



Your Ref: 583341
Our Ref : CS/MSG19002385/N

18 February 2019

M/s MSIG Insurance (Singapore) Pte. Ltd.
16 Raffles Quay #24-01
Hong Leong Building
Singapore 048581
(Motor Claims Department)

**TECHNICAL INVESTIGATION REPORT OF FIRE INCIDENT INVOLVING THE
MOTOR VEHICLE WC 4290P ON 24 JANUARY 2019**

1. We refer to your letter dated 11 February 2019 and the instructions therein.
2. Our analysis, comments and opinions with respect to the cause of fire to the Motor Vehicle WC 4290P (herein referred to as "**Insured Vehicle**") are set out below.

Inspection of the Motor Vehicle

3. The Insured Vehicle was physically inspected on 11 February 2019 at the premises of Tan Chong Industrial Machinery Pte. Ltd. (herein referred to as "**Tan Chong**") located at 23 Jalan Buroh, Singapore 619479.
4. A static inspection was carried out to the Insured Vehicle where the following general information was recorded:-

Vehicle Registration No.	: WC 4290P
Make / Model	: NISSAN CGB45CLSMNB
Chassis No	: CGB4CLS00197
Year of Registration	: June 2011
Mileage	: N.A (wiring affected)

5. The Insured Vehicle was noted to have sustained fire damage that was confined to its interior portion. The fire damage was observed to be most severe at its interior compartment. The front exterior portion was unaffected by the fire except for the front windscreen. The engine compartment was unaffected by the fire. See photos 1 – 6 below.



Photo 1 shows the front view of the Insured Vehicle at the time of our inspection. The fire damage to the Insured Vehicle was confined to its interior compartment. Most parts of the front portion were unaffected by the fire except for the front windscreen (circled).



Photo 2 shows a close up view of the front windscreen of the Insured Vehicle. The left portion of the front windscreen seemed to have sustained serious fire damage (circled).



Photo 3 shows the left side view of the Insured Vehicle at the time of our inspection. The fire damage to the Insured Vehicle was confined to its interior compartment. The left side was observed to have been unaffected by the fire except for the left passenger door window (circled).



Photo 4 shows a closer view of the interior portion of the left passenger door of the Insured Vehicle at the time of our inspection. The left passenger door was observed to have sustained serious fire damage (circled).



Photo 5 shows the rear view of the Insured Vehicle at the time of our inspection. The fire damage to the Insured Vehicle was confined to its interior compartment. The rear portion was observed to have been unaffected by the fire.



Photo 6 shows the interior compartment of the Insured Vehicle at the time of our inspection. Most of the components in the interior 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 started from the left portion of the dashboard instrument panel. This can be determined basing on the area where the extent of fire damage was most severe which was the left portion of the dashboard instrument panel. Various components of the dashboard instrument panel were observed to have been burnt and/or partly melted from prolonged exposure to high heat intensity which included the glove compartment, upper and central parts of the instrument panel assembly, amongst others. See photos 7 & 8 below.

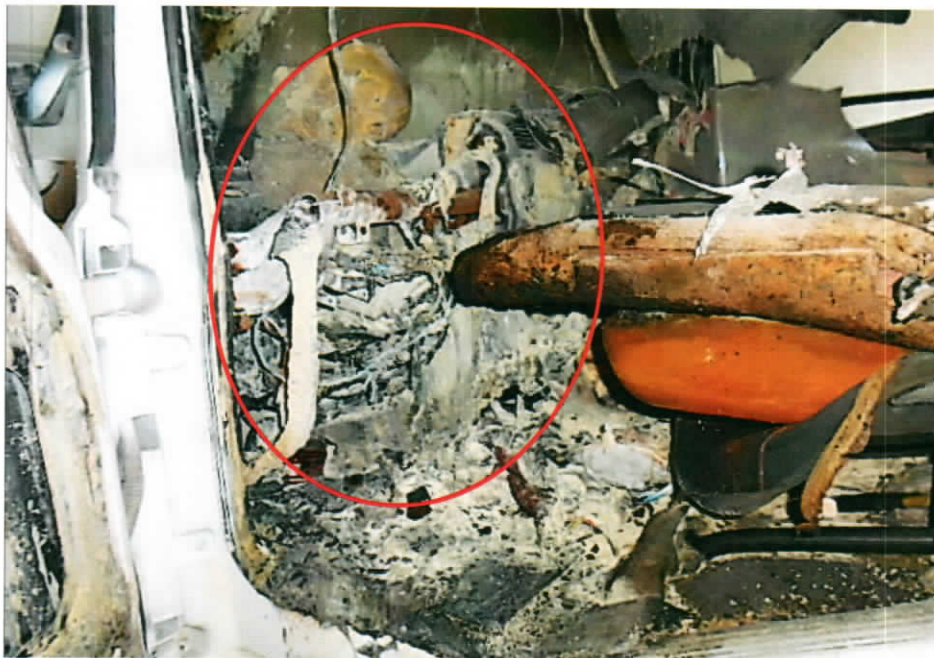


Photo 7 shows the dashboard instrument panel of the Insured Vehicle. The fire seemed to have originated from the left portion of the dashboard basing on the area where the extent of fire damage was most severe. Various components of the instrument panel were observed to have been burnt and/or partly melted from prolonged exposure to high heat intensity which included the glove compartment, upper and central parts of the instrument panel assembly (circled).



Photo 8 shows a closer view of the centre portion of the instrument panel. Various components of the instrument panel were observed to have been burnt and/or partly melted from prolonged exposure to high heat intensity which included the glove compartment, upper and central parts of the instrument panel assembly.

8. Upon closer examination of the various components contained within the glove compartment of the dashboard instrument panel, which was where the fire to the Insured Vehicle had likely started, we had found greenish residue on some of the wirings. The wirings were original factory fitted wirings. 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 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 9 & 10 below.



Photo 9 shows some original factory fitted wirings within the glove compartment with greenish residue (arrowed). 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.

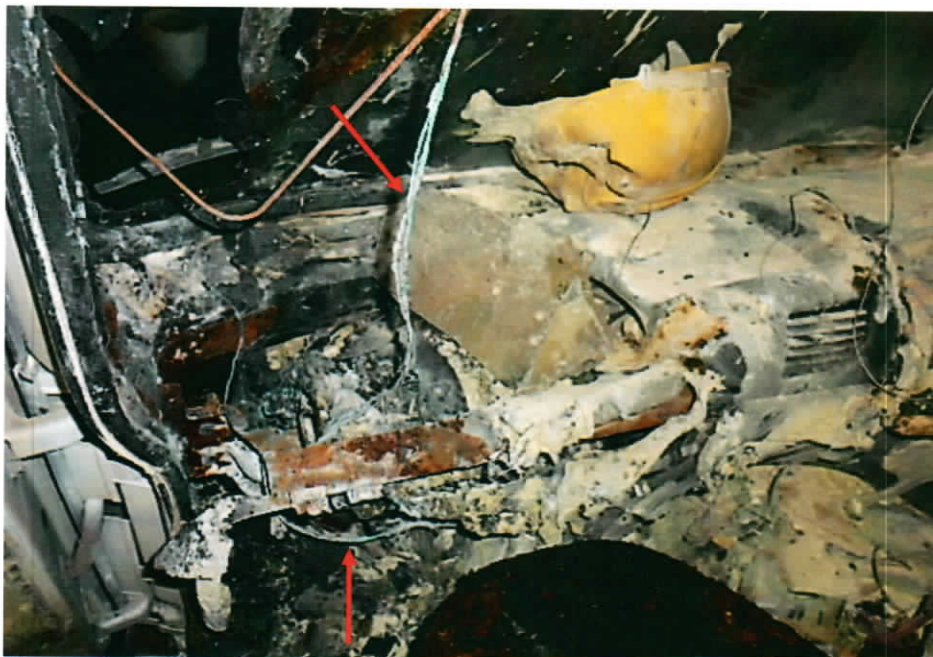
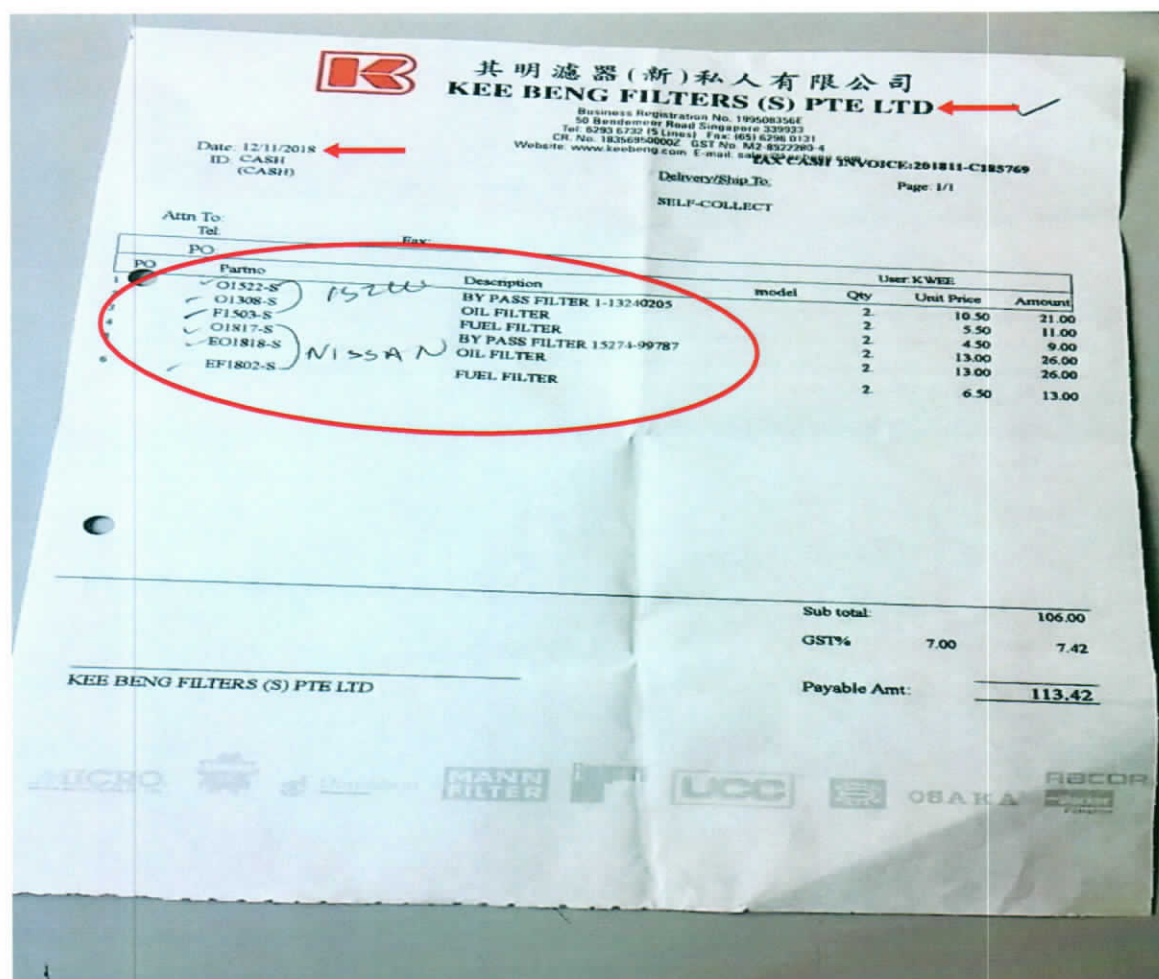


Photo 10 shows a closer view of the original factory fitted wirings within the glove compartment with greenish residue (arrowed). The presence of such greenish residue suggests occurrence of an electrical short circuit.

9. From the Singapore Police Report No. E/20190124/2064 and Accident Statement which was made by Mr Sivaneasan Selvam (herein referred to as **"Mr Siva"**), we note that the fire to the Insured Vehicle had started at a time when it was parked at a construction site. Mr Siva was first alerted of the fire when he noticed black smoke emitting from the left portion of the Insured Vehicle.
10. We managed to speak to Mr Siva where we were able to gather further information pertaining to the incident as well as to the history of the Insured Vehicle.
11. According to Mr Siva, at about 1220hrs on 24 January 2019, he had parked the Insured Vehicle at the Alliance Plant, a construction site located at Fort Road. He was waiting by the right portion of the Insured Vehicle. About half an hour later, he noticed black smoke emitting from the left portion of the Insured Vehicle. He rushed to open the left passenger door and noticed a fire at the left portion of the dashboard of the Insured Vehicle. He quickly alerted the others who were within the vicinity. Mr Siva got some water from nearby and a few colleagues grabbed a couple of fire extinguishers to put out the fire. The fire was extinguished in approximately 15 minutes.
12. After extinguishing the fire, Mr Siva called his insurance officer and reported the incident. Towing arrangements were also made. The tow truck arrived 3 to 4 hours later. Mr Siva had already left the incident location by the time the tow truck arrived around 2100 hours. The Insured Vehicle was towed to Tan Chong. Mr Siva lodged an insurance report at IDAC Sin Ming later that day at 1545 hours followed by a police report at the Bishan Neighbourhood Police Centre at 1734 hours.
13. Mr Siva is the main driver of the Insured Vehicle. To the best of his recollection, there has not been any major mechanical problem and/or electrical problem with the Insured Vehicle whenever he was driving it. Mr Siva added that the Insured Vehicle had been parked for the past 2 weeks prior to the incident as the cement drum gearbox needed to be repaired.
14. With regards to the history of the Insured Vehicle, we were able to gather from Mr Siva that the Insured Vehicle was purchased second hand 1 year ago.

15. Pertaining to the maintenance aspect, Mr Siva informed us that the Insured Vehicle was serviced periodically every 3 to 4 months. The vehicle servicing is done in- house. Mr Siva purchases the parts separately. He purchased the bypass, oil and fuel filters from Kee Beng Filters (S) Pte. Ltd. on 12 November 2018. He purchased the engine oil from Gee Boon Enterprises on 3 December 2018. The Insured Vehicle was last serviced on 15 December 2018.
16. The gearbox drum parts were purchased from Kian Ho Pte. Ltd. on 21 January 2019.
17. During the course of our investigations, we were able to obtain from Mr Siva the copies of the parts he purchased for the servicing as well as for the repair of the Insured Vehicle's cement drum gearbox. See invoices 1 - 3 below.



其明德器(新)私人有限公司
KEE BENG FILTERS (S) PTE LTD

Business Registration No. 199607198R
50 Bandermer Road Singapore 339923
Tel: 6256 3561 (5 Lines) Fax: 651 6298 0121
CR No. 18369500002 GST No. M2 852788-4
Website: www.keebeng.com E-mail: sales@keebeng.com

Date: 12/11/2018
ID: CASH (CASH)

Delivery/Ship To: SELF-COLLECT
Page: 1/1

PO	Partno	Description	model	Qty	Unit Price	Amount
✓	O1522-S	BY PASS FILTER 1-132-40205		2	10.50	21.00
✓	O1308-S	OIL FILTER		2	5.50	11.00
✓	F1503-S	FUEL FILTER		2	4.50	9.00
✓	O1817-S	BY PASS FILTER 15274-99787		2	13.00	26.00
✓	EO1818-S	OIL FILTER		2	13.00	26.00
✓	EF1802-S	FUEL FILTER		2	6.50	13.00

Sub total: 106.00
GST% 7.00 7.42
Payable Amt: 113.42

KEE BENG FILTERS (S) PTE LTD

Invoice 1 shows the bypass, oil and fuel filters (circled) purchased by Siva from Kee Beng Filters (S) Pte. Ltd. on 12 November 2018 (red arrows).

GEE BOON ENTERPRISES
270 HANGKON ROAD SINGAPORE 118458
TEL: 6298 5230, 6298 4000 & 6298 8420 FAX: 6298 3973
Business Registration No. 100171502 GST Registration No. M90371891
Email: gboonenterprises@gmail.com

TAX INVOICE
DATE: Dec 3, 2018
INV NO: ORD000151822
TERMS: 30 DAYS

CUSTOMER:
CONSTRUCTION & TRANSPORT
SELVAM
HP: 8700 9661

SHIP TO:
FORT ROAD

QTY	UOM	DESCRIPTION	P.O.	CONTACT	UNIT PRICE	EXTENDED PRICE
1	Drum	ELF PERFO VICTORY 15W40 CI 4 (208L)			530.00000	530.00

COMMENTS:
Note: Goods sold cannot be returned.
Received above goods in good order and condition.

Received By: _____

PAID
03 DEC 2018
GEE BOON ENTERPRISES

SUB TOTAL: 530.00
GST 7%: 37.10
TOTAL: 567.10

elf, ExxonMobil, TOTAL, Shell

Invoice 2 shows the engine oil purchased by Mr Siva from Gee Boon Enterprises on 3 December 2018 (red arrows).

Kian Ho Pte Ltd
5 Changi South Street 3
Singapore, 486117
Tel: 6287 5806, Fax: 6285 9852, 6285 9853
Email: sales@kianho.com.sg
Website: http://www.kianho.com.sg
Co. Reg. No.: 201426805D
GST Reg No.: 201426805D

ORDER ACKNOWLEDGEMENT
THIS IS NOT A SALES INVOICE

Sold To: JURONG'S LOCAL CASH SALES
SINGAPORE
SINGAPORE

Ship To: JURONG'S LOCAL CASH SALES
SINGAPORE
SINGAPORE

PAGE NO.: 1
SELL-TO CUSTOMER NO.: CC0300
CONTACT NO.: 62683410
SALES COORDINATOR: 51901
HANDLE BY: CINDY TEO
DATE: 21 Jan 2019
SHIPMENT DATE: 21/01/19
ORDER NO.: 5019-02405
PRICE INCLUDING GST: No
INCOTERMS:
EXTERNAL DOC. NO:

No.	Part No.	Description	Type	Brand	Quantity	UOM	Country of Origin	Unit Price	Amount
1	32222	METRIC TAPERED ROLLER BEARING	A	FAG	1	PCS		230.00	230.00
2	32024	METRIC TAPERED ROLLER BEARING	XU	NTN	1	PCS		145.00	145.00
3	NTB110145	NEEDLE ROLLER BEARING		IKO	1	PCS		22.00	22.00
4	140X170X14(AE961A0)	OIL SEAL	TC	NOK	1	PCS		12.00	12.00
5	32309	METRIC TAPERED ROLLER BEARING	A	FAG	3	PCS		36.00	108.00
Total Quantity					7				
Total SGD Excl. GST									517.00
GST Amount - 7%									36.19
Total SGD Incl. GST									553.19

Invoice 3 shows the drum gearbox parts purchased by Mr Siva from Kian Ho Pte. Ltd. on 21 January 2019 (red arrows).

18. Mr Siva mentioned that since the last servicing and repair works were carried out, he had not experienced any other mechanical problems with the Insured Vehicle till the day of the incident. He mentioned that there were neither warning lights displayed nor was there an abnormal rise in temperature throughout the period the Insured Vehicle was driven till the day of the incident.

Incident Scene Photographs

19. Although we were not able to obtain any video footage of the incident, we were however able to obtain photographs which were taken by Mr Siva at the incident location. The photographs were taken after the fire to the Insured Vehicle was extinguished.
20. In general, the information that could be gathered from these photographs had corresponded to the events that were related to us by Mr Siva. Our close examination of these photographs also showed no unusual foreign material(s) and/or object(s) found on the ground in the immediate area of the construction site where the Insured Vehicle was parked. See photos 11 - 13 below.



Photo 11 shows the Insured Vehicle after the fire was extinguished by Mr Siva. In general, the information that could be gathered from this photograph had corresponded to the events that were related to us by Mr Siva, which is the fire started from the interior compartment.

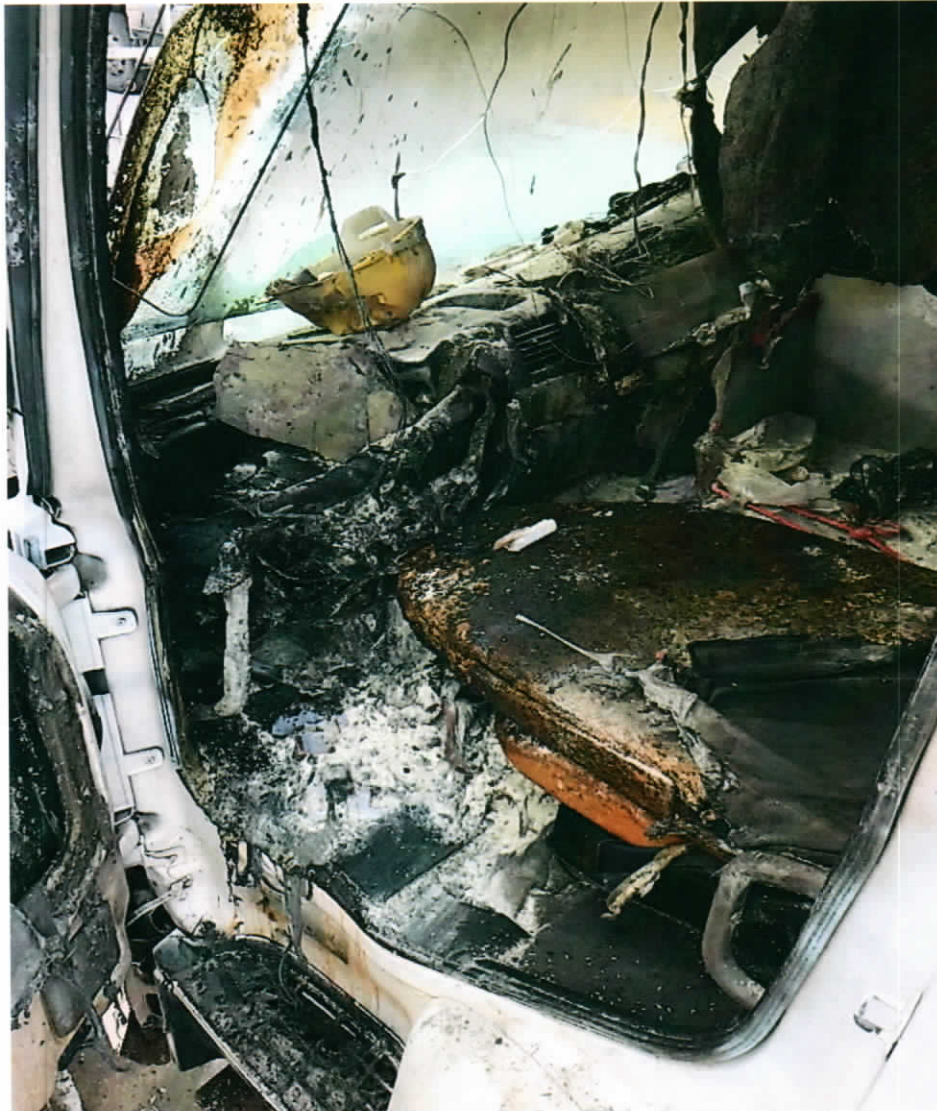


Photo 12 shows the interior compartment of the Insured Vehicle after the fire was extinguished. In general, the extensive damages sustained to the left portion of the dashboard had corresponded to the events that were related to us by Mr Siva, which is the fire started from the left portion of the interior compartment of the Insured Vehicle.



Photo 13 shows the Insured Vehicle being prepped to be towed away to Tan Chong.

21. Based on the vehicle service record invoices provided, we are of the opinion that it is unlikely that the fire could have been caused by poor maintenance of the Insured Vehicle. Furthermore, the Insured Vehicle was not utilised 2 weeks prior to the incident.
22. Given the circumstances of incident as reported, the possibility of the cause of fire to the Insured Vehicle being due to engine overheating would seem unlikely as the fire had broken out while the Insured Vehicle was parked at the construction site.
23. 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 was confined to within its interior compartment with no visible exterior damage. The location where the Insured Vehicle caught fire was also observed to be not at a secluded location.
24. 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 inside the left portion of the dashboard instrument panel of the Insured Vehicle, which was earlier discussed in paragraph 8 above.

25. 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.

Enquiry on Vehicle Recall - Vehicle Specific

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

Vehicle Owner Particulars	
Owner ID Type:	Company
Owner ID:	2472G
Vehicle Details	
Vehicle Registration number:	WC4290P
Make:	NISSAN
Vehicle Model:	CGB45CLSMNB
Engine No:	GE13336853B
Chassis No:	CGB4CL500197
Recall Details	
No Recall Detail records	

OK

Please do not use your browser's Back or Forward buttons as this may result in information loss

Conclusion

26. 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 from the wirings within the left portion of the dashboard instrument panel of the Insured Vehicle. The wirings were original factory fitted wirings of the Insured Vehicle.

27. 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.

28. There were 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.

29. 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 possibly be related to this incident.

**Muhd Nazril***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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