London Luton Airport (LLA) Terminal Car Park 2, 10 October 2023

Key Points:

Car Park 2 was a five-storey building containing four floors and a ground floor drop off area consisting of a steel framed structure with reinforced concrete floors and open sides. Four protected escape routes positioned on the external frame of the car park included dry riser provision.

London Luton Airport is a category 7 aerodrome.

* At **20:42** on Tuesday 10 October 2023, CCTV captures a red Range Rover Sport arriving at the ticket barrier at London Luton Airport (LLA) Terminal Car Park 2. As the vehicle stops at the barrier, light smoke can be seen issuing from the vehicle.
* At **20:47:20** Bedfordshire Fire and Rescue Service (FRS) Control received an initial call to a car fire on the third floor of the multi storey carpark located at LLA, Terminal Car Park 2.
* The PDA of two rescue pumps (08P1 Luton, 12P1 Stopsley, drone 05D1 and a flexi duty officer) were mobilised.
* Automatic Vehicle Location System (AVLS) data shows that 12P1 arrived at **20:55:00** and 08P1 at **20:55:58.**
* Initial crews in attendance were faced with multiple cars involved in fire on the third floor.
* Bedfordshire FRS crews attempted to attack the fire from the northeast stairwell. However, it was not possible to open the door to this stairwell from the outside without a key.
* Airport Fire Crews on the northwest stairwell had secured a water source which was supplying a LLA appliance which in turn was ready to supply the dry riser.
* The Crew Commander from Bedfordshire Fire & Rescue Service (BFRS) decided to change their tactical plan and to use the northwest stairwell (where LLA fire crews had secured water supplies) with crews briefed to move to the new location.
* **20:56** – ALP requested.
* **21:03 –** High rise PDA requested – 4 Pumps, ALP, Control Unit, one officer).
* BFRS crews now firefighting internally with LLA crews using an HRET externally.
* **21:16** - make pumps 10 AP x two.
* **21:26:46** - internally the incident was escalating and there were signs of internal structural damage within the stairwell and concrete floor. Based on this information all crews were evacuated from internal firefighting and tactical mode Delta was adopted.
* **21:26:50 –** High Volume Pump (HVP) and two water carriers requested, along with Hazardous Materials Advisor (HMA) and ambulance for crew welfare.
* **21:37:21** approximately 80 per cent of the third floor was involved in fire and a major incident was declared with a METHANE message being sent.
* **22:00** – Vehicles reported as being seen moving on the top floor of the car park.
* In an attempt to retrieve their car, a member of the airport staff had used their position as a worker at the airport to gain access to the car park. It is estimated that the entry of the worker into the car park and their subsequent rescue by BFRS crews occurred between **21:30 and 22:17.**
* Crews in sector 2 were tasked with providing fire protection for the two aircraft that were roughly 30 metres from the car park. This was by means of water curtains and wetting the aircraft until they could be moved.
* Fireground tactics were changed from containment of the fire on the third floor, to defensively containing it within Terminal Car Park 2 to prevent it from spreading to other buildings such as the DART (Direct Air Rail Transit) Station and Car Park 1 and to protect the two aircraft in sector 2.
* **22:28:05** - The worker who was rescued from the building and three firefighters were taken to the Luton and Dunstable Hospital by ambulance.
* **22:57:12 –** make pumps 15 message sent.
* **23:04:47 (approx.) -** A loud noise was heard and elements of the structure and burning cars could be seen dropping down to ground level into the area used as the drop off and pick up area of the car park.
* **23:38 –** HVP in attendance. (Initial request was made at 21:26:50)
* **00:00:39 (11.10.23) –** Thefire on the third floor had spread to floors one and two due to the collapse of the structure. The incident had been sectorised into four sectors. In sector 1 there were no firefighting operations. In sector 2 an ALP was in place and firefighting in progress with two large aircraft being protected using a water curtain. In sector 3 the Hertfordshire Fire and Rescue Service ALP had been deployed and was firefighting. In sector 4 there were three uncrewed ground monitors in use for firefighting, which had been set in place prior to the sector being evacuated by personnel.
* Up until **03:00** a series of further collapses occurred throughout the building as [the] fire continued to break out across all sectors throughout the night. Ground monitors, HRETs, APs and TTLs were used to suppress this fire spread.
* **02:16:55** – HVP was in place (almost 4 hours after the initial request) – If you’re not familiar with HVPs, they’re National resources placed around the UK and can be called on to support FRS operations when necessary. They are large bits of equipment, transported on dedicated vehicles with a tactical advisor and a specialist crew. They can pump at 8000 – 22000 litres per minute through 150mm – 300mm hose. The HVP and its crew came from Northamptonshire FRS (the nearest – Herts. FRS - didn’t have a vehicle available to transport it) and had 1.5km of hose to lay and a 40m head to contend with.
* 05:28:18 – Incident reduced to 6 pumps, 1 ALP and one HART crew. RFFS still working in Sector 3 with 2 MFTs.
* **09:13:22** – All firefighting operations had ceased.
* **09:59:40** The incident was ‘now no longer declared a major incident by the FRS. LLA moved into recovery mode.

Timeline:

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* **20:47:20** - Range Rover owner makes 999 call.
* **21:07:44** - Multiple cars well alight on 3rd floor of car park, crews at work implementing high rise measures. Tactical Mode Offensive
* **21:24:24** - Approx 25 cars involved in fire on 3rd storey of multi storey, 6 BA under stage 1, 2 airport MFTs - external fire suppression.
* **21:27:21** - **Major Incident Declared**, 80% of 3rd storey car park involved in fire. Luton Airport CAT 0 full closure. Hazards fire and risk of building collapse. Access via Luton Airport approach road. Holding area Airport Approach Road. No casualties involved. Emergency Services in attendance. Fire Police and Airport Fire Service.
* **22:12:46** – 80% of car park involved in fire. 2 ALPs in use. Delta Mode being used.
* **22:17:00** – Airport worker found on car park roof.
* **22:19:05** – National Resilience Fire Control’s first request for information for the Home Office.
* **22:28:05** – 3 FFs sent to hospital with smoke inhalation/heat exhaustion.
* **22:28:24** – LLA ATC confirmed that no aircraft movements would be permitted.
* **22:35:15** – Environment Agency involved.
* **23:00:01** – Duty National Resilience Assurance Team (NRAT) officer requested information for the Home Office who were asking for a cause of the fire. (The NRAT team cover the UK and provide strategic command and control advice and act as a conduit to the Home Office – I did that role for two years. FRSs love the NRAT officers-----not!).
* **23:02:00** – First media enquiry (The Guardian).
* **23:05:00** – First JESIP meeting.

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* **00:00:39** – RFFS supporting firefighting operations.
* **00:08:46** – Aerodrome EWS being used as a water source.
* **00:48:44** – Aerodrome closed completely.
* **02:16:55** – Sector 2 not in use due to collapse of building and all vehicles being burnt out.
* **04:40:34** – JESIP Meeting. Aerodrome will be closed until at least 12:00.
* **05:15:00 -** JESIP Meeting. Good water supply established. Building collapse ongoing.
* **09:59:40** – No longer a major incident for the FRS. LLA entering recovery mode.
* **19:06:23** – Stop message sent.
* 20:30:09 – Incident handed to LLA.

Observations:

* BFRS has revised the PDA for the multi storey car parks at London Luton Airport but not at other multi storey car parks in Bedfordshire. The Service should assure itself that the PDAs on all multi storey car parks are suitable and sufficient.
* Crews did not access information held about Terminal Car Park 2 because it was attached to the risk information for the terminal building. BFRS will create separate Site Specific Risk Information (SSRI) for Car Park 1 at Luton Airport.
* For all multi-storey car parks the Service will consider if an SSRI is required in addition to the information available to crews through the adoption of National Operation Guidance Scenarios.
* Despite regular exercising with LLA Fire Service for airside incidents, responding crews were unaware of the additional 8” water main within the newly constructed DART station, were not aware of the limitations in accessing the Airport Fire Station water tank nor were they familiar with which hydrants shared the same water mains.
* Bedfordshire FRS should work with LLA Fire Service to review the availability of water supplies for firefighting purposes for both airside and non-airside incidents This information should then be included in the SSRI for the site with local firefighting crews briefed on any revisions.
* The quantity of foam used by LLA Fire Service was recorded and this information was made available to the Environment Agency and Thames Water. Efforts were made by Bedfordshire FRS on scene to stop the foam entering the drainage system. In total **3,000 litres of foam** concentrate were used to produce approximately 100,000 litres of finished foam.
* Fireground tactics were changed from containment of the fire to the third floor, to defensively containing it within Terminal Car Park 2 to prevent it from spreading to other buildings such as the DART Station and Car Park 1 and to protect the two aircraft in sector 2.
* The level of command during the incident was in line with Service policy, however, the policy had not been fully aligned with the latest National Operational Guidance (NOG) – BFRS should review its Incident Command Policy to ensure alignment with NOG and to provide clarity on command thresholds.
* Several issues with fireground radio communications were identified. Radio discipline was not good during the incident, and this resulted in everyone migrating to the Command channel.
* BFRS should ensure that through training and exercising scenarios with high volumes of radio traffic that incident commanders have the confidence to utilise the full functionality of the new radios during a major incident, supported by a pre-agreed procedure.
* Toilet and welfare facilities in the terminal building required access via the main terminal building, which was occupied by many members of the public. Several personnel had to face questioning about the incident and queries about retrieval of cars etc. This led to delays in them returning to the fire ground.
* Bedfordshire FRS should work with Local Resilience Forum (LRF) partners to ensure terminology is consistent between partners to effectively implement the agreed understanding for activation of a TCG and SCG as identified in the Bedfordshire LRF plan.
* Bedfordshire FRS should ensure all tactical and strategic commanders of responding agencies are aware of the Response and Recovery and JESIP guidance on TCG meetings.
* BLRF should review the arrangements for media support at major incidents to ensure on-call strategic comms advice is available to the SCG.
* At the multi-agency debrief it was identified that early operations from both Bedfordshire FRS and LLA Fire Service worked well, with people noting that the initial interaction and joint response between the LLA Fire Service and Bedfordshire FRS was productive and assisted with gaining situational awareness.
* It was noted in the Bedfordshire FRS internal debrief that historically joint exercises with LLA Fire Service have only ever been for aircraft incidents. The internal debrief report recommends that consideration is given ‘to developing the joint training between London Luton Airport Fire and Bedfordshire Fire and Rescue Service to train land side as well as air side. This needs to include understanding tactics and agreeing tactics to prevent tactics that counter each other.
* LLA RFFS has several pre-existing resources to assist in dealing with airside incidents. When attending airside incidents there is a preplanned procedure where attending fire crews take control of the silver room (an on-scene command room), this early take over was missed due to the incident location being land side. This room could have been utilised for multiagency/ TCG meetings.
* Neither Bedfordshire Fire and Rescue Service or LLA RFFS were fully aligned with National Operational Guidance (NOG) at the time of the incident. NOG alignment for airside and landside incidents for both Services would ensure a common way of working.
* Bedfordshire Fire and Rescue Service is in the process of adopting NOG; it should consider how it can support LLA Fire Service with NOG implementation. This is because adoption by the LLA Fire Service would be beneficial for all involved with increased opportunity for shared training and improved systems of work and better interoperability.
* Bedfordshire FRS arranged an onsite press briefing without communicating with LLA’s communication team owing to a lack of regular communication cell, and a preferred action would have been an agreement for a multiagency briefing at an agreed time.
* Record keeping at the incident was not as accurate or as comprehensive as it could have been.
  + - The Service should make it a requirement for all officers attending an incident that has been declared a major incident to write contemporaneous notes.
    - The Service should evaluate training support staff who are already skilled at note taking to be able to act as scribes at major incidents.
    - The Service should evaluate the possibility of using Dictaphones and or body worn cameras to capture operational decisions at incidents.
* The Independent Review of Buildings Regulations and Fire Safety led by Dame Judith Hackitt in 2018 found the regulatory system for buildings in England is not fit for purpose. This has highlighted the need for strengthened fire safety requirements in buildings in England.
* The National Fire Chiefs Council (NFCC) subsequently updated its position statement and associated guidance on Automatic Water Suppression Systems (AWSS) in December 2020 214 and most recently in May 2024 as well as calling for more research to be undertaken, particularly given the recent increase in vehicles powered by emerging technologies.
* Since the incident, BFRS has liaised closely with the airport and planning authorities to reinforce the importance of sprinklers should the airport rebuild the car park.
* It was reported in crews witness statements that there were running fuel fires on floor 2 (the floor below where the fire started). On investigation looking through images taken by crews inside the car park it is evident that drainage pipes within the car park are of plastic construction. The heat from the fire and the running fuel fires entering the drainage system would have caused the pipes to fail leading to fire spread.
* The fire investigation report for Luton airport identifies running fuel fires and an approximately 10 mph wind along with the design of the car park with narrow gaps between the parked cars as being the factors contributing to the spread of the fire. The 10mph wind is based on a reading taken in Luton at a lower level, it should be noted that London Luton Airport is located at the top of a hill and fire was on the third floor.
* Crews from Bedfordshire Fire and Rescue Service, Hertfordshire Fire and Rescue Service, London Fire Brigade, Buckinghamshire Fire and Rescue Service, Cambridgeshire Fire and Rescue Service, Northamptonshire Fire and Rescue Service and London Luton Airport Fire Service worked hard to tackle the fire. The initial attending crews from Bedfordshire FRS quickly recognised the warning signs of building collapse leading to a successful evacuation of the building. Given the significant structural collapse witnessed by crews the early recognition of the risk of collapse almost certainly saved lives. Crews succeeded in containing the fire to Car Park 2 and thus protecting neighbouring infrastructure such as the DART and Car Park 1.