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Our Ref : CI/TPD23001592/P

28th February 2023

Fatal Accident Investigation Team

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

MECHANICAL INSPECTION REPORT OF MOTOR VAN GBD 7875B

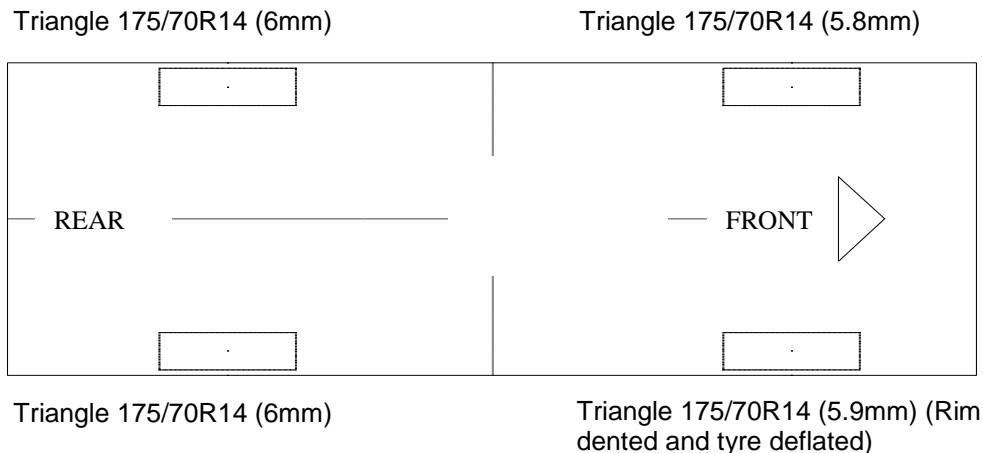
1. I refer to your request on 7th February 2023 to conduct a physical inspection of a Motor Van bearing registration number GBD 7875B (herein referred to as "**Motor Van**"), which was involved in a road traffic accident on 11th September 2022.
2. The objective of the inspection is to determine if there was any possible mechanical failure to the Motor Van that may have contributed to the accident.
3. Following the request, I had carried out a physical inspection of the Motor Van on 24th February 2023 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 Van at the time of my inspection was not recorded as the engine and ignition of the Motor Van was badly damaged as a result of the accident.
5. The Motor Van was observed to have sustained damage at its front and left portion. Its windscreen, front bonnet, front bumper, front left fender and left door was the body parts and various engine compartments were 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 Motor Van's front right wheel rim was observed to be dented and its tyre was observed to be deflated as a result of the accident. The front left, rear left and right tyres and wheel rims 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 4 tyres. The front left, rear left and right tyres were observed to be sufficiently inflated for vehicular operation. The tyre brand, tyre size and remaining tread depth of the 4 tyres were recorded as follows:-



7. The front right wheel rim was observed to be dented and its tyre was deflated as a result of the accident. The front left, both rear left and right tyres were observed to be wrapped around steel wheel rims that were found to be without any damages. See photo 1 – 15 below.



Photo 1 shows a general view of the Motor Van's rear body at the time of my inspection. The rear portion of the Motor Van was observed to have been undamaged by the accident.



Photo 2 shows the number plate of the Motor Van's body at the time of my inspection.



Photo 3 shows a general view of the Motor Van's front body at the time of my inspection. The Motor Van was observed to have sustained damage at its front and left portion. Its windscreen, front bonnet, front bumper, front left fender and left door was the body parts and various engine compartments were 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 Motor Van's front body at the time of my inspection. The Motor Van was observed to have sustained damage at its front portion. Its front windscreen (circled) was damaged as a result of the accident.



Photo 5 shows the close up view of the Motor Van's front body at the time of my inspection. The Motor Van was observed to have sustained damage at its front portion. Its front bumper (circled) was damaged as a result of the accident.



Photo 6 shows the close up view of the Motor Van's front body at the time of my inspection. The Motor Van was observed to have sustained damage at its front portion. Its front left fender (circled) was damaged as a result of the accident.



Photo 7 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 damage at its left portion. Its left door (circled) was damaged as a result of the accident.



Photo 8 shows the close up view of the Motor Van's left body at the time of my inspection. The Motor Van was observed to have sustained damage at its left portion. Its left door (circled) was damaged as a result of the accident.



Photo 9 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 undamaged by the accident.



Photo 10 shows the general condition of the front right tyre and wheel rim of the Motor Van. The wheel rim was observed to be dented and its tyre was observed deflated as a result of the accident.



Photo 11 shows the close up condition of the front right tyre and wheel rim of the Motor Van, the wheel rim was dented and the tyre was observed to be and deflated (circled) as a result of the accident with remaining tread depth of approximately 5.9mm.



Photo 12 shows the general condition of the rear right tyre of the Motor Van, which was observed to be in serviceable condition with remaining tread depth of approximately 6m. The tyre was also observed to be sufficiently inflated for vehicular operation with no tear, cut or burst mark(s).



Photo 13 shows the condition of the rear left tyre of the Motor Van, which was observed to be in serviceable condition with remaining tread depth of approximately 6mm. The tyre was also observed to be sufficiently inflated for vehicular operation with no tear, cut or burst mark(s).



Photo 14 shows the condition of the front left tyre of the Motor Van, which was observed to be in serviceable condition with remaining tread depth of approximately 5.8mm. The tyre was also observed to be sufficiently inflated for vehicular operation with no tear, cut or burst mark(s).



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

Engine Compartment & Operating Fluids

8. Upon engine compartment of the Motor Van, I had observed we observed that the engine and ignition system was damaged as a result of the induced impact from the accident. However, we were only able to inspect the brake fluid it was found to be of sufficient level for operating purposes and there was also no contamination found to the fluid.
9. My subsequent checks on the underside of the Motor Van also revealed no sign(s) or indication(s) of fluid leak and/or fluid stain(s). Visually, the various undercarriage components of the Motor Van were all observed to be intact and without any visible damage. See photo 16 -21 below.



Photo 16 shows a general view of the Motor Van's engine compartment. The various parts and components inside the engine compartment were observed that the engine and ignition system was damaged as a result of the induced impact from the accident.

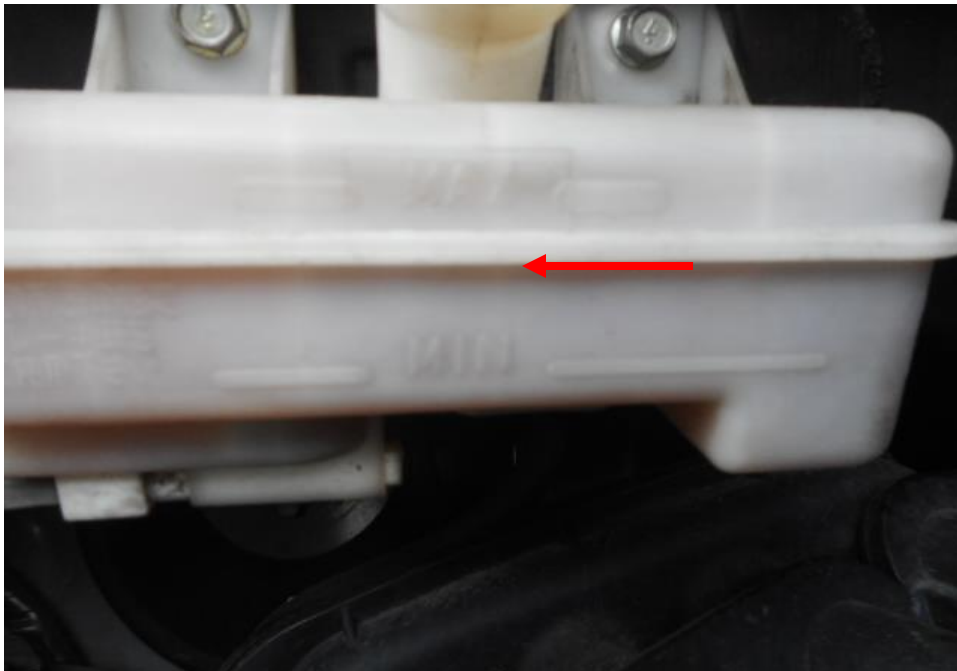


Photo 17 shows checks being carried out to the brake fluid reservoir of the Motor Van at the time of my inspection. The brake fluid was observed to be of sufficient level (arrowed) and without any visible contamination.



Photo 18 shows the close up view of the Motor Van's front body at the time of my inspection. The Motor Van was observed to have sustained damage at its front portion. Its engine (circled) was amongst the various components in the engine compartments were also damaged as a result of the accident.



Photo 19 shows the close up view of the Motor Van's front body at the time of my inspection. The Motor Van was observed to have sustained damage at its front portion. Its ignition system (circled) was amongst the various components in the engine compartments were also damaged as a result of the accident.



Photo 20 shows the close up view of the Motor Van's front body at the time of my inspection. The Motor Van was observed to have sustained damage at its front portion. Its ignition system battery (circled) was amongst the various components in the engine compartments were also damaged as a result of the accident.



Photo 21 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.

Braking System & Steering System

10. For this inspection, I was not able to conduct any static brake and steering tests on the steering and braking system of the Motor Van due to the Motor Van running on electric power steering (EPS) and braking system which requires the Motor Van to be started as the ignition system and engine is damaged.
11. My visual examination of the various steering components had revealed that the front left driveshaft and the front left steering tie rod was damaged as a result of the accident. However, the other steering components of the other wheels were all generally intact.
12. My visual examination of the various braking components which had included the brake hoses and brake pipes had revealed that these components were all generally intact. See photo 22 - 28 below.

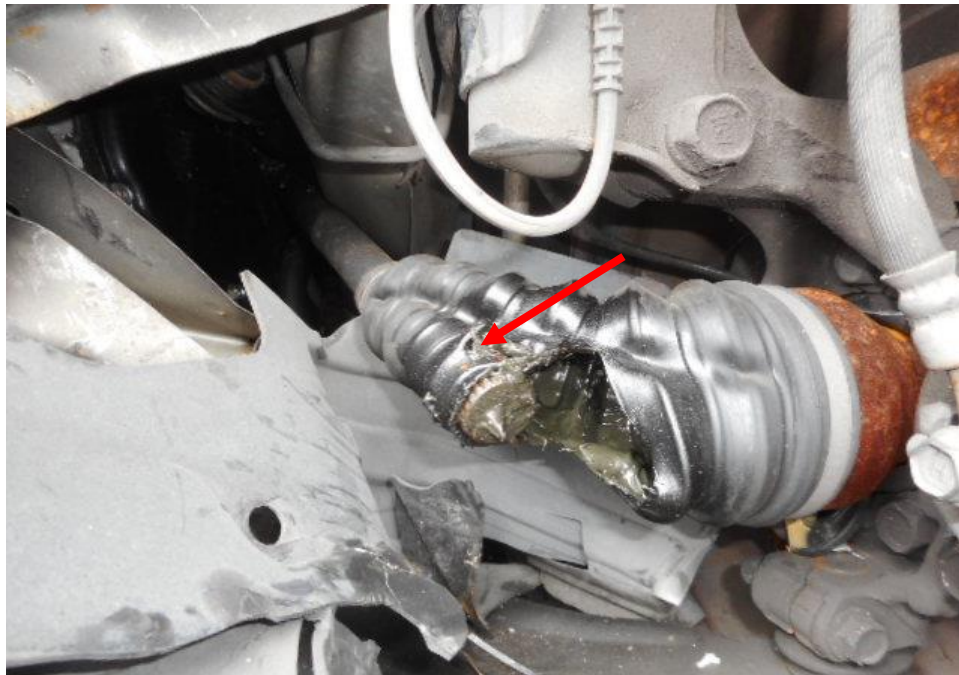


Photo 22 shows the various undercarriage components at the front left wheel of the Motor Van, in particular the left driveshaft (arrowed) was observed to be broken off as a result of the accident.

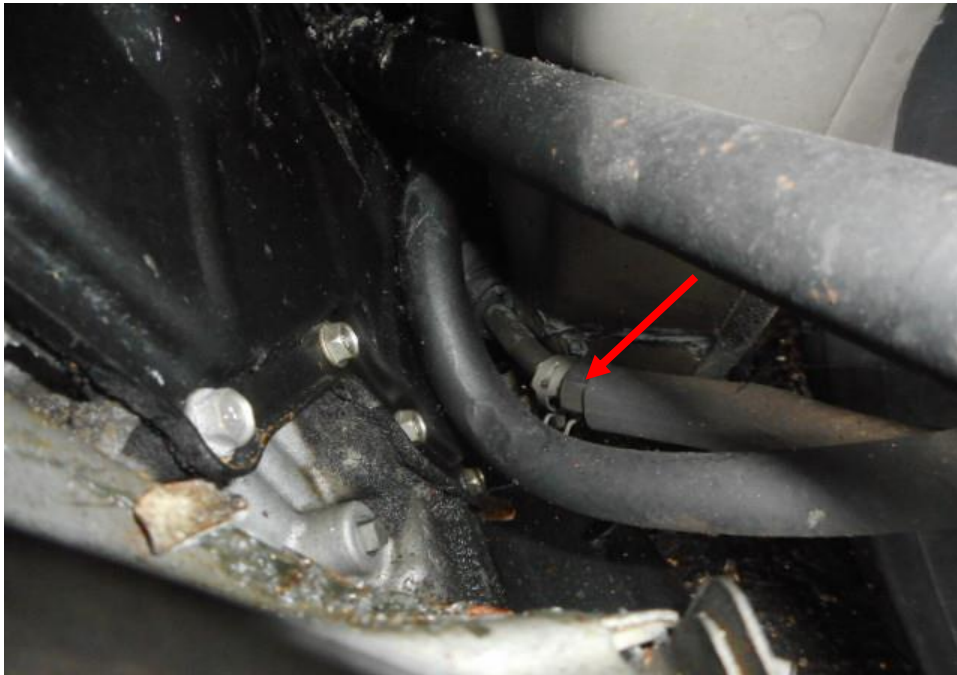


Photo 23 shows the various undercarriage components at the front left wheel of the Motor Van, in particular the steering tie rod (arrowed) was observed to be bent as a result of the accident.



Photo 24 shows the various undercarriage components at the front right wheel of the Motor Van, in particular the steering tie rod (red arrow) and right driveshaft (yellow arrow) was observed to be intact.

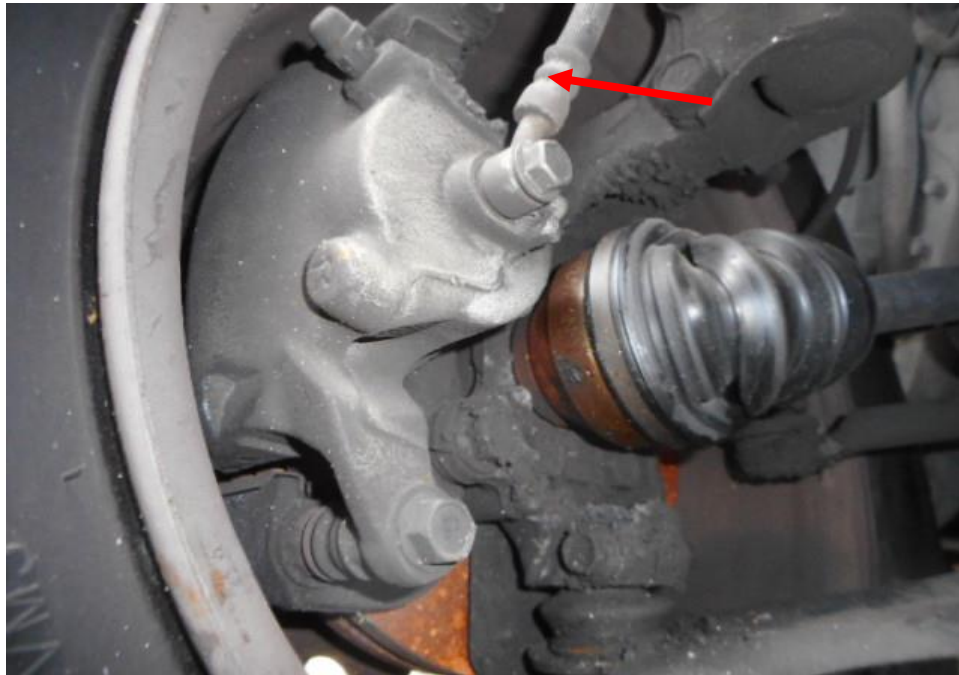


Photo 25 shows the brake hose/pipe (arrowed) at the front right wheel of the Motor Van. No leakage of brake fluid was observed. Visual examination of the various components of the braking system like the brake caliper (circled) etc had revealed all to be intact and without visible damage.

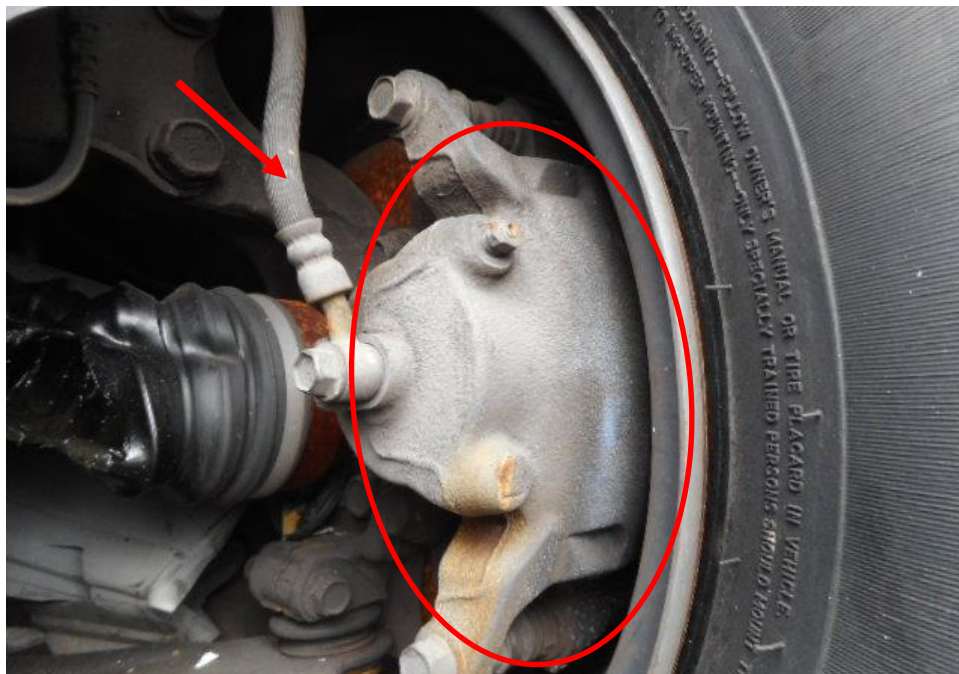


Photo 26 shows the brake hose/pipe (arrowed) at the front left wheel of the Motor Van. No leakage of brake fluid was observed. Visual examination of the various components of the braking system like the brake caliper (circled) etc had revealed all to be intact and without visible damage.



Photo 27 shows the brake hose/pipe (arrowed) at the rear 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 drum brake etc. had revealed all to be intact and without visible damage.



Photo 28 shows the brake hose/pipe (arrowed) at the rear 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 drum brake etc. had revealed all to be intact and without visible damage.

Electronic Safety / Warning Indicators

13. The Motor Van's automatic self-test of the functionality of its various electronic operating systems was not able to be conducted as the engine and ignition system was damaged as a result of the accident.

Seat Belts

14. The front right and left seat belt of the "Motor Van" was not 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 29 and 30 below.



Photo 29 shows that the seat belt on the right seat was not 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.



Photo 30 shows that the seat belt on the left seat was not 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

15. 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 and ignition system of the Motor Van was damaged as a result of the accident.

Conclusion

16. 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, braking system, transmission system, steering system and suspension system.

17. The Motor Van's right wheel rim was observed to be dented and the tyre was observed to be deflated as a result of the accident. However, the front left, both rear left and right tyres of the Motor Van 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 4 tyres. The front left and both rear left and right tyres were observed to be sufficiently inflated for vehicular operation with remaining tread depth of approximately 5.8mm to 6mm and the front right tyre with remaining tread depth of approximately 5.9mm.

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