

Your Ref: TP/IP/63425/2018
Our Ref : CI/TPD18022206/Z

29th March 2019

General Investigation Team 'D'

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

MECHANICAL INSPECTION REPORT OF MOTOR CAR SBJ 7833R

1. We refer to your request on 28th November 2018 to conduct a physical inspection of a motor car bearing registration number SBJ 7833R (herein referred to as "**Motor Car**"), which was involved in a road traffic accident on 15th November 2018.
2. The objective of the inspection is to determine if there was any possible mechanical failure to the Motor Car that may have contributed to the accident.
3. Following the request, we had carried out a physical inspection of the Motor Car on 21st December 2018 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 Car recorded at the time of our inspection was 4408707 km.
5. The Motor Car did not sustain any damage which associates it to the accident. It was likely due to the Motor car had collided onto the pedestrian body parts.
6. This was likely due to the consistency of the accidents case facts that on 15th November 2018 at about 2146hrs, the driver of the Motor Car (SBJ 7833R) claimed that her brake did not respond when she stepped on the brake pedal. Thus, she could not brake in time and collided onto a pedestrian at a designated signalised pedestrian crossing; along Pasir Panjang Road. See photo 1 to 7 below.

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Photo 1 shows the mileage of the Motor Car was 4408707 km.



Photo 2 shows a general view of the front body of the Motor Car at the time of our inspection. The Motor Car was observed to be in good general condition unaffected by the accident.



Photo 3 shows a general view of the front right body of the Motor Car at the time of our inspection. The Motor Car was observed to be in good general condition unaffected by the accident.



Photo 4 shows a general view of the front left body of the Motor Car at the time of our inspection. The Motor Car was observed to be in good general condition unaffected by the accident.

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Photo 5 shows a general view of the rear body of the Motor Car at the time of our inspection. The Motor Car was observed to be in good general condition.



Photo 6 shows a general view of the front right body of the Motor Car at the time of our inspection. The Motor Car was observed to be in good general condition.



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

Tyres and Wheel Rims

7. The condition of the Motor Car's 4 tyres was observed 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. The tyre brand, tyre size and remaining tread depth of the 4 tyres were recorded as follows:-

Yokohama A-Drive 195/55R15 (5mm)

Maxxis MA-P3 195/55R15 (4mm)

<div style="border: 1px solid black; width: 50px; height: 20px; margin: 0 auto;"></div> <p>REAR</p> <div style="border: 1px solid black; width: 50px; height: 20px; margin: 0 auto;"></div>	<div style="border: 1px solid black; width: 50px; height: 20px; margin: 0 auto;"></div> <p>FRONT</p> <div style="border: 1px solid black; width: 50px; height: 20px; margin: 0 auto;"></div>
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Yokohama A-Drive 195/55R15 (5mm)

Maxxis MA-P3 195/55R15 (5mm)

8. The 4 tyres were observed to be wrapped around alloy wheel rims that were found to be without any significant damage except for some marks of grazing nature on the outer spokes of the wheel rims, which are commonly associated to grazing against a road kerb. See photo 8 – 11 below.



Photo 8 shows the condition of the front left tyre of the Motor Car, which was observed to be in serviceable condition with remaining tread depth of approximately 4mm. The tyre, which was wrapped around alloy 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 4 tyres.



Photo 9 shows the condition of the front right tyre of the Motor Car, which was observed to be in serviceable condition with remaining tread depth of approximately 5mm. The tyre, which was wrapped around alloy 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 Car, which was observed to be in serviceable condition with remaining tread depth of approximately 5mm. The tyre, which was wrapped around alloy wheel rim, was also observed to be sufficiently inflated for vehicular operation.



Photo 11 shows the condition of the rear right tyre of the Motor Car, which was observed to be in serviceable condition with remaining tread depth of approximately 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 4 tyres.

Engine Compartment & Operating Fluids

9. Upon examination of the engine compartment of the Motor Car, we had observed all the parts and components inside the engine compartment to be intact and unaffected by the accident. Operating fluids such as engine fluid, and engine coolant were found to be of sufficient level for operating purposes. Visually, there was also no contamination found to these fluids.
10. However, further examination on other operating fluids such as brake fluids and power steering fluids reveals that it was not sufficient for operational purposes. Power steering fluids was found to fall below the minimum marks in its reservoir tank. As for brake fluids, its reservoir tank was found to be empty. With these findings, there's evidence that these two operational components was not in its operational ready condition.
11. 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 Car.
12. Our subsequent checks on the underside of the Motor Car also revealed no fluid stain. Visually, the various undercarriage components of the Motor Car 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 Car'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 Car at the time of our inspection. The brake fluid was observed to be empty at time of our inspection.

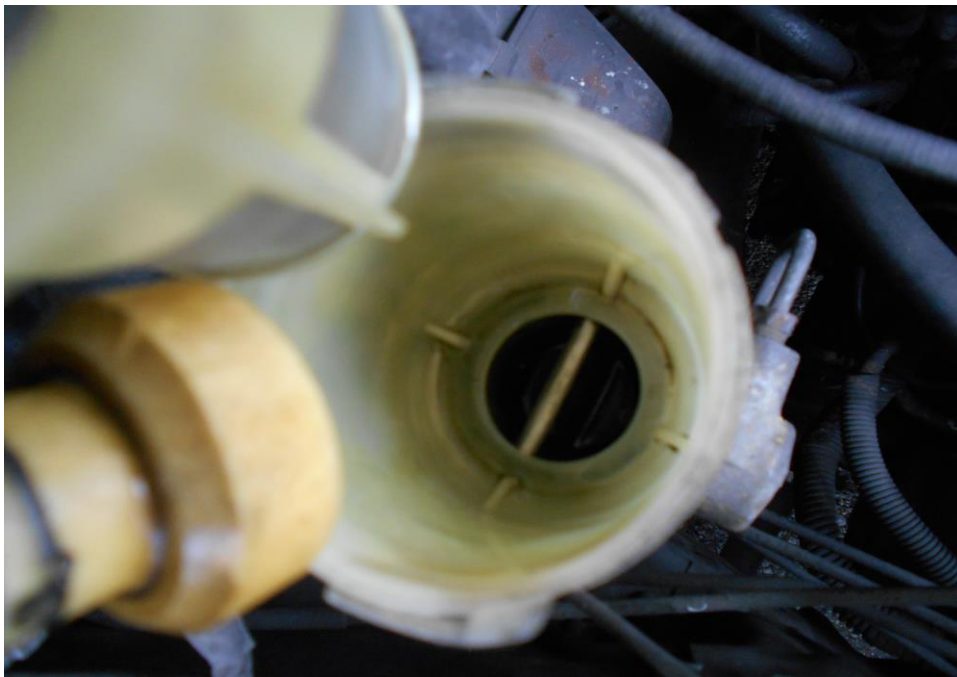


Photo 14 shows the brake fluid reservoir (internal view) of the Motor Car at the time of our inspection. The brake fluid was observed to be empty at time of our inspection.



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

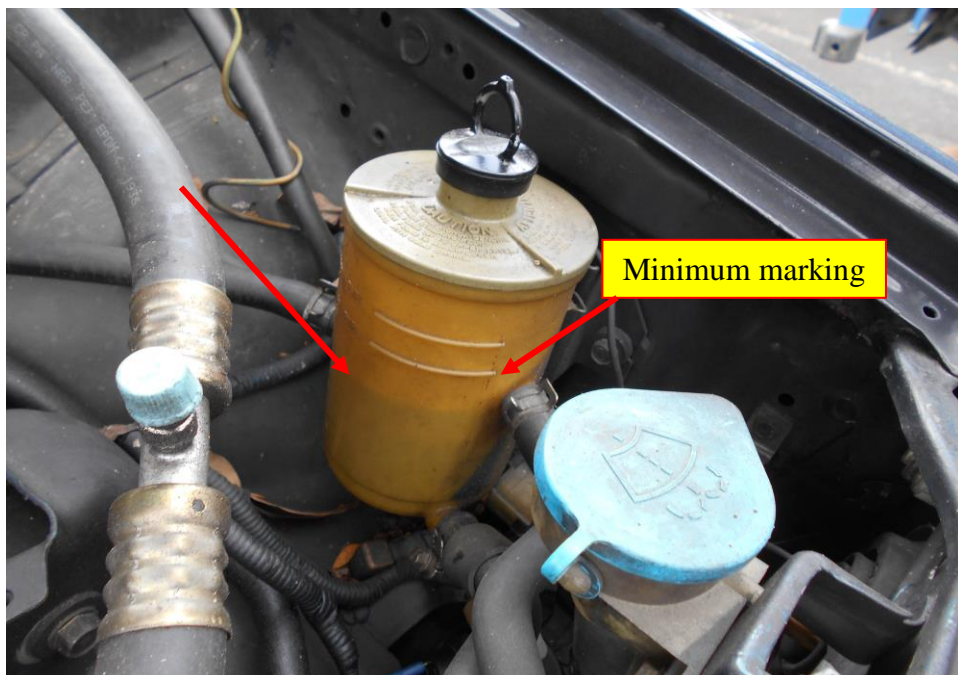


Photo 16 shows the power steering fluid reservoir of the Motor Car at the time of our inspection. The power steering fluid was observed to be insufficient level and falls below the minimum mark at time of our inspection.

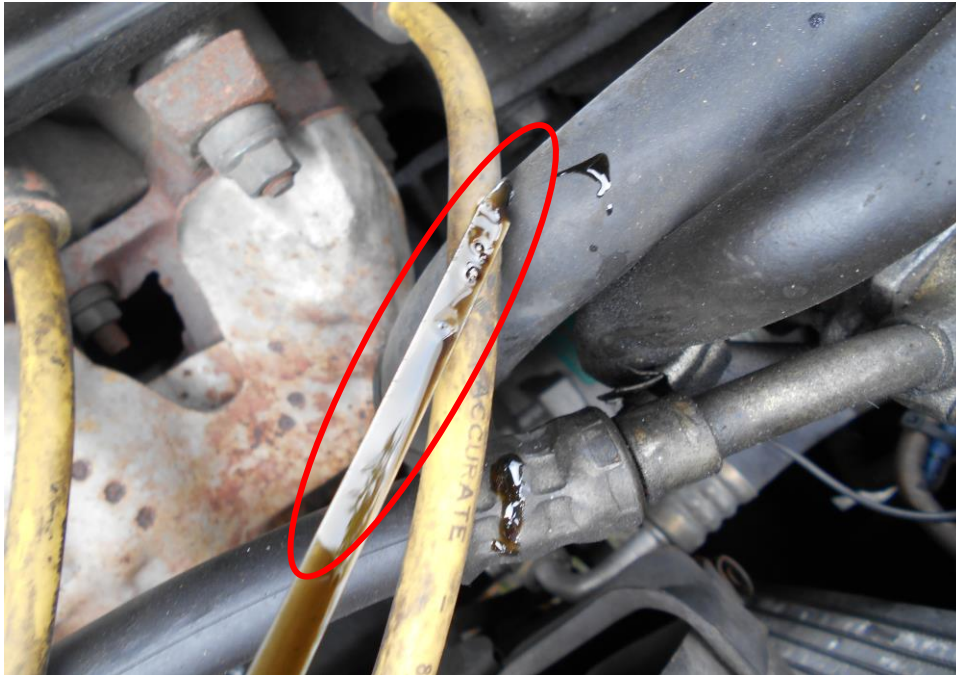


Photo 17 shows the engine oil dip stick of the Motor Car at the time of our inspection. The engine oil was observed to be of sufficient level and without any visible contamination.

Steering System & Braking System

13. The mechanical components of the Motor Car's steering system and braking system were all found to be visually intact and undamaged. Our visual examination of the various steering components, which had included the rack and pinion, tie rods, tie rod ends and ball joints, revealed that these components were all generally in good condition. Components of the braking system like the brake master pump, brake booster, brake callipers and brake hoses amongst others were also found to be without any damage upon our visual inspection.
14. Static test on the steering system of the Motor Car revealed that we had experience an abnormal free play and resistance when turning the steering wheel left and right to full lock positions. This was likely caused by the insufficient power steering fluid as mentioned in paragraph 10 earlier.
15. Static test on the braking system of the Motor Car revealed that we had experience an abnormal braking re-action when depressing the brake pedal. The foot brake pedal was found to be able to be depressed until it reaches the Motor Car floor board easily. However, a slight spongy feeling/ resistance were presence at time of our static test. See photo 18 - 21 below.



Photo 18 shows the brake hose (arrowed) at the rear left wheel of the Motor Car. We did not observe any leakage of brake fluid at the time of our inspection of the Motor Car. Our visual inspection of the various mechanical components of the Motor Car's braking system revealed all to be intact and without visible damage.

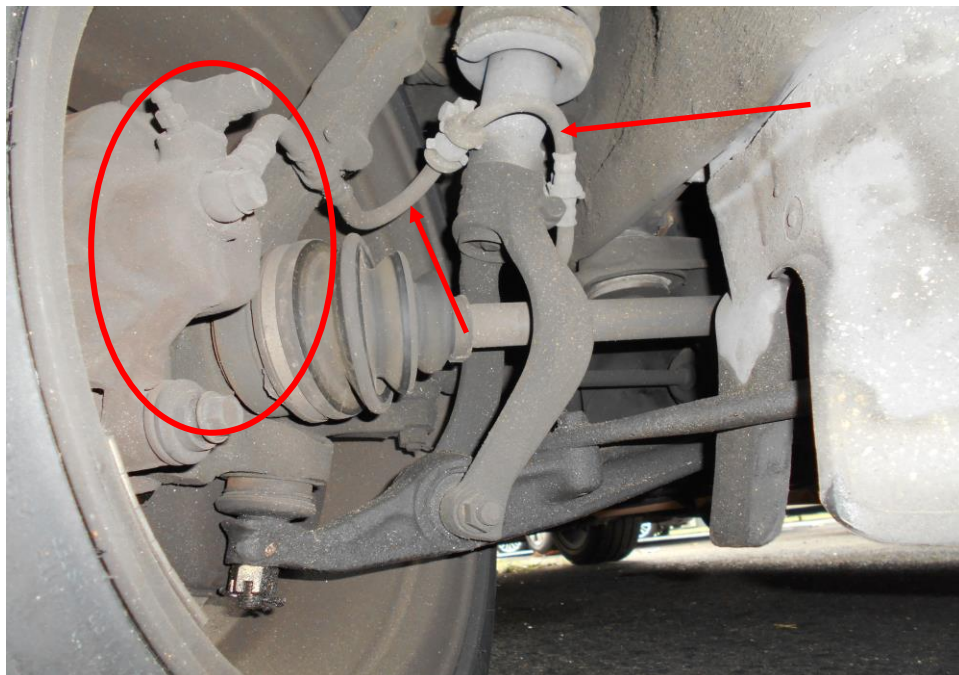


Photo 19 shows the brake hose (arrowed) at the front right wheel of the Motor Car. We did not observe any leakage of brake fluid at the time of our inspection of the Motor Car. Our visual inspection of the various mechanical components of the Motor Car's braking system, including its brake calliper (circled), 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.

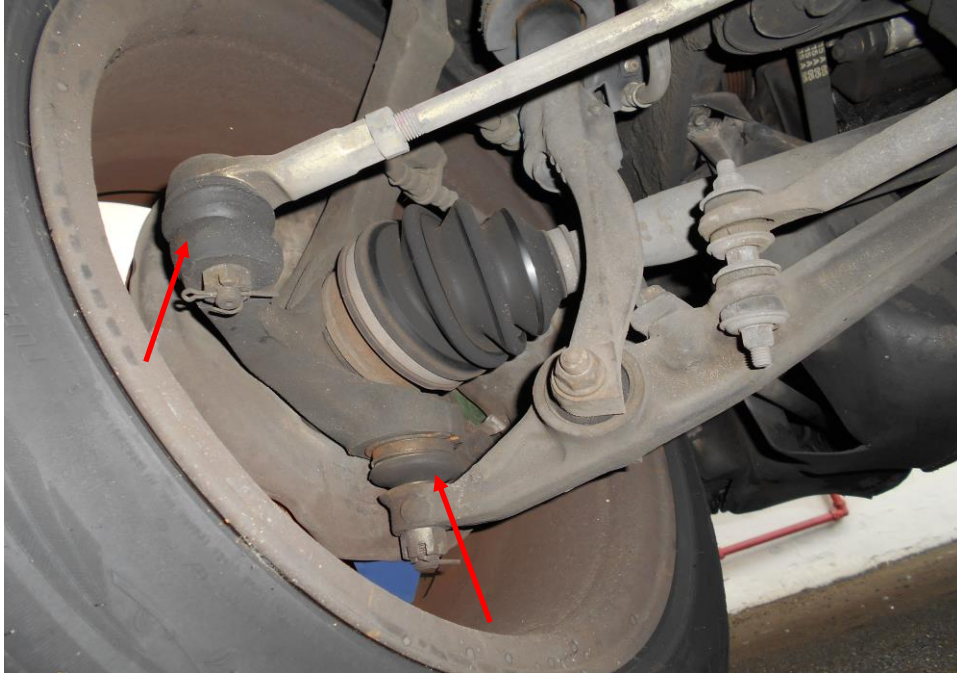


Photo 20 shows the various undercarriage components at the front left wheel of the Motor Car, in particular the steering tie rod (arrowed). The various steering components were all found to be intact, suggesting that the steering system of the Motor Car was likely to be in serviceable condition.

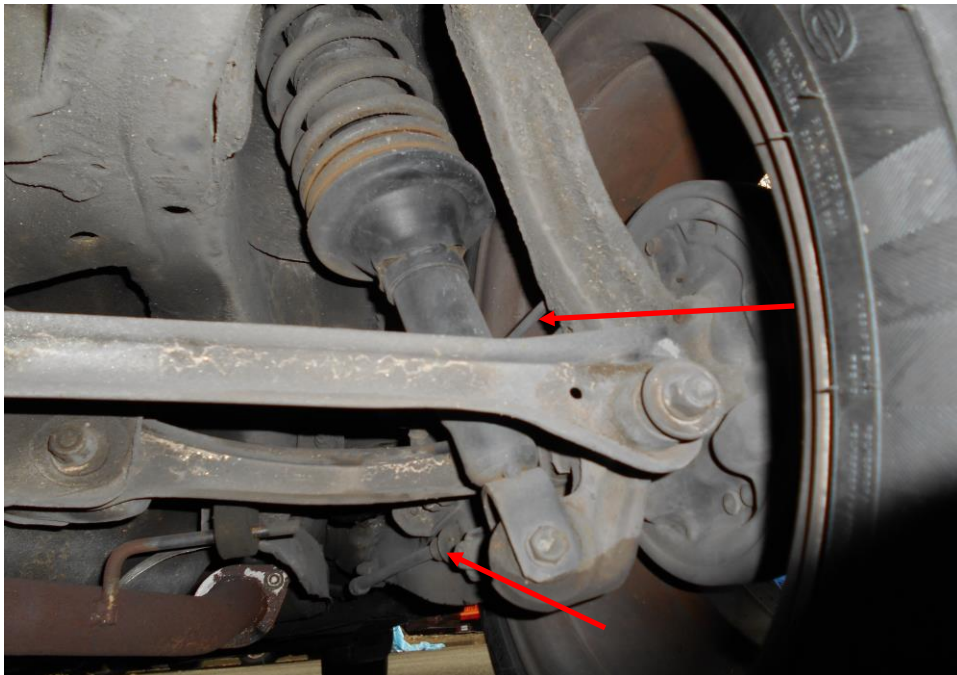


Photo 21 shows the various undercarriage components at the rear right wheel of the Motor Car. We did not observe any leakage of brake fluid at the time of our inspection of the Motor Car. Our visual inspection of the various mechanical components of the Motor Car's braking system revealed all to be intact without visible damage.

Electronic Safety / Warning Indicators

16. The Motor Car's automatic self-test of the functionality of its various electronic operating systems like the battery check light, engine fluid check light, fuel light and parking light 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 22 below.



Photo 22 shows no warning lights illuminated on the instrument panel of the Motor Car 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 Car

17. A short operational test of the Motor Car, to primarily determine whether there was any abnormality to its engine system, its transmission system and braking system was subsequently carried out.
18. During the operational test, the transmission system of the Motor Car was able to be shifted to drive mode and reverse mode without any difficulty. There were no abnormal sounds heard and/or abnormal behaviour of the Motor Car's transmission system.

19. As for the steering system, the Motor Car was able to move forward and backward normally. However, it was observed not to be in smooth steering manoeuvring to the left & right. Its steering wheel was found to be jerky and heavy at times while conducting the operational test. This was likely caused by the insufficient power steering fluid which might affect the operational sequence.

20. Notwithstanding that the braking system was found to be in working condition as the Motor Car was able to slow down and come to a complete stop upon depressing of the brake pedal, our operational test on the braking system does took a longer period of time to achieve the intention. We had to fully depress the brake pedal until it reaches the floor board to come to a complete stop. This was likely caused by the insufficient brake fluid which contributes to the ineffectiveness of the braking process. Hence, concluded that the braking system was not in serviceable condition prior to the accident. See photo 23 below.



Photo 23 shows an operational test on the Motor Car. The steering wheel was able to be steered to the left & right. However, there were some abnormalities such as jerky and heavy on the steering wheel handling while conducting the operational test.

Conclusion

21. From our physical inspection of the Motor Car, it appears that its engine system and transmission system were in serviceable condition.
22. As for the steering system and braking system, we had found that the operating fluids were insufficient at time of our examination. The operational test which we had conducted on both systems reveals that it was not in serviceable condition prior to the accident as explained on paragraph 10, 14, 15, 19 and 20 above.
23. A short operational test of the Motor Car, which we had conducted, did reveal that there was mechanical deficiency to the Motor Car. Hence, we conclusively with the opinion that the mechanical deficiency mentioned above may have caused and/or contributed to the accident.
24. The 4 tyres of the Motor Car 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 4mm to 5mm each.

Rohaizal A. Rahim

Technical Investigator

Ang Bryan Tani

AMSOE, AMIRTE, AFF SAE, M.MATAI, AFF.Inst.AEA

Senior Technical Investigator

Technical Investigation & Reconstructionist (SAE-A)

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