ALARM SYSTEMS USED AS AN INVESTIGATION TOOL

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In today's age, securing one's property and business against fire or unauthorized or unlawful entry is becoming more and more important. Many businesses and an increasing number of homeowners are using electronic alarm systems to satisfy their security needs.

An alarm system can be used as an investigative tool following many insurable losses. Such events may include burglaries, fires, property damage due to water flooding and freezing conditions. Temperature and moisture levels can also be monitored by alarm systems in poultry farms, greenhouses and food storage warehouses.

In general, alarm systems are becoming very sophisticated, with the ability to monitor and report on an ever increasing number of events or occurrences. Their use in detecting fire and burglaries is very well known. Another example of the use of an alarm system is the monitoring and controlling of a poultry barn environment. An alarm system can monitor and maintain the temperature of the barn. If the temperature dips below a pre-specified level, the heaters are automatically activated. When the temperature rises above a pre-determined level, the ventilation fans are automatically operated. If the alarm system detects temperatures (low or high) which are harmful to poultry, then an alarm siren is activated and a signal is sent via the automatic telephone dialer to a pager. Thus response to the barn by responsible parties and, therefore, the safety of our turkey dinner is assured.

In this paper, I will discuss some of the different modes of failure of alarm systems. Before discussing the modes of failure, however, a general description of an alarm system would be helpful.

Regardless of what type of condition is being monitored, be it a fire, a break and enter, water flooding, or excessive high temperature, an alarm system can, in general, be considered to be an electronic "black box". In brief, an alarm system may consist of a number of sensors or detectors, typically one or more keypads, an automatic telephone dialer, a backup battery and a main control panel, that serves as the central processing unit.

All sensors, detectors and keypads are typically hardwired into the main control panel, although some alarm systems are now utilizing wireless technology. Alarms and other signals are communicated to the main control panel which, in turn, processes the information and, when necessary, issues signals that activate sirens and other emergency notification devices. If capable, the main control panel also sends a signal to a remote monitoring station through the automatic telephone dialer.

The typical alarm system is capable of self-supervision, allowing it to monitor some of its own operations and alert the appropriate personnel or a remote monitoring station of a malfunction. These malfunctions can be caused by such things as faulty or disconnected sensors or detectors, faulty or damaged wiring, electric power failures and low backup battery power. An alarm system may also be able to perform an automatic communication test with the remote monitoring station at periodic pre-determined times, thus verifying the functionality of the telephone lines and the automatic telephone dialer. Other signals which may be communicated between the alarmed premises and the remote monitoring station are openings and closings, when the alarm system has been armed and disarmed.

The failure of an alarm system to detect or to announce an alarm condition quickly, thus reducing the insurable loss, could occur for various reasons, some of which are listed below:

Improper Installation: The alarm system was improperly installed and tested.

Defective Hardware: One of the many items which make up the overall alarm system was defective and/or malfunctioning.

Incorrect Use of Hardware: The improper or incorrect use of alarm system components, such as installing heat detectors when smoke detectors should have been used.

Improper Programming: The main control panel for the alarm system was programmed incorrectly. Proper or thorough verification tests of the system's functionality may not have been carried out.

Improper Use: The alarm system is operating or is assumed to be monitoring for the wrong condition. For example, an alarm system is assumed to include fire protection but, in fact, only consists of a burglar alarm.

Tampering: The alarm system was intentionally disabled to allow a certain condition to go undetected or unreported. An example of this would be an arsonist who disables an alarm system so that an alarm signal is not transmitted to the appropriate authorities when the fire is detected. Alternately, a security zone has been intentionally bypassed.

The identification of the cause of the failure or activation of an alarm system is essential in any small or large insurable loss.

A few examples where examination of an alarm system by an alarm system expert may assist an adjuster or claims examiner in an insurable loss are given below.

An alarm system fails to detect or fails to announce a fire or burglary. An alarm system expert may be able to determine whether or not the alarm system had been tampered with, signalling the adjuster or claims examiner to look for a suspect. If the alarm system was not tampered with, then the alarm system expert may be able to determine the mode of failure. If the evidence points to a problem with the alarm company, then the insurer may be able to recover some of the costs by evaluating the

cost of the additional damage sustained as a result of a late detection. Was the fire detected early by a smoke detector or discovered by a passerby when flames were observed through the roof? This time delay could mean a difference between a fire confined to one room as opposed to involving the whole structure, not to mention the potential loss of life. Whatever the cause, an adjuster and/or claims examiner is wise to have an alarm system examined by an alarm system expert. One thing to keep in mind, however, is that if the examination is not done by a knowledgeable person and not done in a timely fashion, the information which could be extracted from the alarm system may be lost forever.

There are also instances when an alarm system functions exactly as it was intended. A fire is detected and announced at a very early stage. If the fire is determined to have been intentionally set, an alarm system may hold incriminating information. It could show or prove if the system was armed a mere five to ten minutes before the fire was detected.

Another example of an alarm system which should be examined is one which is installed in a poultry barn. Some occurrences in poultry barns have resulted in the early demise of a few thousand turkeys. A barn which is monitored by an alarm system which functioned incorrectly should obviously be examined. The question of why an event such as the heat in the barn remaining on for a long period of time could only be answered if an inspection of the alarm system was carried out. Was the alarm system malfunctioning because of a power disturbance or was it defective (manufacturer's problem) or was the system installed incorrectly (installer's problem)? Or was the death of the birds pre-planned by someone?

If the building with an alarm system was extensively damaged by a fire, then it may be possible to obtain information from the alarm monitoring station that would be helpful in determining the origin and cause of the fire. As an example, a signal received from the alarm system during the early stages of the fire may reveal that the rear workshop smoke detector was activated. The search for physical evidence by an origin and cause team could then begin in that area.

Regardless of the incident or event, when an alarm system is involved in a loss, an adjuster or claims examiner should seriously consider having an alarm system expert carry out an examination. Just like using any other tool at their disposal, this type of examination could provide the adjusters and/or claims examiner with information that might otherwise not be available.