

Your Ref: TP/IP/35397/2020
Our Ref: CI/TPD20009195/P

3rd November 2020

Fatal Accident Investigation Team

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

MECHANICAL INSPECTION REPORT OF MOTOR LORRY GU 5156H

1. We refer to your request on 31st August 2020 to conduct a physical inspection of a motor lorry bearing registration number GU 5156H (herein referred to as "**Motor Lorry**"), which was involved in a road traffic accident on 19th August 2020.
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 Lorry on 3rd November 2020 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

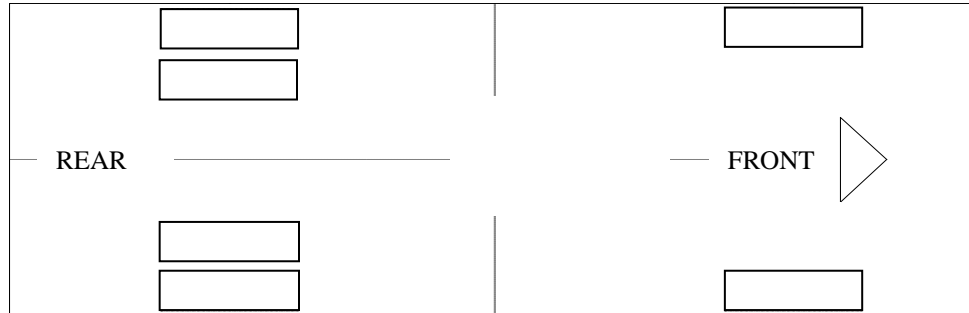
4. The mileage of the Motor Lorry at the time of my inspection was 593,719km.
5. The Motor Lorry was observed to have sustained major damage at its front cabin & windscreen portion as well as its left and right doors as a result of the accident.

Tyres and Wheel Rims

6. The condition of the Motor Lorry's 6 tyres was observed 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. The tyre brand, tyre size and remaining tread depth of the 6 tyres were recorded as follows:-

Westlake 155/ R12 (4.6mm)

Greenmax 185/ R14 (7.6mm)



Westlake 155/ R12 (5.3mm)

Greenmax 185/ R14 (7.9mm)

7. The 6 tyres were observed to be wrapped around standard steel wheel rims were found to be without any damages. See photo 1 - 12 below.



Photo 1 shows no mileage of the Motor Lorry at the time of my inspection. The mileage observed was 593,719km.



Photo 2 shows a general view of the front windscreen and body panel of the Motor Lorry at the time of our inspection. The Motor Lorry was observed sustained major damages to its frontal likely due to the accident's impact.



Photo 3 shows the close up view of the left door of the Motor Lorry at the time of our inspection. The Motor Lorry was observed to have sustained major damages to its doors that was crushed due to the accident's impact.



Photo 4 shows the close up view of the right door of the Motor Lorry at the time of our inspection. The Motor Lorry was observed to have sustained major damages to its doors that was crushed and dislodged due to the accident's impact.



Photo 5 shows a general view of the Motor Lorry's left body at the time of my inspection. The left portion of the Motor Lorry was observed to have been unaffected by the accident.

51 UBI AVE 1, #01-25 PAYA UBI INDUSTRIAL PARK, SINGAPORE 408933 TEL : (065) 62563561 FAX : (065) 67414108



Photo 6 shows a general view of the Motor Lorry's right body at the time of my inspection. The right portion of the Motor Lorry was observed to have been unaffected by the accident.



Photo 7 shows the general view of the Motor Lorry's rear body at the time of my inspection. The Motor Lorry rear was observed to be unaffected by the accident.

51 UBI AVE 1, #01-25 PAYA UBI INDUSTRIAL PARK, SINGAPORE 408933 TEL : (065) 62563561 FAX : (065) 67414108



Photo 8 shows the close up view of the interior cabin of the Motor Lorry. It was observed to have sustained extensive induced damages to the dashboard, foot well as a result of the accident.



Photo 9 shows the condition of the front right tyre of the Motor Lorry, which was observed to be in serviceable condition with remaining tread depth of approximately 7.4mm. The tyre, which was wrapped around standard steel wheel rim, was also observed to be sufficiently inflated for vehicular operation.

51 UBI AVE 1, #01-25 PAYA UBI INDUSTRIAL PARK, SINGAPORE 408933 TEL : (065) 62563561 FAX : (065) 67414108



Photo 10 shows the condition of the rear right tyres of the Motor Lorry, which observed to be in serviceable condition with remaining tread depth of approximately 4.6mm. The tyres, which were wrapped around standard steel wheel rim, were also observed to be sufficiently inflated for vehicular operation.



Photo 11 shows the condition of the rear left tyres of the Motor Lorry, which were observed to be in serviceable condition with remaining, tread depth of approximately 1.7mm. See above.



Photo 12 shows the condition of the front right tyre of the Motor Lorry, which was observed to be in serviceable condition with remaining tread depth of approximately 7.6mm. 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 Lorry's engine compartment, we had observed that all the parts, components and fluids could not be inspection as due to the damage induced has crushed and deformed the cabin of the Motor Lorry which immobilized its opening and viewing, however we are able to observed the brake fluid and engine coolant reservoir of the Motor Lorry and was observed to be sufficient level without any visible contamination.
9. Our subsequent checks on the underside of the Motor Lorry also revealed sign of old fluid stain. Visually, the various undercarriage components of the Motor Lorry were all observed to be intact and without any visible damage. See photo 13 – 16 below.



Photo 13 shows the induced damage to the cabin (arrowed) of the Motor Lorry's which immobilised the opening and viewing of the various parts and components inside the engine compartment, a result of the accident.



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

51 UBI AVE 1, #01-25 PAYA UBI INDUSTRIAL PARK, SINGAPORE 408933 TEL : (065) 62563561 FAX : (065) 67414108



Photo 15 shows the engine coolant reservoir of the Motor Lorry at the time of our inspection. The coolant fluid was observed to be of sufficient level and without any visible contamination (arrowed).



Photo 16 shows the undercarriage of the engine of the Motor Lorry at the time of our inspection. There was also sign(s) and indication(s) of old fluid stain within the engine undercarriage area.

Steering System & Braking System

10. Static brake and Static steering tests was not conducted on the Motor Lorry as the steering and braking controls in the cabin had sustain major damage as the result of the accident. Our visual inspection of the mechanical components of the Motor Lorry's observed that its undercarriage steering and braking system components was intact. See photo 17 - 23 below.



Photo 17 shows the various undercarriage components at the front right wheel of the Motor Lorry, in particular the steering tie rod end and ball joints (arrowed). The various undercarriage components of the Motor Lorry 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.



Photo 18 shows the various undercarriage components at the front left wheel of the Motor Lorry, in particular the steering tie rod end and ball joints (arrowed) were observed to be damaged.

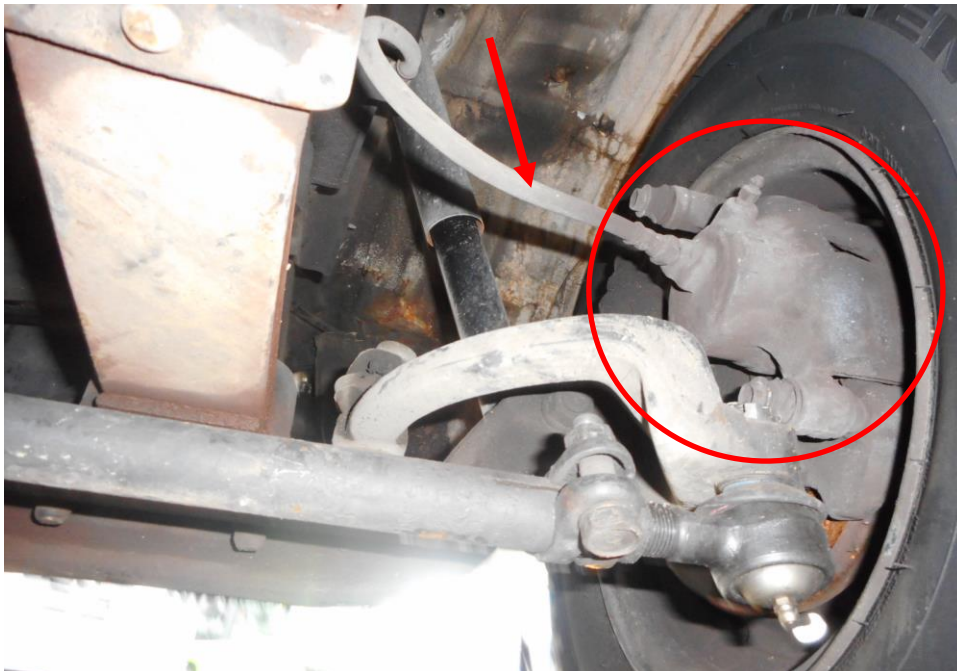


Photo 19 shows the various undercarriage components at the front right wheel of the Motor Lorry, in particular the brake hose (arrowed) and callipers (circled). The various undercarriage components of the Motor Lorry were all found to be intact without any visible damage. There was also no sign of fluid stain(s) observed on the various undercarriage components.



Photo 20 shows the various undercarriage components at the front left wheel of the Motor Lorry, in particular the brake hose (arrowed) and callipers (circled). The various undercarriage components of the Motor Lorry 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.



Photo 21 shows the various undercarriage components at the rear left wheel of the Motor Lorry, in particular the brake hose and drum brake (arrowed). The various undercarriage components of the Motor Lorry 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.



Photo 22 shows the various undercarriage components at the rear right wheel of the Motor Lorry, in particular the brake hose and drum brake (arrowed). The various undercarriage components of the Motor Lorry 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 static test of the Motor Lorry electronic safety system could not be inspected as the instrument cluster was damaged due to the induce impact from the accident.

Seat Belts

15. The front right seat belts of the "Motor lorry" were worn at the material time of accident as the respective pre-tensioners that were fitted at the sides of each seat was activated upon the material time and there was signs of an extrication conducted. See photo 23 below.



Photo 23 shows that the seat belt on the right seat was worn at the material time of accident as the safety pre-tensioners was activated at the moment of impact and caused the seat belts to be locked into the last position of the user and there was signs an extrication conducted (arrowed)

Operational Behaviour of the Motor Lorry

16. An operational test of the Motor Lorry was not conducted due to the damages induced by the accident rendering all the major components of the Motor lorry unserviceable.

Conclusion

17. For this particular case, I was unable to determine whether there was any possible mechanical failure to the Motor Lorry that may have contributed to the accident. The extent of damage that it had sustained 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.

18. The 6 tyres of the Motor Lorry 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. All 6 tyres were observed to be sufficiently inflated for vehicular operation with remaining tread depth of approximately 4.6mm to 7.9mm.



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.