

Your Ref: S0M02R5X
Our Ref : CS4/ASM20007667/P

7th August 2020

M/s AXA Insurance Pte. Ltd.

8 Shenton Way #24-01
AXA Tower
Singapore 068811
(Motor Claims Department)

**TECHNICAL INVESTIGATION REPORT OF FIRE INCIDENT INVOLVING THE
INSURED VEHICLE SJR 6161R ON 22nd JULY 2020**

1. We refer to your letter dated 24th July 2020 and the instructions therein.
2. Our analysis, comments and opinions with respect to the cause of fire to the insured vehicle SJR 6161R (herein referred to as “**Insured Vehicle**”) are set out below.

Inspection of the Insured Vehicle

3. The Insured Vehicle was physically inspected on 28th July 2020 at the premises of Progressive Car Care Pte Ltd - HQ located at Block 3022A, Ubi Road 1 #01-45/46, Singapore 408716.
4. A static inspection was carried out to the Insured Vehicle where the following general information was recorded:-

Vehicle Registration No.	: SJR 6161R
Make / Model	: Audi TTC-2.0 TFSI S-TRONIC
Chassis No	: TRUZZZ8J991006763
Year of Registration	: August 2008
Mileage	: N.A (wiring affected)

5. The Insured Vehicle was observed to have sustained severe fire damage confined to its engine compartment in the front and was completely burnt. Rust had accumulated around the engine compartment of the Insured Vehicle as a result of exposure to environmental condition for a period of time. See photos 1 – 6 below.



Photo 1 shows the rear portion of the Insured Vehicle, which was observed to be unaffected by the fire.



Photo 2 shows the rear right body of the Insured Vehicle, which was observed to be unaffected by the fire.



Photo 3 shows the rear left body of the Insured Vehicle, which was observed to be unaffected by the fire.

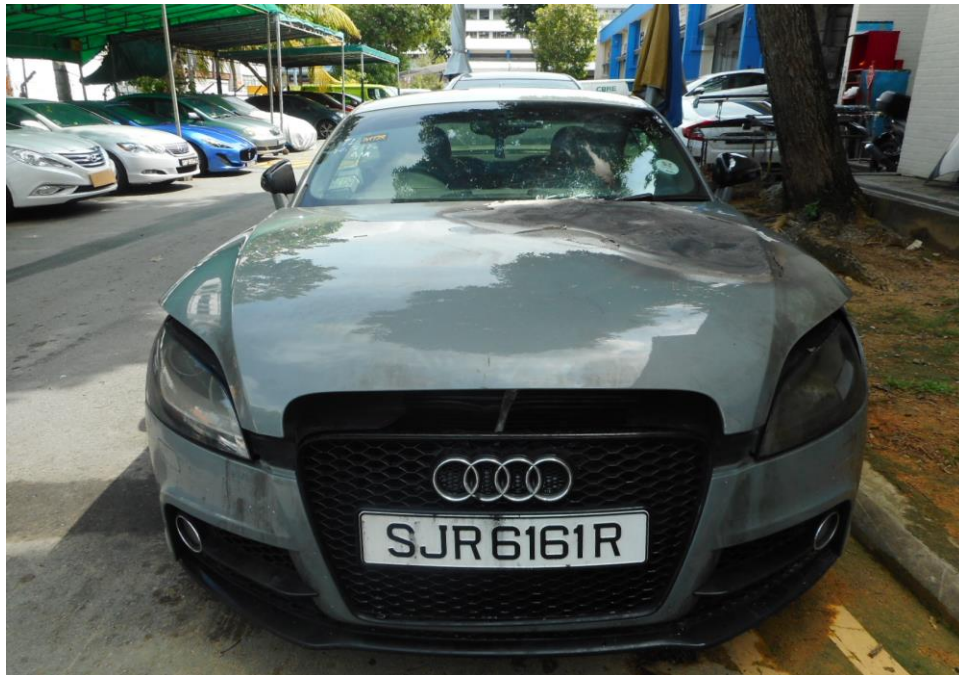


Photo 4 shows the general view of the front portion of the Insured Vehicle at the time of our inspection. The Insured Vehicle was observed to have sustained severe fire damage. Its engine compartment was completely burnt. Rust had accumulated around the engine compartment of the Insured Vehicle as a result of exposure to environmental condition for a period of time.



Photo 5 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.



Photo 6 shows the interior view from the right side of the Insured Vehicle at the time of our inspection. The right side of the Insured Vehicle was observed to be unaffected by the fire.

6. At the time of inspection of the Insured Vehicle, we did find any additionally fitted electronic and/or electrical component(s) observed are aftermarket air filter pipe, monitoring gauges, audio head unit on the Insured Vehicle. There also appears to be modification(s) fitted on the Insured Vehicle observed are upgraded brake kits, exhaust system and rims. See photo 7 – 11 below.



Photo 7 shows an aftermarket air filter pipe (arrowed) on the Insured Vehicle, which was observed to be affected by the fire.



Photo 8 shows an aftermarket audio head unit (arrowed) and monitoring gauge (circled) on the Insured Vehicle, which was observed to be unaffected by the fire.



Photo 9 shows an aftermarket monitoring gauge (circled) on the Insured Vehicle, which was observed to be unaffected by the fire.



Photo 10 shows an aftermarket monitoring gauge (circled) on the Insured Vehicle, which was observed to be unaffected by the fire.



Photo 11 shows an aftermarket rim (yellow arrow) and upgraded brake caliper and disc brake (red arrow) on the Insured Vehicle, which was observed to be unaffected by the fire.



Photo 12 shows a set of aftermarket exhaust system (circled) on the Insured Vehicle, which was observed to be unaffected by the fire.

Investigation and Technical Analysis

7. For this particular case, the fire appears to have originated from the left portion of the engine compartment of the Insured Vehicle. This can be determined from the burn pattern of the various components in the engine compartment, which were observed to have been partly melted and burn from the high heat intensity and the high heat intensity burn marks (whitish burn marks) found on the metal parts around the Insured Vehicle. Rust had also developed on these metal parts.
8. The whitish burn marks are a result of exposure to prolonged heat intensity. Rust would normally start to develop around these areas soon after a fire as prolonged exposure to high heat intensity usually causes steel/metal material body parts to be exposed to natural environmental condition. The rust that had developed on the metal brackets is an indication that the front right position of the Insured Vehicle had sustained exposure to prolonged high heat intensity. See photos 13 & 14 below.



Photo 13 shows the top of the front bonnet cover of the Insured Vehicle at the time of our inspection. The high heat intensity burn marks (whitish burn marks) and rust that had development on the left exterior surface of the bonnet indicates that the fire had originated from the left engine compartment portion of the Insured Vehicle.



Photo 14 shows the underside of the front bonnet cover of the Insured Vehicle at the time of our inspection. The High heat intensity burn marks (whitish burn marks) and rust that had development found on the exterior surface of the bonnet indicates that the fire had originated from the left engine compartment portion of the Insured Vehicle.

9. Upon closer examination of the engine compartment of the Insured Vehicle which was where the fire had started, we had found traces of greenish residue on the wirings leading from the fuse box to the electrical components. 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 photos 15 - 18 below.

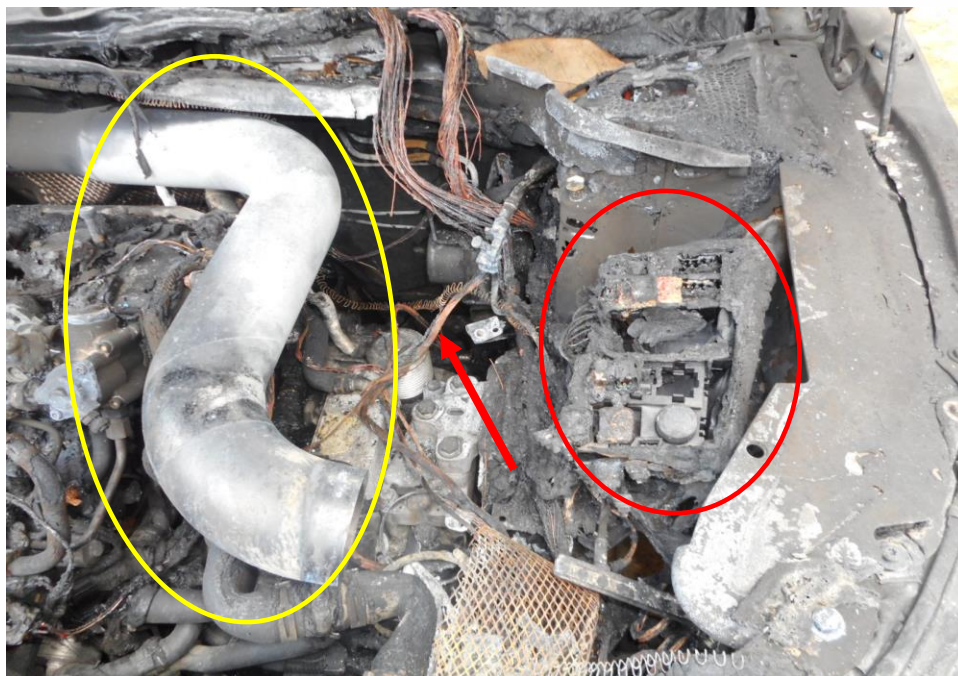


Photo 15 shows the general view of the front engine compartment portion of the Insured Vehicle where the fire had likely started from at the time of our inspection. The fire damage to the Insured Vehicle was confined to its right engine compartment portion as seen that the metal air intake pipe had sustained high heat intensity burn marks (whitish burn marks) (yellow circle) and its fuse box (circled), original wiring harnesses (red arrow) and abs pump and was amongst the parts in the compartment that were found to have been affected as a result of the fire.



Photo 16 shows the close up view of the front right engine compartment portion of the Insured Vehicle at the time of our inspection. The fire damage to the Insured Vehicle was confined to its engine compartment portion and. Its fuse box (circled), original wiring harnesses (red arrow) and abs pump (yellow arrow) and was amongst the parts in the compartment that were found to have been affected as a result of the fire.

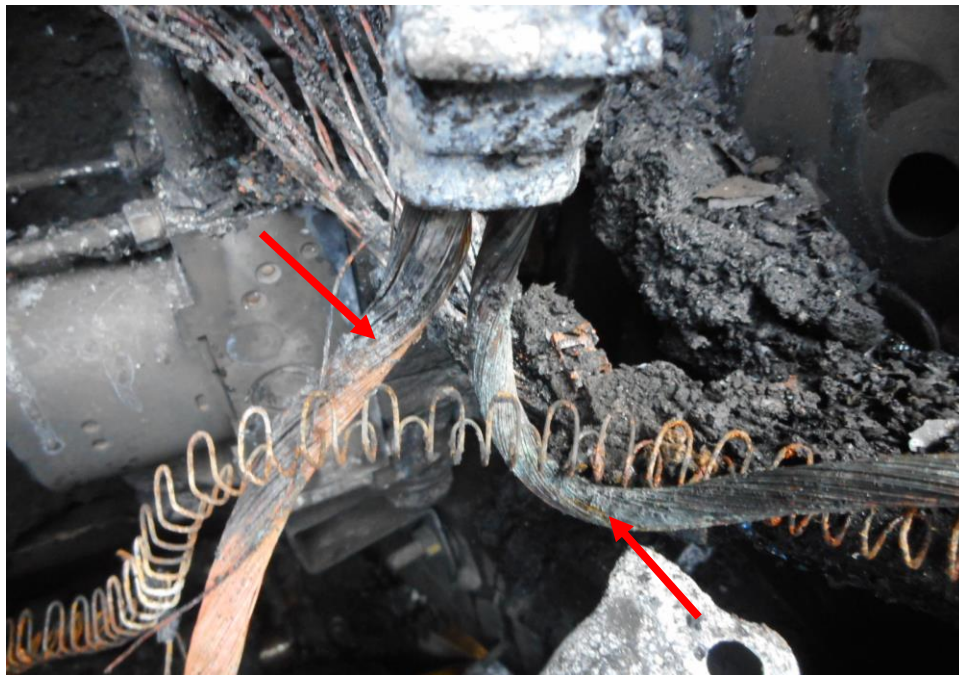


Photo 17 shows a general view of the original wiring harness in the engine compartment. The original wiring harness (arrowed) was observed with greenish residue on the surface. The presence of greenish residue indicates internal heating of copper wires, a sign of an electrical short circuit occurring. The greenish residue is normally left behind from oxidation as a result of chemical reaction involving the copper wires.

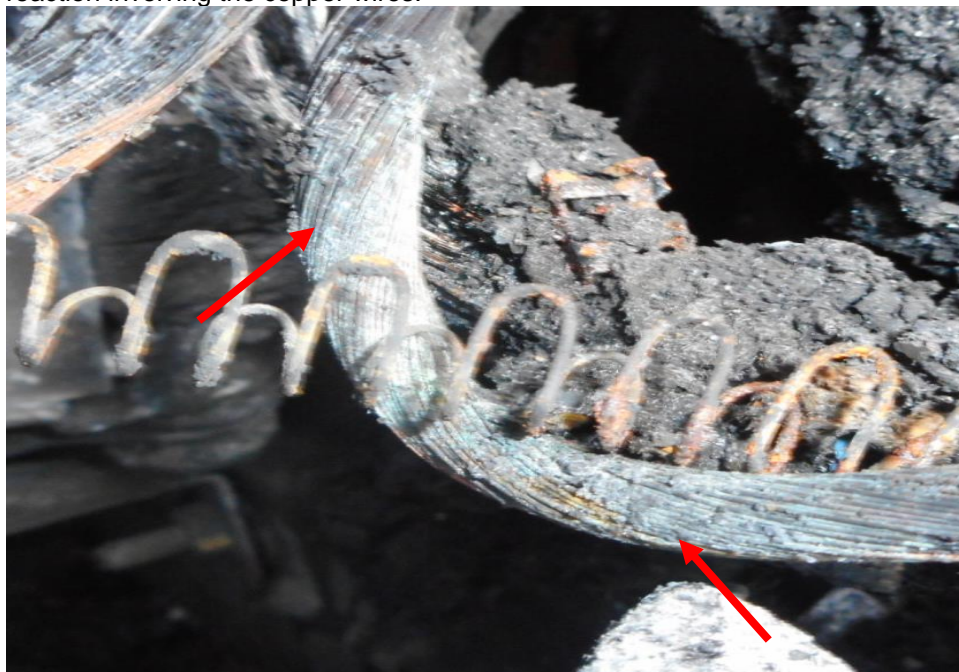


Photo 18 shows a close up view of the original wiring harness in the engine compartment. The original wiring harness (arrowed) was observed with greenish residue on the surface. The presence of greenish residue indicates internal heating of copper wires, a sign of an electrical short circuit occurring. The greenish residue is normally left behind from oxidation as a result of chemical reaction involving the copper wires.

10. From the Singapore Accident Statement, which was made by Mr Lim Jing Zhe (herein referred to as “**Mr Lim**”), we note that the fire to the Insured Vehicle had started at a time when it was in the midst of travelling on the road. Mr Lim was first alerted of the fire when he heard a sound emitting from the engine compartment.
11. We managed to speak to Mr Lim on 3rd August 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.
12. According to Mr Lim, at about 1745hrs on 22nd July 2020, he was travelling from Somerset Road towards his home at Farrer Road. He was driving the Insured Vehicle along Farrer Road, suddenly he heard an explosion sound coming from the front of the Insured Vehicle and subsequently, he saw white smoke emitting out from the front left area of the insured vehicle. Mr Lim informed that he immediately drove the Insured Vehicle to a side lane on Jln kembong Melati road and turned off the engine and evacuated from the Insured Vehicle, shortly after the white smoke got bigger and flames was seen emitting out from the front engine compartment of the Insured Vehicle, Mr Lim then proceeded to the safe side of the road and requested for SCDF assistance
13. Bystanders from the nearby house came to assist with their garden hoses and the fire was under controlled, SCDF arrived shortly and had the fire fully extinguished within 5 minutes. Mr Lim was given a case number after his statement was taken by the police and SCDF officers.
14. Mr Lim subsequently contacted his workshop and they advised to have the Insured Vehicle towed to his Insurance authorised reporting workshop. The tow truck arrived within an hour and the Insured Vehicle was towed to Progressive Car Care Pte Ltd. Mr Lim made an insurance report on 24th July 2020 at 1013 hours.
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 was 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 pre-owned. He is the registered owner of the Insured Vehicle. Mr Lim informed us that he is the sole driver of the Insured vehicle since the day he bought the Insured Vehicle 1 year 8 months ago.
17. Pertaining to the maintenance aspect, Mr Lim sends the Insured Vehicle for periodical servicing. He provided us with his latest servicing record, inspection certification and there was no major overhaul done or modifications done to the Insured Vehicle.

REV. 3

TEST CERTIFICATE


No: AM00272316AM2

Land Transport Authority

THE ROAD TRAFFIC ACT (CHAPTER 276)

This is to certify that the motor vehicle with registration no: SJR6161R was examined under section 90 of the Road Traffic Act and that at the date of the examination the prescribed statutory requirements were complied with in relation to the vehicle.

18/Sep/2019
Date of issue


JIC INSPECTION SERVICES PTE LTD
 Authorised signatory

KEEP THIS CERTIFICATE SAFELY

CHECK carefully that the particulars specified above are correct. A test certificate showing any alteration should not be issued or accepted as this may delay the renewal of a vehicle licence.

For the purpose of renewing road tax, this Certificate must be presented within **3 MONTHS** from the date of issue.

A test certificate should not be accepted as evidence of the satisfactory mechanical condition of a vehicle offered for sale.


JIC INSPECTION SERVICES PTE LTD
Registration No. 1954257401

HEAD OFFICE : 53 PIONEER ROAD SINGAPORE 628505
 BRANCH : 21 ANG MO KIO STREET 63 SINGAPORE 569118
 MAILING ADDRESS : 385 SIN MING DRIVE SINGAPORE 575718

TEL: 6863 9639 FAX: 6863 1838
 TEL: 6484 7370 FAX: 6484 7379







revo Authorised
Dealer

BILL TO:

Anton

Tel: 82539238

Email: mellowedhigh@gmail.com

25 Kaki Bukit Road 4 Unit 01-46 / 05-43

Singapore Singapore 417800

GST Registration No.: 201538300K

Tel: 63858330

Email: info@motorenwerkz.com

Website: http://motorenwerkz.com

TAX INVOICE

Tax Invoice Number: 2466

Date: 26/09/2019

Due Date: 26/09/2019

FOR:

Engine Oil Servicing (10K KM)

Odometer: 113,519 KM

Model: Audi TT

Reg No: SJR6161R

VIN: TRUZZZ8J991006763

Body Type: Coupe

Description	Qty.	Unit Price	Disc.	Amount
HKS Euro Package				
MPM Engine Flush	1.0	S\$20.000		S\$20.00
MPM Fuel System Cleaner	1.0	S\$20.000		S\$20.00
MPM Engine Ceramic Protector	1.0	S\$30.000		S\$30.00
HKS Premium Euro Super Oil 5w40	4.0	S\$37.500		S\$150.00
Engine Oil Filter for VW/Audi 2.0TFSI	1.0	S\$30.000		S\$30.00
Labour				S\$60.00
Additional				
HKS Premium Euro Super Oil 5w40	1.0	S\$37.500	15.0%	S\$31.88
Fan Belt for VW / Audi	1.0	S\$50.000	10.0%	S\$45.00
Fan Belt Tensioner for VW / Audi	1.0	S\$120.000	10.0%	S\$108.00
Labour for fan belt and tensioner				S\$90.00

Discount	- S\$55.64
Subtotal	S\$532.88
GST	S\$37.30
Total	S\$570.18
Paid	S\$570.18
Balance Due	S\$0.00



revo Authorised Dealer

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Website: http://motorenwerkz.com

TAX INVOICE

Tax Invoice Number: 3024
Date: 06/12/2019
Due Date: 06/12/2019

FOR:
Clutch & Transmission

Model: Audi TT
Reg No: SJR6161R
VIN: TRUZZZ8J991006763
Body Type: Coupe

Description	Qty.	Unit Price	Disc.	Amount
Original Clutch Kit				
Auto G/B Clutch Kit VW 6Sp DSG	1.0	S\$770.000	10.0%	S\$693.00
Labour To R/I Subframe & Gearbox To Replace Clutch Kit				S\$600.00
Alignment 2 Wheel	1.0	S\$90.000		S\$90.00
DSG Fluid Change				
DSG Fluid for VW / Audi DQ250 6Speed	6.0	S\$30.000	5.0%	S\$171.00
DSG Oil Filter for VW / Audi 6 Speed DQ250	1.0	S\$25.000	5.0%	S\$23.75
DSG Oil Filter O-Ring for VW / Audi 6Speed DQ250	1.0	S\$5.000	5.0%	S\$4.75
Labour for dsg fluid change				S\$60.00
Oil Leak				
Turbo Oil Return Pipe Gasket for VW / Audi 2.0	1.0	S\$3.000	10.0%	S\$2.70
Labour To Replace Turbo Oil return Pipe Gasket				S\$30.00
Steering Boot				
VW Steering Boot Tou/Pas/A3/TT	2.0	S\$15.000	5.0%	S\$28.50
Labour To Replace Steering Boots LH & RH				S\$60.00
Subframe Bushings				
Audi/VW Sub-Frame Bottom Bushing	1.0	S\$70.000	5.0%	S\$66.50
Audi/VW Sub-Frame Upper Bushing	1.0	S\$70.000	5.0%	S\$66.50
Labour To R/I Complete Subframe To Replace Subframe Bushings				S\$180.00



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Email: info@motorenwerkz.com
Website: http://motorenwerkz.com

TAX INVOICE

Tax Invoice Number: 3301
Date: 06/01/2020
Due Date: 06/01/2020

FOR:
Engine Oil Servicing (10K KM)
Odometer: 119,776 KM

Model: Audi TT
Reg No: SJR6161R
VIN: TRUZZZ8J991006763
Body Type: Coupe

Description	Qty.	Unit Price	Amount
HKS Euro Engine Oil Service			
HKS Premium Euro Super Oil 5w40	4.0	S\$28,000	S\$112,00
Engine Oil Filter for VW/Audi 2.0TFSI	1.0	S\$30,000	S\$30,00
Labour To Service			S\$60,00
HKS Premium Euro Super Oil 5w40	1.0	S\$28,000	S\$28,00
MPM 3in1			
MPM Engine Flush	1.0	S\$30,000	S\$30,00
MPM Engine Ceramic Protector	1.0	S\$55,000	S\$55,00
MPM Fuel System Cleaner	1.0	S\$30,000	S\$30,00
Other Servicing Items			
Charcoal Canister for VW / Audi	1.0	S\$190,000	S\$190,00
Air Con Filter For Mk5/6	1.0	S\$40,000	S\$40,00



Discount	- S\$79.18
Subtotal	S\$501.00
GST	S\$35.07
Total	S\$536.07
Paid	S\$536.07
Balance Due	S\$0.00

Incident Scene Photographs

18. During the course of our investigations, we were able to obtain coloured photographs showing the Insured Vehicle at the incident location before, during and after the fire was extinguished by SCDF personnel. These were provided to us by Mr Lim.
19. Our examination of these photographs revealed that the fire had started from the front of the engine compartment of the Insured Vehicle. The photographs had also showed the Insured Vehicle on fire and similar extent of damage and burn pattern to the Insured Vehicle as per what we had observed during our physical inspection of the Insured Vehicle. Apart from the aforesaid, there was no further notable information that could be gathered from these photographs. See photos 19 - 22 below which were provided to us by Mr Lim.



Photo 19 shows the smoke emitting from the front and undercarriage of the Insured Vehicle 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 Lim, location when the fire broke out.



Photo 20 shows the start of the fire at the front left engine compartment of the Insured Vehicle 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 Lim, location when the fire broke out.



Photo 21 shows the smoke and flames engulfing the front of the Insured Vehicle 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 Lim, location when the fire broke out.



Photo 22 shows the Insured Vehicle at the incident location after the fire was extinguished by SCDF personnel. Firefighters can be seen to be extinguishing the fire and inspecting the extent of damage.

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 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, Fire due to an overheated engine was unlikely as the Insured Vehicle was still able to be operated after smoke were seen emitting from the front of the Insured Vehicle. Mr Lim was still able to drive 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 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.
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 condition of the wirings that were found leading from the fuse box assembly to the electrical components on the Insured Vehicle, which was earlier discussed in paragraph 9 above.
23. 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 engine compartment of the Insured Vehicle. See search result from LTA below.

1

2

Vehicle Recall Details

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

Owner ID Type Singapore NRIC	Owner ID 048Z
Vehicle No. SJR6161R ←	Make/Model AUDI/ TTC 2.0 TFSI S-TRONIC
Engine No.: BWA245102	Chassis No.: TRUZZZ8J991006763
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 nature. For this particular case, the fire had originated along the wirings leading to the original manufacturer fuse box 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.

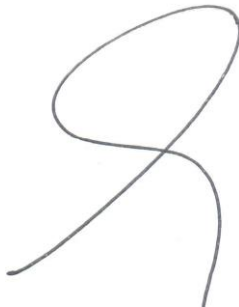
26. We observed aftermarket air filter pipe, aftermarket brake capliers, brake disc component(s), audio head unit, monitoring gauges and exhaust system fitted on the Insured Vehicle at the time of our inspection of the Insured Vehicle. In our opinion, this components did not cause or contribute to the fire incident as the cause of fire was observed to be of short circuit origin on the original wiring harness of the Insured Vehicle.

27. 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.

28. SCDF was activated to attend to the fire incident and a fire report pertaining to their findings will likely be forth coming. We have applied for this fire report and will forward a copy of the report once it is made available to us.



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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