

**FALSE ALARM RESPONSE FEES:
A FEASIBILITY ANALYSIS**

FIRE SERVICE FINANCIAL MANAGEMENT

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An applied research project submitted to the National Fire Academy
as part of the Executive Fire Officer Program

August 1999

Abstract

The Prince George's County Fire/Emergency Medical Services Department provides fire, rescue, and emergency medical services to its citizens in the Washington, DC metropolitan area. The Department responded to over 114,000 calls for service in 1998. Over 25% of the non-EMS calls were for false alarms, many of them generated by alarm monitoring companies. The problem was that the number of calls for automatic alarms from alarm monitoring companies continued to increase while staffing levels decreased, thereby, enhancing the risk that fire companies were not available for emergency calls. The purpose of this research was to evaluate the implementation of an alarm ordinance containing fines for excessive false automatic alarms in Prince George's County as a method of reducing these unnecessary calls. This research project employed the evaluative research method to answer 4 research questions:

1. Is there a need for an alarm ordinance in Prince George's County, Maryland?
2. What steps might be taken to reduce the number of false alarms generated by alarm monitoring companies?
3. What steps have other jurisdictions taken to reduce false alarms generated by alarm monitoring companies?
4. What are appropriate penalties or fees for false alarms or non-compliance with any ordinance enacted?

The procedure for this project involved a review of fire service literature to identify the extent of the false alarm problem nationwide and what methods had been employed by other organizations to combat the problem. Additionally, a survey of fire departments was conducted to gain current information on the false alarm problem. Finally, an interview was conducted to

identify what had been done by the Prince George's County Police Department to combat its false alarm problem.

The findings of this research were that the false alarm problem is very significant on the national level and that several organizations had taken steps to combat it. The most common solution was to implement false alarm response fees. It was felt that the Prince George's County Fire/EMS Department would benefit from the implementation of a false alarm ordinance similar to that of the police department.

It was recommended that the department request funding in the next budget to hire 2 personnel to begin the process of drafting the legislation and to establish a tracking procedure. Several areas of additional research were identified that included identifying legal ways to keep the funds within the department for its use and establishing appropriate fees that were similar to the police department's. Additionally, it was recommended that the staff assigned to Public Education and Public Information be used to advertise the program. Lastly, this paper recommended the establishment of an appeals process for property owners who believe that they were mistakenly charged for service.

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Introduction

The Prince George's County Fire/Emergency Medical Services (EMS) Department is a full service organization providing fire, rescue, and emergency medical services as well as a variety of other emergency services to the citizens of Prince George's County. The number of responses to automatic alarms, which turn out to be false, appears to have risen significantly over the past several years. This increase has come at the same time as other calls for service are also increasing. As a result, the total call volume for the Department has increased by nearly ten percent between 1994 and 1998.

A review of computer aided dispatch (CAD) records during March 1999 indicates that the Department responded to 627 calls from alarm monitoring companies for automatic alarms sounding at locations within the County. This number constitutes approximately 6.5% of all calls for service and over 20% of all non-EMS calls during the same month. An informal survey of officers throughout various parts of the Department indicates that between 70% and 98% of calls for automatic alarms do not result from any fire related cause and are, therefore, false alarms. Conservatively, this works out to nearly 6,800 false alarms generated by privately owned alarm companies or approximately six percent of all calls and over 18% of all non-EMS calls.

It is difficult to assign a cost to these responses because of the combination system operated in Prince George's County. Therefore, labor costs vary with each response. One could surmise, however, that the cost to the citizens is significant and is based on a service provided to a limited number of citizens and corporate entities.

Additionally, the authorized staffing levels allocated for the Prince George's County Fire/EMS Department decreased from 775 personnel in fiscal year 1992 to 670 personnel in

fiscal year 1997 due to budget constraints. The authorized levels have rebounded to 704 personnel in fiscal year 2000. Actual staffing levels, however, dropped as low as 606 personnel in March 1999. An additional 97 personnel were hired in March 1999 but will not complete all of their training until December of this year, thereby, continuing to leave the Department understaffed. This reduction in staffing has forced the Department to alter its staffing patterns, removing career staffing from some stations and reducing it at others. The result has been that the increasing call volume is being carried by fewer personnel, and in some cases, by fewer available fire companies. Carrying this out even further, the risk that companies needed for actual fires and other emergencies will not be available increases significantly with the elevated number of calls for automatic alarms.

The problem is that the number of calls for automatic alarms from alarm monitoring companies continues to increase while staffing levels decrease, thereby, enhancing the risk that fire companies will not be available for emergency calls. The purpose of this research is to evaluate the implementation of an alarm ordinance containing fines for excessive false automatic alarms in Prince George's County as a method of reducing these unnecessary calls. In conducting this research, the evaluative method was used. The following research questions were identified:

1. Is there a need for an alarm ordinance in Prince George's County, Maryland?
2. What steps might be taken to reduce the number of false alarms generated by alarm monitoring companies?
3. What steps have other jurisdictions taken to reduce false alarms generated by alarm monitoring companies?

4. What are appropriate penalties or fees for false alarms or non-compliance with any ordinance enacted?

Background and Significance

The Prince George's County Fire/EMS Department is a combination career and volunteer department in the Washington, DC metropolitan area. It provides fire, rescue, and emergency medical service to approximately 762,000 people in a 500 square mile area. The Department has 704 career and approximately 1,000 active volunteer members staffing 47 fire and rescue stations.

In 1998 the Department handled 114,536 calls for service. These calls included 9,841 fires; 77,710 EMS incidents; 4,621 out of county mutual aid responses; 2,557 hazardous material incidents; 9,175 false alarms; and 10,612 miscellaneous incidents. The total number of false alarms accounted for eight percent of the total call volume and nearly 25% of the non-EMS calls during the year. As a percentage of total calls, 1998 was the lowest year for false alarms with false alarms accounting for over 30% of all non-EMS incidents in 1997.

It is unclear how many of these responses are generated by reports of automatic alarms received from third party monitoring companies such as ADT and Brinks security because the Department's statistics do not break down false alarms by category. In March 1999 alone the Department received 627 calls for automatic alarms, which is 20.4% of the non-EMS call volume. Assuming that this is a typical month and expanding it out for the entire year the total number of automatic alarm responses works out to 9,554 total calls. Again, assuming this is a representative month, it appears that the majority of the false alarms (82%) result from automatic alarms. This represents a significant expenditure of resources by the Department to handle unnecessary incidents that benefit only the property owner.

The standard dispatch for an automatic alarm received from a monitoring company without confirming information from the premises is two engine companies, one ladder truck, and a battalion chief. Because of the staffing and dispatch policies of the Department it is difficult to assign a cost factor to these responses. This is because the Department staffs only 44 of the 47 stations with career fire fighters during the day time hours (0700-1500 hours) Monday through Friday and has varying levels of staffing--from no career personnel to 4 career personnel in each station--on nights and weekends. Therefore, it is extremely difficult to determine the labor costs of career personnel on each incident because the number of career personnel varies with each call and there is no salary cost for volunteer personnel. Additionally, the number of pieces of fire apparatus often varies between calls. As stated earlier, the standard dispatch consists of two engine companies, one ladder truck, and a battalion chief. Department policy, however, allows stations to respond with additional pieces of apparatus as long as they do not respond with a service when there is another like service closer that has not been dispatched to the call. Therefore, the amount of apparatus and the number of career personnel responding varies with each call making it difficult to track costs and determine the true cost of each false automatic alarm call.

In 1997, the Prince George's County Police Department had a false alarm ordinance implemented. The police department had a bill introduced into the County Council during fiscal year 1995 which established standards for the installation of burglar and holdup alarms, required registration of alarm companies and installed alarm systems, and established a penalty for excessive false alarms in a one year period. The Department began registering alarm systems in September 1997 and began enforcement of the registration requirements as well as fining property owners for excessive false alarms in April 1998. In 1997--prior to the implementation

of the ordinance--the police department responded to 86,000 false burglar and holdup alarms. After the first year of the false alarms, the number of false alarms has decreased by 12,000 (14%).

It is thought that the Fire/EMS Department may have similar results with a false alarm ordinance dealing with fire alarm systems. The concept that this paper will explore is the feasibility of implementing a false alarm ordinance, which requires a monetary fine for excessive false fire alarms from third party monitoring companies. The Fire Service Financial Management course of the National Fire Academy's Executive Fire Officer Program requires that an Applied Research Project related to the class be submitted. This research project is relevant to the alternative financing section as it relates to changing behavior.

Literature Review

The literature review for this project was intended to provide information on four subject areas. The first was a review of fire service literature to determine the extent of the false alarm problem on a national level. Second, information pertaining to the effects on the public and fire service personnel relative to false alarms was reviewed. Third, a review of fire service literature was conducted to determine what, if any, options were available to fire service organizations to reduce the incidence of false alarms in their communities and the potential benefits associated with implementation of an alarm ordinance. Finally, information was sought which outlined what penalties had been implemented by other jurisdictions with alarm ordinances.

Extent of the problem

For many years, the fire service has advertised the benefits of automatic fire alarm systems as silent sentinels able to detect a fire and alert building occupants as well as the fire department much more quickly and efficiently than people. It has done so very well. In fact, it

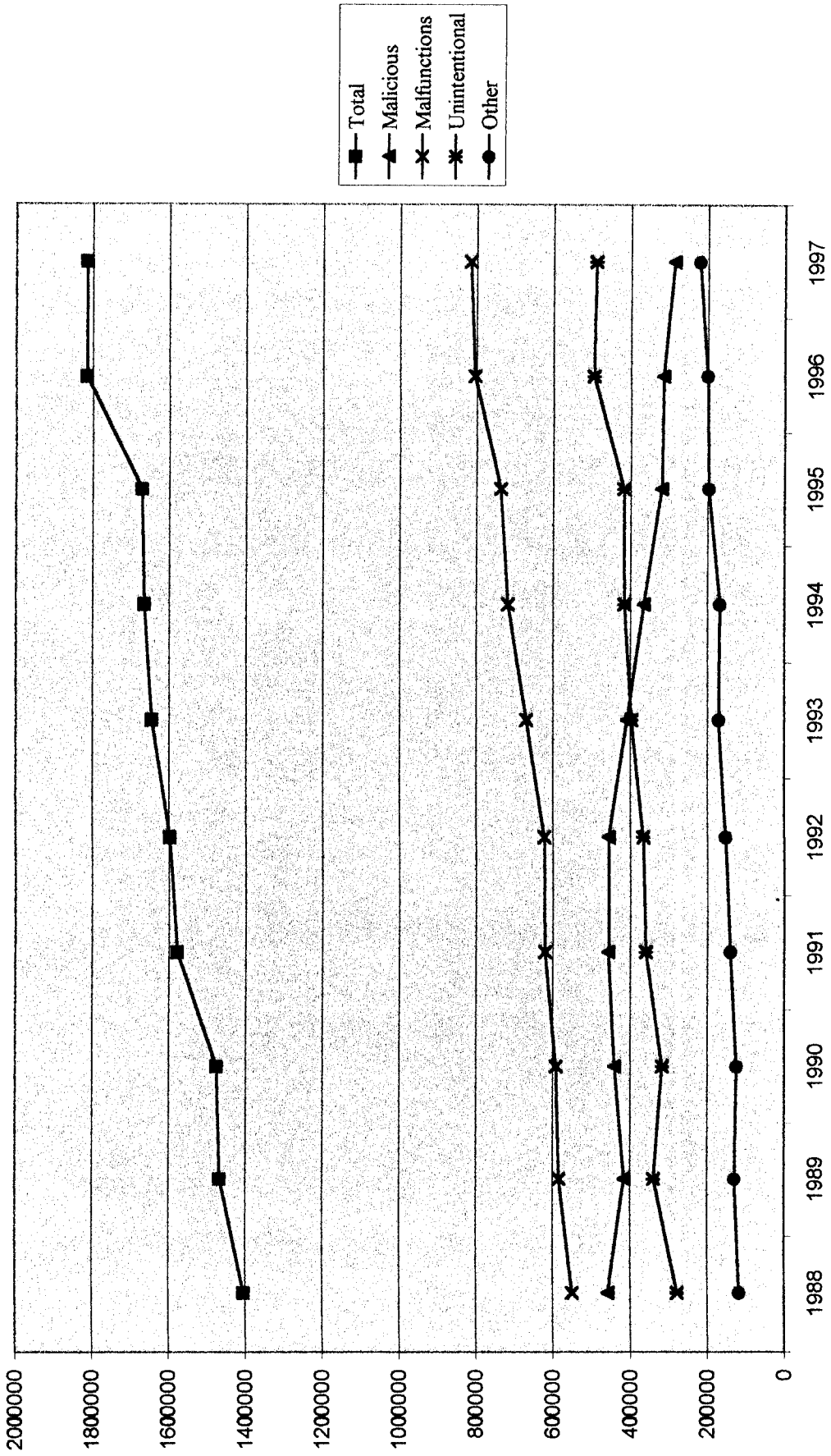
may have done it too well. The growing number of automatic alarm systems has created a new challenge for the fire service. That challenge has been how to deal with the growing number of false alarms generated by automatic alarm systems. According to Karter (1998) “in 1997, U. S. fire departments responded to 1,814,500 false alarms. This means that one out of ten calls responded to by fire departments were false alarms” (p. 1). His data indicates that from 1988 to 1997 the total number of false alarms has risen steadily every year and that “the number of system malfunctions have increased every year and increased an overall 48.3% from 550,500 in 1988 to 816,500 in 1997” (p. 1). Table one illustrates the data contained in Karter’s report. In an Applied Research Project at the National Fire Academy, Hoover (1997) states “literature indicates that nuisance activations of alarm systems far outnumber real-fire alarms, by a margin of 17-to-1 to 27-to-1” (p. 15). Halas (1992) quotes a 1986 Rekindle article:

Wayne Moore, a leading author on the subject, stresses that “false alarms from fire alarm systems have risen to epidemic proportions and are causing many people to take drastic measures, such as disconnecting them to eliminate the problem. It is obvious that what is needed is significant corrective measures . . . implemented immediately” (p. 13).

According to Hershfield (1995):

False alarms emanate from a variety of sources. Someone accidentally or maliciously pulls an alarm switch. Someone else neglects to report alarm testing, or a neighbor mistakes a backyard barbecue for a fire . . . However, more than a third of all false alarms to which fire departments respond are not caused by human error or maliciousness. Rather, they result from malfunctioning automatic alarm systems (p. 46)

TABLE 1
 Estimates of False Alarms by Type, 1988-97



Source: False Alarm Activity in the U.S., 1997, NFPA

Halas (1992) continues this thought, stating:

Virtually all of the numerous sources of literary and technical advice seem to agree on the major factors causing the false alarm problem. In short, improper installation, lack of adequate maintenance and the failure to have obsolete alarm system components upgraded, are among the primary causes of the problem (Halas, 1992, p. 26).

It appears that much of the problem comes with the increased sophistication of the detection systems. Nielsen (1988) writes, “false alarms from these systems are caused largely by a lack of maintenance of the monitoring devices installed on the system—heat detectors, smoke detectors, etc.” (p. 14). Spahn echoes this sentiment, saying:

Many fire alarm system designers and installers do not keep up with the latest fire alarm system technology. As a result, systems are often designed, installed, and tested incorrectly. Long after the designers and installers are gone, the public, the fire department, and the building owner are left to deal with faulty systems (as quoted in Halas, 1992, p. 7).

Halas (1992) further states “if false alarms are so detrimental, then it seems logical that if fire alarm systems were designed, installed, tested and maintained correctly, then the false alarm problem would be drastically reduced” (p. 7).

Effects of excessive false alarms

Beyond the number of false alarms lies the effect that excessive false alarms have on the public and on those responding to them. It seems obvious that repeated false alarms will cause the public to be conditioned such that they ignore alarms. This could have devastating effects in the event of a real fire. According to Halas (1992), “the negative impact of these false alarms included 1) significantly affecting available manpower for true emergencies, 2) increasing safety

hazards to emergency personnel as well as the public, and 3) eroding the trust and confidence many building occupants had in these alarm systems” (p. 1). According to A Guide to Funding Alternatives for Fire and Emergency Medical Services Departments (1993):

Most new commercial buildings and an increasing number of residences have automated fire detection systems that can trigger unnecessary automatic responses by the fire department, particularly when the alarm systems are not properly installed or maintained. Repeat offenders—particularly homes, businesses, or buildings—make up a large number of false alarms. Each false alarm response creates some danger for the public and the firefighters. Valuable resources are used unnecessarily, and the units are not available for actual fires or other calls. There also is the “boy who cried wolf” syndrome—letting down one’s guard on the assumption that the alarms are false (p. 55).

This sentiment is repeated throughout the literature. Fire department personnel often arrive on the scene at buildings with fire alarms sounding to find the occupants still inside because they have become so accustomed to the false alarms (Kapler, 1990; Hoover, 1997). Wayne Moore further adds, “the effectiveness of a warning system depends significantly on its credibility Each false alarm reduces the credibility of a warning system At any given time, the credibility status of warning systems is a function of the ratio of recent true alarms to recent false alarms” (as quoted in Halas, 1992, pp.6-7).

The second issue regarding the effects of excessive false alarms is that of firefighter safety. Firefighters, like the public, also become accustomed to repeated false alarms and expect certain alarms to be false. In an article in the June 10, 1999 issue of the Prince George’s Journal, Charlynn Flaherty, Director of the Prince George’s County Police Department’s False Alarm Response Unit, is quoted as saying, “when an alarm goes off it’s like saying, ‘Help! Help!’ to

the police . . . Officer safety becomes an issue when the police have been to a house 10 times and the next time there really is a bad guy in there” (Dominello, p. 11). While this specifically refers to burglar and hold up alarms in the police department, similar attitudes are developed by firefighters and safety becomes a very serious issue when they respond to repeated false alarms at the same location. Hoover (1997) cites an incident in Memphis where this attitude became dangerous.

This type of behavior was demonstrated when fire fighters died in a high rise apartment building in Memphis. This Memphis building had a reputation for generating false alarms so fire fighters used the elevators to go directly to the floor where the alarm was coming from. In this case the alarm was actually detecting a fire and the fire fighters were on the fire floor without proper personal protective equipment functioning (pp. 2-3).

As mentioned briefly above, the issue of not having units available for a true emergency because they are tied up on a false alarm is a distinct possibility. Hershfield (1995) addresses this issue very clearly, saying:

If it is sometimes expensive to prevent false alarms, what is the cost of experiencing false alarms? One expense is what Denver’s Chief Gonzalez calls ‘a social cost issue. It has a ripple effect. We may not be able to respond to a real fire’ while out on a false alarm (pp. 47-48).

Options and benefits

According to Hoover (1997), “the primary means discussed in the literature to reduce community risk caused by false alarms from automatic systems was to charge for responses or otherwise financially penalize the owner of the building with the problem system” (p. 16). Hoover (1997) continues, saying, “the purpose of charging for nuisance alarms is not to generate revenue, but to

encourage owners to fix or update problem systems. Nationally, the average number of nuisance alarms allowed before fire departments charge for response is 2.9 per year” (p. 20).

It is important to be clear on the purpose of implementing financial penalties for excessive false alarms. Halas (1992) is very clear on this issue:

To be truly effective, the requirements must be designed to generate corrective action of the deficiencies. Whether human error, mechanical malfunctions, or even improperly installed devices, the fines imposed for excessive false alarm responses should not be intended to raise revenue. Moreover, repairing and/or upgrading the fire alarm equipment, resulting in improved operation of the system and subsequently improving the credibility that occupants have in it when an alarm sounds, should be the major goal of such local legislation (p. 27).

In her article, Hershfield (1995) quotes Oakland Fire Chief Lamont Ewell as saying “We don’t want to create revenue, but we do want to coerce cooperation” (p. 47).

Improvements in detection and system technology is important when determining strategy to minimize the number of nuisance alarms from alarm systems. It seems plausible that the policy of fining owners of alarm systems that consistently cause false alarms, or charging property owners for responses to nuisance alarms may cause the owners to use newer technology to reduce the number of false alarms. Punitive action against the owner would be ineffective if no solution is available to that individual. If that individual has the technology available to reduce nuisance alarms but chooses not to spend the money necessary to eliminate nuisance alarms, punitive action such as charging for responses to that location can effectively reduce alarms and lower community risk caused by these alarms (Hoover, 1997, p. 9).

Damrell (1995) addresses the issue of using alternative funding methods to change behavior in his Applied Research Project. He states:

Another perspective states that the person or company causing the expense to the community should be held responsible for the city's cost to correct or mitigate the outcome of the incident. The common taxpayer should not be required to subsidize the loses [sic] resulting from gross negligence or illegal activities, nor should the established taxpayer be required to provide new and expensive city services for new developments (p. 7).

In detailing the purpose of adopting alternative funding sources, he further states:

A . . . purpose is to discourage specific behavior that adversely affects the community or to encourage behavior that improves the quality of life in the community. The third reason seeks to prevent waste and redistribute the needed services to those who demonstrate the greatest need (Damrell, 1995, p. 9).

Obviously, the goal of any false alarm ordinance would be to reduce the number of false alarms from automatic alarm systems. The literature contained little specific information detailing what benefits were derived from the implementation of alarm ordinances. It does appear, however, that those who chose to publicize their results have been successful.

The City of Boston Fire Department was faced with false alarms that placed a burden upon their operations. A city ordinance was enacted in 1988 enabling the fire department to charge fees for false alarms on a sliding scale. In just three years, the number of false alarms dropped from over 9,000 per year to 5,000 per year, a decrease of 44 percent (A Guide to Funding Alternatives for Fire and Emergency Medical Services Departments, 1993, p. 56).

Another city that has made its results public is Melbourne, Australia. According to Melbourne's Chief Fire Officer Jeffrey Godfredson, the incentives have been extremely successful. "Before they were instituted, he said, the building owners' solution was to do nothing; the fire brigade showed up and did the work. 'When we began to fine,' he notes, 'all those problems building owners had said were insoluble [sic] were resolved'" (Hershfield, 1995, p. 47). According to Damrell (1995), Melbourne generated approximately \$11 million between 1989 and 1994 and the Washington D. C. Fire Department estimates that it could generate \$300,000 annually.

The only other reference to the success of false alarm ordinances referred to that of the Prince George's County Police Department. That bill has also been very successful. The police department estimates that it has saved almost \$1,000,000 and, additionally, will place close to \$1,000,000 from false alarm fees into the county's general fund (Dominello, 1999, p. 1). The reduction in the total number of false alarms has also been dramatic. "'We've had a 1,200 false alarm reduction between March of 1998 and March of 1999,' said Flaherty. Flaherty said that in March of 1998 police responded to 6,900 false alarms and in March of 1999 police responded to 5,700 false alarms" (Dominello, 1999, p. 1).

Appropriate fees

There were a number of references in the literature to what fees are charged by jurisdictions with existing false alarm ordinances. Surprisingly, the fees were very similar across the board. According to Walthour (1994) who analyzed fire department fees in departments throughout Florida "the fees for false alarms were very similar for all fire ordinances we reviewed" (p. 13). The fees noted in the literature, and any information related to how they are applied, will be detailed.

In his Applied Research Project, Nelson (1989) noted the false alarm policies in Oakbrook, Illinois and Boston, Massachusetts.

The Oakbrook Fire Department was experiencing a severe false alarm problem because 64% of all responses to structures were the result of false system alarms. It was determined that smoke detectors were the main cause of these alarms. The Department was charging \$25.00 for each false alarm in excess of the one per three month period allowed. Through the passage of a new ordinance, the fee was increased to \$150.00 for each alarm in excess of the allowable one per three month period. Some exceptions were allowed such as weather related false alarms that may be beyond the scope of preventative maintenance. This program resulted in a 50% decrease [sic] in false alarms within a one year period (p. 5).

Nelson (1989) further states:

Boston has a false alarm ordinance that imposes a fee schedule for false alarms. Each system is allowed 3 false alarms per half year (six month) period. Subsequent alarms during the half year period result in fines as follows:

Fourth malfunction	\$50.00
Fifth malfunction	\$75.00
Sixth malfunction	\$100.00
Seventh malfunction	\$150.00
Eighth and any subsequent malfunction	\$200.00

In the event that a system has eight or more malfunctions within a half year period, the Fire Marshal may assess an additional fine of \$200.00 per day for each day after the

malfunction until the system owner demonstrates compliance (the causes of the false alarms are being addressed or remedied) or demonstrates no malfunction (the alarm was not caused by a malfunction) (p. 6).

A Guide to Funding Alternatives for Fire and Emergency Medical Service Departments

(1993) cites the Bellevue, Washington ordinance.

In Bellevue, Washington, only one “preventable” fire alarm is allowed from an alarm system during a calendar year. If a second preventable alarm occurs, the city charges a \$50 fee. For any subsequent alarms, a \$75 fee is charged. “Preventable alarms” include activations caused by improper installation or maintenance; erroneous transmissions; work on alarm systems when reasonable steps were not taken to prevent reporting of an alarm; fire drills or tests of alarms; work such as painting or welding; and smoke or fumes from closed fireplace dampers, cooking, or smoking of tobacco products (p. 56).

Walthour (1994) makes reference to Orlando, Florida’s false alarm fees and further makes a recommendation to increase the fee. Both will be included.

Orlando’s fee for false alarms is based on a 12 month period. No fee is charged for the first three alarms; \$50.00 fee for each of the next three false alarms; and \$100.00 for each false alarm in excess of six. The city whose fee was significantly different from the others was Miramar; they charge \$100.00 for the third false alarm and for each subsequent false alarm the fee is double the previous fee (p. 13).

He recommended:

In order to prevent repetitive responses to false alarms caused by habitual offenders, increase false alarm service fees to create more incentive to maintain and/or repair fire alarm systems. Consideration should be given to charging the following rates for each

false alarm beyond six: 1. \$200 each for 7-12 false alarms; 2. \$300 each for 13-18 false alarms; 3. \$400 each for 19-24 false alarms; 4. \$500 each for 25 and over (p. 19).

Robert Barnes, Fire Chief of the Oneonta, NY Fire Department, recommended a system which adjusts the number of allowable false alarms in a year based on the number of detectors in the alarms system. His recommendation was that systems with less than ten detectors be allowed two false alarms per year; from 10 to 50 detectors, four false alarms; 51 to 150 detectors, six false alarms; more than 150 detectors, eight false alarms. On the first false alarm beyond the grace period the fine would be \$50 and would increase by \$25 for each additional false alarm (1995).

Hershfield (1995) cites Palm Beach County, Florida Fire Marshal Jim Sweat in reference to the need to balance the desire to minimize false alarms while maintaining needed fire protection. According to Sweat, “Keeping a balance is important. If we make the fine too heavy, people will disable their systems, but [the fine] has to be enough of a reminder” (as cited in Hershfield, 1995, p. 47). According to Chief Rich Gonazalez, of the Denver Fire Department, “It’s hard [to decide how to come down on malfunctioning alarms] when you are the ones who mandate them” (as cited in Hershfield, 1995, p. 46). Palm Beach County has established an innovative method for encouraging fire alarm repairs by forgiving fines in return for repairs on the faulty systems (Hershfield, 1995). According to Fire Marshal Sweat, “Say people have \$2,000 in fines If they document \$2,000 worth of improvements to the problem alarms, certified through the state fire marshal, we will deduct that amount from the fine owed us” (as cited in Hershfield, 1995, p. 47).

On a related topic, Jioras (1991) recommended a permit system “which requires the building owner to obtain an annual permit. This permit system would identify a named person to

which penalty/fee notices can be mailed” (p. 15). In the case of the Prince George’s County Police Department the licensing fees collected helped to defray the cost of setting up the False Alarm Reduction Unit, which is responsible for tracking false alarm occurrences and citing property owners for excessive false alarms.

Procedures

The research procedure used in preparing this paper consisted first of a literature review conducted initially at the Learning Resource Center at the National Emergency Training Center in February of 1999. Additionally, literature reviews were conducted between March and June of 1999 at the University of Maryland libraries located in College Park, Maryland and Catonsville, Maryland as well as the author’s personal library. The purpose of this review was to identify the nature of the false alarm problem on the national level as well as what methods have been employed by other fire service organizations to reduce them.

Additionally, a survey was developed and distributed requesting information on the false alarm experience of various fire departments and any methods they employ to combat the problem. This survey was distributed to the students in the Fire Service Financial Management and Executive Leadership classes at the National Fire Academy. It was also distributed to East Coast fire departments meeting the criteria of the International Association of Fire Chiefs as a metropolitan department. A total of 63 surveys were distributed. Of those distributed, 37 (59%) were returned completed. One survey was returned by the United States Postal Service for an incorrect address.

The data from the survey was entered into a computer database for tabulation. The information was compiled and separated by department size and type for analysis. The information was examined to determine the prevalence of monetary fines for excessive false

alarm activity, the number of “grace” alarms, and the time period used. This information was then compared to what was gleaned from the literature review in preparing the recommendations.

Lastly, Charlynn Flaherty, Director of the Prince George’s County Police Department False Alarm Response Unit was interviewed to identify what methods were used in developing their false alarm ordinance. It was also intended to glean information on what problems necessitated the development of the ordinance and what benefits resulted from the program.

Assumptions and Limitations

There are two basic limitations associated with this research. The first dealt with the lack of statistical information available from the department regarding the number of automatic alarm calls received from third party monitoring companies and the number of those which were false alarms. This made it difficult to clearly define the extent of the problem within the Prince George’s County Fire/EMS Department. It was, therefore, necessary to gauge the degree of the false alarm problem by the perception of several company officers familiar to the author.

Secondly, the number of surveys distributed was very limited. The number of surveys mailed out and returned is not sufficient to be statistically significant for the fire service as a whole. It does, however, give an overview of how the fire service combats the false alarm problem.

Lastly, it was assumed that March 1999 was a typical month relative to the number of calls for service received in Public Safety Communications. It was also assumed that the breakdown of calls by type was very similar to that which would be received over the course of the entire year.

Results

In the introduction to this research project, four research questions were identified. The results of this research are organized around those four questions and are presented in order.

1. Is there a need for an alarm ordinance in Prince George's County, Maryland?

The literature review indicates that the level of false alarms handled by fire departments across the country has risen dramatically over the last ten years. Additionally, the primary cause of these alarms has shifted from malicious and mischievous calls to system malfunctions. This is probably due to the complexity of the systems, but a significant, contributing factor may well be the inexperience of alarm installers relative to automatic fire alarm systems. Much of the research material points out that these companies are responsible for the majority of the problem alarm systems.

The experience of the Prince George's County Police Department has been that the enactment of the false alarm ordinance has created a more professional, experienced core of alarm system installers. It has also forced the less reputable companies out of the county leaving the citizens with reliable alarm system installers and capable monitoring companies. It should be noted that the false alarm ordinance has created in the code legal requirements for the installation and monitoring of alarm systems in addition to the penalties for excessive false alarms.

In Prince George's County, the number of automatic fire alarms during March of 1999 accounted for over 20% of all non-EMS calls for service and the total number of false alarms received was over 25% of non-EMS calls. Based on the March numbers it is estimated that over 80% of the automatic alarm calls are false alarms.

Considering the results obtained by the police department through its false alarm ordinance, and the number of false alarms received by the fire department from third party alarm

monitoring companies, it appears that the Prince George's County Fire/EMS Department would benefit from the implementation of a false alarm ordinance. This benefit would be both in the reduction of responses to unnecessary alarms and in the generation of revenue to partially cover the cost of response to these types of calls.

2. What steps might be taken to reduce the number of false alarms generated by alarm monitoring companies?
3. What steps have other jurisdictions taken to reduce false alarms generated by alarm monitoring companies?

Based on the literature review and the survey information, the most common method used to reduce the incidence of false alarms is through monetary fines. Of the 37 surveys returned, 14 of the departments reported having a false alarm reduction policy in place. All but one of those indicated that the policy involved a monetary fine for excessive false alarms received from third party monitoring companies. The one organization that indicated it did not have a monetary fine in place—Saint Paul (MN) Fire and Safety Services—indicated that after more than three malfunctions in one month or six in one year the fire marshal orders the alarm system to be repaired. Failure to comply with the order could result in a \$700 fine and/or 30 days in jail. It does not appear that there is any correlation between department size and the prevalence of false alarm policies. The survey results (see table 2) indicate a nearly even distribution between large and small departments with policies.

While the specific fees used in false alarm ordinances and the number of “grace” false alarms vary between jurisdictions, it is obvious that the most commonly utilized method for reducing false alarms is through the use of monetary fines.

TABLE 2
False Alarm Survey

Dept. Type*	Dept. Size**	Organization	Number of Calls	Automatic Alarms	False Alarm Policy	Fine	Fine after:	Time Period	Permit Fee?	1=Dept 2=General Fund
0	1	Bethel Township	1812	50	<input type="checkbox"/>	<input type="checkbox"/>	0		<input type="checkbox"/>	0
1	3	Philadelphia FD	220565	0	<input type="checkbox"/>	<input type="checkbox"/>	0		<input type="checkbox"/>	0
1	3	Cleveland FD	54883	6250	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3	12 months	<input type="checkbox"/>	2
1	3	Dekalb County Fi	0	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3	12 months	<input type="checkbox"/>	2
1	3	Houston FD	178000	1000	<input type="checkbox"/>	<input type="checkbox"/>	0		<input type="checkbox"/>	0
1	3	St. Paul Fire & Sa	37685	2479	<input checked="" type="checkbox"/>	<input type="checkbox"/>	0		<input type="checkbox"/>	0
1	3	Boston FD	72000	5000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3	6 months	<input type="checkbox"/>	0
1	3	Charlotte FD	59490	5100	<input type="checkbox"/>	<input type="checkbox"/>	0		<input type="checkbox"/>	0
1	3	Tulsa FD	28000	8000	<input type="checkbox"/>	<input type="checkbox"/>	0		<input type="checkbox"/>	0
1	3	Baltimore City F	170000	4800	<input type="checkbox"/>	<input type="checkbox"/>	0		<input type="checkbox"/>	0
1	3	Atlanta FD	53321	0	<input type="checkbox"/>	<input type="checkbox"/>	0		<input type="checkbox"/>	0
1	3	DCFD	163008	24000	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3	12 months	<input type="checkbox"/>	2
1	2	Danville FD	4300	430	<input type="checkbox"/>	<input type="checkbox"/>	0		<input type="checkbox"/>	0
1	1	Battle Creek FD	7200	200	<input type="checkbox"/>	<input type="checkbox"/>	0		<input type="checkbox"/>	0
1	1	El Dorado FD	4200	250	<input type="checkbox"/>	<input type="checkbox"/>	0		<input type="checkbox"/>	0
1	1	Missoula FD	3800	0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3	1 month	<input type="checkbox"/>	2
1	1	Parsons FD	650	50	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2	6 months	<input type="checkbox"/>	0
1	1	South Trail FD	4584	350	<input type="checkbox"/>	<input type="checkbox"/>	0		<input type="checkbox"/>	0

*1-Career 2-Volunteer 3-Combination **1-<100 personnel 2-101-300 personnel 3->300 personnel

Dept. Type*	Dept. Size**	Organization	Number of Calls	Automatic Alarms	False Alarm Policy	Fine	Fine after:	Time Period	Permit Fee?	1=Dept 2=General Fund
1	1	Irondale F&R	1100	240	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	5	12 months	<input type="checkbox"/>	2
1	1	Deltona F&R	7000	100	<input type="checkbox"/>	<input type="checkbox"/>	0		<input type="checkbox"/>	0
1	1	Eau Claire FD	4250	350	<input type="checkbox"/>	<input type="checkbox"/>	0		<input type="checkbox"/>	0
1	1	Sheboygan FD	2800	150	<input type="checkbox"/>	<input type="checkbox"/>	0		<input type="checkbox"/>	0
1	1	Chapel Hill FD	3300	1650	<input type="checkbox"/>	<input type="checkbox"/>	0		<input type="checkbox"/>	0
1	1	Muscataine FD	1350	100	<input type="checkbox"/>	<input type="checkbox"/>	0		<input type="checkbox"/>	0
1	1	Durant FD	302	40	<input type="checkbox"/>	<input type="checkbox"/>	0		<input type="checkbox"/>	0
1	1	Orange FD	1483	77	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2	3 months	<input checked="" type="checkbox"/>	2
2	2	Bloomington FD	1400	800	<input type="checkbox"/>	<input type="checkbox"/>	0		<input type="checkbox"/>	0
2	1	Ponderosa VFD	1322	240	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2	12 months	<input type="checkbox"/>	1
3	3	Frederick County	18689	978	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	0		<input type="checkbox"/>	0
3	3	Virginia Beach F	19684	1095	<input type="checkbox"/>	<input type="checkbox"/>	0		<input type="checkbox"/>	0
3	3	Montgomery Cou	82493	2622	<input type="checkbox"/>	<input type="checkbox"/>	0		<input checked="" type="checkbox"/>	2
3	3	Henrico County D	22555	1529	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2	6 months	<input type="checkbox"/>	1
3	3	Anne Arundel Co	47809	0	<input type="checkbox"/>	<input type="checkbox"/>	0		<input type="checkbox"/>	0
3	3	Columbia FD	9517	3700	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3	12 months	<input type="checkbox"/>	2
3	3	Prince William C	23400	0	<input type="checkbox"/>	<input type="checkbox"/>	0		<input type="checkbox"/>	0
3	1	Cottage Grove/So.	2600	100	<input type="checkbox"/>	<input type="checkbox"/>	0		<input type="checkbox"/>	0
3	1	Castle Rock F&R	2700	200	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3	12 months	<input checked="" type="checkbox"/>	2

*1=Career 2=Volunteer 3=Combination **1=<100 personnel 2=101-300 personnel 3=>300 personnel

4. What are appropriate penalties or fees for false alarms or non-compliance with any ordinance enacted?

The information found during the literature review disagrees somewhat with what was contained in the returned surveys regarding the fees assessed for excessive false alarms.

Additionally, there is great variation between organizations with regard to the number of false alarms allowed before fines are assessed and the measurement period. Hoover (1997) indicated that the average number of false alarms before fines were charged was 2.9 per year. According to the survey information, the average number of false alarms before penalties is 4 per year.

Based on the information obtained in the literature review, a fine of \$50 for the first false alarm past the allowable number seems pretty common. There was one exception noted with a first offense carrying a fine of \$150. In all cases the amount of the fine increased as the number of false alarms in the measurement period grew. It should be noted, however, that some of the information reviewed in this project was as much as ten years old.

Of those indicating the penalty amount on the returned surveys, fines varied between \$25 and \$250 for a first offense after the number of allowable false alarms. The average fine was just over \$105 for the first finable offense. In the majority of the cases the fines also increased with the number of false alarms in the measurement period.

Subtitle 9 of the Prince George's County Code, titled Burglar and Holdup Alarm Legislation, establishes the fees charged by the police department for excessive false alarms. The fee schedule allows three false alarms within a 12 month period without a false alarm response fee. Starting with the fourth false alarm a \$50 fee is charged for each false alarm. This fee increases by another \$50 for each three false alarms received after the fourth. For example, after three false alarms the penalty is \$50 for each false alarm. On the seventh false alarm in the

same 12 month period, the penalty increases to \$100 and then to \$150 on the tenth false alarm. The maximum penalty is \$200 per false alarm starting with the thirteenth false alarm in the year. Additionally, the legislation requires that after six or more false alarms in a year a licensed alarm contractor must recertify the system. There is also an additional \$25 recertification fee required. After 12 or more false alarms in a year the system must be upgraded to meet the current standards established in the code. A \$50 system upgrade fee is also charged.

Discussion

Fire alarm systems have long been considered a critical factor in the early detection and notification of fire in a building. As the fire service has marketed and required these systems, however, the increase in unnecessary responses has become a problem that threatens to reduce the amount of protection fire departments are able to provide to the citizens. From both a cost standpoint and a risk standpoint the increasing number of false alarms brings into question the true effectiveness of automatic fire alarm systems.

It is clear that the Prince George's County Fire/EMS Department commits a significant amount of its resources to these unnecessary calls for service. Based on the success of the police department's false alarm reduction policy and legislation as well as that of the respondents to the survey, it is thought that a similar policy could be effective in reducing the number of false alarms resulting from automatic alarm systems. It is also thought that the revenue generated would be sufficient to cover the costs associated with tracking the false alarms and collecting the fees.

One issue that was identified in a letter attached to a survey returned from the Charlotte, NC Fire Department was that of alarm companies calling the fire department when they receive a burglar alarm to avoid paying a fine levied by the police department. As a result, fire companies

are responding into potentially extremely dangerous situations without being aware of it. The fire department is now struggling to develop a strategy for dealing with this problem.

There are several issues that must be addressed prior to implementing any false alarm ordinance. The first deals with how County revenues are credited and distributed. In general, all revenue sources go directly into the General Fund and are distributed to agencies throughout county government as part of the budget process. It is felt that funds received from false alarm response fees should go directly to the fire department to cover the costs of responding to these calls and to offset the costs of tracking and collecting the penalties. It would be necessary to include in any legislation that the revenue generated from this ordinance be returned to the fire department.

The second issue is one of tracking the false alarms from alarm monitoring companies. The police department uses information captured from the Computer Aided Dispatch (CAD) system to track false alarms. The police dispatchers utilize a code when closing out all calls that indicates how it was handled. As such, on false alarms a specific code indicates that it was an unnecessary call. The False Alarm Reduction Unit then extracts all call types coded as burglar and holdup alarms and having a close-out code indicating unnecessary alarms (Charlynn Flaherty, personal communication, July 26, 1999). The existing fire CAD, however, does not have standard disposition codes to indicate how an incident is resolved. The field exists but there is no standardized method for indicating false alarms. It would be simple to identify which calls were received as automatic alarms from monitoring companies but identifying which ones were unnecessary alarms is not possible with the current CAD. A new CAD system has been ordered and is expected to be operational by the end of the year. It is unclear whether it will be

capable of tracking this information as the specifications are currently. There may be an additional cost associated with adding this capability.

The last issue is that of creating a group to track, bill, and collect the fees for false alarms. This would require the addition of personnel above the Department's existing staffing levels, which must be done as part of the budget process. The fiscal year 2001 budget process will begin in October of this year, therefore, it will, most likely, be necessary to work on drafting any legislation and submitting it to the County Council for consideration now and delay creation of an alarm unit until the next fiscal year. Based on the police department's experience, it will probably not be possible to begin enforcement of any false alarm ordinance until fiscal year 2003 at the earliest, a delay of three years.

Recommendations

Based on the literature review, the survey results, and the interview, it is recommended that the Prince George's County Fire/EMS Department begin drafting a false alarm ordinance. The legislation should parallel the existing legislation for burglar and holdup alarms in Subtitle 9. Additionally, a request should be included in the next budget for two civilian personnel to begin establishing a false alarm unit. These personnel would be responsible for creating a system and identifying a computer software package capable of tracking false alarms. They would also be charged with developing a training program for operational personnel and a public awareness campaign advertising the ordinance.

It is further recommended that the department's legal affairs staff investigate the legality and feasibility of creating an account for depositing the funds generated by this project. It should also research the legality of creating an enterprise fund to be used in conjunction with the

creation of a false alarm ordinance to ensure that any moneys generated remain in the control of the Fire/EMS Department to enhance its service delivery.

Further research must also be conducted to identify an appropriate penalty system for excessive false alarms. The fine structure should be similar to that of the police department. If a significantly different fee schedule is identified, the Fire/EMS Department should work with the police department to create a parallel schedule of false alarm response fees. This will eliminate any tendency for alarm companies to call the “cheaper” department to investigate its alarms regardless of what type of alarm is received.

If, and when, an alarm ordinance is enacted, existing Public Education and Public Information staff can be utilized to educate the public on the goals and merits of the program. These two divisions have regular contact with the public and have avenues for distributing information to large segments of the county’s population. They should work with the police department to learn what methods were effective and to identify what alarm companies are currently doing business in the county. It will be crucial to publicize the onset of the program to ensure that property owners are aware of it before it starts. This will allow the department to advertise the benefits of it and to “sell” it based on how it will improve the service to the citizens of the county. A critical part of the marketing will be spreading the word that false alarm responses reduce the department’s availability to respond to true emergencies.

Lastly, an appeals process must be established as part of the false alarm ordinance. It will be critical to establish a means through which property owners can appeal penalties imposed when it can be shown that the alarm resulted from an appropriate indication of fire or because of something out of the control of the property owner. Without a “customer friendly” appeals process it will be very easy to lose the support of the citizens and the business community when

the Fire/EMS Department needs it most. People are much more likely to support the department if they feel it is concerned with being fair in its enforcement duties.

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APPENDIX

**FIRE SERVICE
FALSE ALARM REDUCTION SURVEY**

Organization Name _____

Address _____

City _____ County _____

State _____ ZIP _____

Person completing survey _____

Position/Title _____

Telephone Number _____

Department Type

_____ Career _____ Volunteer _____ Combination

Department Size

_____ less than 100 personnel _____ 101-300 personnel _____ over 300
personnel

1. What services does your organization provide? (check all that apply)

_____ Fire _____ EMS _____ Rescue _____ Haz Mat _____ other

2. How many calls for service did your organization answer in 1998? _____

3. Approximately how many responses were for automatic alarms received from monitoring services (ADT, Brinks, etc.)?

4. What is the standard response to calls for automatic alarms received from third party monitoring companies?

5. Does your organization have a policy in place for the reduction of false alarms received from third party monitoring companies?

_____ YES _____ NO

If you answered YES to question 5 please continue. If you answered NO, please stop here. Thank you for your assistance.

6. Does this policy involve a monetary fine for false alarms received from monitoring companies?

_____ YES _____ NO

7. If so, after how many responses does this monetary fine “kick in?”

_____ First response _____ After 2 responses _____ After 3 responses

_____ After 4 responses _____ After 5 or more responses

In what time period?

8. Please explain the fee structure.

9. Does your Department charge a permit fee (either one time or annual) for automatic alarm systems installed in each occupancy?

_____ Yes _____ No

10. Does the money go to the Department or into the jurisdiction’s general fund?

_____ Department _____ General Fund

11. If your Department’s policy does not involve a monetary fine, please explain it in the space below.