

Your Ref: TP/IP/ 00087/2021  
Our Ref : CI/TPD21001204/P

4<sup>th</sup> March 2021

**Fatal Accident Investigation Team**

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

**MECHANICAL INSPECTION REPORT OF MOTOR CAR SJP 5485Z**

1. I refer to your request on 22<sup>nd</sup> January 2021 to conduct a physical inspection of a Motor Car bearing registration number SJP 5485Z (herein referred to as "**Motor Car**"), which was involved in a road traffic accident on 2<sup>nd</sup> January 2021.
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, I had carried out a physical inspection of the Motor Car on 2<sup>nd</sup> March 2021 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**

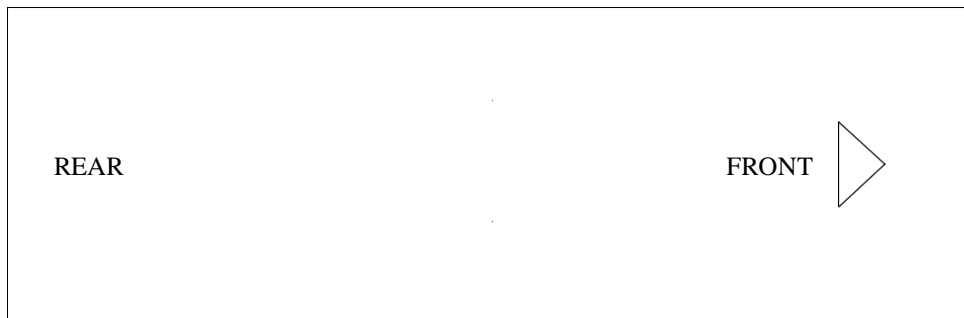
4. The mileage of the Motor Car at the time of my inspection was not recorded as the engine system was damaged as a result of the accident.
5. The Motor Car was observed to have sustained damage all around. Its front and rear windscreen, front and rear bumper, front bonnet, left and right body panels and roof was amongst the body parts and various components in the engine compartments were also damaged as a result of the accident. The Supplemental Restraint System (SRS) was activated as a result of the accident.

## Tyres and Wheel Rims

6. The condition of the Motor Car's 4 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 4 tyres. The front right tyre was observed to slip out of the rim as a result of the accident. However the other 3 tyre were 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:-

Kapsen 195/65R15 (2.4mm)

Atrezzo 195/65R15 (7.2mm)



Michelin 195/65R15 (2.5mm)

Sailun 195/65R15 (7.1mm) (Slip off)

7. The front right tyre was observed to slip out of the rim as a result of the accident. However the other 3 tyre were observed to be wrapped around standard alloy wheel rims that were found to be without any damage. See photo 1 – 15 below.



**Photo 1** shows the general view of the Motor Car's rear portion at the time of my inspection. The Motor Car was observed to sustained damage at its rear portion. Its rear bumper and rear windscreen were amongst the body parts that were damaged as a result of the accident.



**Photo 2** shows the close up view of the Motor Car's rear portion at the time of my inspection. The Motor Car was observed to sustained damage at its rear portion. Its rear windscreen (circled) were amongst the body parts that were damaged as a result of the accident.



**Photo 3** shows the close up view of the Motor Car's rear portion at the time of my inspection. The Motor Car was observed to sustained damage at its rear portion. Its rear bumper (circled) were amongst the body parts that were damaged as a result of the accident.



**Photo 4** shows a general view of the Motor Car's front body and roof at the time of my inspection. The Motor Car was observed to sustained damage at its front and roof portion. Its front windscreen, front bonnet and roof was amongst the body parts and various components in the engine compartments were also damaged as a result of the accident. The Supplemental Restraint System (SRS) was activated as a result of the accident.

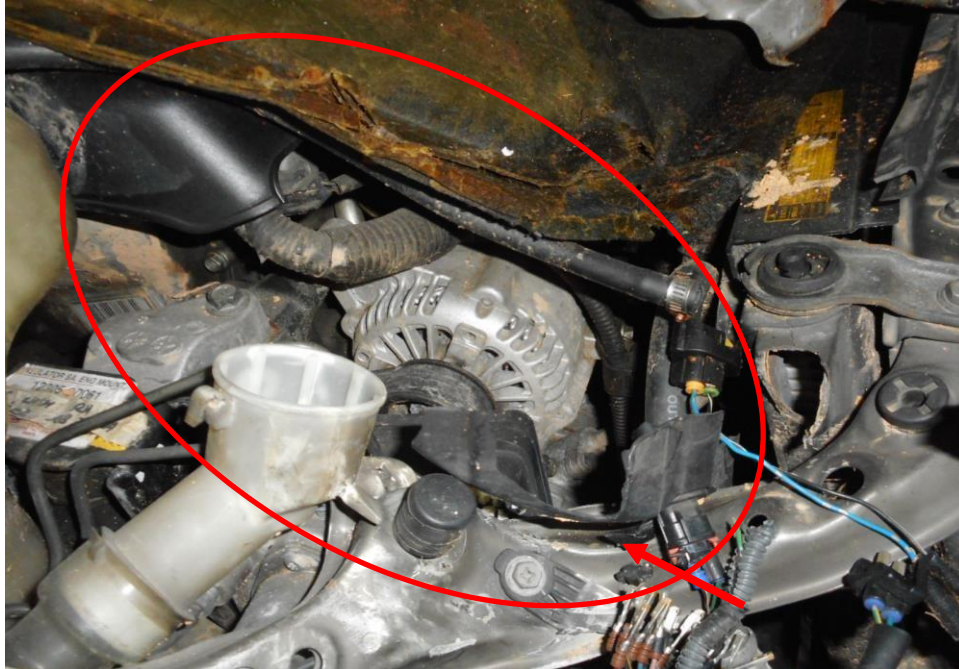




**Photo 5** shows the close up view of the Motor Car's front body at the time of my inspection. The Motor Car was observed to have sustained damage at its front and roof portion. Its front windscreen (yellow circle) and roof (red circle) were amongst the body parts that were damaged as a result of the accident.



**Photo 6** shows the close up view of the Motor Car's front body at the time of my inspection. The Motor Car was observed to have sustained damage at its front portion. Its front bonnet (circled) and front bumper (arrowed) were amongst the body parts that were damaged as a result of the accident.



**Photo 7** shows the close up view of the Motor Car's front engine compartment at the time of my inspection. The Motor Car was observed to have sustained damage at its engine compartment. Its engine system (circled) were amongst the components that were damaged as a result of the accident.



**Photo 8** shows a general view of the Motor Car's right body at the time of my inspection. The Motor Car was observed to sustained damage at its right portion. Its right body panels were amongst the body parts that were damaged as a result of the accident.





**Photo 9** shows a close up view of the Motor Car's right body at the time of my inspection. The Motor Car was observed to sustained damage at its right portion. Its right body panels (circled) were amongst the body parts that were damaged as a result of the accident.



**Photo 10** shows a general view of the Motor Car's left body at the time of my inspection. The Motor Car was observed to sustained damage at its left portion. Its left body panels were amongst the body parts that were damaged as a result of the accident.



**Photo 11** shows the condition of the front right tyre of the Motor Car, which was observed to slip off the rim as a result of the accident. The remaining tread depth of approximately 7.1mm. The tyre was observed to be deflated with no tear, cut or burst mark(s).



**Photo 12** 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 4.6mm. The tyre, which was wrapped around alloy wheel rim, was also observed to be sufficiently inflated for vehicular operation.





**Photo 13** 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 2.4mm. The tyre, which was wrapped around alloy wheel rim, was also observed to be sufficiently inflated for vehicular operation.



**Photo 14** 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 7.2mm. 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 Motor Car's 4 tyres.



**Photo 15** shows the deployment of the Supplemental Restraint System (SRS) airbags (arrowed) in the Motor Car as a result of the accident.

### Engine Compartment & Operating Fluids

8. We were unable to raise the front bonnet of the Motor Car to conduct the examination of the Motor Car's engine compartment because the damage caused by the accident had resulted in the damages to the lock mechanism of the bonnet and the structure of the engine compartment. (unable to open)  
See photo 16 below



**Photo 16** shows a close up view of the damaged front bonnet lock mechanism and the structure of the engine compartment of the Motor Car at the time of my inspection resulting it unable to open a result of the accident (circled) (Unable to open)

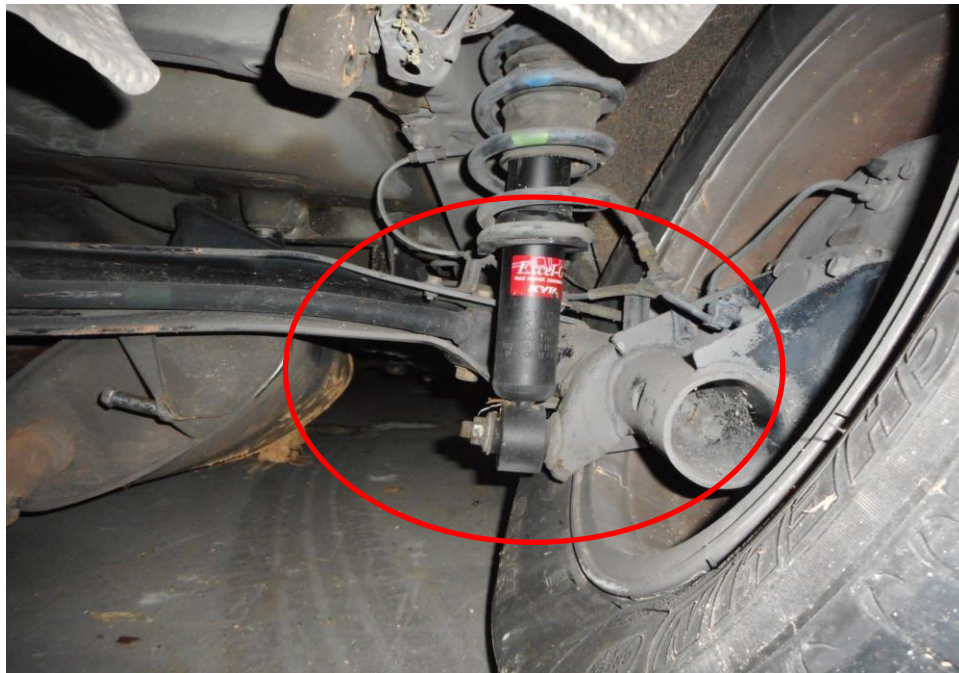
### **Braking System & Steering System**

9. For this inspection, I was not able to conduct any tests on the steering system of the Motor Car due to the Motor Car running on electric power steering (EPS) which requires the Motor Car to be started and engine system was damaged as a result of the accident. (Unable to be started)
10. Static brake tests were not conducted on the Motor Car due to the jammed doors which was cause by the accident has blocked access into the vehicle to conduct the test.
11. My visual examination of the various steering and braking components which had included the rack and pinion, tie rods, tie rod ends and ball joints, brake hoses and brake pipes had revealed that these components were all generally intact. However, the rear axle at the rear right wheel was observed to be damaged as a result of the accident See photo 17 - 23 below.

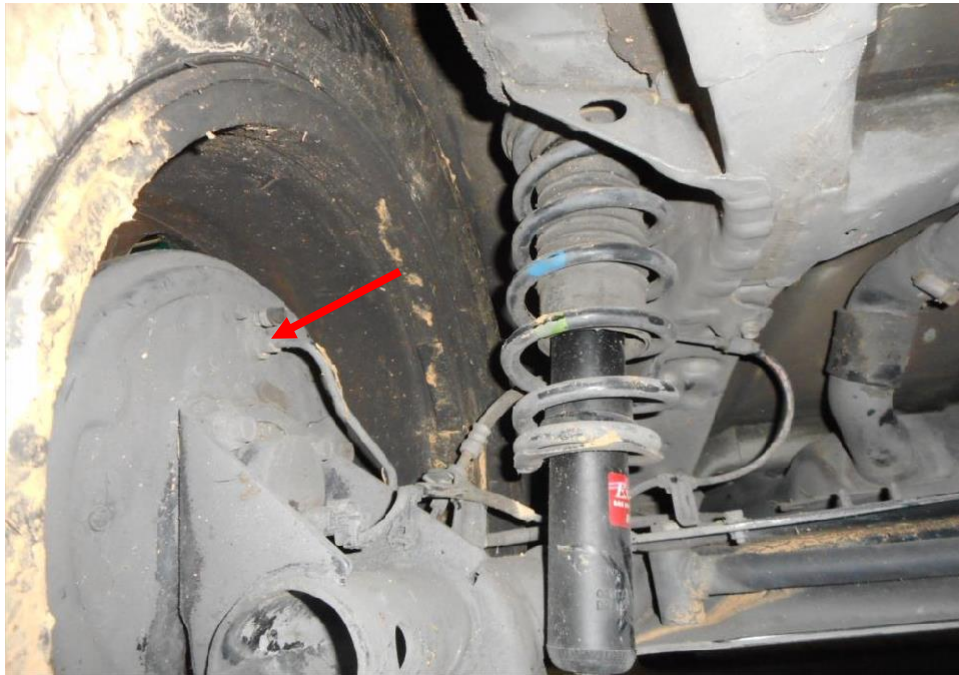




**Photo 17** shows the brake hose/pipe (arrowed) at the rear right wheel of the Motor Car. No leakage of brake fluid was observed. Visual examination of the various components of the braking system like the drum brake and brake hoses had revealed to be intact and without visible damage.



**Photo 18** shows the rear axle at the rear right wheel of the Motor Car. The axle was observed to be bent and damage (circled) as a result of the accident.



**Photo 19** shows the brake hose/pipe (arrowed) at the rear left wheel of the Motor Car. I did not observe any leakage of brake fluid at the time of my inspection of the Motor Car and the undercarriage component of the Motor Car were also all found to be intact



**Photo 20** shows the brake hose/pipe (arrowed) at the front right wheel of the Motor Car. I did not observe any leakage of brake fluid at the time of my inspection of the Motor Car. The undercarriage components of the Motor Car were also all found to be intact and without any visible damage. The undercarriage components were cover in mud as due to the result of the accident.



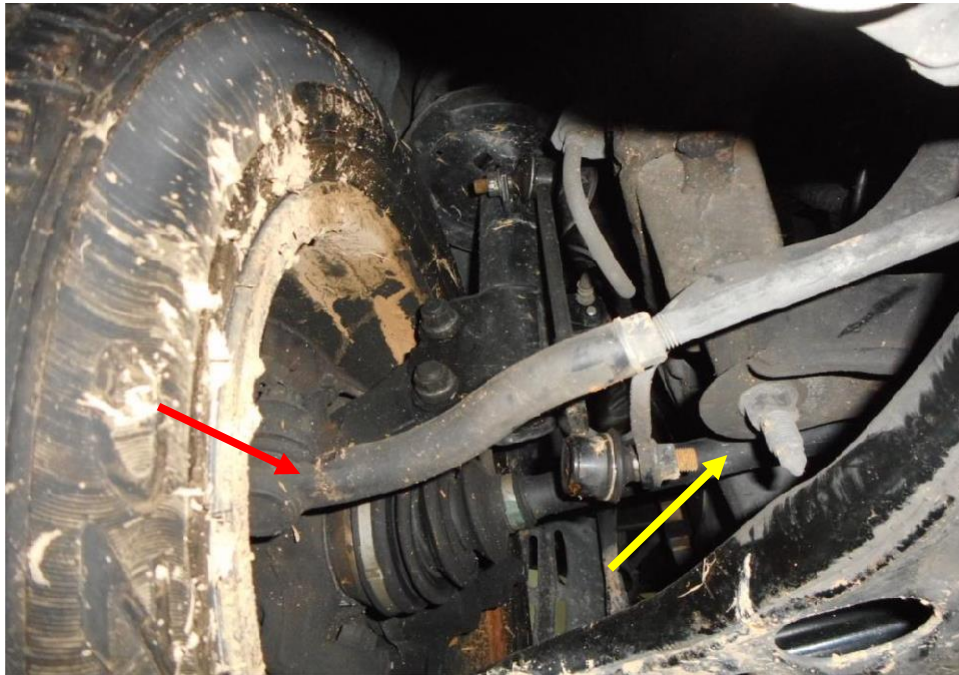


**Photo 21** shows the brake hose/pipe (arrowed) at the front left wheel of the Motor Car. No leakage of brake fluid was observed. Visual examination of the various components of the braking system like the brake caliper (circled) had revealed all to be intact and without visible damage.



**Photo 22** shows the various undercarriage components at the front right wheel of the Motor Car, in particular the steering tie rod (red arrow). 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 at the material time of accident. There was also no sign of fluid stain observed on the various undercarriage components at the front right wheel of the Motor Car. The undercarriage components were cover in mud as due to the result of the accident.





**Photo 23** shows the various undercarriage components at the front left wheel of the Motor Car, in particular the steering tie rod (red arrow) and drive shaft (yellow arrow). 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 at the material time of accident. There was also no sign of fluid stain observed on the various undercarriage components at the front left wheel of the Motor Car.

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

12. The Motor Car's automatic self-test of the functionality of its various electronic operating systems was not able to be conducted as there was damaged to engine system as a result of the accident. (unable to be started)

### **Seat Belts**

13. The front right seat belt was worn and the left seat belt was not worn of the "Motor Car" was worn at the material time of accident, as the respective pre-tensioners that were fitted at the side of each seat was activated upon the material time. See photo 24 and 25 below.



**Photo 24** shows that 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 belt to be locked into the last position.



**Photo 25** shows that that the seat belt on the left seat was not worn at the material time of accident as the safety pre-tensioners was activated at the moment of impact and caused the seat belt to be locked into the last position.

## Operational Behaviour of the Motor Car

14. An operational test to primarily determine whether there was any abnormality to the engine system, transmission system and braking system of the Motor Car could not be conducted given the extent of damage that it had sustained (Engine systems of the Motor Car damage as a result of the accident.).

## Conclusion

15. For this particular case, I was unable to determine whether there was any possible mechanical failure to the Motor Car 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, braking system, steering system and suspension system.
16. The front right tyre was observed to slip off the rim as a result of the accident. However, the other 3 tyres of the Motor Car were 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 4 tyres. The 3 tyres were also observed to be sufficiently inflated for vehicular operation with remaining tread depth of approximately 2.4mm to 7.2mm and front right tyre remaining tread depth of approximately 7.1mm.



**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.