

Your Ref: TP/IP/63795/2019  
Our Ref : CI/TPD19020761/P

30<sup>th</sup> March 2020

**Fatal Accident Investigation Team**

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

**MECHANICAL INSPECTION REPORT OF MOTOR LORRY JAH 1469**

1. I refer to your request on 21<sup>st</sup> November 2019 to conduct a physical inspection of a Motor Lorry bearing registration number JAH 1469 (herein referred to as "**Motor Lorry**"), which was involved in a fatal road traffic accident on 11<sup>th</sup> October 2019.
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, I had carried out a physical inspection of the Motor Lorry on 30<sup>th</sup> March 2020 at the premises of Traffic Police vehicle pound, 517 Airport Road Singapore 539942. I now set out below my observations and comments with respect to this inspection.

**General Condition**

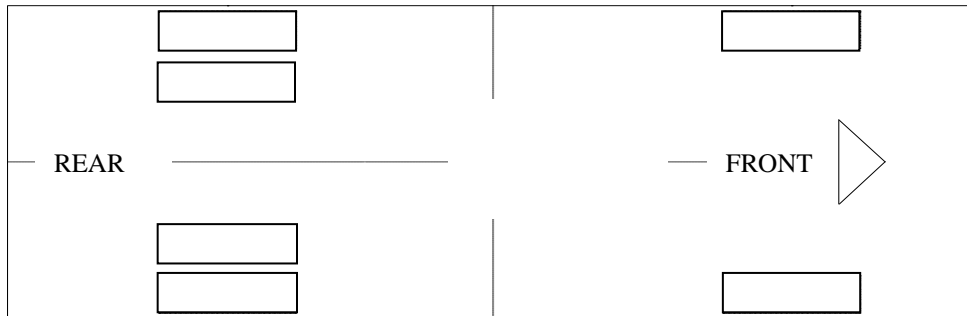
4. The mileage of the Motor Lorry at the time of my inspection was not recorded due to a flat battery.
5. The Motor Lorry was observed to have sustained relatively minor impact damage at its front portion. Its front bumper, front left headlight and front grille was observed to be damaged as a result of the accident.

**Tyres and Wheel Rims**

6. The 6 tyres fitted on the Motor Lorry were all 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 Motor Lorry's 6 tyres were recorded as follows:-

Bridgestone 295/ 80 R22.5 (7.4mm)

Bridgestone 295/ 80 R22.5 (11mm)



Firestone 295/ 80 R22.5 (8.7mm)

Bridgestone 295/ 80 R22.5 (9.6mm)

7. The 6 tyres were observed to be wrapped around standard alloy wheel rims that were found to be without any damage. See photo 1 – 10 below.



**Photo 1** shows a general view of the front body of the Motor Lorry at the time of my inspection. The Motor Lorry was observed to have sustained relatively minor impact damage at its front portion. Its front bumper, front left headlight and front grille was observed to be damaged 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 my inspection. The Motor Lorry was observed to have sustained relatively minor impact damage at its front portion. Its front left headlight (arrowed) and front grille (circled) was observed to be damaged as a result of the accident.



**Photo 3** shows a close up view of the front body of the Motor Lorry at the time of my inspection. The Motor Lorry was observed to have sustained relatively minor impact damage at its front portion. Its front bumper (arrowed) was observed to be damaged as a result of the accident.





**Photo 4** shows a general view of the left body of the Motor Lorry at the time of my inspection. The Motor Lorry was observed to be intact and unaffected by the accident.



**Photo 5** shows a general view of the right body of the Motor Lorry at the time of my inspection. The Motor Lorry was observed to be intact and unaffected by the accident.



**Photo 6** shows a general view of the Motor Lorry's rear left body at the time of my inspection. There was no impact damage found at the rear portion of the Motor Lorry.



**Photo 7** shows the condition of the front left tyre of the Motor Lorry, which was observed to be in serviceable condition with remaining tread depth of approximately 11mm. The tyre, which was wrapped around standard alloy wheel rim, was also observed to be sufficiently inflated for vehicular operation with no tear, cut or burst mark(s) on the outer and the inner sidewalls.



**Photo 8** 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 9.6mm. The tyre, which was wrapped around standard alloy wheel rim, was also observed to be sufficiently inflated for vehicular operation with no tear, cut or burst mark(s) on the outer and the inner sidewalls.



**Photo 9** 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 7.4mm. The tyres, which were wrapped around standard alloy wheels rims, were also observed to be sufficiently inflated for vehicular operation. There was also no damage found on all the 6 alloy wheel rims of the Motor Lorry.





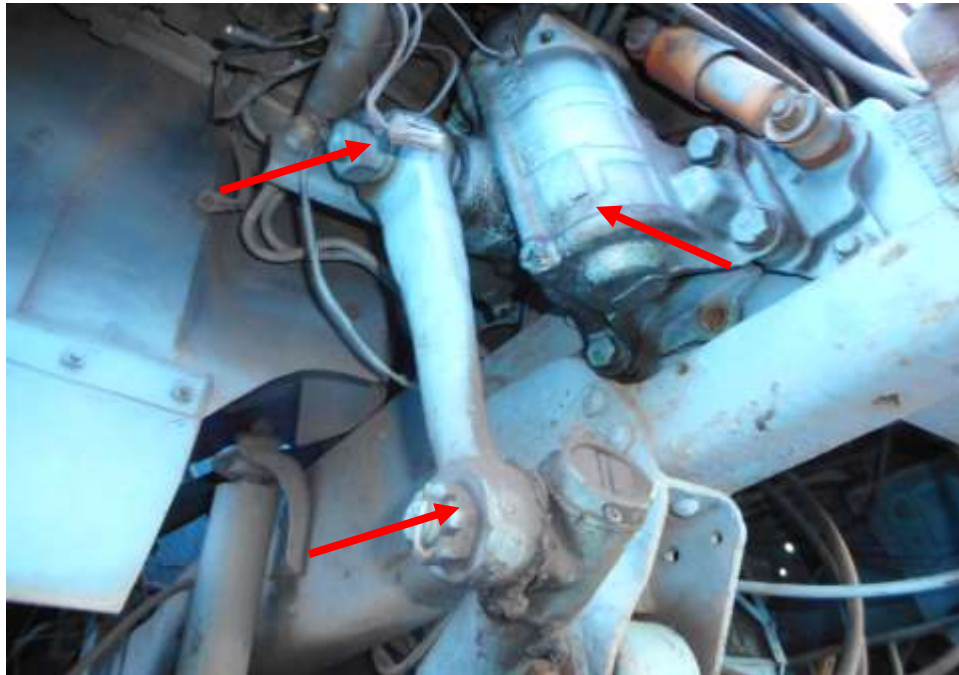
**Photo 10** shows the condition of the rear right tyres of the Motor Lorry, which were observed to be in serviceable condition with remaining tread depth of approximately 8.7mm. The tyres, which were wrapped around standard alloy wheel rims, were also observed to be sufficiently inflated for vehicular operation with no tear, cut or burst mark(s) on the outer and the inner sidewalls. There was also no damage found on all the 6 alloy wheel rims of the Motor Lorry.

### **Engine Compartment & Operating Fluids**

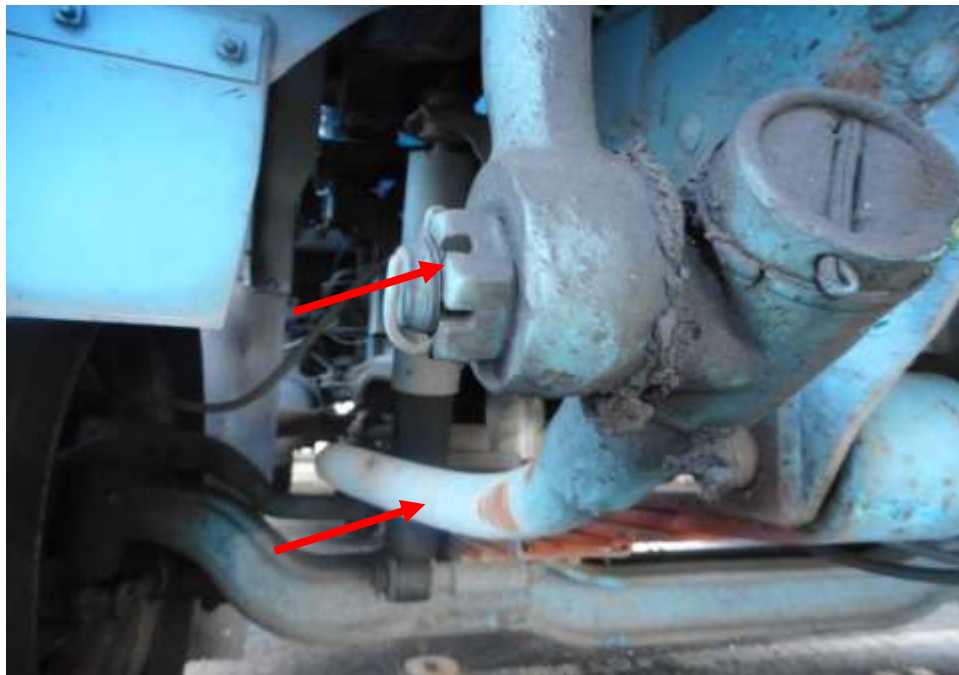
8. The engine compartment of the Motor Lorry was located below the front cabin of the Motor Lorry. I was not able to carry out any checks on the engine compartment as the cabin of the Motor Lorry was not able to be lifted to the engine compartment as it requires the battery powered. The various operating fluids were also not able to be checked.

### **Steering System & Braking System**

9. The mechanical components of the Motor Lorry's steering system were all found to be visually intact and undamaged. The steering shaft and steering rack of the Motor Lorry were observed to be intact and securely attached to the front left wheel and front right wheel. The steering ball joints were also observed to be in a serviceable condition.
10. Although the steering system could not be tested at the time of my inspection (engine unable to be started), it is likely that the steering system of the Motor Lorry was in serviceable condition since its mechanical components were all found to be generally intact and securely fitted. See photo 11 – 14 below.



**Photo 11** shows the front underside of the Motor Lorry. I was not able to conduct any test(s) on the steering system of the Motor Lorry as the engine of the Motor Lorry could not be started. However my visual checks on the various mechanical components of the steering system like the steering box, steering shaft and steering linkages (arrowed) amongst others revealed all to be intact and in good condition.



**Photo 12** shows the front underside of the Motor Lorry. The various mechanical components of the Motor Lorry's steering system like the steering shaft and steering linkages (arrowed) were all observed to be intact and in good condition.





**Photo 13** shows the undercarriage components at the front right wheel of the Motor Lorry. The various undercarriage components of the Motor Lorry were all observed to be intact and without any visible damage. This had included the steering rack and steering ball joints (arrowed) of the Motor Lorry. Visual examinations of the mechanical components of the steering system appear to indicate that the Motor Lorry's steering system was in serviceable condition.



**Photo 14** shows the undercarriage components at the front left wheel of the Motor Lorry. The various undercarriage components of the Motor Lorry were all observed to be intact and without any visible damage. This had included the steering rack and steering ball joints (arrowed) of the Motor Lorry, which were observed to be securely attached to the front left wheel and front right wheel.

11. The braking system of the Motor Lorry was noted to be of a full air-assisted braking system. Briefly, in this system, compressed air is used to press onto the brake shoes (for drum brakes) or onto the brake pads (for disc brakes), through the respective braking mechanism, thus slowing the rotation of the wheels.
12. Since the engine of the Motor Lorry could not be started, I was hence not able to carry out test(s) on whether there was any leakage of compressed air that could have affected the braking efficiency of the Motor Lorry. However the air pipes, air tanks and connecting valves had all appear to be in good general condition and securely fitted upon my visual examination of these parts.
13. In general, my 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. See photo 15 -17 below.



**Photo 15** shows a general view of the air tank, valves, pipes and hoses, which are some of the components for the air-assisted braking system of the Motor Lorry. I was however not able to carry out any operational test(s) to the braking system of the Motor Lorry as its engine was unable to be started.



**Photo 16** shows the brake air cylinder and air pipes at the front left wheel of the Motor Lorry. My 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.



**Photo 17** shows the brake air cylinder and air pipes at the front right wheel of the Motor Lorry. My 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 / Speed Limit Device**

14. The Motor Lorry was not fitted with any electronic safety feature(s) like Anti-Brake Lock System (ABS), Supplemental Restraint System (SRS) etc. There was hence no test carried out on the functionality of these systems.
15. The speed limiting device was similarly unable to be tested due to the Motor Lorry's flat battery.

**Operational Behaviour of the Motor Lorry**

16. As the engine of the Motor Lorry could not be started, I was hence not able to carry out any operational test(s) to primarily determine whether there was any operational abnormality to its engine system, transmission system, steering system and braking system.

**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 engine could not be started. 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 fitted on the Motor Lorry were also found to be in serviceable condition. There was no 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 sufficiently inflated for vehicular operation with remaining tread depth of approximately 7.4mm to 11mm.
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 its engine could not be started at the time of my inspection.

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