

Your Ref: TP/IP/27360/2022  
Our Ref : CI/TPD22010898/P

28<sup>th</sup> December 2022

**Fatal Accident Investigation Team**

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

**MECHANICAL INSPECTION REPORT OF MOTOR BUS SG 1226Y**

1. I refer to your request on 31<sup>st</sup> October 2022 to conduct a physical inspection of a Motor Bus bearing registration number SG 1226Y (herein referred to as "**Motor Bus**"), which was involved in a road traffic accident on 9<sup>th</sup> October 2022.
2. The objective of this 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 19<sup>th</sup> October 2022 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 our inspection was not able to be recorded as the whole dashboard including the odometer has been damaged by the accident.
5. The Motor Bus was observed to sustained damage at its front portion. Its front cabin structure, front windscreen, front bumper, front body panel and front door was damaged as a result of the accident.

## 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, cut or burst mark(s) on the outer and the 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:-

Bridgestone 275/70R/R22.5 (6.1mm)

Bridgestone 275/70R/R22.5 (7.5mm)

<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <input type="text"/>  <input type="text"/> </div> <div style="text-align: center;"> <input type="text"/>  <input type="text"/> </div> </div> <p style="text-align: center;">REAR</p>	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <input type="text"/>  <input type="text"/> </div> <div style="text-align: center;"> <input type="text"/>  <input type="text"/> </div> </div> <p style="text-align: center;">FRONT</p>
--	---

Bridgestone 275/70R/R22.5 (5.7mm)

Bridgestone 275/70R/R22.5 (11.5mm)

7. The 6 tyres were observed to be wrapped around standard steel wheel rims that were found to be without any damage. See photo 1 – 13 below.



**Photo 1** shows the damaged instrument cluster (arrowed). Therefore no mileage is recorded at the time of our inspection.



**Photo 2** shows a close up view of the rear portion of the Motor Bus at the time of our inspection. The rear portion of the Motor Bus was observed to have been unaffected by the accident



**Photo 3** shows a general view of the front body of the Motor Bus at the time of my inspection. The Motor Bus was observed to sustained damage at its front portion. Its front cabin structure, front windscreen, front bumper, front body panel, front door was damaged as a result of the accident.





**Photo 4** 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 sustained damage at its front portion. Its front cabin structure (circled) were damage at the time of my inspection as a result of the accident.



**Photo 5** 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 sustained damage at its front portion. Its front windscreen (circled) were damage at the time of my inspection as a result of the accident.



**Photo 6** 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 sustained damage at its front portion. Its front bumper and front body panel (circled) were damage at the time of my inspection as a result of the accident.



**Photo 7** shows a close up of the left body of the Motor Bus at the time of my inspection. The Motor Bus was observed to sustained damage at its front portion. Its front door (circled) were damage at the time of my inspection as a result of the accident.





**Photo 8** shows a close up view of the right portion of the Motor Bus at the time of our inspection. The right portion of the Motor Bus was observed to have been unaffected by the accident. However, the windscreen was removed by the SCDF officers for rescue procedures.



**Photo 9** shows a close up view of the left portion of the Motor Bus at the time of our inspection. The left portion of the Motor Bus was observed to have been unaffected by the accident



**Photo 10** 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 11.5mm. 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 11** 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 5.7mm. The tyre, which was wrapped around standard steel wheel rim, was also observed to be sufficiently inflated for vehicular operation.





**Photo 12** shows the condition of the rear left tyres of the Motor Bus, which was observed to be in serviceable condition with remaining tread depth of approximately 6.1mm. The tyres, which were wrapped around standard steel wheel rim, were also observed to be sufficiently inflated for vehicular operation. There was also no damage found on all 6 steel wheel rims of the Motor Bus.



**Photo 13** shows the condition of the front left tyres of the Motor Bus, which were observed to be in serviceable condition with remaining tread depth of approximately 7.5mm. 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 6 tyres that were fitted on the Motor Bus.



### 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 engine oil and engine coolant were found to be of sufficient level for operating purposes and visually, there was also no contamination found to these fluids. However, the power steering fluid was observed to be insufficient level as there was leakage of fresh fluid at the power steering box as a result of the accident.
9. Further examination 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 only power steering fluid stain from the power steering box. Visually, all the other various undercarriage components of the Motor Bus were all observed to be intact and without any visible damage. See photo 14 – 19 below.



**Photo 14** 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

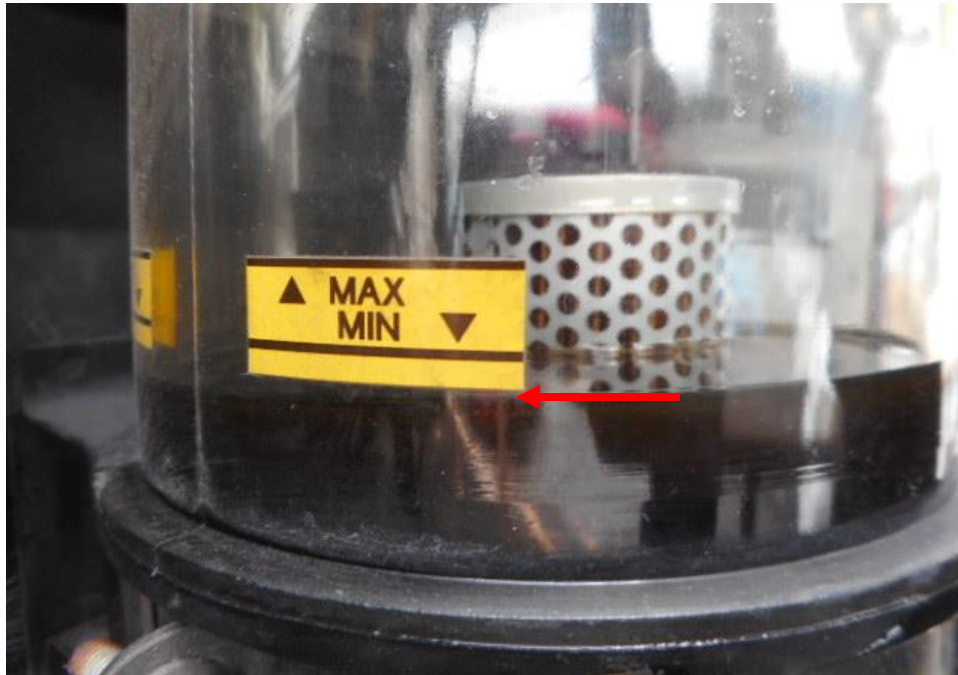


**Photo 15** shows the engine coolant reservoir of the Motor Bus at the time of my inspection. The engine coolant was observed to be sufficient for operation and without any visible contamination.

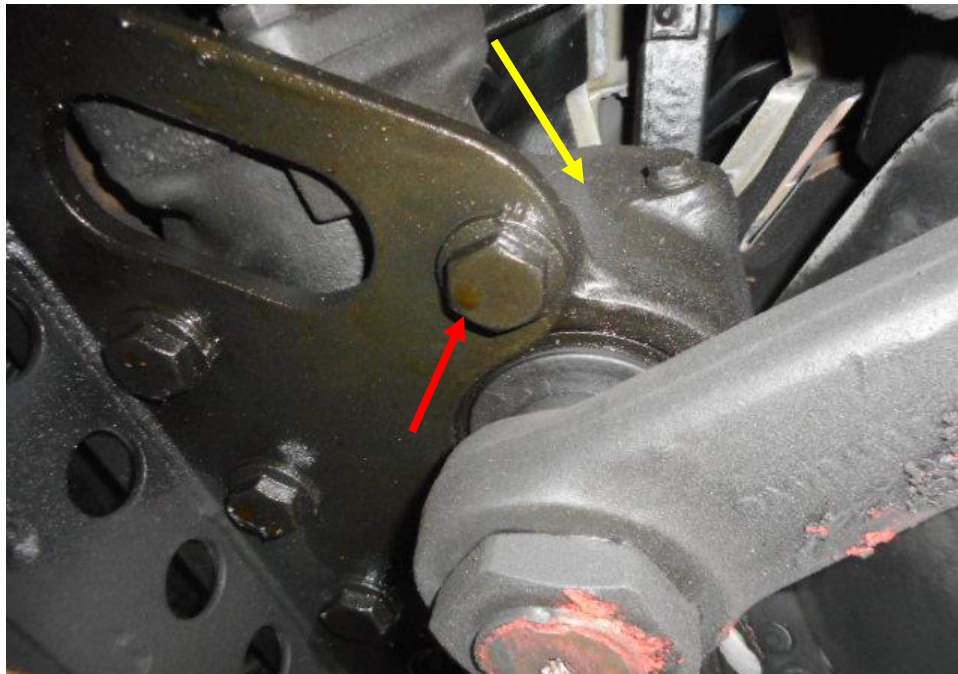


**Photo 16** shows the engine oil dip stick system of the Motor Bus at the time of my inspection. The engine oil was observed to be sufficient for operation and without any visible contamination.





**Photo 17** shows the power steering fluid of the Motor Bus at the time of my inspection. The power steering fluid (arrowed) was observed to be of insufficient level due to a leakage at the power steering box as a result of the accident.



**Photo 18** shows the power steering fluid of the Motor Bus at the time of my inspection. The power steering fluid (red arrow) was observed to be of insufficient level due to a leakage at the power steering box (yellow arrow) as a result of the accident.



**Photo 19** 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.

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

11. Static brake and steering tests was not conducted on the Motor Bus as the engine was unable to be started up. My visual examination of the various braking and steering components, which had included the brake hoses, brake pipes, steering box, tie rods, tie rod ends and ball joints had revealed that these components were all generally in good condition. See photo 20 - 26 below.

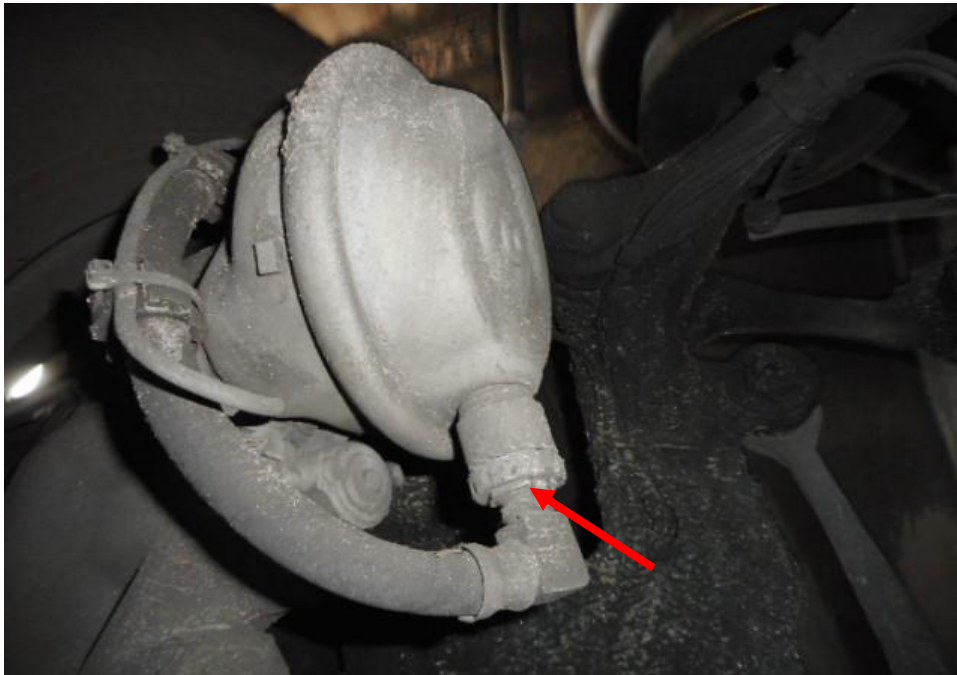




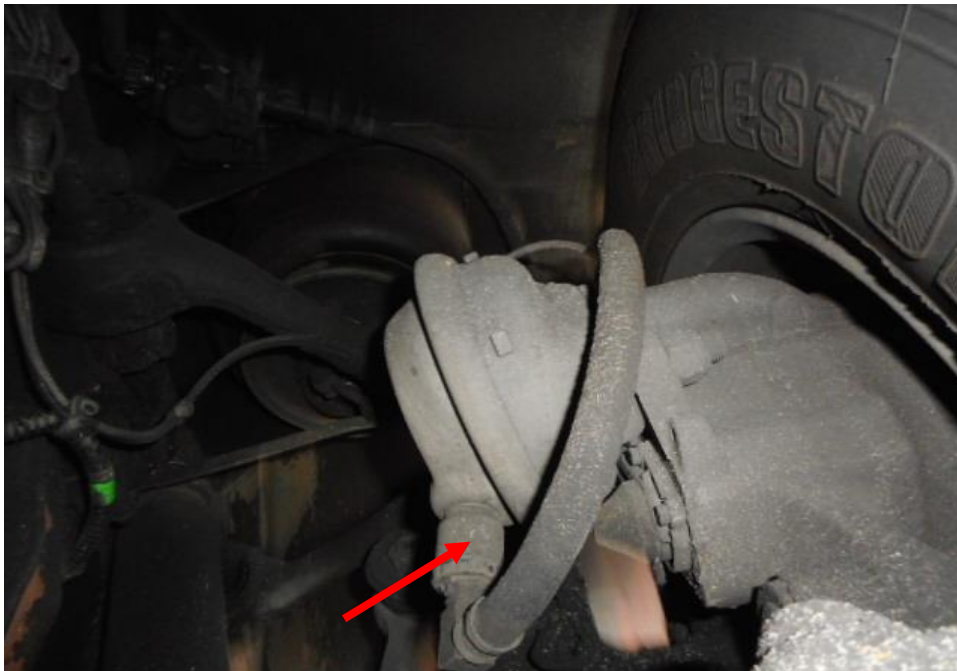
**Photo 20** shows the brake pipe (arrowed) at the rear right wheel of the Motor Bus. I did not observe any leakage of brake fluid at the time of my inspection of the Motor Bus. My visual examination of the various mechanical components of the braking system where generally intact and unaffected by the accident.



**Photo 21** 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 where generally intact and unaffected by the accident.

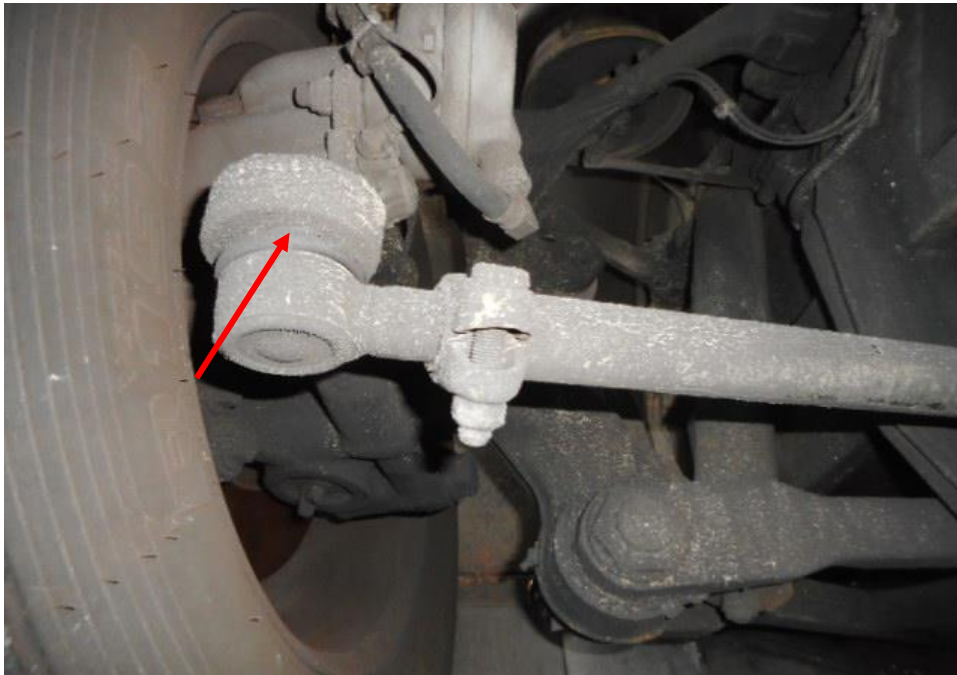


**Photo 22** shows the brake pipe (arrowed) at the front right wheel of the Motor Bus. I did not observe any leakage of brake fluid at the time of my inspection of the Motor Bus. My visual examination of the various mechanical components of the braking system where generally intact and unaffected by the accident.

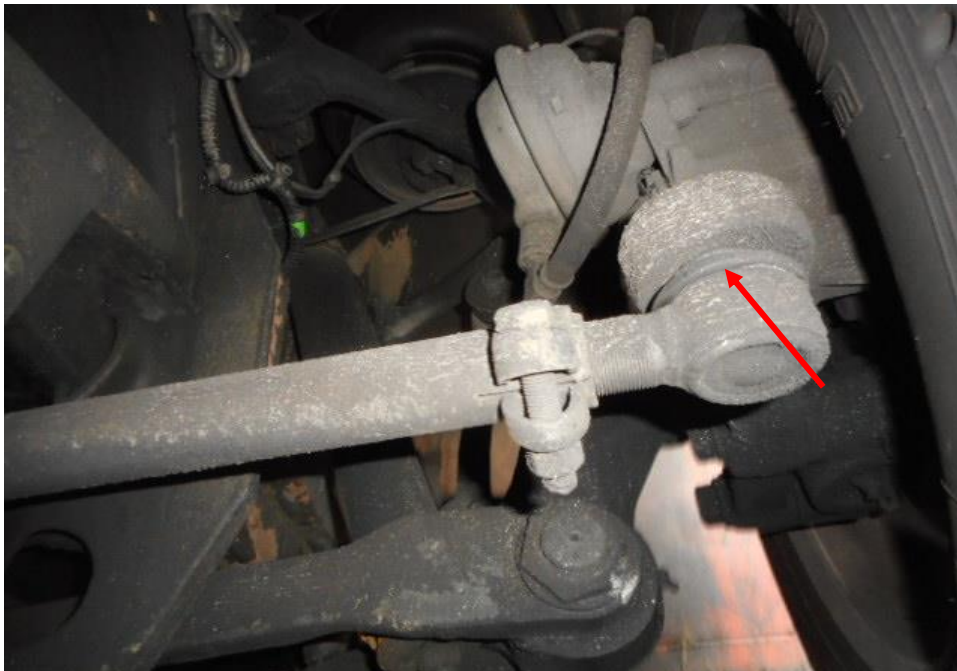


**Photo 23** shows the brake pipe (arrowed) at the front left wheel of the Motor Bus. I did not observe any leakage of brake fluid at the time of my inspection of the Motor Bus. My visual examination of the various mechanical components of the braking system where generally intact and unaffected by the accident.

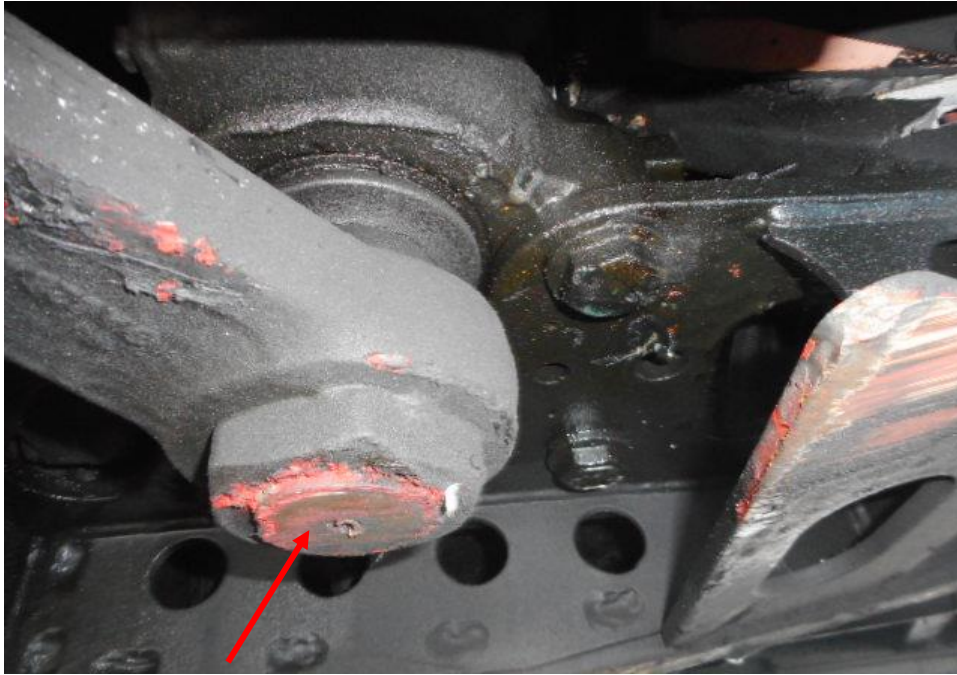




**Photo 24** shows the various undercarriage components at the front right wheel of the Motor Bus, in particular the steering tie rod end (arrowed). The various steering components were all found to be intact. There was also no sign of fluid stain(s) observed on the various undercarriage components.



**Photo 25** shows the various undercarriage components at the front left wheel of the Motor Bus, 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 26** shows the steering box component (arrowed) at the undercarriage of the Motor Bus was found to sustained damages as a result of the accident and there was sign of fresh fluid stain observed on the component.

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

12. The Motor Bus automatic self-test of the functionality of its various electronic operating systems at the time of our inspection was not able to be recorded as the whole dashboard including the odometer has been damaged by the accident

### **Operational Behaviour of the Motor Bus**

13. Operational test to primarily determine whether there was any abnormality to the engine system, transmission system and braking system of the Motor Bus could not be conducted given the damages the Motor Bus had sustained as a result of the accident.

### **Conclusion**

14. For this particular case, I was unable to determine whether there was any possible mechanical failure to the Motor Bus that may have contributed to the accident. As the engine was unable to start up had prevented me from carrying out any operational test(s) and/or static test(s) to its engine system, transmission system, steering system and suspension system.



15. The 6 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 5.7mm – 11.5mm.

**Sherwin Beh***Technical Investigator***Ang Bryan Tani***AMSOE, AMIRTE, AFF SAE, M.MATAI, AFF.Inst.AEA**Senior Technical Investigator**Technical Investigation & Reconstructionist (SAE-A)*

**DISCLAIMER OF LIABILITY TO THIRD PARTIES:** - This Report is made solely for the use and benefit of the Client named on the front page of this Report. No liability or responsibility whatsoever, in contract or tort, is accepted to any third party who may rely on the Report wholly or in part. Any third party acting or relying on this Report, in whole or in part, does so at his or her own risk.