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**AXA Insurance Pte Ltd**

8 Shenton Way #24-01  
AXA Tower  
Singapore 068811

**TECHNICAL EVALUATION REPORT OF ACCIDENTS INVOLVING THE  
INSURED VEHICLE SMF 2318K ON 02 MARCH 2022**

1. I refer to your request dated 23 June 2022 to comment, in particular but not limited to, whether the spare tyre that was fitted on the insured vehicle SMF 2318K (herein referred to as "**Insured Vehicle**") had possibly contributed to the accidents on 02 March 2022.

**Background**

2. The Insured Vehicle was involved in 2 separate accidents on 02 March 2022, with a time gap of approximately 3.5 hours between the first accident and the second accident. In both accidents, the Insured Vehicle was being driven with a spare tyre fitted at the front left wheel.
3. The first accident occurred at about 1250hrs on 02 March 2022 along the CTE (City) exit slip road towards Balestier Road. The driver of the Insured Vehicle, Mr Loo Chun Yik (herein referred to as "**Mr Loo**") could not recall this accident but basing on the video footage of an involved vehicle, SMS 565H, the Insured Vehicle had collided into some temporary red and white plastic barriers that were placed on the side of the right lane along the exit slip road.
4. As for the second accident, it occurred at about 1600hrs on 02 March 2022 along Circuit Road. Mr Loo, who was again the driver of the Insured Vehicle, reported that he was trying to avoid a bus when he lost control of the Insured Vehicle and collided into a taxi, SHA 981T at the signalized T-junction of Circuit Link and Circuit Road.
5. The video footage of the first accident as well as the accident scene photographs attached in Mr Loo's Singapore Accident Statement for the second accident had showed that the front left tyre of the Insured Vehicle was a spare tyre at the material time of both accidents.

6. Subsequent interviews and statements recorded of Mr Loo did not produce any notable information as to when and why the front left tyre of the Insured Vehicle was changed to a spare tyre. The lack of notable information was mainly due to Mr Loo's incapability to remember, but he believes that the tyre change was done by him in the morning of the same day ie 02 March 2022.

### Comments & Opinions

7. For this case, I had carried out an inspection of the Insured Vehicle on 27 June 2022. During my inspection, I had found the original front left tyre, still wrapped around the front left wheel rim, lying in the rear boot compartment of the Insured Vehicle. Upon my closer examination of the tyre, I had found a hole and cut on the outer sidewall of the tyre. There were also marks of grazing nature to the edges of the outer circumference of the front left wheel rim.
8. The condition of the original front left tyre and wheel rim would suggest to me that the Insured Vehicle had grazed against a road kerb, causing the original front left tyre to be damaged. This immobilized the Insured Vehicle and therefore requiring the replacement to a spare tyre. See photo 1 – 4 below.



**Photo 1** shows a general view of the front left body of the Insured Vehicle at the time of my inspection on 27 June 2022. The Insured Vehicle was observed to have sustained impact damages at its frontal portion. The driver's airbag, driver's seat airbag, driver's knee airbag and front left passenger airbag were deployed. The front left tyre fitted on the Insured Vehicle was a spare tyre (arrowed).



**Photo 2** shows the Insured Vehicle at the time of my inspection on 27 June 2022. The original front left tyre, still wrapped around the front left wheel rim, was found lying in the rear boot compartment of the Insured Vehicle. Upon my closer examination of the tyre, I had found a hole and cut on the outer sidewall of the tyre. There were also marks of grazing nature to the edges of the outer circumference of the front left wheel rim. The condition of the original front left tyre and wheel rim would suggest to me that the Insured Vehicle had grazed against a road kerb, causing the original front left tyre to be damaged, immobilizing the Insured Vehicle and requiring the replacement to a spare tyre.



**Photo 3** shows a closer view of the hole and cut on the outer sidewall of the Insured Vehicle's original front left tyre.





**Photo 4** shows a closer view of the marks of grazing nature (circled) to the edges of the outer circumference of the Insured Vehicle's front left wheel rim. The condition of the original front left tyre and wheel rim would suggest to me that the Insured Vehicle had grazed against a road kerb, causing the original front left tyre to be damaged, immobilizing the Insured Vehicle and therefore requiring the replacement to a spare tyre.

9. All the tyres of the Insured Vehicle, inclusive of the damaged original front left tyre and spare tyre that was fitted at the front left wheel, were found to be with relatively good remaining tread depth and tread pattern for operational purposes. Save for the damaged original front left tyre, all other tyres were sufficiently inflated for vehicular operation.
10. The spare tyre that was fitted at the front left wheel of the Insured Vehicle was seen to be pasted with 2 bright coloured yellow stickers on the wheel rim indicating the maximum speed of 80km per hour and 50miles per hour. In other words, the maximum safe travelling speed of a vehicle that is fitted with this spare tyre is 80km per hour or 50 miles per hour. If indeed Mr Loo had replaced the damaged original spare tyre himself, it would be reasonable to expect him to know this maximum safe travelling speed. See photo 5 & 6 below.



**Photo 5** shows the spare tyre that was fitted at the front left wheel of the Insured Vehicle. The spare tyre was observed to be sufficiently inflated with relatively good remaining tread depth and tread pattern for vehicular operation. 2 bright coloured yellow stickers were pasted on the wheel rim of the spare tyre, which had indicated the maximum speed of 80km per hour and 50miles per hour.



**Photo 6** shows a closer view of the 2 bright coloured yellow stickers that were pasted on the wheel rim of the spare tyre. The stickers indicate that the maximum safe travelling speed of a vehicle that is fitted with this spare tyre is 80km per hour or 50 miles per hour.

11. Normally, a spare tyre provides temporary replacement of a vehicle's tyre in the event of a puncture and/or damage so as to allow the vehicle to be driven either to a safer environment or to a tyre shop where the punctured and/or damaged tyre can be replaced permanently at the earliest possible opportunity. Prolonged driving of a vehicle that is fitted with a spare tyre at one of its wheels can compromise the road worthiness of the vehicle.
12. For this particular case, the size of the spare tyre that was fitted at the front left wheel of the Insured Vehicle was noted to be 145/70D17, which means that the width of the spare tyre is 145mm, the height of the tyre sidewall is 70mm, the diameter of the wheel rim is 17inch. In comparison, the size of the damaged original front left tyre and the other 3 tyres fitted on the Insured Vehicle was 205/60R16, which means that the other 3 tyres fitted on the Insured Vehicle at the material time of accident has a tyre width of 205mm, tyre sidewall height of 60mm and wheel rim diameter of 16inch.
13. Basing on the tyre markings, the spare tyre that was fitted at the front left wheel of the Insured Vehicle has a narrower width as compared to the 3 other tyres that were fitted on the Insured Vehicle at the material time of accident, approximately 30% narrower. A narrower width equates to lesser contact area between tyre and ground. As tyres are the only part of a vehicle that contacts onto the ground, the front left wheel of the Insured Vehicle would therefore have 30% less contact area between Insured Vehicle and ground at the material time of both accidents. See photo 7 & 8 below.





**Photo 7** shows the narrower width of the spare tyre that was fitted on the Insured Vehicle as compared to the wider width of the other 3 tyres (refer to photograph 8 below) that were fitted on the Insured Vehicle at the material time of accident. A narrower width equates to lesser contact area between tyre and ground.



**Photo 8** shows the width of the front right tyre that was fitted on the Insured Vehicle at the material time of accident. The width of the other 3 tyres that were fitted on the Insured Vehicle was wider as compared to the narrower width of the spare tyre that was fitted on the front left wheel of the Insured Vehicle (refer to photograph 7 above).

14. Because of this lesser contact area, there is an imbalance of contact area, in totality, between the Insured Vehicle and the ground, which could lead to the road handling, stability and braking of the Insured Vehicle being affected. Notwithstanding this, given the nature of these 2 accidents, the spare tyre that was fitted at the front left wheel of the Insured Vehicle is unlikely to have caused and/or contributed to the 2 accidents. Reasons for which are set out in the below paragraphs.
15. For the first accident, the video footage from the involved vehicle SMS 565H had showed the Insured Vehicle colliding into several temporary red and white plastic barriers. During the collision, the Insured Vehicle can be seen travelling straight before it swerved to the left, a normal post-collision reaction from Mr Loo to steer the Insured Vehicle away from the hazard. The travelling speed of the Insured Vehicle also does not seem to be more than 80km per hour.
16. The events seen in the video footage indicates to me that during the accident, Mr Loo was able to reasonably steer and manage the Insured Vehicle that was fitted with the spare tyre at its front left wheel. Consequently, it would mean that Mr Loo was also able to steer and manage the Insured Vehicle in the time leading up to the first accident. The spare tyre fitted at the front left wheel did not cause issue(s) to the steering and handling of the Insured Vehicle.
17. In all likelihood, the cause of this accident was human factor and not due to the spare tyre that was fitted at the front left wheel of the Insured Vehicle. In addition, towards the end of the video footage, the distance between the involved vehicle SMS 565H and the Insured Vehicle was longer as compared to when the Insured Vehicle first appeared in the video footage, likely due to braking action by Mr Loo, which is another normal post-collision reaction. Hence, the spare tyre fitted at the front left wheel also did not affect the braking capability of the Insured Vehicle.
18. As for the second accident, the location of the accident was a T-junction where the Insured Vehicle was mandated to make a left turn. The final resting location of the Insured Vehicle suggests that it went straight into the T-junction with no attempt(s) to steer the Insured Vehicle left as per road layout. Unlike the first accident, there seems to be no sign(s) or indication(s) to suggest that Mr Loo had reacted pre-collision and post-collision.



19. Based on Mr Loo's Singapore Accident Statement, he lost control of the Insured Vehicle as he was avoiding a bus. He did not lose control of the Insured Vehicle due to any mechanical issue. The cause of accident would seem more likely to be human factor. The fact that Mr Loo was able to even drive the Insured Vehicle to the second location is an indication that the spare tyre fitted at the front left wheel did not pose any operational issue to the Insured Vehicle, in terms of its handling, stability and braking.
20. Although the lack of reaction by Mr Loo for the second accident can suggest that there was possible issue(s) to the Insured Vehicle that could have contributed to the accident, it would be unusual that this was not reported by Mr Loo if he had indeed experienced something out of the ordinary given that he drives the Insured Vehicle daily.
21. Even if Mr Loo had replaced the spare tyre with a normal tyre after the first accident, the second accident would have still occurred since the cause was more likely due to human factor rather than prolonged driving with a spare tyre fitted at the front left wheel, despite having ample opportunity and time between the first accident and second accident to get the spare tyre permanently replaced.

## Conclusion

22. Following the above discussions and having considered the factual matters relevant to this request, I am of the opinion that the spare tyre fitted at the front left wheel of the Insured Vehicle did not cause and/or contribute to the 2 accidents on 02 March 2022.



### Ang Bryan Tani

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

Senior Technical Investigator

Technical Investigation & Accident Reconstructionist (SAE-A)

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