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Your Ref: TP/IP/27321/2021
Our Ref : CI/TPD21002935/P

2nd July 2021

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

MECHANICAL INSPECTION REPORT OF LORRY YP 6810J

1. I refer to your request on 25th February 2021 to conduct a visual inspection of a Lorry bearing registration number YP 6810J (herein referred to as "**Lorry**"), which was involved in a fatal road traffic accident on 8th February 2021

2. The objective of this inspection is to determine if there was any possible mechanical failure to the Lorry that may have contributed to the accident.

3. Following the request, I had carried out a visual inspection of the Lorry on 25th June 2021 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.

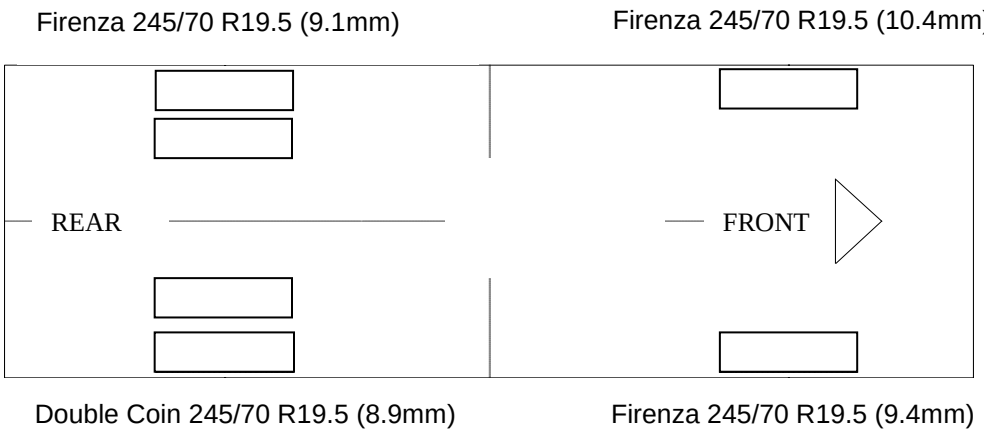
General Condition

4. The mileage of the Lorry at the time of my inspection was not recorded.

5. The Lorry was observed to have sustained damage at its rear portion. Its rear right brake lamp was damaged as a result of the accident.

Tyres and Wheel Rims

6. The 6 tyres of the Lorry was observed to be in serviceable condition; 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. However, the remaining tread depth of the both rear right tyres was observed to be insufficient for vehicular operation. The tyre brand, tyre size and remaining tread depth of the 6 tyres of the Lorry were recorded as follows:-



7. The 6 tyres were observed to be wrapped around standard steel wheel rims that were found to be without any damage. See photo 1 – 9 below.

Photo 1 shows a general view of the rear body of the Lorry at the time of my inspection. The Lorry was observed to be sustained damage and affected by the accident.

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Photo 2 shows a close up view of the rear body of the Lorry at the time of my inspection. The Lorry was observed to have sustained damage at its rear right brake lamp (circled) as a result of the accident.

Photo 3 shows a general view of the Lorry's frontal portion at the time of my inspection. The Lorry was observed to be intact and unaffected by the accident.

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

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

Photo 6 shows the condition of the front right tyre of the Lorry, which was observed to be in serviceable condition with remaining tread depth of approximately 9.4mm. The tyre, which was wrapped around standard steel wheel rim, was also observed to be sufficiently inflated for vehicular operation. 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 that were fitted on the Lorry.

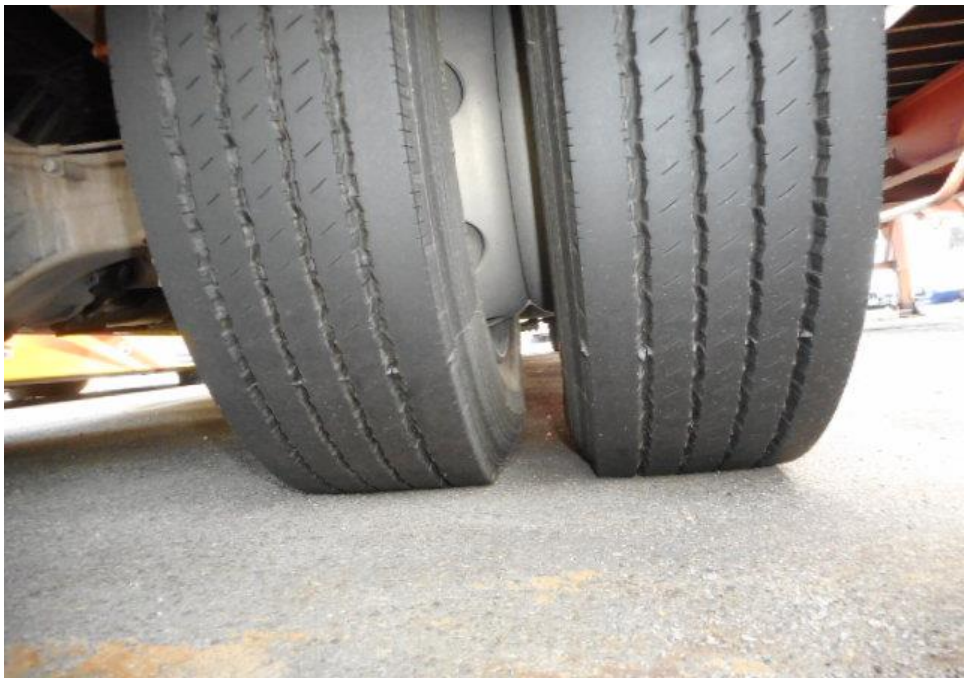

Photo 7 shows the condition of the rear right tyres of the Lorry, which was observed to be in serviceable condition with remaining tread depth of approximately 8.9mm. The tyre, which was wrapped around standard steel wheel rim, was also observed to be sufficiently inflated for vehicular operation. There 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 that were fitted on the Lorry.

Photo 8 the condition of the rear left tyres of the Lorry, which was observed to be in serviceable condition with remaining, tread depth of approximately 9.1mm. The tyres, which were wrapped around standard steel wheel rim, were also observed to be sufficiently inflated for vehicular operation. There was also no damage found on all 6 steel wheel rims of the Lorry.

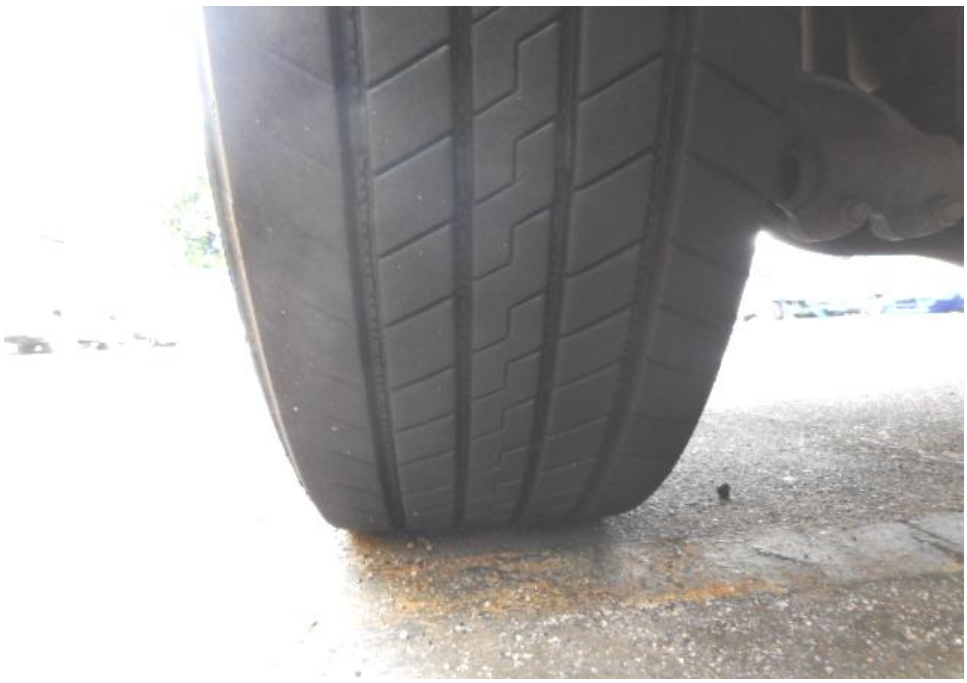

Photo 9 shows the condition of the front left tyre of the Lorry, which were observed to be in serviceable condition with remaining, tread depth of approximately 10.4mm. There was also no tear, cut or burst mark(s) on the outer and the inner sidewalls as well as across the tread of the 6 tyres that were fitted on the Lorry.

Engine Compartment & Operating Fluids

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

Steering System & Braking System

9. The mechanical components of the Lorry's steering system were all found to be visually intact and undamaged. The steering shaft and steering rack of the 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 not started), it is likely that the steering system of the Lorry was in serviceable condition since its mechanical components were all found to be generally intact and securely fitted. See photo 10 – 12 below.

Photo 10 shows the front underside of the Lorry. I was not able to conduct any test(s) on the steering system of the Lorry as the engine of the Lorry could not be started. 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 11 shows the undercarriage components at the front right wheel of the Lorry. The various undercarriage components of the 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 Lorry. Visual examinations of the mechanical components of the steering system appear to indicate that the Lorry's steering system was in serviceable condition.

Photo 12 shows the undercarriage components at the front left wheel of the Lorry. The various undercarriage components of the 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 Lorry, which were observed to be securely attached to the front left wheel and front right wheel.

11. The braking system of the 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 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 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 Lorry's braking system appear to suggest that its braking system was in serviceable condition at the material time of accident. See photo 13 -17 below.

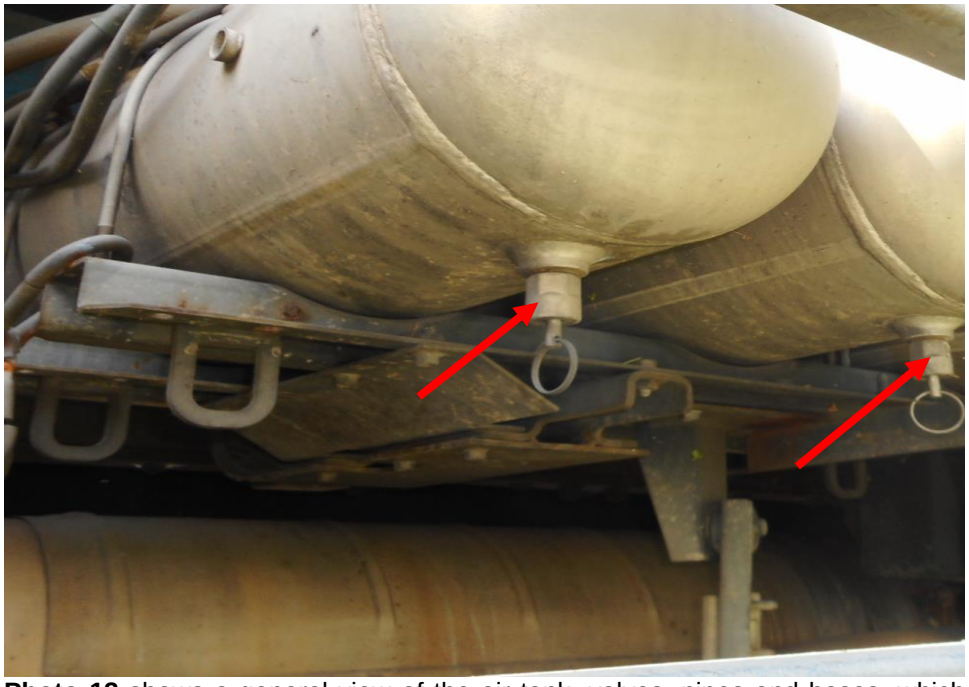

Photo 13 shows a general view of the air tank, valves, pipes and hoses, which are some of the components for the air-assisted braking system of the Lorry. I was however not able to carry out any operational test(s) to the braking system of the Lorry as its engine was unable to be started.

Photo 14 shows the brake air cylinder and air pipes (arrowed) at the front left wheel of the Lorry. My visual inspection of the mechanical components of the Lorry's braking system appear to suggest that its braking system was in serviceable condition at the material time of accident.

Photo 15 shows the brake air cylinder and air pipes (arrowed) at the front right wheel of the Lorry. My visual inspection of the mechanical components of the Lorry's braking system appear to suggest that its braking system was in serviceable condition at the material time of accident.

Photo 16 shows the brake air cylinder and air pipes (arrowed) at the rear left wheel of the Lorry. My visual inspection of the mechanical components of the 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 (arrowed) at the front right wheel of the Lorry. My visual inspection of the mechanical components of the 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

14. Lorry's automatic self-test of the functionality of its electronic operating systems was not conducted as the engine of the Lorry was not started.

Operational Behaviour of the Lorry

15. As the engine of the Lorry was not started up, 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

16. At the time of my inspection of the Lorry, its steering system and braking system could not be tested as the Lorry's engine could not be started. However, basing on my observations, it would appear that the steering system and braking system of the 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.

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

18. The 6 tyres fitted on the 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 8.9mm to 10.4mm.

19. My findings were based solely on a static and visual inspection of the Lorry. No operational test(s) could be carried out to the Lorry as its engine was not started at the time of my inspection.

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