

Your Ref: TP TP/11422/2023  
Our Ref : CI/TPD23006782/P

28<sup>th</sup> July 2023

**Fatal Accident Investigation Team**

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

**MECHANICAL INSPECTION REPORT OF MOTOR BUS SBS 6171B**

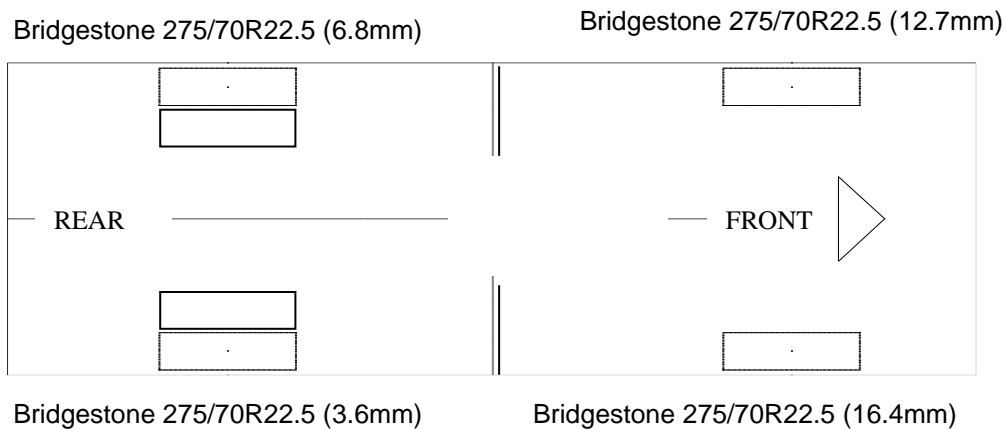
1. I refer to your request on 10<sup>th</sup> June 2023 to conduct a physical inspection of a Motor Van bearing registration number SBS 6171B (herein referred to as "**Motor Bus**"), which was involved in a road traffic accident on 24<sup>th</sup> April 2023.
2. The objective of the inspection is to determine if there was any possible mechanical failure to the Motor Bus that may have contributed to the accident.
3. Following the request, I had carried out a physical inspection of the Motor Bus on 26<sup>th</sup> July 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 Bus at the time of my inspection was 714,248km.
5. The Motor Bus was observed to have sustained damage at its front portion its front windscreen was the body part that were damaged at the time of inspection.

## Tyres and Wheel Rims

6. The 2 front tyres and 4 rear tyres of the Motor Bus were observed to be in serviceable condition and sufficiently inflated for vehicular operation. I did not find any tear or burst mark(s) on the outer and inner sidewalls as well as across the tread of the 6 tyres. The tyre brand, tyre size and remaining tread depth of the 6 tyres of the Motor Bus were recorded as follows:-



7. The 6 tyres were observed to be wrapped around standard steel wheel rims that were found to be without any damages. See photo 1 – 10 below.



**Photo 1** shows a general view of the instrument cluster of the Motor Bus at the time of my inspection. The mileage of the Motor Bus was 714,248km



**Photo 2** shows a general view of the front body of the Motor Bus at the time of my inspection. The Motor Bus was observed to have sustained damages at its front windscreen was observed to be damage at the time of my inspection.



**Photo 3** shows a close up view of the front body of the Motor Bus at the time of my inspection. The Motor Bus was observed to have sustained damages at its front portion. Its front windscreen (circled) was damaged as a result of the accident.



**Photo 4** shows the general view of the right body of the Motor Bus at the time of my inspection. The Motor Bus was observed to be intact and unaffected by the accident.



**Photo 5** shows the general view of the left body of the Motor Bus at the time of my inspection. The Motor bus was observed to be intact and unaffected by the accident.



**Photo 6** shows the general view of the rear body of the Motor Bus at the time of my inspection. The Motor Bus was observed to be intact and unaffected by the accident.



**Photo 7** shows the condition of the front right tyre of the Motor Bus, which was observed to be in serviceable condition with remaining tread depth of approximately 16.4mm. The tyre, which was wrapped around standard steel wheel rim, was also observed to be sufficiently inflated for vehicular operation. There was no tear, cut or burst mark(s) on the outer and the inner sidewalls as well as across the tread of the 6 tyres that were fitted on the Motor Bus.



**Photo 8** shows the condition of the rear right tyre of the Motor Bus, which was observed to be in serviceable condition with remaining tread depth of approximately 3.6mm. The tyre, which was wrapped around standard steel wheel rim, was also observed to be sufficiently inflated for vehicular operation



**Photo 9** shows the condition of the rear left tyre of the Motor Bus, which was observed to be in serviceable condition with remaining tread depth of approximately 6.8mm. The tyre, which was wrapped around standard steel wheel rim, was also observed to be sufficiently inflated for vehicular operation.



**Photo 10** shows the condition of the front left tyre of the Motor Bus, which was observed to be in serviceable condition with remaining tread depth of approximately 12.7mm. The tyre, which was wrapped around standard steel wheel rim, was also observed to be sufficiently inflated for vehicular operation.

## Engine Compartment & Operating Fluids

8. Upon examination of the Motor Bus's engine compartment, I had observed all the parts and components inside the engine compartment to be intact and unaffected by the accident. The air in the air brake cylinders, power steering fluid and engine coolant were all found to be of sufficiently level for operating purposes. Visually, there was also no contamination found to these fluids.
9. Further examinations of the engine compartment revealed, there was no sign(s) or indication(s) of fresh fluid leakage and/or fluid stain within the engine compartment of the Motor Bus.
10. My subsequent checks on the underside of the Motor Bus 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 11 -15 below.



**Photo 11** shows a general view of the Motor Bus's engine compartment, which was accessed by lifting the rear of the Motor Bus. 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.



**Photo 12** shows the air in the air brake cylinder of the Motor Bus at the time of my inspection. The air in the cylinder was observed to be of sufficient level & serviceable at the time of my inspection.



**Photo 13** shows the engine coolant reservoir of the Motor Bus at the time of my inspection. The engine coolant was observed to be of sufficient level (arrowed) and without any visible contamination.



**Photo 14** shows the power steering reservoir of the Motor Bus at the time of my inspection. The power steering was observed to be of sufficient level (arrowed) and without any visible contamination.



**Photo 15** shows the engine oil dip stick of the Motor Bus at the time of my inspection. The engine oil was observed to be sufficient for operation and without any visible contamination.

## Braking System & Steering System

11. Static brake tests conducted on the Motor Bus revealed no abnormality. The air brake booster had responded well to the various test 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 Bus. The braking system of the Motor Bus was likely to be in serviceable condition at the material time. This was also taking into consideration that the brake fluid and air brake was of sufficient level and also that there was no sign(s) of air leakage and fluid along the brake hoses, brake pipes and air cylinders.
12. Static test on the steering system of the Motor Bus also revealed no abnormality to the steering system. I did not experience any abnormal free play and/or other resistance when turning the steering wheel left and right to full lock positions. My visual examinations of the various steering components which had included the rack and pinion, tie rods, tie rod ends and ball joints had also revealed that these components were all generally in good condition. See photo 16 - 24 below.



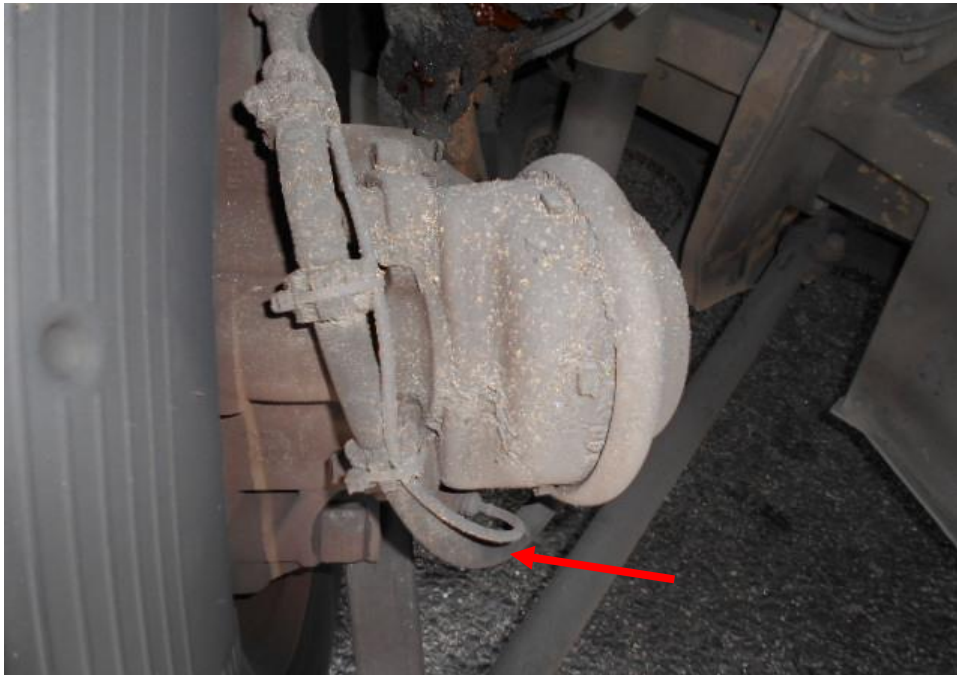
**Photo 16** shows the brake pipe (arrowed) at the rear right wheel of the Motor Bus. I did not observe any leakage of brake fluid at the time of my inspection of the Motor Bus. My visual examination of the various mechanical components of the braking system were generally intact and unaffected by the accident.



**Photo 17** shows the brake pipe (arrowed) at the rear left wheel of the Motor Bus. I did not observe any leakage of brake fluid at the time of my inspection of the Motor Bus. My visual examination of the various mechanical components of the braking system were generally intact and unaffected by the accident.



**Photo 18** shows the brake pipe (arrowed) at the front left wheel of the Motor Bus. I did not observe any leakage of brake fluid at the time of my inspection of the Motor Bus. My visual examination of the various mechanical components of the braking system were generally intact and unaffected by the accident.



**Photo 19** shows the brake hose/pipe (arrowed) at the front right wheel of the Motor Bus. I did not observe any leakage of brake fluid at the time of my inspection of the Motor Bus. My visual examination of the various mechanical components of the braking system were generally intact and unaffected by the accident.



**Photo 20** shows the various undercarriage components at the front right wheel of the Motor Car, in particular the steering tie rod end (arrowed). The various steering components were all found to be intact. There was also no sign of fluid stain(s) observed on the various undercarriage components.



**Photo 21** shows the various undercarriage components at the front left wheel of the Motor Car, in particular the steering tie rod end (arrowed). The various steering components were all found to be intact. There was also no sign of fluid stain(s) observed on the various undercarriage components.



**Photo 22** shows the steering box component (arrowed) at the undercarriage of the Motor Bus was found to be intact and without any visible damage. There was also no signs of fluid stain(s) observed on the various undercarriage components.



**Photo 23** shows the undercarriage of the Motor Bus, 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 Bus.



**Photo 24** shows the front right wheel of the Motor Bus turned to its full left. During my steering system test, I did not experience any abnormal free play and/or resistance when I had turned the steering wheel towards full left and full right. This would suggest that the steering system of the Motor Bus was likely to be in serviceable condition at the material time of accident.

**Electronic Safety / Warning Indicators**

13. The Motor Bus automatic self-test of the functionality of its electronic operating systems was not conducted as the Motor Bus was not fitted with it.

**Operational Behaviour of the Motor Bus**

14. A short operational test of the Motor Bus, 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 Bus forward, stopping, before reversing and coming to a stop again.
15. During the operational test, the various transmission gears of the Motor Bus were able to be engaged without any difficulty by stepping on the brake pedal and manually shifting the gear lever. There were no abnormal sounds heard and/or abnormal behaviour of the Motor Bus'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 Bus was able to slow down and come to a complete stop upon depressing of the brake pedal. Refer to photo 2 and 24.

**Conclusion**

16. From my physical inspection of the Motor Bus, it appears that its engine system, transmission system, steering system and braking system were all in serviceable condition. I did not find any evidence(s) to suggest that there was possible mechanical failure and/or abnormal behaviour to the Motor Bus that may have caused and/or contributed to the accident.

17. A short operational test of the Motor Bus, which I had conducted, did not produce any sign(s) or symptom(s) to suggest that there was any abnormality to its engine system, its transmission system and braking system
18. The 2 front tyres and 4 rear tyres fitted on the Motor Bus 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 6 tyres. The 6 tyres were also observed to be sufficiently inflated for vehicular operation with remaining tread depth of approximately 3.6mm – 16.4mm.

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