

Buncefield response

Reflections on Buncefield – twenty years on

HMI Roy Wilsher, His Majesty's Inspector of Fire & Rescue Services

Twenty years since one of the largest incidents of my career, one of the largest fires of its kind in peacetime Europe, I feel fortunate to still be heavily involved in fire and rescue services as one of His Majesty's Inspectors of Constabulary and Fire & Rescue Services (HMICFRS). I was asked to reflect on the Buncefield incident, particularly the operational aspects, but I have also taken the opportunity to reflect on the wider impact.

2005 was a defining year for me and for the fire service. It was the year we lost firefighters Jeff Wornham and Michael Miller, along with resident Natalie Close at the Harrow Court high rise fire. It was the year of the 7/7 London bombings and the year the capital, my home city, was awarded the Olympics. It was the year I was promoted to Chief Fire Officer at Hertfordshire Fire and Rescue Service and it was also the year of Buncefield. This article will concentrate on the Buncefield incident, the impact, and what has changed, or not, twenty years later.

The events at Buncefield attracted international attention for years. There was a time when a day wouldn't go by without someone in the fire service mentioning Buncefield, but time has passed and many firefighters who joined after the fire will now be halfway through their careers. Still, the lessons identified remain relevant and it is reassuring that some of the lessons were learnt, and positive changes made as a result.

For those not familiar with fire and rescue service operations, it is important to set the context of those operations in 2005.

- It was a time before the complete roll out of the New Dimensions project (hi-volume pumps (HVPs), mass decontamination, urban search and rescue etc).
- It was a time before the National Co-ordination and Advisory Framework (NCAF, now on its 6th edition).
- There was an interim National Co-ordination Centre in West Yorkshire Fire and Rescue Service and the Fire Emergency Information Centre (FEIC, an innovation for the 2002/3 national strikes and forerunner of the Emergency Room) although it didn't replicate the current National Resilience Fire Control located in Merseyside.
- Her Majesty's Fire Service Inspectorate was being wound down, although fire service inspections became part of what is now HMICFRS in 2018.
- The position of Chief Fire and Rescue Adviser did not exist, and after a few years and two postholders, the position no longer exists.
- The Joint Emergency Services Interoperability Programme (JESIP) was years away.
- Fire policy was with the Office of the Deputy Prime Minister. It is now back with the Ministry of Housing Communities and Local Government (MHCLG) having spent a few years back in the Home Office.

I won't dwell too long on the sequence of events on Sunday 11th December 2005, the cause is well documented, but it is worth a brief recap from a fire service perspective. The explosion that occurred at just after 0600 on the Sunday morning engulfed twenty tanks across seven bunds, later spreading to just two more tanks as fire service action was taken to reduce spread.

As Hertfordshire's Chief Fire Officer, I knew phone calls in the early hours were never good news. I was woken a few minutes after the explosion by a phone call and the words "governor, Buncefield's alight". I rang my Deputy Chief Fire Officer, Mark Yates¹, and agreed he would head to the depot and establish Fire Tactical (Silver) command on or near the site whilst I would make my way to Strategic Co-ordination Group (Gold) at Hertfordshire Police HQ, Welwyn Garden City, some 12 miles from the scene.

The fires created a massive smoke plume that rose several thousand feet and by mid-afternoon had blocked the sunlight to central London. The fire control rooms in Hertfordshire and adjoining services received hundreds of 999 calls as the explosion was heard across many counties and measured 2.4 on the Richter scale. It is interesting to note that when Buncefield was constructed in 1968 it was two miles from the nearest building, but by 2005 commercial buildings had been constructed right up to Buncefield's boundary.

The first fire crews in attendance were confronted by unprecedented destruction covering several square kilometres. The destruction meant that two of the three emergency water suppliers on site were inaccessible, firefighting water was eventually pumped from a balancing tank 1.8km from the site using multiple Hi-volume pumps for the first time. The incident had to be dealt with in phases; first the area was divided into four quadrants to commence search and rescue, meanwhile a three-storey office complex adjacent to the depot was well alight and required eight fire engines and one high-reach vehicle to bring it under control.

I must commend the response of all those involved, including 31 fire and rescue services, police, ambulance, oil industry firefighters and specialists, local and County Council, voluntary sector, and companies such as Angus and Tesco. Everyone played their part magnificently. The expertise provided by the specialist teams was invaluable, including advice from Niall Ramsden who appeared at Gold early on and told me about his experience in fighting these types of fire. I asked him to join my Deputy, Mark Yates, at Silver and add his expertise to the plans being developed to tackle the blaze.

The significance of the event cannot be underestimated. Gold remained in place for five days and teams continued to work on site until January 2006, having been left in charge of safety over Christmas. In successfully extinguishing one

of the largest fires of its kind in Europe and co-ordinating the multi-service response, Hertfordshire Fire and Rescue Service clocked up some significant statistics:

- **786,000 litres of foam concentrate** was used to extinguish the fire and maintain foam blankets, following an estimation that 250,000 litres would be used. The original plan had to be revised after the Environment Agency raised concerns about groundwater contamination, as the whole area sits on chalk aquifers.
- Both 'clean' and recycled water was used to extinguish the fire and maintain cooling water jets, **53 million litres of clean water and 15 million litres of recycled water** were used. In addition, 10 million litres of contaminated water was held on site and only removed in February 2006 under the direction of the Environment Agency.
- There were **642 fire appliance movements to Buncefield**; 86% of these were by Hertfordshire Fire and Rescue Service.
- Hertfordshire Fire and Rescue Service also supplied over 90% of the personnel who attended.

The foam concentrate was to become a significant issue both during and after the incident as claims of contamination became a concern. One thing we knew at the time was, once we started attacking the fire by smothering, we had to maintain the foam flow to maintain the foam blankets and avoid re-ignition. This is why the foam attack on the depot fires didn't start until 0822 on Monday morning, 12th December. As the foam attack continued, the manufacturer was producing foam concentrate to order and for this to continue, we had to get

a tanker of raw material diverted from Rotterdam to Tilbury to keep production going. We also discovered later that fire services had delivered old PFOS concentrate at Buncefield which later led to fears of ground contamination.

The foam attack and firefighting effort was hampered during the early hours of 13th December when a tank suffered a structural failure resulting in a running fuel fire, posing a significant threat to firefighters and other tanks that were being kept cool by covering water jets. But fortunately, this fire was soon brought under control and all but two tanks were extinguished by Tuesday evening, though bund fires and one tank (tank 912) were still alight. The last fire was extinguished by Wednesday afternoon, 14th December, a lot earlier than many had predicted or expected.

The response to the Buncefield incident was a multi-agency and national response that worked extremely well. Hertfordshire Resilience Forum was well established with a long history as the Hertfordshire Emergency Services Major Incident Committee with well-rehearsed and established procedures. With these procedures in place, it meant that my decision to go to Gold and Mark to Silver was an easy one. It is what we had always planned for, should such an event unfold. But Gold is not just about being at the Strategic Coordinating Group table making decisions, it is about the work within your own agency and with other agencies outside the formal SCG meetings.

Gold command worked well, I worked in tandem with the police chair, Assistant Chief Constable Simon Parr at the formal Gold meetings and outside. This means planning and reporting to ensure the strategic decisions are taken forward

**53 million litres
of clean water and
15 million litres
of recycled water**



**786,000 litres
of foam
concentrate**



**642 fire appliance
movements to
Buncefield**



Chiltern Air Support

and implemented. And even more so now than 20 years ago, it is about reporting to government so there is a common recognised information picture. Simon Parr and I also visited the site during the first 24 hours; as any fire commander will tell you, you need a picture of the incident in your mind. It is very difficult to command a fire attack from a room or back of a control unit if you don't have that understanding of what the firefighters are facing on the ground.

A good example of working at Gold outside the formal SCG were the meetings between myself, the police force and Environment Agency that worked through the detail of the fire attack plan, and the EA's request to change the plan. Another aspect of the command structure was that Hertfordshire Police established their Silver at Watford Police station, with multi-agency partners and a fire liaison also located there, probably referred to as a Tactical Co-ordinating Group today. This way of working with Silver command at the scene and Police Tactical being remote is still with us and is why JESIP developed the term 'On-scene Commander' and introduced Police command tabards supporting the concepts of co-location, communication and co-ordination through shared situational awareness with the use of the Joint Decision Making Model and METHANE (Major Incident, Exact location, Type of incident, Hazards, Access, Number of casualties, Emergency services) model of communication.

The response was national for the fire and rescue service, but the New Dimension project (now known as FRS National Resilience) had not been completed. There was an interim National Co-ordinating Centre (NCC) in West Yorkshire, urban search and rescue and incident response units (mass decontamination) had been rolled out, but HVPs had just been delivered to services and local training was not complete. Those HVPs are still in use today, although the New Dimensions 2 programme means their replacement is planned. There was no National Coordination and Advisory Framework (NCAF), National Strategic Advisers (NSATs), National Resilience Advisers (NRATs), Tactical Advisers, Enhanced Logistics Support (ELS) and many of the other supporting functions we now take for granted. Fortunately, there was a Hertfordshire Officer working in the New

Dimensions project team, Gordon MacMillan, who was able to advise me on what was possible – an NRAT in today's parlance. He advised me about the capabilities of NCC, and we were able to mobilise HVPs, along with the national HVP trainers, subject matter experts, who would now be called TacAds – this set up supplied the water for the fire attack plan and water recycling. I knew that significant resources had to be gathered and marshalled, so the old M10 (now the A414) was used as a rendezvous point with a logistics officer and marshalling officer; a forerunner of a strategic holding area and ELS officer still detailed in NCAF and supporting guidance today.

The impact of the explosion was significant financially, politically and economically:

- Ninety businesses were directly impacted (sixteen of which moved out of the area, some out of the UK completely, impacted by severe under insurance).
- By the end of 2007, there were over 1000 Buncefield related redundancies.
- There were 244 Buncefield related visits to accident and emergency.
- 76% of residents in the local area reported damage to property.
- Remarkably, even though there were seven staff and drivers on site at the time of the explosion, thankfully no one was killed.
- 2000 people were evacuated and 60 children aged between five and 14 had Buncefield-related counselling for up to two years.
- The local population also reported high levels of anxiety and demonstrated severe stress for years afterwards.

Some of the greatest impacts were on aviation as Buncefield supplied approximately 35-40% of the aviation fuel for Heathrow:

- The smoke plume delayed flights for four days, with long haul flights having to stop in Europe to re-fuel, putting 90 minutes on a flight to Sydney. For example, South African Airlines would top up fuel in Milan.

The smoke plume
delayed flights for
four days



2000 people
were evacuated



244 A&E visits
related to
Buncefield



Chilren Air Support

- 83 airlines were affected with a cumulative 480 days of disruption costing an estimated £245 million.
- Various other costs mounted up to over £1 billion for compensation, demolition and rebuilding fines, road re-surfacing and environmental protection brought the total known cost of the incident to well over £1 billion.
- There was also the uncosted impact of 200+ schools closed for two days.
- The closures of the M1 and M10.
- The unseen impact on the data infrastructure housed at Buncefield. The data and digital services impacted included outsourced payroll, London congestion charge admin, medical records, the Police National Computer and benefit payments.

No one can be in any doubt that this was a major incident with a significant impact.

The response to this incident was national for all fire and rescue services. One consequence of these actions including the debriefs and reviews, the lessons identified, and recommendations made to the Lord Newton Inquiry, along with similar learning after the 2007 floods, was the development of the National Coordination and Advisory Framework (NCAF) and the way the fire and rescue service now co-ordinates national resilience and its response to major incidents.

This time of reflection also enabled me to look back on the thirty recommendations made by Hertfordshire Fire and Rescue Service, all of which were adopted by Lord Newton within the 'Emergency preparedness for, response to and recovery from incidents' section. Those recommendations included a national system for mobilising assets, such as the Fire and Rescue Service National Co-ordination Centre, FRSNCC, now the National Resilience Fire Control, Strategic Holding Areas with suitable facilities, incident command support teams (ELS), tactical advisers for all national defence assets, a national system for hot debriefs, large hose ramps and national welfare arrangements. National and Joint Operational Learning, JESIP and National Operational Guidance all have links back to 2005 and 2007 and laid the foundations of what we have today.

There were also one or two wider recommendations that have been implemented to a greater or lesser degree or not at all — for example, nationally funded and provided foam concentrate resources and delivery mechanisms and complete guidance for the establishment of a health advisory cell at a Strategic Coordinating Group. It is also interesting to note that one of Hertfordshire's recommendations was that all fire and rescue services should work to the Incident Command manual at the time. This was an issue ten years after Buncefield but has been resolved today by National Operational Guidance, a project I was proud to have launched as the Chief Fire Officers' Association Operations Director. The recommendations also covered the issue of self-deployment. One particular fire and rescue service self-deployed a significant resource to Buncefield and set up outside command, communication and health and safety structures until brought into line. Something that is just as relevant now — proper ordering and mobilisation is required, especially with the increased threats we face.

I haven't covered every aspect or anecdote from Buncefield

and its aftermath, it would take too long; but it is amazing to think it has been twenty years since the incident. Many of the things we learnt there, combined with learning from other major incidents have formed recommendations and procedures that have been developed and implemented to what we have in place today.

I strongly believe the structures, processes and training for major and catastrophic events across fire and partner agencies are much improved. Nevertheless, as we face greater threats such as climate change and wildfires and an unstable world, it would be wrong to not say I'm not concerned about the resources available. In 2005, Hertfordshire had five operational principal officers to maintain the Gold rota. There are fewer now and I know across other services, resources have reduced. We also have fewer firefighters than we had in 2005 as demand on emergency service colleagues in police and ambulance also continues to grow.

However, I remain confident that with the developments since Buncefield and greater focus since the awful and tragic Manchester MEN arena attack, the country can respond in a co-ordinated multi-agency response to a significant incident, but only if that multi-agency training, including JESIP training takes place. Training and operational response remain as important as ever to tackle any major multi-agency incident.

Endnote

¹ Sadly, Mark passed away in September after a short illness. Mark was my Deputy for five years, we started together as Chief and Deputy Chief Fire Officer in April 2005 and went through a lot in those 5 years. Mark went on to be Chief Fire Officer of Hereford and Worcester Fire and Rescue Service and latterly chair of Herefordshire and Worcestershire Health and Care Trust. He is survived by his wife and daughter and will be missed.

Acronyms

EA	Environment Agency
ELS	Enhanced Logistics Support
FEIC	Fire Emergency Information Centre
FRSNCC	Fire and Rescue Service National Co-ordination Centre
HVP	Hi-Volume Pump
JESIP	Joint Emergency Services Interoperability Programme
METHANE	Major Incident, Exact location, Type of incident, Hazards, Access, Number of casualties, Emergency services
MHCLG	Ministry of Housing Communities and Local Government
NCAF	National Co-ordination and Advisory Framework
NCC	National Co-ordinating Centre
NCAF	National Coordination and Advisory Framework
NSAT	National Strategic Advisor
NRAT	National Resilience Advisor
SCG	Strategic Co-ordination Group