



Your Ref: TP/IP/09577/2018
Our Ref : CI/TPD18010143/Z

20th March 2018

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

MECHANICAL INSPECTION REPORT OF MOTOR VAN GBA 2132K.

1. We refer to your request on 07th March 2018 to conduct a physical inspection of a Motor Van bearing registration number GBA 2132K (herein referred to as "Motor Van"), which was involved in a fatal road traffic accident on 10th February 2018.
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 19th March 2018 at the premises of Traffic Police vehicle pound, 517 Airport Road Singapore 539942. We 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 our inspection was 405636km.
5. The Motor Van was observed to have sustained damages at its front bonnet; front left headlamp and front left lower bumper were amongst the body parts that were damaged as a result of the accident.
6. This was likely due to the consistency of the accident's case facts that the Motor Van was traveling along CTE (AYE) on lane 3 of 5 lane road near 7km mark. A motor cyclist was riding on lane 4. The Motor Van driver then switched to lane 4 and in the midst of changing lane, the front left portion of the Motor Van collided onto the Motorcycle. See photo 1 to 7 below.



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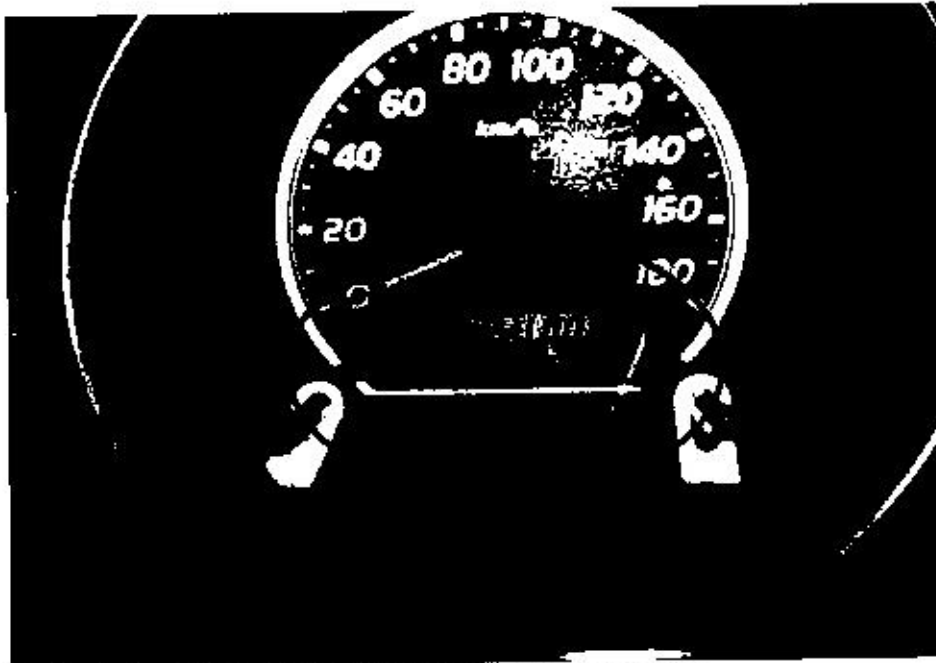


Photo 1 shows the mileage of the Motor Van was 405636km.



Photo 2 shows a general view of the front left body of the Motor Van at the time of our inspection. The Motor Van was observed to sustained damages that were confined to front left side of the body.



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Photo 3 shows the damages to the front bonnet & headlamp as a result of the accident.

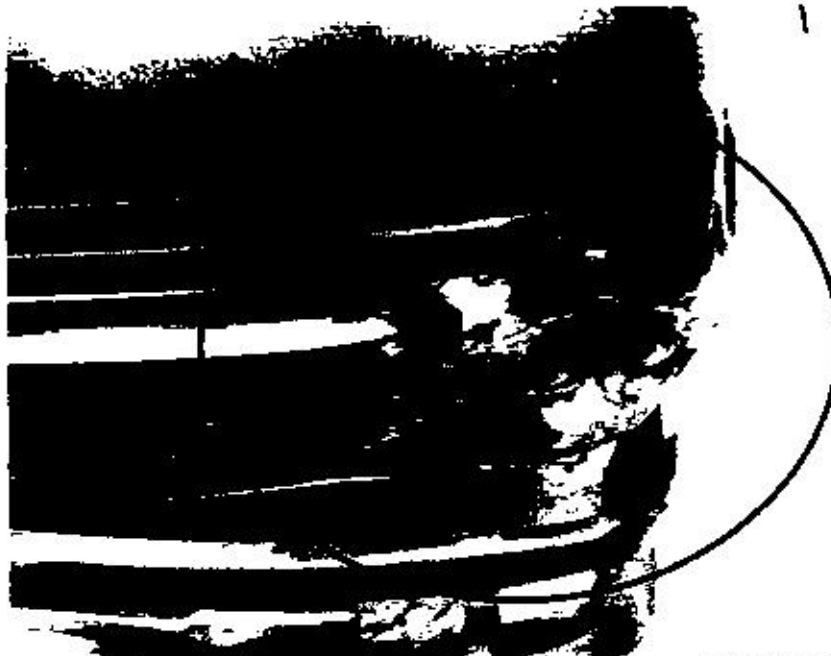


Photo 4 shows the front lower bumper was damaged as a result of the accident.



Photo 5 shows a general view of the rear body of the Motor Van at the time of our inspection. The Motor Van was observed to be in good general condition at time of inspection.



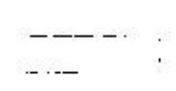
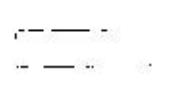
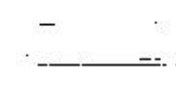

Photo 6 shows a general view of the front right body of the Motor Van at the time of our inspection. The Motor Van was observed to be in good general condition at time of inspection.



Photo 7 shows a general view of the rear left body of the Motor Van at the time of our inspection. The Motor Van was observed to be in good general condition at time of inspection.

Tyres and Wheel Rims

7. The 4 tyres were observed to be in serviceable condition and sufficiently inflated for vehicular operation. We 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:-

<p>CST Tyres CL-31 195 R15C (7mm)</p> 	<p>CST Tyres CL-31 195 R15C (5mm)</p> 
<p>REAR</p> 	<p>FRONT</p> 
<p>CST Tyres CL-31 195 R15C (7mm)</p>	<p>CST Tyres CL-31 195 R15C (5mm)</p>



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8. The 4 tyres were observed to be wrapped around standard wheel rims with wheel caps fitted on its outer side. There was no significant damage observed on all of the wheel caps. See photo 8 – 12 below.

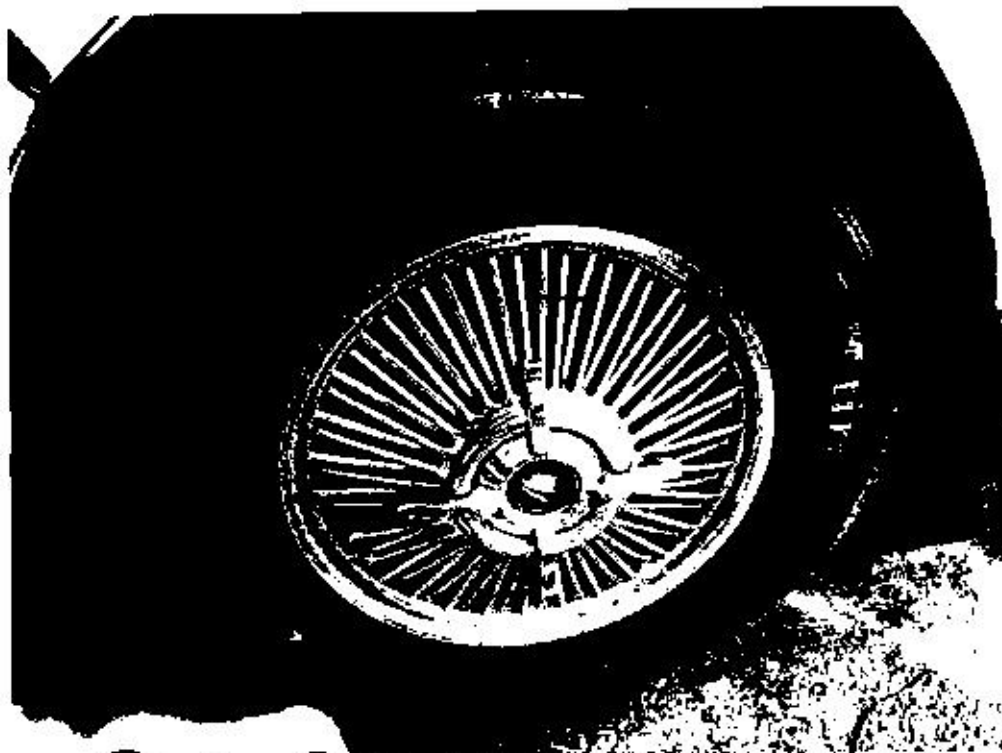


Photo 8 shows the condition of the front left tyre of the Motor Van, which was observed to be in serviceable condition without any damage found at time of our inspection.

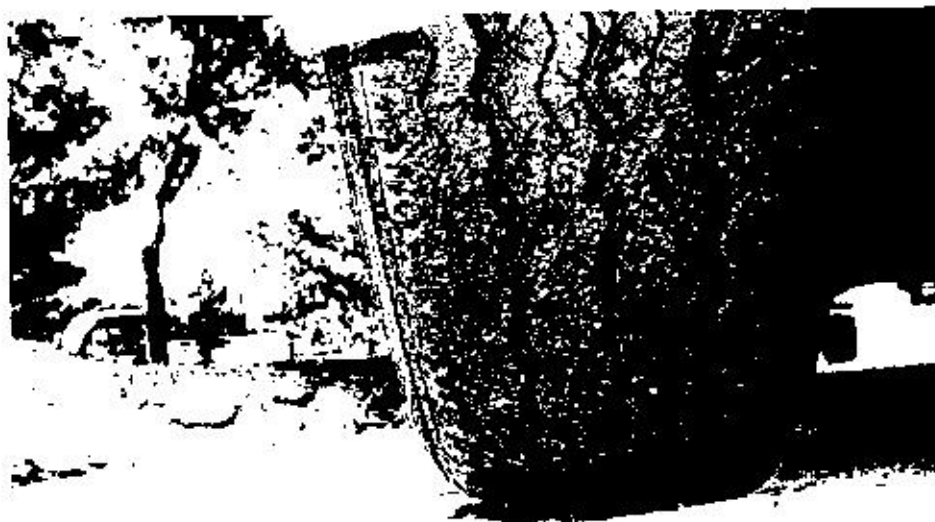


Photo 9 shows the condition of the front right tyre of the Motor Van, which was observed to be in serviceable condition with remaining tread depth of approximately 5mm. The tyres were all observed to be sufficiently inflated for vehicular operation with no tear, cut or burst mark(s) on the outer and the inner sidewalls as well as across the tread.

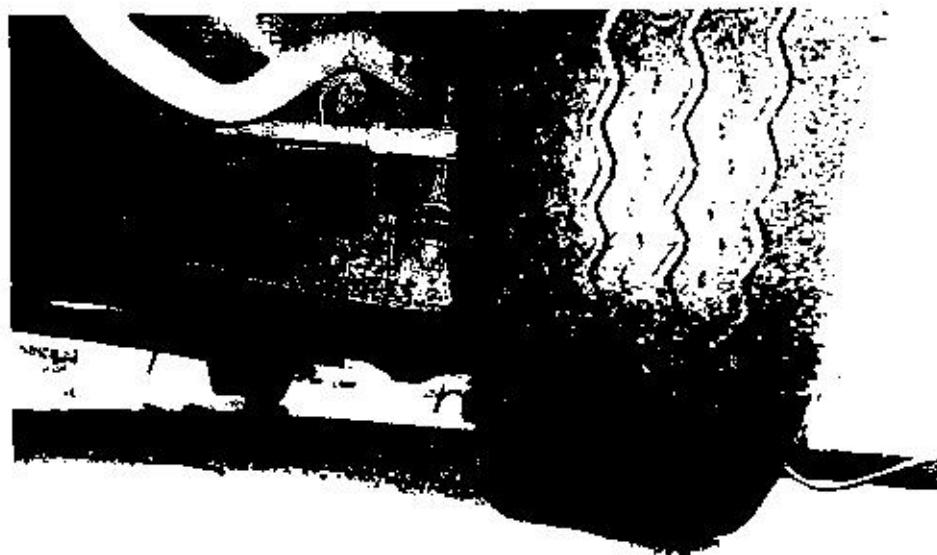


Photo 10 shows the condition of the front left tyre of the Motor Van, which was observed to be in serviceable condition with remaining tread depth of approximately 5mm. The tyre, which was wrapped around standard wheel rim, was also observed to be sufficiently inflated for vehicular operation.

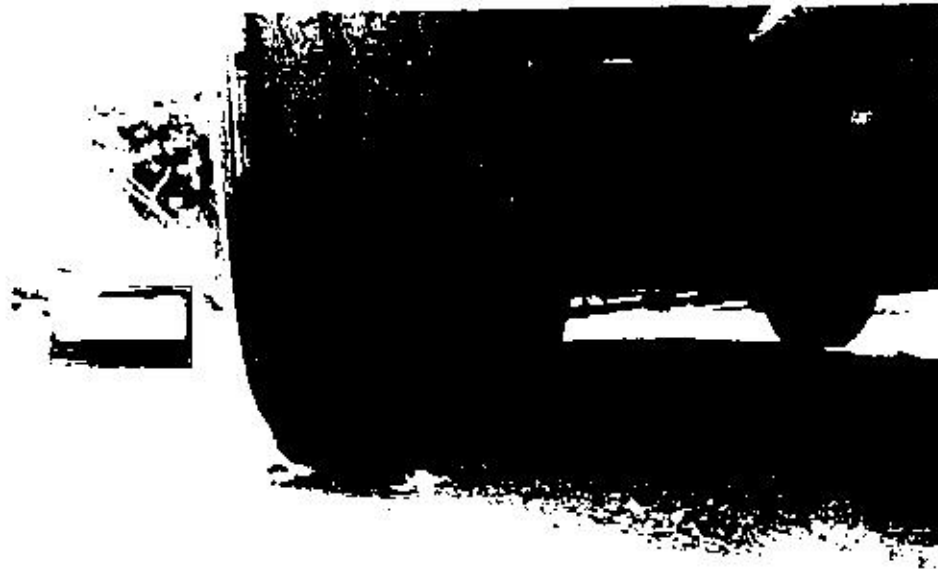


Photo 11 shows the condition of the rear left tyre of the Motor Van, which was observed to be in serviceable condition with remaining tread depth of approximately 7mm. The tyre, which was wrapped around standard wheel rim, was also observed to be sufficiently inflated for vehicular operation. There was also no significant damage found on the 4 wheel rims of the Motor Van.



Photo 12 shows the condition of the rear right tyre of the Motor Van, which was observed to be in serviceable condition with remaining tread depth of approximately 7mm. 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 tyre, which was also sufficiently inflated for vehicular operation.

Engine Compartment & Operating Fluids

9. Upon examination of the Motor Van's engine compartment, we had observed all the parts and components inside the engine compartment to be intact and unaffected by the accident. The brake fluid, engine oil, power steering fluid and engine coolant were all found to be of sufficient level for operating purposes. Visually, there was also no contamination found to these fluids.
10. Further examination of the engine compartment revealed no sign(s) or indication(s) of fluid leakage and/or fluid stain within the engine compartment of the Motor Van.
11. Our subsequent checks on the underside of the Motor Van revealed no fluid stain. Visually, the various undercarriage components of the Motor Van were all observed to be intact and without any visible damage. See photo 13 – 17 below.

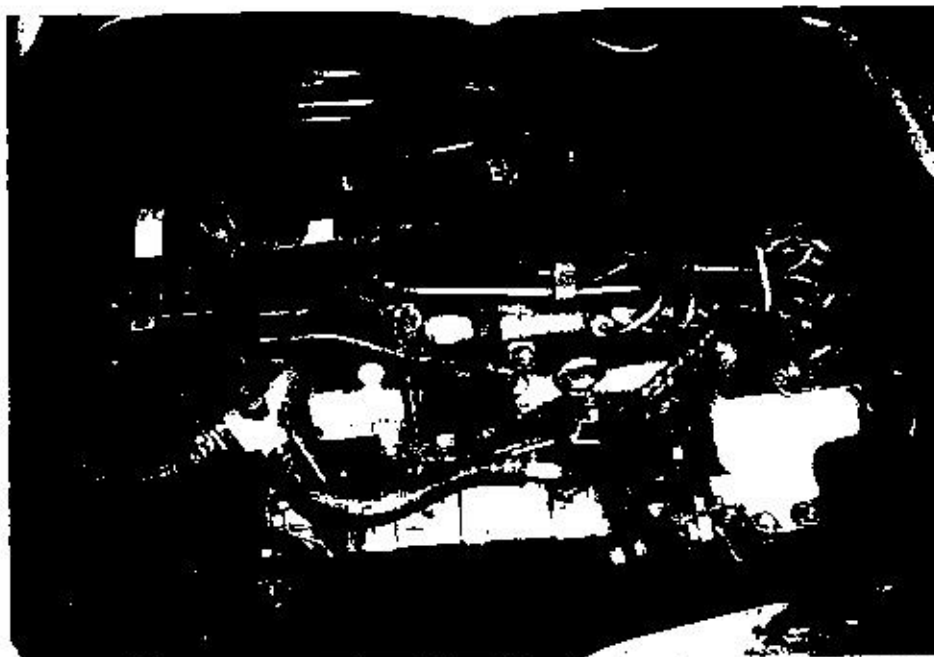


Photo 13 shows a general view of the Motor Van's engine compartment. The various parts and components inside the engine compartment were unaffected by the accident. There was also no sign(s) or indication(s) of fluid leakage and/or fluid stain within the engine compartment.



Photo 14 shows the brake fluid reservoir of the Motor Van at the time of our inspection. The brake fluid was observed to be of sufficient level and without any visible contamination.

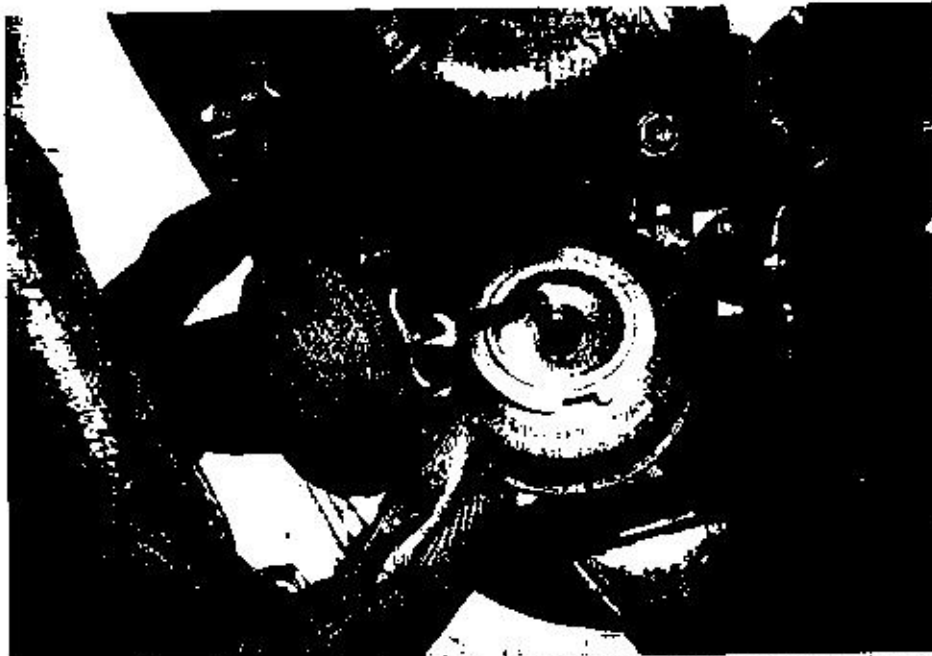


Photo 15 shows the power steering fluid reservoir of the Motor Van at the time of our inspection. The power steering fluid was observed to be of sufficient level and without any visible contamination.



Photo 16 shows the engine coolant reservoir of the Motor Van at the time of our inspection. The engine coolant was observed to be of sufficient level and without any visible contamination.

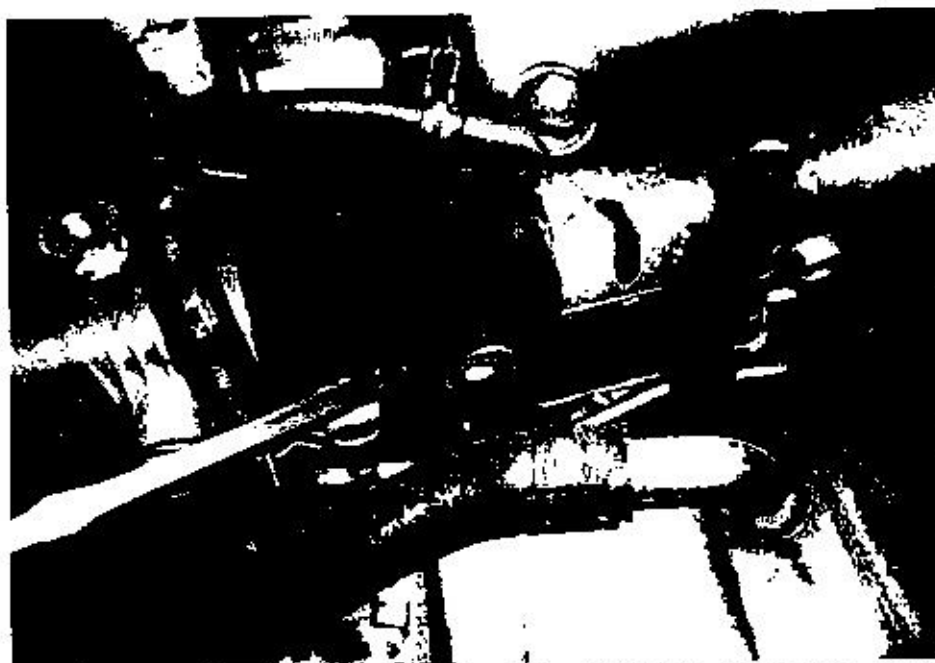


Photo 17 shows the engine dip stick of the Motor Van at the time of our inspection. The engine oil was observed to be of sufficient level and without any visible contamination.

Steering System & Braking System

12. The mechanical components of the Motor Van's steering system were all found to be visually intact and undamaged. The steering wheel, steering column, steering rack and ball joints of the Motor Van were observed to be intact and securely attached to the front left wheel and front right wheel.
13. Although the steering system could not be tested at the time of our inspection (engine unable to be started likely due to the accident), it was likely that the steering system of the Motor Van was in serviceable condition at the material time of accident since its mechanical components were all found to be generally intact and securely fitted.
14. Static brake tests was unable to be conducted on the Motor van due to the engine could not be started likely due to the accident at time of inspection. However, visual inspection had suggested that there was no internal leakage of pressure/vacuum in the braking system of the Motor Van 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. The braking system of the Motor Van was likely to be in serviceable condition at the material time. See photo 18 - 21 below.



Photo 18 shows the various undercarriage components at the rear left wheel of the Motor Van, in particular the brake hose (arrowed). We did not observed any leakage of brake fluid at the time of our inspection of the Motor Van.

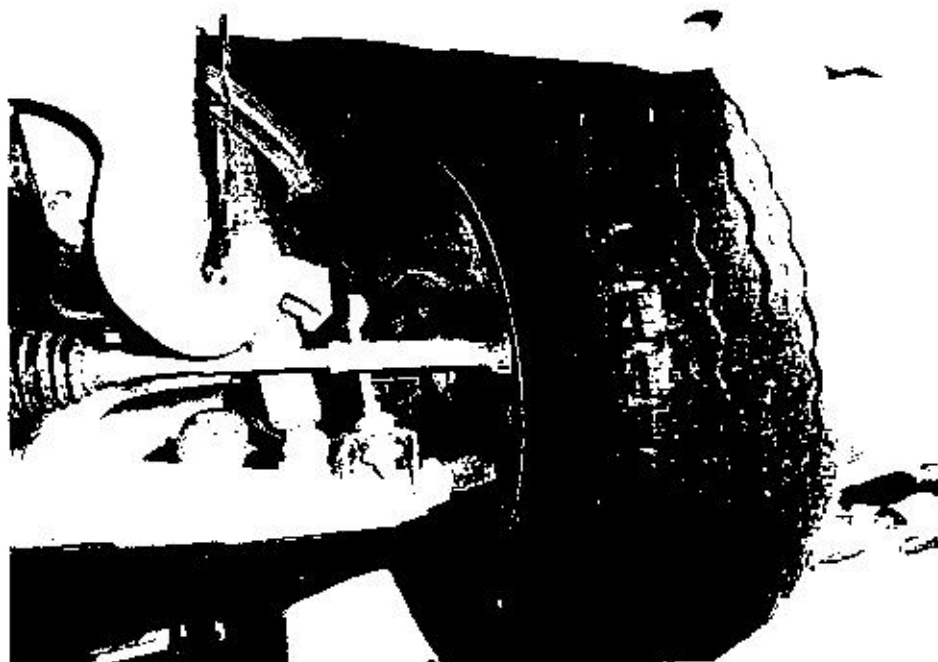


Photo 19 shows the brake hose at the front left wheel of the Motor Van. We did not observe any leakage of brake fluid. Our visual inspection of the various mechanical components of the Motor Van's braking system revealed all to be intact and without visible damage, indicating that the braking system was likely to be in serviceable condition at the material time of accident.



Photo 20 shows the brake hose (arrowed) at the front right wheel of the Motor Van. We did not observe any leakage of brake fluid at the time of our inspection of the Motor Van. Our visual inspection of the various mechanical components of the Motor Van's braking system, including its brake calliper, revealed all to be intact and without visible damage.



Photo 21 shows the various undercarriage components at the rear right wheel of the Motor Van. 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 at the 4 wheels of the Motor Van.

Electronic Safety / Warning Indicators

15. The Motor Van 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.

Operational Behaviour of the Motor Van

16. We was also not able to carry out any operational test to primarily determine whether there was any operational abnormality to the engine system, transmission system, steering system and braking system of the Motor Van due to the engine couldn't be started likely due to the accident.



Conclusion

17. At the time of our inspection of the Motor Van, its steering system and braking system could not be tested as the Motor Van's engine could not be started likely due to the accident. However basing purely on our observations, it would appear that the steering system and braking system of the Motor Van were in serviceable condition. This is taking into consideration that all the various mechanical components were found to be intact and undamaged.
18. The observations gathered from our physical inspection of the Motor Van had indicated no evidence to suggest possible mechanical failure to the Motor Van that may have contributed to the accident.
19. The 4 tyres of the Motor Van 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 4 tyres. The 4 tyres were sufficiently inflated for vehicular operation with remaining tread depth of approximately 5 & 7mm each.
20. Our findings were based solely on a static and visual inspection of the Motor Van. No operational test could be carried out to the Motor Lorry due to it was unable to be started at time of inspection.

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