Correctional Security in the Age of Drones

By Tim Smith

Quadcopters (colloquially known as drones) and model helicopters possess many similarities. Both are radio-controlled aircrafts with enough lift and thrust to propel themselves through the air. However, the drones of today represent a threat to corrections far different from the model helicopters of the past. Today’s drones are smaller, quieter and have payload capacities capable of delivering contraband including drugs, cell phones and weapons. They are even capable of being used as a weapons platform controlled remotely. For decades, the price tags of radio-controlled model helicopters and the skill required to fly them limited the number of rotocrafts in the skies above us. The affordability and user-friendliness of today’s drones (facilitated by inexpensive electronic stabilizers and gyroscopes) have made these machines far more available and easier to fly.

With as little as $15, anyone can purchase a mini drone powered by two AAA batteries. While this availability gives users the opportunity to view things from above easily, it also increases the potential for unmanned airborne surveillance of correctional facilities.

The Danger of Drones

Personal drones have already been used to fly illicit materials to inmates, dropping narcotics in prison yards and attempting to drop a loaded gun in a Maryland prison.

For correctional facility owners, operators and inmates, these threats exist on a scale of varying degrees. In the Maryland case, police were able to identify and neutralize the drone and its operator before serious damage was done. However, in another case, staff members weren’t aware of the threat until they saw a flight break out in the yard over the dropped contraband. From identification to neutralization, the design of correctional facilities needs to consider electronic countermeasures including drone detection technologies.

All drones are not threats. The law enforcement community is increasingly making use of the technology in positive ways for search and rescue operations, remote surveillance and other tasks that put drones in dangerous situations and keep officers out of harm’s way to the extent practical.

A Virtual Dragnet

How can we outfit justice facilities with the technology necessary to detect drones that are smaller than a dollar bill?

Emerging technologies include detection systems that include a sensor array creating a virtual canopy over a facility. The sensor array is made up of networks and holds a database of audio signatures from every drone on the commercial market. As a new one comes out, its signature is pushed out over the network to the sensors. In addition to the audio signatures, the arrays use video and infrared cameras to search for the devices that can be as small as a hummingbird. Incorporating this detection technology into the design of security control systems is an important first step in countering this new threat.

There are mitigation tools such as interceptor drones that can be deployed to capture the threat drones once they are detected. Technologies are being developed that include lasers and high power, focused RF energy to disrupt the operation of malicious drones and technologies that can be hosted on an interceptor drone that will destroy the threat drones.

As we have in the past, we must continue to research the threat and the countermeasures; we in the design community must educate clients so that they can make informed decisions about how best to deal with this threat in the context of their policies and procedures.

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mulatation of moisture that could cause damage.

A Wise Investment

While safety is paramount for most jail and prison administrators, keeping maintenance and operations costs to a minimum doesn’t fall far behind. With this in mind, PDS locks (which are appropriate for all security levels) carry a lifetime warranty, which is unique to the industry, giving customers added peace of mind. Should a problem ever arise with a lock or part, the company will replace it, free of charge.

“You have to look at cost over a period of time,” Tipton said. “For most locks on the market, the warranties are a maximum of five years. We’ve engineered our locks to prevent the problems that most locks have by doing that, it’s easy for us to offer that lifetime warranty.”

“Everything we [offer] is made from stainless steel,” Tipton continued. “We don’t put any other heat-like materials to get any chemical reactions. We want our locks to be as maintenance-free as possible.”

Additionally, the company offers round-the-clock support should a problem ever arise. “We don’t believe that a safety product used in a facility like [a jail or prison] can wait two, three or four weeks to be fixed,” Tipton added. “It’s a problem that needs to be solved right away. We make sure that the facility has what it needs to solve that problem immediately.”

Those facilities have also given PDS its most valuable research and development feedback. The company primarily looks to detention center locksmiths and correctional officers, who Tipton calls a wealth of knowledge, and seeks to meet their specific locking needs.

After visiting facilities and meeting with staff, any lock-related needs or complaints are sent to the PDS engineering team for a tailored solution. That team includes son Ted Tipton, a key member of the engineering team, and Howard Parrett, who leads the company’s engineering, design and manufacturing departments.

This method helped the company develop a newly designed electromechanical lock, Series 120, that it plans to debut in early 2016. Tipton says the lock will be engineered to the new standards PDS has introduced to the industry. “Our slogan is: ‘The new standard in detention locks.’” Tipton added. “The tolerances that we use are so much tighter than usual that it prevents a lot of the old problems facilities have encountered. We know that we have built the proverbial better mousetrap.”