

Your Ref: TP/IP/12980/2022
Our Ref: CI/TPD22008161/P

8th September 2022

General Investigation Team

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

MECHANICAL INSPECTION REPORT OF MOTOR VAN PA 9648C

1. We refer to your request on 16th August 2022 to conduct a physical inspection of a motor Van bearing registration number PA 9648C (herein referred to as "**Motor Van**"), which was involved in a road traffic accident on 29th May 2022.
2. The objective of this inspection is to determine if there was any possible mechanical failure to the Motor Van that may have contributed to the accident.
3. Following the request, we had carried out a physical inspection of the Motor Van on 6th September 2022 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

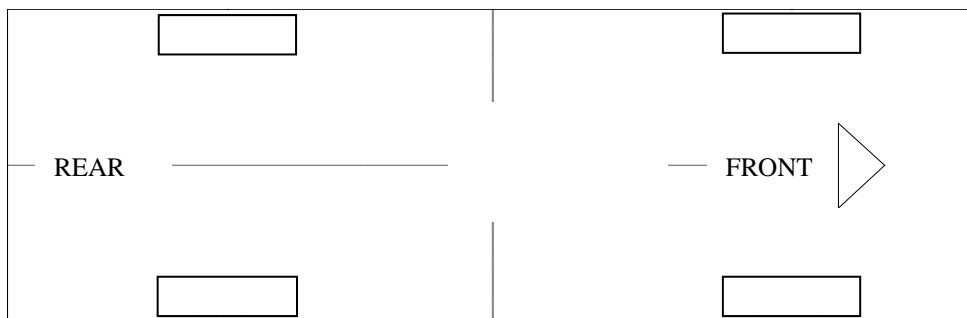
4. The mileage of the Motor Van at the time of my inspection was not recorded as the dashboard of the Motor Van was damaged as a result of the accident.
5. The Motor Van was observed to have sustained damages at its front, right and left portion. Its front windscreen, front body panel, front grille, front bumper, right and left doors was the body parts that were damaged and various engine components was also damaged as a result of the accident. The Supplemental Restraint System (SRS) was activated as a result of the accident.

Tyres and Wheel Rims

6. The 4 tyres of the Motor Van 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 4 tyres. The tyre brand, tyre size and remaining tread depth of the 4 tyres of the Motor Van were recorded as follows:-

Yokohama 195/R15 (2mm)

Bridgestone 195/R15 (7.4mm)



Yokohama 195/R15 (2.5mm)

Bridgestone 195/R15 (7.7mm)

The 4 tyres were observed to be wrapped around standard steel wheel rims that were found to be without any damage. See photo 1 - 15 below.



Photo 1 shows the close up view of the front portion of the Motor Van at the time of our inspection. The Motor Van was observed to have sustained major damages to its dashboard (circled) that was crushed due to the accident's impact.



Photo 2 shows the general view of the Motor Van's rear body at the time of my inspection. The Motor Van rear was observed to be unaffected by the accident.



Photo 3 shows a general view of the front portion of the Motor Van at the time of our inspection. The Motor Van was observed sustained major damages to its front, right and left portion. Its front windscreen, front body panel, front grille, front bumper, right and left doors was the body parts that were damaged and various engine components was also damaged as a result of the accident. The Supplemental Restraint System (SRS) was activated as a result of the accident.



Photo 4 shows the close up view of the front portion of the Motor Van at the time of our inspection. The Motor Van was observed to have sustained major damages to its front windscreen (red circle) and front body panel (yellow circle) as a result of the accident.

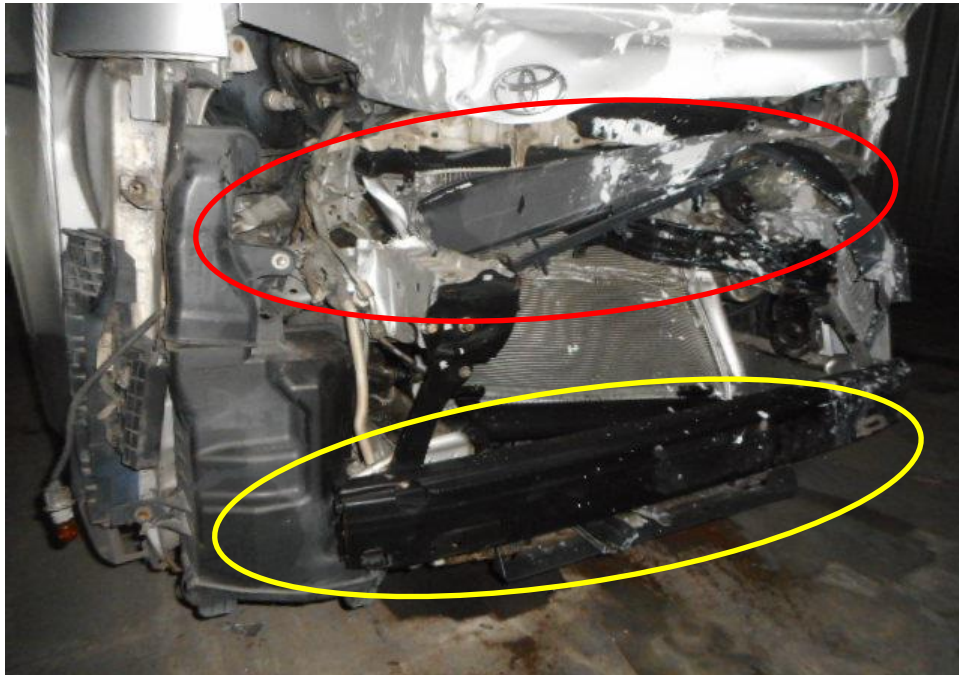


Photo 5 shows the close up view of the front portion of the Motor Van at the time of our inspection. The Motor Van was observed to have sustained major damages to its front grille (red circle) and front bumper (yellow circle) that was damaged as a result of the accident's impact.



Photo 6 shows the close up view of the front portion of the Motor Van at the time of our inspection. The Motor Van was observed to have sustained major damages to its front engine coolant radiator (circled) was damaged as a result of the accident's impact.

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Photo 7 shows the close up view of the right door of the Motor Van at the time of our inspection. The Motor Van was observed to have sustained damages to its right door (circled) as a result of the accident.



Photo 8 shows a general view of the Motor Van's right body at the time of my inspection. The right portion of the Motor Van was observed to have been unaffected by the accident.

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Photo 9 shows the close up view of the left door of the Motor Van at the time of our inspection. The Motor Van was observed to have sustained damages to its right door (circled) as a result of the accident.



Photo 10 shows a general view of the Motor Van's left body at the time of my inspection. The Motor Van was observed to have sustained damages to its left rear door and windscreen (circled) as a result of the accident.

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Photo 11 shows the condition of the front right tyre of the Motor Van, which were observed to be in serviceable condition with remaining, tread depth of approximately 7.7mm. The tyre, which was wrapped around standard steel wheel rim, it was observed to be sufficiently inflated for vehicular operation.



Photo 12 shows the condition of the rear right tyres of the Motor Van, which were observed to be in serviceable condition with remaining, tread depth of approximately 2.5mm. The tyre, which was wrapped around standard steel wheel rim, it was observed to be sufficiently inflated for vehicular operation.

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Photo 13 shows the condition of the rear left tyres of the Motor Van, which were observed to be in serviceable condition with remaining, tread depth of approximately 2mm.



Photo 14 shows the condition of the front left tyre of the Motor Van, which were observed to be in serviceable condition with remaining, tread depth of approximately 7.4mm. 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 4 tyres that were fitted on the Motor Van.



Photo 15 shows the deployment of the Supplemental Restraint System (SRS) airbag in the Motor Car as a result of the accident.

Engine Compartment & Operating Fluids

7. Upon examination of the Motor Van's engine compartment, we had observed that all the parts, components and fluids could not be inspected as due to the damage induced has crushed and deformed the dashboard and the cabin of the Motor Van which immobilized its opening and viewing.
8. Our subsequent checks on the underside of the Motor Van visually, the various undercarriage components of the Motor Van were observed to be intact and without any visible damage. See photos 16 and 17 below.

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



Photo 17 shows the undercarriage of the Motor Van, 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 Van.

Steering System & Braking System

9. Static braking and steering tests was not conducted on the Motor Van as the braking and steering controls in the cabin had sustain damage as the result of the accident. Our visual inspection of the mechanical components of the Motor Van's observed that its undercarriage braking system components was intact. However, the steering box shaft had been damaged as a result of the accident.
10. My visual examination of the various steering components which had included the rack and pinion, tie rods, tie rod ends and ball joints had revealed that these components were all generally in good condition. See photo 18 - 25 below.



Photo 18 shows the steering box shaft (arrowed) of the Motor Van's steering system. The steering box was observed to sustained damages a result of the accident.



Photo 19 shows the steering box shaft (arrowed) of the Motor Van's steering system. The steering box was observed to sustained damages a result of the accident.

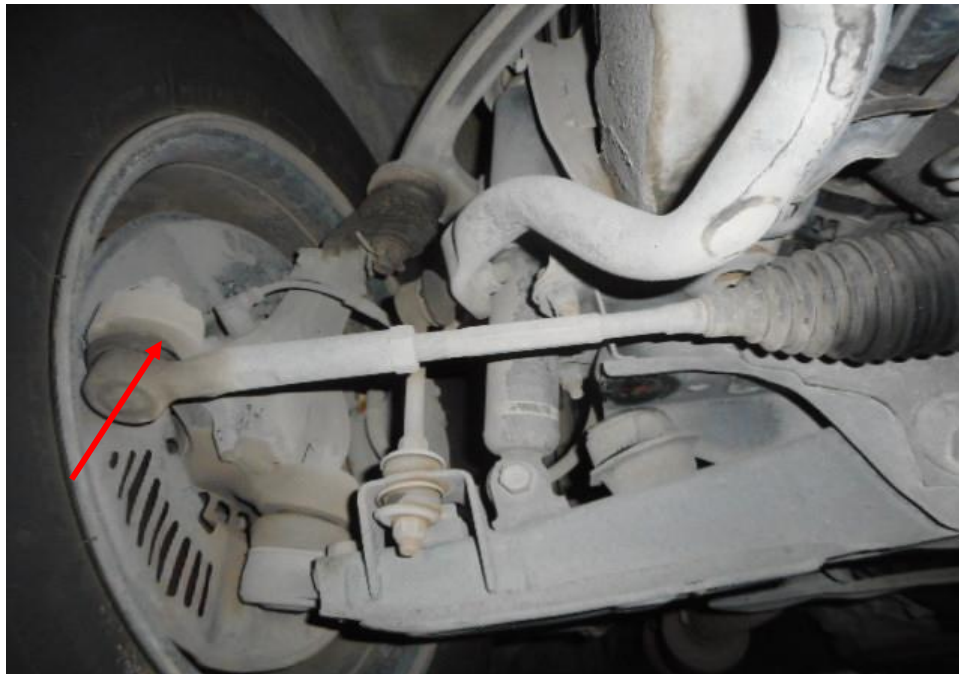


Photo 20 shows the various undercarriage components at the front right wheel of the Motor Van, in particular the steering tie rod end (arrowed). The various steering components were all found to be intact, suggesting that the steering system of the Motor Van was likely to be in serviceable condition at the material time of accident. There was also no sign of fluid stain(s) observed on the various undercarriage components.

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Photo 21 shows the various undercarriage components at the front left wheel of the Motor Van, in particular the steering tie rod end (arrowed). The various undercarriage components of the Motor Van 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 brake pipe (arrowed) at the rear right wheel of the Motor Van. I did not observe any leakage of brake fluid at the time of my inspection of the Motor Van. My static tests of the Motor Van'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.

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Photo 23 shows the brake pipe (arrowed) at the rear left wheel of the Motor Van. I did not observe any leakage of brake fluid at the time of my inspection of the Motor Van. My static tests of the Motor Van'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 Van was likely to be in serviceable condition at the material time of accident.



Photo 24 shows the brake hose/pipe (arrowed) at the front right wheel of the Motor Van. 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 brake hose/pipe (arrowed) at the front left wheel of the Motor Van. 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.

Electronic Safety / Warning Indicators

11. The Motor Van's automatic self-test of the functionality of its various electronic operating systems at the time of our inspection was not able to be recorded as the whole dashboard including the odometer had been damaged by the accident

Seat Belts

12. The front right seat belt of the "Motor Van" was worn at the material time of accident as the respective pre-tensioners that were fitted at the side of each seat was activated upon the material time. See photo 27 below.



Photo 27 shows that the seat belt on the right seat was worn at the material time of accident as the safety pre-tensioners was activated at the moment of impact and caused the seat belt to be locked into the last position.

Operational Behaviour of the Motor Van

13. An operational test to primarily determine whether there was any abnormality to the engine system, transmission system and braking system of the Motor Van could not be conducted given the engine of the Motor Van was unable to be started up and the damages sustained as a result of the accident.

Conclusion

14. For this particular case, I was unable to determine whether there was any possible mechanical failure to the Motor Van 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, braking system and suspension system.

15. The 4 tyres of the Motor Van were also 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 4 tyres. The 4 tyres were also observed to be sufficiently inflated for vehicular operation with remaining tread depth of approximately 2mm to 7.7mm.



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