

Your Ref: PNPV2019-00008113-01  
Our Ref : CS4/FWD20009638/P

16<sup>th</sup> September 2020

**M/s FWD SINGAPORE PTE LTD**  
6 TEMASEK BOULEVARD  
#18-01 SUNTEC TOWER 4  
Singapore 038986  
(Motor Claims Department)

**TECHNICAL INVESTIGATION REPORT OF FIRE INCIDENT INVOLVING THE INSURED VEHICLE SKB 7080G ON 6<sup>th</sup> September 2020**

1. We refer to your letter dated 9<sup>th</sup> September 2020 and the instructions therein.
2. Our analysis, comments and opinions with respect to the cause of fire to the insured vehicle SKB 7080G (herein referred to as “**Insured Vehicle**”) are set out below.

**Inspection of the Insured Vehicle**

3. The Insured Vehicle was physically inspected on 3<sup>th</sup> December 2019 at the premises of Charn’s Customcraft Pte Ltd located at 1010 Bukit Merah Lane 3, #01-105, Singapore 159724
4. A static inspection was carried out to the Insured Vehicle where the following general information was recorded:-

Vehicle Registration No.	: SKB 7080G
Make / Model	: NISSAN TEANA 2.5CVT ABS D/ABHID 2WD
Chassis No	: JN1BBUJ32Z0002825
Year of Registration	: JUNE 2011
Mileage	: NIL

5. The Insured Vehicle was noted to have sustained fire damage that was confined to its interior compartment portion. The exterior body was observed to be unaffected by the fire.

6. The fire was confined to its centre armrest storage box rear portion, however the fire had resulted in the various components located in the interior of the Insured Vehicle suffer from heat and smoke damages, this includes the front left and right seat and several parts inside the centre armrest storage box that were also observed to sustain damages included electronic components & wirings. See photos 1 – 10 below.



**Photo 2** shows the general view of the front portion of the Insured Vehicle at the time of our inspection. The fire damage to the Insured Vehicle was confined to its interior portion. Its exterior is observed to be unaffected by the fire.



**Photo 3** shows the general view of the right portion of the Insured Vehicle at the time of our inspection. The fire damage to the Insured Vehicle was confined to its interior portion. Its exterior is observed to be unaffected by the fire.



**Photo 4** shows the general view of the left portion of the Insured Vehicle at the time of our inspection. The fire damage to the Insured Vehicle was confined to its interior portion. Its exterior is observed to be unaffected by the fire.



**Photo 5** shows the general view of the rear portion of the Insured Vehicle at the time of our inspection. The fire damage to the Insured Vehicle was confined to its interior portion. Its exterior is observed to be unaffected by the fire.



**Photo 6** shows the general view of the engine portion of the Insured Vehicle at the time of our inspection. The fire damage to the Insured Vehicle was confined to its interior portion. Its engine compartment is observed to be unaffected by the fire.



**Photo 7** shows the general view of the fuse box in the engine portion of the Insured Vehicle at the time of our inspection. The fire damage to the Insured Vehicle was confined to its interior portion. Its fuse box compartment is observed to be unaffected by the fire.



**Photo 8** shows the general view of the interior compartment of the Insured Vehicle at the time of our inspection. The fire was confined to its centre armrest storage box rear portion, however the fire had resulted in the various components located in the interior of the Insured Vehicle suffer from heat and smoke damages, this includes the front left and right seat and several parts inside the centre armrest storage box that were also observed to sustain damages included electronic components & wirings.



**Photo 9** shows the general view of the centre armrest storage box of the Insured Vehicle at the time of our inspection. The storage box had suffered heat and smoke damages (circled) as a result of the fire.



**Photo 10** shows the close up view of the centre storage box area of the Insured Vehicle at the time of our inspection. The left & right seats (arrowed) surrounding area of the storage box had also suffered heat and smoke damages as a result of the fire.

7. At the time of inspection of the Insured Vehicle, we did not find any additionally fitted electronic and/or electrical component(s) on the Insured Vehicle. There also appears to be no modification(s) fitted on the Insured Vehicle.

### **Investigation and Technical Analysis**

8. Based on the circumstances for this particular case, the fire appears to have originated from the interior portion of the Insured Vehicle, somewhere in the centre armrest storage box. This can be determined basing on the area where the extent of fire damage was most severe, the circumstances of the fires' origin at the material time of incident and also the burn marks and melting of material that were found in the centre console armrest.
9. Upon closer observations, the wirings in the centre armrest storage box were observed to be where the fire had started, we had found traces of greenish residue on the original wirings leading from the fuse box. The wirings were original wirings fitting from manufacturer. The presence of greenish residue indicates internal heating of copper wires, a sign of an electrical short circuit occurring. The greenish residue is normally left behind from the oxidation as a result of chemical reaction involving the copper wires. This physical evidence would then appear to suggest that the cause of fire to the Insured Vehicle could have possibly been due to electrical in nature. See photo 11-14 below.



**Photo 11** shows the general inside view of the centre armrest storage box of the Insured Vehicle at the time of our inspection. Observed that the items & electrical components in the storage box had sustain heat & smoke damaged.



**Photo 12** shows the general inside view of the centre armrest storage box of the Insured Vehicle at the time of our inspection. Observed that the fire had likely started from the original wiring harnesses (arrowed) leading out from the fuse box as there was greenish residue on the surface. The presence of greenish residue indicates internal heating of copper wires, a sign of an electrical short circuit occurring. The greenish residue is normally left behind from oxidation as a result of chemical reaction involving the copper wires.



**Photo 13** shows a close up view of the original wiring harness leading from the fuse box in the centre armrest storage box compartment. The original wiring harness (arrowed) was observed with greenish residue on the surface. The presence of greenish residue indicates internal heating of copper wires, a sign of an electrical short circuit occurring. The greenish residue is normally left behind from oxidation as a result of chemical reaction involving the copper wires. This is likely where the fire had started from.



**Photo 14** shows a close up view of the original wiring harness leading from the fuse box in the centre armrest storage box compartment. The original wiring harness (arrowed) was observed with greenish residue on the surface. The presence of greenish residue indicates internal heating of copper wires, a sign of an electrical short circuit occurring. The greenish residue is normally left behind from oxidation as a result of chemical reaction involving the copper wires. This is likely where the fire had started from.

10. We managed to speak to driver Mr Lim Ek Kian on 10<sup>th</sup> September 2020 where we were able to gather further information pertaining to the incident as well as information pertaining to the history of the Insured Vehicle.
11. From the Singapore Accident Statement, which was made by Mr Lim Ek Kian (herein referred to as “**Mr Lim**”), we note that the fire to the Insured Vehicle had started at a time when he was driving the Insured Vehicle. Mr Lim first spotted burnt smell and smog emitting from the centre armrest storage box of the Insured Vehicle while he was driving.
12. According to Mr Lim, he was driving the Insured Vehicle from commonwealth road towards his residence at Mei Ling Street. In the midst of driving, he noticed burned smell and smoke emitting from the in centre armrest storage box of the Insured Vehicle. Mr Lim quickly pulled to the side of sterling road, switched off the engine & examined the source.

13. Mr Lim informed us that in the midst of examination, he observed flame emitting out from the centre armrest storage box, he took some rags which he had in the Insured Vehicle & a mop which he just bought and attempted to put out the fire and shortly the fire had been put out.
14. Mr Lim mentioned that there was no SCDF activation as he managed to put out the fire at the material time. Subsequently, Mr Lim contacted AA tow truck & had the Insured Vehicle towed to his workshop and his workshop advised him to contact his insurance company & have the Insured Vehicle towed to their authorised workshop Charn's Customcraft. Mr Lim proceeded down & made an accident report the follow day.
15. Mr Lim mentioned that he had not experienced any mechanical or electrical/electronic problems with the Insured Vehicle till the day of the incident. He also mentioned that there were neither warning lights displayed nor was there an abnormal rise in temperature throughout the period the Insured Vehicle and when driven, prior to the fire.
16. With regards to the history of the Insured Vehicle, we were able to gather from Mr Lim that the Insured Vehicle was purchased brand new and the Insured Vehicle belongs to his wife Ms Yap Eng Khoon who is the registered owner of the Insured Vehicle. Mr Lim informed us that he is the sharing driver of the Insured vehicle with his wife since the day the Insured Vehicle bought.

17. Pertaining to the maintenance aspect, Mr Lim sends the Insured Vehicle for periodical servicing. He provided us with his latest servicing record and informed that there was no major overhaul done or modifications done to the Insured Vehicle. See servicing invoice below.

## Servo Autowerkz Pte Ltd

Co. Reg. & GST No.: 201618080R  
Blk 8, Sin Ming Industrial Estate  
Sector C #01-50  
Singapore 575643  
Tel: 6451 0100  
Fax: 6456 4188  
Email: Info@servoautowerkz.com

### Tax Invoice

SKB7080G STEPHANIE  
Tel: 98348476/93893787  
Attn: STEPHANIE

Invoice No. : INV. [20]/07/00852  
Invoice Date : 08/07/2020  
Vehicle No. : SKB 7080 G  
Make/Model : NISSAN TEANA  
Mileage(KM) : 289,275KM  
PO/WO/RO# :  
Ref./Remark :

SNo	Item Code	Description	Quantity	Unit Price	Amount
1	I000066	CASTROL ENGINE OIL 5W-40	6.00	20.00	120.00
			LITRES		
2	I000002	OIL FILTER	1 PC	12.00	12.00
3	I000004	AIR FILTER	1 PC	20.00	20.00
	S000004	LABOUR FOR CAR SERVICING	1	40.00	40.00
4	I001018	D2S BULB	1 PC	80.00	80.00
5	I000029	BULB	3 PCS	5.00	15.00
Sum of Singapore Dollars Three Hundred Four And Cents Twenty Nine Only				Amt S\$	287.00
				7% GST	17.29
				Total S\$	304.29

18. Given the circumstances of the incident as reported, the possibility of the cause of fire to the Insured Vehicle being due to engine overheating would seem unlikely as Mr Lim had mentioned to us there were no indications of abnormally high temperatures when he was driving the Insured Vehicle on the day of the incident. Moreover, there was no damaged of fire nature in the engine compartment.
19. The possibility of the fire being due to external factors (foreign material(s) stuck on hot surfaces, arson and sabotage amongst others) would also seem unlikely as the fire occurred as Mr Lim was driving the Insured Vehicle. The location where the Insured Vehicle caught fire was also observed to be not at a secluded location.
20. The possibility of the fire being due to electrical in nature would then seem more likely given that engine overheating and external factors would both seem unlikely. The fire being due to electrical nature is also supported by the condition of the wirings that were found leading from the original wirings to the fuse box on the Insured Vehicle, which was earlier discussed in paragraph 9 above.
21. Our checks with both local and international bodies and associations had also revealed that at the time of writing this report, there is no manufacturer recall of similar make and model vehicle as the Insured Vehicle that may possibly be related to fire being originated from the exterior of the Insured Vehicle. See search result from LTA below.

## Vehicle Recall Details

\* ONLY INFORMATION ON VEHICLE RECALLS SUBMITTED FROM 9 APRIL 2007 IS AVAILABLE

Owner ID Type <b>Singapore NRIC</b>	Owner ID <b>561E</b>
Vehicle No. <b>SKB7080G</b> ←	Make/Model <b>NISSAN/ TEANA 2.5 CVT ABS D/AB HID 2WD 4DR</b> ←
Engine No.: VQ25538498A	Chassis No.: JN1BBUJ32Z0002825
Recall Details: <b>No Recall Detail records</b> ←	

**Recall details.** Shows the vehicle recall results retrieved from LTA's website. There was no recall on the Insured Vehicle at the time to the fire incident.

### Conclusion

22. Having investigated and technically analysed the damages of burnt nature to the Insured Vehicle, we are of the view that the cause of fire to the Insured Vehicle was of electrical nature. For this particular case, the fire had originated along the original manufacturer wirings leading to the fuse box of the Insured Vehicle.
23. We did not find any evidence which had suggested that the cause of fire to the Insured Vehicle was due to poor maintenance and/or recurring electrical problem.

24. There was no modification(s) or additional electronic and/or electrical component(s) fitted on the Insured Vehicle at the time of our inspection of the Insured Vehicle.
25. Our investigations had also revealed that at the time of writing this report, there is no manufacturer recall to similar make and model vehicle as the Insured Vehicle that may possibly be related to this incident.



**Sherwin Beh**  
*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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