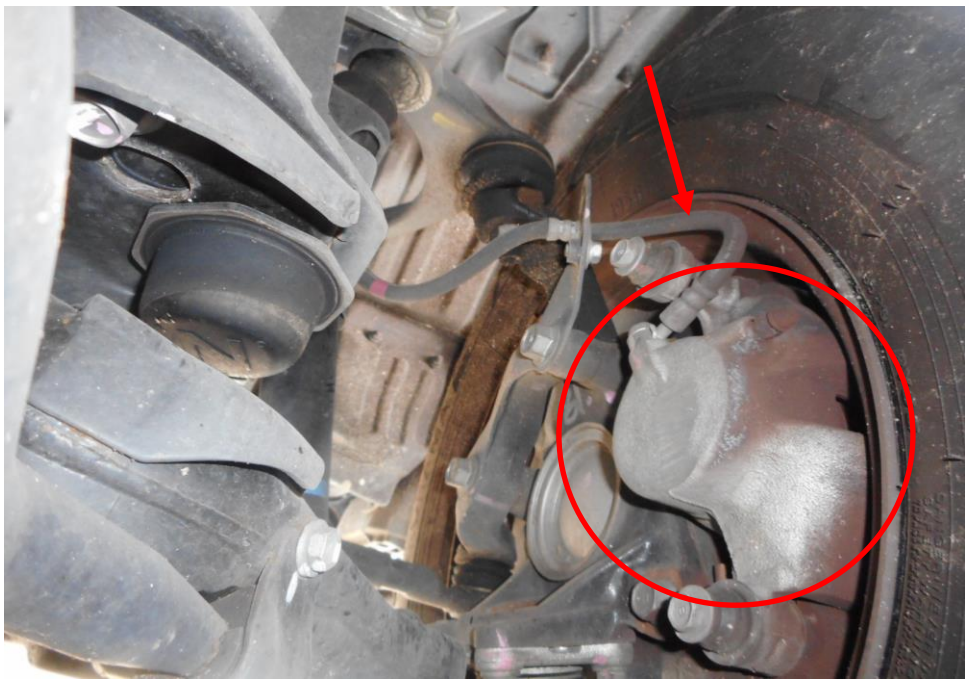


Photo 19 shows the various undercarriage components at the front right wheel of the Motor Lorry, in particular the brake hose (arrowed) and callipers (circled) The various undercarriage components of the Motor Lorry were all found to be intact without any visible damage. There was also no sign of fluid stain(s) observed on the various undercarriage components.

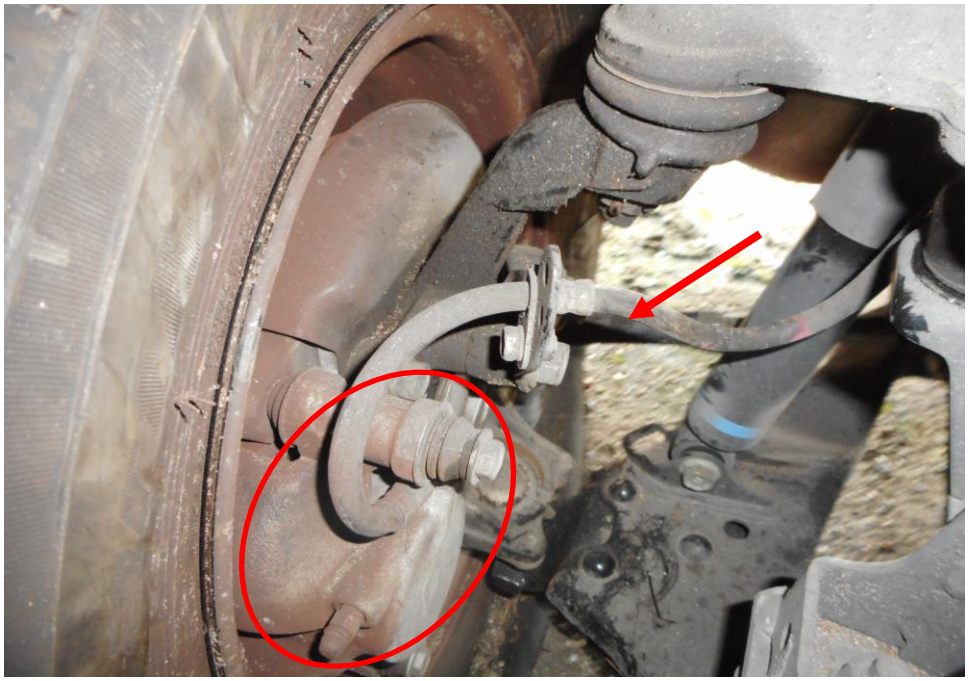


Photo 20 shows the various undercarriage components at the front left wheel of the Motor Lorry, in particular the brake hose (arrowed) and callipers (circled). The various undercarriage components of the Motor Lorry were all found to be intact without any visible damage. There was also no sign of fluid 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.

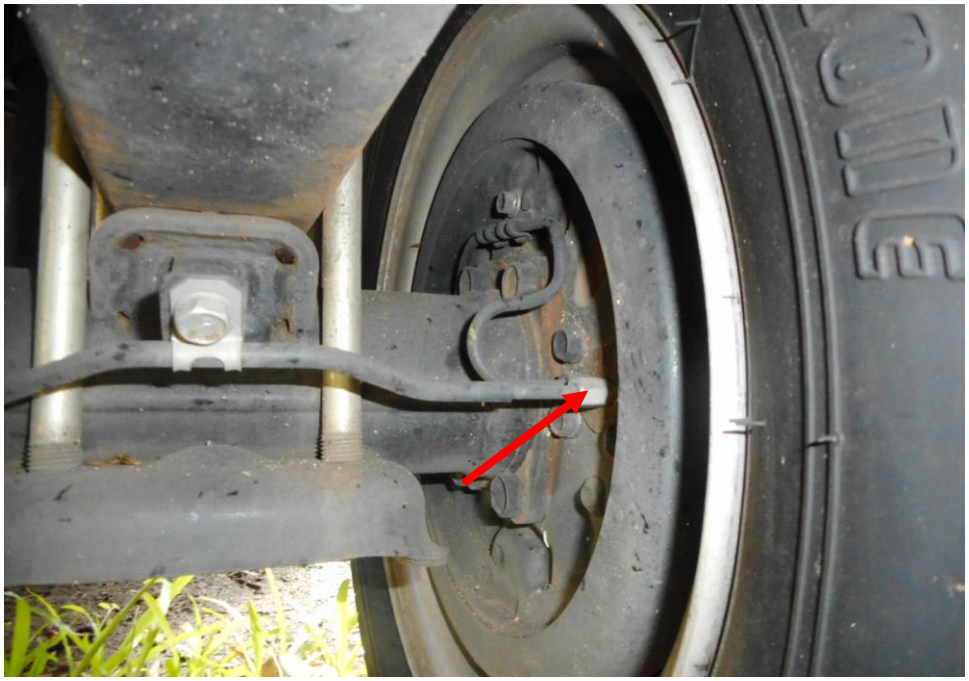


Photo 22 shows the various undercarriage components at the rear right wheel of the Motor Lorry, in particular the brake hose and drum brake (arrowed). The various undercarriage components of the Motor Lorry were all found to be intact without any visible damage. There was also no sign of fluid stain(s) observed on the various undercarriage components.

Electronic Safety / Warning Indicators

14. The static test of the Motor Lorry electronic safety system could not be inspected as the Motor Lorry was not started up.

Seat Belts

15. The front right and front left seat belts of the “Motor Lorry” were tested and all the seat belts 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

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

Conclusion

17. 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.

18. However, static brake tests 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.

19. For this particular case, we observed that the front left was deflated and its rear left tyres were observed to be cut by its rims and deflated as a result of the accident.

20. However, front right and rear right 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 tyres and were observed to be sufficiently inflated for vehicular operation. Remaining tread depth for all 6 tyres are of approximately 2mm to 2.3mm.

Sherwin Beh,
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