

# When the show must go on ...



**Managing safety and terror threats at the ever growing volume of events, festivals and live sporting events is a tough task, but research and innovation are opening up new approaches, as Robert Preston finds out**

## **+ TERROR THREATS AND GOOD TIMES**

The current threat level from international terrorism in the UK is “severe”, according to official advice from MI5, meaning that an attack is considered “highly likely”. For those responsible for the health and safety of the public at major entertainment or sporting events, terrorism joins a long list of other risks that must be assessed and planned for, including fire, crowd behaviour and site design. Specialist training in counter-terrorism risk management for events is now more widely available, creating a separate discipline from event safety management.

Mark Breen is director of Safe Events, a Dublin-based event planning and management company. Its clients include the organisers of the Fleadh Cheoil na hÉireann, a roving music and cultural festival hosted this August by the town of Drogheda with 500,000 people attending. Safe Events has also worked other mass-participation events including the MiSK Art Festival in Riyadh, Saudi Arabia, held over four days at an outdoor venue.

“Our normal mindset for planning events is different from that required for counter-terrorism,” he says. Breen describes the skill applied in counter-terrorism as “putting yourself in the mind of the terrorist”, such as assessing venues to identify vulnerable areas and how an attack might take place. The response might include siting a stage at an outdoor event away from a fence so as to reduce the potential for vehicle attack. “It feeds into the process, so your event is more counter-terrorism aware,” says Breen.

Attacks using vehicles, and how to mitigate them, is an area that event safety managers now have to deal with. Measures to prevent vehicle attack are known as hostile vehicle mitigation (HVM), and in the event sector attention on these techniques has increased since the attack in Nice, France, on 14 July 2016, when a lorry was driven into the Bastille Day crowds, killing



Hostile vehicle mitigation can take many forms

86. On 19 December that year, a lorry was driven into a Christmas market in Berlin, killing 12.

Manufacturers now offer a range of temporary barriers and bollards to secure the perimeter of an event site. Another tactic is parking a large vehicle such as a refuse lorry to block access, but Breen points out that this can actually increase risk, especially if they are parked in an unsuitable location or have too much fuel onboard. “We’ve seen countless events where vehicles have been used as HVM but there’s been no risk assessment,” says Breen. “You’ve decided that there’s a risk there, but sometimes people also put a container full of fuel there.”

His concerns over inappropriate HVM measures are shared by Keith Still, professor of crowd science at Manchester Metropolitan University. “[HVM precautions] do tend to get in the way of crowd movement,” he says, noting that they may also block access for emergency vehicles.

Another concern in the current climate is the potential for crowds to over-react to what they wrongly perceive to be a terrorist attack. When firecrackers went off during a mass outdoor screening of a Juventus match in Turin, Italy, on 3 June 2017, over 1,500 people were injured in the ensuing stampede, the crowd having been “seized by panic and by the psychosis of a terror attack,” according to local authorities.

**A** concert, sporting event or festival is always a high pressure environment: large volumes of excited people, temporary structures and exposure to the elements create a hazardous mix. And when something goes wrong in the safety planning, production cannot simply be halted. “It’s not just a few blokes messing about putting on a band in a field. The customers are coming tomorrow and the timetable is rigid,” says Steve Heap, chairman of the Events Industry Forum (EIF).

On top of these commercial pressures, there’s the threat of terrorist activity. Amongst the incidents that have demonstrated the attractiveness of large public gatherings to terrorists is the suicide bomb attack that took place after the Ariana Grande concert at the

**“I’m qualified, insured and have over 35 years’ experience. When I first started, nobody had heard of risk assessments”**

Chris Hannam, Stagesafe

Manchester Arena on 22 May 2017, killing 23 and wounding a further 137.

In the background, the industry is continuing to grow, as consumers turn to the “experience economy” rather than buying goods and services. According to UK Music, an umbrella group that represents the UK live and recorded music industry, the contribution of the live music sector (including festivals and

concerts) to UK GDP was £1bn in 2016, up 14% on the year before. Another UK Music study found a 12% rise in audiences at live music events in 2016, with audiences hitting 30.9 million.

An estimated 1,000

festivals, ranging from music and literary to beer and food promotions, took place in 2016.

The EIF has recently commissioned research from the University of Bourne-mouth that will demonstrate the role the event industry plays in the economy, Heap reports, with the findings due to be published by Christmas.



### + CROWD CONDUCT

Once the stage is set and the public arrives, “the risk changes very dynamically”, explains Breen. He gives the example of a fully-booked concert arena with 15,000 people waiting to enter, where the risk of slips, trips and falls will be concentrated in the queue outside. This particular risk will then re-emerge in other areas inside the building during an interval, as the audience moves around, and when they leave.

Managing these issues can be achieved in relatively simple ways, such as taking a plan of the event site and colouring it in to show where the hazards are greatest at a specific time, such as before, during and after a concert. “Risk mapping can be done just with paper and some colouring pencils,” notes Breen, who has found it useful in communicating risk concepts and how they change during the event to key stakeholders.

“Most people find it easier to understand things presented visually rather than written; particularly when it comes to something as abstract as the concept of risk at events.”

The risk mapping tools Breen uses were developed by crowd science specialist professor Keith Still at Manchester Metropolitan University, where courses on offer include a three-year distance learning MSc in crowd safety and risk analysis. Students on the online course have included events managers, police, security and licensing officers and safety consultants.

One of the biggest issues Breen encounters is insufficient evacuation provision, with too few emergency exits, or their capacity being insufficient for the number of people attending. “Simple mathematics can tell if that exit is going to work for the number of people using it,” he says, suggesting

that the deaths of 21 people at the Love Parade in Duisburg, Germany in 2010 could have been avoided with rudimentary planning. The crowd was funnelled through a single tunnel leading to a staircase, when a surge caused people to fall down the stairs, with others trampled underfoot or crushed against the walls.

The growing demand for professional qualifications in crowd safety management over the last 10 or 15 years is noted by John Drury, professor of social psychology at University of Sussex. He teaches a module on the psychology of crowd safety management at Bucks New University, which offers a BA in the subject as well as CPD programmes and crowd safety research and consultancy. “Event organisers are more risk aware, more conscious of potential litigation,” he says. The need for greater professionalism creates “a place for science”, with mathematics, computer modelling and psychology increasingly used in planning and managing events.

**“ If you believe mass panic is a genuine human response, that has consequences”**

John Drury, University of Sussex

### + REGULATIONS RULE ... BUT WHICH ONES?



A thorough risk assessment is “the key to every element of an event”, says Breen. “The risk in an event changes very dramatically over time, as does the duty of care,” he notes. Before the public arrives and after the event has finished, there the specific risks involved in building and then dismantling stages and other temporary structures, together with any necessary lighting and sound equipment. In between, there will be a different set of risks as the crowd gathers and moves around.

In the UK, building temporary structures falls within the remit of the Construction (Design and Management) Regulations 2015 (CDM), which requires the preparation of a construction phase plan by the principal contractor and a health and safety file by the principal designer. Steve Heap, chairman of the EIF, says that “we have little evidence that there has been any serious [negative] impact”, adding that CDM is “a seriously

important piece of advice.”

The highly specialised work of rigging to install lighting and other equipment above the stage comes under the Lifting Operations and Lifting Equipment Regulations 1998 (LOLER). “We’re hanging hundreds of tonnes above a stage. You don’t want that falling on anyone, especially the star,” says Chris Hannam, whose Stagesafe consultancy specialises in providing health and safety services to the live music, events and entertainment industries.

Hannam points out that working at height in the larger venues can involve the use of equipment such as mobile elevating working platforms, forklifts and telehandlers, but there is also a great deal of manual handling in the events business. According to Hannam: “It’s very difficult to mechanise the process of unloading trucks. It’s all got to be manually handled by the local crew, stage hands in other words.”

In the past, events were often planned on the basis of “common sense” – although Drury prefers to term it “ideas in popular culture”. “Common sense contains things that might be quite dangerous and wrong,” he says. “If you believe mass panic is a genuine human response, that has consequences.” The popular perception that crowds are “bad, mad and dangerous” is unjustified, he feels, so the key to managing them is tapping into the shared identity and collective experience people are seeking.

“Events go well when there is a shared togetherness. Most people want to be there for the same reason; that sense of potential togetherness needs to be realised,” he says. Event staff can therefore study a crowd’s shared identity and values, rather than trying to predict behaviour based on its composition by age, gender or other demographic features alone.

Drury cites an event on Brighton beach in 2002, where staff familiarity with dance culture enabled a dangerous situation to be resolved. Sussex Police were expecting 60,000 to attend Fatboy Slim’s Big Beach Boutique II, but after the free event was mentioned on Radio 1 the crowd numbered 250,000.

Members of the crowd started climbing the lighting rig but the emergency services were unable to intervene. The situation was resolved by getting the DJ to make an announcement asking them to come down. With the DJ specifying the norms of behaviour for the crowd, “nobody else climbed one of those lighting rigs for the rest of the evening,” says Drury.

## + VOLUNTEERS AND PROFESSIONALS

If an event crowd has an identity and common values, then these are likely to be shared by those attending as volunteer workers, giving up their time for free. "Most events wouldn't work without volunteers," says Breen, with outdoor sporting events often deploying "marshals" who are often unpaid volunteers.

"While there is and should be a level of personal responsibility borne by the marshals, for me, the duty of care rests more so with the organisers of the event and governing bodies," he says. "Volunteers should receive adequate training and they should never replace a paid staff role," he says, particularly one that has safety or security responsibilities.

The legal status of volunteers was recently highlighted by a health and safety prosecution brought by Denbighshire County Council, following the death of a spectator at a mountain biking race in Llangollen on 31 August 2014. Volunteer course manager Kevin Duckworth was charged under Section 7 of the Health and Safety at Work Act, which places a duty on employees to take "reasonable care" of the health and safety of others.

Although he was acquitted by the jury on the direction of the judge, Kevin Elliott, head of the health and safety team at Eversheds Sutherland, says that "attempts to prosecute volunteers for health and safety offences is something of a concern. Health and safety legislation is aimed at regulating employers, the self-employed or

employees in the context of work activities."

According to Elliott, there is a real risk that similar prosecutions, alleging that volunteers have employee status and are therefore "at work" and within the scope of Section 7, may produce a downturn in the number of people volunteering at sporting events.

**“If enforcement agencies were to pursue events volunteers, the industry would close down”**

Steve Heap, Events Industry Forum

"That may put the future of certain events in jeopardy if there are insufficient volunteers necessary for the event to run. Events such as mountain biking and rallying rely upon volunteers in order for the events to take place," he says. "If those individuals become exposed to the risk of liability, and upon conviction a term of imprisonment, then that may impact on the number of people in future prepared to volunteer."

As Elliott highlights: "In plain terms, health and safety legislation is aimed at making sure work activities and people at work are safe. It is not aimed at regulating individual volunteers and the HSE's own published guidance confirms that."

But even if the Health and Safety at Work Act

does not apply, the volunteer may well have a duty of care under common law, allowing – in a case that resulted in a fatality – a prosecution to be brought for gross negligence manslaughter. If the consequence of a lapse in judgement were a two-year jail term (the starting point for sentencing in cases of lower culpability cases under the new sentencing guideline taking effect in England and Wales on 1 November), Elliott suggests that "you'd think long and hard about being involved. The risks are quite high and the rewards are not financial, they do it for the love of the sport." "The majority of the events industry is run by amateurs and volunteers," says Heap. "If enforcement agencies were to pursue events industry volunteers, the industry would close down."

However, for the EIF, "there is no difference between people who volunteer and those we employ," says Heap. The forum strongly recommends that its members ensure volunteers receive health and safety briefings and are covered by employer's liability insurance. Event organisers who ignore this advice "do so at their own risk".

Reliance on volunteers worries Manchester Metropolitan University's Still, particularly if it is for financial reasons. "People try to put on events at minimum cost and they get away with it by the skin of their teeth," he says. "People don't realise how much things cost when they go wrong." Spending on safety "is basically an insurance policy," he suggests.

that the leisure sector could benefit from the weaker pound, which will attract tourists in higher numbers.

Alongside the growth in the sector, though, comes an increase in incidents, although it's impossible to put a figure to this. "Everyone has had a close call or a near-miss, but this information never filters back to the industry," says professor Keith Still, who teaches crowd safety and risk analysis at Manchester Metropolitan University. Still contrasts this state of affairs with industries such as aviation, where serious near-misses have to be reported to the Air Accidents Investigation Board, with the lessons investigated, recorded and shared.

### Lack of structure

Securing safety at live music, cultural and sporting events is also complicated by the variable standards of professionalism in the event sector itself. "Anyone can set themselves up as an event manager without qualifications, it's a worldwide phenomenon," says Still. Equally, for those taking responsibility for health and safety, there is no recognised entrance route, qualifications hurdle, or professional body: most enter the field following careers in a related specialism.

Nevertheless, those working in the industry are clear that it is becoming more professional, particularly in the field of health and

safety. "I'm qualified, I'm insured and I've got over 35 years' experience in the industry," says Chris Hannam, whose Stagesafe consultancy has acted for Duran Duran and Susan Boyle tours. "When I started nobody had heard of risk assessments. A lot has changed in that time."

Part of the reason for the lack of a structured response, or standard qualifications, is the lack of a structure for the sector itself. The EIF is its umbrella body, bringing together industry trade associations to discuss issues of common interest. It is also taking a lead on health and safety: in 2013 it took over the task of publishing the so-called HSG195 "Purple Guide" from the HSE, *A guide to health, safety and welfare at music and similar events*.

The EIF's Heap, whose day job is representing the Association of Festival Organisers, says that the EIF is asking government at all levels "to consider the events industry as a proper industry", albeit one which "can't be regulated as factory premises". This would involve taking a more joined-up approach on training, qualifications and accreditation, and regulatory updates. To bolster his argument, Heap points to the sector's growing contribution to the economy, and the benefits to social cohesion by bringing people from diverse backgrounds together.

With both the risks growing alongside

the size of the sector growing, and the emergence of new forms of threats, there is also an increasing level of good practice and innovation in safety management approaches. Practitioners are benefiting from new research and insights into crowd psychology, risk mapping and mitigating terrorist attacks. In a sector that has traditionally only reviewed safety practices in the aftermath of major disasters – such as the 1990 Hillsborough disaster or the 2010 Love Parade in Duisburg – it's clear that the show is now going on with safety firmly in mind.

Crowd and event  
**SAFETY**

CONFERENCE

MANCHESTER - 10 OCTOBER 2018  
LONDON - 20 MARCH 2019



**iirsm**  
INTERNATIONAL INSTITUTE OF  
RISK AND SAFETY MANAGEMENT

**IIRSM is holding two one-day seminars on crowd and event safety, on 10 October in Manchester and 20 March in London. Speakers include: Professor John Drury, University of Sussex; Professor Keith Still, Manchester Metropolitan University; and Safe Events director Mark Breen. More details at [www.iirsm.org/events](http://www.iirsm.org/events)**