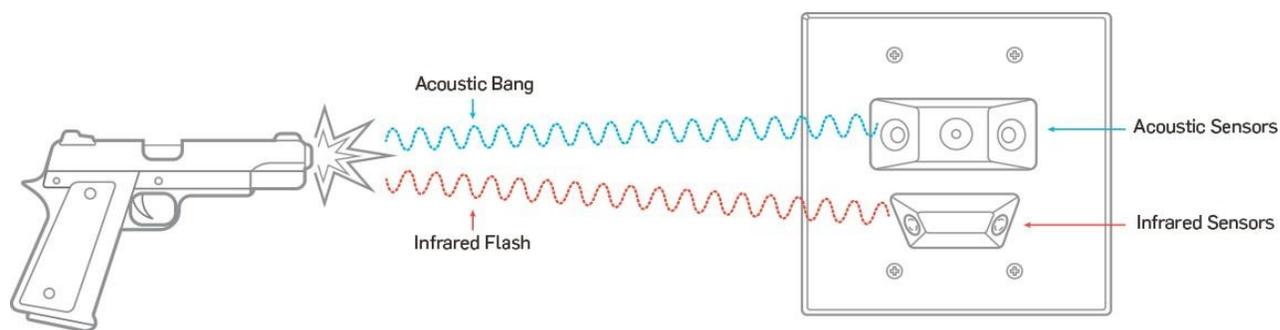


# Setting the Stage for a Safer Fan Experience with Gunshot Detection

By Joe Kierych



Since the October 2017 shooting at the Route 91 Harvest Music Festival in Las Vegas, venue managers have been looking at shifts in security protocols to better prepare for the worst without lessening the fan experience. In the past, your detailed security policies and procedures were as securely guarded as a sports team's playbook, distributed only on a strict need-to-know basis. Today, promoting any advances in the safety and security of your venue can become a competitive marketing advantage. A carefully crafted messaging campaign that shares your commitment to the safety and security of your venue can help fans feel safer and keep ticket sales up.

To truly take advantage of such a strategy, you need to back it up with fielded, proven innovations and coordinated, well-practiced drills that evolve along with modern technology developments and security systems upgrades. You also need to pair with a systems integrator that can strategically help identify and deliver the integrated Physical Security measures to help prevent and respond to threats before they can turn into a crowd panic incident. These should include:

- An effective Access Control System for access and egress points that don't increase cue times for your guests
- A sophisticated Video Management and Video Analytics System to proactively address potential crowd threats
- A Gunshot Detection System to quickly detect shots and report their location for rapid response to a shooting incident
- A robust Incident Command System to quickly respond to and help mitigate threats that do materialize

You might be surprised to see Gunshot Detection on my list of technologies, but with this rising threat, it's my opinion that the time has come for us to admit that Video and Access Control alone, while critical, are not enough to respond to shooting events.

According to the ALICE Training Institute, the average length of an active shooter incident is between 5 and 7 minutes. During that time, an average of one death occurs every 5 to 15 seconds. With these staggering statistics in mind, does relying on nearby security officers to alert and respond to the threat seem like the most effective means for alerting the Global Security Operations Center (GSOC) to an event in progress? What if, while officers are responding to the threat, the GSOC already has cameras cued to the incident area and a description of the perpetrator? When it comes to addressing the active shooter threat, gunshot detection is the most advanced technology to enter the commercial market in recent years, and it evolved from real world incidents in the battlefield.

## Government Sponsored Innovation for Military Applications

As a capability, gunshot detection was born out of a U.S. Government initiative in 1995 sponsored by a research arm of the DoD called the Defense Advanced Research Projects Agency (DARPA). DARPA sponsored the development of prototype systems that paired acoustic muzzle blast and ballistic shock wave signatures to accurately predict the location of gunfire events and associated shooter locations. Six systems were developed and tested, but it wasn't until the Iraq War in 2003 that the need for these systems became critical.

While traveling in noisy Humvees, U.S. troops were battling against an aggressive insurgency and often didn't know they were being shot at until a fellow soldier was hit. Knowing they were being shot at, and being able to identify where the shots were coming from, would give them a lifesaving and tactical advantage. DARPA selected the company that had produced the most successful technology from their trials, BBN Technologies out of Cambridge, Massachusetts, and challenged



them to rapidly develop vehicle gunshot detection systems that could not only localize a shooter to plus or minus 15-degree accuracy, it had to report within one second of a shot and do so on vehicles traveling up to 60 miles per hour on rough terrain and in harsh environments. The result was what is now known as the Boomerang Shooter Detection System, credited with saving over 250 American lives in the field.

### Gunshot Detection for Commercial Applications

Fast forward to 2018, and the news is full of stories of schools, workplaces, and public venues that instantly become battlefields with the active shooter as the enemy. Active shooter drills, now commonplace, were not being practiced in our schools until after the tragic Sandy Hook shooting in 2012. Innovations in ballistic glass, panic buttons, and door locking devices were flooding the market in a reactive response to the security weaknesses exposed by the Sandy Hook incident. That year Christian Connors, a key team member from the Boomerang deployment days, heard his elementary school aged children talking about the active shooter drills they had in school. Knowing the lifesaving benefit Boomerang had overseas, Connors realized he had an obligation to investigate the development of an indoor gunshot detection system.

Connors and his team of engineers from BBN Technologies took the Boomerang technology, a large array of microphones appropriate for a Humvee, and developed it into a small, discrete device that can be implemented into ceilings and walls and look no more intrusive than a switch plate and called it the Guardian Indoor Active Shooter Detection System. Instead of alerting soldiers in battle, these systems help alert building occupants and law enforcement with the same Boomerang performance adapted for indoor acoustic environments with the addition of infrared muzzle flash detection. This additional technology helps to ensure against false alerts and offers users the confidence to integrate automated shot detection alerts and actions into other security systems.

### Gunshot Detection and Integration Capabilities

Although originally developed for the school market, the overwhelming market adoption of this technology has been from Fortune 500 corporations, airports, and other public venues including retail facilities and convention centers. Most of these sites have integrated Guardian systems to cue video surveillance cameras directly to the incident area, initiate lockdown procedures, populate emergency incident command centers with shot location information, send alerts to security radios, and more. The systems are installed by the company's network of certified global systems integrators, including Johnson Controls, an IAVM member servicing close to half of the professional North American venues with building control and security systems.

With truly endless possibilities for integration with your existing security systems, you'll want to sit down with your systems integration partner and your security team to best plan what actions you want shot detection to activate and who should receive them. Some considerations for planning the integration strategy to include gunshot detection include:

- Do you want cameras pulled to the incident area?
- Should security guards receive radio alerts? If so, what should they say?
- Do you want to automate alerts to all onsite staff and vendors?
- What about co-located staff such as Senior Leadership and PR/Crisis Response teams?
- What is your relationship with local law enforcement?
- Are they willing to do training drills with you and your security team that incorporate automated alert response?

If you want to remain on the forefront of technology that helps make safety and security of your venue a selling point, I strongly suggest you take a closer look at gunshot detection. As a part of their commitment to training more than 1,500 venue sites in the U.S., IAVM recently partnered with Johnson Controls to install the Guardian System in their Coppel, Texas headquarters. Live sensors are now installed in both the lobby and the main training room, integrated with ExacqVision Video Management System, and staff have been set up to receive text message notifications. With the system's built-in training software, test shots can be incorporated into live drills, so staff and first responders can practice response based on the intelligence gathered. This makes for a fantastic opportunity for visiting venue managers to experience the technology firsthand.

As venue managers, your challenge is to balance the adoption of new security technologies with the fan or guest experience to ensure that all attendees, as well as your employees and vendors, have a safe environment to work and enjoy events. When it comes to adopting technologies and integrations to address the evolving active shooter threat, I urge you to lean on your trusted security consultants, technology providers, and systems integrators. Demand that they research and vet out innovative technologies, understand the integration capabilities, and can provide best practices for implementation so that when your security budget allows, you can quickly make decisions to adopt and implement the technology. **FM**

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For more information on gunshot detection for your venue, visit [www.shooterdetectionsystems.com](http://www.shooterdetectionsystems.com) or call 1-844-SHOT911.