

Your Ref: M11D00052210
Our Ref: CS4/UOI22010525/N

21 November 2022

M/s United Overseas Insurance Limited

146 Robinson Road #02-01
UOI Building
Singapore 068909
(Claims Division)

**TECHNICAL INVESTIGATION REPORT OF FIRE INCIDENT INVOLVING THE
INSURED VEHICLE GBG 499J ON 30 SEPTEMBER 2022**

1. We refer to your letter dated 25 October 2022 and the instructions therein.
2. Our analysis, comments and opinions with respect to the cause of fire to the insured vehicle GBG 499J (herein referred to as “**Insured Vehicle**”) are set out below.

Inspection of the Insured Vehicle

3. The Insured Vehicle was physically inspected on 2 November 2022 at the premises of Guan Lee Seng Motor, (herein referred to as “**GLS**”) located at 3 Pioneer Rd North, #01-20, Singapore 628457.
4. A static inspection was carried out to the Insured Vehicle where the following general information was recorded:-

Vehicle Registration No.	: GBG 499J
Make / Model	: NISSAN NV200 1.5 MT ABS AIRBAG 2WD 6DR E5 W/RC
Chassis No	: VSKYBAM20Z0139979
Year of Registration	: May 2017
Mileage	: N.A (battery melted)

5. The Insured Vehicle was observed to have sustained severe fire damage all around. Its engine compartment and interior compartment were completely burnt. Rust had accumulated all over the Insured Vehicle as a result of exposure to environmental condition for a period of time. See photos 1 – 4 below.



Photo 1 shows the general view of the frontal portion of the Insured Vehicle at the time of our inspection. The Insured Vehicle was observed to have sustained extensive fire damage all around. Its engine compartment and interior compartment were completely burnt. Rust had accumulated all over the Insured Vehicle as a result of exposure to environmental condition for a period of time.



Photo 2 shows the general view of the rear portion of the Insured Vehicle at the time of our inspection. The Insured Vehicle was observed to have sustained extensive fire damage all around. Rust had accumulated all over the Insured Vehicle as a result of exposure to environmental condition for a period of time.



Photo 3 shows the general view of the interior compartment of the Insured Vehicle at the time of our inspection. Its interior compartment was completely burnt.



Photo 4 shows the engine compartment of the Insured Vehicle at the time of our inspection. The entire engine compartment of the Insured Vehicle was observed to be severely burnt. Most of the parts inside the engine compartment were found to be burnt and/or melted as a result of the fire.

6. 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

7. For this particular case, the fire appears to have originated within the engine compartment of the Insured Vehicle due to the nature of the fire damage which was more extensive at the engine compartment. See photo 5 below.



Photo 5 shows a closer view of the frontal portion of the Insured Vehicle. The fire appears to have originated within the engine compartment of the Insured Vehicle due to the nature of the fire damage which was more extensive at the engine compartment (arrowed).

8. Upon closer examination of the engine compartment, in particular at the centre portion, we had found traces of greenish residue on several burnt stretches of original factory fitted wirings around the centre portion of the engine compartment. The presence of such 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 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 photos 6 - 10 below.



Photo 6 shows the burnt stretches of original factory fitted wirings at the centre portion of the engine compartment, which is in the immediate vicinity where the fire to the Insured Vehicle had likely started. Traces of greenish residue were found on some of the wirings (circled). 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 7 shows a closer view of the burnt stretches of original factory fitted wirings at the centre portion of the engine compartment, which is in the immediate vicinity where the fire to the Insured Vehicle had likely started. Traces of greenish residue were found on some of the wirings (circled).



Photo 8 shows a closer view of the greenish residue found on some of the burnt wirings at the centre portion of the engine compartment (circled). The presence of such greenish residue suggests occurrence of an electrical short circuit.



Photo 9 shows a close up view of the greenish residue found on some of the burnt wirings at the centre portion of the engine compartment (arrowed). The presence of such greenish residue suggests occurrence of an electrical short circuit.



Photo 10 show shows a close up view of the greenish residue found on some of the burnt wirings at the centre portion of the engine compartment (arrowed). The presence of such greenish residue suggests occurrence of an electrical short circuit.

9. From the Singapore Police Report No. T/20221020/2106 and Accident Statement which was made by Mr Tan Hup Leong (herein referred to as “**Mr Tan**”), who is the mechanic for GLS, we note that the fire to the Insured Vehicle had started at a time when it was in GLS for repairs. Mr Tan was first alerted of the fire when he saw smoke emitting from the front bonnet of the Insured Vehicle while he was out on a test drive.
10. The Insured Vehicle belongs to Aver Asia (S) Pte. Ltd. (herein referred to as “**Aver Asia**”) We managed to speak to Mr Tan and the driver of the Insured Vehicle, Mr Hashari where we were able to gather further information pertaining to the incident.
11. Mr Hashari mentioned that on 29 September 2022 around 9am, he was to attend to an equipment breakdown in Changi. He drove the Insured Vehicle from the Aver Asia office located at Benoi Place and entered PIE (Changi). As he was driving along the expressway, he experienced a loss of power with the Insured Vehicle. He then noticed an engine warning light on the dashboard panel. He stopped the Insured Vehicle by the road shoulder and switched off the engine. In less than 15 minutes EMAS personnel had arrived and offered to tow the Insured Vehicle to the open carpark at Jalan Bahar. Mr Hashari hitched a ride with the EMAS tow truck. He then called GLS and made towing arrangements. The tow truck arrived within 30 minutes. Mr Hashari hitched a ride with the tow truck and the Insured Vehicle was towed to GLS.
12. Mr Hashari informed Mr Tan of the issue with the Insured Vehicle and left GLS shortly after. According to Mr Tan, he inspected the Insured Vehicle the following day, on 30 September 2022. He turned the engine on and mentioned that the engine light was on. A diagnostic check of the Insured Vehicle indicated a fault code displayed on the dashboard panel. Mr Tan explained that the fault code was pertaining to a broken air hose. He replaced the broken air hose with an available spare air hose. He mentioned that after replacing the air hose, the fault code was no longer visible on the dashboard panel of the Insured Vehicle.
13. He then took the Insured Vehicle for a test drive within the vicinity. Mr Tan informed us that the engine light was still on and the Insured Vehicle was still under- powered. He decided to head back to GLS. While waiting at the traffic stop after the Pioneer Road North roundabout, Mr Tan saw white smoke emitting from the front bonnet. He immediately switched off the engine. Suddenly the engine compartment burst into flames.

14. Mr Tan immediately ran away from the Insured Vehicle. Mr Tan did not call 995 but the police arrived first followed by the SCDF within 20 minutes. Firefighters put out the fire within 30 minutes. The police took down Mr Tan's statement.
15. Mr Tan made towing arrangements. The tow truck arrived within 15 minutes and the Insured Vehicle was towed back to GLS. Mr Tan lodged a police report at the Jurong West Neighbourhood Police Centre on 20 October 2022 at 2313 hours. He made an insurance report at Sng Ah Tee Motor & Panel Service Pte. Ltd. the following day, on 21 October 2022 at 1013 hours.
16. With regard to the history of the Insured Vehicle, we spoke with Mr Edmund Cheek (herein referred to as "**Mr Cheek**") who is a manager at Aver Asia. Mr Cheek mentioned that the Insured Vehicle was bought new in 2017 and Mr Hashari is the main driver. We had asked Mr Cheek why the insurance report was only filed on 21 October 2022, about 3 weeks after the incident had occurred. He explained that on 1 October 2022 GLS informed him that the insurance report could only be lodged after the SCDF fire report was ready. On 19 October 2022 Mr Cheek contacted GLS for an update. Hence GLS attempted to purchase the SCDF report on 20 October 2022 and were told that they could not purchase the SCDF fire report but the insurance report could be made first pending the SCDF fire report.
17. Pertaining to the maintenance aspect, Mr Cheek mentioned that the Insured Vehicle will be sent for periodic servicing. The last servicing was done on 6 August 2022 at William's Auto Pte Ltd. located at Block C3 Woodlands Road, 391B Yew Tee Industrial Estate, Singapore, 677965. The servicing package included changing of engine oil, oil filter and air filter. The front shock absorbers, front shock absorbers stopper, front shock absorbers bearing, front shock absorbers mounting and engine mounting were also replaced.
18. During the course of our investigations, we were able to obtain from GLS the latest servicing and repair records of the Insured Vehicle. Refer to Invoice 1 below.

WILLIAM'S AUTO PTE LTD ←

BLK C3 WOODLANDS ROAD 391-B YEW TEE INDUSTRIAL ESTATE SINGAPORE 677965
TEL: 67636811/67637186 FAX: 67632166

GST: M2-0032987-2 RCB NO: 197803151Z

PAGE: 1

TAX INVOICE

NO: INVA2202211
DATE: 06/08/2022 ←
A/C CODE: A05929/1998H
JOB NO: JBA2202115
P/O NO: 82520

VEH REG: GRC0499J ←
MILEAGE: 195048KM
MAKE/MODEL: NISSAN NV200 1.5L MT
ABS AIRBAG (2WD) 6DR

TO: AVER ASIA (S) PTE LTD
14 BENOI PLACE
SINGAPORE 629953
TEL: 68615550 FAX: 68621171

Description	Quantity	Unit Price	Amount
		S\$	S\$
1. ENGINE OIL, SYNTHETIC	5 LIT	14.50	72.50
2. OIL FILTER	1 PC	10.00	10.00
3. AIR FILTER	1 PC	14.00	14.00
4. FRONT SHOCK ABSORBERS	2 PC	120.00	240.00
5. FRONT SHOCK ABSORBER STOPPER	2 PC	25.00	50.00
6. FRONT SHOCK ABSORBERS BEARING	2 PC	45.00	90.00
7. FRONT ABSORBER MOUNTING	2 PC	75.00	150.00
8. ENGINE MOUNTINGS (4PCS)	1 SET	520.00	520.00
LUMP SUM LABOUR CHARGE TO CHANGE SPARE PARTS AS ABOVE	1 JOB	220.00	220.00
TOTAL QTY: 1 JOB, 5 LIT, 10 PC & 1 SET		TOTAL	S\$ 1,366.50
		ADD GST @ 7%	95.66
		GRAND TOTAL	S\$ 1,462.16

SINGAPORE DOLLAR ONE THOUSAND FOUR HUNDRED SIXTY TWO AND CENTS SIXTEEN ONLY

BANK INFO: 658-408877-001 (OCBC)
PAYNOW - UEN NO: 197803151Z001

PAYMENT REQUISITION Date:
Verified & Requested By: TIEW SH Signature:
Approval By: NG TK Signature:
Remark: GRC499J

POST 17 AUG 2022 PINV 51160

Received
HARD 14/8/2022 90027760
E & O. E. CONFIRMED & ACCEPTED BY BY HAND
Aver Asia (S) Pte Ltd

WILLIAM'S AUTO PTE LTD
14 BENOI PLACE
SINGAPORE 629953
TEL: 68615550 FAX: 68621171

Address: 14 Benoi Place Tel: (65) 68615550 Fax: (65) 68621171
Email: enquiry@averasia.com Website: www.averasia.com

Invoice 1 shows the last servicing package done on the Insured Vehicle on 6 August 2022 at William's Auto Pte. Ltd. (red arrows). The servicing package included changing of engine oil, oil filter and air filter. The front shock absorbers, front shock absorbers stopper, front shock absorbers bearing, front shock absorbers mounting and engine mounting were also replaced (circled).

Incident Scene Photographs

19. We were able to obtain from Mr Hashari and Mr Tan several photographs of the Insured Vehicle during the fire and post- incident. In general, the information that could be gathered from these photographs had corresponded to the events that were related to us by Mr Hashari and Mr Tan. See photos 11 - 13 below.



Photo 11 shows the Insured Vehicle which was waiting to be towed along the PIE on 29 September 2022. In general, the information that could be gathered from this photograph had corresponded to the events that were related to us by Mr Hashari, which is the Insured Vehicle had broken down along the PIE on 29 September 2022.



Photo 12 shows the Insured Vehicle on fire before the arrival of the SCDF. In general, the information that could be gathered from this photograph had corresponded to the events that were related to us by Mr Tan which is the fire had started from the engine compartment of the Insured Vehicle (arrowed).



Photo 13 shows the Insured Vehicle post- incident. In general, the information that could be gathered from this photograph had corresponded to the events that were related to us by Mr Tan which is the SCDF were present at the incident location (arrowed).

20. 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 the mechanic of GLS had mentioned to us there were no indications of abnormally high temperatures on the Insured Vehicle when he was performing the test drive of the Insured Vehicle around the vicinity of the workshop after replacing the air hose. Moreover, an overheated engine would have caused the Insured Vehicle to stall. However in this case, the mechanic was the one who noticed smoke emitting from the engine compartment while waiting at the traffic stop and switched off the engine of the Insured Vehicle.
21. 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 given that our examination of the available incident scene photographs did not reveal an unusual material(s)/object(s) found on the ground near where the Insured Vehicle had caught fire. Furthermore, the location of where the Insured Vehicle was positioned was also observed to be not at a secluded location.
22. 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 faint traces of greenish residue that were found on several burnt stretches of original factory fitted wirings around the centre portion of the engine compartment of the Insured Vehicle, which was earlier discussed in paragraph 8 above.
23. Our checks with both local and international bodies and associations had revealed that at the time of writing this report, there is no manufacturer recall of electrical nature to similar make and model vehicle as the Insured Vehicle that may possibly be related to this incident. See search result from LTA below.



Vehicle Recall Details

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

Owner ID Type Company	Owner ID 929H
Vehicle No. GBG499J	Make/Model NISSAN/ NV200 1.5 MT ABS AIRBAG 2WD 6DR E5 W/RC
Engine No.: K9KC400D056420	Chassis No.: VSKYBAM20Z0139979
Recall Details: No Recall Detail records	

Conclusion

24. 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 in nature. For this particular case, the fire had originated along the wirings around the engine compartment. The wirings were original factory wirings around the centre portion of the engine compartment of the Insured Vehicle.
25. 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.

26. Our investigations had also revealed that at the time of writing this report, there is no manufacturer recall of electrical nature to similar make and model vehicle as the Insured Vehicle that may pose a fire risk.

**Muhd Nazril***Senior 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.