

Your Ref: 1201900003140/LT
Our Ref : CS/FWD19001712/D

01 February 2019

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 SJR 1275D ON 23 JANUARY 2019

1. I refer to your request dated 25 January 2019.
2. My analysis, comments and opinions with respect to the cause of fire to the insured vehicle SJR 1275D (herein referred to as "**Insured Vehicle**") are set out below.

Inspection of the Insured Vehicle

3. The Insured Vehicle was physically inspected on 28 January 2019 at the premises of M/s Vin's Motor Pte Ltd, 160 Sin Ming Drive #03-03 Sin Ming AutoCity, Singapore 575722.
4. A static inspection was carried out to the Insured Vehicle where the following general information was recorded: -

| | |
|--------------------------|-------------------------------------|
| Vehicle Registration No. | : SJR 1275D |
| Make / Model | : Volkswagen New Polo 1.4 AT 5K13G5 |
| Chassis No | : WVVZZZ1KZ9W517204 |
| Year of Registration | : 2009 (June) |
| Mileage | : N.A (wiring affected) |

5. The fire damage to the Insured Vehicle was observed to be confined to a single area of the Insured Vehicle. This was at the driver's side of its interior compartment. The front dashboard, upholstery and various plastic trims near the driver's side area were partially melted/burnt. Apart from a blackened and cracked front windscreen, the exterior of the Insured Vehicle was unaffected by the fire. The engine compartment was also without any fire damage.
6. At the time of my inspection of the Insured Vehicle, I did not find any additionally fitted electronic and/or electrical component(s) on the Insured Vehicle. There was also no modification(s) fitted on the Insured Vehicle. See photo 1 – 6 below.



Photo 1 shows a general view of the front left body of the Insured Vehicle at the time of my inspection. The exterior body of the Insured Vehicle was observed to be in good general condition with no damage of burn nature found apart from a blackened and cracked front windscreen.



Photo 2 shows a general view of the rear right body of the Insured Vehicle at the time of inspection. The rear body of the Insured Vehicle was observed to be unaffected by the fire.



Photo 3 shows the engine compartment of the Insured Vehicle at the time of my inspection. Although powdery residue from fire extinguishers were seen on the surfaces of various components inside the engine compartment, there was however no damage of burn nature observed within the engine compartment.



Photo 4 shows a general view of the interior compartment of the Insured Vehicle. The fire damage to the Insured Vehicle was confined to the driver's side of its interior compartment. The front dashboard, upholstery and various plastic trims around the driver's side area were observed to have been partially melted/burnt.



Photo 5 shows the partially melted/burnt front dashboard at the leg area of the driver's side. The fire damage to the Insured Vehicle was confined to a single area. This was at the driver's side of the interior compartment.



Photo 6 shows the partially melted/burnt roof upholstery and plastic trims at the driver's side of the Insured Vehicle. These damages were a result of smoke/heat arising from the fire.

Circumstance of Incident

7. From the Singapore Accident Statement, which was made by one Loo Sai Siong Winston (herein referred to as “**Mr Loo**”), I note that the fire to the Insured Vehicle had started at a time when he was driving the Insured Vehicle. Mr Loo first noticed smoke coming out from the air conditioning vents of the Insured Vehicle. He then drove slightly forward (as not to obstruct traffic), stopped the Insured Vehicle and turned off the engine before alighting from the Insured Vehicle. Fire was subsequently seen from the air conditioning vent at the driver’s side a few seconds after he had alighted from the Insured Vehicle. Mr Loo managed to get a fire extinguisher from a nearby coffeeshop and put out the fire before the arrival of SCDF and Police officers.
8. I spoke to Mr Loo on 29 January 2019 and through telephone conversation, I was able to gather further information pertaining to the incident as well as information pertaining to the history of the Insured Vehicle.
9. According to Mr Loo, on 23 January 2019 he was initially having lunch with a colleague at Paya Lebar Square. Mr Loo estimates the lunch time to be about 45mins to an hour. After collecting the Insured Vehicle at the carpark, Mr Loo drove to Aljunied Crescent with his colleague seated on the front left passenger seat. They had intended to buy some things at the market in the vicinity. Mr Loo estimates the drive to Aljunied Crescent to about 5mins to 10mins.
10. At the gantry leading to the carpark of Block 119 Aljunied Crescent, Mr Loo and his colleague saw smoke coming out from the air conditioning vents of the Insured Vehicle. He then decided to drive into the carpark and stop to check. Upon alighting from the Insured Vehicle, after turning the engine off, Mr Loo opened the front bonnet to check for the source of the smoke. At this time, he saw flames coming out from the air conditioning vent at the driver’s side of the Insured Vehicle. Mr Loo then quickly sought the assistance of people from a nearby coffeeshop and he managed to get a fire extinguisher to put out the fire from the Insured Vehicle before the arrival of SCDF and Police officers.
11. With regard to the history of the Insured Vehicle, I was able to gather from Mr Loo that the Insured Vehicle was purchased second hand about 2 years ago. It is registered under his name and he is the main driver of the Insured Vehicle. Apart for the usual wear and tear issues, he did not experience any major mechanical and/or electrical problem with the Insured Vehicle. He did however replace the mechatronics (controls the shifting of transmission gears) on 26 March 2018 due to gear shifting problems he had experienced.

12. Servicing and maintenance of the Insured Vehicle was done at his regular workshop, VAS Motorwerkz Pte Ltd, at Sin Ming area. The last servicing was on 27 November 2018 where the engine oil, engine oil filter, air conditioning filter and fuel pump were replaced. Mr Loo was able to provide me documents in relation to this servicing as well as to the replacement of the mechatronic. See photo 7 & 8 below showing the documents that were provided to me by Mr Loo.
13. Mr Loo also informed me that he has not done any modification(s) and/or fitted any additional electronic/electrical component(s) on the Insured Vehicle since he took possession of it. He did however mention that the stereo (head-unit) of the Insured Vehicle is non-original. The stereo fitted on the Insured Vehicle was of touch screen type and it came fitted on the Insured Vehicle when he purchased it.

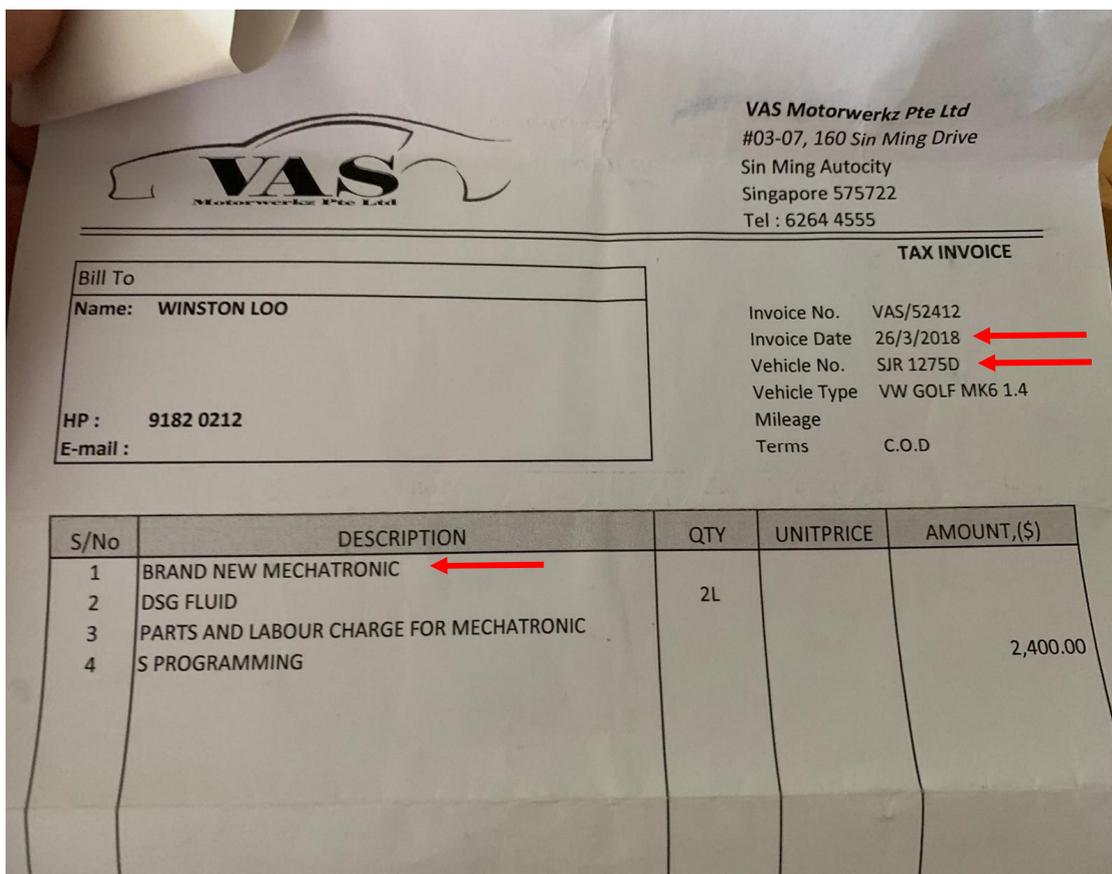


Photo 7 shows the document relating to the replacement of the mechatronic of the Insured Vehicle on 26 March 2018. Along with the mechatronic replacement, the transmission fluid was also replaced.

VAS Motorwerkz Pte Ltd VAS Autorwerkz Pte Ltd

NAME: Winston Loo
H/P: 91820212
EMAIL: (IN CAPITAL)
CAR PLATE NO: 9JR 1275 D
CAR MODEL: vw golf

INVOICE NO:
DATE: 27/11/18
MILLEAGE:
ATTENDED BY:

| S/N | DESCRIPTION | QTY | UNIT PRICE(\$) | AMOUNT(\$) |
|-----|-------------------------------|------|----------------|------------|
| 1 | Engine oil & oil filter | 1lot | \$150 | \$150 |
| 2 | Air Filter | 1PCS | \$35 | \$35 |
| 3 | A/cow filter | 1PCS | \$35 | \$35 |
| 4 | High pressure fuel pump | 1PCS | \$315 | \$315 |
| 5 | Labour to replace above items | | | \$ 0 |
| 6 | | | | |
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Photo 8 shows the document relating to the last servicing of the Insured Vehicle on 27 November 2018. The engine oil, engine oil filter, air conditioning filter and fuel pump were replaced during this servicing.

14. Mr Loo informed me that there were some photographs taken at the incident location and these were duly forwarded to me for review.

Investigation and Technical Analysis

15. My review of the photographs provided by Mr Loo had produced several notable information. From one of the photographs, flames were seen emitting from the dashboard area at the driver's side of the Insured Vehicle. Also, the fire damage seen inside the interior compartment of the Insured Vehicle immediately after the fire was extinguished was observed to be similar to what I had observed during my inspection of the Insured Vehicle. See photo 9 & 10 below.



Photo 9 shows the Insured Vehicle at the incident scene (photograph provided to me by Mr Loo). Flames could be seen coming out from the dashboard area at the driver's side of the Insured Vehicle. Since there were no flames emitting from other areas of the Insured Vehicle, the origin of fire can be established to have been from the area behind the front dashboard, at the driver's side of the Insured Vehicle.



Photo 10 shows the Insured Vehicle at the incident scene after the fire was extinguished (photograph provided to me by Mr Loo). the fire damage seen inside the interior compartment of the Insured Vehicle immediately after the fire was extinguished was observed to be similar to what I had observed during my inspection of the Insured Vehicle.

16. For this case, the fire to the Insured Vehicle can be established to have originated from the interior compartment, at the area behind the front dashboard, at the driver's side. This was established from information gathered upon reviewing the photographs provided by Mr Loo, as well as, from the physical damage to the Insured Vehicle, where the fire damage to the Insured Vehicle was observed to be confined to a single area ie at the driver's side inside the interior compartment of the Insured Vehicle.
17. My examination of the area behind the front dashboard at the driver's side, which was where the fire to the Insured Vehicle had originated, revealed burnt wirings that were with faint greenish colour residue. The wirings were observed to be original factory fitted wirings leading to the interior fuse box of the Insured Vehicle that was located directly behind the front dashboard, where the fire had originated. 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 indicate that the cause of fire to the Insured Vehicle was due to electrical in nature. See photo 11 - 13 below.

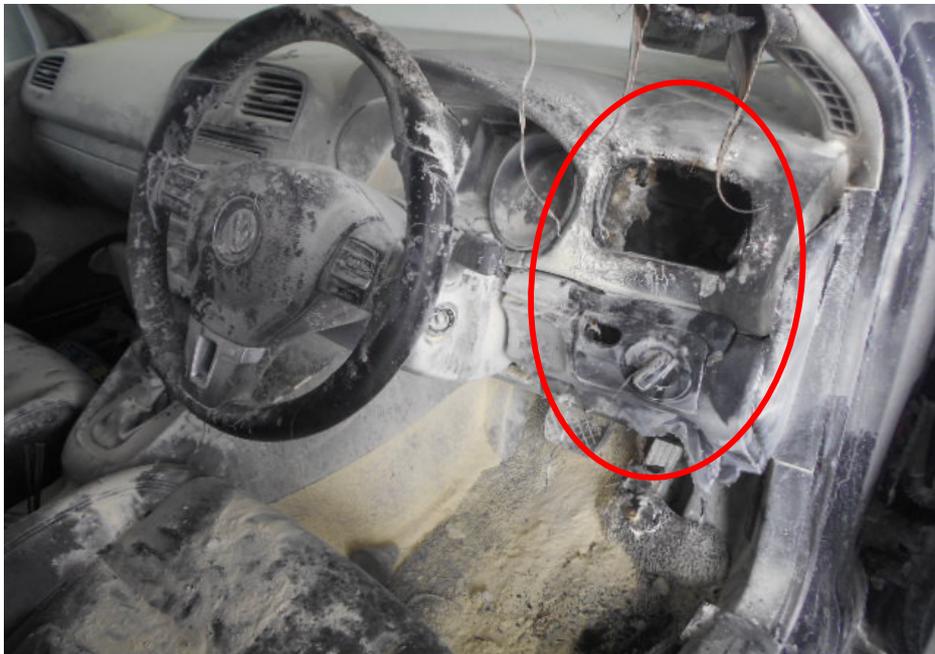


Photo 11 shows the interior compartment of the Insured Vehicle, at the driver's side. Basing on the information gathered during the course of my investigations, and the physical damage to the Insured Vehicle, the fire had originated at the area (circled) behind the front dashboard.

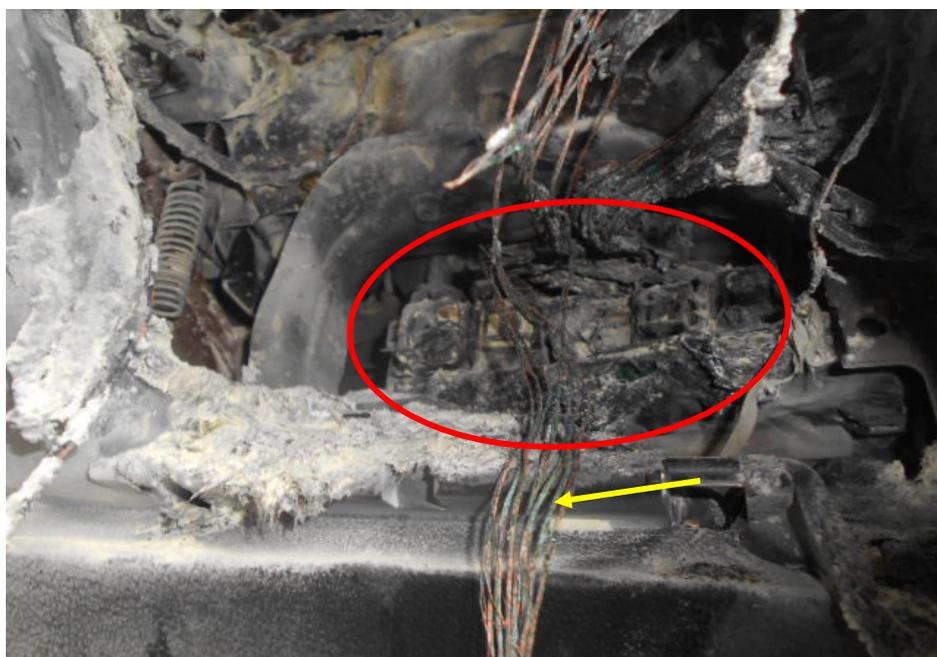


Photo 12 shows the burnt wirings that were with faint greenish colour residue (arrowed). The wirings were observed to be wirings leading to the interior fuse box (circled) of the Insured Vehicle that was located directly behind the front dashboard at the driver's side, where the fire had originated. 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 indicate that the cause of fire to the Insured Vehicle was due to electrical nature.

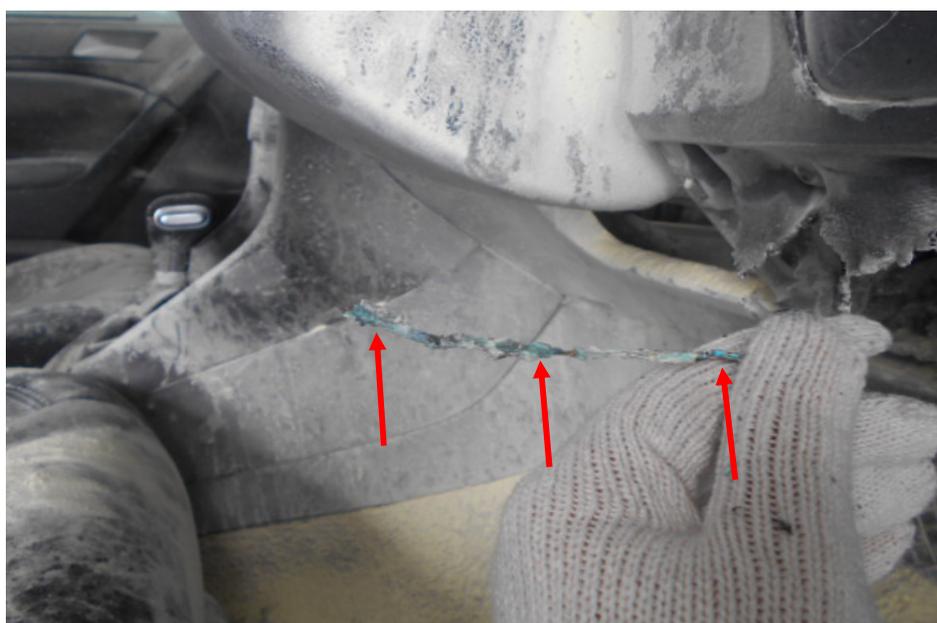


Photo 13 shows a closer view of the burnt wirings that were with faint greenish colour residue (arrowed). The presence of greenish residue indicates internal heating of copper wires, a sign of an electrical short circuit occurring.

18. My checks with both local and international bodies and associations revealed that there was a manufacturer recall involving the Insured Vehicle in year 2013. The recall was for issue relating to the transmission oil and plastic parts in the transmission that could lead to electronic communication failure (short circuit) of the transmission control unit in the Communication Area Network (CAN) of the Insured Vehicle, where various electronic control modules communicate via electronic messages to allow efficient operating behaviour of the Insured Vehicle. From the records, the purpose of the manufacturer recall does not pose a fire risk. Also, it was note that rectifications to address the issue was carried out to the Insured Vehicle in year 2013. See search result below obtained from LTA.

Enquiry on Vehicle Recall - Vehicle Specific

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

| Vehicle Owner Particulars | | | | | | | | | | | | | | | |
|--|--|-------------|-------------|---------------------------|-------------|--------------------------------------|------|--|---|-----------------|---------------|--|--|----------------------|--------------------------|
| Owner ID Type: | Singapore NRIC | | | | | | | | | | | | | | |
| Owner ID: | 2491J | | | | | | | | | | | | | | |
| Vehicle Details | | | | | | | | | | | | | | | |
| Vehicle Registration number: | SJR1275D ← | | | | | | | | | | | | | | |
| Make: | VOLKSWAGEN | | | | | | | | | | | | | | |
| Vehicle Model: | NEW GOLF 1.4 AT 5K13G5 | | | | | | | | | | | | | | |
| Engine No.: | CAX211568 | | | | | | | | | | | | | | |
| Chassis No.: | WVWZZZ1KZ9W517204 | | | | | | | | | | | | | | |
| Recall Details | | | | | | | | | | | | | | | |
| 1 | <table border="1"> <tbody> <tr> <td>Recall No.:</td> <td>R2013050016</td> </tr> <tr> <td>Manufacturer Recall Date:</td> <td>30 Apr 2013</td> </tr> <tr> <td>Estimated Completion Year of Recall:</td> <td>2013</td> </tr> <tr> <td>Brief Description (As Provided by Motor Dealer):</td> <td> <p>Sulphur in the gear oil and an inorganic heat stabiliser in the plastic parts (iodine) can cause metallic surfaces to be attacked and to suffer from electrolytic corrosion. Conducting particles can then settle between the circuit paths of the control unit and could cause a short circuit. ←</p> </td> </tr> <tr> <td>Date Rectified:</td> <td>16 Jul 2013 ←</td> </tr> <tr> <td colspan="2">For more details, contact VOLKSWAGEN GROUP SINGAPORE PTE LTD</td> </tr> <tr> <td>Hotline Information:</td> <td>Call Centre at 6305 7299</td> </tr> </tbody> </table> | Recall No.: | R2013050016 | Manufacturer Recall Date: | 30 Apr 2013 | Estimated Completion Year of Recall: | 2013 | Brief Description (As Provided by Motor Dealer): | <p>Sulphur in the gear oil and an inorganic heat stabiliser in the plastic parts (iodine) can cause metallic surfaces to be attacked and to suffer from electrolytic corrosion. Conducting particles can then settle between the circuit paths of the control unit and could cause a short circuit. ←</p> | Date Rectified: | 16 Jul 2013 ← | For more details, contact VOLKSWAGEN GROUP SINGAPORE PTE LTD | | Hotline Information: | Call Centre at 6305 7299 |
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| Date Rectified: | 16 Jul 2013 ← | | | | | | | | | | | | | | |
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| Hotline Information: | Call Centre at 6305 7299 | | | | | | | | | | | | | | |

Screenshot shows the LTA search result regarding the manufacturer recall that involved the Insured Vehicle. The recall was for issue relating to the transmission oil and plastic parts in the transmission that could lead to electronic communication failure (short circuit) of the transmission control unit in the Communication Area Network (CAN) of the Insured Vehicle. From the records, rectifications to address this recall was carried out to the Insured Vehicle in year 2013.

Conclusion

19. Having investigated and technically analysed the damages of burnt nature to the Insured Vehicle, I am 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 behind the front dashboard inside the interior compartment, at the driver's side of the Insured Vehicle. The wirings were original fitted wirings leading to the interior fuse box of the Insured Vehicle that was located directly behind the front dashboard, where the fire had originated.
20. I 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.
21. At the time of my inspection of the Insured Vehicle, I did not find any modification(s) or additionally fitted electronic and/or electrical component(s) on the Insured Vehicle that could have caused and/or contributed to the fire incident. Although the stereo of the Insured Vehicle was non-original, it was found to be intact and without burn marks. The non-original stereo fitted on the Insured Vehicle hence did not caused and/or contributed to the fire incident.
22. My investigations also revealed that the Insured Vehicle was involved in a manufacturer recall in year 2013. The purpose of the recall was for possible electronic communication failure of the transmission control unit in the Communication Area Network (CAN) of the Insured Vehicle. Rectification works to address this issue were carried out to the insured Vehicle in year 2013. Since the purpose of the manufacturer recall does not pose a fire risk, I am of the opinion that this fire incident was hence not related to the manufacturer recall.

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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