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20 November 2017

M/s Tokio Marine Insurance Singapore Ltd
20 Macallum Street #09-01
Tokio Marine Centre
Singapore 069046
(Motor Claims Department)

**AUTOMOBILE TECHNICAL INVESTIGATION REPORT OF ACCIDENT
INVOLVING SHA 4501U AND GBB 2494K ON 26 JULY 2017**

1. We refer to your letter dated 8 November 2017 and the instructions therein to comment on the damage consistency of the motor taxi SHA 4501U involved in the captioned accident, in particular to establish whether there was possibly contact between the left side of the motor taxi SHA 4501U and the right side of the motor van GBB 2494K; and if there was contact, whether the damages on the left side of the motor taxi SHA 4501U is consistent to the accident.
2. The following documents were provided to us for our review and consideration in the preparation of this report:-
 - a) Singapore Accident Statement of the driver of the motor taxi SHA 4501U (herein referred to as "Taxi"), where amongst other information, the circumstances of accident was described together with 6 black and white photographs of the Taxi at the time of reporting;
 - b) Singapore Police Report and Accident Statement of the driver of the motor van GBB 2494K (herein referred to as "Van"), where amongst other information, the circumstances of accident was described together with 8 coloured photographs of the Van at the time of reporting;
 - c) 14 coloured photographs of the damage to the Taxi taken during the Pre- Repair Survey by LKK Auto Consultants Pte. Ltd.;
 - d) 84 coloured photographs taken during the physical inspection of the Van;
 - e) 1 post-accident video of the Van taken by the driver of the Van;
 - f) 4 video recordings of the accident taken from the in-vehicle camera of the Taxi.

3. In preparation of this report, we had conducted a physical inspection and thereafter height measurements of the right side of the Van. We had also conducted height measurements of the left front portion of the Taxi (using a similar make and model); both collectively referred herein as **"Involved Motor Vehicles"**. An analysis of all the available documents and information gathered was subsequently carried out.
4. We now set out below our detailed findings and analysis.

Nature of Accident

5. From the Singapore Accident Statement of the driver of the Taxi, Mr Kuah Kim Han (herein referred to as **"Mr Kuah"**) on 26 July 2017 at approximately 1910 hours he was at the traffic junction of Sengkang East Way and Rivervale Drive. He was on the 1st lane (a right turn only lane), waiting to turn right into Rivervale Drive. While waiting he saw the Van stopping on the 2nd lane (a straight only lane). The driver of the Van did not indicate any signal to turn right. When the traffic light turned green, the Van proceeded to turn right and grazed against the left front portion of the Taxi, causing damage.
6. The Singapore Police Report and Accident Statement of the driver of the Van, Mr Chua Keem Long (herein referred to as **"Mr Chua"**), however had stated that on the accident date at about 1845 hours, he was travelling along the extreme left lane of Rivervale Drive. While he was approaching the right turn pocket, he noticed a taxi bearing number plate SHA 4501U in front of him making an emergency brake. Mr Chua managed to stop the Van in time and avoided a collision by turning the Van to the left. At that point of time, the right turn arrow was still visible. He overtook the taxi on the left and stopped in front of the Taxi when the traffic light turned red.

Damage to the Taxi

7. From our examination of the photographs taken during the Pre- Repair Survey conducted by LKK Auto Consultants Pte. Ltd. about 2 days after the accident, we observed paint graze marks on the top portion of the left side panel as well as around the left corner of the front bumper. We also noted that the front bumper was slightly misaligned at its left corner edge. See photos 1 - 5 below.



Photo 1 shows a front view of the Taxi at the time of the Pre- Repair Survey conducted by LKK Auto Consultants Pte. Ltd. which was taken about 2 days after the accident.



Photo 2 shows a closer view of the left front portion of the Taxi. We observed paint graze marks on the top portion of the left side panel as well as around the left corner of the front bumper (as marked by the X's). We also noted that the front bumper was slightly misaligned at its left corner edge (circled).



Photo 3 shows a close up view of the paint graze marks found on the top portion of the left side panel as well as around the left corner of the front bumper of the Taxi (red arrows).



Photo 4 shows a close up view of the paint graze marks found around the left corner of the front bumper of the Taxi (circled).



Photo 5 shows a close up view of the left side of the front bumper of the Taxi. We noted that the front bumper was slightly misaligned at its left corner edge (red arrows).

Physical Inspection of the Van

8. The Van was physically inspected on 15 November 2017 at the premises of Each-A-Cup Pte. Ltd. located at 9 Kaki Bukit Road 1, Eunos Technolink, #B1-05, Singapore 415938. Principal Consultant, Mr K K Lau was also present during this physical inspection.
9. The mileage recorded was 205,062km.
10. The physical inspection carried out had primarily focused on the right side of the Van as the accident was reported to be of a 'side swipe' nature where the Van was turning right from the 2nd lane beside the Taxi at the material time.
11. At the time of our inspection, we did not observe any damages on the driver door of the Van. Upon closer examination of the rear right portion of the Van, we found paint graze marks and several paint scratch marks on the front portion of the rear right wheel fender. See photos 6 - 11 below.



Photo 6 shows the general view of the front portion of the Van at the time of our inspection.



Photo 7 shows the general view of the right side of the Van at the time of our inspection.



Photo 8 shows a closer examination of the rear right portion of the Van together with Principal Consultant, Mr K K Lau. We found paint graze marks and several paint scratch marks on the front portion of the rear right wheel fender (as pointed by Mr K K Lau) (circled).



Photo 9 shows a closer view of the paint graze marks found on the front portion of the rear right wheel fender (circled).

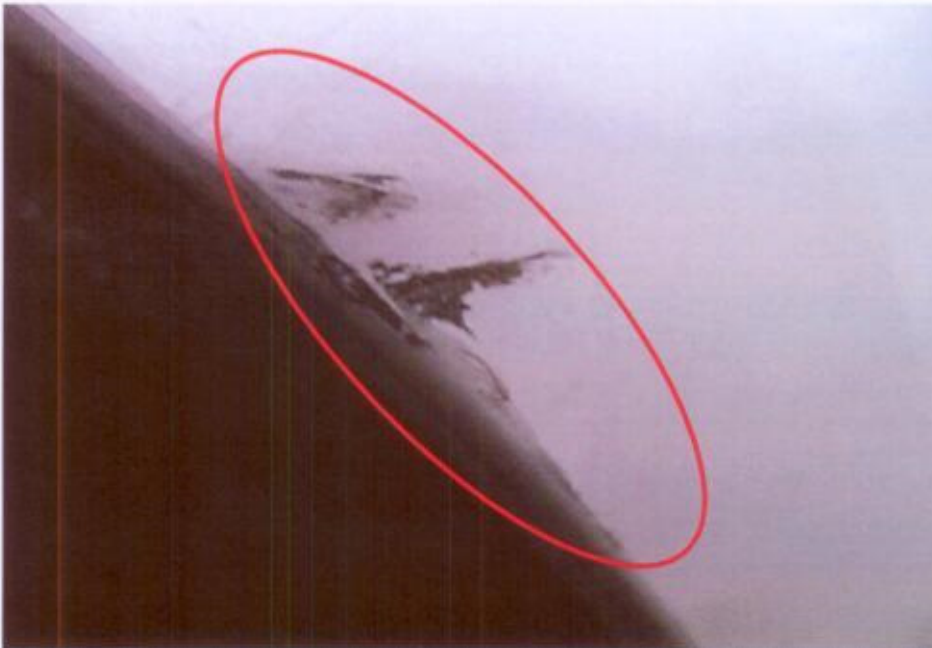


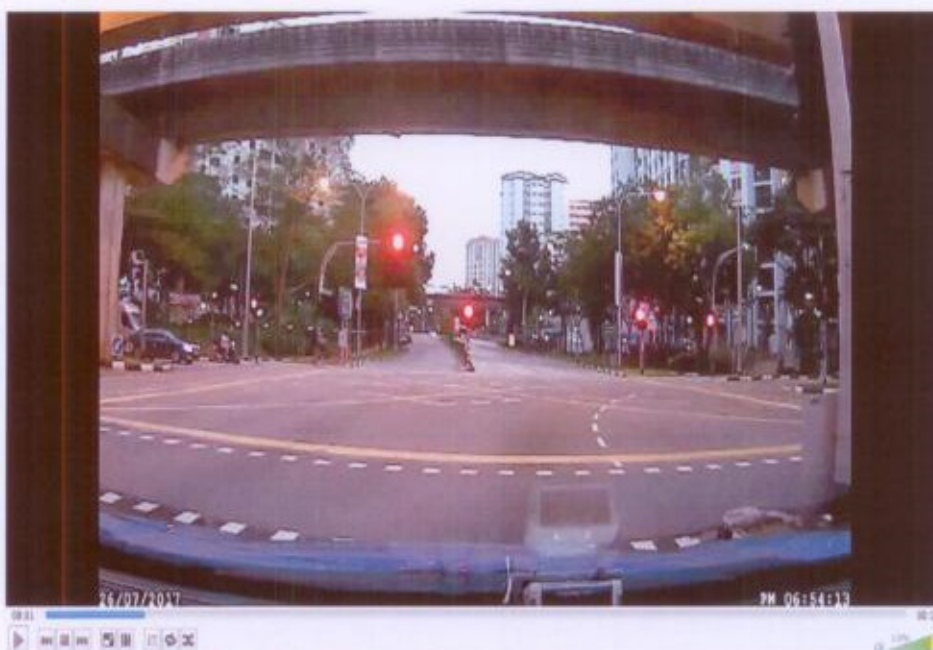
Photo 10 shows a close up view of the paint graze marks found on the front portion of the rear right wheel fender (circled).



Photo 11 shows a close up view of the several paint scratch marks found on the front portion of the rear right wheel fender (circled).

Video Recordings

12. The video recordings that were provided to us in preparation of this report were taken from a video recording device that was mounted onto the front windscreen of the Taxi. The recordings showed the events before the accident and the accident itself. The length (duration) indicated in the 1st video recording was 10 seconds. The length (duration) indicated in the 2nd video recording was 8 seconds.
13. From the 1st video recording, the Taxi can be seen waiting to turn right into Rivervale Drive at the traffic junction of Sengkang East Way on the 1st lane at the 1 second mark. The rest of the duration of the video shows the Van approaching the traffic junction and the driver positioning the Van towards the right, close to the Taxi. See screenshots 1 & 2 below.



Screenshot 1 of the 1st video recording from the video recording device that was mounted onto the front windscreen of the Taxi shows the Taxi waiting to turn right into Rivervale Drive at the traffic junction of Sengkang East Way on the 1st lane at the 1 second mark.



Screenshot 2 of the 1st video recording from the video recording device that was mounted onto the front windscreen of the Taxi shows the Van approaching the traffic junction and the driver positioning the Van towards the right, close to the Taxi from the 2 second mark till the end of the duration of the video.

14. From the 2nd video recording, the Van can be seen trying to overtake the Taxi to turn right with the right turn signal indicator turned on as soon as the traffic light turned green at the 3 second mark. The Taxi can be seen inching forward. At the 7 second mark of the video recording, we had noted a slight movement (jerk like movement) of the Taxi as well as the Van. This was as the Involved Motor Vehicles were moving forward to turn right at the junction. The capturing of this slight movement by the video recording device that was mounted onto the front windscreen of the Taxi is a sign that there was a jerk like movement to the Taxi itself. Ultimately, indicating that there was contact between the left front portion of the Taxi and the right rear portion of the Van. However one would have to view the recording to see this slight movement. See screenshots 3 and 4 below.



Screenshot 3 of the 2nd video recording from the video recording device that was mounted onto the front windscreen of the Taxi shows the Van trying to overtake the Taxi to turn right with the right turn signal indicator turned on (circled) once the traffic light turned green at the 3 second mark (arrowed).



Screenshot 4 of the 2nd video recording from the video recording device that was mounted onto the front windscreen of the Taxi shows a slight movement (jerk like movement) of the Taxi as well as the Van at the 7 second mark. This was as the Involved Motor Vehicles were moving forward to turn right at the junction.

Technical Analysis

15. For this case, based on the nature of damages of grazing nature to the left front portion of the Taxi and the rear right portion of the Van as well as close examination of the video recordings provided to us, it would appear that the point of contact between the Involved Motor Vehicles would be the left front portion of the Taxi and the rear right portion of the Van as the Van was trying to overtake the Taxi which was on the 1st lane, to turn right at the traffic junction.

Height Measurement

16. Notwithstanding the video recordings which had showed that there was possible contact between the left front portion of the Taxi and the rear right portion of the Van, we had conducted a height configuration test to determine whether the damages observed on the left front portion of the Taxi corresponds to the damage observed on the rear right portion of the Van.
17. In order to determine this, we had measured the height above ground level of the left front portion of the Taxi (using a similar make and model), at the area where the paint graze marks were found. We had thereafter compared this measured height against the rear right portion of the Van. See photos 12 & 13 below.



Photo 12 shows the height measurement being conducted on the left front portion of the Taxi (using a similar make and model). The height above ground level of the paint graze marks was between the ranges of 22cm to 68cm.

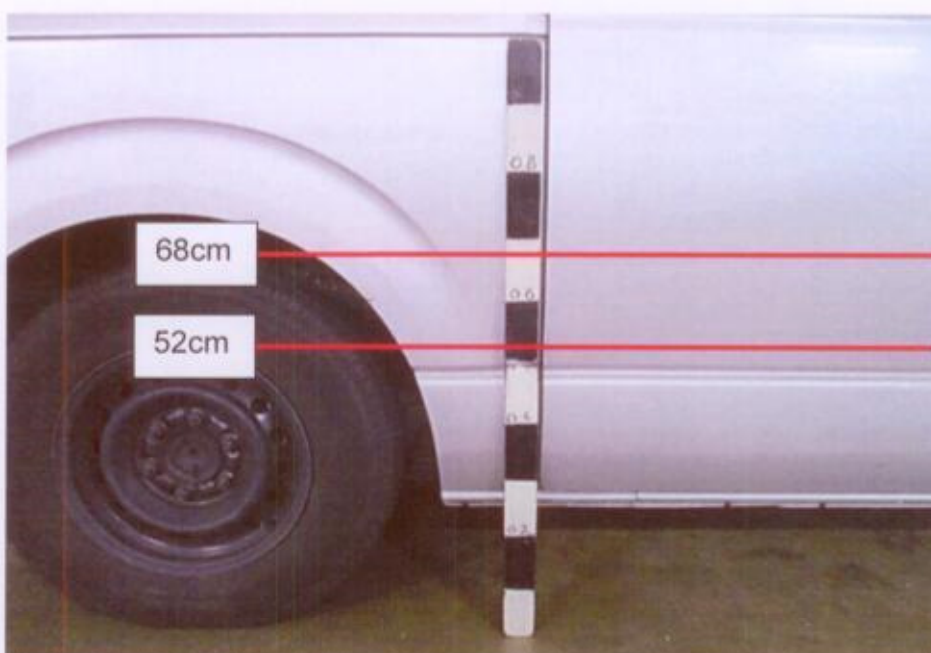



Photo 13 shows the height measurement being conducted on the rear right portion of the Van. The paint graze marks and several paint scratch marks found on the front portion of the rear right wheel fender are between 52cm and 68cm above ground level.

18. We now set out below the findings that we had gathered following the height measurements that were conducted:-

- a) the height above ground level of the paint graze marks on the front left portion of the Taxi was measured to be approximately between 22cm to 68cm;
- b) the height above ground level of the paint graze marks and several paint scratch marks on the front portion of the rear right wheel fender of the Van was measured to be approximately between 52cm to 68cm;
- c) the height measurements appear to support the findings of possible contact between the left front portion of the Taxi and the rear right portion of the Van. The damage observed on the left front portion of the Taxi was a result of this contact and corresponds to the damage observed on the rear right portion of the Van.

Conclusion

19. Having investigated and technically analyzing the material evidence available at the time of writing this report, we are of the opinion that there was contact between the left front portion of the Taxi and the rear right portion of the Van at the material time.
20. The contact was relatively minor and had occurred when the Van was attempting to overtake the Taxi which was simultaneously moving forward to make a right turn at the traffic junction, resulting in a slight contact of grazing nature between the rear right wheel fender of the Van and the left front portion of the Taxi.
21. Both damages are corresponding to their respective heights and are consistent to their nature of contact. Furthermore the pattern of the paint graze marks observed on the rear right portion of the Van corresponds to the pattern of the paint graze marks observed on the left front portion of the Taxi.


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