



Chapter 5 Duress Alarm Devices and Their Role in Crisis Management

It would be very unusual for a school to never experience a crisis situation. A crisis can be any incident whereby the health or well-being of one or more students or one or more employees is in imminent danger, or part or all of the school facility will potentially be destroyed or made unavailable. A list of crises could include:

- A threatening or drunk student or employee.
- A trespasser on campus.
- A fight.
- The breakout of a contagious disease.
- An irate and threatening parent on campus.
- Sudden unavailability of a teacher or a bus driver.
- A weapon known to be on campus.
- Massive vandalism.
- A utility outage (no water, electricity, heating, cooling, or telephone service).
- Bad weather (weather too bad to allow students to return home via normal methods or at normal times).
- A vehicular accident with injuries, either in or near the school parking lot or during a school-sponsored event.
- An extremely ill student or employee.
- A gas main leak or toxic spill on or near campus.
- A bomb threat.
- A gang confrontation on or near school property.
- A suicide.
- A hostage situation.
- A shooting, stabbing, murder, or rape.
- A bomb detonation inside the school facility or adjacent to school facilities (a car bomb).
- A local or National emergency that sends community residents to seek temporary shelter at the school.

For a school, a crisis that requires immediate response can be as harmless (but inconvenient) as the lack of a key to open the gym for an evening sporting event. Unfortunately, recent tragedies in the United States have demonstrated the need for schools to be prepared to respond to emergencies as serious as shootings or bombs.

How a school responds to this wide range of incidents is in itself an entire discipline—that of crisis management and planning. Every school needs a well-thought-out, annually updated crisis plan, with regular training for all those who might be involved. Not all schools have a plan, and many plans in existence were issued by the school district such that, by virtue of their generic nature, they may be inadequate for a true emergency. This plan needs to make assignments of who is in charge during different types of emergencies; who is the alternate in charge; who is called first, by whom, from where, and using what; whether students are relocated and how; how students are provided food, water, or shelter in the interim; what type of statement is made to the press and by whom; and who is in charge when

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emergency teams (fire, police, and so forth) arrive on the scene. These are only a few of the specifications called for. In the best of all possible situations, a predetermined team of school employees will immediately muster upon occurrence of a serious situation. Team members would know who to look to for decisions and then proceed automatically in their roles for the particular plan chosen to be implemented.

For the sake of this discussion, it will be assumed that a school has a current crisis plan in place. The issue that will be of concern here is how an employee (or student) can notify security, school personnel, and/or local emergency services that a crisis is occurring or is imminent. Types of communication that may be viable are yelling/screaming, sending someone else for help, using the public address (PA) system, using a telephone, or calling on a two-way radio. (Two-way radios will be a selected technology topic in a subsequent manual.)

Now consider that the person who needs to summon help is in a situation where these options are not viable. This situation may be constrained by the need for extreme urgency or discretion (because of an intimidating situation) or because of the vulnerable location of the person summoning help. The provision that allows a person to summon help under one or more of these constraints is defined as a "duress alarm."

Modern duress alarms are generally electronic devices that vary widely in capabilities and price. There are three general overlapping categories of duress alarms that can send one or more levels of distress signals to a particular location:

- A panic-button alarm—a pushbutton mounted in a fixed location.
- An identification alarm—a portable device that identifies the owner of the device.
- An identification/location alarm—a portable device that identifies, locates, and tracks the person who activated the duress alarm.

(One additional category could possibly be the cellular telephone. While this approach is neither as discrete nor as automatic as the other three categories of alarm devices, a cellular telephone is highly recommended equipment for every principal and the primary security person. Land lines for telephone service are occasionally unavailable, whether due to inclement weather, accidents, or through malicious actions.)

The panic button is by far the most common type of duress alarm presently found in schools (exhibit 5.1). The simplest application would be a strategically located button that, when initiated, would engage a dedicated phone line. A prerecorded message specifying the school, its location, and the urgency is sent to several locations, such as the police department, the district security office, and so forth. Such a system could be pulled together for a few hundred dollars by the local handyman, plus the ongoing cost of the phone line.



Exhibit 5.1.

Commercially available duress panic button systems provide a pushbutton mounted on classroom walls or under teachers' desks. In a duress situation, a teacher or other employee depresses the panic button, which transmits a signal, via wiring, to a location where a visible and/or audio alarm would be activated at a console. This console would provide information that would

identify the classroom where the panic button was activated, but not who activated it. A more advanced system may incorporate the PA system, which allows the teacher and the administrative personnel to hold a two-way conversation by using the existing room PA speakers and installed internal wiring. The cost of this system for an average school would be approximately \$10,000.

There are several weaknesses to a panic-button system. In a classroom situation, it is possible that the panic button would not be readily available in a duress situation. It may be across the room from the teacher's desk or even accidentally blocked by furniture or posters. Also, this configuration lends itself to nuisance alarms triggered by mischievous students. This problem can be offset by hiding the pushbutton or requiring a teacher to enter a PIN on a keypad before use. (The latter is not recommended for schools because of the potential liability of a student attempting, unsuccessfully, to summon help in a threatening situation.) Such a system does not actually identify the person using it, only the owner of the device, but does locate the alarm to a particular classroom or wherever the pushbutton is physically mounted. A panic-button system is cost-effective when installed during the school's initial construction, rather than as a retrofit, and can be a simple and effective system for many types of emergencies.

A second type of system incorporates a pagerlike device that has a panic button built in and is either worn by school personnel or may be installed within a foot switch located under a desk. When the panic button is pushed, a wireless alarm signal is sent to the closest installed wireless sensing unit (a type of repeater) which would then send the signal on to the alarm console. The personnel at the console would receive a coded number and this number would correspond to a teacher. This system does not usually give specific locations other than to the general preprogrammed zone of the repeater. Increasing the number of zones requires more wireless sensing units to be installed, which increases the cost and complexity of the system. A major limiting factor for this system is that the pagerlike device must have a clear line of sight to the nearest sensing unit for an accurate transmission. In other words, walls, glass, roofs, floors, and so forth will degenerate the transmitted signal which decreases the precision of identifying an individual under duress.

This type of system may also incorporate a two-way radio built into the pager that would allow communication between the console operator and person under duress, but this larger pager is more awkward to wear. Also, if a school has an existing PA system, a duress system could utilize the existing PA system wiring to send the signal from the sensing unit to the alarm console. This hybrid system would use both wireless and preexisting wires to reduce the hardware and installation costs. An estimated cost for this type of system would be about \$50,000.



Exhibit 5.2.

A third system, a smarter version of the previous system, can identify, locate, and track the person who activated the duress alarm of his or her pager. Again, school personnel would push the panic button in a duress situation, and this action would send a wireless alarm signal to a more sophisticated wireless sensing unit. The sensing unit would forward the signal to the alarm console.

An extensive wireless infrastructure identifies, locates, and tracks the pager device (and hence the person under duress) within school property (exhibits 5.2 and 5.3). The electronics and software of such a system produces a positioning symbol on a console panel or maplike display. (Telephone calls to

several vendors during the summer of 1998 revealed that these systems generally cost approximately \$100,000 for a 40-acre school area.)

Advanced and promising technologies. The Global Positioning Satellite (GPS) technology that is currently identifying, locating, and tracking everything from military soldiers to car rental vehicles has not been shown to be as successful when used inside buildings or around large or tall buildings. GPS requires an unobstructed signal from the ground transmitter unit to an Earth-orbiting satellite. Some advanced duress systems use a hybrid design that tracks outside personnel with GPS technology and RF or infrared systems for tracking personnel inside facilities. The cellular phone system infrastructure is improving greatly in capabilities and coverage, which in the future may be a great asset to duress alarm signals. Advances in low earth-orbiting satellite technology that transmits data may also prove to be beneficial in making duress alarm systems more intelligent in the future.



Duress alarm system technologies are improving at a very fast pace but will likely have to come down substantially in cost before they will be affordable to most schools. Before going out on bid for the purchase of such a system, it is recommended that school administrators communicate with current users or request to participate in a demonstration of the proposed system.

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