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Our Ref : CI/TPD17022590/Z

30<sup>th</sup> November 2017

**Fatal Accident Investigation Team**

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

**MECHANICAL INSPECTION REPORT OF MOTOR VAN GW 5055E**

1. We refer to your request on 16<sup>th</sup> November 2017 to conduct a physical inspection of a Motor Van bearing registration number GW 5055E (herein referred to as "**Motor Van**"), which was involved in a fatal road traffic accident on 08<sup>th</sup> November 2017.
2. The objective of this inspection is to determine if there was any possible mechanical failure to the Motor Lorry that may have contributed to the accident.
3. Following the request, we had carried out a physical inspection of the Motor Van on 29<sup>th</sup> November 2017 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 our inspection was not recorded due to a flat battery.
5. The Motor Van was observed to have sustained damages at its front left panel; headlamp and front grille was amongst the body parts that were damaged as a result of the accident. Its front windscreen was also broken at the left area. Its right side sliding panel door & left panel was observed to sustained dents & scratches. See photo 1 – 7 below.

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**Photo 1** 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 have sustained damages at its front left panel and front grille was amongst the body parts that were damaged as a result of the accident. Its front windscreen was also broken at the left area (circled).



**Photo 2** shows a general view of the front left body of the Motor Van at the time of my inspection. The Motor Van was observed to have sustained damages at its left panel, front left wiper panel, front grille, were amongst the body parts that were damaged as a result of the accident. Its front windscreen was also broken at the left bottom area. Its left panel was observed to sustained scratches.



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**Photo 3** shows the damage sustained on the front windscreen as a result of the accident.



**Photo 4** shows the damage sustained on the front left panels & headlamp as a result of the accident.



**Photo 5** shows the damage sustained on the front grille (missing) as a result of the accident.



**Photo 6** shows the damage sustained on the right hand side dents & scratches.



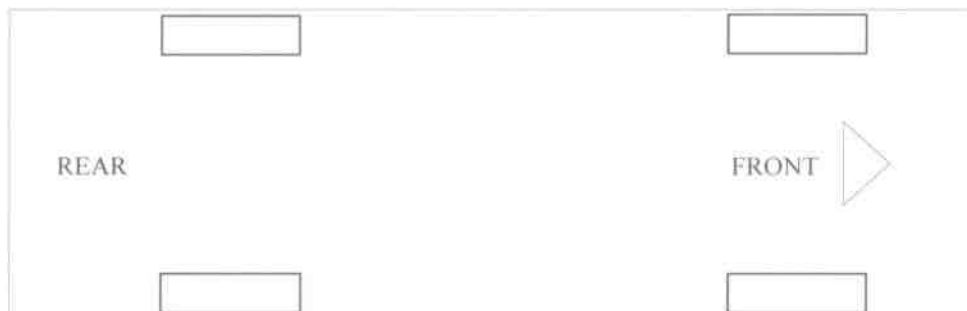
Photo 7 shows the damage sustained on the left hand side line scratch.

### Tyres and Wheel Rims

6. The 2 front tyres and 2 rear tyres of the Motor Van 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:-

Bridgestone Duravis R624  
185R14 (2mm)

Yokohama Delivery Star 818  
185R14 (6mm)



Yokohama Delivery Star 818  
185R14 (1.6mm)

Yokohama Delivery Star 818  
185R14 (5mm)

7. The 4 tyres were observed to be wrapped around standard wheel rims that were found to be without any damage. See photo 8 – 11 below.





**Photo 8** 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 6mm.



**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.

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**Photo 10** shows the condition of the rear left tyres of the Motor Van, which was observed to be in serviceable condition with remaining tread depth of approximately 2mm. The tyres, which were wrapped around standard wheel rim, were also observed to be sufficiently inflated for vehicular operation.



**Photo 11** 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 1.6mm. 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 4 tyres that were fitted on the Motor Van.

### Engine Compartment & Operating Fluids

8. 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.
9. Further examination of the engine compartment found that there was no sign(s) or indication(s) of fresh fluid leakage and/or fluid stain within the engine compartment of the Motor Van. However, oil stain observed to be pre-existed prior the accident looking at the dust accumulated with it.
10. Our subsequent checks on the underside of the Motor Van also 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 – 17 below.



**Photo 12** shows a general view of the Motor Van's engine compartment, which was accessed by lifting the passenger's seat of the Motor Van. The various parts and components inside the engine compartment were unaffected by the accident. There was also no sign(s) or indication(s) of fresh fluid leakage and/or fluid stain within the engine compartment except oil stain was observed to be pre-existed prior the accident looking at the dust accumulated with it.



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**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 radiator coolant reservoir of the Motor van at the time of our inspection. The radiator coolant was observed to be of sufficient level and without any visible contamination.

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



**Photo 16** shows the engine dip stick (general view) 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 (arrowed).



**Photo 17** shows the close-up view 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 (arrowed).

### **Steering System & Braking System**

11. 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.
12. Although the steering system could not be tested at the time of our inspection (engine unable to be started), it is 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.

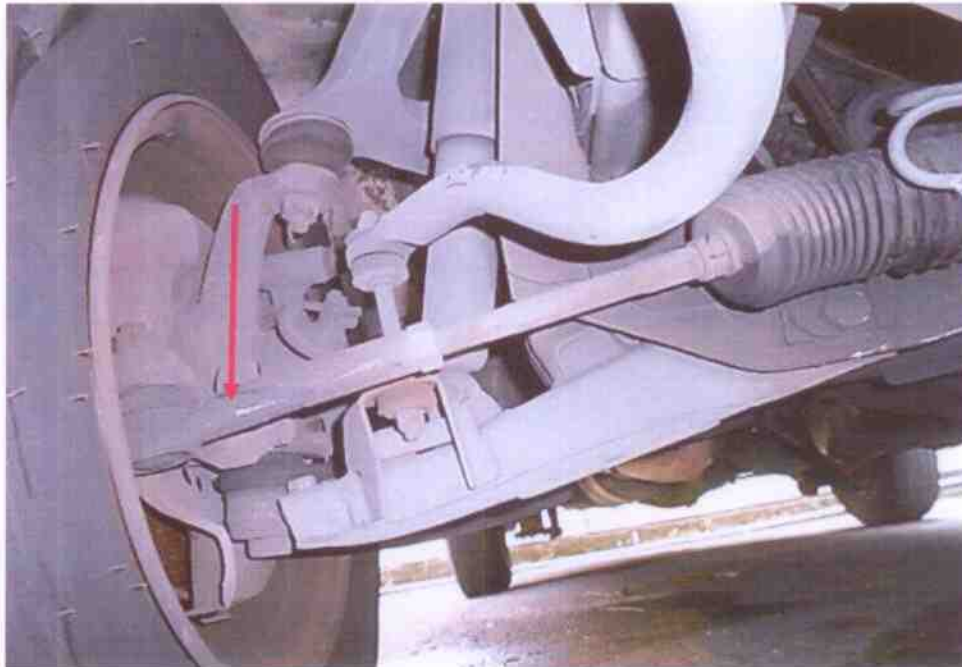


13. Static brake tests was unable to be conducted on the Motor van due to the engine could not be started at time of inspection. However, visual inspection had suggested that there was no internal leakage of pressure/vacuum in the braking system of the Motor Van taking into consideration that the brake 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 - 20 below.



**Photo 18** shows the brake pipe (arrowed) at the rear right wheel of the Motor Van. We did not observe any leakage of brake fluid at the time of our inspection.

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**Photo 19** 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 it's in serviceable condition at the material time of accident. There was also no sign of fluid stain(s) observed on the various undercarriage components.



**Photo 20** 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.

### **Electronic Safety / Warning Indicators**

14. 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 Lorry**

15. We were 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 a flat battery.

### **Conclusion**

16. 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 due to a flat battery. 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.
17. 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.
18. The 2 front tyres and 2 rear tyres fitted on the Motor Van were also found to be in serviceable condition. 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 4 tyres were also observed to be sufficiently inflated for vehicular operation with remaining tread depth of approximately 1.6 to 6mm each.



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19. 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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