



Your Ref: TP/IP/21857/2018  
Our Ref : CI/TPD18011989/Z

24<sup>th</sup> July 2018

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

**MECHANICAL INSPECTION REPORT OF MOTOR VAN GBA 1055G.**

1. We refer to your request on 10<sup>th</sup> May 2018 to conduct a physical inspection of a Motor Van bearing registration number GBA 1055G (herein referred to as "**Motor Van**"), which was involved in a fatal road traffic accident on 06<sup>th</sup> April 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 08<sup>th</sup> June 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 247284km.
5. The Motor Van was observed to have sustained minor scratches at its front left lower bumper amongst others likely due to the accident.
6. This was likely due to the consistency of the accident's case facts that the Motor Van's driver was found unconscious in the driver's seat where half of his Motor Van (left) was found on the left kerb and another half (right) was found on the road with engine running along Seletar Road towards TPE. See photo 1 to 7 below.



**Photo 1** shows the mileage of the Motor Van was 247284km.



**Photo 2** 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 sustained minor damage at the front left lower bumper.



**Photo 3** shows a close-up view of the scratches on the front left lower bumper of the Motor Van at the time of our inspection. It was observed to have sustained with minor damage likely due to the accident.



**Photo 4** 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 be in good condition unaffected by the accident.





**Photo 5** 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.



**Photo 6** shows a general view of the front rear 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.



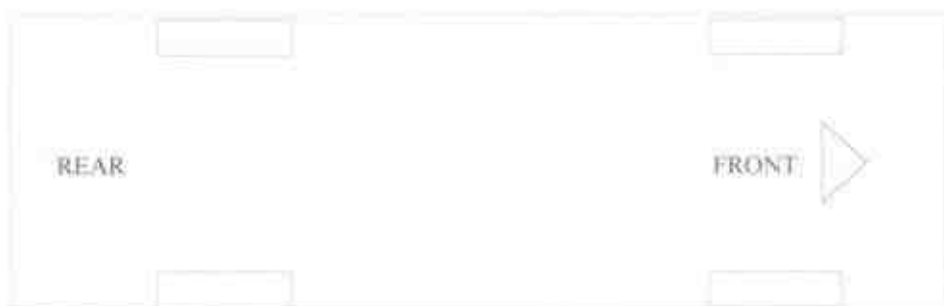
Photo 7 shows a general view of the rear left body of the Motor Van at the time of our inspection. The Motor Van was observed to be in good general condition at time of inspection.

### 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:-

Firestone TZ700 185/65R15  
(6mm)

Kumho Sulos KH 17 185/65 R15  
(7mm)



Firestone TZ700 185/65R15  
(6mm)

Kumho Sulos KH 17 185/65 R15  
(7mm)

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 – 11 below.



**Photo 8** 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 7mm. 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 9** 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 7mm. The tyre, which was wrapped around standard wheel rim, was also observed to be sufficiently inflated for vehicular operation.



**Photo 10** 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, 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 11** 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 6mm. 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 12 – 16 below.





**Photo 12** 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.



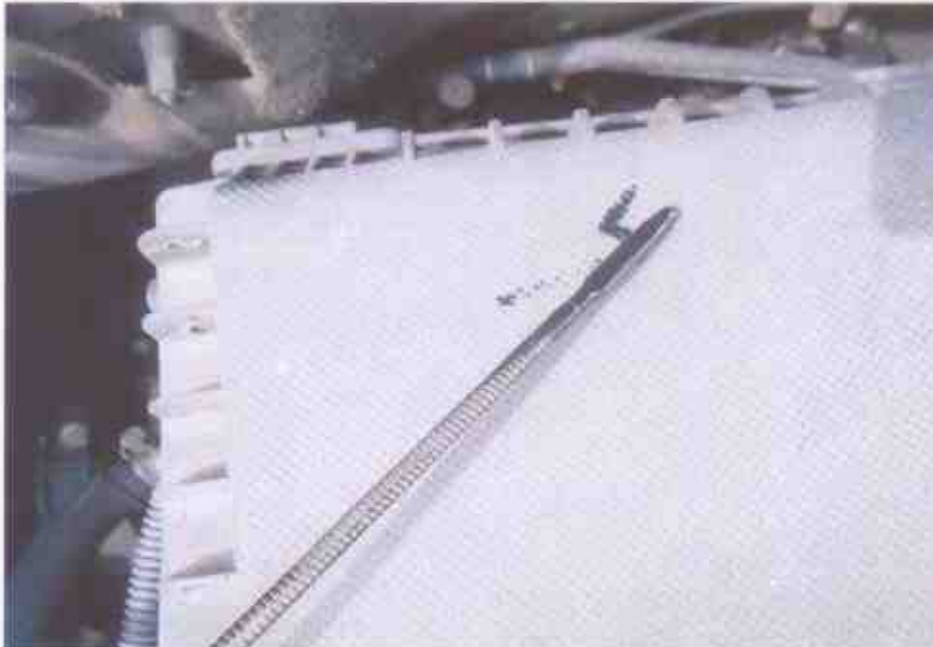
**Photo 13** shows the brake fluid reservoir of the Motor Van at the time of our inspection. The brake fluid was observed to be of sufficient level and without any visible contamination.



**Photo 14** 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 15** shows the power steering reservoir of the Motor Van at the time of our inspection. It was observed to be of sufficient level and without any visible contamination.



**Photo 16** 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. Static brake tests conducted on the Motor Van revealed no abnormality. The brake booster had responded well to the various tests conducted. There was also no abnormal movement of the brake pedal when it was depressed. In general, the static brake tests had suggested that there was no internal leakage of pressure/vacuum in the braking system of the Motor Van. The braking system of the Motor Van was likely to be in serviceable condition at the material time. This was also 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.
13. Static test on the steering system of the Motor Van also revealed no abnormality to the steering system. We did not experience any abnormal free play and/or other resistance when turning the steering wheel left and right to full lock positions. Our 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 17 - 20 below.





**Photo 17** shows the various undercarriage components at the rear left wheel of the Motor Van, in particular the brake hose (arrowed). We did not observe any leakage of brake fluid at the time of our inspection of the Motor Van.



**Photo 18** 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 19** 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 20** 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

14. The Motor Van's automatic self-test of the functionality of its various electronic operating systems like the Supplemental Restraint System (SRS), engine checked & etc. During cranking of the engine had indicated that these systems were in working condition and without abnormality. This can be established from the warning lights disappearing from the instrument panel after the self-test. See photo 21 & 22 below.



**Photo 21** shows the warning lights for the various electronic operating systems of the Motor Car appearing on its instrument panel during the self-test when the engine was cranked.





Photo 22 shows no warning lights illuminated on the instrument panel of the Motor Van after the engine was cranked. This would suggest that there was no abnormality to the various electronic operating systems of the Motor Car.

### Operational Behaviour of the Motor Van

15. A short operational test of the Motor Van, to primarily determine whether there was any abnormality to its various operating systems like its engine system, its transmission system, steering system and braking system was subsequently carried out. The test was conducted by driving the Motor Van forward, stopping, before reversing and coming to a stop again.
16. During the operational test, the various transmission gears of the Motor Van were able to be engaged without any difficulty by stepping on the clutch pedal and manually shifting the gear lever. There were no abnormal sounds heard and/or abnormal behaviour of the Motor Van's engine system. It was able to move forward and backward normally. The braking system was also found to be in working condition as the Motor Van was able to slow down and come to a complete stop upon depressing of the brake pedal. See photo 23 & 24 below.



**Photo 23** shows a short operational test of the Motor Van, to primarily determine whether there was any abnormality to its various operating systems like its engine system, its transmission system, steering system and braking system was subsequently carried out. The test was conducted by driving the Motor Van forward, stopping, before reversing and coming to a stop again.



**Photo 24** shows a short operational test of the Motor Van, the test was conducted by driving the Motor Van forward, stopping, before reversing and coming to a stop again.

## Conclusion

17. From our physical inspection of the Motor Van, it appears that its engine system, steering system, braking system and transmission system were all in serviceable condition. We did not find any evidence(s) to suggest that there was possible mechanical failure to the Motor Van that may have caused and/or contributed to the accident. This is also taking into consideration that the operational test of the Motor Van, which we had conducted, did not produce any sign(s) or symptom(s) to suggest that there was any abnormality to its various operating systems.
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 6mm each.



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