Navy Provides Input to DOJ's Officer Duress System Guide

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Correctional facility staff are attacked — that is a reality. Between July 1, 1999, and June 30, 2000, there were 17,952 assaults on staff in confinement facilities under federal or state authority, according to the Bureau of Justice Statistics. In addition, between July 1, 1998, and June 30, 1999, inmates committed 9,276 physical or sexual assaults on correctional staff from 848 jurisdictions, BJS reported. When these attacks occur, technology can ensure that staff are able to do more than just yell for help.

When a correctional officer or employee is in trouble, the ability to respond quickly is crucial. Knowing the correct location and nature of the problem increases the likelihood that lives will be saved and decreases the likelihood of any significant damage to the facility. Some recent technological advances in officer duress systems have helped correctional facilities meet their safety needs.

Duress systems permit alarm signals to be distributed rapidly in the event of impending threats. Real-time alarm notification permits central control to coordinate an effective response to a given duress situation. But as with any new technology, it is not as easy as picking up any solution off the shelf. The solution has to be the right fit for the facility and personnel.

Through an award from the National Institute of Justice Office of Justice Programs, the Department of the Navy's Space and Naval Warfare (SPAWAR) Systems Center in Charleston, S.C., has created a selection guide for officer duress systems to assist correctional agencies in identifying, selecting and deploying appropriate duress alarm systems. In order to select an appropriate system for a facility, administrators should understand several key issues. To help get a handle on those issues, SPAWAR produced a simple scheme for classifying systems, defined a simplified duress system model, reviewed basic issues to address during the selection process and developed an overview of relevant (current and emerging) technologies.

Duress System Technology

A duress system typically is composed of a closed network of portable and mounted transmitters and receivers linked to a command center alarming point. When a staff member senses a threat, he or she activates the system by a transmitter that forwards a distress alarm to the central alarm console.

These systems currently use ultrasonic, infrared and radio frequency waves to link the distributed transmitters and receivers. There are advantages and disadvantages to the implementation of these technologies. Many of the limitations depend on specific characteristics of a particular facility.[1]

In addition, several emerging technologies may have future application in duress systems. These technologies represent ideas or early products that have been developed but, in most cases, have not been integrated into duress alarm systems. They include global positioning systems, ultra-wideband technology and biometrics.

Types of Duress Systems

There are essentially three types of alarm systems: panic buttons, identification alarms and identification/location alarms. A brief description of each follows, and Table 1 compares the advantages and disadvantages of each.

Panic Button. The panic button is the most basic duress alarm. In the simplest application, panic buttons are installed in easily accessed locations such as walls, desks and ingress/egress points. When activated, the button transmits a signal via wiring or radio frequency to a central alarm console. Using visible and/or audible enunciators, the alarm console identifies the location of the event where the alarm was triggered. These systems are not capable of identifying the individuals involved in a duress situation.

Identification Alarms. These alarms are typically a portable transmitting device worn or carried by staff members. The portable transmitter broadcasts a wireless signal that identifies the officer or staff involved. The nearest sensing unit receives the signal and forwards it to the alarm console.

Identification/Location Alarms. These systems are capable of identifying, locating and tracking the correctional staff member who triggered an alarm. As with the identification alarm systems, an individual initiates the alarm transmitter, which broadcasts a wireless signal to a sophisticated sensing unit. The sensing unit then forwards the signal to the alarm console. Additionally, an extensive wireless infrastructure identifies, localizes and tracks the transmitting device. The systems may produce a positioning symbol on a console panel or map-like display at a central alarm location.

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What to Consider

Basic considerations for selecting an officer duress system are:

Cost. Think beyond the purchase price. What will it cost to install and integrate the system? What training, operational and maintenance costs can be expected? Answers to these questions will give an approximate total life-cycle cost of the system.

Scalability/Flexibility. Consider the current situation and determine how "big" a system the facility needs. What will be needed one, five or 10 years from now? Administrators should buy a system that can expand or contract as their needs change.

Size and Weight. The size of both the portable and fixed components should not interfere with staff's daily operations or with other facility systems.

Installation and Integration. Consider the facility's structure and design and other related systems. The duress system will need to be integrated into these (e.g., the electrical system, noise patterns and layout). The effectiveness of new system integration includes more than just the equipment. It also involves the people. For example, what is the learning curve of the new system and what are the training requirements?

Reliability. For a system designed to save an officer's life, reliability is an obvious concern. Make sure that the system's defective units can be easily identified, repaired or replaced. Make sure there is an established maintenance schedule. Another aspect of reliability is testing. Does the system have built-in diagnostics? Can the system be tested without bringing it down? Finally, look at the power supply requirements of each part of the system. Does the system require an uninterruptible power supply? How does it function when batteries are low? How often must batteries be replaced and how much do they cost?

***Alarm Activation,* Positive Identification and Location Determination**. Find out how the system works from how the alarm is triggered to how staff are located and identified, provided the system is designed to do this.

Location Determination/Staff Tracking. For administrators looking at a system that can both identify and locate the person signaling the alarm, find out how the system accomplishes that. Some systems use an assignment log to determine the most likely location of the alarm, while others dynamically locate and track an individual when an alarm is triggered. For the systems using the latter method, look into the level of accuracy that is required and how the facility's building type might affect that.

Operational Environment. Consider any special environmental factors that may affect the system such as extreme temperatures, humidity or electromagnetic interference.

Coverage. Vendors use prediction programs to identify areas within a facility where a readable signal can be obtained, and then guarantee coverage only within those areas. Before selecting a system, identify all areas where coverage is essential and select a system that covers those areas. Also, find out how "dead spots" can be identified and corrected once the system is deployed, and what the costs are for these dead spot corrections.

Choose Wisely

Technology is only one of many solutions to officer safety, but it can play an important role. Selecting an officer duress system that will work effectively is complicated, but it can be done with some forethought and with the help of professionals. Selecting the right system means saving lives and avoiding costly mistakes.

ENDNOTES

[1] Details on those characteristics are available in the *Correctional Officer Duress Systems Selection Guide*. The full report can be downloaded from the National Criminal Justice Reference Center Web site at www.ncjrs.org.

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Table 1. Advantages and Disadvantages of System Types

System Type	Advantages	Disadvantages
Panic Button	• Simple and effective for many types of emergencies • Typically lowest cost • Minimal installation requirements, particularly if integrated during facility construction	• May be inaccessible in a duress situation (e.g., blocked or across the room) • Systems lend themselves to nuisance alarms triggered by inmates
Identification Alarms	• Can identify personnel involved in the duress situation • Portability allows individuals to trigger alarms anywhere within a coverage area	• Cannot localize alarms within a facility
Identification/Location Alarms	• Can identify and localize corrections personnel under duress • Allow better coordination of response to duress situations using officers in close proximity	• Higher acquisition costs than the other systems • Typically the most difficult to install

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