

**Fire Investigation Report 382-17
Kings Dock Car Park
Monarch Quay
Liverpool**

Compiled by Station Manager *****
Incident Investigation Team, Merseyside Fire and Rescue Service.

OFFICIAL SENSITIVE

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MERSEYSIDE FIRE & RESCUE SERVICE

INCIDENT INVESTIGATION TEAM

FIRE INVESTIGATION

PREMISES: Kings Dock Car Park, Monarch Quay,
Liverpool

DATE: 31st December 2017

TIME OF CALL: 16:42 hrs.

METHOD OF CALL: 999

TYPE OF PROPERTY: Multi storey car park

AUTOMATIC FIRE DETECTION: Yes

BUILDING OWNER: Liverpool City Council

NUMBER OF FIRE APPLIANCES: 12 Pumps, 3 CPLs, 3 HVP

INITIAL INCIDENT COMMANDER: Watch Manager *****

INCIDENT COMMANDER: Chief Fire Officer Dan Stephens

FIRE INVESTIGATION OFFICER: Station Manager *****

1 SUMMARY

- 1.1 On 31st December 2017 Merseyside Fire & Rescue Service (MFRS) attended a fire at Kings Dock Car Park, Monarchs Quay. The car park comprised of eight storeys consisting of a ground floor with seven levels above. The fire started in a car which was parked on the third level of the car park. The vehicle was parked shortly before the fire started. The fire spread to involve other vehicles on level three and to the levels above and below. The fire developed to cause significant damage to the building and 1309 vehicles; at the time of writing consideration is being given to a complete demolition of the building. The findings from the subsequent fire investigation concluded that the cause of the fire was due to an electrical or mechanical defect of the vehicle in which the fire originated.

2 PURPOSE OF REPORT

- 2.1 This report is to outline the details of the fire that occurred at Kings Dock Car Park and to identify the cause and origin of the fire and subsequent fire spread. As such I examined the scene of the fire to determine the area of origin and the most likely cause.

3 STATEMENT OF TRUTH AND COMPLIANCE

- 3.1 I understand my duty as an expert witness to the court is to provide independent assistance by way of objective and unbiased opinion in relation to matters within my expertise. I will inform all parties and where appropriate the court in the event that my opinion changes on any material issues.

4 INVESTIGATION METHODOLOGY

4.1 ***'The Systematic Approach:*** *The systematic approach is based on the scientific method. This method provides an organisational and analytical process that is desirable and necessary in a successful fire investigation'.*

4.2 This investigation was based around the 'scientific method'. This approach ensures a logical enquiry into the investigation and follows the processes outlined below:

- Information collection
- Information analysis
- Development of an hypothesis
- Test of the hypothesis and validation of results
- Report of the final conclusion

5 DESCRIPTION OF PROPERTY

- 5.1 The Kings Dock Car Park is a multi storey car park. It has eight storeys comprising of a ground floor with seven levels above. It is owned by Liverpool City Council (LCC) and managed by Arena Conference Centre Limited on its behalf. The car park provides car parking for visitors to Liverpool and to the adjacent Echo Arena.

- 5.2 The car park was constructed from reinforced concrete and is predominately open sided. There are apartment blocks on 2 sides of the car park.

- 5.3 The behaviour of the elements of the building construction during the fire is a subject that is extensively covered in a separate investigation report completed by the Merseyside Fire and Rescue Authority Protection Department.

6 INCIDENT BACKGROUND

- 6.1 Merseyside Fire & Rescue Authority (MFRA) was alerted to a car on fire on the 3rd floor of the Kings Dock Car Park at 16:42hrs, Sunday 31st December 2017.

- 6.2 The car park can hold approximately 1600 cars and was at near capacity due to The Liverpool International Horse Show taking place at the Echo Arena during that day, with the afternoon show about to finish. To support the Horse Show the ground level of the car park was being utilised for storage and stabling of horses and their support teams.

- 6.3 The investigation relating to the MFRA response to the Fire Incident is covered in a separate operational assurance investigation report.

7 FIRE INVESTIGATION

- 7.1 I initially attended the incident scene at the time of the fire, where I took photographs and made some initial notes. The ongoing firefighting operation and the state of the fire prevented any effective investigation work at this time; I therefore postponed further investigation and returned to continue my enquiries on the following day.
- 7.2 I became aware of a photograph taken by a member of the public of the vehicle that was initially involved in the fire, this image was published on “The Sun” news website. The photograph was insufficient to identify the make and model of this vehicle, however the member of the public who took the photograph stated that it was an old Land Rover. This person was one of the callers who reporting the fire to MFRA when the incident occurred.
- 7.3 At approximately 16:45 hours on the 1st January 2018 I received a telephone call from MFRA’s Fire Control Room advising me that the owner of the vehicle had contacted the Service stating that he thought that it was his car that had first caught fire. Fire Control passed me the details of the owner in order for me to make contact.
- 7.4 At approximately 17:15 I rang the owner and introduced myself as the fire investigator with responsibility for investigating the fire at the kings Dock Car Park. During this telephone conversation the owner informed me that he had seen the photograph on “The Sun” website and that he thought that the vehicle to have caught fire was his.
- 7.5 The owner provided me with the vehicle details, telling me that it was a light blue Range Rover, he also gave me the vehicle registration number. He explained that he had owned the vehicle for approximately 5 years, that it had a current MOT certificate and that the car had a petrol engine.
- 7.6 During our conversation the owner told me that he could smell burning as he walked away from his vehicle but did not think it was his vehicle as another

vehicle was driving past at the time. He thought that the vehicle driving past might have been producing the smell.

7.7 He explained that he had travelled from the Wirral to the Echo Arena. He told me that he parked the car between 16:20 and 16:25 hours leaving the car park on foot at about 16:30 hours.

7.8 On the 2nd January I re-visited the car park to continue my investigation. I entered level 3 via the same staircase that was used by the firefighters who were initially deployed onto level 3 to fight the fire. I located the Range Rover on the right hand isle heading away from the staircase, in the tenth parking space (see section 13, Plan of Level 3). The location of the vehicle was consistent with the location of the fire as reported by the initial firefighting team.



Fig 6.

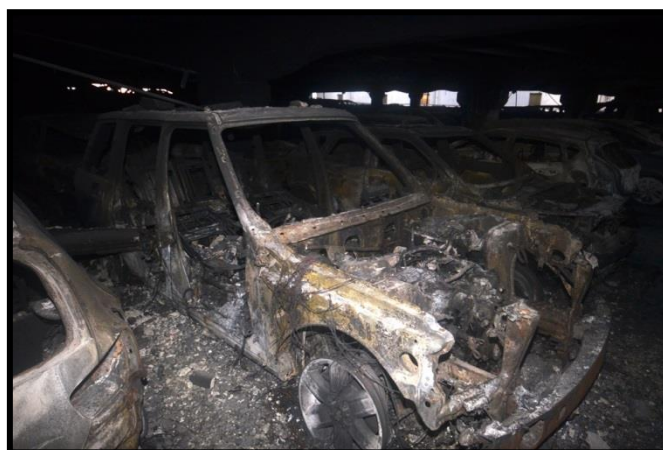


Fig 7.

Fig 6 and 7. Show vehicle originally involved in fire

- 7.9 During the months January to March 2018 I made numerous requests to the owner to attend an interview or to provide a statement in order to assist me with my investigation; these requests were made directly and through his insurance company and their agents, however on each occasion they declined my request to assist.
- 7.10 On the 4th January 2018 I received an email from a private fire investigation company called IFIC Forensics. IFIC Forensics had been appointed to investigate the fire on behalf of the NFU Mutual Insurance Services. In that email it was explained that following a meeting they had with the owner a statement had been taken, this statement was never provided to MFRA.
- 7.11 On the 10th January 2018 I reviewed the CCTV footage captured by the car park security cameras. A colleague from MFRA Protection Department, Watch Manager *****, assisted me in the review.
- 7.11 By cross referencing the arrival time of fire appliances with the time on the CCTV it was identified that the time on the CCTV was incorrect. WM ***** realigned the timeline to reflect the correct and actual times from the point that the vehicle entered the car park to when flame is seen.

- 7.12 The CCTV shows the Range Rover entering the car park and parking on level 3. It shows the vehicle owner and a female leaving the vehicle and then returning to the vehicle on two separate occasions before finally leaving the car park. Notwithstanding the inaccuracies of the CCTV clock, the CCTV shows that smoke appears from under the bonnet of the vehicle in 8 minutes and 20 seconds after it being parked. It is 2 minutes and 18 seconds after the owner leaves the vehicle for the final time that smoke starts to appear.
- 7.13 On the 20th March 2018 I provided Merseyside Police with a statement outlining the fire, MFRA's response to the fire and the difficulties I was having in obtaining an account of the vehicle owners actions prior to the fire.
- 7.14 As part of their investigation Merseyside Police interviewed the owner and showed him the CCTV footage that I had provided to the Police. The owner's legal team requested that I was not present at the interview, and as a result I did not attend the interview.
- 7.15 Detective Sergeant ***** contacted me to confirm that the police had conducted an interview with the owner during which he had provided them with an account of his actions at the time that his vehicle went on fire. From this interview the police concluded that they were satisfied that his actions were plausible and that they found no evidence to suggest any suspicious activity by the owner or by any other persons.

8 CAUSE OF THE FIRE (Range of ignition sources)

8.1 During the course of the investigation and scene examination I considered the following as the source of ignition; **deliberate ignition and vehicle defect**. Other sources of ignition such as smoking and fireworks were ruled out as there was no evidence to suggest that these were likely sources of ignition. It is clear from the CCTV footage that the fire started in the engine compartment of the vehicle, making a discarded cigarette or a firework an unlikely cause of ignition.

8.2 The lack of co-operation from the vehicle owner, his solicitor, his fire investigation company and his insurers limited opportunities to conduct a more thorough investigation to determine the origin and cause of the fire.

8.3 Concerns regarding the stability of the building have prevented an examination of the vehicle in situ from being carried out and it has not been possible to remove the vehicle due to the fire damage to the structure.

8.4 Deliberate ignition

The fire investigation found no evidence to support a case that the fire was deliberately ignited, in drawing this conclusion I considered both the CCTV footage and the conclusion from a police interview with the owner.

8.5 Vehicle defect

The actions captured on the car park CCTV footage of the owner's activity after he had parked the vehicle suggest that he suspected there was something wrong with the vehicle. The CCTV footage also showed unusual activity with the vehicle lighting which further suggests that there was something wrong with the vehicle.

From the vehicle stopping in the parking bay it takes 8 minutes and 20 seconds for smoke to start issuing from under the bonnet of the vehicle. This timing is consistent with a vehicle being driven, parked and the first signs of fire being seen externally from under the bonnet. Coupling this timeline with the owner's actions suggest that the fire had started at around the time the vehicle was

parked. It is more than likely that the fire started accidentally, either due to an electrical fault or a component failure.

Therefore in view of the above, I conclude that it is more than likely that the fire started accidentally, either due to an electrical fault or a component failure.

9 FIRE SPREAD

- 9.1 The investigation of the fire spread inside the car park was conducted by Protection officer and is extensively detailed in the Protection Fire Investigation report.

10 GLOSSARY OF TERMS

Area of Origin

The specific location or place where the fire initially started.

Automatic Fire Alarm (AFA)

A fire alarm system comprising components for automatically detecting a fire, initiating an alarm of fire and initiating other action as arranged; the system may include manual call points.

Combustion

Oxidisation that generates detectable heat and light.

Fire Appliance

An appliance that is capable of carrying a multitude of equipment and firefighting media (such as water and foam) to deal with different types of emergencies.

Fire Control

A control room used to handle emergency calls for the fire services and mobilise resources to deal with incidents.

Flaming Fire

Rapid oxidation of gases and vapours that generates a detectable heat and light.

Ignition

The process of initiating combustion or catching fire.

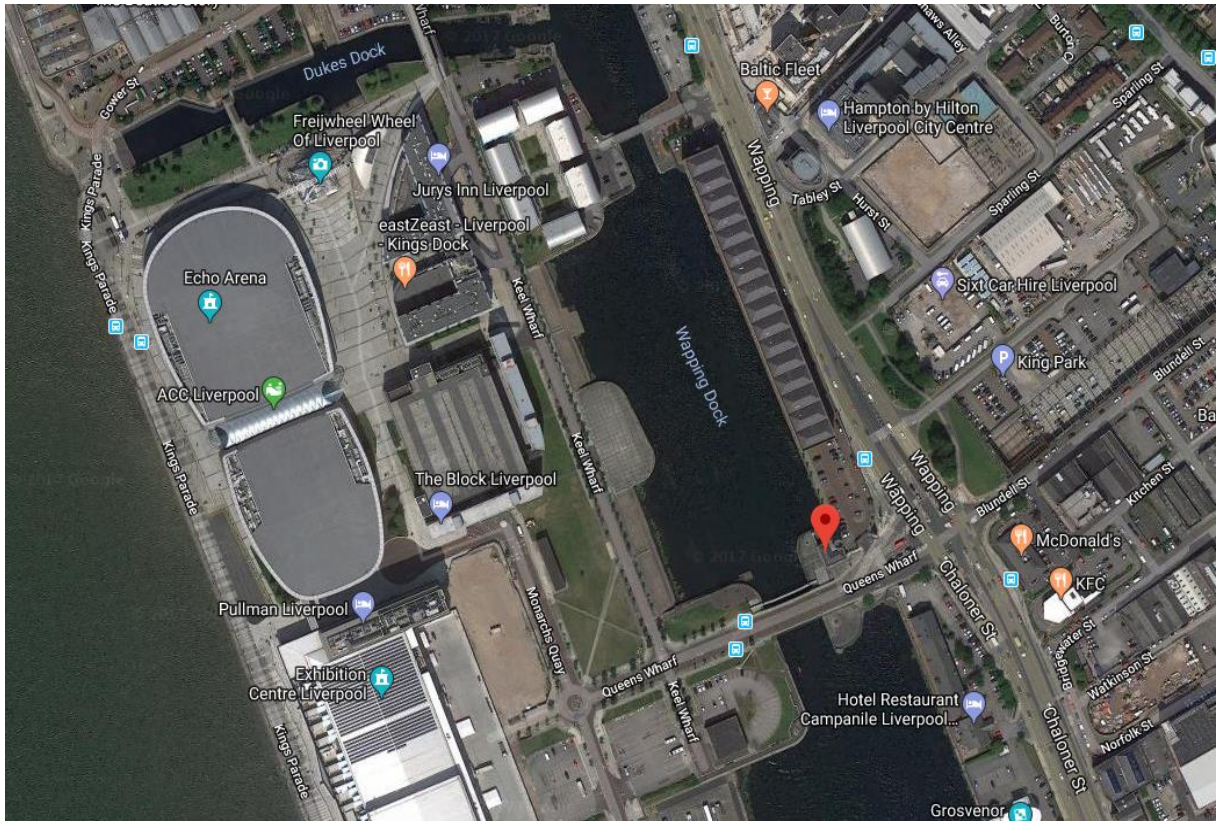
11 REFERENCES

1. NFPA 921, Chapter 4, Page 19 (4.2).

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Station Manager
Incident Investigation Team
22nd May 2018

12 AERIAL VIEW OF SITE



13 PLAN OF LEVEL 3



Symbol:



Location of vehicle first involved in fire

14 KEY PHOTOGRAPHS**Photographs**

	Description	Frame number
1	Vehicle originally involved in fire	DSC 7479
2	Offside view of vehicle	DSC 7481
3	Close up of fire damage to vehicle that first caught fire	DSC 7482
4	Nearside view of vehicle	DSC 7483
5	View of fire from Pullman Hotel	DSC 7129
6	View of fire from opposite main entrance to car park	DSC 7135
7	Failure of concrete as a result of the fire	DSC 7159
8	Fire damaged vehicles on level 3 in area where fire started	DSC 7221
9	Fire damage on ramp leading to level 7	DSC 7284

Fire Investigation

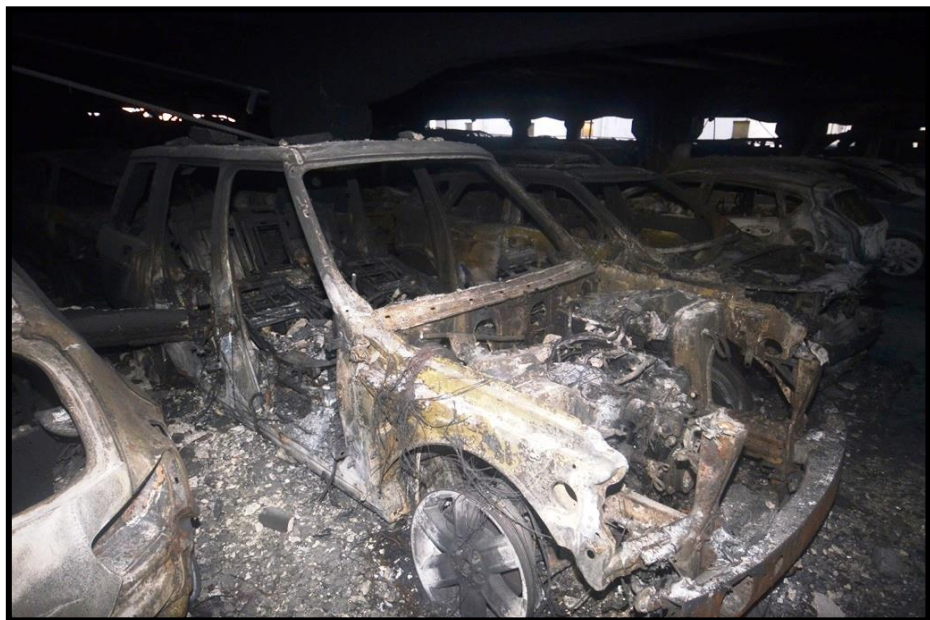
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Vehicle originally involved in fire

Fire Investigation

2



Offside view of vehicle

Fire Investigation

3



Close up of fire damage to vehicle that first caught fire

Fire Investigation

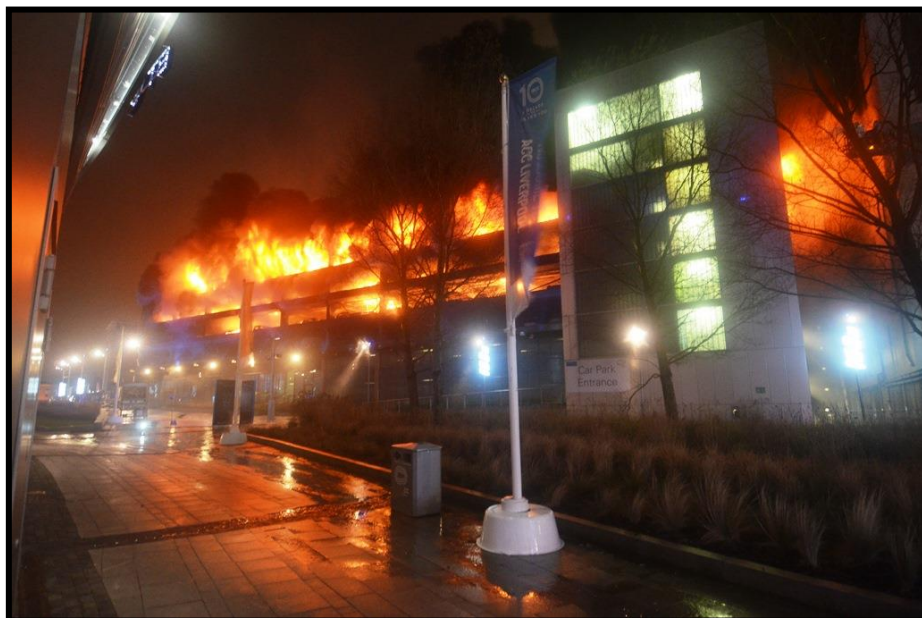
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Nearside view of vehicle

Fire Investigation

5



View of fire from Pullman Hotel

Fire Investigation

6



View of fire from opposite main entrance to car park

Fire Investigation

7



Failure of concrete as a result of the fire

Fire Investigation

8



Fire damaged vehicles on level 3 in area where fire started

Fire Investigation

9



Fire damage on ramp leading to level 7