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Your Ref: TP/IP/20467/2020
Our Ref: CI/TPD20005597/P

7th August 2020

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

MECHANICAL INSPECTION REPORT OF MOTOR LORRY GBJ 9489M

1. We refer to your request on 28th April 2020 to conduct a physical inspection of a motor lorry bearing registration number GBJ 9489M (herein referred to as "**Motor Lorry**"), which was involved in a road traffic accident on 21st April 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 5th 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 extensive damage at its front cabin & windscreen portion and right door as well as its rear cabin body panel as a result of the accident. See photo 1 - 8 below.

Photo 1 shows a general view of the front windscreen and front cabin body panel of the Motor Lorry at the time of our inspection. The Motor Lorry was observed sustained extensive damage as a result of the accident.

Photo 2 shows a close up view of the front body of the Motor Lorry at the time of our inspection. The Motor Lorry was observed to have sustained extensive damages to its front windscreen and front cabin body panel (circled) as a result of the accident.

Photo 3 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 damages to its doors and rear cabin body panel as a result of the accident.

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

Photo 5 shows a close up view of the right body of the Motor Lorry at the time of our inspection. The Motor Lorry was observed to have sustained damages to its rear cabin body panel (circled) as a result of the accident.

Photo 6 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 damages to its rear cabin body panel as a result of the accident.

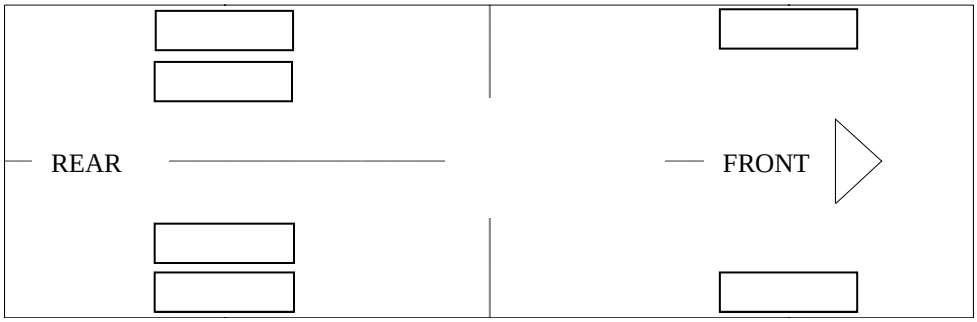
Photo 7 shows a close up view of the left body of the Motor Lorry at the time of our inspection. The Motor Lorry was observed to have sustained damages to its rear cabin body panel (circled) as a result of the accident.

Photo 8 shows the general view of the rear portion of the Motor Lorry at the time of our inspection. The Motor Lorry was observed to be unaffected by 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:-

Bridgestone 155/ R12 (5mm) Bridgestone 195/75 R15 (7.9mm)



Bridgestone 155/ R12 (4.8mm) Bridgestone 195/75 R15 (8.3mm)

7. The 6 tyres were observed to be wrapped around standard steel wheel rims that were found to be without any damage. See photo 9 – 12 below.

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 8.3mm. The tyre, which was wrapped around standard steel wheel rim, was also observed to be sufficiently inflated for vehicular operation.

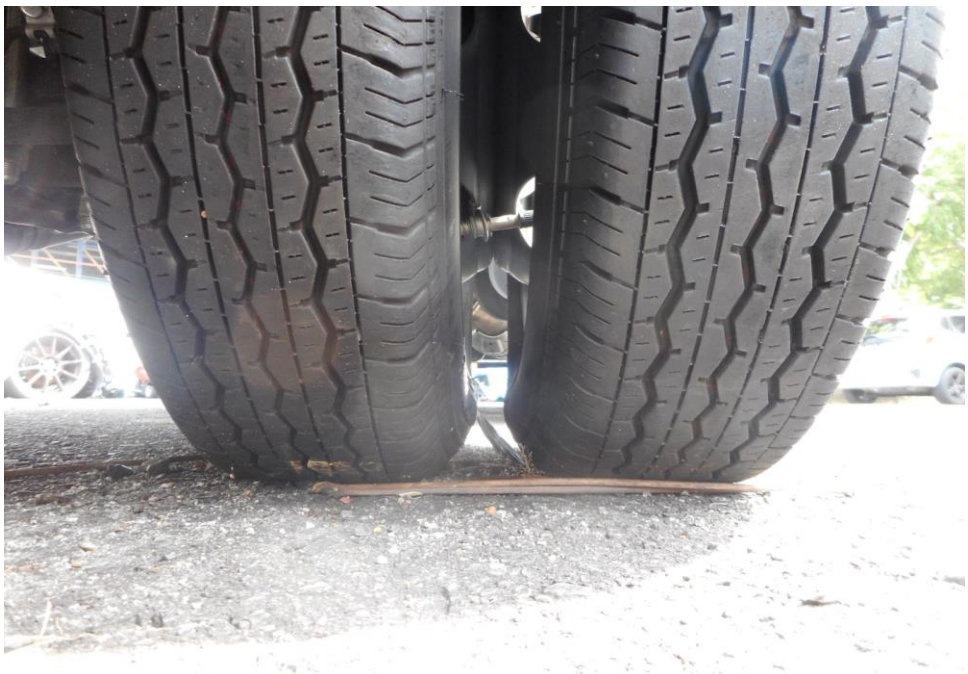


Photo 10 shows the condition of the rear right tyres of the Motor Lorry, which was observed to be in serviceable condition with remaining tread depth of approximately 4.8mm. The tyre, which was wrapped around standard steel wheel rim, was also observed to be sufficiently inflated for vehicular operation.

Photo 11 shows the condition of the rear left tyre of the Motor Lorry, which was observed to be in serviceable condition with remaining tread depth of approximately 5mm. The tyre, which was wrapped around standard steel wheel rim, was also observed to be sufficiently inflated for vehicular operation.

Photo 12 shows the condition of the front left tyres of the Motor Lorry, which observed to be in serviceable condition with remaining tread depth of approximately 7.9mm. The tyres, which were wrapped around standard steel wheel rim, were also observed to be sufficiently inflated for vehicular operation.

Engine Compartment & Operating Fluids

8. Upon examination of the Motor Lorry's engine compartment, I had observed all the parts and components inside the engine compartment to be intact and unaffected by the accident. The brake fluid, engine oil and engine coolant were all found to be of sufficient level for operating purposes. Visually, there was also no contamination found to these fluids.

9. Further examination of the engine compartment revealed, there was no sign(s) or indication(s) of fresh fluid leakage and/or fluid stain within the engine compartment of the Motor Lorry.

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 – 18 below.

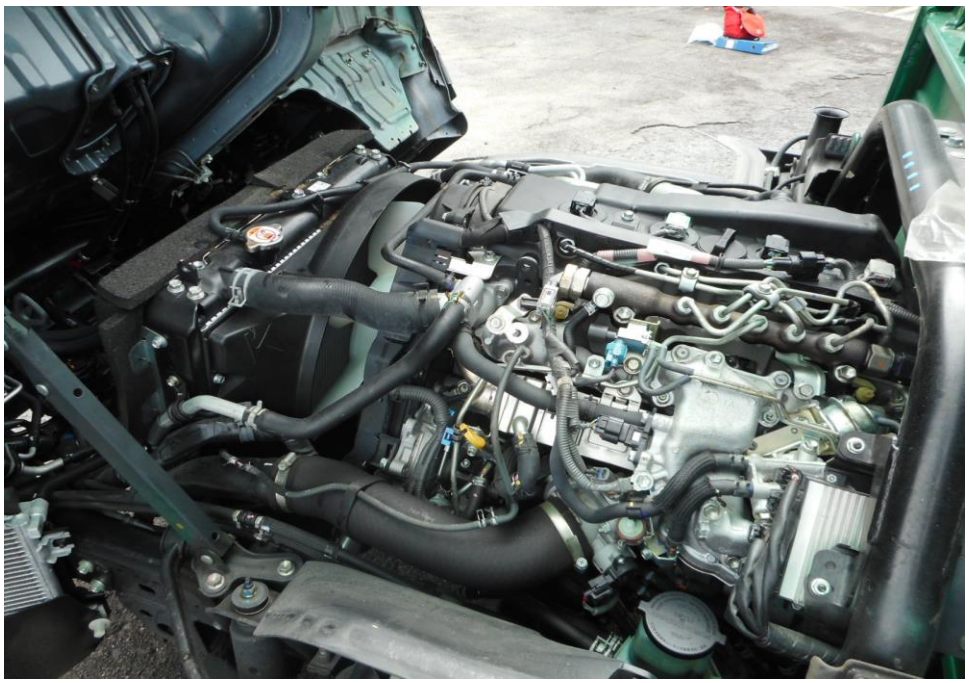


Photo 13 shows a general view of the Motor Lorry's engine compartment, which was accessed by lifting the front cabin of the Motor Lorry. The various parts and components inside the engine compartment were unaffected by the accident. There was also no sign(s) or indication(s) of fresh fluid leakage and/or fluid stain within the engine compartment (photograph shows the engine compartment as viewed from the right front side of the Motor Lorry.

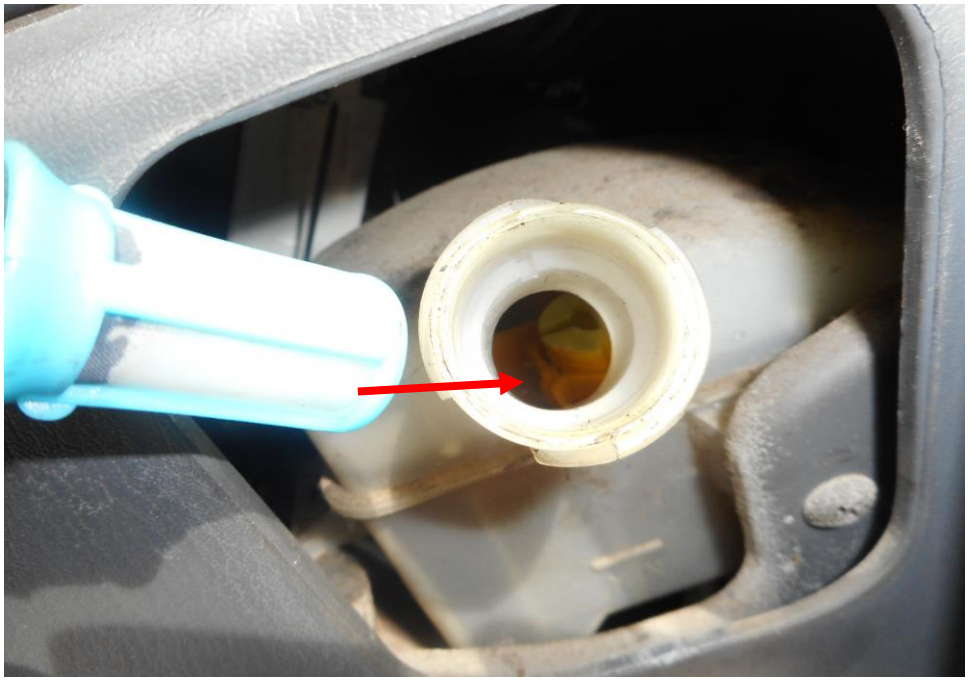


Photo 14 shows the brake fluid reservoir of the Motor Lorry at the time of my inspection. The brake fluid was observed to be of sufficient level (arrowed) and without any visible contamination.

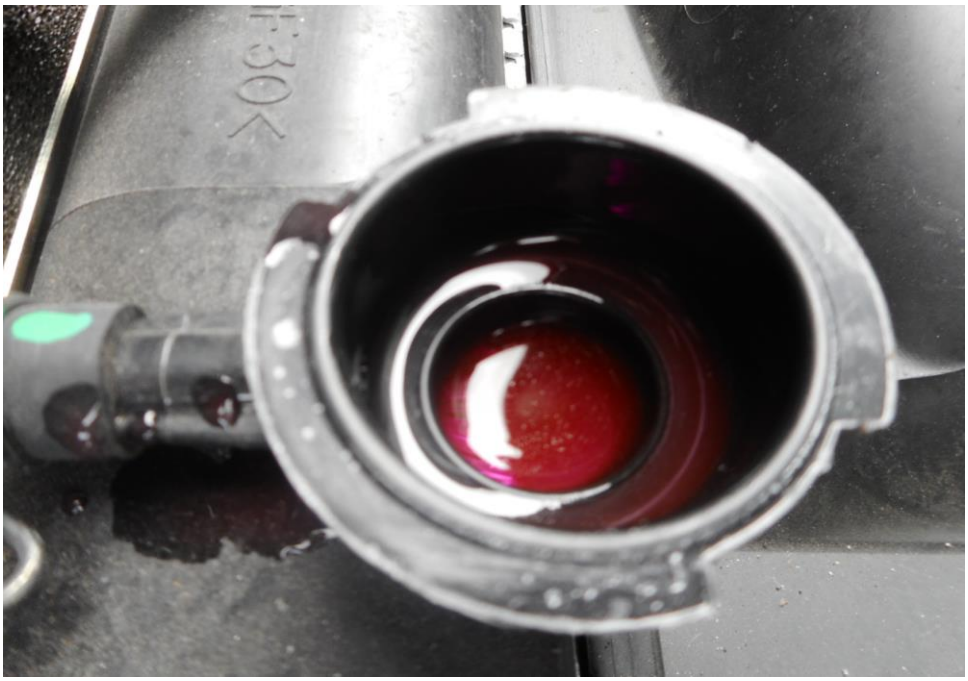


Photo 15 shows the engine coolant reservoir of the Motor Lorry at the time of my inspection. The engine coolant was observed to be of sufficient level and without any visible contamination.

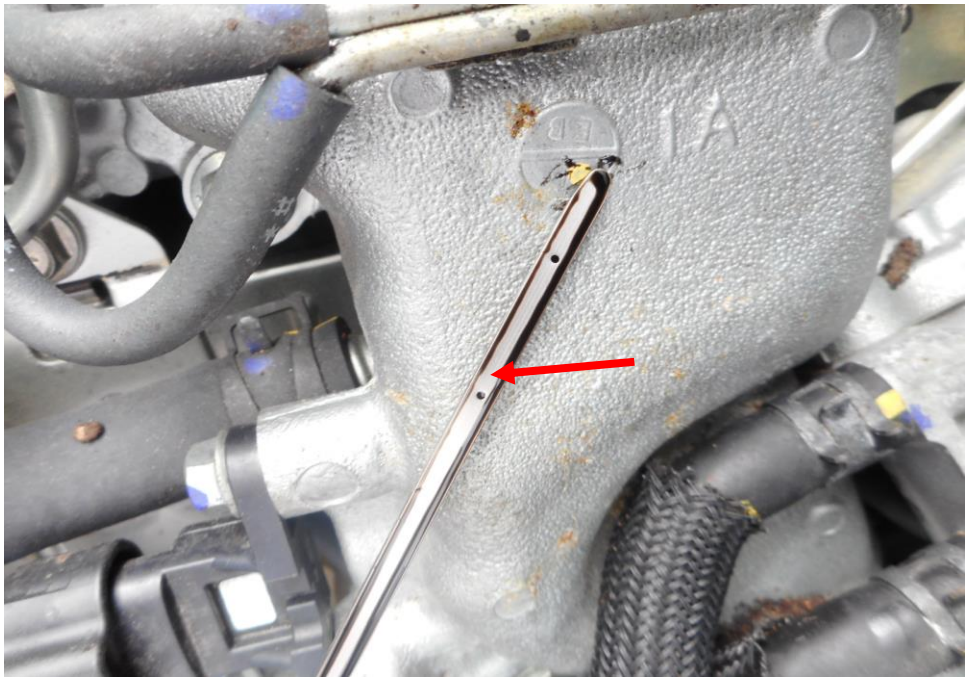


Photo 16 shows the engine oil dip stick of the Motor Lorry at the time of my inspection. The engine oil was observed to be of sufficient level (arrowed) and without any visible contamination.

Photo 17 shows the power steering fluid dip stick of the Motor Lorry at the time of my inspection. The steering fluid oil was observed to be of sufficient level (arrowed) and without any visible contamination.

Photo 18 shows the undercarriage of the Motor Lorry, at the area where the engine housing and transmission housing are located. . I did not find any sign(s) or indication(s) of fluid leak and/or fluid stain(s) on the underside of the Motor Lorry.

Steering System & Braking System

11. 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. 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.

12. Static steering tests was not conducted on the Motor Lorry as the Motor Lorry was unsafe to be operated as the damage it sustained to the front cabin and its undercarriage chassis. In general, our visual inspection of the mechanical components of the Motor Lorry's appear to suggest that its steering system was in serviceable condition at the material time of accident. See photo 19 - 25 below.

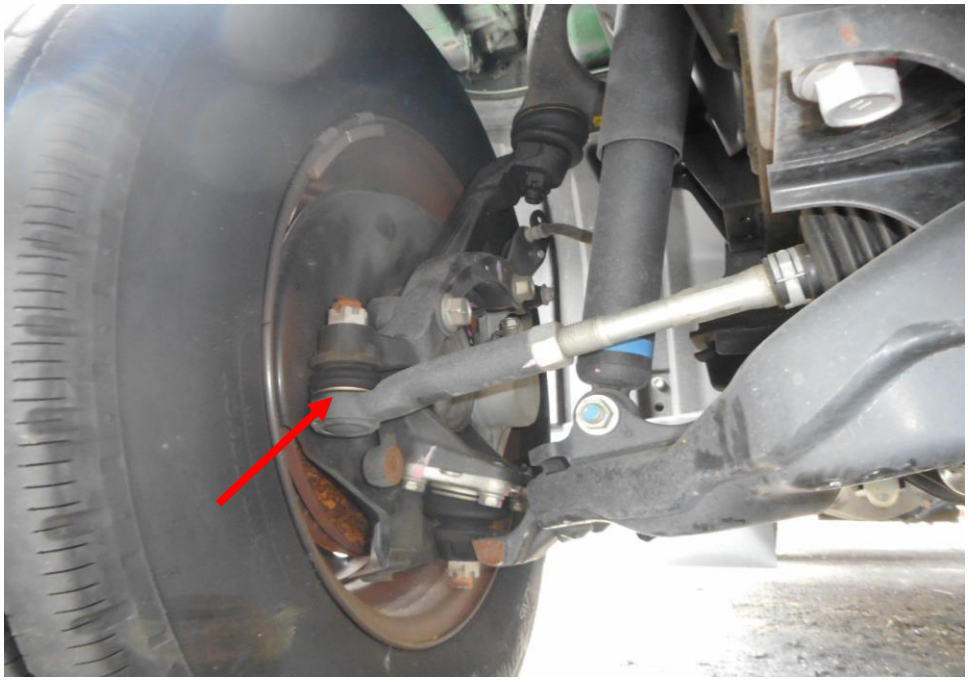


Photo 19 shows the various undercarriage components at the front right wheel of the Motor Lorry, in particular the steering tie rod end (arrowed). The various steering components were all found to be intact, suggesting that the steering system of the Motor Lorry was likely to be in serviceable condition at the material time of accident. There was also no sign of fluid stain(s) observed on the various undercarriage components.

Photo 20 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.

Photo 21 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 static tests of the Motor Lorry's braking system, along with my visual examination of the various mechanical components in the braking system, had indicated that there was no internal leakage of pressure/vacuum.

Photo 22 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 static tests of the Motor Lorry's braking system, along with my visual examination of the various mechanical components in the braking System had indicated that there was no internal leakage of pressure/vacuum. Hence the braking system of the Motor Lorry was likely to be in serviceable condition at the material time of accident.

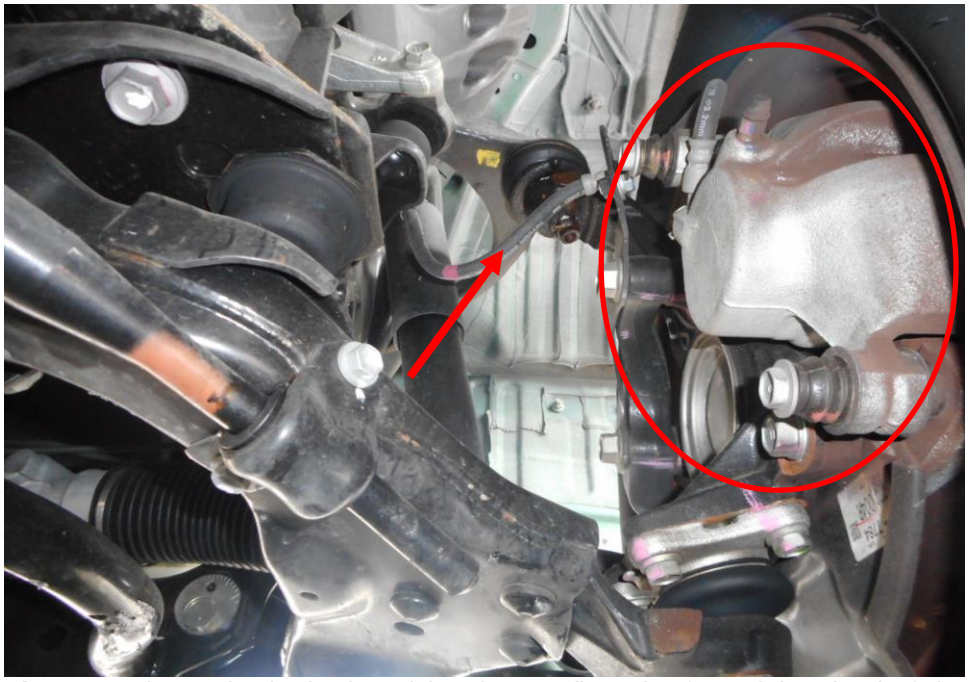


Photo 23 shows the brake hose/pipe (arrowed) at the front right wheel of the Motor Lorry. No leakage of brake fluid was observed. Visual examination of the various components of the braking system like the brake caliper (circled), brake booster, brake pedal etc had revealed all to be intact and without visible damage at the time of accident. There was also no sign of fluid stain(s) observed on the various undercarriage components.

Photo 24 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.

Photo 25 shows the undercarriage chassis (circled) of the Motor Lorry. It was observed to shift out of position due to the impact it had sustained as a result of the accident.

Electronic Safety / Warning Indicators

14. The static test of the Motor Lorry electronic safety system could not be inspected as the instrument cluster was damaged as a result of the accident.

Seat Belts

15. For this particular case, we were unable to tell if the seat belts were worn at the material as the accident did not trigger the Supplemental Restraint System (SRS) to the respective pre-tensioners that were fitted at the sides of each seat was to be activated upon the material time. However, the seat belts 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. See photo 26 & 27 below.

Photo 26 shows that the seat belt on the left seat was 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.

Photo 27 shows that the seat belt on the right seat was 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 by driving the Motor Lorry was not conducted as it was unsafe to be operated due to the damage it sustained to the front cabin and its undercarriage chassis as a result of the accident.

Conclusion

17. At the time of my inspection of the Motor Lorry, its steering system and braking system could not be tested as the Motor Lorry's it was unsafe to be operated. However basing on my observations, it would appear that the steering system and braking system of the Motor Lorry were in serviceable condition. This takes into consideration that the various mechanical components of the steering system and braking system were found to be intact and undamaged.

18. The observation gathered from my physical inspection of the Motor Lorry had indicated no evidence to suggest possible mechanical failure to the Motor Lorry that may have contributed to the accident.

19. The 6 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 6 tyres. The 6 tyres were also observed to be sufficiently inflated for vehicular operation with remaining tread depth of approximately 4.8mm to 8.3mm.

20. My findings were based solely on a static and visual inspection of the Motor Lorry. No operational test(s) could be carried out to the Motor Lorry as it was unsafe to be operated at the time of my inspection.

Sherwin Beh,
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