

Best Practice Number Three: Reducing the Dispatch Rate and Number of False Burglar Alarms in Memphis and Shelby County

Executive Summary

Burglar alarms serve as useful deterrents to crime, but the amount of time and money police spend responding to the 100,000 or more false alarm calls in Memphis every year has become a tremendous problem. More than 98 percent of alarm calls were false or canceled prior to dispatch of Police services.

False alarms are caused primarily by user errors, a lack of training at installation, and sometimes by technological problems. The National Burglar & Fire Alarm Association, Inc. the International Association of Chiefs of Police, and the Alarm Industry Research and Educational Foundation have done considerable work to address this issue. This paper examines the benefits of burglar alarms, the costs of false burglar alarms, and solutions that are currently being tried or proposed to assess best practices in Memphis for false alarm reduction in the following areas:

- user training
- alarm standards
- response by police
- local ordinances
- state laws

False alarm ordinances vary greatly across jurisdictions in terms of how clearly they are written, whether they are fair, and who must pay the fines they levy. From the view of law enforcement, false alarms are a nuisance and potential cause of injury to responding police officers.

This report has four main recommendations:

- a public service announcement on false alarms is needed for distribution to television and cable systems
- ensure that the industry educates users on system use and false alarms, and

- assess the local ordinance on alarms
- evaluate the cost of a false alarm and education center.

This document was produced for the Memphis/Shelby Crime Commission for the False Alarm Task Force. Attendees included representatives from the Memphis Police Department, Shelby County Sheriff's Office, Memphis Fire Department, City of Memphis - Finance Division, Alarm Industry Representatives, and the University of Memphis.

False Alarms

False alarms, nuisance alarms, false activations, canceled prior to dispatch. A false alarm, by any name, presents an undesired activation of burglar alarms which confounds police departments, alarm companies, alarm users, and local governments. The problem of "false alarms" is a complex issue. Definitions and solutions are multi-faceted, with different groups taking opposing viewpoints.

What is a false alarm? A false alarm is the notification of an alarm to the authorities when the responding authority finds no evidence of the alarm the system was designed to report.

A false alarm can be broken down into several categories to distinguish between user error and technological problems. This differentiation in categories can lead to different ways of counting the alarms and influence recommendations on solutions.

Unwanted alarm system activations in which a sensor properly responds to a stimulus, but the stimulus is not a burglar are **nuisance alarms**. For example, a heat and motion detector may be set off by a dog or cat in the house. System activations due to mechanical defects are "**true**" **false alarms** caused, for example, by a dead back-up battery on a system. Unnecessary requests for police assistance may result from nuisance alarms, true false alarms, or errors by alarm monitoring stations.

User error is the most common form of false alarm. A recent survey in Maryland suggests that false alarms are caused almost 80 percent of the time by users of electronic systems (NBFAA, 1996). For example, "He set it ... but didn't tell her."

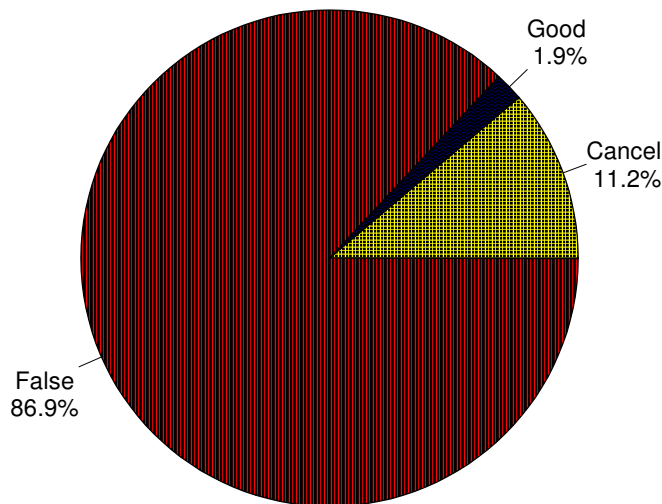
Some parties would like to see a category of **canceled alarms** included in false alarm statistics. A canceled alarm occurs when the alarm company's dispatcher calls police dispatchers to say that the alarm just reported is now known to be false and that police services are not required. However, who is to cancel the alarm? How are the

police to verify that it is the party and not a criminals who cancels the dispatch once they hear an alarm? Alarm companies claim they could reduce police dispatches if police departments would accept cancellations.

The particular type of false alarm this paper is concerned with is the type that causes police to travel unnecessarily to an alarm site--for whatever reason. This paper will describe that type of alarm as a "false alarm."

How common are false alarms? False alarms are too common but determination of exactly how common depends on definition and point of view. Most reports express false alarms as a percentage of all alarm calls. Comparative indicators from National and local studies show that 95 percent to 98 percent of all alarm calls are false where there was do evidence of an actual or attempted intrusion. Figure 1 shows that about 98 percent of calls in Memphis were false alarms or canceled prior to dispatch. Taken from this vantage point, the problem of false alarms looks outrageous.

Figure 1.
Burglar Alarm Calls in Memphis, 1996



Source: Memphis Police Department

Another common way to assess how often false alarms occur, used most often by industry groups, is to quote the number of false activations per installed system per year. This number typically equals between one to two false alarms per year per system. The smaller number (1 to 2) makes the problem look slight.

Neither view reflects the situation quite accurately. The real problem for police is not the percentage of false alarms but the number of unnecessary calls for service. In Memphis in 1996 there were more than 125,000 alarm-related calls for police service and 98 percent of those calls were unfounded. While many of the calls were canceled prior to dispatch, there were 108,810 calls for service for false alarms. Table 1 reports information on calls for service and false alarms. False alarms account for a substantial percentage of all calls for service.

Table 1. Calls for Service to Police and Burglary Alarms by Type of Call, Memphis 1996

Calls for Service	Number of Calls	Percent of CFS
Total	774,734	100.0
False Alarm	108,810	14.0
Cancel prior to dispatch	13,964	1.8
Good	2,369	0.3

Source: Memphis Police Department

Examining the number of false calls per system per year leaves the problem understated. National estimates of installed systems, 8 to 12 percent of U.S. homes and 40 percent of U.S. businesses have alarm systems, for a total of 8 to 20 million systems. If each user generates just one false call for police response annually, that's still 8 million to 20 million unnecessary calls for service. Moreover, an estimate of one false alarm per

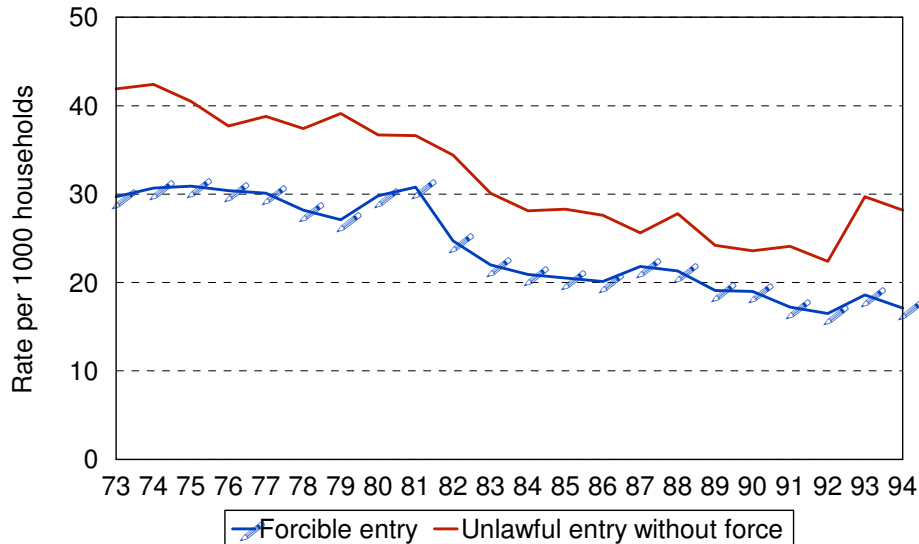
system per year is probably low. A more realistic estimate is about 2.2 false alarms per system per year.

No matter what method is used to assess the rate of false alarms, these calls represent a substantial percentage of calls for service. Estimates range from 10 to 20 percent across the Nation. Keep in mind that it costs approximately \$100,000 per year to keep an officer on the street and that about 15 % of all calls for service is spent on unfounded situations.

Burglary Rates

Information from the National Crime Victimization Survey (NCVS) shown in Figure 2 illustrates that trends in household burglary rates have dropped steadily since the early 1970s. The rate is a National average expressed as a rate per 1,000 households. About 30 households per 1,000 were burglarized using forcible entry in 1973 with the rate dropping to about 17 per 1,000 households in 1994.

Figure 2.
Trends in Burglary Rates: NCVS, 1973-1994

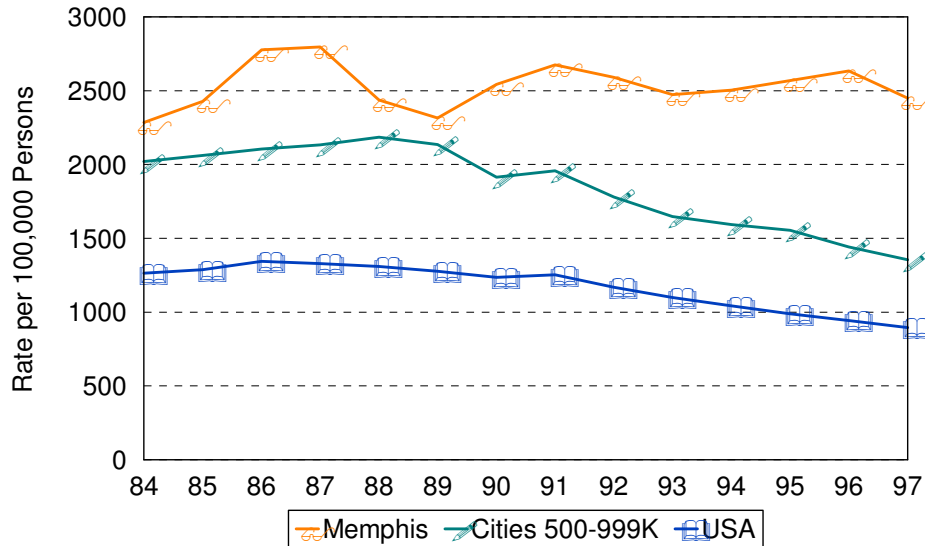


Notice that burglaries more often involve unlawful entry without force than forcible entry. It is reasonable to infer from these trends that a household where the doors and windows are unlocked are more likely to be burglarized. Indirectly we can also assume that burglar alarms act as a deterrent to crime, when an alarm is active and identified.

The NCVS also assesses fear of crime which is a substantial predictor of whether or not people will purchase an alarm. Fear of crime has not changed substantially over time while the burglary rate has dropped. At the same time many people are both comforted in getting an alarm and they recognize that alarm systems are an effective deterrent to crime.

Figure 3, drawing from the Uniform Crime Reports, shows the trend in Burglary for Memphis, Cities over 500,000 population, and the United States for 1984 to 1997. Burglary rates in Memphis are higher than those in comparable cities and the National average. Moreover, unlike other trends, the burglary rates in Memphis have not dropped substantially over time.

Figure 3.
Burglary rates: Uniform Crime Reports, 1984-1997



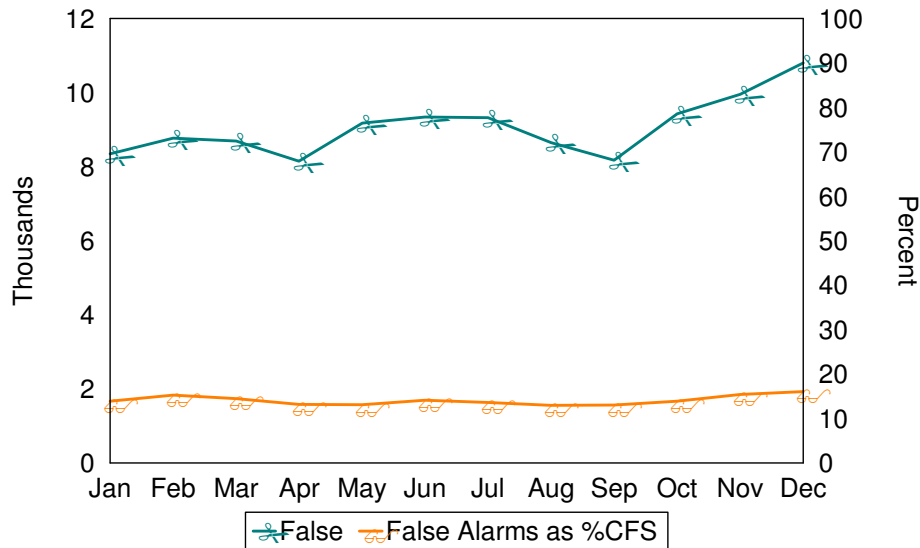
A number of explanations have been given for Memphis's crime rate (see Cohen, Fox, and Wolfgang, 1996). At issue for this report is how to address burglaries and false alarms. Fear of crime in Memphis is about the same as that found in other cities of comparable size (see Forde, 1995 cited in Cohen et al. 1996). It is reasonable to assume that the number of alarm system installations will continue to grow in Memphis, particularly as equipment improves and becomes increasingly affordable.

Calls for Service

False alarms represent a substantial cost to the community. Figure 4 shows the sheer number of false alarm calls that are made to the Memphis Police Department. The real cost for full recovery on a single alarm call is about \$75 (Source: Phoenix Police Department Alarm Program, 1997). This means that in 1996 about 8.2 million dollars were spent responding to 108,810 false alarms. More shocking is the fact that this time

that Police devote to false alarms is about 15 percent of the time that police allocated to calls for service which translates into 1/6th of the Police force.

Figure 4
False Alarms: Calls Monthly and as Percent of
Calls for Service in Memphis, 1996

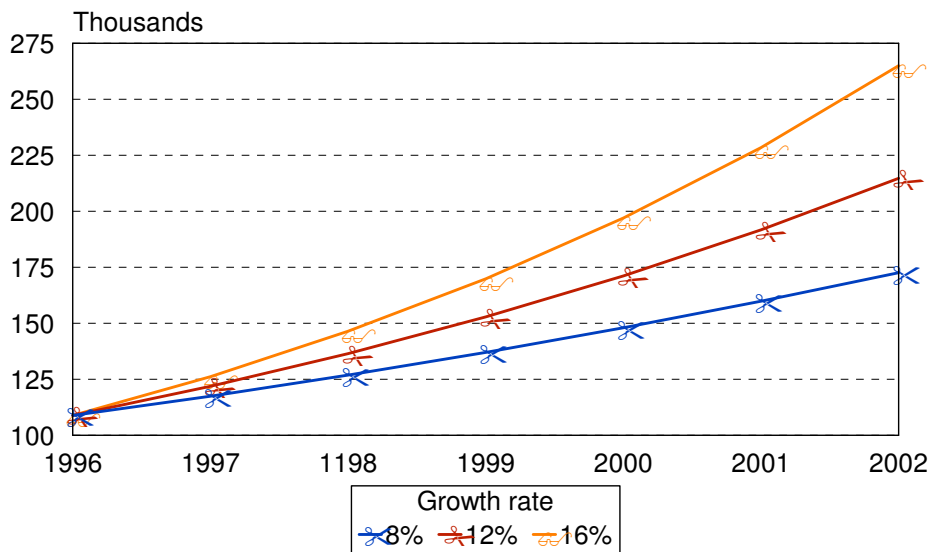


Unchecked, the problem will grow significantly along with the steadily increasing number of alarm system installations. Large cities in American are already experiencing hundreds of thousands of false alarm calls annually.

Figure 5 presents estimates of the number of false alarm calls for service in Memphis to the year 2002 assuming similar rates of false alarms calculated at three different growth rates for the installation of alarm systems in the community. The current market growth rate in the United States for system installations is about 12 percent per year. The 12 percent growth rate is the middle slope on the graph out of which we can see that Memphis could expect an additional 100,000 false alarms in the year 2002 if conditions do not change. Taking an 8 percent growth rate the number of false alarms this number would increase by about 70,000 false alarms. Estimating a 16 percent growth rate yields a prediction of a whopping 154,000 additional false alarms. If false alarms continue at the present rate, the best estimate on costs for false alarms is that

the City of Memphis will require an additional expenditure of about 7.5 Million dollars beyond the 8.2 Million dollars which is already being paid. False alarms may account for an increasingly larger percentage of calls for service for the Memphis Police Department with the estimated additional expenditure projected to range from a minimum of 5.2 Million to a maximum of 11.6 Million dollars per year by the year 2002.

Figure 5.
Projections of Calls for Service for False Alarms
by Growth Rate of Alarm Installations



Social Costs of Residential Burglaries

There are tangible and intangible costs of burglaries. A person may lose property to which we can place a dollar value on the loss. A person may also suffer losses because of pain, suffering, health costs, and time lost from work (Cohen 1988). The following estimates the extent of losses from residential burglaries in Memphis in 1996.

A number of assumptions are made in estimating the costs of residential burglaries:

- about 2/3rds of burglaries are residential burglaries (Uniform Crime Reports, 1996)
- the average property loss for a residential burglary is \$1350 (Uniform Crime Reports, 1996)
- property loss in homes with alarms is about 75 percent of that for homes without alarms assumed as an estimated average cost of \$1013
- persons are at home during about 13 percent of residential burglaries (Hakim et al., 1996)
- persons are assaulted in about 1/3rd of burglaries when they are at home
- persons are raped in about 1 in 10 assaults during a residential burglary

Information about household size is drawn from the Tennessee Statistical Abstracts (1997) which report that there were 229,829 households in Memphis in 1996. This number will be used as the base in estimating burglary rates.

The Memphis Police Department reported that there were 18,576 burglaries in Memphis in 1996 (FBI, 1997). About 2,400 “true” alarms were recorded in 1996. Going on the assumption that 2/3rds of burglaries are residential burglaries there were about 12,384 burglaries and 1600 of these were in homes which had burglar alarms.

A number of studies suggest that houses which have burglar alarms will have lower rates than houses without burglar alarms. However, there is no evidence that having an alarm will displace crime so that the burglary rate for neighboring houses goes above the rate for the neighborhood (Mieth, 1990). The estimation procedure for calculating the cost-benefit of residential burglar alarms is as follows:

- the burglaries are considered as if each household was victimized once (as opposed

to repeat victimizations)

- the number of households with alarms is estimated
- the burglary rate for households with alarms is estimated
- the burglary rates for households without alarms is estimated
- the burglary rate assuming that no alarms are in the community is estimated
- dollar costs are estimated for each category, and gain or loss is calculated

Tables 2 to 4 illustrate the direct costs of burglaries estimated based on 10, 15, and 20 percent of households having burglar alarms. Keep in mind that the true burglary rate for households with alarms will be lower since some households were victimized more than once. The tables present estimates of the direct costs of burglary and benefits to Memphians because of burglar alarms in their homes.

Table 2.
Direct Cost of Burglaries if 10% of Households Have Alarms

	Actual alarm	Actual no alarm	Estimate if no alarms	Savings
Households	22,983	206,846	229,829	
Burglaries	1,600	10,784	12,834	
Burglary rate	0.0696	0.0521	0.0521	
Cost per burglary	\$1,013	\$1,350	\$1,350	
Total cost	\$1,620,000	\$14,558,400	\$16,176,000	-\$2,400

Working on an assumption of 10 percent of households with alarms yields poor estimates. The 1600 reported alarm calls is taken as a true number and the estimated burglary rates for households with alarms would be higher than that for houses without

alarms. There would also be an unrealistic predicted loss to the city of \$2,400.

Table 3.
Direct Cost of Burglaries if 15% of Households Have Alarms

	Actual alarm	Actual no alarm	Estimate if no alarms	Savings
Households	34,474	195,354	229,829	
Burglaries	1,600	10,784	12,834	
Burglary rate	0.0464	0.0552	0.0552	
Cost per burglary	\$1,013	\$1,350	\$1,350	
Total cost	\$1,620,000	\$14,558,400	\$17,127,529	\$949,129

Table 3 illustrates the direct benefits of alarms assuming that 15 percent of households have alarms. The net benefit is nearly one million dollars. The difference in the burglary rates for households with or without alarms, however, is not very substantial.

Next, looking at estimates in Table 4 based on 20 percent of houses with residential alarms there is an appreciable difference in the burglary rate for houses with alarms versus those without alarms. These figures are closer to results reported in other studies (such as Miethe, 1990). The net benefit to Memphis is a savings of about 2 Million dollars because of alarms in homes.

Table 4.
Direct Cost of Burglaries if 20% of Households Have Alarms

	Actual alarm	Actual no alarm	Estimate if no alarms	Savings
Households	45,966	18,363	229,829	
Burglaries	1,600	10,784	12,834	
Burglary rate	0.0348	0.0587	0.0587	
Cost per burglary	\$1,013	\$1,350	\$1,350	
Total cost	\$1,620,000	\$14,558,400	\$18,198,000	\$2,019,600

Property damage and property loss are conservative estimates of loss to victims during criminal victimization. A more realistic estimate takes into account factors such as pain and suffering, medical costs, loss of time at work, and more. Cohen (1988) estimated the cost of crime to victims. Hakim et al. (1996) calculate estimates for assault and rape in 1990 dollars based on Cohen's research. This report estimates costs of assault and rape during a burglary in 1996 dollars updated based on changes in the Consumer Price Index (CPI).

The estimated cost of assault during burglary is:

$\$13490 \times (\text{burglary rate without alarm} - \text{burglary rate with alarm}) \times \text{number of alarm owners} \times \text{proportion of houses occupied during a burglary} \times \text{probability of an assault during a burglary} \times (\text{CPI } 1996 / \text{CPI } 1990)$ (Adapted from Hakim et al., 1996)

The estimated cost of rape during burglary is:

$\$56,419 \times (\text{burglary rate without alarm} - \text{burglary rate with alarm}) \times \text{number of alarm}$

owners x proportion of houses occupied during a burglary x probability of an assault during a burglary x probability of a rape (CPI 1996 / CPI 1990) (Adapted from Hakim et al., 1996)

Table 5 shows the direct and indirect cost benefit of having residential burglar alarms. The direct savings is property losses that were avoided. The indirect costs are savings in costs for victims of assaults and rapes that occur during a burglary. The best estimate of total savings falls between 1.3 and 3.1 million dollars since the percentage of households with alarms is between 15 and 20 percent. Note that this is a conservative estimate of costs to victims since it does not estimate indirect costs for other violent crimes such as murders during a burglary.

Table 5.
Direct and Indirect Cost-Benefit of Residential Burglar Alarms

Alarms	Direct savings	Assault	Rape	Total savings
10 %	-\$2,400	-\$288,369	-\$120,604	-\$411,373
15 %	\$949,129	\$217,515	\$90,971	\$1,257,615
20 %	\$2,019,600	\$786,635	\$328,993	\$3,135,228

Burglar alarms in the community can produce savings in costs to victims but it is important to remember that they also generate an expenditure of 8.2 Million dollars in costs for the Police in order to service calls for service for false alarms. It is necessary to consider how many victimizations may occur because the Police were busy or unavailable to protect other citizens in Memphis. **Clearly false alarms must be reduced for the**

protection of all citizens in Memphis.

Reducing False Alarms

Several initiatives are currently underway in the United States and Canada to reduce the number of false alarms. A pilot program in 1995, the “**Model Cities Program**” has demonstrated that it is possible to significantly reduce the number of false alarms through professional standards for alarm industry centers, and education and registration of users. Table 6 reports the percentage decreases in false alarms for these cities.

Table 6.
Model Cities Program 1995: Declines in False Alarms

City	% change
Bellevue, WA	-13
Elgin, IL	-29.6
Philadelphia, PA	-13

Source: Security Sales, 1996

The “**Model States**” false alarm reduction program, starting in 1996, includes California, Florida, Illinois, and Washington. The mission of the Alarm Industry Research and Educational Foundation (AIREF) is to assess data from the model cities program and to apply workable programs via the State Association of Chiefs of Police in the chosen States. The number of false alarms is recognized as a national problem out of which industry and state agencies will attempt to reduce false alarm response through:

- Encouraging or requiring alarm central stations to attempt to verify alarms by telephone or other electronic means prior to calling the police
- Moving the alarm industry to self-regulation by suspending services to chronic

abusers of alarm systems

- Supporting alarm system user education
- Utilizing supplementary or alternative response (leaving initial alarm response to private, contract responders or to municipal employees other than commissioned officers)
- Encouraging the passage of alarm ordinances that provide for, among other things, user permits and fines for excessive numbers of false alarms
- Supporting security industry technology research and equipment standards
- Supporting cooperative efforts to reduce the administrative burden to local government through efficient permitting, licensing, and centralized management of the false alarm data and fee collection process
- Accepting dispatch cancellations
- Supporting licensing of alarm companies
- Supporting consumer ratings of alarm companies and systems based on dependability

(Source: Model States False Alarm Reduction Program Action Plan, 1996)

The Model States program clearly identifies a number of areas where industry, police, local government, and the public can work to address the problem of false alarms. The issues of user error, alarm standards, response by police, local ordinances and state laws will be discussed.

User error

The vast majority of false alarms (70 to 80 percent) are caused by user error.

- A pet is left in the house
- A windstorm blows open a window and sets off the motion detector
- Hired help are given a key but not the alarm code
- Homeowners trip the alarm going out the wrong door

- A child comes home early and doesn't remember the code
- Homeowners fail to shut the door properly
- Business managers fail to give the code to an employee
- A back-up battery is not maintained
- The homeowner does not do a monthly routine check on the system
- The homeowner forgets the password
- A tenant is not shown how to use the system
- And many more examples

As this report showed earlier, the issue of false alarms results in a significant number of calls for service. The public, however, seems unaware of the extent of the false alarm problem.

False alarms are not only wasteful, they are **extremely dangerous** because Police Officers may become complacent responding to false alarm after false alarm. Both the Officer and the system user may be injured. An Officer, expecting a false alarm, may be caught unaware when someone is in a true emergency. Police must treat each alarm activation as if it were a "good" alarm.

This report recommends that a public service announcement to educate users on false alarms be produced for distribution on television and cable. The public service announcement is merely a tool to counteract false alarms. The responsibility remains for the public, the police, industry, and the city to work together.

Alarm Standards

The industry has recognized that user errors are common in false alarms. Many improvements have been made in alarm system technology and training to counter false alarms including:

- longer time delays at door closing to allow sufficient time to get in and out of area
- one week delays before systems go on-line to allow users to learn system
- better design of panic, distress, fire, ambulance, and police buttons

- better and more reliable sensor technology
- better training of installers about the need to educate the user
- development of public service announcements to educate the public on false alarms
- better communication with police dispatch center

It is clear that the alarm system industry recognizes that false alarms are a nationwide problem. At the same time it is important to ensure that professional standards are applied by the industry. **This report notes that Tennessee State Law and local ordinances of Memphis need modification of requirements for monitoring procedures.** Monitoring agencies must keep accurate records of alarm users. Standardized procedures are needed in cancellation of dispatch of police to false alarms.

Response by Police

Police departments respond to an estimated 13.7 million alarm activations in the United States. The vast majority of alarms are false. While alarm ownership is increasing at about 12 percent per year, Police department budgets, on the other hand, will only rise by about 3 percent.

John Firman of the International Association of Chiefs of Police says “Using very scarce police department resources to respond to false alarms is a disaster. The burden on police departments will only worsen because of the increase in alarm installation.” Police departments will have to make choices about how to respond:

- **Private security.** Las Vegas, NV; Boulder, CO; and Beverly Hills, CA do not respond to activations unless a private security company first visits the premises.
- **Selective response.** Large cities such as Chicago, New York, Toronto, and Los Angeles have reacted by delaying or selectively responding to alarms. Some have abandoned the effort altogether.
- **Charge a nominal fee for response.** Riverside, CA, sought legislation for police dispatching over the 900 lines so that the central alarm station would be charged \$5 per call.
- **Limit the number of free responses.** Montgomery County, MD, for example, has established rapidly escalating fines for repeat activations.

The issue of private security is a difficult one as a police force may open itself to a lawsuit if it does not respond to a true emergency. Selective response can be difficult as it requires tracking of registration, counting of false alarms, and making a decision about how many alarms are too many (which again opens an organization to challenge in court). Charging a nominal fee fails to cover costs of response to false alarms. Education of users is necessary to ensure that they know the real cost of false alarms. Punitive actions using fines have been shown to work. Fines may reach as high as \$1,000. A problem, however, is that use of fines requires an effective administrative effort to identify repeat offenders and to collect fines. The overall issue from the point of view of Police is how to reduce false alarms to lessen the substantial burden on police resources rather than to see this as an issue of how to make money on false alarms.

Local ordinance

Most cities require registration of all alarm owners, yet few achieve 100 percent registration. More often, non-registered systems are identified on activation of a false alarm. Maintaining accurate alarm system information is essential if the Police are to identify the system user as opposed to the burglar. At issue is whether maintaining the database should be done by the city or by the alarm companies. Identification of the user can also be achieved if the alarm monitoring center verifies the validity of a response and provides the name of the user before dispatching police services.

There are currently 78,785 permits on file for burglar alarms in Memphis (Source: City of Memphis, March 1998). The alarm office is located in the Treasury Department. Table 7 reports information on new permits, renewals, and penalties collected.

Table 7.
Burglar Alarm Registration and Penalties

	Permits	Renewals	Permits (\$)	Penalties collected	Citations (\$)
1995	7,788	53	\$233,640	891	\$22,275
1996	8,345	46	\$250,350	224	\$6,060
1997	8,363	6	\$250,890	11	\$335

Source: City of Memphis: Division of Finance and Administration

The number of citations issued for false alarms is about 500 per month. The current system for collection is clearly insufficient given that about 6,000 citations were issued in 1997 and only 11 penalties were collected. Enforcement of these citations at the current \$25 per fine would net \$150,000. **This report recommends evaluating the cost of maintaining an alarm user registration database.** Some cities, such as Seattle, are able to able to collect fines despite not requiring a permit nor an annual fee for an alarm system. Others such as Phoenix use renewal fees to maintain the database and to operate an education program on false alarms.

The local ordinance is an important part of the challenge to reduce false alarms. Most importantly, what can be done to ensure that the user knows how to use the alarm system? Local ordinances which include fines can be effective in lowering the rate of false alarms. At the same time, education is needed to ensure that the public knows the real cost of false alarms. Currently there is a fine structure in the Memphis Code. The fine structure is limited by State law. **This report recommends that the local ordinance on fines for false alarms be enforced, and that repeat offenders be required to undergo education on false alarms after a fifth false alarm.** The effectiveness of this education should be assessed as well to ensure that false alarms are reduced.

False Alarm Management

A number of cities have successfully developed programs to manage the high volume and burden of false burglar alarms in their communities. Phoenix, for example, has implemented a program which has reduced false alarm activations from more than 2 activations per system year in 1990 to about 0.56 activations in 1997 (Phoenix Police Department 1998). The Phoenix Police Department has a false alarm rate which is about 1/3 that in Memphis. Removing two-thirds of the cost of false alarms would save over 5.5 Million dollars in the current budget for Police calls for service per year.

A number of factors are required in order to implement an effective program for false alarm management. The Phoenix model and the Model States Program suggest that it is necessary to include:

- an ability to identify users (through an up-to-date database)
- Computer Aided Dispatch (CAD) to track the number of false alarms in order to work with users and alarm companies for excessive false alarms
- an aggressive public relations campaign, and
- an alarm school for public education about false alarms.

The cost of an expanded office to maintain an alarm user registration database and to operate an alarm school may be easily achieved and cost effective. Table 8 provides an estimate of the initial start-up and annual recurring costs to coordinate a false alarm office. Items include salaries, materials and supplies, computer hardware and software, and marketing costs.

The current staff would need to be supplemented by additional clerks in order to handle current and additional data entry. **The False Alarm Task Force recommends that an officer from each of the Memphis Police Department and the Shelby County Sheriff's Office work out of this office in a joint effort to deal with false alarms in Memphis and Shelby County.** The officers are key personnel who would provide services for the alarm school and public education.

A false alarm office would require monies for postage and supplies primarily directed at annual renewal of permits. An automobile and mileage estimate is provided for two cars for use of the officers.

Office space costs are estimated for year one based on the setting up of a new office with office equipment and furniture for 8 Clerk stations, 2 officers, and 1 alarm administrator. The costs of office equipment and furniture would also include audio-visual and educational equipment for the alarm school.

The City of Memphis is currently updating the computer system of the Memphis Police Department. There would be one-time costs to integrate the computer system of the alarm office with the computer in the Police Department.

The total cost to begin a false alarm office in Memphis would be about \$795,573. Total recurring costs in subsequent years would be about \$448,297. Keep in mind that the cost of false alarms to the Memphis Police Department is about \$8.2 Million per year. The rate of false burglar alarms in Shelby County is about the same as in Memphis with substantial costs to the Sherrif's Office.

The initial funding for a Metro False Alarm Office would have to be found in budget processes of the City of Memphis and Shelby County Government. This report uses information from Memphis to illustrate the extent and cost of false alarms.

Permits in Memphis for burglar alarms are currently issued under a permit fee of \$30 bringing in about \$250,000 per year. If burglar alarms were renewed annually on a fee of \$10, as is done in other cities, this would provide a budget of about \$1,040,400 based on new permits and renewal fees.

The cost of running a false alarm office is expected to be less than the monies that would be generated by annual fees. In addition, the office, which is currently understaffed, would work to collect monies from fines. The cost of the office would

Table 8 Proposed Metro Alarm Office Budget

Category	Cost
Staff	
Alarm Administrator	\$45,000
Police Sergeant (reimbursable)	\$39,800
Sheriff Sergeant (reimbursable)	\$43,356
4 Clerk A's @ \$21,294	\$85,176
Total salaries	\$213,332
Materials and Supplies	
Auto/Gas (reimbursable) Mileage 2 cars	\$45,000
Postage	\$78,193
Supplies	\$17,272
Document reproduction	\$2,000
Total supplies	\$142,465
Office Space Rental	
Office Space Rental	\$20,000
Communications/phone	\$8,000
ISDN rental for computers	\$2,500
Office equipment and furniture	\$5,000
Total office	\$30,500
Marketing	
Marketing	\$25,000
Paper/printing	\$37,000
Total Marketing	\$62,000
Total recurring office costs	\$448,297
Computer hardware and software	
Imaging	\$25,000
CAD Interface City of Memphis	\$30,000
CAD Interface Shelby County	\$50,000
Computer server	\$10,000
6 computers @ \$3000	\$18,000
2 laptop computers for cars @ \$3500	\$7,000
Software for PCs + Laptops @ \$400	\$3,200
Software customization of CAD	\$50,000
Computer audit and accountability	\$10,000
PC Network cables at \$150 x 6	\$900
Total computer	\$204,100
Additional costs setup	
4 Temporary Clerk A's @ \$21,294 for one year	\$85,176
Mobile radios for 2 cars @ \$4000	\$8,000
Office Furniture	\$25,000
Marketing	\$25,000
Total additional setup costs	\$143,176
Total computer and setup	\$347,276
TOTAL YEAR ONE	\$795,573
TOTAL RECURRING	\$448,297

Note: These are good faith estimates which will require verification from the Finance Divisions of the City of Memphis and Shelby County Government.

easily pay for its operating costs based on fees and fines. However, the money from fees and fines still falls far below the actual cost of Police calls for service for false burglar alarms.

Table 9 presents cost/benefit projections on the cost of false alarms and the expected benefit of a false alarm office. The major and realistic benefit of a false alarm office is the potential for a drop in the number of false alarms and costs for calls for service by the Police. This table draws from information presented earlier in this document and works based on several assumptions which are stated below. The base year for the table is 1996 beginning with information on calls for service to the Police. Costs are estimated for current dollars budgeted in 1998. Looking at savings and potential savings, not having an alarm reduction plan will cost the city an additional 2.1 Million dollars in 1998 compared to what was spent 1996.

Table 9.
Cost/Benefit for the City of Memphis
of an Expanded False Alarm Office

Year	Cost of False Alarms	Users	False Alarms	Drop in False Alarms	Alarms per system year	Cost of Alarm Office	Renewal fees	Fines collected	Total cost	Savings 1998\$
1996	8,160,750	68,000	108,810	0%	1.6	250,000	\$250,350	\$6,060	\$8,154,340	(2,102,805)
1997	9,180,844	76,500	122,411	0%	1.6	250,000	\$250,890	\$335	\$9,179,619	(1,077,526)
1998	10,282,545	85,680	137,101	0%	1.6	250,000	\$275,400	\$0	\$10,257,145	0
1999	9,356,256	95,962	124,750	23%	1.3	795,573	\$1,165,248	\$233,906	\$8,752,675	1,504,470
2000	8,866,852	107,477	118,225	18%	1.1	448,297	\$1,305,078	\$221,671	\$7,788,400	2,468,745
2001	9,028,067	120,374	120,374	10%	1.0	448,297	\$1,461,687	\$225,702	\$7,788,976	2,468,169
2002	8,089,148	134,819	107,855	25%	0.8	448,297	\$1,637,090	\$202,229	\$6,698,127	3,559,018

The cost of false alarms is based on \$75 per false alarm per call for service. The

estimates for future years are also based on a 12 percent annual increase in the numbers of burglar alarms in Memphis, and on the average number of false alarms per system year.

The average number of false alarms per system year is based on known information from the Memphis Police Department on calls for service (see Table 1). The A two-thirds reduction in this average to match the Phoenix Alarm Management would not come in the first year of a program in Memphis. Based on the Model States Program and the Phoenix model, a twenty to twenty-five percent reduction is a realistic goal in the first year with additional efficiency in future years.

The cost of a False Alarm Office is based on initial and recurring costs from Table 8. Permit and renewal fees are based on current collections to 1997, estimated collections for 1998, and the implementation of annual renewal fees beginning in 1999. The monies for fines collected are based on full enforcement in 1999 and then proportions of new users and drops in false alarms in future years.

The results of a cost/benefit analysis indicate that significant savings of about 1.5 Million dollars over costs from 1998 may be achieved in the first year of operation of a false alarm office. Substantial savings of about 3.6 Million dollars per year (1998\$) could be achieved by 2002. The potential for savings from a false alarm office is an even more dramatic 9.6 Million dollars when Table 9 is compared to Figure 5 where the estimated cost for Police calls for Service in 2002 is 15.7 Million dollars per year.

Public awareness of the substantial program of false alarms can be achieved based on enforcement of fines, public education provided and reminded with annual renewals, and in an alarm school for false alarms. For the longer term, a 50 percent or higher reduction in false alarms is desired. Simply leaving the situation on false burglar alarms in its current form will severely reduce the capability of the Police to serve the public in Memphis.