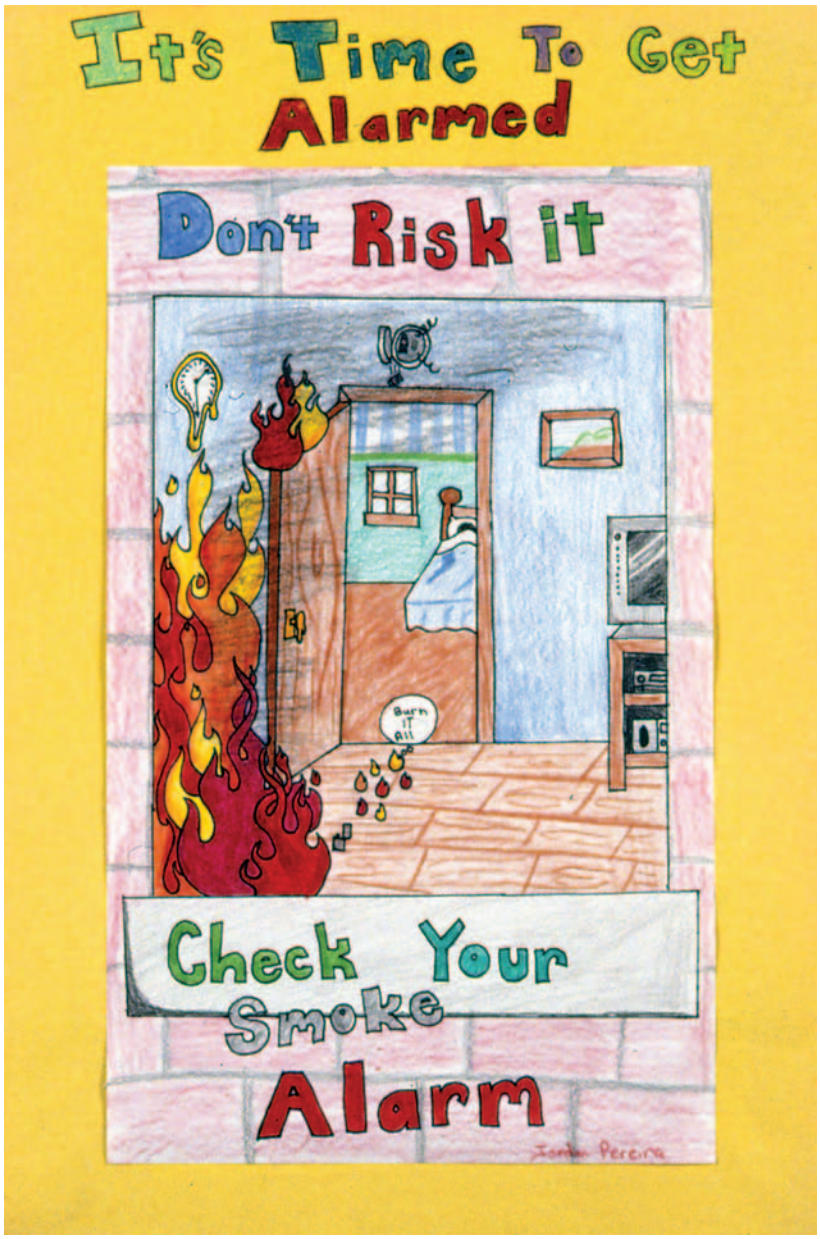
The Massachusetts Fire Problem



Annual Report of the Massachusetts Fire Incident Reporting System

2005

Mitt Romney
Governor

Robert C. Haas
Secretary of Public Safety

Stephen D. Coan
State Fire Marshal

Thomas P. Leonard
Deputy State Fire Marshal

ABOUT THE COVERS

The original drawings shown on the front and back covers are the year 2006 winning entries of the 24th Annual Statewide Arson Watch Reward Program Poster Contest, sponsored by the Massachusetts Property Insurance Underwriting Association (FAIR Plan), on behalf of all property and casualty insurance companies of Massachusetts. This year's poster theme was **"IT'S TIME TO GET ALARMED! CHECK YOUR SMOKE ALARMS."**

For the second year in a row, Massachusetts has held a countywide contest that was open to all students in grades 6-8. Coordinators from each county held individual countywide contests where they chose First and Second Place winners. All First Place County Winners then had their posters submitted to Massachusetts Property Insurance Underwriting Association for participation in the Massachusetts statewide contest. First, Second and Third Place winners were chosen and announced at an Award Ceremony held at the Sheraton Framingham Hotel on June 1, 2006

The front cover shows a drawing submitted by Jordan Pereira, a student at the Silvio Conte Middle School, North Adams, Massachusetts. Jordan's poster was chosen as First Place Winner in the Berkshire County Poster Contest, and as a result, was automatically entered into the statewide contest, along with eight other county winners, where it was chosen as the First Place Statewide Winner.

The back cover shows a drawing submitted by Bomsol Lee, a student at the Chenery Middle School, Belmont, Massachusetts. Bomsol's poster was chosen as First Place Winner in the Middlesex County Poster Contest, and as a result, was also automatically entered into the statewide contest, where it was chosen as the Second Place Statewide Winner.

The Massachusetts FAIR Plan has generously sponsored the printing of the 2005 Annual Report of the Massachusetts Fire Incident Reporting System (MFIRS), as well as, the use of the first and second place posters for the covers, for the last 23 years.

Massachusetts Fire Incident Reporting System

2005 Annual Report

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This report is also available in an electronic format through the Fire Data section of the Department of Fires Services website:

www.mass.gov/dfs/osfm/firedata/mfirs/index.htm

Fireman's Prayer

When I am called to duty, God
Wherever Flames may rage
Give me the strength to save some life
Whatever Be its age
Help me embrace a little child
Before it is too late
Or save an older person from
The horror of that fate
Enable me to be alert and
Hear the weakest shout
And quickly and efficiently
To put the fire out
I want to fill my calling and
To give the best in me
To guard my every neighbor
And protect their property
And if according to your will
I have to lose my life
Please bless with your protecting hand
My children and my wife

-Unknown

Foreword from the State Fire Marshal

Our Mission: *The mission of the Department of Fire Services is to provide the people of Massachusetts the ability to create safer communities through coordinated training, education, prevention, investigation, emergency response and leadership.*

November 2006

This is the *2005 Annual Report of the Massachusetts Fire Incident Reporting System* (MFIRS) which summarizes the Massachusetts fire experience for 2005. It is based on the 28,793 individual fire reports submitted by members of 347 fire departments and fire districts. It is this effort that makes it possible to look at the total fire experience, to identify our fire problems and to develop strategies to address these issues. One of the goals of the Office of the State Fire Marshal is to provide the fire service and the public with accurate and complete information about the fire experience in Massachusetts.

Tied for the Lowest Number of Civilian Fire Deaths on Record

2005 tied the lowest number of civilian fire deaths on record. Fifty-two (52) residents of Massachusetts died as a result of fires. This is the same number of residents that died in fires in 2004. There was also a 4% decrease in the amount of civilian fire injuries in 2005. Although one death or injury is one too many, we are making strides in reducing the vulnerability of Massachusetts residents being killed or injured in a fire.

Our relentless goal is to reduce the deaths, injuries and damage fires do in the Commonwealth, and to send each and every firefighter home safely at the end of the day. We must continue to fund and strengthen our code compliance efforts, and use enforcement tools when necessary. An important part is educating the public as to why fire codes are in place. We must continue to educate the public at every stage of their lives as to what they can do to prevent a fire and to survive the ones that will occur.

In the past decade, our annual reports have measured the steady decline in fire deaths. We are making substantial progress.

- We have measured the positive impact of smoke alarms in reducing fire deaths and multiple deaths in fires. We may not be able to save the person who fell asleep smoking, but we can save their family and neighbors by giving them an early warning of the danger.
- We have measured the impact of smoking laws and tobacco control programs on reducing fires and fire deaths. While the total number of fire deaths from smoking continues to decline, it remains the leading cause of fatal fires.
- We have measured the impact of the Student Awareness of Fire Education Program (S.A.F.E.) on child fire deaths. As a result of consistent statewide fire education, children are no longer a high-risk group for dying in fires in our state. Seniors still are, so we must expand our prevention efforts to them, not lose ground by shifting to them.
- We have measured the 84% drop in motor vehicle fires and 96% drop in motor vehicle arsons as a result of the Burned-Recovered Motor Vehicle Reporting Law passed in 1987.

Landmark Fire Safety Regulation Becomes Law
As a direct result of the 2003 fire at the Station nightclub in Rhode Island, in August of 2004, Governor Mitt Romney signed the landmark fire safety legislation, Chapter 304 of the Acts & Resolves of 2004 called the Massachusetts Fire Safety Act. The most important aspect of this legislation, completing the unfinished business of the Cocoanut Grove fire in 1942, is the requirement for the installation of fire sprinklers within three years in certain nightclubs, bars, dance halls and discotheques. This has also led to a renewed emphasis on the training and educating of local fire and building inspectors along with the creation of a new non-criminal 'ticketing' system that will allow inspectors to write citations during the inspection, before resorting to the court system.

Self-Extinguishing Cigarettes a Reality in Massachusetts
As of the writing of this report, Governor Mitt Romney has signed the Resistant Ignition Propensity (RIP) legislation or 'fire safe cigarette' law making it mandatory for cigarette manufacturers to start selling only the self-extinguishing type of cigarettes in Massachusetts in 2008.

Next Steps
We look forward to seeing flammability standards for upholstered furniture, passage of a national standard for self-extinguishing cigarettes, and more buildings -especially homes - with sprinklers.

98.6% Participation in MFIRS
We wish to thank the members and chiefs of fire departments for providing this office with the valuable statistical data that forms the backbone of the annual report. Three hundred and forty-four (344) fire departments in Massachusetts either submitted incident reports to MFIRS or certified that they had no reportable fires for a 98.6% compliance rate.

MFIRS is a partnership. By law, fire departments are required to report any fire resulting in a dollar loss or a human casualty. Fire departments may report other fires and other types of incidents that they respond to. We encourage them to do so, because it gives us a more accurate representation of the fire experience in their community as well as a better understanding of the other types of situations that Massachusetts fire departments handle, such as EMS, rescue and hazmat calls. We forward MFIRS data to the U.S. Fire Administration where it is merged with data from the rest of the country to form a picture of the national fire problem. The data is also shared with other government agencies, industry and the media.

We also wish to recognize the efforts of the staff of the Fire Data and Public Education Unit, Jennifer Mieth, manager; Derryl Dion, research analyst; Pavel Gorelik, programmer; and Usha Patel, data entry clerk, within the Office of the State Fire Marshal who manage the Massachusetts Fire Incident Reporting System and prepared this report.

We would like to thank the Massachusetts Property Insurance Underwriting Association for printing this report and for their support throughout the year. We also wish to thank Governor Mitt Romney, and Public Safety Secretary Robert C. Haas for their commitment and support to the Massachusetts fire service through the Department of Fire Services.

Stephen D. Coan
State Fire Marshal

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Executive Summary

"All…fires or explosions by which a loss is sustained shall be reported… to the State Fire Marshal on forms furnished by the department, and shall contain a statement of all facts relating to the cause and origin of the fire or explosion that can be ascertained, the extent of damage thereof, the insurance upon the property damaged, and such other information as may be required."

-Massachusetts General Laws, Chapter 148, Section 2.

14,662 Structure Fires, 3,666 Vehicle Fires, 10,465 Outside & Other Fires in 2005
There were 28,793 fire and explosion incidents reported by fire departments to the Massachusetts Fire Incident Reporting System (MFIRS) in 2005. The 14,662 structure fires, 3,666 motor vehicle fires, and 10,465 outside and other fires caused 52 civilian deaths, 359 civilian injuries, 523 fire service injuries, and an estimated dollar loss of $222 million in property damages. In 2005 there were 1.8 civilian deaths for every 1,000 fires.

Structure Fires Up in 2005
The total number of reported fires decreased by 3% from 29,811 in 2004 to 28,793 in 2005. Structure fires rose 3% from 2004 to 2005. From 2004 to 2005, motor vehicle fires decreased by 4%. Outside, brush, and other fires decreased by 11% during the same time period.

Although the law states that only fires where a loss is sustained must be reported, many fire departments are wisely reporting all of the fire incidents that they respond to, giving a more accurate picture of the fire problem in Massachusetts. Many departments are also reporting the non-fire calls that they respond to. Emergency medical and rescue calls represent over half, or 51%, of the 580,925 total runs that were reported MFIRS in 2005.

Cooking Was the Leading Cause of Residential Structure Fires
Over half, 52%, of all residential structure fires were caused by unattended and other unsafe cooking practices in 2005. Fifty-five percent (55%) of residential structure fires originated in the kitchen.

No Fire Related Firefighter Deaths in 2005
In 2005, there were no fire-related fire service fatalities in the Commonwealth of Massachusetts. Firefighter injuries declined 10% from the 579 reported in 2004 to 523 in 2005.

Civilian Fire Deaths Remain Constant – Lowest Point Since World War II
Civilian deaths remained constant with 52 in 2005 as well as in 2004. Twenty-six (26) men, 21 women, and five children died in Massachusetts' fires. Of the 52 civilian deaths in fires in 2005, 39 occurred in residential structure fires and two occurred in a non-residential structure fire. Seventy-five percent (75%) of civilians died in the “safety” of their own homes. The majority of these victims died at night, while they were sleeping and did not have working smoke detectors. It is also important to remember that detectors

only provide an early warning of a fire. They do not guarantee an escape. It is important to make and practice an escape plan.

Seven (7) deaths occurred in motor vehicle fires in 2005. Four (4) people died in four outside and other fires in 2005.

Electrical Fires Were the Leading Cause of Residential Fire Deaths
Electrical fires supplanted the improper disposal of smoking materials as the leading cause of fire deaths in Massachusetts. In 2005, the electrical fires caused nine fire deaths, in seven fatal fires. They caused 23% of residential structure fire deaths and 21%, of fatal residential structure fires. Smoking fires were the second leading cause of fire deaths, but remained the leading cause of fatal fires.

17% of Residential Fires Occurred in Homes With No Working Detectors
Unfortunately, in 17% of the residential structure fires, there were no working smoke detectors. No detectors were present at all in 3% of the residential structure fires. Detectors were present but failed to operate in 2%. Detectors, in confined fires, did not alert the occupants in 12% of total residential fires. The fire was too small to activate the detector in 3% of residential fires. Detectors operated in 54% of residential structure fires. It was undetermined if the detectors were present in 26% of residential fires.

Detectors Operated in 1/2 of Structure Fires that Caused Injuries
Detectors operated in half (50%) of the structure fires that caused injuries. This may be because when the occupant is alerted to the presence of the fire; they may try to extinguish it themselves and injure themselves during this task or during the escape after the situation has considerably worsened. When alerted to the presence of a fire, occupants should vacate the building and notify the fire department as soon as possible, letting the professionals with the proper training and gear extinguish the fire.

All Arson Down 22%
One thousand two hundred and eighteen (1,218) Massachusetts fires were considered arson in 2005. The 339 structure arsons, 176 vehicle arsons, and 703 outside and other arsons caused seven civilian deaths, 12 civilian injuries, 27 fire service injuries, and an estimated dollar loss of $12 million. This is an 18% drop in arson from the 1,477 reported in 2004.

Structure arson fell by 9%. Motor vehicle arsons fell 22% from 2004 to 2005, although since 1987, motor vehicle arson has fallen 97%. The steady decline of motor vehicle arsons can be explained by the enactment of the Burned Motor Vehicle Reporting Law, which took effect in 1987, and requires owners of burned motor vehicles to complete and sign a report which must also be signed by a fire official from the department in the community where the fire occurred before they can collect on their fire insurance. Outside and other arsons decreased by 20%.

Over 1/3 of All Vacant Building Arsons Occurred in Unsecured Buildings
Thirty-four percent (34%) of all vacant building arsons in 2005 occurred in unsecured vacant buildings. Twenty-three percent (23%) occurred in secured, vacant buildings; while another 23% happened in idle buildings that are not routinely used. Buildings under construction accounted for 13% of vacant building arsons. Buildings under major renovation accounted for 5% of the vacant building arsons in 2005. Two percent (2%) of these arsons occurred in buildings being demolished.

Over 1/5 of School Fires Were Intentionally Set
Twenty-one percent (21%) of the 222 school fires were considered intentionally set. Cooking started 29% of fires in Massachusetts' schools in 2005. Indoor rubbish fires accounted for 23% of these fires. Only 3% of the fires in schools were attributed to juvenile-set fires.

Conclusion
Most people die in fires at night in the so-called safety of their own home. While deaths continue to decline, smoking is still the leading cause of fatal fires and the lack of working smoke alarms or automatic extinguishing systems are contributing factors to these tragedies. It is important to remember that detectors only provide an early warning of a fire. They do not guarantee an escape. It is important to make and practice an escape plan.

Cooking is something that we do everyday but it is still the leading cause of fires in the home and the leading cause of civilian fire injuries and we must address this.

All arson fires were down 18% from the 1,477 arson fire reported in 2004.

Massachusetts Fire Departments

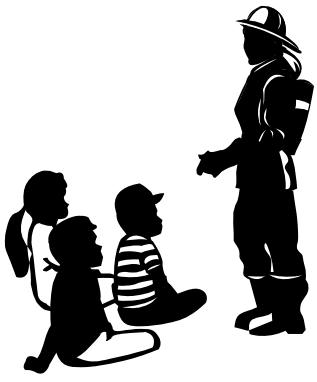
Today's firefighters do far more than fight fires. Many are emergency medical technicians or paramedics. All firefighters must be trained to offer first aid if they arrive first at an emergency. They are the first ones called to deal with hazardous materials incidents ranging from the suspected presence of carbon monoxide to a leaking propane truck. They may be called to rescue a child that fell through the ice or that locked himself in the bathroom. They get people out of stuck elevators and wrecked cars. They test and maintain their equipment, ranging from self-contained breathing apparatus to hydrants to hoses and trucks. They know the basics of construction, electricity and chemistry. Some undertake the calling of fire prevention and become inspectors or public fire educators. They report their fire incidents through the Massachusetts Fire Incident Reporting System so we can spot trends, problems and successes.

When most people think of the fire department, they think of fire trucks, sirens and flames. Actually, the fire department aims to prevent fires. If prevention failed, then the alarm comes in and the trucks roll.

Fire Department Enforces M.G.L. Chapter 148 and 527 CMR
The fire department is legally required to enforce the provisions of 527 Code of Massachusetts Regulations (CMR). This contains regulation sections on fireworks, dry cleaning, oil burners, gas stations, liquid propane, plastics, transportation of flammable liquids, above ground and underground storage tanks, electrical systems, explosives, storage of flammable substances, marine fueling, model rockets, lumber yards, bulk plants, tentage, salamanders, flammable decorations and curtains, cannon or mortar firing, fire extinguishers, smoke detectors, obstructions and hazards, combustible fibers, rubbish handling, crop ripening, pesticide storage, welding and storage, carbon monoxide, and unvented appliances. The fire department must also enforce the laws contained in Massachusetts General Law Chapter 148.

Inspectors must know the regulations they are enforcing and they must know how to apply the regulations to situations in the community. They must communicate information about weaknesses in plans they review and educate people on violations and perform follow-up inspections. Just as firefighters are sent to the Massachusetts Firefighting Academy to learn the principles of suppression, fire prevention personnel go to classes to learn the ins and outs of the regulations. These functions also produce a corresponding amount of documentation that must be maintained.

Firefighters Teach the Community Fire and Burn Prevention
Firefighters go out in the community to teach children, seniors and interested community groups how to protect themselves from fire and burns. The statistics in this report are critical to these educators in developing injury prevention programs.



The S.A.F.E. Program

The Student Awareness of Fire Education or S.A.F.E. program was implemented in fiscal year 1996. Because smoking materials continue to be the leading cause of fire deaths in the state and nationwide, the Legislature approved $1,078,666 from the cigarette tax revenue to fund public fire education grants. These grants provide local fire departments with funding to educate children about the dangers associated with fire, particularly fires caused by smoking. Any city or town whose fire department is committed to working with school systems, public health or other community agencies to develop a well conceived and coordinated fire safety education program message is invited to apply for these grants. In fiscal year 2005, 227 fire departments shared the $1,078,666 in S.A.F.E. funding.

Abington Young Hero – Anthony Manupelli

About 10:30 a.m. Christmas morning (December 25, 2005), the Manupelli family was opening gifts at the home of grandparents Bob and Marie Kendrigran in Hanson. Five-year old Anthony Manupelli wandered into the dining room and noticed that the centerpiece on the dining room table had ignited from a candle that had been left burning. Anthony immediately raced back into the family room to alert everyone. The grandfather, a retired firefighter, put out the fire before it spread. The entire family is convinced that Anthony's quick reporting of the fire to an adult saved the home and their holiday. Anthony proceeded to critique the adults' handling of the incident, reminding them that they should have all left the house and called 9-1-1 from outside. He received fire safety education at his pre-school from the Abington Fire Department's S.A.F.E. Program.

Capt. Rick Tustin Named Public Fire & Life Safety Educator of the Year

Captain Rick Tustin of the Winchester Fire Department was awarded the 2005 Public Fire and Life Safety Educator of the Year. He is a key instructor in the Mass. Firefighting Academy's training program for new fire educators, delivers workshops at the annual conference, and an active participant in the statewide Fire and Life Safety Education Task Force. His perseverance and dedication made real the creation of MASS SAFE, a non-profit statewide organization to support fire educators similar to the DARE Officers Association. He was nominated by a classroom teacher and the police department's school resource officer for his commitment and contribution to partnerships with them, including the local S.A.F.E. Program, teen driving programs, parent programs and school safety programs.

99 MA Departments Receive $11.5 Million in Federal Grants

In the fourth year of the Federal Assistance to Firefighter Grant program, 99 Massachusetts fire departments received $11.5 million. Eighty-one (81) departments received $8.4 million for fire operations and firefighter safety. Six (6) departments received $172,454 for fire prevention programs. And 12 departments received $3.2

million for the purchase of firefighting vehicles. Two fire departments were awarded SAFER grants that allow for the hiring of more firefighters.

98.6% of Massachusetts Fire Departments Participated in MFIRS

By law, fire departments are required to report any fire or explosion resulting in a human casualty or dollar loss to the Office of the State Fire Marshal. This is done through the Massachusetts Fire Incident Reporting System (MFIRS). Three hundred forty-four (344), or 98.6% of Massachusetts Fire Departments reported at least one fire during 2005. Sixteen (16) certified that they had no fires that met the criteria. As an added incentive to comply with the law, a community had to be participating in MFIRS to be eligible for the S.A.F.E. program and for the federal FIRE Act grants.

Massachusetts Fire Incident Reporting System

More and more departments are automating fire incident reporting and other department functions. In 2005, 272, or 75%, of Massachusetts' fire departments submitted their data electronically. This is down one department from 2004 and up 4% from the 259, or 71%, of departments that reported electronically in 2003.

Expanded Possibilities With Version 5

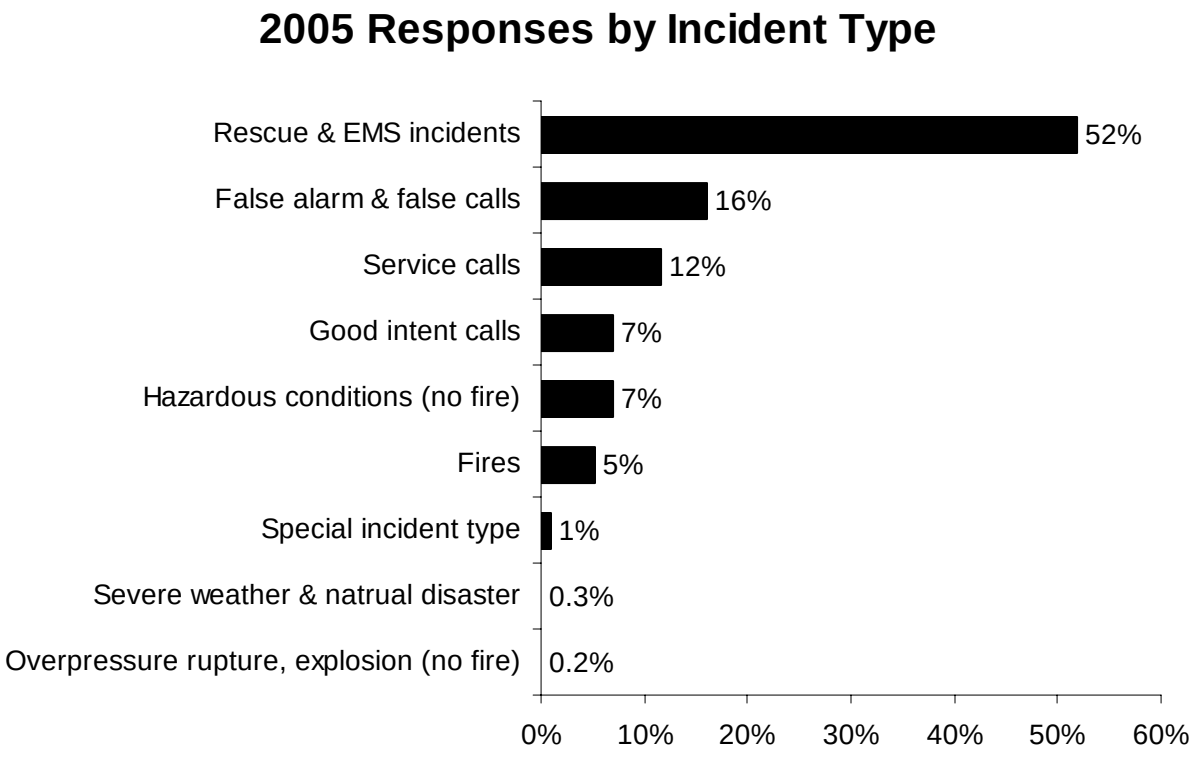
2005 is the fourth full year that fire incident reports were submitted and analyzed using version 5 reporting format and data codes. We hope this new version of the reporting system allows us a greater opportunity to complete a more in-depth analysis of the fire problem in Massachusetts. With MFIRS version 5 comes an expanded database set with new fields to help us answer the key question of what is causing our fires and how do we take the necessary steps to mitigate the problems. Some of the questions that MFIRS can now answer, are: What types of vacant buildings are burned? What was the vacant building's status? Was it secured, unsecured, seasonal or under renovation? Why did the smoke or heat detectors or automatic extinguishing systems such as sprinklers fail to perform? We can also now tell the severity of a person's injury and where they were in relation to where the fire started and see what factors helped or hampered their escape.

Version 5 also includes an entirely new module, the Arson/Juvenile Firesetter Module. This module should give us the ability to identify where and when the crime takes place, what form it takes, and the characteristics of its targets and perpetrators. Armed with such information, we can develop and implement prevention initiatives and counseling programs and track trends to identify, track and catch arsonists and juvenile firesetters.

Non-Fire Incidents

Fire Departments Do More Than Just Fight Fires
Massachusetts fire departments do much more than just fight fires. Over the past couple of decades they have branched out and taken on the added responsibilities for EMS responses, multiple types of specialized rescues, hazardous materials incidents, responding during and after natural disasters, as well as the typical service calls, good intent calls, false alarms and the special types of incidents that do not fit neatly into any of the other categories. We expect these numbers to rise as more fire departments automate their reporting and begin voluntarily reporting all of their incidents to MFIRS. Only then will we have a more complete understanding of the amount of work the Massachusestts fire service does on a day-to-day basis.

52% of All Massachusetts Calls Were EMS Incidents
In 2005, 344 fire departments in Massachusetts reported 580,926 responses[1] to MFIRS. Of these 580,926 responses, 550,722 non-fire calls were voluntarily reported. Of these 550,722 non-fire incidents there were 301,630 (52%) reported rescue and emergency medical services (EMS) calls; 93,387 (16%) reported false alarm or false calls; 67,052 (12%) reported service calls such as lock-outs, water or smoke problem, unauthorized burning or public service assistance; 42,499 (7%) reported good intent calls; 38,302 (7%)



[1] These figures include responses in which fire departments gave mutual aid to other fire departments.

reported hazardous condition calls with no fire; 5,301 (1%) reported special incident type calls such as citizen complaints; 1,490 (0.3%) reported severe weather and natural disaster incidents; and 1,061 (0.2%) reported overpressure rupture, explosion or overheat calls with no fire.

Thirty thousand two hundred and three (30,203), or 5%, of the total responses submitted by Massachusetts fire departments were fires.

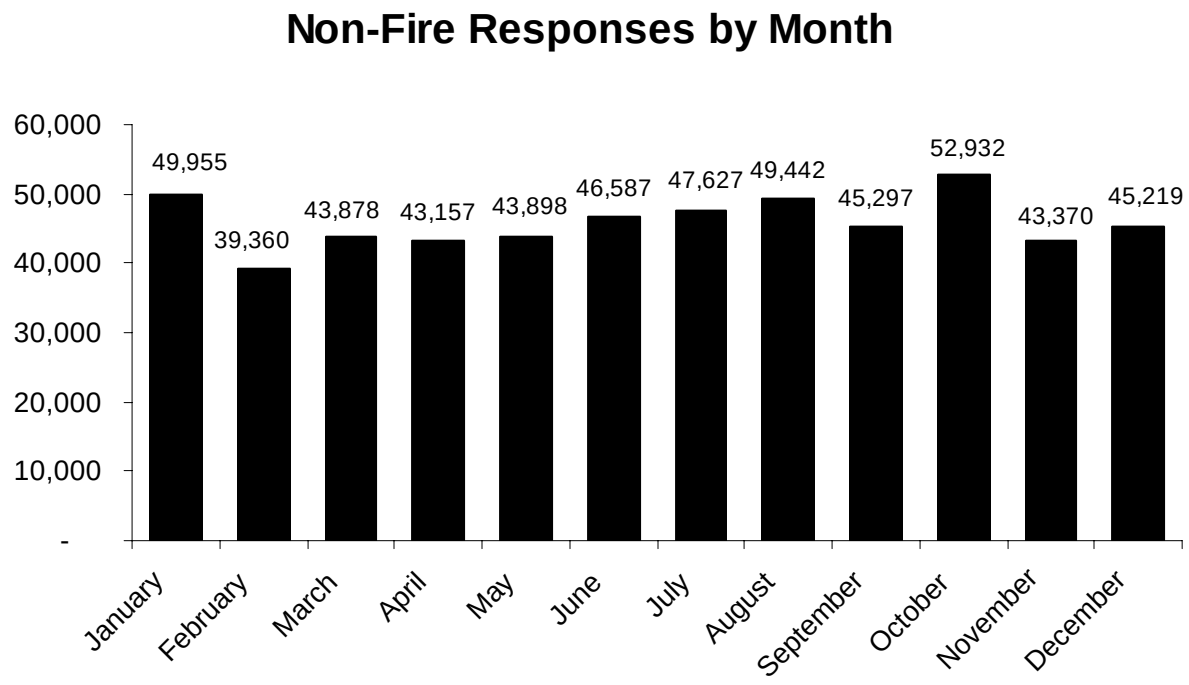
Most Large Cities Voluntarily Reporting All of Their Incidents
Boston, the largest city in the Commonwealth, reported 70,496 non-fire incidents in 2005. The City of Worcester, the second largest city in Massachusetts reported the second most non-fire incidents in 2005, 21,450 incidents. The next five cities in terms of the number of non-fire calls reported were: Cambridge, 11,907 calls; Quincy, 9,934 calls; New Bedford, 9,835 calls; Framingham, 9,302 calls, and Springfield with 9,140 reported non-fire incidents in 2005.

Over Half of All Fire Department Responses Were EMS Calls
Fifty-one percent (51%) of all reported 2005 fire department responses in the Commonwealth were emergency medical service calls. Four of the top five types of all calls were all EMS type incidents. Over one quarter of all reported incidents, or 27%, were non-vehicle accident with injury - EMS calls. Nine percent (9%) were calls where firefighters assisted the EMS crews. Eight percent (8%) classified as rescue, EMS call, other. Four percent (4%) of all reported incidents in 2005 were motor vehicle accidents with injuries. The fifth most reported call in 2005 were good intent calls, other accounting for 3% of all reported incidents.

Middlesex & Suffolk Counties Reported Over 1/3 of All Non-Fire Incidents
Middlesex and Suffolk Counties reported a combined 34% of all non-fire incidents to MFIRS in 2005. Middlesex County reported 19% of these types of incidents and Suffolk County reported 16%. Norfolk County submitted the third most non-fire calls totaling 12%, and Worcester County also reported 12% of all the 2005 non-fire incidents. Nantucket County reported 2,207 (0.4%) non-fire incidents and Dukes County reported 116 non-fire incidents; accounting for 0.02% of all non-fire incidents reported to MFIRS in 2005.

For a complete breakdown of non-fire incidents by incident type and county refer to the Appendix.

Non-Fire Incidents by Month
October was the month with the most reported non-fire incidents in 2005, 52,932, or 10% of all non-fire incidents, followed by January 49,555 (9%) and August, 49,442 (9%). February was the month with the least reported non-fire incidents, 39,360 (7%). Statistically these incidents are spread evenly from month to month. Three (3) months each accounted for 9% of the incidents, and seven months each accounted for 8% of the incidents. The average number of monthly reported non-fire incidents in 2005 was 45,894 calls.



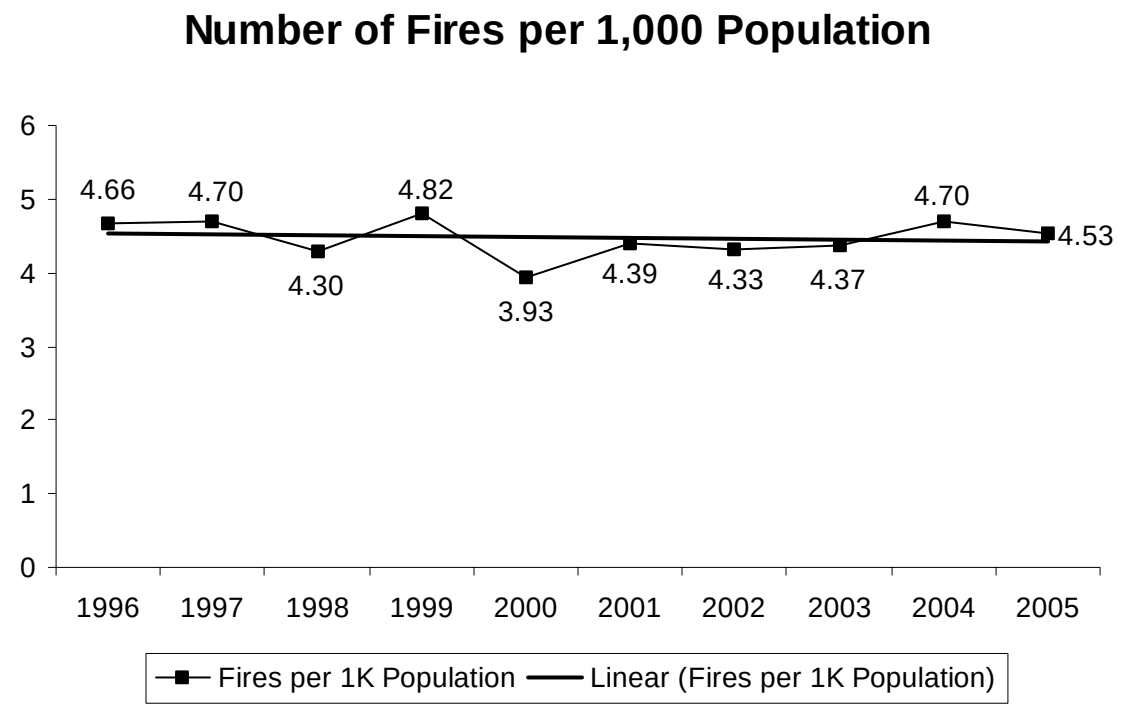
Fires by Incident Type

14,662 Structure Fires, 3,666 Vehicle Fires, 10,465 Outside & Other Fires in 2005
There were 28,793 fire and explosion incidents reported by fire departments to the Massachusetts Fire Incident Reporting System (MFIRS) in 2005. The 14,662 structure fires, 3,666 motor vehicle fires, and 10,465 outside and other fires caused 52 civilian deaths, 359 civilian injuries, 523 fire service injuries, and an estimated dollar loss of $222 million in property damages.

The following chart indicates the number of total fires reported per 1,000 citizens in Massachusetts per year from 1996 through 2005. In 2005, there were 4.53 fires for every 1,000 citizens in Massachusetts[2]. A figure like this allows one to compare our fire problem to other states of different sizes. For example in 2003, Oregon reported 4.29 fires for every 1,000 of its citizens[3]. There were 5.63 fires per 1,000 citizens for the entire

[2] The population figures used were from the 1990 and 2000 U.S. census. For the years 1994 – 1999, the population in MA was said to be 6,016,425 people. For 2000 – 2005, the population figure used was 6,319,097 people.
[3] Oregon State Fire Marshal 2003 Annual Report, 2003 In Review, page 6.

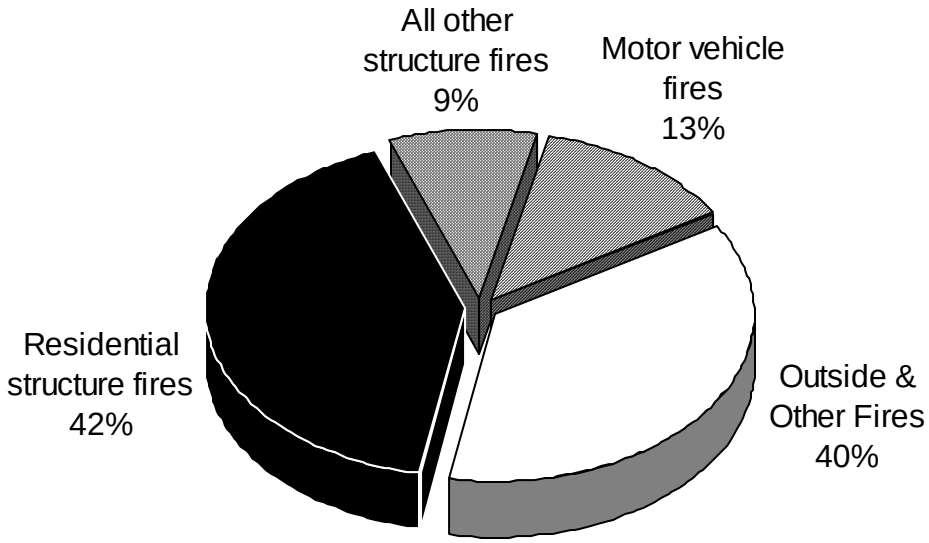
United States in 2003.[4] Massachusetts is below the national average of 1.27 fires per 1,000 citizens.



The following graph depicts the percentage of the major types of fires as part of the whole Massachusetts fire problem. In 2005, 51% of all reported fires were structure fires. The majority of these fires were in people's homes. Forty-two percent (42%) of all fires in the Commonwealth, and 82% of all structure fires, occurred in someone's home; only 9% of all fires, and 18% of all structure fires, occurred in a type of building other than a residence. Thirteen percent (13%) were reported motor vehicle fires, while 40% were classified as outside and other fires.

[4] The population used was the national population was 281,421,906 taken from the US Census Bureau's 2000 U.S. Census. The number of fires of 1,584,500 was obtained from **Fire Loss in the United States During 2003,** page I, Karter, Michael J. Jr., National Fire Protection Agency, October 2004.

2005 Fires by Incident Type



14,662 Structure Fires, 41 Civilian Deaths
Massachusetts fire departments reported 14,662 structure fires to the Massachusetts Fire Incident Reporting System (MFIRS) in 2005. These fires killed 41 civilians, caused 301 civilian injuries, 469 fire service injuries, and an estimated $202 million in property damage. Structure fires accounted for 51% of the total incidents and 79% of the civilian deaths in 2005. Structure fires were up 3% from 2004. There were 339 structure arsons in 2005. Structure fires in the Massachusetts Fire Incident Reporting System include any fires that occur inside or on a structure.

3,666 Motor Vehicle Fires Account for 13% of Reported Fires
The 3,666 motor vehicle fires caused seven civilian deaths, 27 civilian injuries, 23 fire service injuries, and $14.8 million in property damage. These incidents accounted for 13% of the reported 28,793 fires in 2005. Motor vehicle fires accounted for 13% of civilian fire deaths. Motor vehicle fires were down 4% from 2004. There were 176 motor vehicle arsons in 2005. According to MFIRS, a motor vehicle fire is defined as one involving a car, truck, boat, airplane, construction equipment or other mobile property that does not occur inside a structure.

10,465 Brush Fires, Trash Fires, and Other Outside Fires
The 10,465 outside and other fires caused four civilian deaths, 31 civilian injuries, 31 fire service injuries, and an estimated dollar loss of $5 million. The 4,166 trees, grass and brush fires, 3,489 outside rubbish fires, 868 special outside fires, 60 cultivated vegetation or crop fires, and 1,882 other fires accounted for 36% of the total fire incidents in 2005. These fires were down 11% from the 11,786 such outside and other fire incidents reported in 2004. There were 703 outside and other arsons in 2005. Fire departments are

required to report any fire resulting in a dollar loss or human casualty to MFIRS. Fires that do not result in a loss may be reported. Many fire departments, particularly those that submit data electronically, voluntarily report these fires. These figures should be considered an underestimate of the "no loss" fire incidents to which fire departments actually responded.

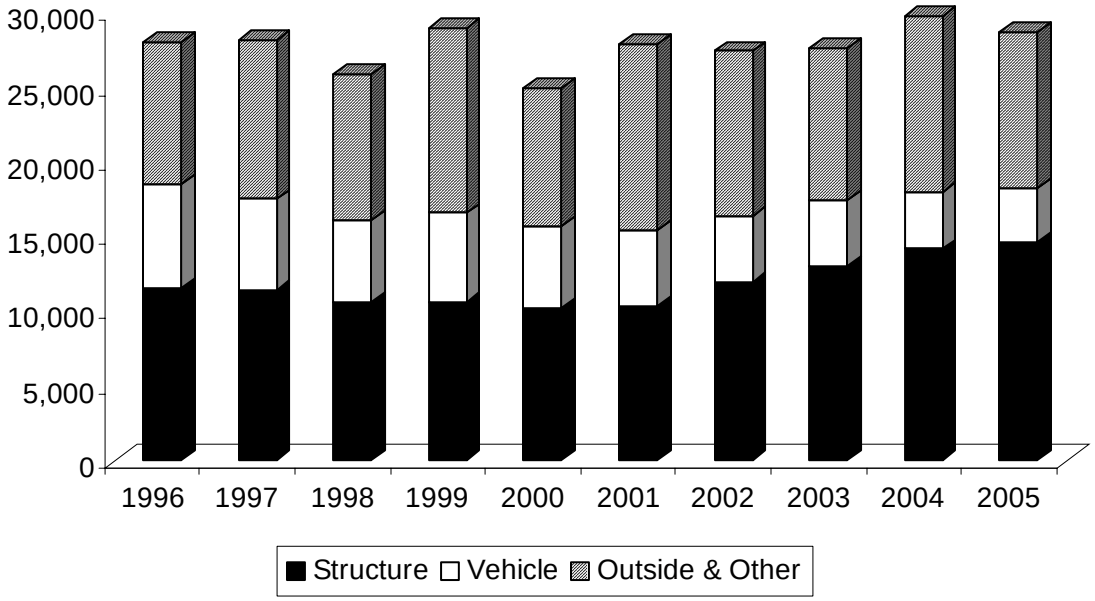
The following table indicates the total number of fires and the subsequent breakdown into structure fires, motor vehicle fires and outside and other fires for the years 1996 through 2005. The total number of fire incidents in 2005 was down 3% from the 29,811 incidents reported in 2004. Fires have been on an overall increasing trend since 2000.

Year	Total Fires	Structure Fires	Vehicle Fires	Other Fires
2005	28,793	14,662	3,666	10,465
2004	29,811	14,200	3,825	11,786
2003	27,819	13,015	4,533	10,271
2002	27,478	12,021	4,347	11,110
2001	27,885	10,384	5,127	12,374
2000	24,931	10,279	5,473	9,179
1999	28,976	10,595	6,011	12,370
1998	25,873	10,613	5,565	9,695
1997	28,249	11,452	6,096	10,701
1996	28,064	11,611	6,980	9,473

The following graph depicts the same numbers in a different manner that shows what proportion of the fire problem each incident type represents. During the first five years of this period (1996-2000) the total number of structure fires decreased. However from 2001 through 2005 the number of structure fires steadily increased[5]. During the past 10 years motor vehicle fires have steadily declined. However, the trend for outside and other fires seems to be developing a 'wave' pattern where the number of these types of fires rises or 'crests' every four years.

[5] This is due to the new codes for confined fires inside of structures, Incident Types 113 – 118. In the past many of these confined fires may have been coded as smoke scares or other non-fire types of incidents.

Incident Type by Year 1996 - 2005



Structure Fires

14,662 Structure Fires Account for 51% of Reported Fires, 79% of Fire Deaths

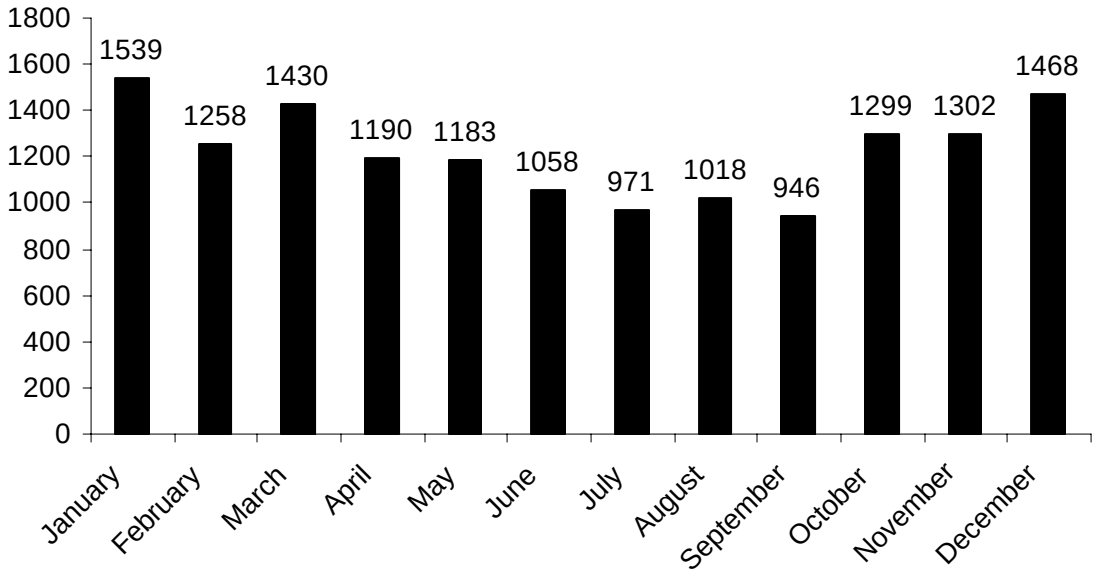
The 14,662 structure fires caused 41 civilian deaths, 301 civilian injuries, 469 fire service injuries, and an estimated dollar loss of $202 million. The average structure fire caused $13,789 in property damage. Structure fires accounted for 51% of reported fires and 79% of the civilian fire deaths in 2005.

According to the MFIRS definition, any fire occurring inside or on a structure is considered a structure fire. This includes chimney fires, cooking fires, indoor waste basket fires, fires on a back porch, exterior trim fires, and vehicle fires that occur inside a garage that extend beyond the vehicle. The number of structure fires rose by 3% from the 14,200 reported in 2004.

Structure Fires Most Common in Colder Months

Heating equipment plays a frequent role in structure fires. It is not surprising that January was the peak month for these incidents in 2005. December ranked second and March had the third largest number of structure fires. The warmer months had significantly fewer structure fires. The fewest fires occurred in September. July had the second lowest frequency of these incidents, and August had the third lowest number of structure fires in 2005.

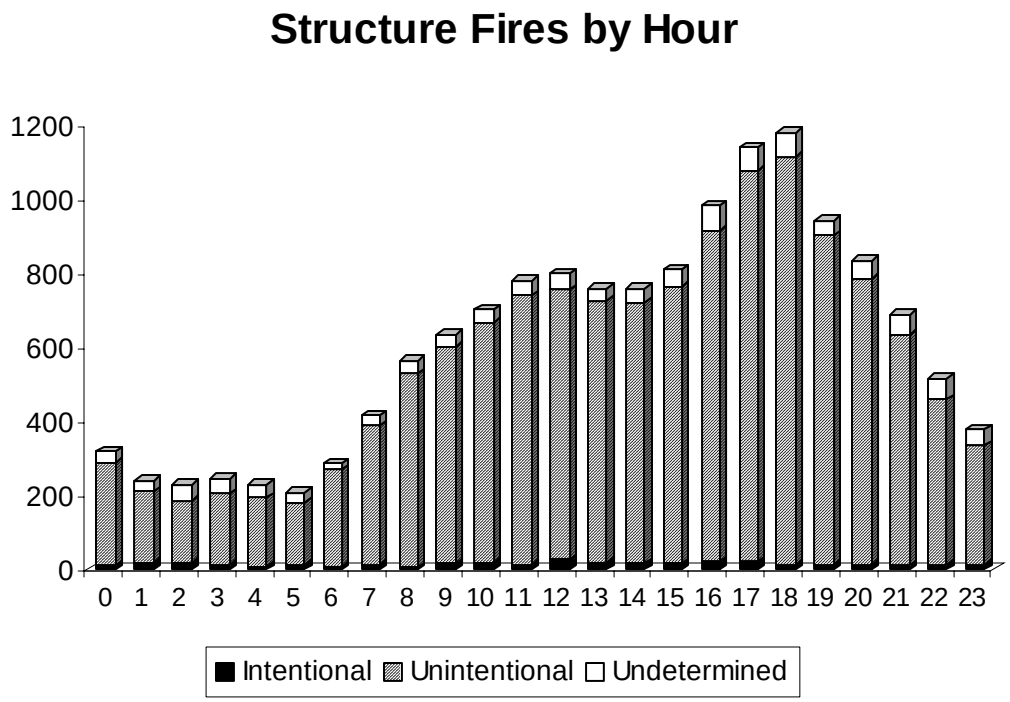
2005 Structure Fires by Month



Structure Fires Most Common Around Dinner Time

Cooking is the leading cause of structure fires. Predictably, structure fires occurred most often around dinnertime. Intentionally set structure fires were most common between 1:00 a.m. and 2 a.m. and also between 4:00 p.m. and 5:00 p.m. Unintentional structure fires reached their lowest point between 1:00 a.m. and 6:00 a.m. and increased fairly steadily to a peak between 5:00 and 6:00 p.m.

The following graph shows fire frequency by time of day on the 24-hour clock for structure arsons, unintentional structure fires and structure fires of undetermined origin. A fire is considered arson when the ignition factor is incendiary or suspicious. Midnight to 1:00 a.m. is represented by 0, 1:00 a.m. to 2:00 a.m. is represented by 1, etc.



82% of Structure Fires Occurred in Residential Occupancies

Eighty-two percent (82%) of the state's 14,662 structure fires and 39 of the 41 structure fire deaths occurred in residential occupancies. The following table shows the number of structure fires, civilian deaths, civilian injuries, fire service injuries, estimated dollar loss and the percentage of total structure fires for each occupancy group. Institutional properties are those used for purposes such as medical or other treatment of persons suffering from physical or mental illness, disease, or infirmity; for the care of infants, convalescents, or aged persons; and for penal or corrective purposes. Industrial facilities, utilities, defense facilities, laboratories, agricultural and mining facilities, are considered basic industries. Special properties include structures such as outbuildings, bus stop shelters and telephone booths.

STRUCTURE FIRES BY OCCUPANCY TYPE

Occupancy	# of Fires	% of Total	Injuries FF	Injuries Civ	Deaths FF	Deaths Civ	Dollar Loss	Avg. Dollar Loss
Public assembly	567	4%	20	5	0	0	$42,346,138	$74,685
Educational	333	2%	4	1	0	0	941,843	2,828
Institutional	427	3%	1	1	0	0	556,410	1,303
Residential	**12,000**	**82%**	**369**	**272**	**0**	**39**	**128,417,392**	**10,701**
1- & 2-Family homes	*5,659*	*39%*	*196*	*146*	*0*	*24*	*75,498,744*	*13,341*
Apartments	*5095*	*34%*	*160*	*114*	*0*	*15*	*43,964,763*	*8,629*
All other residential	*1,246*	*9%*	*13*	*12*	*0*	*0*	*8,953,885*	*7,186*
Mercantile, business	707	5%	37	6	0	0	15,346,164	21,706
Basic industry	54	1%	9	2	0	0	3,258,301	60,339
Manufact., processing	169	1%	8	6	0	1	4,471,940	26,461
Storage properties	276	2%	19	6	0	1	6,319,264	22,896
Special properties	87	1%	2	0	0	0	88,071	1,012
Unclassified	42	0.3%	0	3	0	0	341,920	8,141
Total	**14,662**	**100%**	**469**	**300**	**0**	**41**	**$201,750,543**	**13,760**

Occupancy Group Definitions

- **Public assembly**: This category includes amusement and recreation places such as bowling alleys, skating rinks, ballrooms, gymnasiums, arenas, stadiums, playgrounds, churches, funeral parlors, clubs, libraries, museums, courtrooms, restaurants, taverns, passenger terminals, theatres and studios.
- **Educational**: This category includes classrooms from nursery school through college, and trade and business schools. Dormitories are considered residential.
- **Institutional**: This category includes institutions that care for the aged, the young, the sick or injured, the physically restrained, the physically inconvenienced and the mentally handicapped.
- **Residential**: This occupancy group includes one- and two-family homes, apartments, rooming, boarding or lodging houses, dormitories, hotels, motels and home hotels, and residential board and care facilities. Seasonal homes are included here.
- **Mercantile, business**: Retail establishments, service stations, laundries, offices, banks, medical offices and post offices are included in this category.
- **Basic industry**: This category includes nucleonics, energy production plants, laboratories, communications facilities, defense facilities, document facilities, utility and energy distribution systems, agriculture, forests, hunting and fishing, mining, and manufacturing of mineral products such as glass, clay or cement.
- **Manufacturing, processing**: Manufacturing that is not listed under Basic Industry is listed here.
- **Storage property**: This category includes warehouses, barns, garages and tool sheds.
- **Special property**: This category includes, dumps, sanitary landfills, recycling collection points, outbuildings, bus stop shelters, phone booths, bridges, roads, railroad property, outdoor properties, water areas, aircraft areas and equipment operating areas outbuildings.

2005 Massachusetts Structure Fires by Property Use

MFIRS Code	Property Use	# of Structure Fires
	Assembly	**567**
100	Assembly, other	26
110	Fixed use recreation places, other	10
111	Bowling alley	1
113	Electronic amusement center	1
114	Ice rink: indoor, outdoor	5
116	Swimming facility: indoor or outdoor	2
120	Variable use amusement, recreation places	7
121	Ballroom, gymnasium	6
122	Convention center, exhibition hall	2
123	Stadium, arena	5
124	Playground	47
129	Amusement center: indoor/outdoor	1
130	Places of worship, funeral parlors	3
131	Church, mosque, synagogue, temple, chapel	73
134	Funeral parlor	1
140	Clubs, other	17
141	Athletic/health club	17
142	Clubhouse	17
150	Public or government, other	5
151	Library	9
152	Museum	3
155	Courthouse	2
160	Eating, drinking places	38
161	Restaurant or cafeteria	219
162	Bar or nightclub	23
171	Airport passenger terminal	6
173	Bus station	2
174	Rapid transit station	12
181	Live performance theater	1
182	Auditorium or concert hall	1
183	Movie theater	5
	Educational	**333**
200	Educational, other	26
210	Schools, non-adult	23
211	Preschool	17
213	Elementary school, including kindergarten	63
215	High school/junior high school/middle school	136
241	Adult education center, college classroom	40
254	Day care, in commercial property	22
255	Day care, in residence, licensed	6

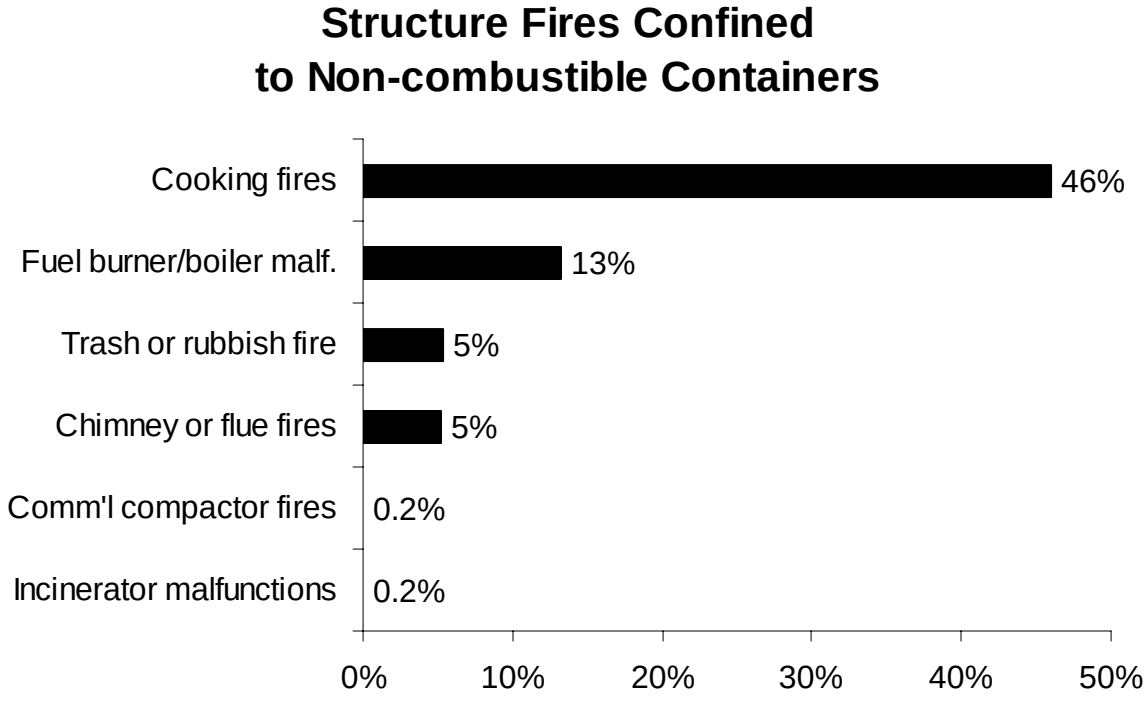
MFIRS Code	Property Use	# of Structure Fires
	Health care, detention & correction	**427**
300	Health care, detention, & correction, other	16
311	24-hour care Nursing homes, 4 or more persons	128
321	Mental retardation/development disability facility	67
322	Alcohol or substance abuse recovery center	32
323	Asylum, mental institution	10
331	Hospital - medical or psychiatric	110
332	Hospices	3
340	Clinics, Doctors offices, hemodialysis centers	13
341	Clinic, clinic-type infirmary	7
342	Doctor, dentist or oral surgeon's office	11
361	Jail, prison (not juvenile)	14
363	Reformatory, juvenile detention center	11
365	Police station	5
	Residential	**12,000**
400	Residential, other	434
419	1 or 2 family dwelling	5,659
429	Multifamily dwellings	5,095
439	Boarding/rooming house, residential hotels	247
449	Hotel/motel, commercial	114
459	Residential board and care	127
460	Dormitory type residence, other	235
462	Sorority house, fraternity house	5
464	Barracks, dormitory	84
	Mercantile, Business	**707**
500	Mercantile, business, other	115
511	Convenience store	23
519	Food and beverage sales, grocery store	130
529	Textile, wearing apparel sales	13
539	Household goods, sales, repairs	17
549	Specialty shop	44
557	Personal service, including barber & beauty shops	14
559	Recreational, hobby, home repair sales, pet store	4
564	Laundry, dry cleaning	36
569	Professional supplies, services	13
571	Service station, gas station	18
579	Motor vehicle or boat sales, services, repair	47
580	General retail, other	31
581	Department or discount store	9
592	Bank	38
593	Office: veterinary or research	10
596	Post office or mailing firms	5

MFIRS Code	Property Use	# of Structure Fires
599	Business office	140
	Industrial, Utility, Defense, Agriculture, Mining	**54**
600	Utility, defense, agriculture, mining, other	8
610	Energy production plant, other	2
614	Steam or heat generating plant	1
615	Electric generating plant	2
629	Laboratory or science laboratory	12
631	Defense, military installation	1
639	Communications center	1
640	Utility or Distribution system, other	2
642	Electrical distribution	2
645	Flammable liquid distribution, pipeline, flammable	1
647	Water utility	5
648	Sanitation utility	5
655	Crops or orchard	2
659	Livestock production	2
669	Forest, timberland, woodland	8
700	**Manufacturing, processing**	**169**
	Storage	**276**
800	Storage, other	21
807	Outside material storage area	15
808	Outbuilding or shed	90
819	Livestock, poultry storage	7
839	Refrigerated storage	1
849	Outside storage tank	1
880	Vehicle storage, other	25
881	Parking garage, (detached residential garage)	54
882	Parking garage, general vehicle	18
888	Fire station	5
891	Warehouse	35
898	Dock, marina, pier, wharf	3
899	Residential or self storage units	1
	Outside or special property	**87**
900	Outside or special property, other	47
919	Dump, sanitary landfill	5
921	Bridge, trestle	3
922	Tunnel	2
926	Outbuilding, protective shelter	15
931	Open land or field	3
935	Campsite with utilities	1

MFIRS Code	Property Use	# of Structure Fires
936	Vacant lot	1
938	Graded and cared-for plots of land	2
960	Street, other	1
962	Residential street, road or residential driveway	4
963	Street or road in commercial area	2
981	Construction site	1
	Other	**42**
000	Property Use, other	42
	Total Structure Fires	**14,662**

69% of Structure Fires Are Confined to Non-Combustible Containers[6]

Ten thousand one hundred and forty-two (10,142), or 69% of all structure fires, were reported as confined to non-combustible containers in 2005. Six thousand seven hundred and twenty-six (6,726) of the reported fires were cooking fires confined to a non-combustible container accounting for 46% of structure fires. One thousand nine hundred



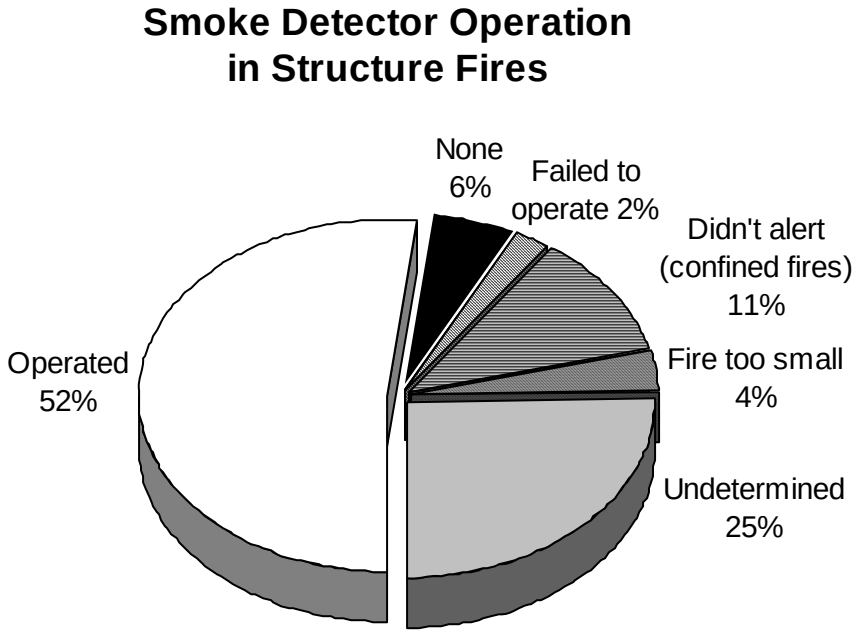
[6] In MFIRS v5 a fire in a building contained to a non-combustible container (Incident Type = 113-118) does not have to have a Fire Module completed. Therefore the following data fields do not need to be completed: Area of Origin, Detector Status, Item First Ignited, Heat Source, Factors Contributing to Ignition, Cause of Ignition, and Equipment Involved In Ignition. These incidents are not included in the analysis of these fields.

and thirty-two (1,932), or 13%, were fires confined to a fuel burner or boiler malfunction. Seven hundred and sixty-eight (768), or 5%, of these fires were contained rubbish fires. Six hundred and sixty-two (662), or 5%, of all structure fires reported in 2005 were fires confined to a chimney or flue. Thirty-two (32), or less than 1%, was a commercial compactor fire that was confined to the rubbish. Twenty-two (22), or less than 1%, of these fires in the Commonwealth were contained to an incinerator overload or malfunction.

Confined structure fires increased by 539 incidents, or 6%, from the 9,603 reported in 2004.

Detectors Alerted Occupants in Just Over 1/2 of Fires

Smoke or heat detectors operated and alerted the occupants in 7,611, or 52%, of the structure fires in 2005. In 11% of these fires[7], the detectors did not alert the occupants. Detectors were present but did not operate in 2% of these incidents. In 6% of these fires, no detectors were present at all. The fire was too small to trigger the detector in 4% of the residential fires. Smoke detector performance was undetermined in 3,705 incidents, or 25% of Massachusetts' 2005 structure fires.



The following table shows detector performance by occupancy type for structure fires.

[7] These represent confined fires where it was reported that the detector did not alert the occupants.

DETECTOR PERFORMANCE

	Operated	Failed to Operate	Didn't Alert (Conf.)	Fire Too Small	None	Unknown	Total
Public assembly	243	7	68	35	51	163	567
Educational	191	3	35	21	20	63	333
Institutional	340	1	14	15	12	45	427
Residential	6,437	291	1,401	399	386	3,086	12,000
Mercantile, business	287	68	84	51	113	164	707
Basic industry	17	0	6	1	11	19	54
Manufacturing	53	2	11	12	44	47	169
Storage properties	25	1	11	4	163	72	276
Special properties	6	0	25	0	22	34	87
Unclassified	12	1	3	2	12	12	42
Total	**7,611**	**314**	**1,658**	**540**	**834**	**3,705**	**14,662**

$23 Million Fire at Harvard Lab is Largest Loss Structure Fire in 2005

- On February 4, 2005, at 11:00 p.m., the Cambridge Fire Department was called to a fire in an underground laboratory at Harvard University that was under construction, but nearly completed. The fire began in a storage area on the third sub-level. The cause of the blaze is undetermined. One firefighter reported inhaling fumes from some of the onsite chemicals while fighting this fire. Detectors and automatic extinguishing systems were not present. Damages from this fire were estimated to be $23 million.

Weymouth Has 2nd Largest Loss Fire in 2005 - $10 Million

- On June 9, 2005, at 10:01 p.m., the Weymouth Fire Department responded to an electrical fire in a church. A refrigerator in the basement of the church malfunctioned, and ignited a nearby wall. Three firefighters were injured battling this blaze. Smoke detectors were present and operating. Sprinklers were not present. Damages from this fire were estimated to be $10 million.

Overall, there were 15 large loss structure fires reported to MFIRS in 2005 with a total combined dollar loss of $64.2 million.

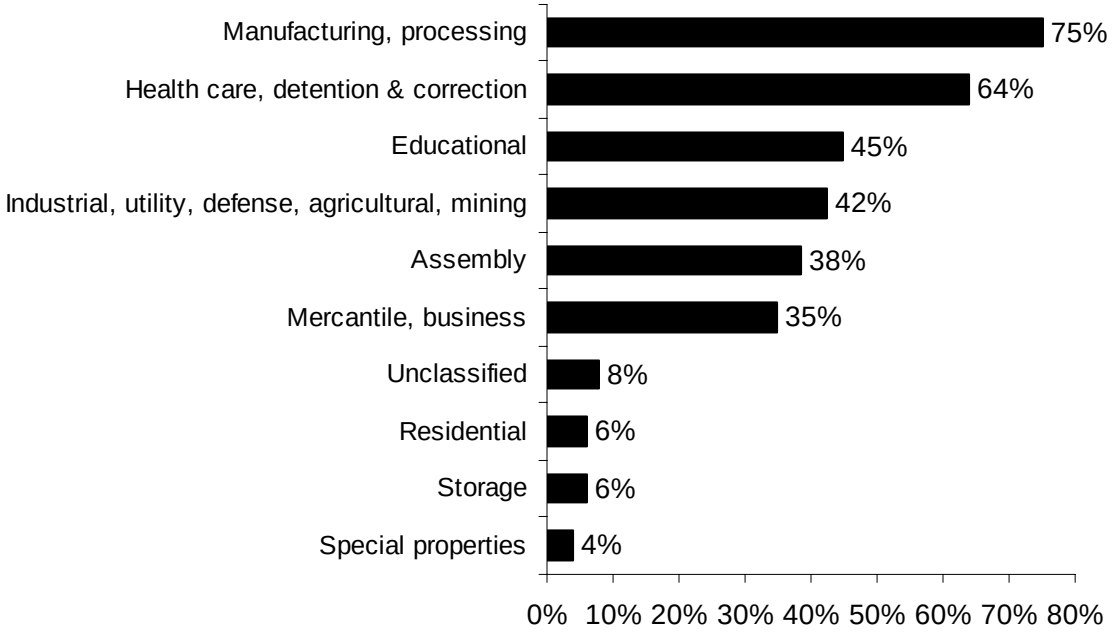
15% of Unconfined Fires Occurred in Buildings with AES

Overall, 13% of the unconfined[8] structure fires in 2005 occurred in buildings that had automatic extinguishing systems (AES), regardless of whether the fire was large enough to activate the system. Manufacturing and institutional properties were the most likely to have an AES. Seventy-five percent (75%) of the fires in manufacturing or processing facilities, 64% of the fires in health care, detention and correction facilities, and 45% of

[8] In MFIRS v5 a fire in a building contained to a non-combustible container (Incident Type = 113-118) also does not have to have a Structure Fire Module completed. Therefore the fields concerned with detector and sprinkler presence and performance would not be completed. These incidents are not included in the analysis of these fields.

the fires in educational facilities occurred in buildings with these systems. Only 6% of the residential fires occurred in buildings protected by an automatic extinguishing system.

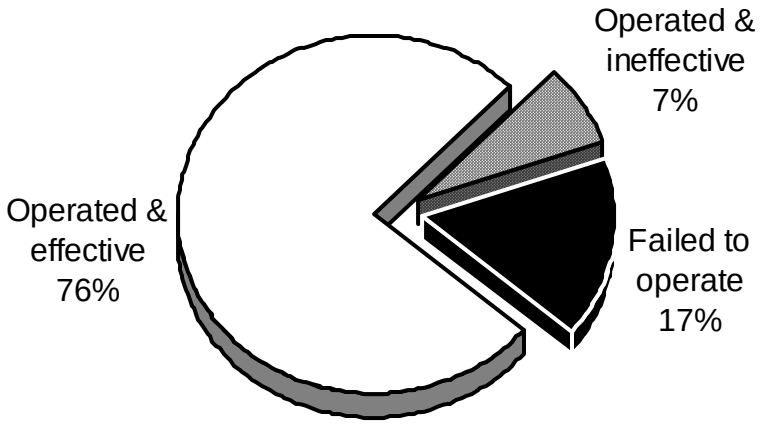
Fires in AES Protected Buildings by Property Use



AES Work in 83% of Building Fires When Installed

AES were present and operated in 172, or 83%, of the 206 structure fires in buildings protected by an automatic extinguishing system, which had a reported fire large enough for the AES to activate in Massachusetts in 2005. Of these 206 fires, the systems were effective in 157, or 76%, and ineffective in 15, or 7%, of these incidents. AES were present but failed to operate in 34, or 17%, of these 206 structure fires. Some of the reasons for the automatic extinguishing system failures were reported to be: the fire was not in an area protected by the system; and the system was shut off.

AES Status in AES Protected Buildings



The table below shows sprinkler performance by occupancy group for those incidents where AES presence and performance were reported.

AUTOMATIC EXTINGUISHING SYSTEM PERFORMANCE

	Operated	Did Not Operate	Fire Too Small	None	Unknown	Total
Assembly	20	9	34	15	1	79
Educational	9	1	25	8	0	43
Institutional	12	2	33	14	1	62
Residential	67	9	100	51	4	231
Mercantile, business	32	5	52	26	0	115
Basic industry	2	1	8	0	0	11
Manufacturing	27	6	32	16	1	82
Storage properties	1	1	7	2	1	12
Special properties	0	0	1	1	0	1
Unclassified	2	0	0	0	0	2
Total	**172**	**34**	**291**	**133**	**8**	**638**

High Rise Buildings Must be Fully Equipped with Sprinklers

Evacuating a high-rise building while fighting a raging fire is a logistical nightmare for firefighters. Automatic sprinklers make these buildings much safer for residents, office workers, visitors and firefighters. Under the provision of MGL Chapter 148, Section 26A 1/2, all existing buildings of more than 70 feet in height above the mean grade had to be retrofitted by a fully protected adequate system of automatic sprinklers by March 30, 1998. This took effect in 1988. All new high rises are required to have automatic sprinklers.

Written Permit Required from Fire Department before Disconnecting Sprinklers
Under the provisions of MGL Chapter 148, Section 27A, it is illegal to "…shut off, disconnect, obstruct, remove or destroy… any part of any sprinkler system, water main, hydrant, or other device used for fire protection… without first procuring a written permit from the head of the fire department." The head of the fire department is authorized to issue conditions necessary to provide protection from fire and the preservation of public safety. In the event of an emergency, the system may be shut down as long as the fire department head is immediately notified of the action and when the system is back in service. Violators may be punished by imprisonment for not more than one year and/or a fine of not more than $1,000.

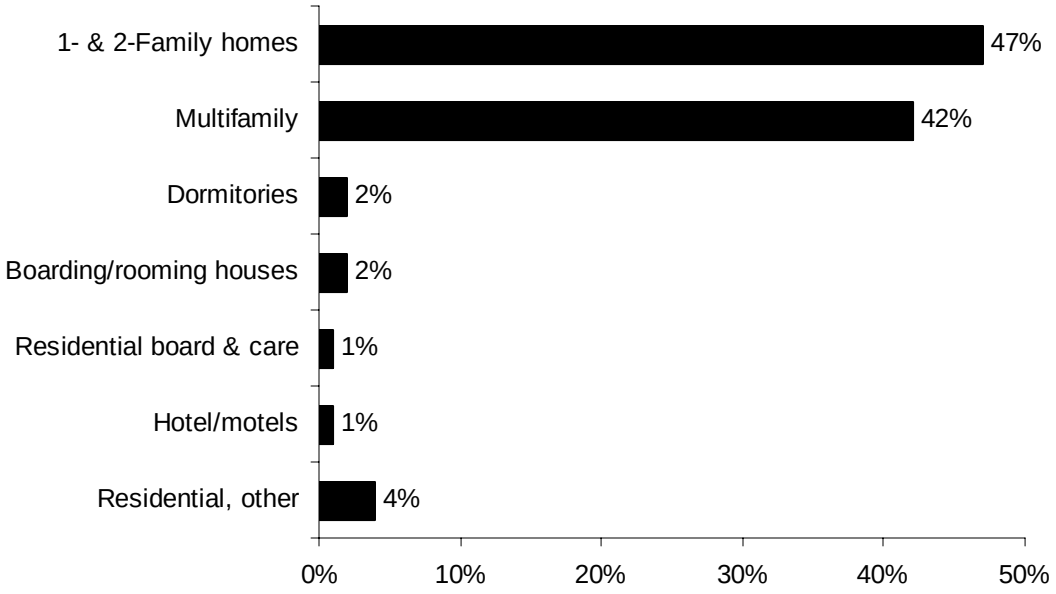
Residential Structure Fires

82% of Structure Fires Occurred in Residential Occupancies
Massachusetts fire departments reported that 12,000, or 82% of the 14,662 structure fires occurred in residential occupancies. These fires caused 39 civilian deaths, 272 civilian injuries, 369 fire service injuries and an estimated dollar loss of $128.4 million. The average dollar loss per fire was $10,701. The total number of reported residential structure fires went up 5% from the 11,380 reported in 2004. The following table shows the statistics for fires, firefighter and civilian casualties and the estimated dollar loss by residential occupancy.

RESIDENTIAL STRUCTURE FIRES

	# of	% of	Injuries		Deaths		Dollar
Occupancy	**Fires**	**Total**	**FF**	**Civ**	**FF**	**Civ**	**Loss**
1- & 2-Family homes	5,659	47%	196	146	0	24	$75,498,744
Multifamily	5,095	42%	160	114	0	15	43,964,763
Rooming houses	247	2%	1	5	0	0	550,555
Hotels & motels	114	1%	0	0	0	0	230,125
Residential board & care	127	1%	0	0	0	0	307,225
Dormitories	324	3%	7	0	0	0	5,698,919
Unclassified	434	4%	5	7	0	0	2,167,061
Total	**12,000**	**100%**	**369**	**272**	**0**	**39**	**$128,417,392**

Residential Structure Fire by Occupancy Type



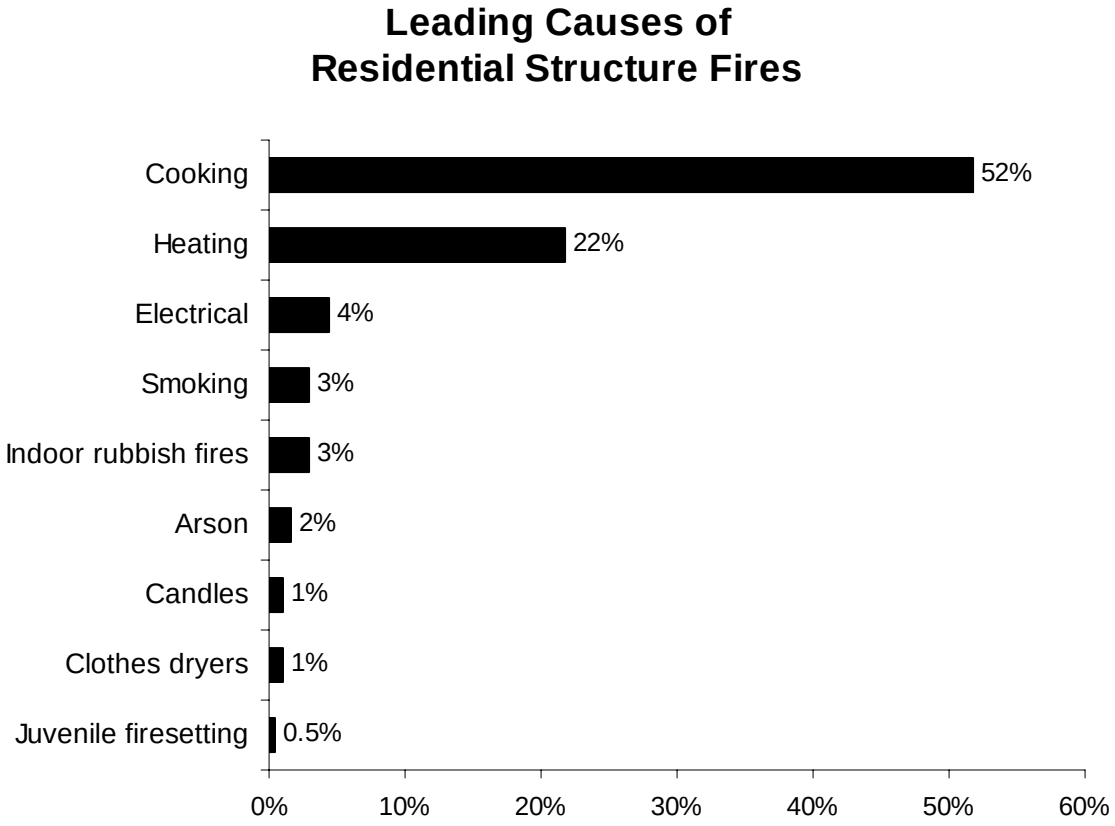
Residential Occupancy Sub-Group Definitions

- **1- & 2-Family**: This category includes one or two family homes, detached, manufactured homes, mobile homes and duplexes.
- **Multifamily dwellings**: This category includes apartments, condominiums, townhouses, rowhouses and tenements.
- **Boarding, rooming house**: This category includes residential hotels and shelters.
- **Hotel, motel**: This occupancy group includes commercial hotels, motels or inns.
- **Residential board and care**: This category includes long-term care and half-way houses. Excluded are nursing facilities (Property Use code = 311).
- **Dormitories**: This category includes dormitory type residences and sorority or fraternity houses. It also includes nurses' quarters, military barracks, monastery/convents, dormitories, bunk houses and workers' barracks.
- **Residential, other**: Any type of residential occupancy that is not defined above.

Cooking Causes Over1/2 of Residential Structure Fires

The leading causes of residential structure fires in 2005 were cooking, heating, electrical, smoking, indoor rubbish fires, arson, candles, clothes dryer fires, and juvenile firesetting. Cooking was the leading cause of residential structure fires accounting for 6,220, or 52%, or more than half of the 12,000 incidents. Heating equipment accounted for 2,611, or 22% of the total fires. Electrical problems caused 528, or 4%, of incidents. The unsafe use and disposal of smoking materials also accounted for 334, or 3%, of these incidents. Indoor rubbish fires were the cause of 317, or 3%, of residential structure fires. Arson accounted for 191, or 2%, of residential structure fires. One percent (1%), or 172, was caused by candles. Clothes dryer fires were the cause for 78, or 1%, of these incidents.

Juvenile firesetting accounted for 57, or less than 1%, of residential structure fires in Massachusetts in 2005.



Over 1/2 of Residential Fires Started in the Kitchen
Over half, or 55%, of the residential structure fires in 2005 started in the kitchen. Fifteen percent (15%) began in a heating room or area; 6% started in the chimney or flue; 3% began in the bedroom; and 2% started in the living room in Massachusetts residential structure fires in 2005.

72% of Residential Structure Fires Confined to Non-Combustible Containers[9]
Eight thousand six hundred and ten (8,610), or 72% of all residential structure fires, were reported as confined to non-combustible containers in 2005. Five thousand seven hundred and eighty-one (5,781) of the reported fires were cooking fires contained to a non-combustible container accounting for 48% of residential structure fires. One thousand seven hundred and thirty-five (1,735), or 14%, were fires confined to a fuel burner or

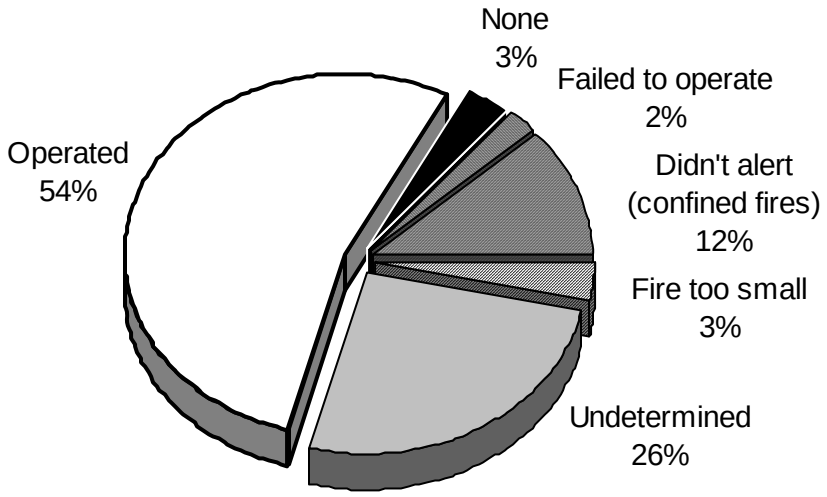
[9] In MFIRS v5 a fire in a building contained to a non-combustible container (Incident Type = 113-118) does not have to have a Fire Module completed. Therefore the following data fields do not need to be completed: Area of Origin, Detector Status, Item First Ignited, Heat Source, Factors Contributing to Ignition, Cause of Ignition, and Equipment Involved In Ignition. These incidents are not included in the analysis of these fields.

boiler malfunction. Seven hundred and thirty (730), or 6%, of all residential structure fires reported in 2005 were fires confined to a chimney or flue. Three hundred and forty-one (341), or 3%, of these fires were contained rubbish fires. Twelve (12), or less than 1%, of these fires in the Commonwealth were contained to an incinerator overload or malfunction. Eleven (11), or less than 1%, of the residential structure fires in 2005 were commercial compactor fires confined to the rubbish inside the compactor.

The number of contained fires in residential occupancies rose in 2005. Confined fires increased by 650 incidents, or 8%, from the 7,960 reported in 2004.

Detectors Alerted Occupants in Over 1/2 of Fires
Smoke or heat detectors operated and alerted the occupants in 6,437, or over half (54%), of the residential structure fires in 2005. In 12% of these fires[10], the detectors did not alert the occupants. Detectors were present but did not operate in 2% of these incidents. In 3% of these fires, no detectors were present at all. The fire was too small to trigger the detector in 3% of the residential fires. Smoke detector performance was undetermined in 3,086 incidents, or 26% of Massachusetts' 2005 residential structure fires.

Smoke Detector Status in Residential Fires



Houses Must Have Detectors at Time of Sale
Under the provisions of Massachusetts General Law Chapter 148, Section 26F, all buildings containing one to five dwelling units built prior to 1975, must be equipped by the seller with approved smoke detectors upon the sale or transfer of the building as provided in Section 26E. This statute took effect on January 1, 1982. Many homes changed hands during the real estate boom of the 1980's and while many owners had not

[10] These represent confined fires where it was reported that the detector did not alert the occupants.

installed detectors to protect themselves, they did install these devices to sell their home. The new owners were then protected by an early warning system but it is our concern that many have not been fully maintained since then. The new owners should maintain the detectors by testing the detectors monthly and replacing the batteries twice a year. Detectors should be kept free of dust and never painted over.

Smoke Alarms That Are 10 Years Old or Older Should Be Replaced
Studies have indicated that not unlike any other appliance in your household, smoke detectors do not last forever. The life span for a typical smoke detector whether it is battery-powered or hard-wired is 10 years. Smoke alarms that are 10 years old or older should be replaced. The manufacture date is stamped or marked on the back of the detector. If there is no date, the detector should be replaced.

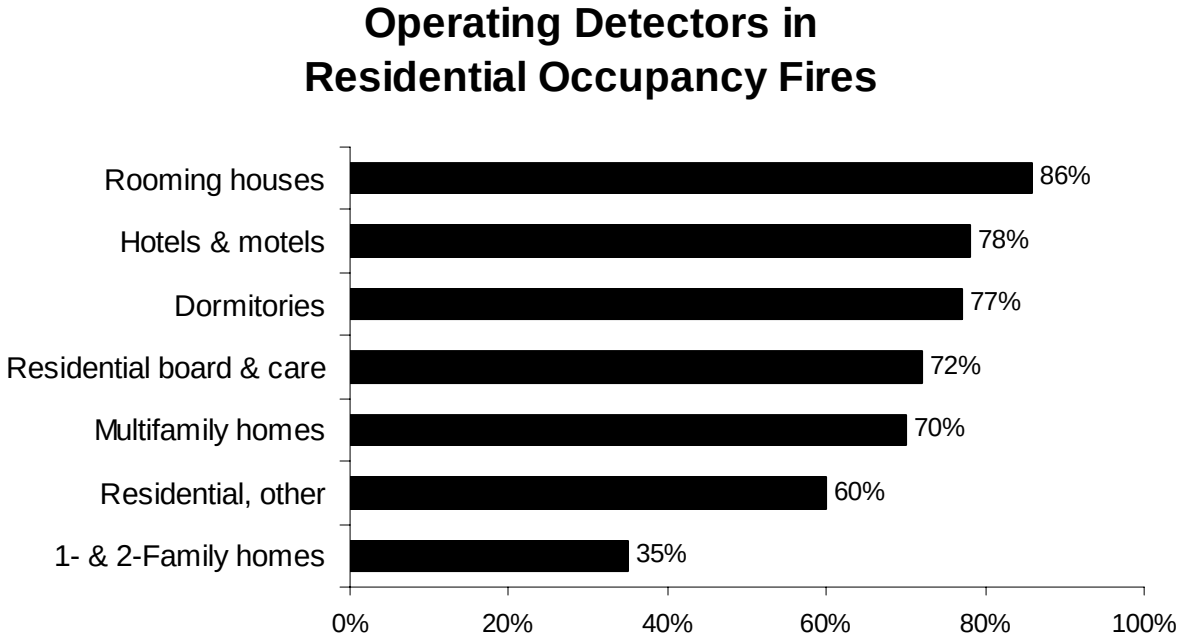
Automatic smoke detectors are required at all times in buildings containing three or more residential units. If adopted as a local ordinance, Massachusetts General Law Chapter 148, Section 26E (a) requires owners of one- and two-family homes built before 1974 to install smoke detectors outside each separate sleeping area and on the ceiling of each stairway leading to a floor above. All homes built after 1975 are required to have smoke alarms. At this date, there is hardly a home left in Massachusetts that is not required to have smoke alarms.

New Homes Must Have Detector in Bedroom Area
At a minimum, smoke detectors should be installed on every floor of the home and at the bottom of the basement stairwell. The Massachusetts Building Code requires smoke detectors within the bedroom area in all *new* residential occupancies. When a bedroom door is shut, it can help prevent the spread of fire from room to room. Unfortunately, a shut door also makes it harder to hear a smoke detector sounding in the hallway. People who sleep with their bedroom door closed should install a detector inside their bedroom. After detectors are installed, they need to be regularly tested and maintained. All the detector can do is sound the alarm. Everyone needs to develop and practice the escape routes they would use in the event of a fire.

Almost 1/3 of Failed Detectors Had Missing or Disconnected Batteries
Of the 291 fires where smoke detectors were present but failed to operate, 88, or 30%, failed because the batteries were either missing or disconnected. Twenty-seven (27), or 9%, failed because of a power failure, shutoff or disconnect. Twenty-one (21), or 7%, did not operate because of dead batteries. Twelve (12), or 4% failed from improper installation or placement. Ten (10) detectors, or 3%, failed from a lack of maintenance such as not cleaning dust from the detector or painting over the detector. Seven (7) units (2%) failed because they were defective. For 126 cases, or 43%, the reason the detector failed was not determined.

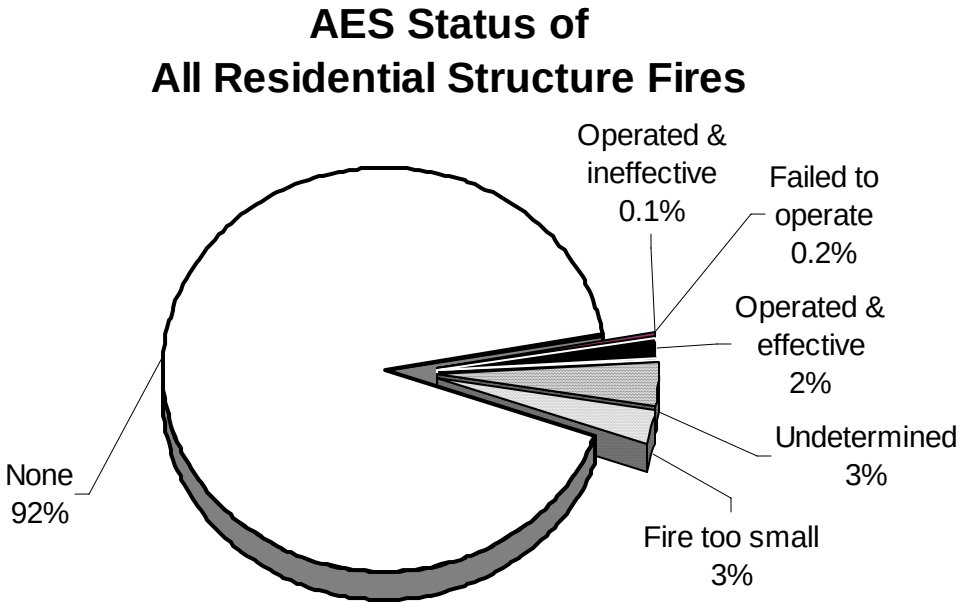
Rooming Houses Had Highest Percentage of Operating Detectors
Rooming houses were the most likely residential occupancy to have operating smoke detectors in 2005. Hotels and motels were the second most likely residence to have working smoke detectors. Dormitories were the next most likely residential occupancy to

have operating smoke detectors while one- and two-family homes were the least likely. The following chart shows the percentage of operating smoke detectors in fires in residential occupancies.



No Working Detectors for Over 1/4 of Residential Fire Victims
Of the thirty-nine (39) people who died in residential structure fires in 2005, the smoke detector performance was known for 23 of the victims. Victims were not alerted by smoke detectors in eight fires that killed 11 people, or 28% of the victims. In six of these incidents, no detectors were present at all, killing six (15%) individuals. Detectors were present, but did not operate in five fires that killed five people (13%). One person, or 3% of the victims, died in one fire where the fire was too small to activate the detector. Detector performance was undetermined in 12 residential structure fires that killed 16 people accounting for 41% of the residential structure fire deaths in 2005. In five of these 12 fires, detectors were present but it was undetermined as to whether they operated or not.

AES Present in Only 5% of Residential Structure Fires
Automatic extinguishing systems (AES) were reported present and operated effectively in 64, or 2% of the 3,678 residential structure fires where system performance was completed in 2005. AES were present and operated ineffectively in three, or 0.1%, of these fires. In nine, or 0.2%, of the fires in residential occupancies, the system did not operate. In 100, or 3%, the fire was too small to activate the system. In 3,383, or 92%, of the cases, there were no systems present or installed. AES performance was not classified for 119 incidents (3%) involving residential structure fires.



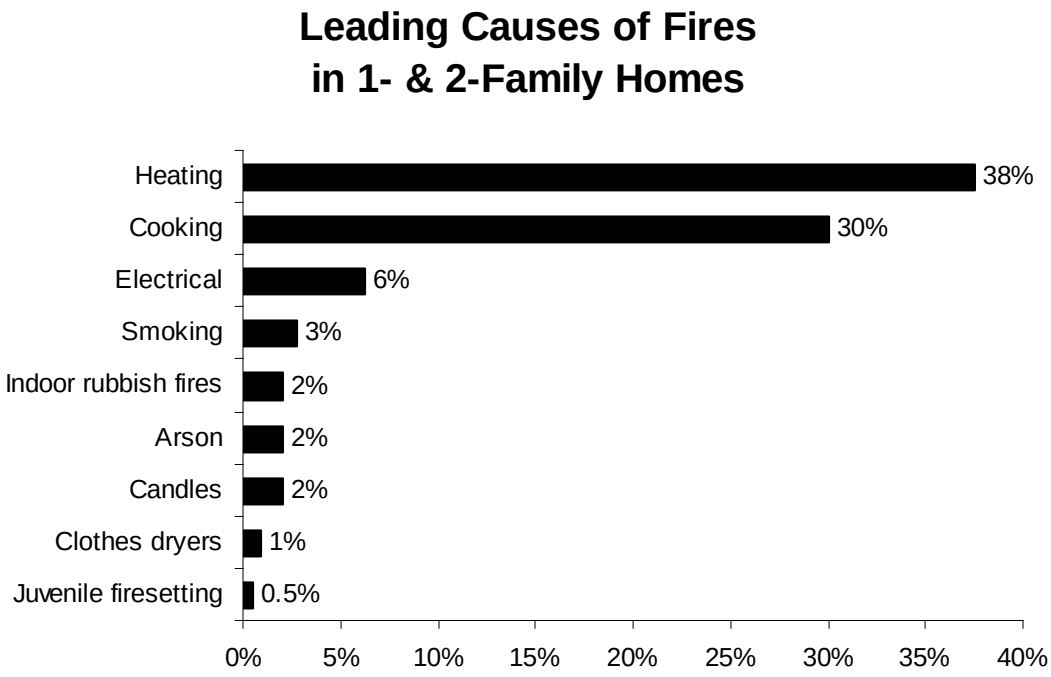
Only You Can Make Your Home Safer for You and Your Family
Eighty-two percent (82%) of structure fires and 75% of fire deaths in 2005 took place in residential occupancies. Efforts to reduce the incidence of fire and fire deaths must be focused on home fire safety to have the greatest impact. Increased maintenance of smoke alarms, installation of residential sprinklers, practice of home escape plans coupled with safer products such as self-extinguishing cigarettes, upholstered furniture that meets the California flammability standard, and flame resistant sleepwear for all ages can help make homes and the families who live in them safer from fire.

Fires in One- and Two-Family Homes

5,659 Fires, 24 Civilian Deaths, $75.5 Million in Damage
Five thousand and six hundred and fifty-nine (5,659) structure fires in one- and two-family homes caused 24 civilian deaths, 146 civilian injuries, 196 fire service injuries, and an estimated $75.5 million in property damage. In 2005, 47% of the Commonwealth's 12,000 residential structure fires occurred in one- and two-family homes. The average dollar loss from these types of fires was $13,341. Fires in one- and two-family homes were up 2% from 5,534 in 2004.

Heating Was the Leading Cause of Fires in 1- & 2-Family Homes
Heating equipment caused 38% of incidents occurring in one- and two-family homes. The next leading cause of fires in one- and two-family homes was cooking, accounting

for 30%. Six percent (6%) of one- and two-family residential structure fires were caused by electrical problems. The unsafe and improper use of smoking materials caused 3% of these fires. Indoor rubbish fires, arsons, and candle fires were each the cause of 2% of the one- and two-family structure fires. Clothes dryers caused 1%, and juvenile-set fires accounted for less than 1% of the fires in one- and two-family homes in 2005.



Cooking is the leading cause of fires in all other residential occupancies. However, the roles have been reversed in one- and two-family homes for the past six years. In every year except 2003 when cooking tied heating as the leading cause, fires started by heating equipment have been the leading cause of fires in one- and two-family homes. A reason for this difference is that multifamily dwellings tend to be more regulated by building and fire codes than one- and two-family homes. Most apartments are rental properties, that fall under more stringent fire prevention statutes.

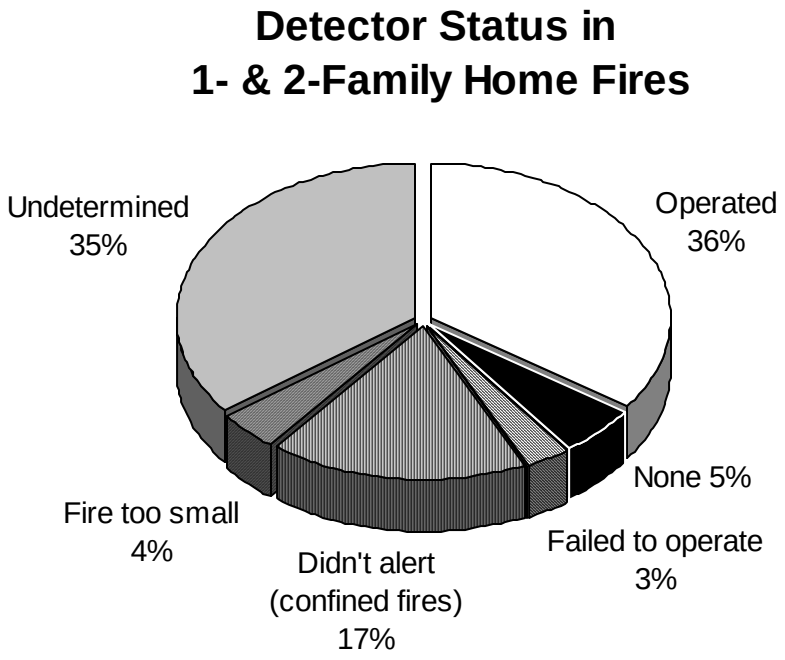
1/3 of Fires in 1- & 2- Family Homes Started in the Kitchen

For fires in one- and two-family homes where area of origin is known, 33% started in the kitchen. The second leading area of origin was rooms or areas with heating equipment accounting for 25% of these fires. Twelve percent (12%) started in the chimney or flue; 4% started in the bedroom. The living room, substructure areas or crawl spaces, and wall assemblies each accounted for 2% of these incidents.

65% of 1- & 2-Family Fires Were Confined to Non-Combustible Containers[11]
Three thousand six hundred and ninety-seven (3,697), or 65%, of all residential structure fires in one- and two-family homes, were reported as confined to non-combustible containers in 2005. One thousand five hundred and fifteen (1,515) were cooking fires confined to a non-combustible container accounting for 27% of all the residential structure fires in one- and two-family homes. One thousand three hundred and forty-eight (1,348), or 24%, were fires confined to a fuel burner or boiler. Six hundred and seventy-eight (678), or 12%, of all one- and two-family fires reported in 2005 were fires confined to a chimney or flue. One hundred and forty-eight (148), or 3%, of these fires were contained rubbish fires. Seven (7), or less than 1%, of the one- and two-family structure fires were contained to an incinerator overload or malfunction. There was one (0.02%) confined commercial compactor fire in one- and two-family homes in 2005.

The number of contained fires rose in 2005. Confined fires in one- and two-family homes increased by 137 incidents, or 4%, from the 3,560 reported in 2004.

Detectors Alerted Occupants in Over 1/2 of Fires
Detectors alerted occupants in over half of one- and two-family residential fires. Smoke or heat detectors operated and alerted the occupants in 1,965, or 36%, of the one- and



[11] In MFIRS v5 a fire in a building contained to a non-combustible container (Incident Type = 113-118) does not have to have a Fire Module completed. Therefore the following data fields do not need to be completed: Area of Origin, Detector Status, Item First Ignited, Heat Source, Factors Contributing to Ignition, Cause of Ignition, and Equipment Involved In Ignition. These incidents are not included in the analysis of these fields.

two-family home fires in 2005. In 17% of these fires[12], the detectors did not alert the occupants. Detectors were present but did not operate in 3% of these incidents. In 5% of these fires, no detectors were present at all. The fire was too small to trigger the detector in 4% of these residential fires. Smoke detector performance was undetermined in 1,995 incidents, or 35% of Massachusetts' 2005 one- and two-family fires.

Over 1/3 of Failed Detectors Had Missing or Disconnected Batteries
Of the 172 fires where smoke detectors were present but failed to operate, 60, or 35%, failed because the batteries were either missing or disconnected. Sixteen (16), or 9%, did not operate because of dead batteries. Thirteen (13), or 8%, failed because of a power failure, shutoff or disconnect. Six (6), or 3%, failed from improper installation or placement. Five (5) units (3%) failed because they were defective. Four (4) detectors, or 2%, failed from a lack of maintenance. For 68 cases, or 40%, the reason the detector failed was not determined.

Detectors Required in All One- and Two-Family Homes
If adopted as a local ordinance, Massachusetts General Law Chapter 148, Section 26E (a) requires owners of existing one- and two-family homes built before 1975 to install smoke detectors outside each separate sleeping area and on the ceiling of each stairway leading to a floor above. Section 26F requires the seller of existing one- and two- family homes to equip the structure with approved smoke detectors as provided in section 26E. The state building code requires all one- and two-family homes constructed after 1975 are required to have hardwired, interconnected smoke detectors outside each separate sleeping area and on the ceiling of each stairway leading to a floor above. In 1997 this was amended by requiring all newly constructed one- and two-family homes and any additions that included a bedroom to include requiring installing smoke detectors in all bedrooms per the Commonwealth's Building Code - 780 CMR 3603.16.10.

No AES Present in 99% of One- and Two-Family Structure Fires
In 2005, in three, or less than 1%, of these incidents an automatic extinguishing system (AES) was present and operated effectively. In two, or less than 1% of the incidents, the fire was too small to activate the system. In 99% of the cases where AES status was known, there were no systems.

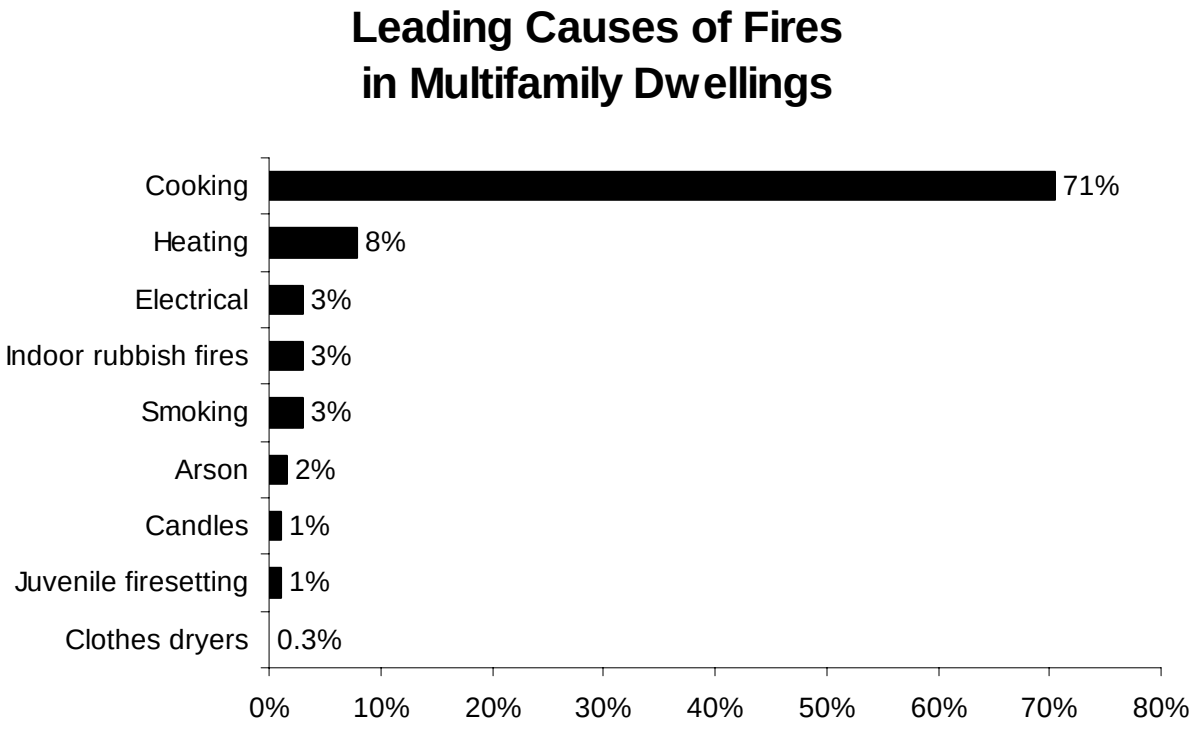
Multifamily Home Fires

5,095 Fires, 15 Civilian Deaths & $44 Million in Damage
Five thousand and ninety-five (5,095), or 42%, of the Commonwealth's 12,000 residential structure fires occurred in multifamily dwellings in 2005. These 5,095 fires caused 15 civilian deaths, 114 civilian injuries, 160 fire service injuries, and an estimated dollar loss of $44 million. The average dollar loss per fire was $8,629. Fires in apartments were up 6% from 4,790 in 2004.

[12] These represent confined fires where it was reported that the detector did not alert the occupants.

This residential occupancy category includes apartments, condominiums, townhouses, rowhouses and tenements.

Unsafe Cooking Caused Almost 3/4 of Apartment Fires
Seventy-one percent (71%) of the fires in apartments were caused by unsafe cooking in 2005. Heating accounted for 8% of apartment fires. Electrical problems, indoor rubbish fires, and smoking were each responsible for 3% of these fires. Arson accounted for 2% of apartment fires. Candles and juvenile-set fires each caused 1% of the fires in these dwellings. Clothes dryer fires caused less than 1% of the fires in multifamily homes.



73% of Apartment Fires Started in the Kitchen
For apartment fires where area of origin is known, 73% started in the kitchen. Seven percent (7%) began in the heating room or area; 3% started in the bedroom; and 1% each started in living rooms, laundry rooms and in bathrooms.

76% of Multifamily Home Fires Confined to Non-Combustible Containers[13]
Three thousand eight hundred and eighty (3,880), or 76% of all structure fires in multifamily homes, were reported as confined to non-combustible containers in 2005.

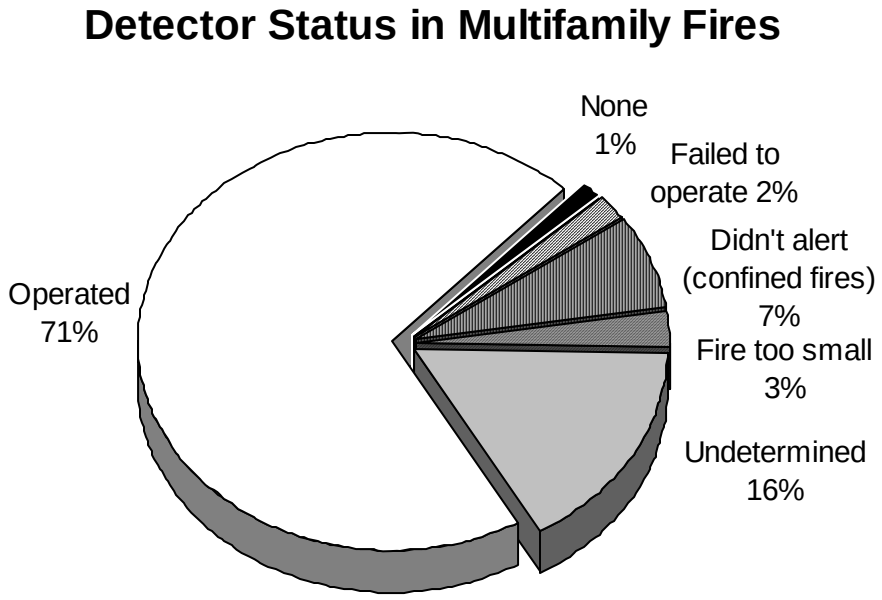
[13] In MFIRS v5 a fire in a building contained to a non-combustible container (Incident Type = 113-118) does not have to have a Fire Module completed. Therefore the following data fields do not need to be completed: Area of Origin, Detector Status, Item First Ignited, Heat Source, Factors Contributing to Ignition, Cause of Ignition, and Equipment Involved In Ignition. These incidents are not included in the analysis of these fields.

Three thousand three hundred and sixty-three (3,363) were cooking fires contained to a non-combustible container accounting for 66% of all the multifamily dwelling fires in 2005. Three hundred and thirty-one (331), or 6%, were fires confined to a fuel burner or boiler malfunction. One hundred and forty-eight (148), or 3%, of these fires were contained rubbish fires. Twenty-six (26), or 1%, of apartment fires reported in 2005 were fires confined to a chimney or flue. Eight (8), or less than 1%, were commercial compactor fires confined to the garbage; and four incinerator overloads or malfunctions contributed less than 1% to the multifamily home fires in 2005.

Confined fires in apartments increased by 318 incidents, or 9%, from the 3,562 reported in 2004.

Detectors Alerted Occupants in Almost 3/4 of Fires

Smoke or heat detectors operated and alerted the occupants in 3,583, or nearly three-quarters (71%), of the multifamily fires in 2005. In 7% of these fires[14], the detectors did not alert the occupants. Detectors were present but did not operate in 2% of these incidents. In 1% of these fires, no detectors were present at all. The fire was too small to trigger the detector in 3% of these residential fires. Smoke detector performance was undetermined in 835 incidents, or 16% of Massachusetts' 2005 multifamily fires.



[14] These represent confined fires where it was reported that the detector did not alert the occupants.

1/4 of Failed Detectors Failed Due to Missing Batteries
Of the 102 fires where smoke detectors were present but failed to operate, 24, or 24%, failed because the batteries were either missing or disconnected. Twelve (12), or 12%, failed because of a power failure, shutoff or disconnect. Six (6), or 6%, didn't operate because of a lack of maintenance. Five (5) detectors, or 5%, failed due to improper installation or placement. Three (3), or 3%, did not operate because of dead batteries. Two units (2%) failed because they were defective. For 50 cases, or 49%, the reason the detector failed was not classified or undetermined.

Apartments with Six+ Units Must Have Hard-Wired Detectors
According to Massachusetts General Law Chapter 148, Section 26C, apartment houses containing six or more units must be equipped with hard-wired smoke detectors. In buildings of three to five dwelling units, the detectors may be hard-wired or battery operated inside the units themselves. Detectors in common hallways and basements must be hard-wired.

AES Present in Only 8% of Multifamily Dwelling Fires
Automatic extinguishing systems (AES) were present and operated effectively in 42, or 2% of the 1,256 multifamily dwelling fires where system status was known in 2005. In four of the fires, less than 1%, the AES did not operate. In two, or less than 1% of these incidents an AES was present but did not operate effectively. In 51, or 4%, of these incidents, the fire was too small to activate the system. In 1,157, or 93%, of the cases, there were no systems present or installed. In 55 incidents, AES status was unknown. These fires were excluded from the percentage calculations.

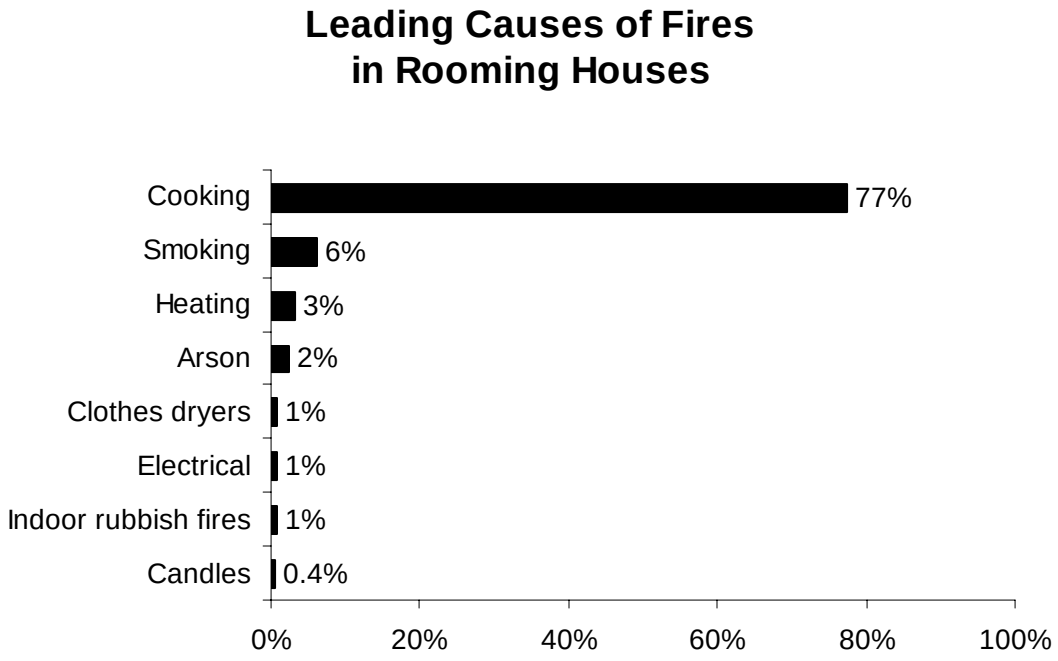
Apartments More Likely to Have Sprinklers Installed
Apartments are more likely than single-family dwellings to have sprinklers installed. Newly constructed apartments with three or more units are required by building codes to have them installed. Also, apartments are likely to be found in high-rise buildings that were required to be retrofitted with sprinklers by March 1998. Sprinklers were present in 8% of multifamily fires, but in less than 1% of fires in one- and two-family dwellings.

In 1998, the State Building Code required all newly built or substantially renovated apartments with common egresses to be sprinklered.

Rooming House Fires

247 Fires, 5 Civilian Injuries, 1 Fire Service Injury & $550,555 in Damages
Two hundred and forty-seven (247) rooming, lodging, and boarding house fires were reported to the Massachusetts Fire Incident Reporting System (MFIRS) in 2005. These 247 fires caused five civilian injuries, one firefighter injury and an estimated $550,555 in damages. The average dollar loss per fire was $2,229. Two percent (2%) of the 12,000 residential structure fires in 2005 occurred in rooming, boarding, or lodging houses. Fires in rooming houses were up 12% from 220 in 2004.

Cooking Caused Over 3/4 of Rooming House Fires
Of the 247 incidents in rooming houses, cooking caused 77%, or more than three-quarters of these fires. The unsafe use and disposal of smoking materials was the next significant cause, igniting 6%, of the rooming house fires. Heating equipment accounted for 3% of these fires. Arsons caused 2% of these fires. Clothes dryers, electrical problems and indoor rubbish fires each caused 1% of these incidents. Candles accounted for less than 1% of the fires in rooming houses in 2005.



78% of Rooming House Fires Started in the Kitchen
Seventy-eight percent (78%) of rooming house fires started in the kitchen. Nine percent (9%) started in the bedroom, 4% started in heating equipment rooms, and 1% each began in the bathroom and living room.

81% of Rooming House Fires Were Confined to Non-Combustible Containers[15]
Two hundred (200), or 81% of all structure fires in rooming houses, were reported as confined to non-combustible containers in 2005. One hundred and eighty-six (186) were cooking fires contained to a non-combustible container accounting for 75% of all the fires in rooming or boarding houses in 2005. Eight (8), or 3%, were fires confined to a fuel burner or boiler malfunction. Five (5) fires, accounting for 2% of rooming house fires were confined indoor rubbish fires.

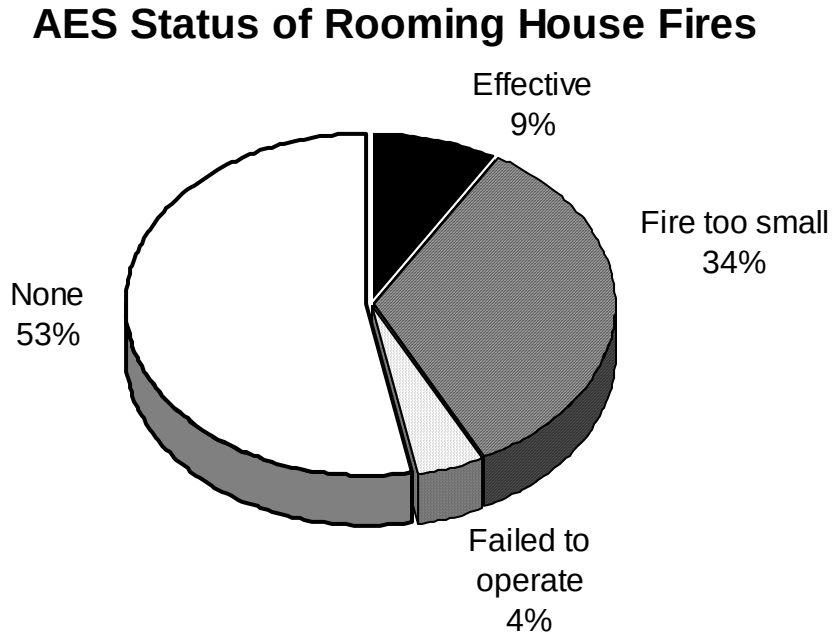
[15] In MFIRS v5 a fire in a building contained to a non-combustible container (Incident Type = 113-118) does not have to have a Fire Module completed. Therefore the following data fields do not need to be completed: Area of Origin, Detector Status, Item First Ignited, Heat Source, Factors Contributing to Ignition, Cause of Ignition, and Equipment Involved In Ignition. These incidents are not included in the analysis of these fields.

Confined fires in rooming houses increased by 23 incidents, or 13%, from the 177 reported in 2004.

Detectors Alerted Occupants in 85% of Fires
Smoke or heat detectors operated and alerted the occupants in 213, or 85%, of the rooming house fires in 2005. In 2% of these fires[16], the detectors did not alert the occupants. Detectors were present but did not operate in 2% of these incidents. In 1% of these fires, no detectors were present at all. The fire was too small to trigger the detector in 1% of these residential fires. Smoke detector performance was undetermined in 21 incidents, or 9% of Massachusetts' 2005 rooming house fires.

Smoke detectors are required in rooming houses. Local communities may elect to adopt the provisions of Massachusetts General Law Chapter 148, Section 26H. This law mandates an adequate system of automatic sprinklers in every lodging or boarding house in the community. Sprinklers must be installed within five years after the provision is accepted. This was enacted after 15 people died in a Beverly rooming house fire on July 4, 1984.

The decline in rooming house fires, especially fatal rooming house fires, is one of the great fire prevention success stories. Prior to the passage of Massachusetts General Law Chapter 148 Section 26H, rooming houses were known as "death traps' because of the large number of fire deaths that occurred in them every year. This is no longer true.

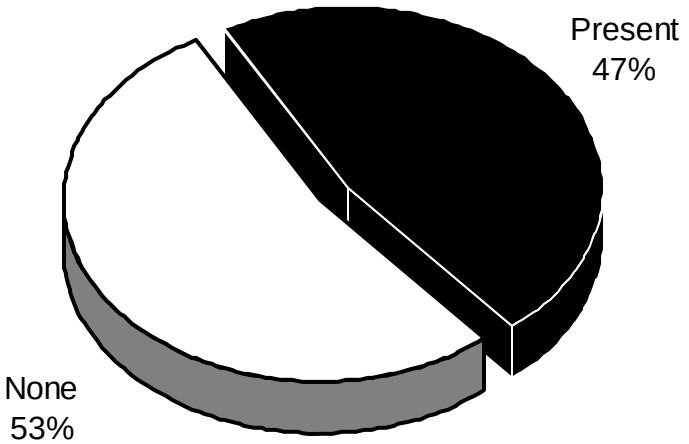


[16] These represent confined fires where it was reported that the detector did not alert the occupants.

1/4 Detector Failed Due to Missing or Disconnected Battery
Of the four fires where smoke detectors were present but failed to operate, one, or 25%, failed because the batteries were either missing or disconnected. One (1), or 25%, failed because of a power failure, shutoff or disconnect. Another detector, or 25%, failed due to improper installation or placement. In another case, or 25%, the reason the detector failed was not classified or undetermined.

AES Present in 47% of Rooming House Residential Structure Fires
AES were reported present in 22, or 47%, of the 47 rooming house fires where AES presence was known. In the other 25 incidents (53%) there were no systems present.

AES Presence in Rooming House Fires



AES Effective in 9% of Rooming House Structure Fires
The fire was too small to activate the automatic extinguishing system (AES) in 34% of the 47 rooming house structure fires in 2005 where AES status was known. In 9% of rooming house fires systems were present and operated effectively. In 4% of these incidents the AES failed to operate. In 53% of the cases, a system had not been installed. AES status was unknown in four incidents.

Hotel and Motel Fires

114 Fires and $230,125 in Damages
One hundred and fourteen (114) structure fires in hotels, motels and home hotels caused $230,125 in estimated property damage. The average dollar loss per fire was $2,019. In 2005, 1% of the 12,000 residential structure fires occurred in hotels, motels, or home hotels. Fires in hotels and motels were down 3% from 117 in 2004.

Cooking Caused Over 1/2 of Hotel & Motel Fires
Of the 117 fires in hotels and motels in 2005, cooking was the leading cause, accounting for 58%, or more than half, of the fires in this occupancy. Heating equipment was responsible for 10% of these fires. Indoor rubbish fires accounted for 5% of these fires. Clothes dryers and electrical problems each caused 4% of the hotel and motel fires. Candles accounted for 1% of hotel and motel fires in 2005.

Over 1/2 of Hotel and Motel Fires Started in the Kitchen
For hotel and motel fires where area of origin is known, 58%, or more than half, of the fires started in the kitchen. Four percent (4%) of these fires began in heating rooms or areas. Another (4%) of these fires began in the laundry room. Three percent (3%) of these fires each started in the attic or an unclassified service or equipment area.

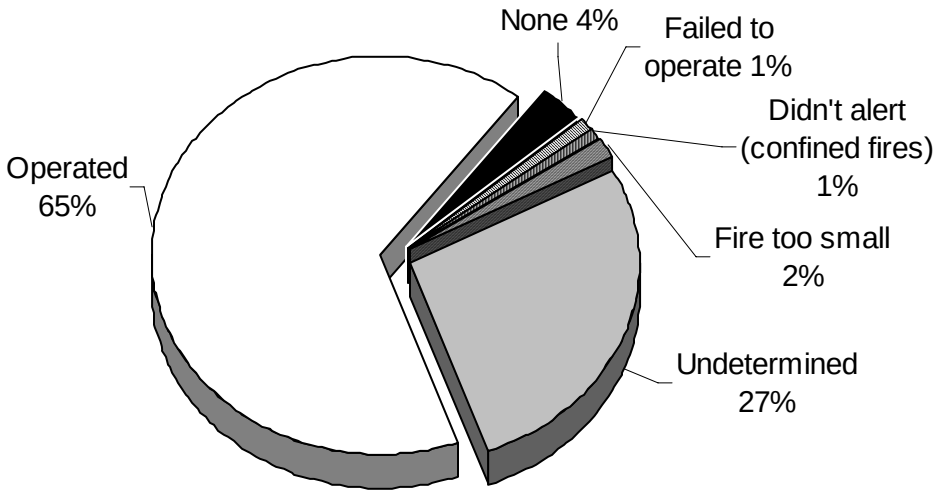
Almost 3/4 of Hotel or Motel Fires Confined to Non-Combustible Containers[17]
Eighty-two (82), or 72% of all structure fires in hotels and motels, were reported as confined to non-combustible containers in 2005. Sixty-four (64) were cooking fires contained to a non-combustible container accounting for 56% of these fires. Indoor rubbish fires caused eight, or 7%, of the hotel and motel fires in 2005. Six (6), or 5%, of hotel or motel fires in 2005 were confined to a chimney or flue. Four (4), or 3%, of the fires in hotels or motels were confined to a fuel burner or boiler malfunction.

[17] In MFIRS v5 a fire in a building contained to a non-combustible container (Incident Type = 113-118) does not have to have a Fire Module completed. Therefore the following data fields do not need to be completed: Area of Origin, Detector Status, Item First Ignited, Heat Source, Factors Contributing to Ignition, Cause of Ignition, and Equipment Involved In Ignition. These incidents are not included in the analysis of these fields.

The number of contained fires rose in 2005. Confined fires in hotels and motels increased by seven incidents, or 9%, from the 75 reported in 2004.

Detectors Alerted Occupants in Almost 2/3 of Fires
Smoke or heat detectors operated and alerted the occupants in 75, or 65%, of the hotel or motel fires in 2005. In 1% of these fires[18], the detectors did not alert the occupants. Detectors were present but did not operate in 1% of these incidents. In 4% of these fires, no detectors were present at all. The fire was too small to trigger the detector in 2% of these residential fires. Smoke detector performance was undetermined in 31 incidents, or 27% of Massachusetts' 2005 hotel or motel fires.

Detector Status in Hotel & Motel Fires



Undetermined Why Detector Failed
It was undetermined why the smoke detector that was reported to have failed to operate was inoperable.

AES Absent in 42% of Hotel and Motel Residential Structure Fires
Automatic extinguishing systems (AES) were present and operated effectively in five, or 17%, of the 29 hotel and motel structure fires in 2005 where AES status was known. In one instance, or 3%, the system activated but was ineffective in suppressing the fire. In 10, or 35%, of these incidents, the fire was too small to activate the system. In one, or 3%, the system failed to operate. In 12, or 42%, of the cases, there was no AES system. AES performance was not classified for four incidents.

[18] These represent confined fires where it was reported that the detector did not alert the occupants.

Federal Hotel and Motel Fire Safety Act of 1990 Implemented in Massachusetts
The Federal Hotel and Motel Fire Safety Act of 1990 was implemented in Massachusetts in 1992. To increase the level of fire safety in hotels and motels, this act limits travel by federal employees to properties meeting certain fire safety standards. Each guestroom must be equipped with a hard-wired, single-station smoke detector installed in accordance with the National Fire Protection Association (NFPA) Standard 72. Hotels and motels over three stories in height must also be protected by an automatic sprinkler system installed in the sleeping area of each room in accordance with NFPA Standard 13 or 13R.

Only properties that meet the fire safety standards are listed in the Federal Travel Directory used by federal employees to select lodging while on official business.

The last provision of this act took effect on October 1, 1996. At that time, 90% of all travel nights by federal employees must be in 'approved accommodations.' The Congressional authors of the act have clarified the term 'place of public accommodation,' to include hotels and motels and all such meeting and sleeping facilities except those specifically exempted. Private conference centers are now included. Meetings funded wholly or in part by federal funds are subject to this requirement. For a list of certified hotels go to the U.S. Fire Administration's website at http://www.usfa.fema.gov/appplications/hotel.

Despite the federal goal of attempting to improve life safety in hotels and motels, the sprinkler provision only applies to buildings over three stories. In the 27 hotel fires that reported having no AES, 19, or 70%, were three stories or less.

State Regulations Require Quarterly Innholder Inspections
State regulations require local fire departments to conduct quarterly inspections of the premises specified in inn holder licenses.

Hotel-Motel Safety
It is important to consider fire safety when selecting accommodations.

- Choose lodging equipped with sprinklers and smoke detectors in each room.
- If you are hearing impaired, you may request a room with an appropriate smoke detector with a flashing strobe light.
- Think about fire safety when checking into a hotel or motel. Count the number of doors down the hall to the nearest fire exit staircase. Remember to never use the elevator in case of fire. Travelers should test the smoke detector in their room.
- It is recommended that you keep the room key, eyeglasses and a flashlight on the night table. If a fire occurs or a fire alarm sounds, take them with you and go out the door. However before opening the door, test the door with the back of your hand. If the door feels cool, open the door a crack. Be ready to close the door if hot air, flames, or smoke rush through the crack. If this does not occur, yet the hall is hazy with smoke, crawl down the hall counting the doors to the nearest stairway exit. If this exit cannot be reached, turn around and count the doors back to your room. Unlock the door and re-enter.

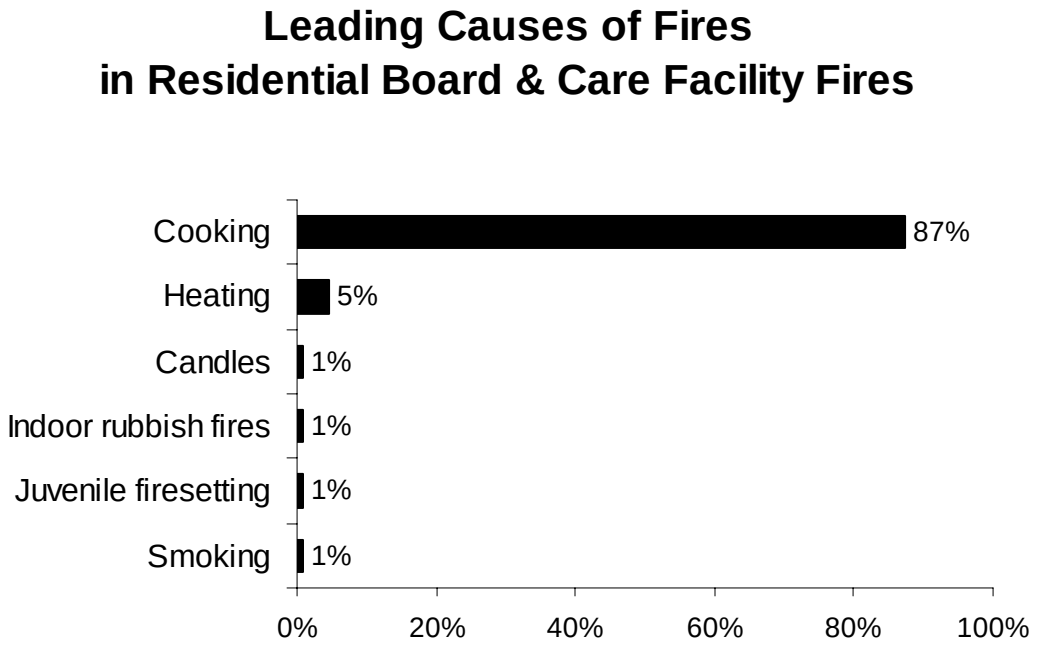
- If it is unsafe to leave the room during a fire:
  Fill the tub with cold water; stuff wet towels around the door to keep the smoke out; if possible, open a window and hang a sheet outside to signal for help; cover your face with a wet cloth and stay low if smoke gets in the room; do not jump.

Residential Board & Care Fires

127 Fires Caused $307,225 in Damages
One hundred and twenty-seven (127) residential board and care structure fires caused an estimated dollar loss of $307,225 in damages. The average dollar loss per fire was $2,419. In 2005, 1% of the 12,000 residential structure fires occurred in residential board and care buildings. Fires in residential board and care facilities were up 15% from 110 in 2004.

This Property Use code includes long term health care facilities, halfway houses and assisted care housing facilities. It excludes nursing homes.

Cooking Accounted for Almost 9 Out of Every 10 Residential Board & Care Fires
Cooking accounted for almost nine out of every 10 residential board and care fires. In the 127 incidents of residential board and care structure fires, the leading cause was cooking, accounting for 111 incidents, or 87%, of the fire incidents. Heating equipment caused six, or 5%, of these fires. Candles, indoor rubbish fires, juvenile-set fires and smoking each accounted for one, or 1%, of the fires in residential board and care facilities in 2005.

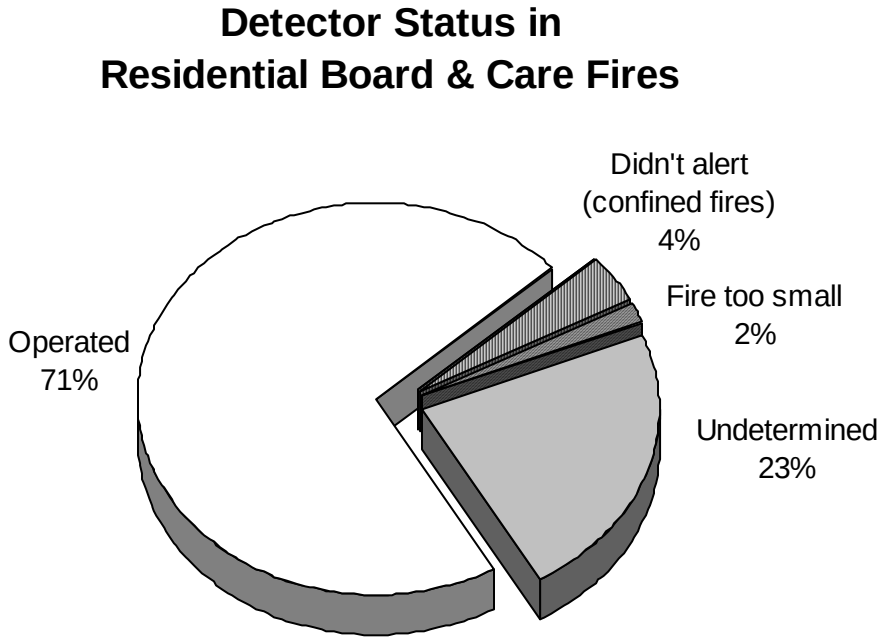


89% of Residential Board & Care Fires Started in the Kitchen
Of the 127 residential board and care building fires, 113, or 89%, started in the kitchen. Six (6), or 5%, began in a heating room or area. Two (2), or 2% began in the bathroom; and one each began in a living room, a bedroom and a ceiling and attic floor assembly area.

91% of Board & Care Fires Confined to Non-Combustible Containers[19]
One hundred and sixteen (116), or 91% of all structure fires in residential board and care facilities, were reported as confined to non-combustible containers in 2005. One hundred and nine (109) were cooking fires contained to a non-combustible container accounting for 86% of these fires. Five (5), or 4%, of the fires in residential board and care facilities was confined to a fuel burner or boiler malfunction. Two (2), or 2%, of these fires were contained rubbish fires.

The number of contained fires rose in 2005. Confined fires in residential board and care facilities increased by 14 incidents, or 14%, from the 102 reported in 2004.

Detectors Alerted Occupants in Almost 3/4 of Fires
Smoke or heat detectors operated and alerted the occupants in 91, or nearly three-quarters (71%), of the residential board and care facility fires in 2005. In 4% of these fires[20], the



[19] In MFIRS v5 a fire in a building contained to a non-combustible container (Incident Type = 113-118) does not have to have a Fire Module completed. Therefore the following data fields do not need to be completed: Area of Origin, Detector Status, Item First Ignited, Heat Source, Factors Contributing to Ignition, Cause of Ignition, and Equipment Involved In Ignition. These incidents are not included in the analysis of these fields.

detectors did not alert the occupants. The fire was too small to trigger the detector in 2% of these residential fires. Smoke detector performance was undetermined in 29 incidents, or 23% of Massachusetts' 2005 residential board and care facility fires.

No AES in 58% of Residential Board & Care Structure Fires
Automatic extinguishing systems (AES) were present in five, or 42%, of the 12 residential board and care structure fires where AES presence was known. In two incidents, or 17%, the system operated effectively. In three, or 25%, of these incidents, the fire was too small to activate the system. In five, or 58%, of these incidents there were no systems present. In one, or 8%, of the incidents an AES was present but it was undetermined if it operated.

Dormitory Fires

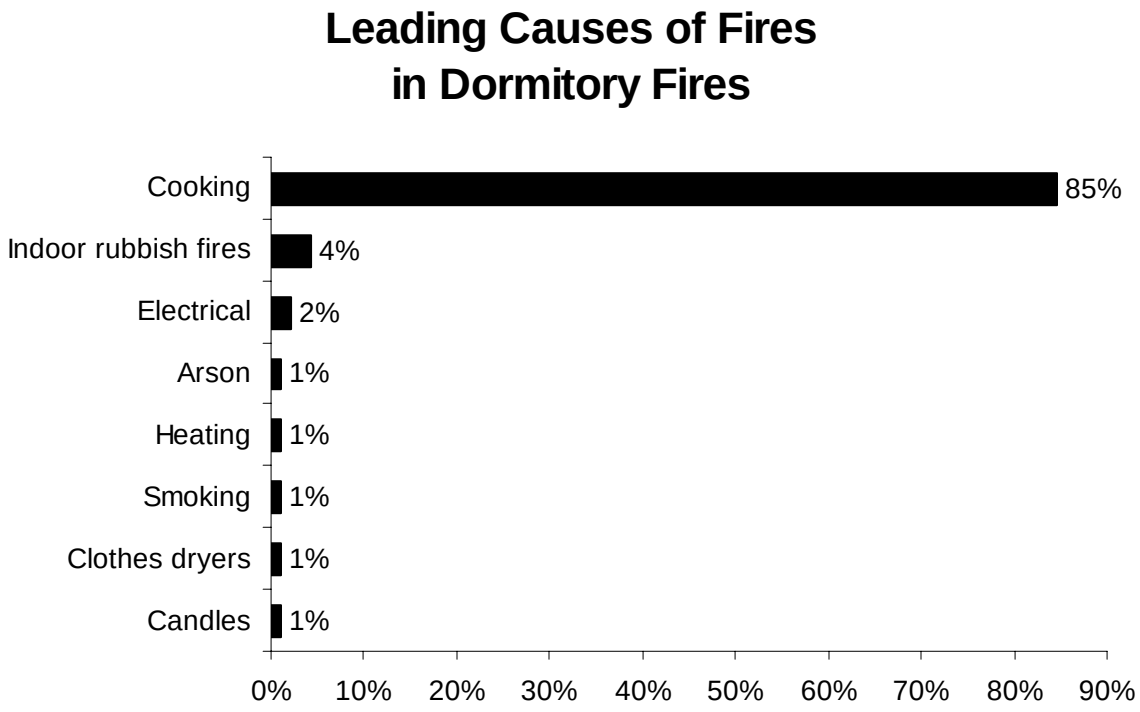
324 Fires, 7 Fire Service Injuries & $5.7 Million in Damages
Three hundred and twenty-four (324) dormitory structure fires caused seven fire service injuries and an estimated dollar loss of $5.7 million in damages. The average dollar loss per fire was $17,589. In 2005, 3% of the 12,000 residential structure fires occurred in dormitories. Fires in dormitories were up 31% from 247 in 2004.

Large Loss Dormitory Fire - $5 Million
On April 6, 2005, at 1:23 p.m., the Boston Fire Department was called to a fire in a six story, 20-unit dormitory building. The fire was caused when a spark or ember from the heating equipment ignited some paper in boxes in the heating room. No one was injured in this fire. Detectors were present and alerted the occupants of the building. Sprinklers were present but it was not reported if they functioned properly. Damages were estimated to be $5 million.

There was also a fire in a fraternity house in Worcester that caused $600,000 in estimated damages. These two fires were responsible for 98% of the total dollar loss for Massachusetts dormitory fires in 2005.

Cooking Accounted for 85% of Dormitory Fires
In the 324 incidents of dormitory fires, the leading cause was cooking, accounting for 274, or 85%, of these fires. Indoor rubbish fires were responsible for 4% of these incidents. Electrical problems accounted for 2% of these fires. Arson, heating equipment, smoking, clothes dryers and candles each accounted for 1% of the fires in Massachusetts dormitories in 2005.

[20] These represent confined fires where it was reported that the detector did not alert the occupants.



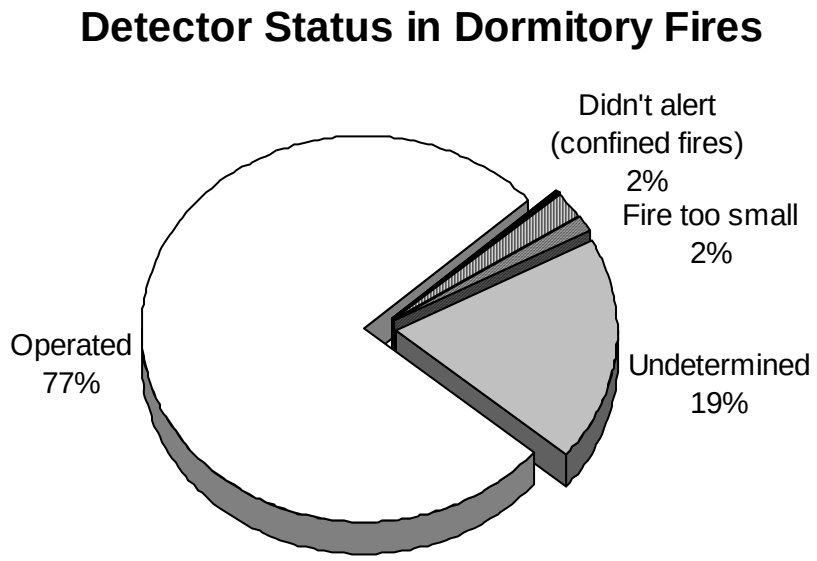
86% Dormitory Fires Started in the Kitchen
For dormitory fires, 86% of the fires started in the kitchen. Two percent (2%) began in bedrooms; and 1% each originated in the living room, heating area, or laundry area.

88% of Dormitory Fires Confined to Non-Combustible Containers[21]
Two hundred and eighty-six (286), or 88% of all structure fires in dormitories, were reported as confined to non-combustible containers in 2005. Two hundred and sixty-eight (268) were cooking fires[22] contained to a non-combustible container accounting for 83% of all dormitory fires. Indoor rubbish fires accounted for 15, or 5% of the fires in dormitories in 2005. It may be surmised that many if not all of these occurred in a bedroom and may have been caused by the careless disposal of smoking material. Three (3), or 1%, of fires in Massachusetts' dormitories in 2005 were confined to a fuel burner or boiler malfunction.

The number of contained fires rose in 2005. Confined fires in dormitories increased by 77 incidents, or 37%, from the 209 reported in 2004.

[21] In MFIRS v5 a fire in a building contained to a non-combustible container (Incident Type = 113-118) does not have to have a Fire Module completed. Therefore the following data fields do not need to be completed: Area of Origin, Detector Status, Item First Ignited, Heat Source, Factors Contributing to Ignition, Cause of Ignition, and Equipment Involved In Ignition. These incidents are not included in the analysis of these fields.
[22] Usually it is assumed that confined cooking fires occur in the kitchen. However, it is our belief that in dormitory fires, the vast majority of these fires occur in the students' bedrooms.

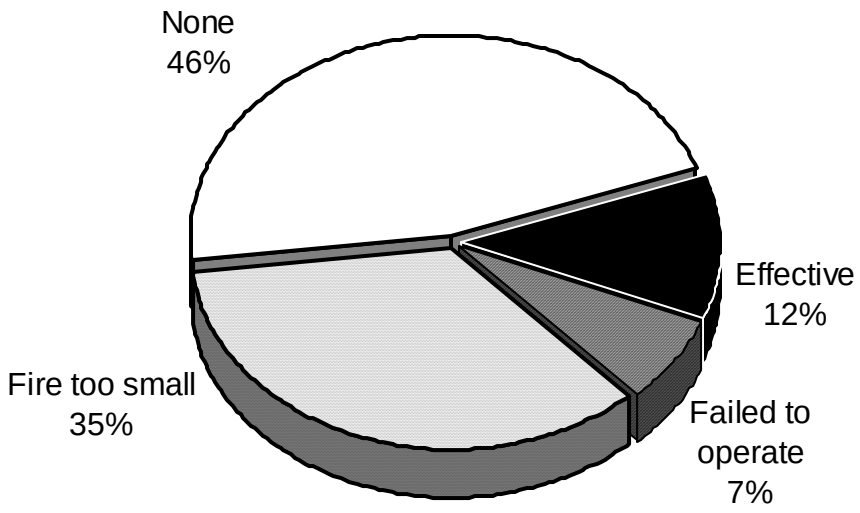
Detectors Alerted Occupants in Over 3/4 of Fires
Smoke or heat detectors operated and alerted the occupants in 250, or 77%, of the dormitory fires in 2005. In 2% of these fires[23], the detectors did not alert the occupants. The fire was too small to trigger the detector in 2% of these residential fires. Smoke detector performance was undetermined in 61 incidents, or 19% of Massachusetts' 2005 dormitory fires.



AES Present in Over 1/2 of Dormitory Fires
Automatic extinguishing systems (AES) were present and operated effectively in 12% of the 43 structure fires in dormitories where AES status was known. In 35% of these incidents, the fire was too small to activate the system. In 7% of these incidents the system failed to operate. In just under half of these fires, 46%, there were no systems present. Three (3) incidents were not classified. These percentages were calculated without these incidents.

[23] These represent confined fires where it was reported that the detector did not alert the occupants.

AES Status in Dormitory Fires



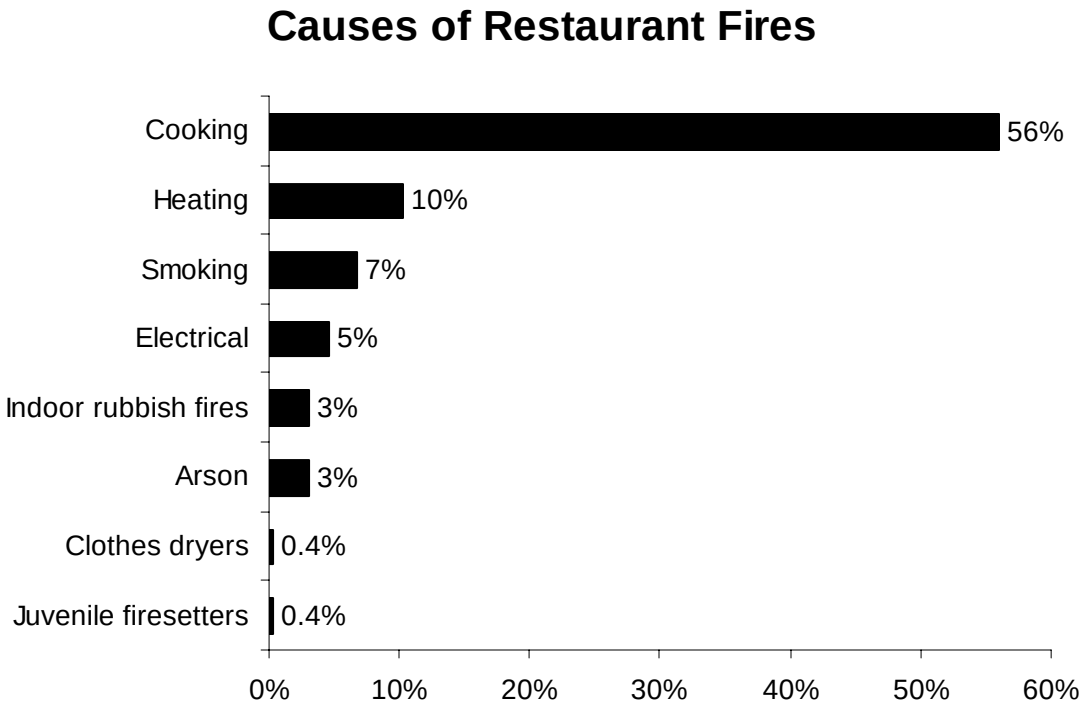
Restaurant Fires

280 Fires, 3 Civilian Injuries, 10 Firefighter Injuries, $5 Million in Damages

Two hundred and eighty (280) structure fires in 2005 occurred in restaurants and other eating and drinking establishments, causing three civilian injuries, 10 firefighter injuries, and an estimated dollar loss of $5 million. The average dollar loss per fire was $17,636. In 2005, 2% of the 14,662 structure fires in Massachusetts occurred in restaurants. Fires in restaurants were up 11% from 252 in 2004.

56% of Restaurant Fires Caused by Cooking

Cooking caused 56% of the restaurant fires; heating equipment caused 10%; smoking accounted for 7% of these fires; electrical problems caused 5%; indoor rubbish fires were responsible for 3% of these fires; another 3% were considered intentionally set; and clothes dryers and juvenile-set fires were each the cause of less than 1% of the fires in restaurants in 2005.



60% of Restaurant Fires Started in the Kitchen
Sixty percent (60%) of the 280 fires in restaurants, started in the kitchen. Five percent (5%) each began in a heating room or area, an exterior wall surface and in a chimney; and 2% of the fires in restaurants originated in a bathroom.

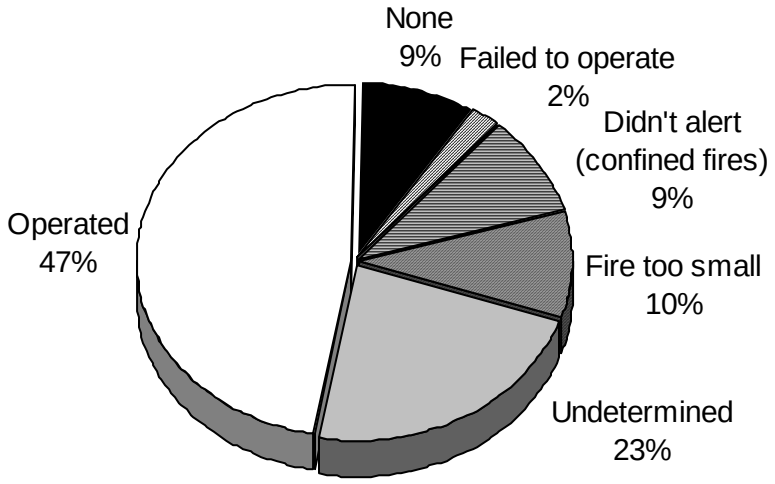
60% of Restaurant Structure Fires Confined to Non-Combustible Containers[24]
One hundred and sixty-nine (169), or 60% of all restaurant structure fires, were reported as confined to non-combustible containers in 2005. One hundred and thirty-two (132) were cooking fires contained to a non-combustible container accounting for 47% of restaurant structure fires. Thirteen (13), or 5%, of all restaurant structure fires reported in 2005 were fires confined to a chimney. Another 13, or 5%, were fires confined to a fuel burner or boiler malfunction. Nine (9), or 3%, of these fires were contained rubbish fires. In 2005 there were two fires confined to a commercial compactors accounting for 1% of restaurant fires.

The number of contained fires rose in 2005. Confined fires in restaurants increased by 18 incidents, or 10%, from the 154 reported in 2004.

[24] In MFIRS v5 a fire in a building contained to a non-combustible container (Incident Type = 113-118) does not have to have a Fire Module completed. Therefore the following data fields do not need to be completed: Area of Origin, Detector Status, Item First Ignited, Heat Source, Factors Contributing to Ignition, Cause of Ignition, and Equipment Involved In Ignition. These incidents are not included in the analysis of these fields.

Detectors Alerted Occupants in Almost 1/2 of Fires
Smoke or heat detectors operated and alerted the occupants in 133, or 47%, of the restaurant fires in 2005. In 9% of these fires[25], the detectors did not alert the occupants. Detectors were present but did not operate in 2% of these incidents. In 9% of these fires, no detectors were present at all. The fire was too small to trigger the detector in 10% of the restaurant fires. Smoke detector performance was undetermined in 63 incidents, or 23% of Massachusetts' 2005 restaurant fires.

Detector Status in Restaurant Fires

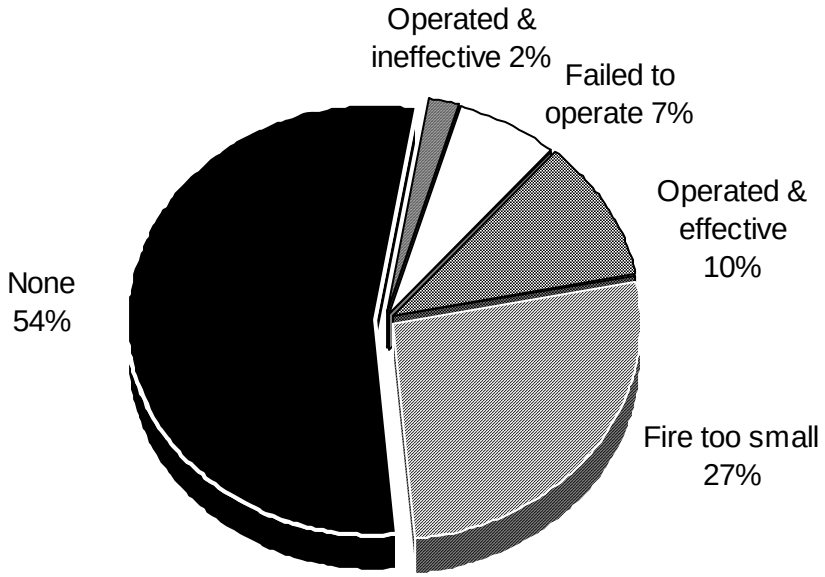


Restaurants Must Have Kitchen Exhaust & Fire Extinguishing Systems
According to Massachusetts 527 CMR 10.03 (8), restaurants must have commercial kitchen exhaust systems and fire extinguishing systems installed and maintained in accordance with NFPA 96 for any cooking equipment that produces grease-laden vapors. An automatic fire extinguishing system would be the primary protection and portable fire extinguishers would be used as a secondary backup. These systems are usually located in the direct vicinity of and specially designed for cooking equipment such as stoves, deep fryers and ovens

No AES in Over 1/2 of Restaurant Fires
Automatic extinguishing systems (AES) were present and operated effectively in 10% of the 105 restaurant fires where AES status was known. In 2% of these fires, systems were present but operated ineffectively. In 7% of these fires, an AES was present but did not operate. In 27% of these fires, the fire was too small to activate the system. No AES equipment was present in 54% of the restaurant fires in 2005. AES status was unknown in 15 incidents. These incidents were excluded from the percentage calculations.

[25] These represent confined fires where it was reported that the detector did not alert the occupants.

AES Status in Restaurant Fires



Largest Loss Restaurant Fire in Peabody

- On September 10, 2005, at 2:08 a.m. the Peabody Fire Department was called to a fire at a local restaurant of undetermined cause. No one was injured in this fire that caused $1.15 million in estimated damages. Heat detectors were present but it was undetermined if they operated properly. Sprinklers were not present in the building. This fire was the largest loss restaurant fire in the Commonwealth in 2005.

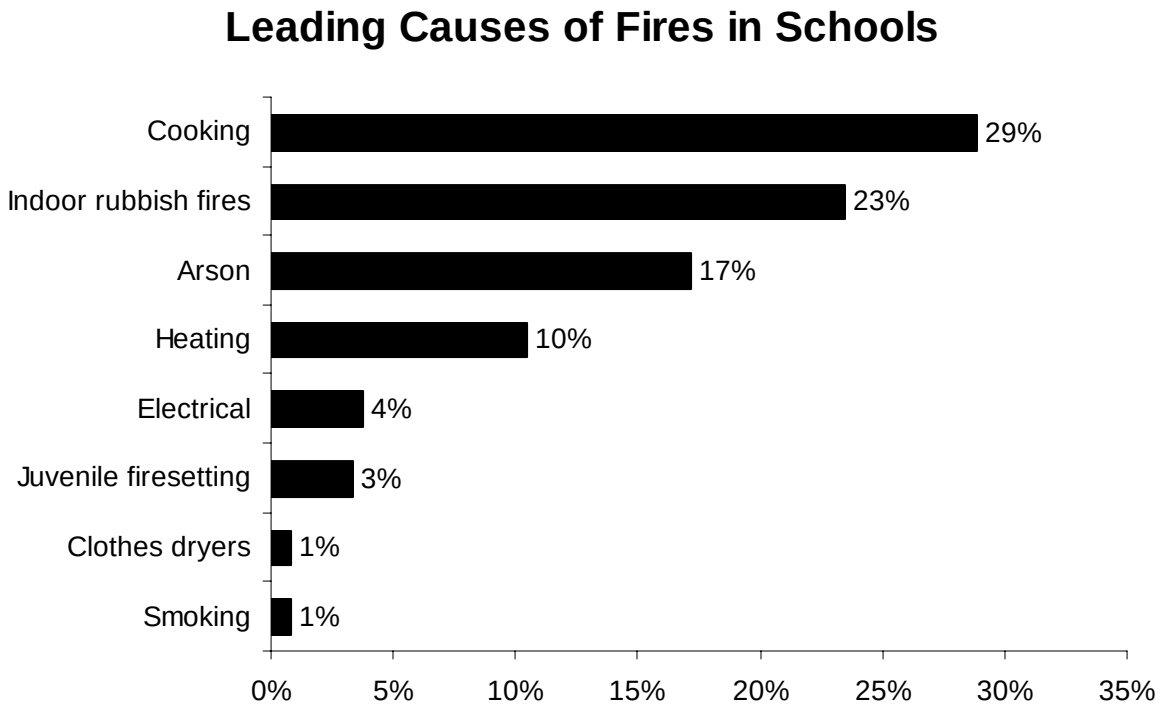
Bourne Had Largest Loss Restaurant Arson

- On January 4, 2005 at 5:03 a.m., the Bourne Fire Department was called to an arson fire at a restaurant. The fire began in a storage area in the basement. This blaze was the largest loss fire in this category of structure fires, with an estimated $600,000 worth of damage done. One firefighter was injured fighting this fire. It was undetermined if smoke detectors were present. Sprinklers were not present.

School Fires

239 Fires Caused 1 Civilian Injury & 4 Fire Service Injuries
Two hundred and thirty-nine (239) structure fires in schools[26] caused one civilian injury, four fire service injuries and $714,727 million in property damages. The average dollar loss per fire was $2,990. In 2005, 2% of the structure fires occurred in schools. Fires in schools were up 6% from 226 in 2004.

Over 1/4 of School Fires Were Cooking Fires
Over one-quarter (29%) of the 239 fires reported to have occurred in Massachusetts schools were caused by cooking. Twenty-three percent (23%) of the school fires were confined indoor rubbish fires for which no causal information was reported[27]. Arson accounted for 17% of these fires. Problems with heating equipment accounted for 10% of these fires. Electrical problems caused 4%. Identified juvenile-set fires accounted for 3% of the fires in schools. Clothes dryers and smoking each caused 1% of the reported fires in schools in 2005. Smoking by students and faculty is generally prohibited in schools.



[26] School fires include version 5 Property Use codes 210 – Schools, non-adult, 211 – Preschool, 213 – Elementary school, including kindergarten, and 215 – High school/junior high school/middle school.
[27] Confined fires, like indoor rubbish fires, do not require causal information to be completed. However some reports do include this information and we are able to classify these fires as other types of fires like arsons or juvenile-set fires.

28% of School Fires Started in the Kitchen
Twenty-eight percent (28%) of the fires in schools started in kitchens; 9% started in a heating room or area; another 9% began in a bathroom; 3% started in assembly areas without seats; 2% started in ducts, and another 2% began in unclassified storage areas.

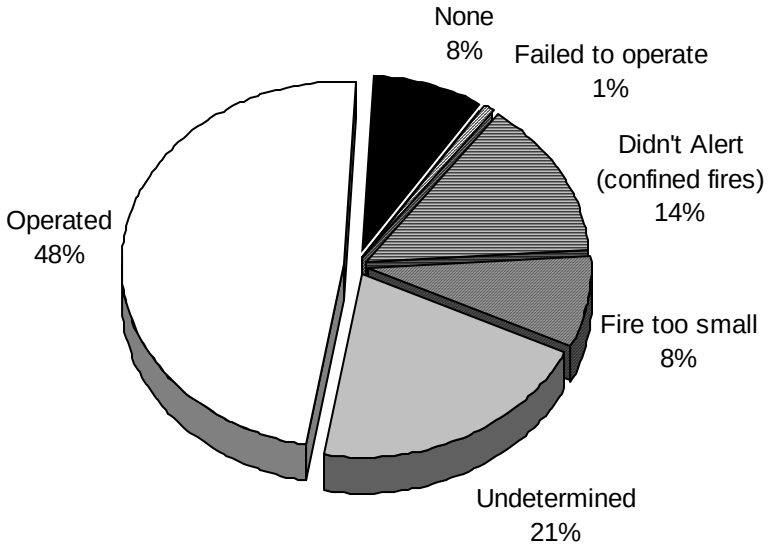
Area of Ignition for Confined Indoor Rubbish Fires is Not Required to be Reported
The area of ignition for confined indoor rubbish fires is not required to be reported. Beginning in September of 2006 with Chapter 80 of the Acts of 2006, An Act Relative to the Reporting of Fires in School, "…any school that provides instruction to pupils in any of grades 1 to 12, shall immediately report any incident involving the unauthorized ignition of any fire within the school building or on school grounds to the local fire department." Upon receipt of this report from the school, the local fire department must then complete an MFIRS report. It is our belief that this new statute will generate a substantial increase in reported fires in schools and will allow us to have a better understanding of where and how these fires are taking place.

Over 2/3 of School Structure Fires Confined to Non-Combustible Containers[28]
One hundred and sixty-one (161), or 67% of all school structure fires, were reported as confined to non-combustible containers in 2005. Seventy-three (73), or 31%, of all school fires were contained rubbish fires. Of these 73 confined rubbish fires, 14 were considered intentionally set or arson, one was determined to be set by juveniles, one was caused by the improper disposal of smoking materials; and one was caused by the chemical reaction, spontaneous combustion. For 56 of these confined rubbish fires, no causal information was reported. Sixty-seven (67) were cooking fires contained to a non-combustible container accounting for 28% of school fires. Twenty-one (21), or 9%, were fires confined to a fuel burner or boiler malfunction. Confined fires in schools increased by 18 incidents, or 13%, from the 143 reported in 2004.

Detectors Alerted Occupants in Almost 1/2 of Fires
Smoke or heat detectors operated and alerted the occupants in 115, or 48%, of the school fires in 2005. In 14% of these fires[29], the detectors did not alert the occupants. Detectors were present but did not operate in 1% of these incidents. In 8% of these fires, no detectors were present at all. The fire was too small to trigger the detector in 8% of the residential fires. Smoke detector performance was undetermined in 50 incidents, or 21% of Massachusetts' 2005 school fires.

[28] In MFIRS v5 a fire in a building contained to a non-combustible container (Incident Type = 113-118) does not have to have a Fire Module completed. Therefore the following data fields do not need to be completed: Area of Origin, Detector Status, Item First Ignited, Heat Source, Factors Contributing to Ignition, Cause of Ignition, and Equipment Involved In Ignition. These incidents are not included in the analysis of these fields.
[29] These represent confined fires where it was reported that the detector did not alert the occupants.

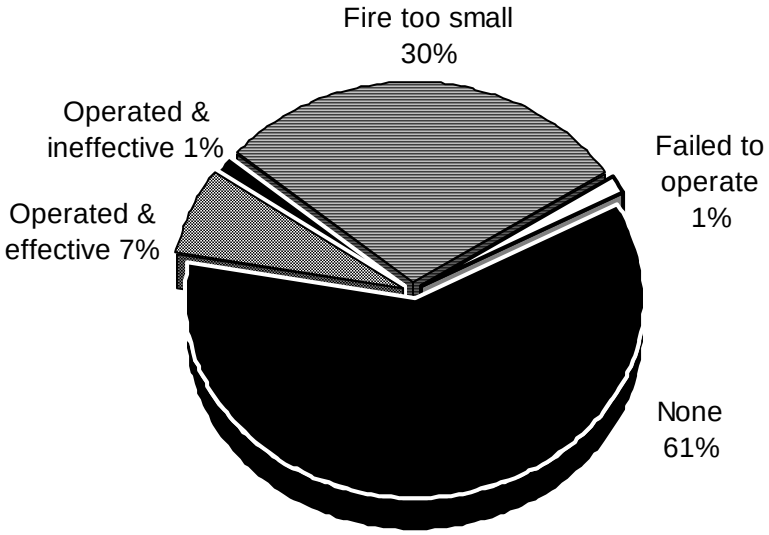
Detector Status in School Fires



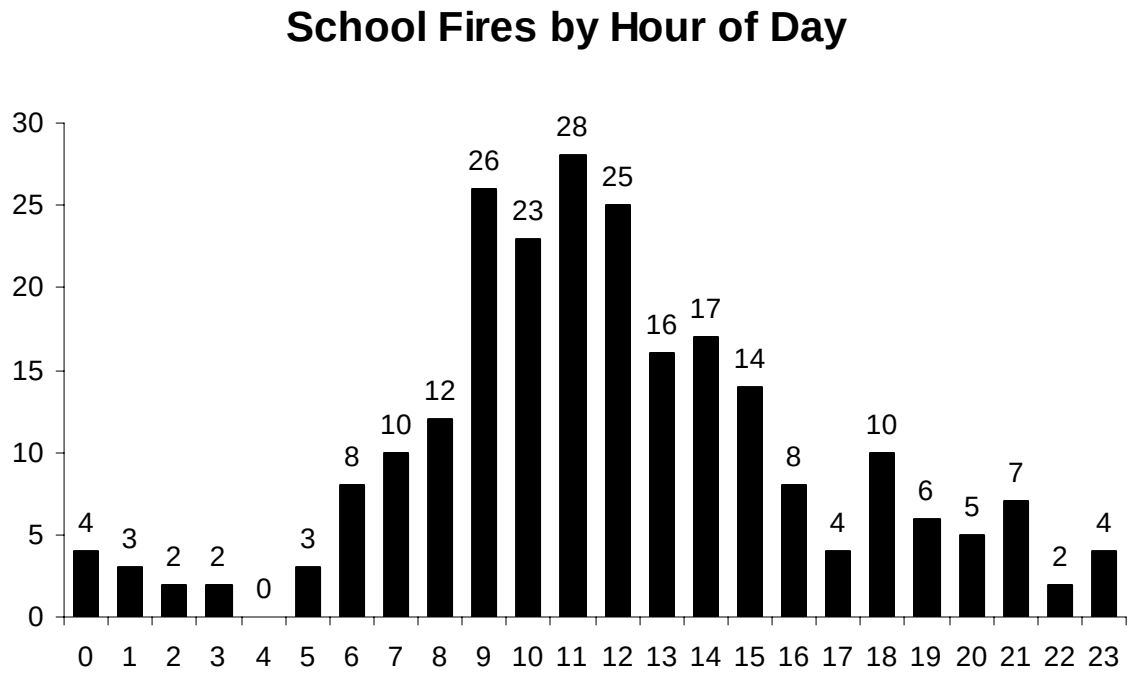
No AES in 61% of Fires in Schools

There were five school fires (7%) where automatic extinguishing systems (AES) were reported to have been present and operated. In 1% of school fires, the AES operated but was ineffective. In another 1% of the school fires, the AES failed to operate. In 30% of school fires, the fires were too small to trigger the system. In 61% of the fires in schools, there were no systems. AES performance was unknown in seven fires in Massachusetts' schools in 2005. These incidents were excluded from the percentage calculations.

AES Status in School Fires



Most School Fires Occur When School is in Session During Lunch
School fires generally occur during the school day. Sixty-seven percent (67%) of the school structure fires occurred during the hours between 8:00 a.m. and 3:00 p.m. with a sharp increase between 9:00 a.m. and 12:00 p.m. The following graph shows the hour of alarm on the 24-hour clock. Midnight to 1:00 a.m. is represented by 0, 1:00 a.m. to 2:00 a.m. is represented by 1, etc. Eighty-eight percent (88%) of these fires occurred between Monday and Friday.

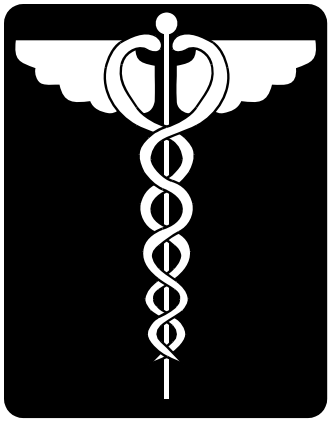


Schools Must Hold Fire Drills Four Times a Year
Effective fire prevention has undoubtedly contributed to the low injury rate at school fires. According to 527 CMR 10.09, fire drills must be conducted four times a year. The fire department must approve an evacuation plan developed by someone from the school system. All teachers must receive instructions about the plan. Students must be advised of the fire drill procedure or take part in a fire drill within three days after entering school.

Cambridge Elementary School Had Largest Loss School Fire

- On January 17, 2005 at 5:40 a.m., the Cambridge Fire Department was called to a fire at a local elementary school of undetermined cause. This fire originated in the basement. This blaze was the largest loss fire in a school, with an estimated $270,000 worth of damage. There were two fire service injuries. Smoke detectors were present and operated, but there were no occupants in the building. Sprinklers were present and operated.

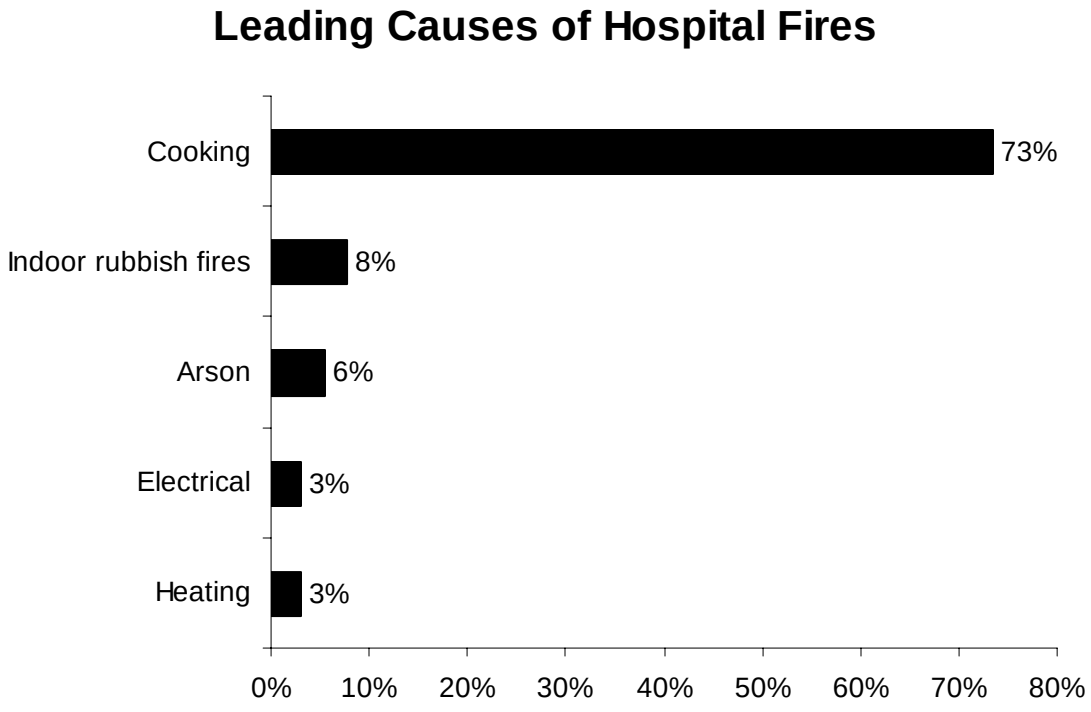
Fires in Hospitals



143 Fires Caused 1 Civilian Casualty
One hundred and forty-three (143) structure fires in hospitals caused one civilian casualty and an estimated dollar loss of $237,812. The average loss per fire was $1,663. In 2005, 1% of the 14,662 structure fires occurred in hospitals. Fires in hospitals were up 8% from 132 in 2004.

This property use section includes, mental institutions, including facilities for the criminally insane; medical, psychiatric and specialty hospitals where treatment is provided on a 24-hour basis; hospices; and clinics and clinic type infirmaries. It does not include doctor's or dentist's offices; nursing homes; alcohol or substance abuse centers; and mental retardation/development disability facilities.

Cooking Caused Almost 3/4 of Hospital Fires
Unattended cooking and other unsafe cooking practices caused 73%, or nearly three-quarters of the fires in hospitals in 2005. Indoor rubbish fires accounted for 8% of these fires; arson caused 6%; electrical problems and heating equipment were each responsible for 3% of the fires in hospitals in 2005.



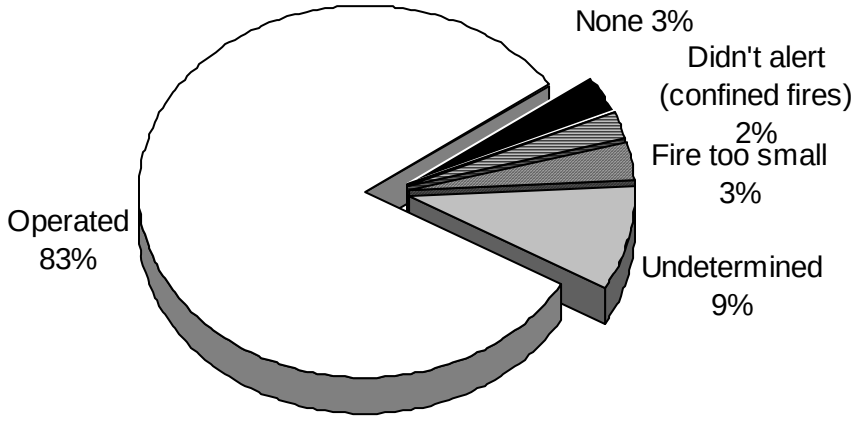
Almost 3/4 of Hospital Fires Began in the Kitchen
Seventy-four percent (74%), or nearly three-quarters, of the fires in hospitals in 2005, started in the kitchen; 3% began in patients' rooms; 2% occurred in heating rooms or areas; and 1% occurred in each bathrooms and offices.

79% of Hospital Structure Fires Confined to Non-Combustible Containers[30]
One hundred and thirteen (113), or 79% of all hospital structure fires, were reported as confined to non-combustible containers in 2005. One hundred (100), or 70%, of these fires were contained cooking fires. Ten (10) were confined indoor rubbish fires accounting for 3% of hospital fires. Three (3), or 2%, were fires confined to a fuel burner or boiler malfunction.

The number of contained fires rose in 2005. Confined fires increased by 12 incidents, or 12%, from the 101 reported in 2004.

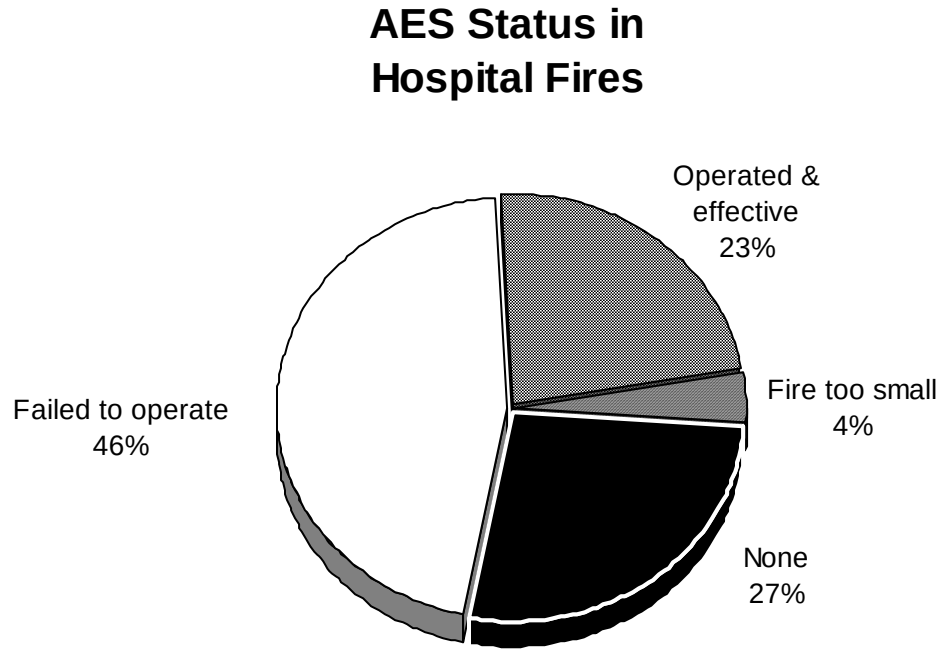
Detectors Alerted Occupants in 83% of Fires
Smoke or heat detectors operated and alerted the occupants in 117, or 83%, of the hospital fires in 2005. In 2% of these fires[31], the detectors did not alert the occupants. In 3% of these fires, no detectors were present at all. The fire was too small to trigger the detector in another 3% of the hospital fires. Smoke detector performance was undetermined in 13 incidents, or 9% of Massachusetts' 2005 hospital fires.

Detector Status in Hospital Fires



[30] In MFIRS v5 a fire in a building contained to a non-combustible container (Incident Type = 113-118) does not have to have a Fire Module completed. Therefore the following data fields do not need to be completed: Area of Origin, Detector Status, Item First Ignited, Heat Source, Factors Contributing to Ignition, Cause of Ignition, and Equipment Involved In Ignition. These incidents are not included in the analysis of these fields.
[31] These represent confined fires where it was reported that the detector did not alert the occupants.

Almost 1/2 AES Systems Fail at Hospital Fires
Of the 26 hospital fires where automatic extinguishing system (AES) performance was known, systems were present and operated effectively in six, or 23% of these fires. AES were present but failed to operate in 12, or 46%, of these hospital fires. The fire was too small to activate the AES in one, or 4%, of these fires. Twenty-seven percent (27%), or seven, of the hospital fires had no systems. AES performance was unknown in 11 of the fires in hospital facilities. These incidents were excluded from this analysis.



Boston Had Largest Loss Hospital Fire in 2005

- On October 28, 2005 at 4:38 p.m. the Boston Fire Department was called to a fire at a health clinic of undetermined cause. The fire began in a first floor office. The fire did not cause any injuries but did cause an estimated $75,000 in damages. Detectors and sprinklers were not present in the building.

Safety Alert For Hospitals and Fire Investigators
Discarded Battery Powered Cauterizing Tools Cause Fires
Massachusetts State Police Investigators assigned to the Office of State Fire Marshal working in conjunction with local fire investigators have been made aware of a rash of fires occurring in hospitals as a result of the improper disposal of battery powered cauterizing tools. Investigators have learned these fires are occurring when these units are discarded without the proper safety cover in place over the tip and activation switch. The weight of additional refuse placed on top of the unprotected unit activates the unit's ON

switch, and causes the cautery tip to heat to a temperature sufficient to ignite any combustible materials (trash). (Weinstein Safety Alert May 17th 2005)

It is imperative to keep the safety cap for each disposable electrocautery unit used during procedures and replace the cap before disposing of the unit.

Four steps to preventing these fires…

1. Retrain surgeons and other operating room staff about the proper disposal procedures for the cordless electrocautery device. This includes first breaking the tip of the device (this interrupts the heating filament circuit so that it cannot be activated) and then recapping the device (which prevents the on button from being activated.
2. Provide intensive and more "hands-on" type of fire safety for operating room staff.
3. Provide additional training to all hospital staff about the importance of pulling the alarm station at the first sign of smoke/fire.
4. Purchase fire-rated sharps disposal containers, which will be used exclusively for these devices. (Weinstein June 16th 2005)

Nursing Home and Rest Home Fires

128 Fires Caused $80,122 in Damages

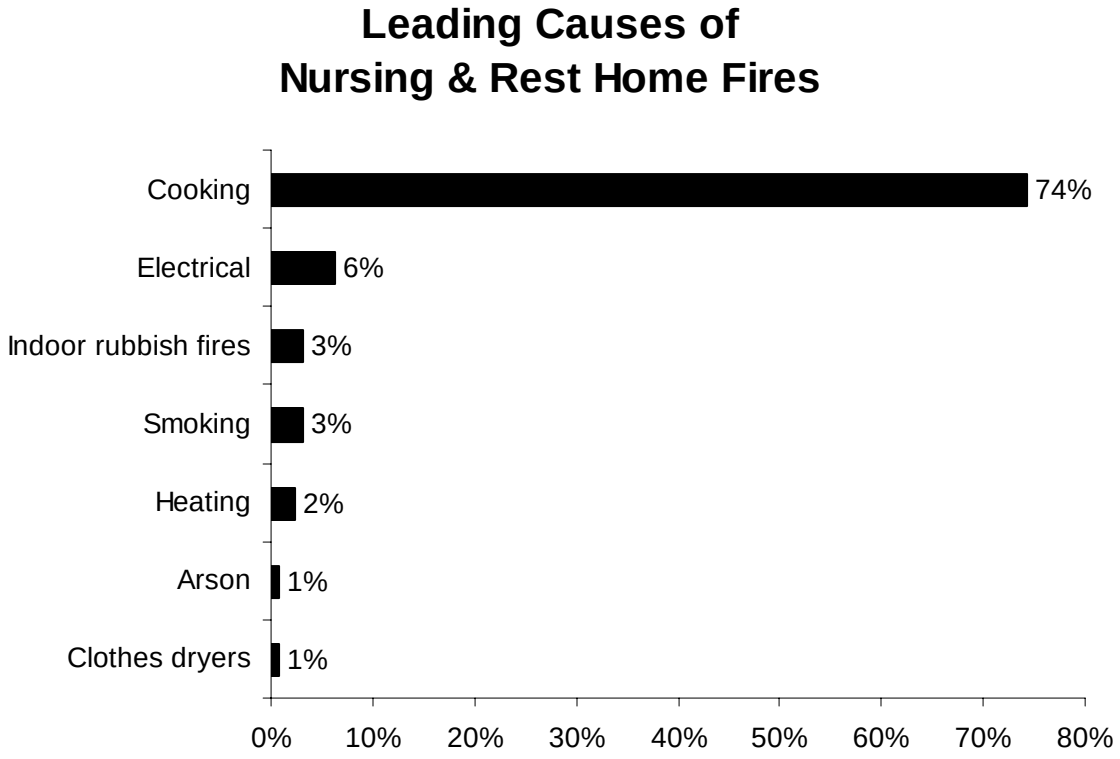
One hundred and twenty-eight (128) structure fires occurred in nursing homes and rest homes[32] during 2005. These fires caused an estimated dollar loss of $80,122. The average loss per fire was $626. In 2005, 1% of the 14,662 structure fires occurred in nursing homes and rest homes. Fires in nursing homes and rest homes increased by 11% from 115 in 2004.

This property use category includes only nursing homes licensed by the state that provide 24-hour nursing care for four or more persons.

Cooking Caused Almost 3/4 of Nursing Home Fires

Unattended cooking and other unsafe cooking practices caused 74% of the fires in nursing and rest homes. Electrical problems caused 6% of nursing home fires. Indoor rubbish fires and the improper use or disposal of smoking materials each caused 3% of nursing home fires. Heating caused 2% of these fires. Arson and clothes dryers each caused 1% of the fires in Massachusetts' nursing homes in 2005.

[32] In version 4 structures with a Fixed Property Use code 312 – Care of the aged without nursing staff - was included in this count. However, with the conversion to version 5 codes, all v4 FPU = 312 have been converted to Property Use code 459 – Residential board and care.



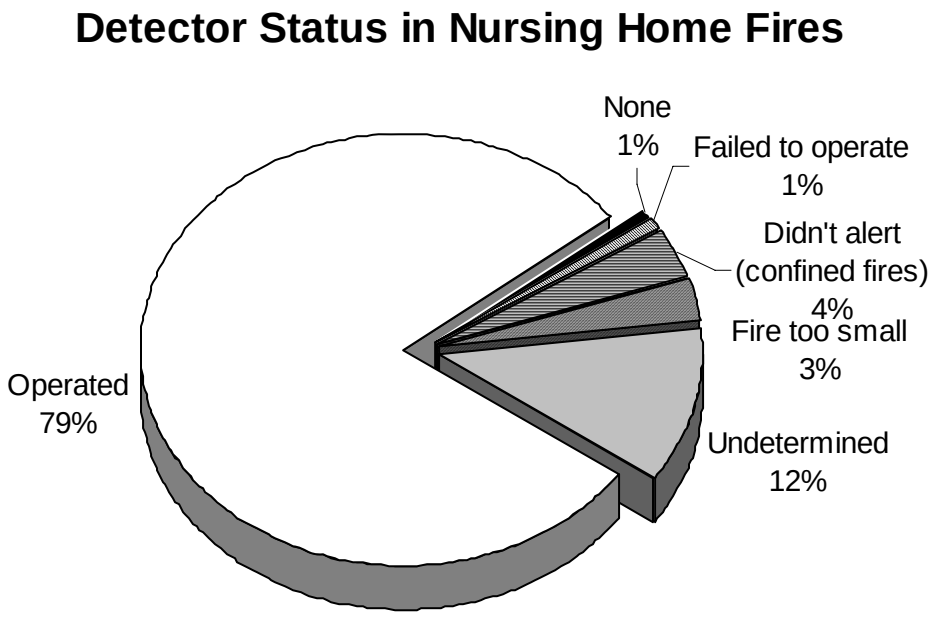
Over 3/4 of Fires Began in the Kitchen
Seventy-six percent (76%), or more than three-quarters of the nursing and rest home fires began in the kitchen. Three percent (3%) began in the laundry room. Two percent (2%) of these fires began in a heating room or area. Another two percent (2%) occurred in patient's rooms. Two percent (2%) of the fires in nursing homes started in bathrooms.

Over 3/4 of Nursing Home Fires Were Confined to Non-Combustible Containers[33]
One hundred (100), or more than three-quarters (78%), of all nursing home structure fires were reported as confined to non-combustible containers in 2005. Ninety-three (93) of the reported fires were cooking fires contained to a non-combustible container accounting for 73% of nursing home structure fires. Four (4), or 3%, of these fires were contained indoor rubbish fires. Three (3), or 2%, were fires confined to a fuel burner or boiler malfunction.

The number of contained fires in nursing homes rose in 2005. Confined fires increased by 12 incidents, or 14%, from the 88 reported in 2004.

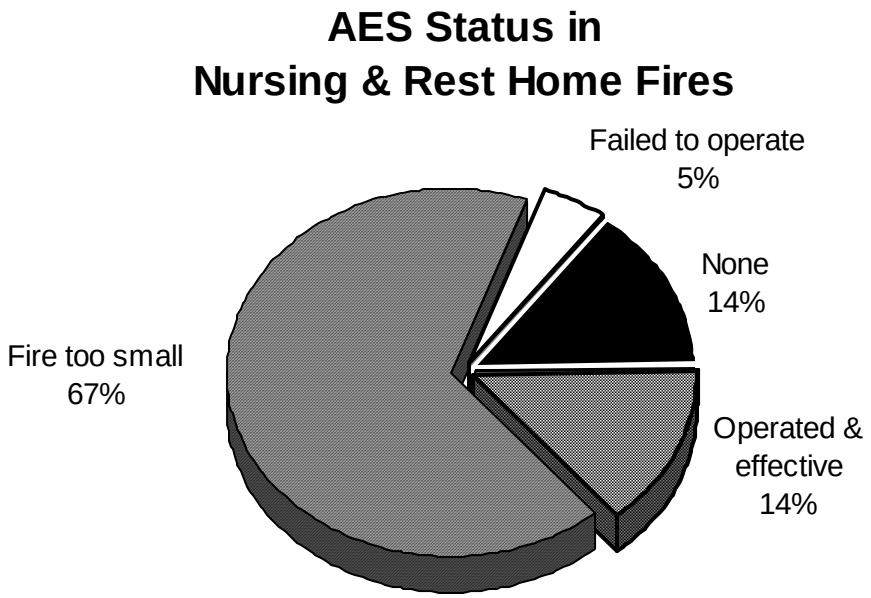
[33] In MFIRS v5 a fire in a building contained to a non-combustible container (Incident Type = 113-118) does not have to have a Fire Module completed. Therefore the following data fields do not need to be completed: Area of Origin, Detector Status, Item First Ignited, Heat Source, Factors Contributing to Ignition, Cause of Ignition, and Equipment Involved In Ignition. These incidents are not included in the analysis of these fields.

Detectors Alerted Occupants in 79% of Fires
Smoke or heat detectors operated and alerted the occupants in 102, or 79%, of the nursing home fires in 2005. In 4% of these fires[34], the detectors did not alert the occupants. In 1% of these fires, no detectors were present at all. In another 1%, the detectors failed to operate. The fire was too small to trigger the detector in 3% of the nursing home fires. Smoke detector performance was undetermined in 15 incidents, or 12% of Massachusetts' 2005 nursing and rest home fires.



AES Operated in 14% of Nursing Home Fires
Of the 21 nursing home fires where automatic extinguishing system (AES) performance was known or reported, systems were present and operated effectively in three, or 14% of these fires. In 14 incidents, or 67% of the fires where AES performance was known, the fire was too small to activate the system. In one nursing home fire, 5%, the AES failed to operate. It failed to operate because the fire was not in an area protected by the system. No systems were present in three, or 14% of these fires. In 10 of these incidents, AES performance was undetermined. These fires were excluded from the analysis.

[34] These represent confined fires where it was reported that the detector did not alert the occupants.



Electrical Problem Caused Largest Nursing Home Loss

- On August 29, 2005 at 7:41 a.m., the Northampton Fire Department was called to a fire in a nursing home caused by an electrical problem in one the residents' rooms. This fire caused $25,000 in damages. No one was injured in this fire. Smoke detectors were present and alerted the staff and occupants. Sprinklers were present but the fire was too small for them to activate.

Office Building and Bank Fires

193 Fires, 1 Civilian Injury & 1 Firefighter Injury, $1.6 Million in Damages

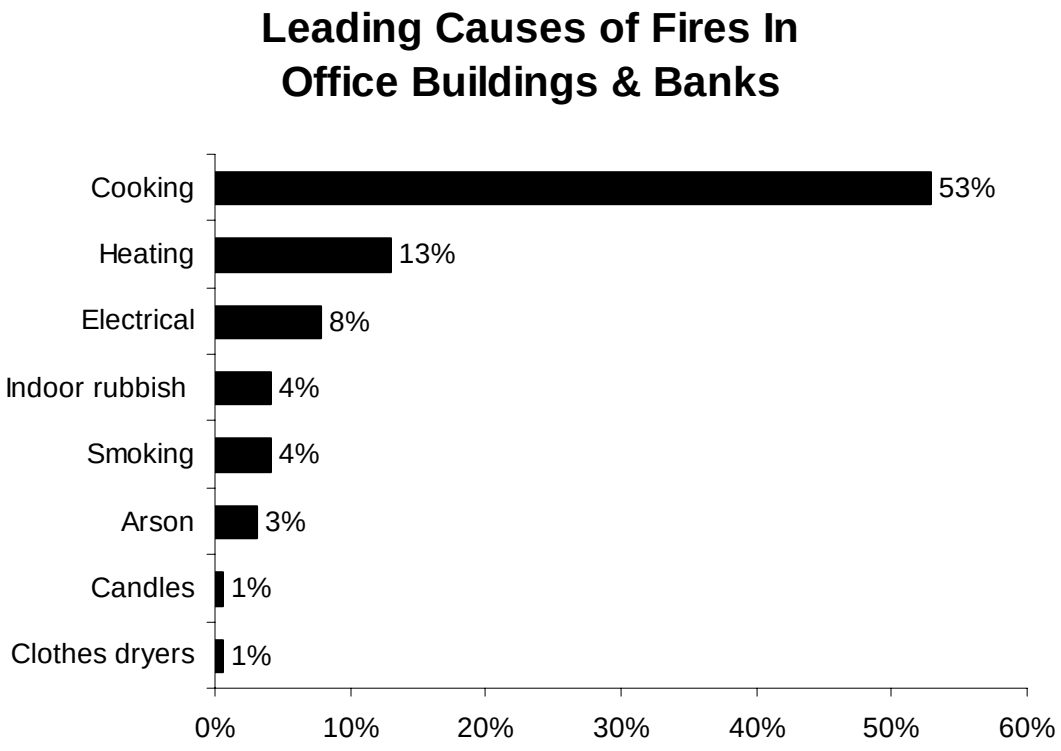
One hundred and ninety-three (193) structure fires occurred in offices and banks during 2005. These fires caused one civilian injury, one firefighter injury and an estimated dollar loss of $1.6 million. The average dollar loss per fire was $8,433. In 2005, 1% of the 14,662 structure fires occurred in offices and banks. Fires in office buildings and banks were up 17% from 165 in 2004.

The one civilian fire death was a case of self-immolation.

Cooking Caused Over 1/2 of Office & Bank Fires

Unattended cooking and other unsafe cooking practices caused 53% of the 193 fires in office buildings and banks in 2005. Heating equipment accounted for 13% of these fires.

Electrical problems caused 8% of these fires; and indoor rubbish fires and smoking each caused 4%; arson was the cause of 3% of these fires; and candles and clothes dryers each started 1% of the fires in office buildings and banks in 2005.



53% Office Building and Bank Fires Started in Kitchen
Fifty-three percent (53%) of the fires in office buildings or banks started in the kitchen. Twelve percent (12%) of these fires began in a heating room or area. Four percent (4%) originated in an office. Two percent (2%) each started on an exterior wall surface, an entrance way or lobby, a bathroom, or the ceiling or floor assembly.

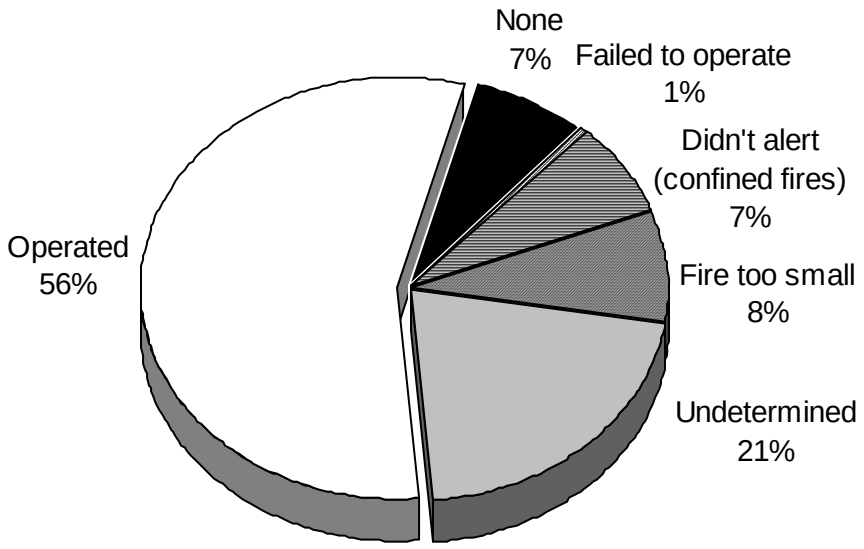
68% of Office Building Fires Are Confined to Non-Combustible Containers[35]
One hundred and thirty-one (131), or 68%, of all office building and bank structure fires were reported as confined to non-combustible containers in 2005. One hundred (100) of the reported fires were cooking fires contained to a non-combustible container accounting for 52% of office building structure fires. Twenty-two (22), or 11%, were fires confined to a fuel burner or boiler malfunction. Eight (8), or 4%, of these fires were contained indoor rubbish fires. One (1) of these fires, or 1%, were confined to a commercial compactor.

[35] In MFIRS v5 a fire in a building contained to a non-combustible container (Incident Type = 113-118) does not have to have a Fire Module completed. Therefore the following data fields do not need to be completed: Area of Origin, Detector Status, Item First Ignited, Heat Source, Factors Contributing to Ignition, Cause of Ignition, and Equipment Involved In Ignition. These incidents are not included in the analysis of these fields.

The number of contained fires rose in 2005. Confined fires in offices increased by 34 incidents, or 35%, from the 97 reported in 2004.

Detectors Alerted Occupants in 56% of Fires
Smoke or heat detectors operated and alerted the occupants in 107, or 56%, of the office building fires in 2005. In 7% of these fires[36], the detectors did not alert the occupants. In 7% of these fires, no detectors were present at all. In 1% of these fires the detectors failed to operate. The fire was too small to trigger the detector in 8% of the office building fires. Smoke detector performance was undetermined in 41 incidents, or 21% of the fires in Massachusetts' office buildings.

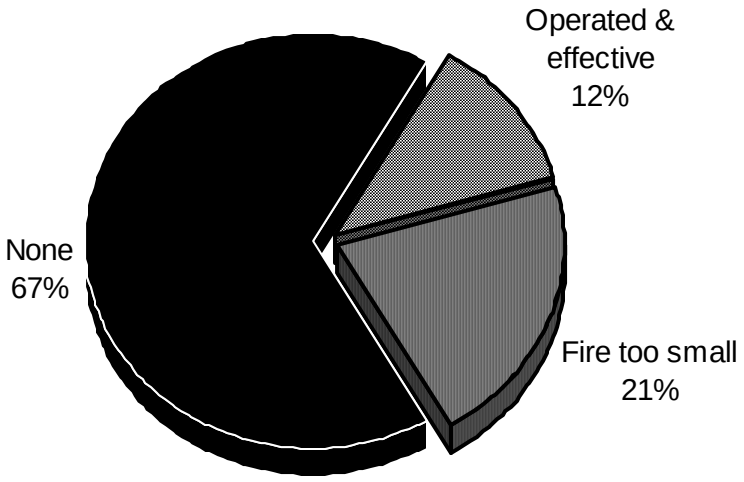
Detector Status in Office Building Fires



Over 2/3 of Office Building and Banks Had No AES
No automatic extinguishing systems (AES) were installed in 38, or 67%, of the 57 fires occurring in office buildings and banks where AES performance was known. Systems were present and operated effectively in seven, or 12%, of these incidents. The fire was too small to activate the system in 12, or 21%, of these incidents. AES performance was not known in seven of the total number of office building and bank fires. These incidents were excluded from the analysis.

[36] These represent confined fires where it was reported that the detector did not alert the occupants.

AES Status in Office Building & Bank Fires



HVAC Caused Largest Loss Office Building Fire

- On February 27, 2005 at 6:34 a.m., the Harwich Fire Department was called to a fire in a two-story office building. The fire was started by heat from the part of the HVAC unit that was between the ceiling and floor assembly. This fire caused $500,000 in damages to the building and its contents. There were no injuries associated with this fire. Smoke detectors were present but failed to operate, however at the time of this fire, no one was inside the building. Sprinklers were not present.

Vacant Building Fires

374 Fires in Vacant Buildings

Three hundred seventy-four (374) structure fires occurred in buildings that were vacant, under construction or demolition[37]. These 374 fires caused one civilian death, seven civilian injuries, 76 firefighter injuries and an estimated $59.2 million in damages. The average dollar loss per vacant building fire was $158,324. Fires in vacant buildings were down 3% from 387 in 2004.

18% of Vacant Building Fires Considered Arson

Sixty-seven (67), or 18%, of the fires in vacant buildings were considered arson. These 67 fires caused one civilian death, one civilian injury, 11 firefighter injuries and $6.6

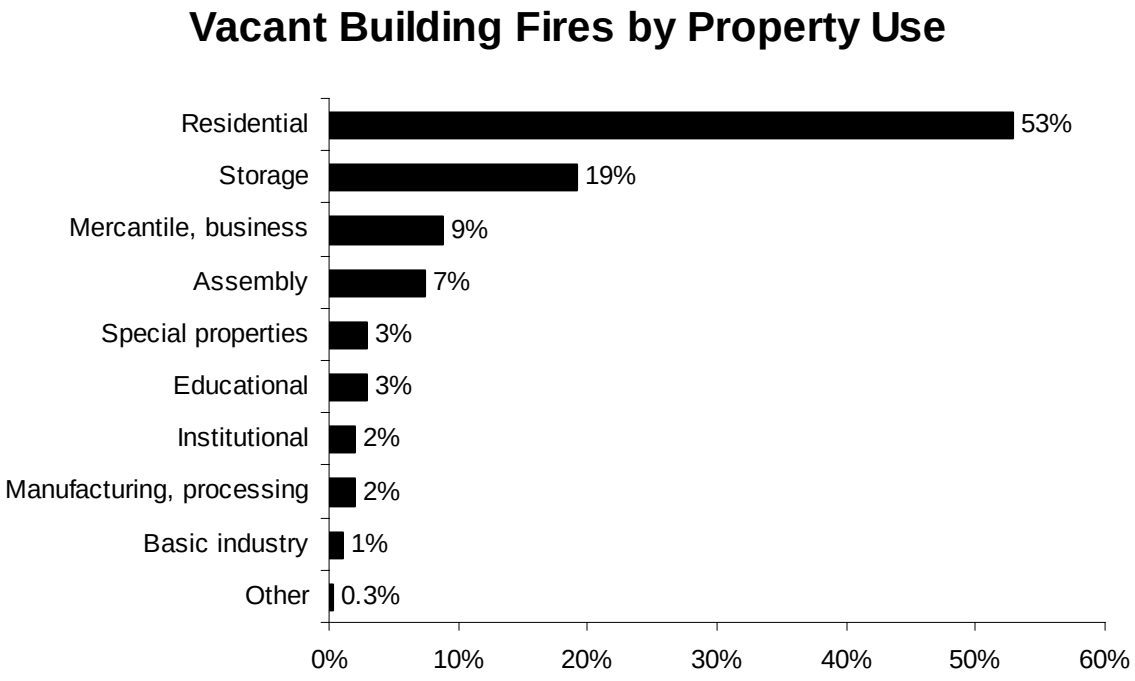
[37] In version 4 a vacant building was defined by having a Fixed Property Use code in the subsection of construction, unoccupied properties, between 910 & 919. However in version 5, the Property Use is separate from the Building Status. In v5 a building is considered vacant if the Building Status is coded: 1-Under Construction; 3-Idle, not routinely used; 4-Under major renovation; 5-Vacant, secured; 6-Vacant, unsecured; & 7-Being demolished. The building use is coded separately in the Property Use field.

million in damages. In 2005, 20%, or one-fifth of the total 339 Massachusetts structure arson fires occurred in vacant buildings.

1/3 of Vacant Structure Fires Undetermined
Thirty-three percent (33%), or one-third of vacant building fires were undetermined. Forty-six (46), or 12%, of the 374 vacant building fires were undetermined after investigation. Seventy-five (75), or 20%, were coded as still under investigation; and three, or 1%, were classified as 'Other'.

In this new format, you are able to make a distinction between the property's use and the building's status. For example in version 4 if you had a vacant apartment building, one might code the 'Fixed Property Use' as Apartments, 3-6 units or Vacant property, but not both. If the report used the former code then it would not have been counted as a vacant property fire. However in the new system, this same incident would now be coded with a 'Property Use' of Multi-family dwelling and a 'Building Status' of vacant, secured or unsecured. The addition of this new field is most likely the primary reason for the dramatic increase in vacant property fires in 2001. One of the improvements that came with version 5, is that we believe we now have a more accurate picture of the vacant building fire problem.

Over 1/2 of All Vacant Building Fires Were Residential
Out of the 374 vacant building fires, 198, or 53%, occurred in residential occupancies. Seventy-two (72), or 19%, happened in storage facilities; 33, or 9%, happened at mercantile or business locations; 28, or 7%, were in public assembly properties; 12, or 3% occurred in special properties; 11, or 3%, were at educational facilities; eight, or 2% of vacant building fires, occurred at institutional facilities; seven, or 2%, happened at manufacturing or processing locations; and four, or 1%, occurred at basic industrial sites. One (1) vacant building fire, or 0.3%, occurred in "other" types of buildings.



1/2 of All Vacant Building Arsons Occurred in Residential Buildings
Half (50%) of the vacant building arsons in 2005 occurred in residential occupancies. Twenty-two percent (22%) took place in storage facilities; 9% occurred in mercantile or business properties; 8% each occurred in public assembly properties; 6% happened at educational facilities; and 2% happened each in manufacturing or processing facilities, institutional facilities and at special properties.

The following table and chart illustrate the trend in vacant building fires and arsons over the past decade. They steadily declined from 113 in 1996 to 73 in 2000. 2001 was the transition year to version 5 and its increased ability to track these fires and was also the year when the cause 'suspicious' was eliminated from our definition of arson. It should be noted that prior to 2004, these statistics did not include data from the Boston Fire Department. Data from the BFIRS system lost the capability to identify vacant buildings during conversion to MFIRS. This problem was eliminated when Boston completed its conversion to MFIRS version 5 in 2004. Therefore, the numbers in the table prior to 2004 should be considered to be underestimated.

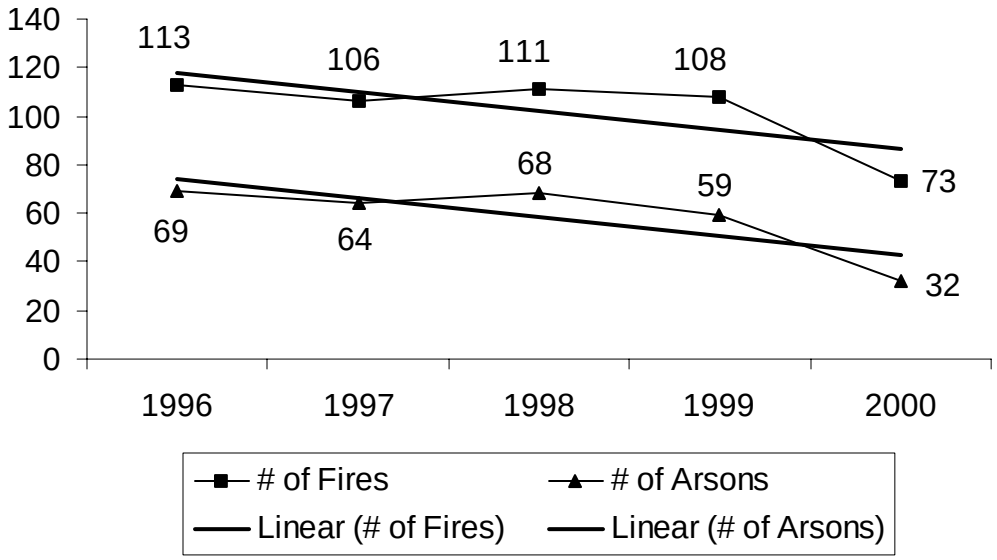
FIRES AND ARSONS IN VACANT BUILDINGS

Year	# of Fires	# of Arsons	% Arsons
2005	374	67	18%
2004	387	67	17%
2003	353	50	14%
2002[38]	332	62	17%
2001	162	43	27%
2000	73	32	44%
1999	108	59	55%
1998	111	68	61%
1997	106	64	60%
1996	113	69	61%

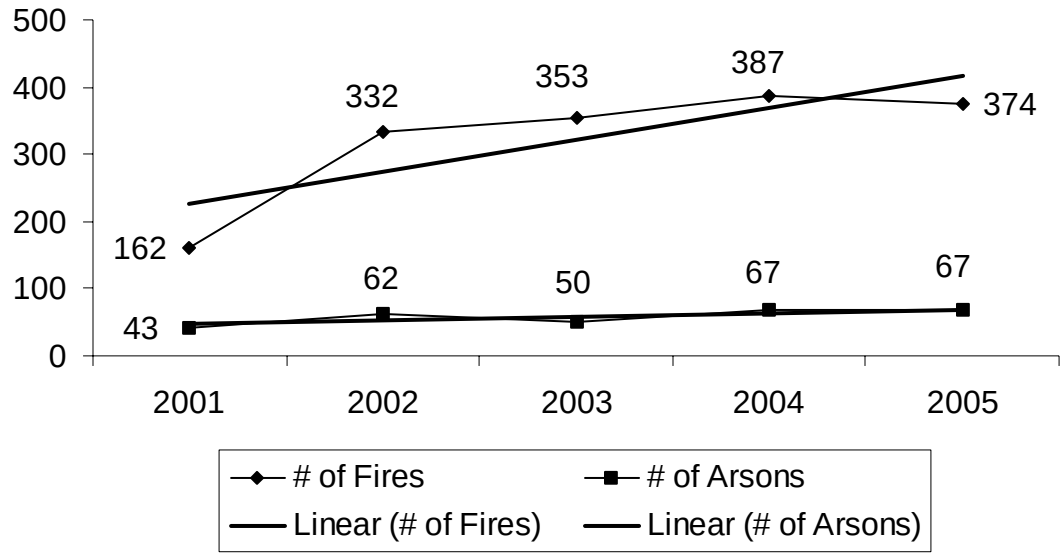
The following graphs clearly show this downward trend in both vacant building fires and vacant building arsons prior to 2001. From 2001 on, numbers are from the new version 5 format. The increase in both the number of vacant building fires and arsons in 2001 was expected because of version 5's new ability to distinguish between a structure's property use and its building status. 2005 is the fourth full year that the data is able to delineate between a building's property use and its building status. The change in coding requirements did create a substantial increase in reported vacant building fires and a moderate increase in vacant building arsons; only after we have five or more years of version 5 data will we be able to tell how substantial this increase really is.

[38] The 2002 MFIRS Annual Report reported 487 fires in vacant buildings. This figure incorrectly included 83 structure fires where the Building Status code was either 0 – Other or U – Undetermined. Without these 83 fires the total number of structure fires in vacant buildings was 332 and arsons in vacant buildings was 62.

Vacant Building Fires & Arsons by Year 1996 - 2000



Vacant Building Fires & Arsons by Year 2001 - 2005

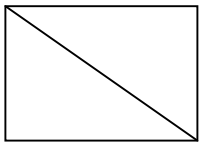


Communities Have Gone on the Offensive Against Vacant Buildings

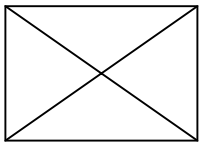
Some communities have gone on the offensive against vacant buildings. The 32% drop in reported vacant building fires from 1999 to 2000 was likely due to the aftermath of the December 3, 1999 Worcester Cold Storage Warehouse Fire where six firefighters lost their lives. A homeless squatter couple that had been living in the abandoned Worcester Cold Storage Warehouse started the fire when a candle they were using was knocked over and ignited some of their clothes. This tragedy led to increased awareness of the dangers of abandoned and vacant buildings. This heightened awareness led to pre-incident planning including increased inspections, stricter adherence to building and fire codes along with tighter security around these structures, more frequent patrols of areas where these structures are located, tougher fines for owners who fail to keep vacant structures secured, and the taking of these properties by the municipality through a variety of means. It also led to many changes in firefighting practices in these types of fires such as deciding whether to use an offensive attack strategy placing firefighters inside the building, or a defensive strategy by setting up master stream devices and fighting the fire from the outside.

The City of Worcester took the lead. Since the tragic death of six of its own firefighters, the city has marked vacant buildings with large placards for firefighters and other public safety personnel. These placards identify vacant buildings and either warn personnel to proceed with extreme caution when entering these buildings or that the building is off limits and a defensive, exterior attack is recommended.

These standards are now mandatory throughout the Commonwealth. Under both the Building Code (780 CMR 121.7 & 8) and the Fire Code (527 CMR 10.13 (7)), owners of vacant buildings must secure and mark them with the following symbols.



Interior hazards exist. Interior operations should be conducted with extreme caution.



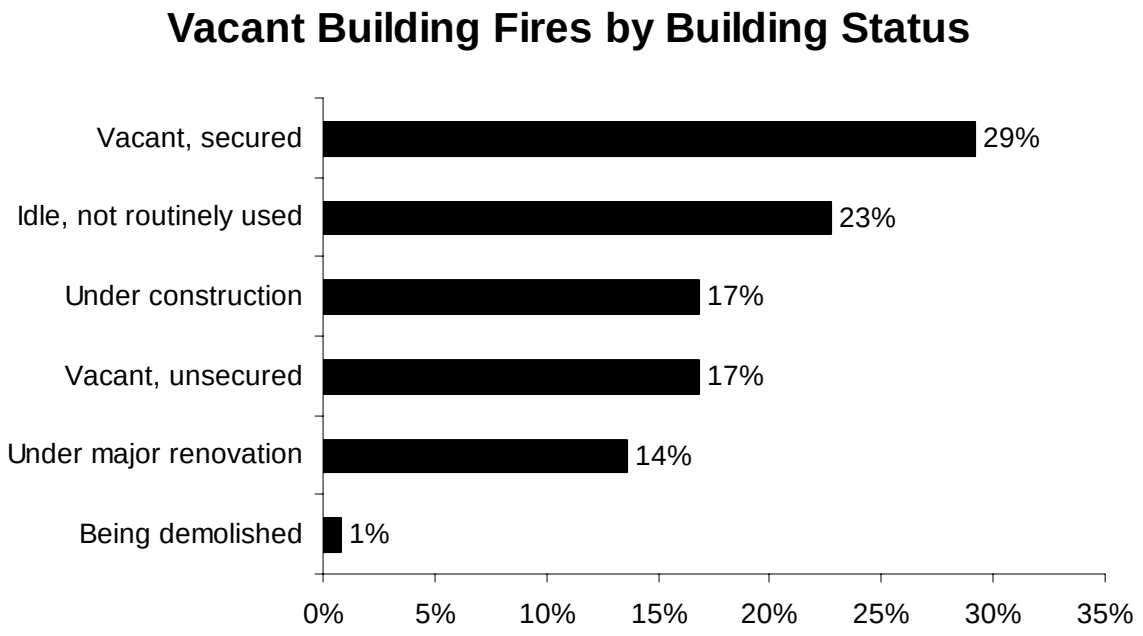
Interior and/or exterior hazards exist. Consideration should be given to conduct operations from the exterior only.

These placards can now be seen in communities throughout the Commonwealth. Neither of these symbols limit the incident commander in directing the operations he deems necessary.

Vacant Buildings Also Threaten Community
Vacant buildings also pose a serious threat to the surrounding community. They become targets for vandalism. Children may find them attractive play spaces. Drug users or dealers may utilize the space for their activities. The homeless may seek shelter and set fires to keep warm. Arsonists who enjoy fires may consider these buildings to be available for their use and entertainment. All of these activities threaten the safety of the neighborhood and surrounding homes. In many ways vacant building fires "tax" the finances of the municipalities where they are located.

Effective Boarding Up Is Key To Protection
Removing furniture, contents and debris from the interior of the building, local officials insisting that all openings to the building are securely boarded up, preferably from the inside, and periodic security checks can reduce the risk of fire in any vacant building and the inherent risk to firefighters called to fight a vacant building fire. Local officials and building owners must ensure that these buildings are adequately secured to prevent entry into these buildings. This is a community's first line of defense in the battle to prevent arson and to maintain housing stock.

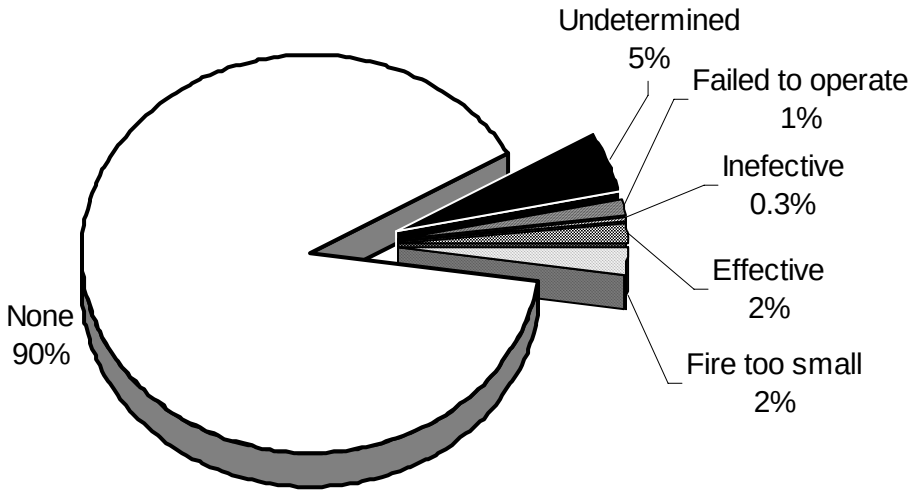
29% Were Vacant and Secured Buildings
Of the 374 fires in vacant buildings in 2005, 109, or 29% were in vacant buildings that were secured. Eighty-five (85), or 23% of these fires took place in buildings that were idle or not routinely used; 63, or 17% were under construction; another 63, or 17% of these fires occurred in vacant buildings that were unsecured; 51, or 14%, happened in buildings undergoing major renovations; and three, or 1%, of the fires in these buildings occurred in buildings that were in the process of being demolished.



34% of All Vacant Building Arsons Occurred in Unsecured Buildings
Twenty-two (22), or 34% of all vacant building arsons in 2005, occurred in unsecured vacant buildings. Fifteen (15), or 23% of these arsons occurred to vacant and secured buildings. Seven (7), or 47% of the arsons involving vacant and secured buildings reported having the fire start on the exterior of the building. Another 15, or 23%, occurred in idle buildings that are not routinely used. Buildings under construction accounted for 13% of vacant building arsons, or eight of these incidents. Buildings under major renovation accounted for three, or 5% of the vacant building arsons in 2005; and one, or 2%, of these arsons occurred in buildings being demolished.

9 Out of 10 Vacant Buildings Had No AES
No automatic extinguishing systems (AES) were installed in 90% of the 368 fires occurring in vacant buildings where AES presence was known. In 2% of these incidents, the fire was too small to activate the system. The AES failed to operate in 1% of these incidents. Systems were present and operated effectively in 2%, of these incidents. In one incident (0.3%), the AES operated but was ineffective in suppressing the fire. AES performance was not known in 5% of the structure fires in vacant buildings in 2005.

AES Status in Vacant Buildings



Sprinklers Must Be Maintained
When the sprinkler systems are present, they must be maintained. If the head of the fire department decides to grant a request under MGL Chapter 148, Section 27 to disconnect the system, extra precautions should be taken.

Firefighters Injured at 1 of Every 6 Vacant Building Fires
One of the most dangerous types of fires for firefighters in 2005 was vacant building fires. Vacant building fires accounted for 76, or 15%, of all firefighter injuries in 2005. These 76 injuries also represent 16% of the number of firefighter injuries at all structure fires. On average there was one firefighter injury for every five vacant building fires.

Large Loss Vacant Building Fires
In 2005, there were seven vacant building fires that had an estimated dollar loss greater than $1 million. The total of these seven fires was $46.5 million dollars, or 79%, of the total dollar loss for all vacant building fires in 2005. The largest loss vacant building fire occurred at a laboratory building nearing completion of its construction in Cambridge. Its dollar loss was estimated to be $23 million. The second largest vacant building fire dollar loss occurred at a Weymouth church; it was estimated that the fire caused $10 million in damages. The anecdotes for these fires can be found in the Structure Fire section of this report.

- On February 22, 2005, at 10:39 p.m., the Watertown Fire Department was called to a fire in a vacant nail salon of undetermined cause. The fire began in the basement area of the strip mall. There were six fire service injuries associated with this fire. Damages from this blaze were estimated to be $4,500,000.

- On November 4, 2005, at 7:47 p.m., the Centerville-Osterville-Marston Mills Fire District was called to a fire in a two-story single-family home that was under construction. The cause of the fire is undetermined. No injuries were associated with this fire. Smoke detectors were present but it was undetermined if they operated, and sprinklers were not present. Damages from this fire were estimated to be $3,000,000.

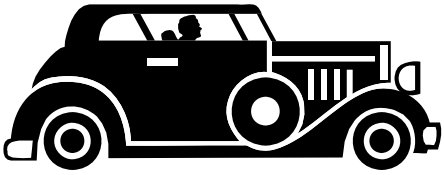
- On November 9, 2005, at 11:19 a.m., the Lexington Fire Department was called to a fire at a single-family home that was undergoing demolition. The cause of the fire was undetermined. There were two civilian injuries associated with this fire. Detectors were present but it was undetermined if they operated. Sprinklers were not present in the building. There were four exposure fires associated with this incident, all of them were structure fires. Total damages from this fire were estimated to be $1,021,000.

- On November 12, 2005, at 9:37 p.m., the Marblehead Fire Department was called to a fire in a 5-story, 40-unit apartment building that was under construction. The fire is believed to have been intentionally set in the basement. The project was a Chapter 40B development project and there was some opposition to it in the community. There were no injuries associated with this fire. It was undetermined if detectors were present in the building. Sprinklers were not present. Damages from this fire were estimated to be $4,000,000.

Motor Vehicle Fires

3,666 Motor Vehicle Fires Account for 13% of All Reported Fires

The 3,666 motor vehicle fires accounted for seven, or 13%, of civilian fire deaths, 27 civilian injuries, 23 fire service injuries, and an estimated property damage of $14.8 million. Motor vehicle fires accounted for 13% of total reported fire incidents. The 3,666 fires in 2005 are a 4% decrease from the 4,037 motor vehicle fires in 2004.



According to MFIRS, a motor vehicle fire is defined as any fire involving a car, truck, boat, airplane, construction equipment or other mobile property (not being used as a permanent structure) that occurs outside of a structure.

The Burned Motor Vehicle Reporting Law

The Massachusetts Fire Incident Reporting System identified motor vehicle fires and motor vehicle arson as a major problem in 1985. The Burned Motor Vehicle Reporting Law took effect in August of 1987. The law requires owners of burned motor vehicles to complete and sign a report that must also be signed by a fire official from the department in the community where the fire occurred. This law has been effective in reducing motor vehicle fires overall and vehicle arsons in particular. Since it took effect in 1987, motor vehicle arsons have decreased 96% from a high of 5,116 in 1987 to 177 in 2005. The percentage of motor vehicle fires that are arsons has also dropped 80% in the past decade from 16.5% in 1993 to 4.8% in 2005.

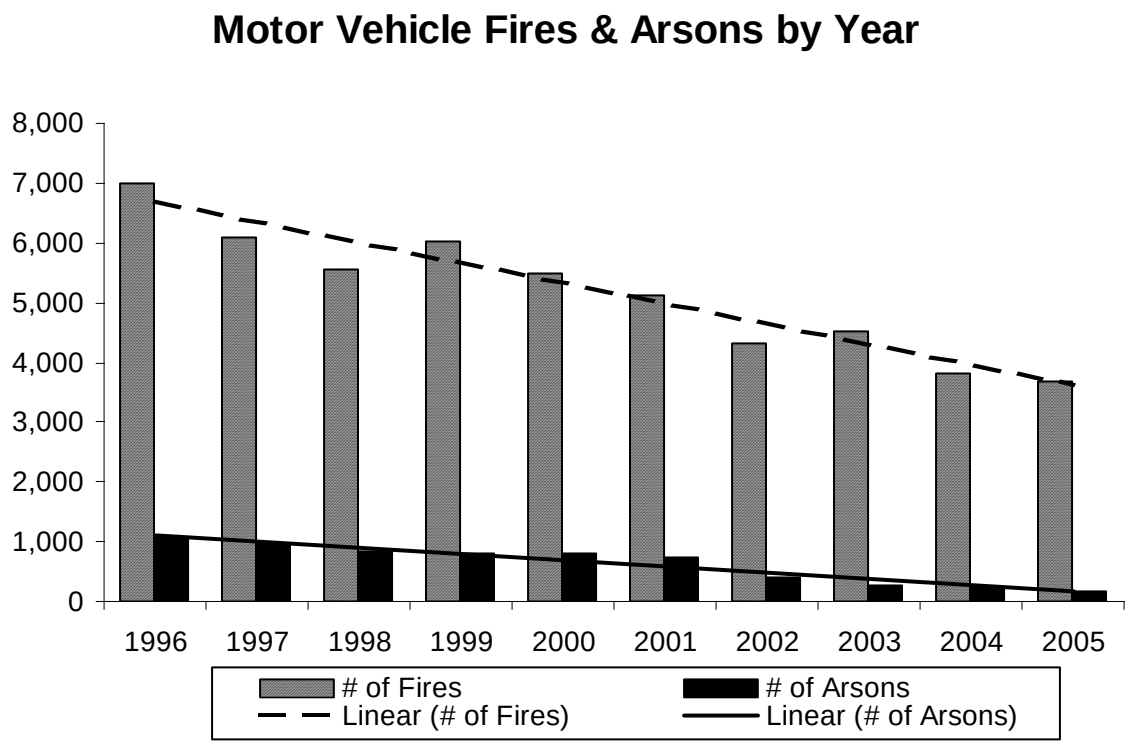
The table below shows the number of vehicle fires and vehicle arsons and the percentage of vehicle fires caused by arson for the past decade.

VEHICLE FIRES AND VEHICLE ARSONS BY YEAR

Year	Vehicle Fires	Vehicle Arsons	% Arsons
2005	3,666	177	4.8%
2004	3,825	227	5.9%
2003	4,533	280	6.2%
2002[39]	4,331	395	9.1%
2001	5,127	743	14.5%
2000	5,473	798	14.6%
1999	6,011	818	13.6%
1998	5,565	836	15.0%
1997	6,096	979	16.1%
1996	6,980	1,082	15.5%

[39] 2002 was the first full year of using only V5 data. As a result, 'Suspicious' was eliminated as a cause and only 'Intentional' fires were counted as arson, thus the significant drop in MV arsons from 2001-2002.

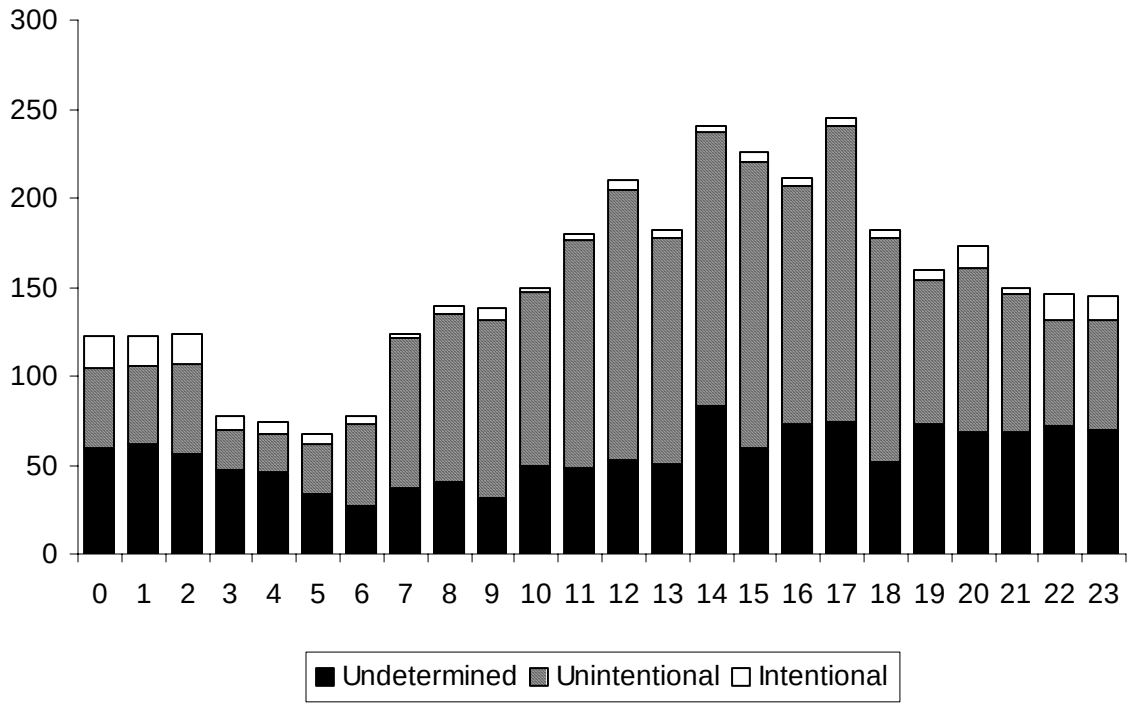
The following graph illustrates the data in the table.



Mechanical Failures Caused 27% of Massachusetts Motor Vehicle Fires
Of the 3,666 motor vehicle fires in 2005, 27% were caused by some type of mechanical failure or malfunction; 5% were considered intentionally set and 32% resulted from other accidental causes. The cause was undetermined or not reported in 34% of the motor vehicle fires.

Unintentional Fires Occur During Day and Early Evening
Motor vehicle fires of different causes occur at different times of the day. As the following graph shows, accidental or unintentional fires are more common during the day and early evening. Incendiary fires are generally set in darkness. The graph below shows fire frequency by time of day on the 24-hour clock for the causes of motor vehicle fires. Midnight to 1:00 a.m. is represented by 0, 1:00 a.m. to 2:00 a.m. is represented by 1, etc.

Causes of Motor Vehicle Fires by Time of Day



Almost 2/3 of Massachusetts Motor Vehicle Fires Involved Automobiles
Automobiles and vans accounted for 62% of the 3,666 motor vehicle fires, 1% were trucks weighing less than one ton and 4% were trucks weighing more than one ton.

Car Fire Safety Tips
Regular maintenance is the best way to prevent car fires. Leaking gasoline, oil and hydraulic fluids can catch fire. Electrical problems can cause short circuits and heat build-up. A properly operating catalytic converter can reach 1,100° F. It can get even hotter if the car has worked hard or needs a tune-up. If other parts come in contact with it, they can ignite. Catalytic converters on parked cars will sometimes ignite a pile of leaves or dried grass underneath.

What Should You Do if You Have a Car Fire?

1. Pull over to the side of the road and stop as soon as possible. For automobiles with an automatic transmission put the vehicle in Park; or for cars with a manual transmission, set the parking brake and put it in gear. Fire can disable a car's electrical system in seconds. Power steering and brakes can be harder to use than normal.
2. Turn off the ignition. You want to make sure no more gasoline is pumped to the fire.
3. Get everyone out of the car.

4. Move away and call 911. Do not open the hood. You risk injury, and give the fire more oxygen.

Unless you're trained, let firefighters handle it. They wear protective clothing and are trained to handle pressurized systems, exploding bumpers, etc. Chemicals in the fire extinguisher can be compacted. To be effective, they must be used correctly. You don't want to practice in a panic situation.

Gasoline Deserves Respect

There were 50 motor vehicle fires at gas and service stations in 2005. There were 50 motor vehicle fires at facilities used for motor vehicle or boat sales, service or repairs. Many of these fires were started by gasoline or the gasoline fumes. Gasoline is so much a part of our lives that we don't think about it. However, it is a very dangerous substance and certain measures should be taken to minimize the chances of an incident.

Gas Station Safety

- Turn off your car when you get gas.
- At self-service stations, remember to put the nozzle back and your gas cap on before driving off. Monitor the fueling; do not get back in the vehicle.
- Gasoline vapors burn at a very low temperature. These fumes are heavier than air, and can travel a distance to find a spark. Keep anything that could provide heat to start a fire away from gasoline. A spark or a lit cigarette is enough to ignite the invisible fumes that may linger on clothing.
- If you need to carry or store gasoline, use an approved container.
- When filling an approved container, place it on the ground to prevent static electricity build–up which could ignite the gasoline vapors. Make sure that the nozzle is always in contact with the container when filling.
- Make sure the approved container is in a secured, upright position away from passenger areas, and that the fill and vent openings are tightly closed. At home, always store these containers in safe secure areas – outside of living areas – away from ignition sources such as pilot lights.

Outside and Other Fires

10,465 Brush, Trash, and Other Outside Fires Reported in 2005

The 10,465 outside and other fires and explosions caused four civilian deaths, 31 civilian injuries, 31 fire service injuries, and an estimated dollar loss of $5 million. The 4,166 trees, grass and brush fires, 3,489 outside trash fires, 868 special outside fires, 60 cultivated vegetation or crop fires, and 1,882 other fires accounted for 36% of the total fire incidents in 2005. These fires were down 11% from the 11,786 incidents reported in 2004. Fire departments are required to report any fire or explosion resulting in a dollar loss or human casualty to MFIRS. Fires that do not result in a loss may be reported. Many fire departments, particularly those that submit data electronically, voluntarily report these fires. These figures should be considered an underestimate of the "no-loss" fire incidents to which fire departments actually responded.

The 10,465 reported outside and other fires include:

- 4,166 natural vegetation fires (trees, grass, and brush fires) which caused one civilian injury, 21 firefighter injuries, and an estimated dollar loss of $601,169; this is an 11% increase from the 3,737 incidents reported in 2004;
- 3,489 trash fires that caused one civilian death, one civilian injury, four fire service injuries and an estimated dollar loss of $225,996; this is an 11% increase from the 3,156 incidents reported in 2004;
- 868 special outside fires (including outside, storage, equipment, mailbox fires and outside gas or vapor explosions) that caused one civilian death, seven civilian injuries, one fire service injury and an estimated dollar loss of $672,320; this is a 15% increase from the 753 incidents reported in 2004;
- 60 cultivated vegetation or crop fires which caused an estimated dollar loss of $1,706; this is a 62% increase from the 23 incidents reported in 2004;
- 1,882 other fires that could not be classified further which caused two civilian deaths, 22 civilian injuries, five fire service injuries, and an estimated dollar loss of $3.5 million; this is a 54% decrease from the 4,103 incidents reported in 2004[40].

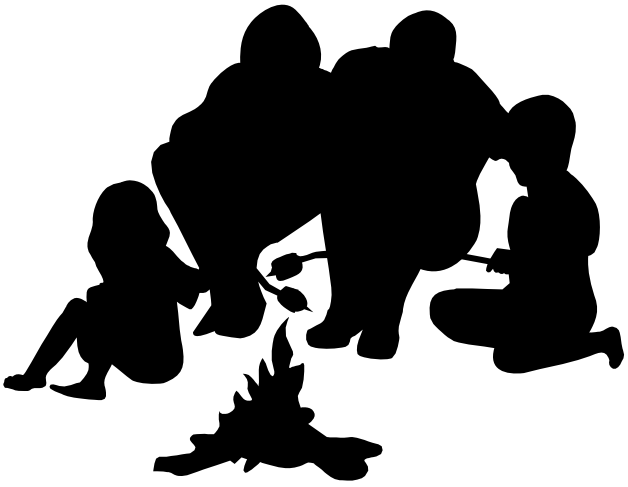
[40] The decrease in other fires is mostly from Worcester. 2003 and 2004 were the first two full years that Worcester used MFIRS version 5, Worcester reported many incorrectly coded fire calls as IT = 100 - Fire, other, and also coded many non-fire type calls, like outdoor cooking fires and unauthorized permit fires as IT = 100 - Fire, other.

Large Loss Outside and Other Fires

- On April 19, 2005 at 12:31 p.m. the New Bedford Fire Department was called to an outside equipment fire. Radiated heat from the machine caused the fire. Damages from this fire were estimated to be $200,000. There were no injuries resulting from this fire.

Most Injuries From an Outside and Other Fire

- On June 22, 2005 at 2:41 p.m. the Mansfield Fire Department was called to a propane grill explosion. The victims were 'tailgating' in a parking lot adjacent to the Tweeter Center. Three civilians were injured. There was no estimate as to the amount of damages incurred from this fire.

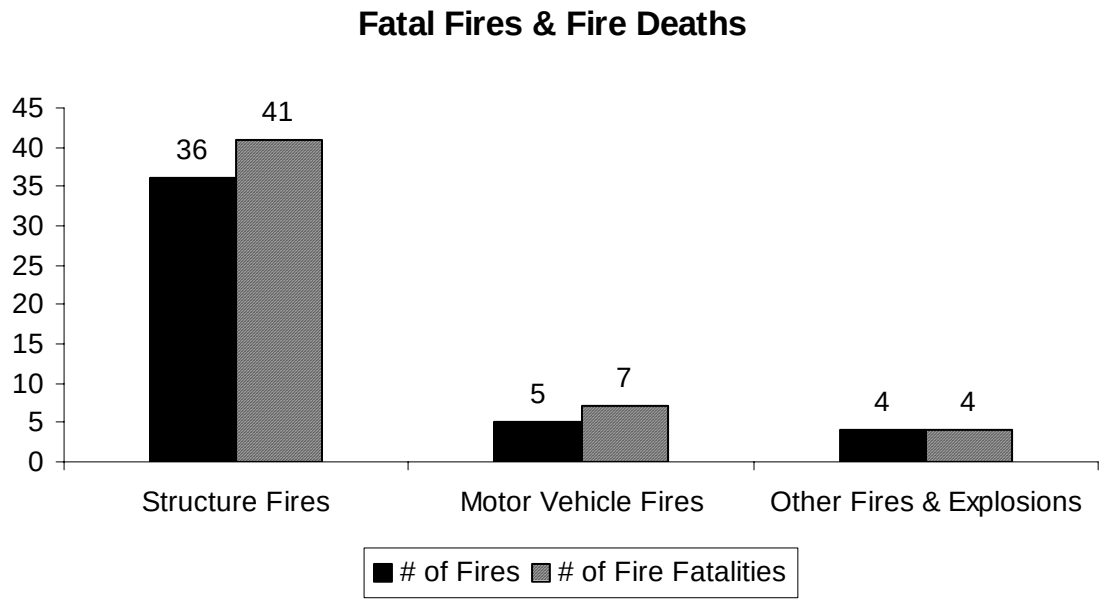


2005 Massachusetts Fire Deaths

Civilian Fire Deaths

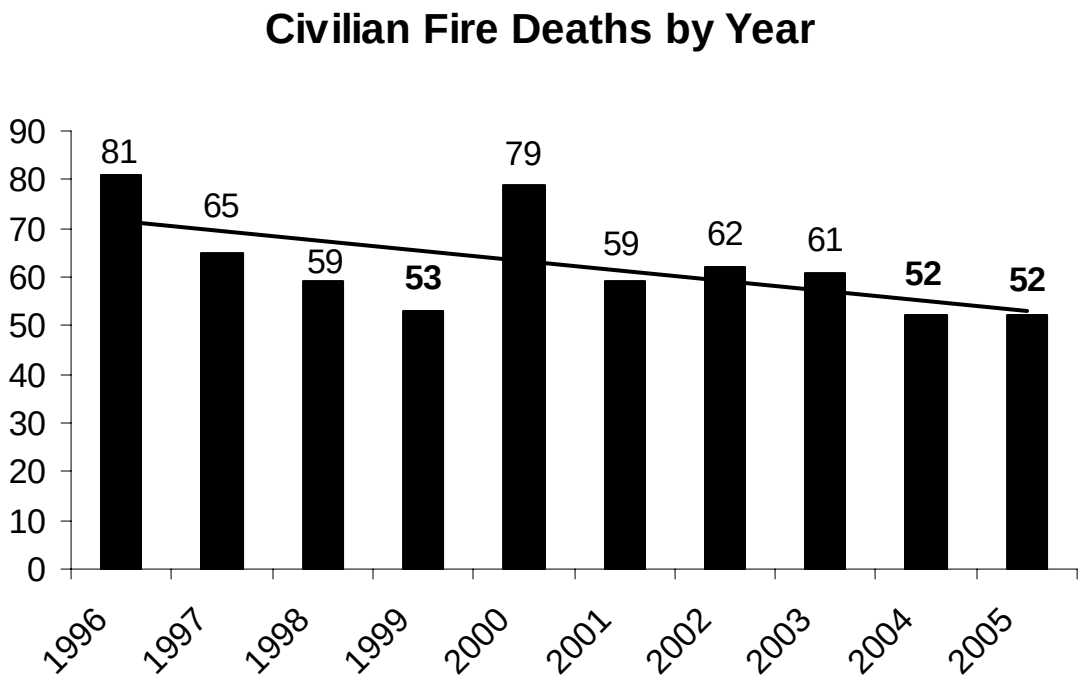
52 Civilians Died in Massachusetts Fires – Ties All-Time Record Low
Fifty-two (52) civilians died in 45 Massachusetts fires during 2005. This is the lowest recorded number of fire deaths since World War II[41]. Forty-one (41) civilians died in 36 structure fires. Seven (7) people died in five motor vehicle fires. Four (4) people died in four outside and other fires in 2005. In 2005, there were 8.2 fire deaths per one million population in Massachusetts the same as in 2004 and down from 9.6 fire deaths per one million population in 2003.

There were no fire-related fire service fatalities in the Commonwealth of Massachusetts in 2005. The following graph shows the number of fatal fires and the number of fire deaths in structure fires, motor vehicle fires and other fires and explosions.



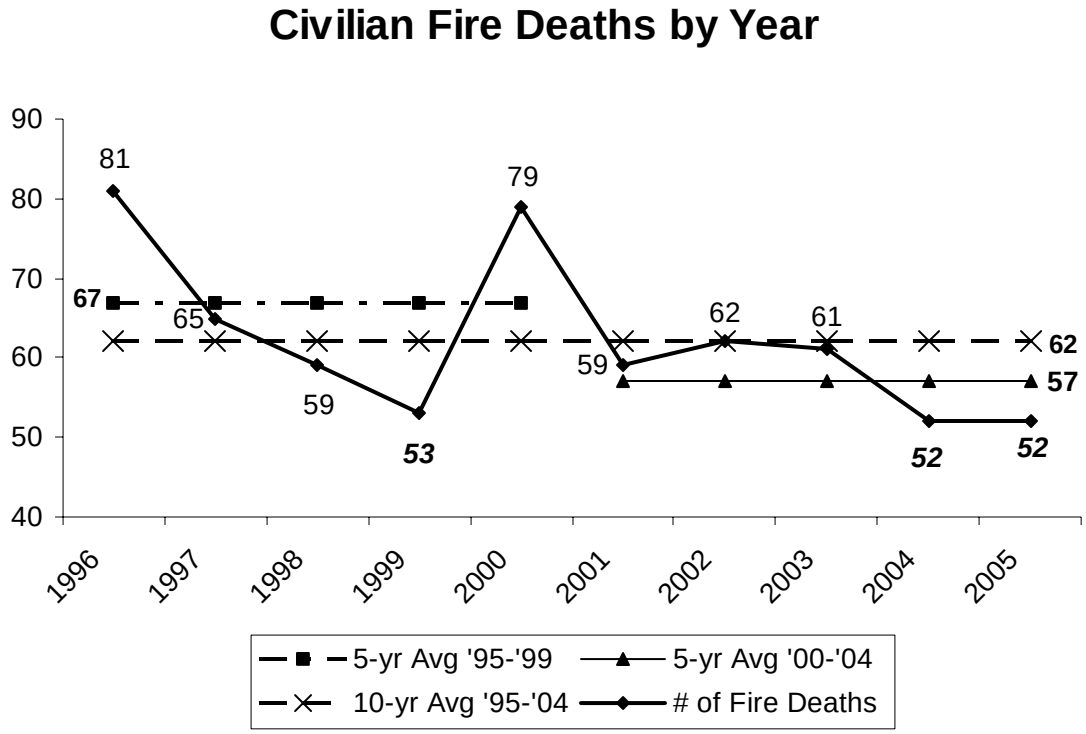
Fire Deaths Remained the Same
In 2005 fire deaths remained the same with 52 deaths reported in both 2005 and 2004. The following chart shows the trend of civilian fire deaths for the past decade on a steady decline. According to available records, the 52 civilian fire deaths in 2004 and 2005 are the lowest on record since the end of World War II. Civilian fire deaths have decreased by 50% from the high of 105 in 1990.

[41] Based upon available records in the State House Library and Office of the State Fire Marshal.

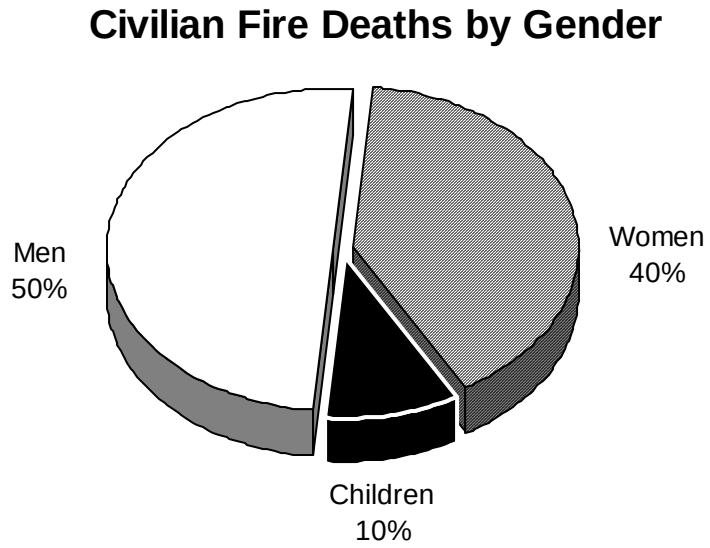


Four of the Last Five Years Have Been Below Both the 10 & 5-Year Averages
Because the number of fire deaths fluctuates from year to year and may be influenced by uncontrollable outside factors such as high energy costs for heating, it is helpful to look at averages over five and 10-year periods. The following graph illustrates the number of fire deaths for the past 10 years in relation to the five-year averages for the periods from 1996 through 2000 and 2001 through 2005 deaths. The average number of fire deaths per year from 1996 through 2000 was 67 deaths. The average number of fire deaths per year from 2001 through 2005 was 62 deaths. The graph also depicts the relationship of the number of fire deaths in relation to the 10-year average of 62 deaths for the same time period. Four of the last five years have been below both the 10-year average and the last two years have been below the five-year average.

Note that the chart below starts at 40 rather than the traditional zero value. This is so the reader can concentrate on the sometimes subtle changes in the figures. The 52 fire deaths in 2005 are 9% below the five-year average and 16% below the 10-year average.

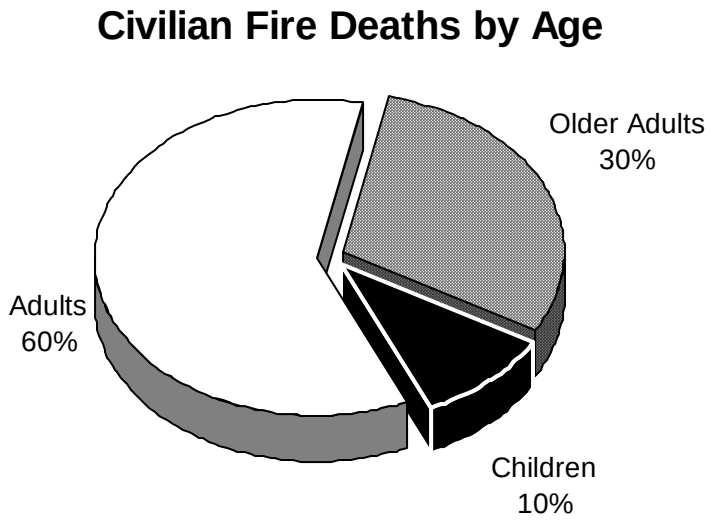


26 Men, 21 Women and 5 Children under 18 Died from Fires in 2005
Of the 52 fire deaths, 26 or 50%, were men, 21, or 40%, were women and five, or 10%, were children under 18. The following pie chart illustrates the above figures.



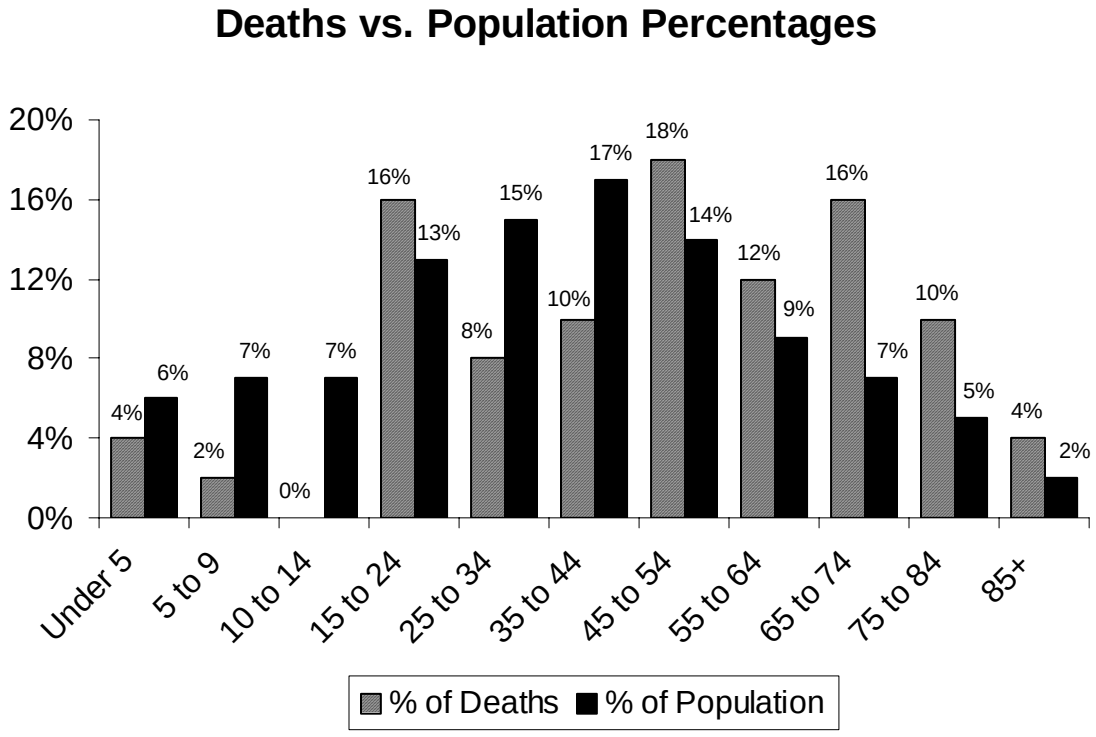
Almost 1/3 of Fire Deaths were Over 65
Fifteen (15), or 30%, of the civilian fatal fire victims were over 65 years of age. This included 10 elderly women and five elderly men. Five (5), or 10%, of the civilian fatal

fire victims were under 18-years old. Thirty (30), or 60%, were adults between 18 and 65 years of age. The following pie chart illustrates the above figures. Two of the victims were unidentified and their ages were not known.



Older Adults at Great Risk for Fire Death

Older adults, those over the age of 65, account for 14% of the population but 50% of the fire deaths. The risk of fire death for older adults is 2.1, down slightly from 2.2 the previous year. This means that older adults were twice as likely to be fire-related



fatalities. The preceding graph shows the percentage of fire deaths versus population percentage by age groups in 2005. Children ages 10 to 14 had the lowest risk of fire deaths in 2005. Older adults, especially over those between the ages of 65 and 74 had the greatest risk of dying in a fire.

How to Read the Preceding Chart
If an age group represents 10% of the population, we expect it to account for 10% of the fire deaths. If it accounts for a higher percentage of fire deaths than it does for the overall population, that group is at a higher risk of dying in a fire. If the age group accounts for a lower percentage of fire deaths that it does for the overall population, then that group is at a lower risk of dying in a fire.

The percentages of the population in each age group were calculated using data from the 2000 Census from the U.S. Census Bureau.

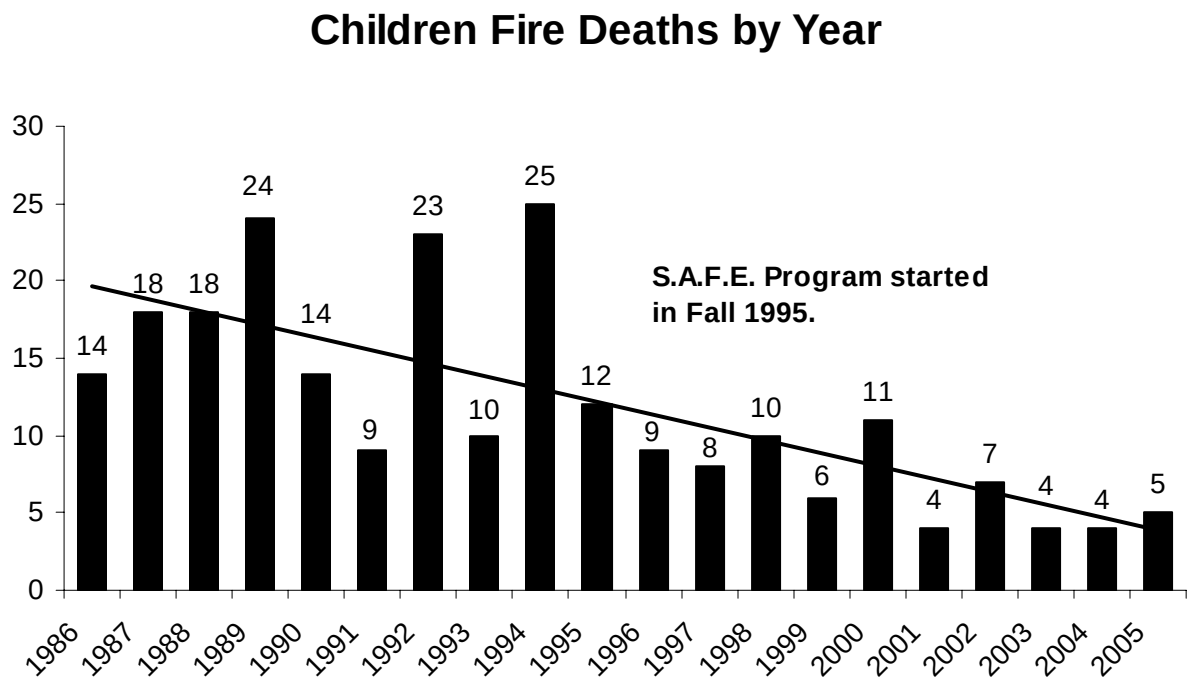
In 2005, two, or 13%, of the older adult fire deaths were caused by the careless disposal of smoking materials while in the confines of their own home. In 2004 none of the older adults died in a smoking-related fire. In 2003 almost half (47%) of the fire deaths to older adults were caused by smoking fires at home.

Children Ages 10-14 Had the Lowest Risk of Fire Deaths
Children under five years old accounted for 4% of the fire deaths and 6% of the population in 2005. Children between the ages of five and nine accounted for 2% of the Commonwealth's fire deaths and 7% of the population; children between the ages of 10 and 14 had the lowest risk of dying in a fire, they did not have any fire deaths and so, accounted for 0% of the deaths and 7% of the population; young adults ages 15 to 24 accounted for 16% of the fire deaths and 13% of the population; people ages 25 to 34 accounted for 8% of the fire deaths and 15% of the population; adults between the ages of 35 and 44 were 10% of the fire fatalities and account for 17% of the population; people ages 45 to 54 accounted for 18% fatal fire victims, the highest of any age group and 14% of the Massachusetts population; victims between the ages of 55 to 64 accounted for 12% of the fatal fire deaths and 9% of the population; and older adults over the age of 65 accounted for 30% of the fire fatalities in Massachusetts in 2005, but only 14% of the population. Older adults between the ages of 65 and 74 had the greatest risk of dying in a fire; they accounted for 16% of the fire deaths in 2005 and 7% of the population, making them 2.3 times more likely to die in a fire.

Children Now at Lower Risk of Dying in Fires in the Commonwealth
Contrary to national trends, children are no longer at a disproportionate risk of dying in fires in Massachusetts. The following graph illustrates the number of child (age >18) fire fatalities in Massachusetts from 1986 through 2005. You can see a definite downward trend in the number of fire related deaths to children from a high of 25 in 1994 to a low of four in 2001, 2003 and again in 2004. According to United States Fire Administration statistics, children under 10 accounted for an estimated 22% of all fire-related deaths

nationally from 1994 – 1998.[42] In 2005 children under 10 accounted for only 6% of all Massachusetts fire-related deaths.

Child Fire Deaths Drop 61% Since Start of S.A.F.E. Program
Fire deaths of children under age 18 have fallen 61% since the start of the S.A.F.E. Program in the fall of 1995. Since fire death numbers fluctuate quite a bit from year, it is helpful to look both at the trendline in the graph below and at averages over several years.



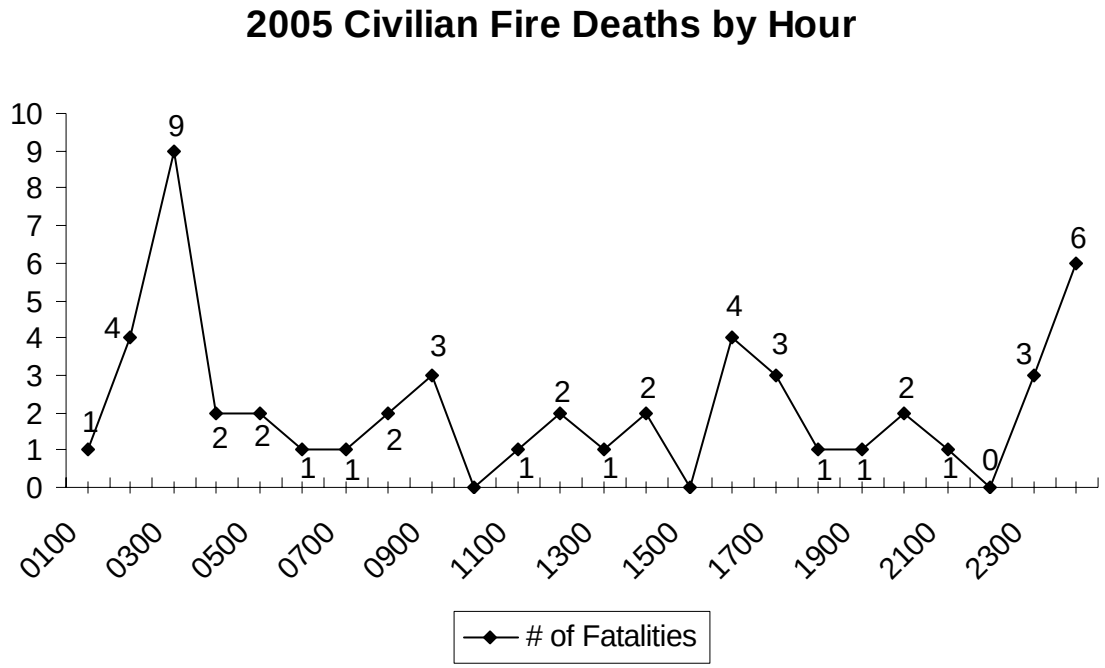
During the 10 full years where the S.A.F.E. Program has been in effect, from 1996 to 2005, the average number of child fire deaths per year has been 6.8. In the 10 years prior to the S.A.F.E. Program, 1986-1994, the average number of child fire deaths per year was 17.6. This 61% drop in the average number of child fire deaths is significant when compared to the 31% drop in the average number of all fire deaths during the same time period.

The one thing that is happening in Massachusetts to improve fire safety exclusively for this age group, that is not also happening to all other age groups, is consistent, comprehensive, statewide, school-based fire safety education.

People Were More Likely to Die in Fires That Occurred While They Slept
People were more likely to die in fires that occurred while they slept. Twenty-nine (29), or 56%, of the fire victims died in fires that occurred between 10:00 p.m. and 7:00 a.m.

[42] Source: United States Fire Administration's **Facts on Fire: Fire in the United States.**

The following graph shows the fire death frequency by time of day on the 24-hour clock. Midnight to 1:00 a.m. is represented by 0100; 1:01 a.m. to 2:00 a.m. is represented by 0200, etc.



The importance of having working smoke alarms is clearly demonstrated here. Because over one-half of the fire victims die during normal sleeping hours, the need to quickly awaken sleepers to the presence of danger is paramount.

Structure Fire Deaths

In 2005, there were 36 structure fire deaths in 41 fatal fires. Not all of the structure fire deaths occurred in residential occupancies. One fatal fire occurred in a sawmill and one happened in an outside shed.

Man Killed in a Shed Fire

- On May 25, 2005, at 9:46 a.m., the Sandwich Fire Department was called to a shed fire. The victim, a 39-year old possibly mentally disabled woman, dispersed a flammable liquid around the shed in a successful self-immolation attempt. There were no other injuries associated with this fire, and damages were estimated to be $2,000.

Man Killed in Saw Mill Fire

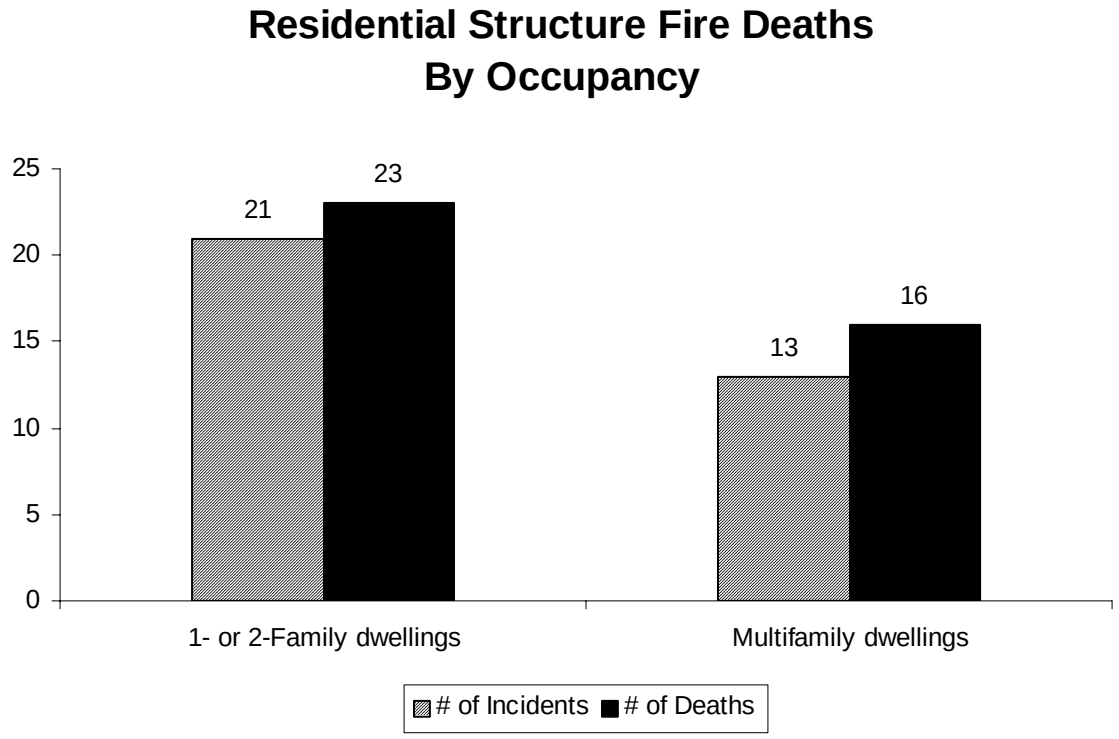
- On November 22, 2005, at 11:11 a.m., the Westminster Fire Department was called to a fatal fire of undetermined causes at a local sawmill. The fire began in the approximate area of the hydraulic system or oil pump. The victim, a 53-year old man

and son of the mill's owner, was the operator of a machine in the area of origin. He died from smoke inhalation. No detectors or sprinklers were present in the building. The estimated damages from this blaze were $500,000.

Residential Structure Fire Deaths

Most Fire Deaths Occur in the Home
The majority of fire deaths occur in residential occupancies. We focus our analysis on these deaths because it is where prevention can yield the greatest results or have the most impact.

Ninety-five percent (95%) of structure fire deaths occurred in residential occupancies. In 2005 there were 39 residential structure fire deaths in 34 residential fatal fires. This represents 95% of the structure fire deaths and 75% of all fire deaths. Twenty-three (23) fire deaths occurred in 21 fires in one- and two-family dwellings; and 16 fire deaths occurred in 13 apartment fires. The graph below shows the number of fatal fire incidents and the number of civilian fatalities associated with various types of residential occupancies.

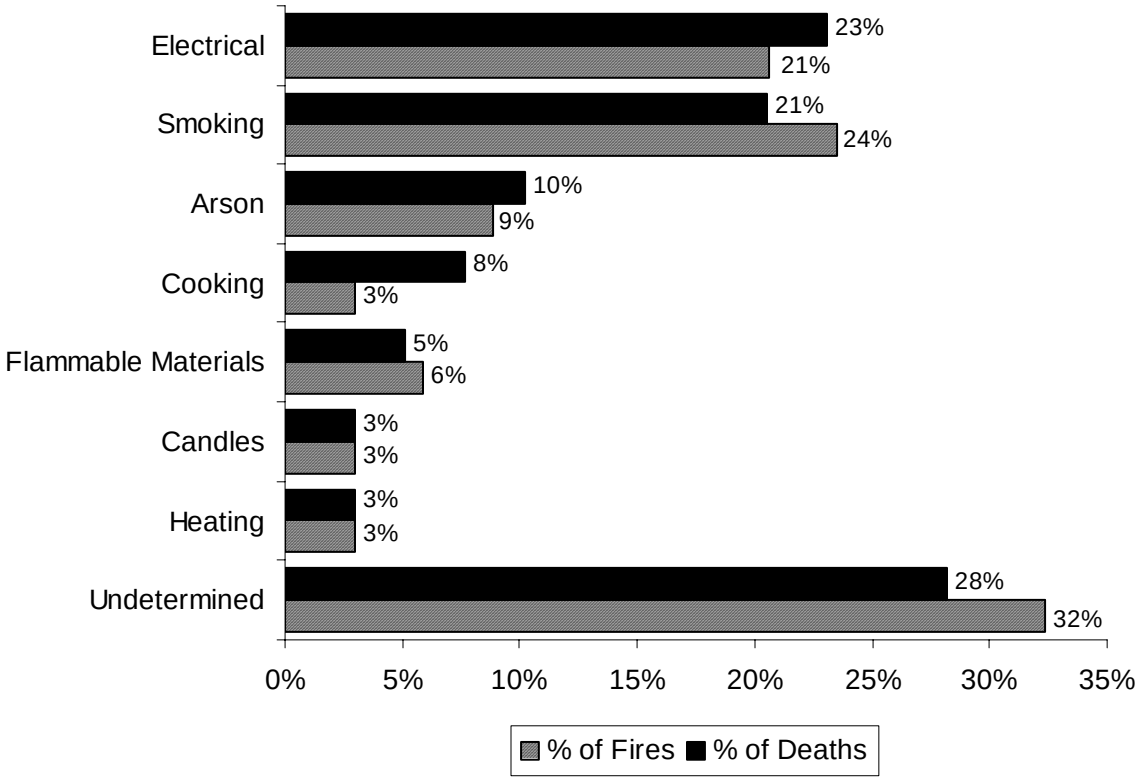


Electrical Fires Are the Leading Causes of Fire Deaths
In 2005, electrical fires started by electrical equipment and appliances were the leading cause of residential structure fire deaths. These fires accounted for nine, or 23%, of residential fire deaths. For years, smoking has been far and away the leading cause of fatal fires and fire deaths in Massachusetts, with no other cause coming close except in

1999. In 1999, cooking and smoking tied as the leading causes of fires that kill. In 2005, smoking was the second leading cause of residential fire deaths accounting for eight deaths or 21% of residential fire deaths. However, smoking was still the leading cause of fatal fires. The third leading cause of fire deaths in 2005 was arson, accounting for 10% of the fire deaths; and cooking fires the fourth leading cause of fire fatalities in Massachusetts in 2005 causing 8% of residential fire deaths.

The following graph illustrates the number of residential structure fire deaths and the number of fatal residential structure fires by cause. The classifications are ranked by the percentage of fire deaths that they caused.

Causes of Residential Fatal Fires and Fire Deaths



7 Fatal Electrical Fires Caused 9 Deaths
Seven (7) fatal electrical fires, or 21% of fatal residential structure fires, caused nine, or 23%, of residential structure fire deaths in 2005.

- On April 17, 2005, at 12:29 a.m., the North Andover Fire Department was called to a fatal electrical fire in a single-family home. The fire was started by arcing in the electric switch that controlled the boiler. The victim, a 61-year old woman, was attempting to escape the fire but she was overcome and found unconscious by

firefighters. She was transported to a local hospital where she later died from smoke inhalation. Smoke detectors were present but failed due to a lack of cleaning. Damages from this fire were estimated at $150,000.

- The Franklin Fire Department was called to a fatal electrical fire in a single-family home on May 13, 2005, at 12:19 a.m. A malfunctioning television set in the basement started the fire. The victims, a 70-year old man, 66-year old woman and their 46-year old daughter were all overcome by heat and smoke in their bedrooms while they tried to escape. Three other civilians, the victims' grandson, and two police officers were injured in this fire. One firefighter was hurt battling this blaze. It was undetermined if smoke detectors were present. There was no estimation as to the dollar loss incurred by this fire.

- On July 11, 2005, at 4:12 a.m. the Brockton Fire Department was called to a fire in a single-family house caused by a 'pinched' electrical cord. The fire originated in an electrical appliance that was next to the stove on the countertop with the wire running down between the stove and a cabinet. The victim, an 83-year old woman, was attempting to escape when she was overcome by the heat and smoke. Detectors were present and operating. There were no other injuries associated with this fire. The fire caused an estimated $55,000 worth of damage.

- On September 13, 2005, at 3:24 a.m. the Pittsfield Fire Department was called to a fatal electrical fire in a 4-unit apartment building. The fire began in the living room where an extension cord was overloaded. The 24-year old male victim was asleep at the time of the fire. The fire blocked his escape route. Two firefighters were injured fighting this fire. Smoke detectors were present and operated. Damages from this fire were estimated to be $350,000.

- On October 11, 2005, at 5:28 a.m. the Boston Fire Department was called to a fatal electrical fire in a 3-unit apartment building. The fire originated in the basement. The victim, a 36-year old homeless man, was sometimes allowed to spend the night. An extension cord that was under a box spring that the victim slept on became frayed over time and ignited the fire. The victim was unconscious when rescued by Boston firefighters but soon succumbed to his injuries. Detectors were present and alerted the other occupants in the building. Damages were estimated to be $25,000.

- On November 25, 2005, at 4:42 a.m., the Cambridge Fire Department was called to a fatal electrical fire in a three-unit apartment building. The cause of the fire was common combustibles being too close to the electric light on the floor at the foot of the bed. The victim, a 77-year old woman was overcome by the heat and smoke. There were three fire service injuries associated with this fire, and damages were estimated to be $750,000. Smoke detectors were present but it was undetermined if they operated.

- On December 30, 2005 at 5:55 p.m., the Acushnet Fire Department was called to a fatal fire in a single-family home. An electric blanket ignited the victim's bedding.

The victim, a 73-year old woman, was sleeping at the time of the fire. She was overcome by heat and smoke while she slept. The fire self-extinguished and was not discovered until the fire and police departments were called upon to do a welfare check and found the victim's remains. There were no other injuries associated with this fire. There were no detectors present in the home. Damages from this fire were estimated to be $100,000.

8 Fatal Smoking Fires Cause 8 Deaths in Homes

Although smoking dropped to the second highest cause of residential fire deaths, it still was the leading cause of fatal residential structure fires. In 2005, the improper use and disposal of smoking materials caused eight fire deaths in eight fatal residential fires. The unsafe and improper use of smoking materials caused 21% of residential structure fire deaths and 24% of fatal residential structure fires. Two (2) of the 15 residential structure fire deaths of people over the age of 65 were caused by smoking.

- On January 1, 2005, at 2:47 a.m., the Burlington Fire Department was called to a fatal smoking fire in a single-family home. The fire began when someone dropped some smoking materials onto a couch on the front porch. The fire soon spread to the rest of the house. The victim, an 89-year old man, was asleep at the time of the fire and was attempting to escape when he was overcome by the heat and smoke. He later died from burns and smoke inhalation. There were no detectors present. One other occupant of the home and two firefighters were injured during this fire. Damages were estimated to be $375,000.

- On January 12, 2005 at 5:42 a.m. the Falmouth Fire Department was called to a fatal smoking fire in a single-family home. A cigarette ignited an upholstered chair. The victim, a 22-year old man, was asleep at the time of the fire and died from burns and smoke inhalation. No other injuries were associated with this fire. There were no smoke detectors in the house. Damages from this blaze were estimated to be $70,000.

- On February 24, 2005, at 6:08 p.m., the Webster Fire Department was called to a fatal smoking fire in a five-unit apartment building. The victim, a 48-year old woman, had fallen asleep in the bedroom, and the cigarette she was smoking ignited a chair. The victim was transported to a local hospital and later died from smoke inhalation and burns sustained in this fire. No estimation was made as to damages from the blaze. Smoke detectors were present but failed because of a dead battery.

- On April 14, 2005 at 8:59 p.m., the Plymouth Fire Department was called to a fatal smoking fire in a single-condominium unit. The victim, a 62-year old woman, was possibly impaired by alcohol and was overcome by heat and smoke. She died from smoke inhalation. There were no other injuries associated with this fire. Smoke detectors were present but did not operate because of a lack of power. Damages from this fire were estimated to be $20,000.

- On May 14, 2005 at 3:38 a.m. the Falmouth Fire Department was called to a fatal smoking fire in a 5-unit apartment building. A cigarette ignited the bedding in the

victim's bedroom. The victim, a 70-year old woman, was asleep at the time of the fire. She was transported to a local hospital, transferred to a Boston area hospital where she died from burns and smoke inhalation. One firefighter was injured fighting this fire. Smoke detectors were present but the victim was intimately involved with the ignition. Damages from this blaze were estimated to be $15,000.

- On November 23, 2005 at 9:55 a.m., the New Bedford Fire Department was called to a fatal smoking fire in a single-family home. The fire was started by a cigarette on the living room couch. The victim, a 63-year old woman, died from her burn injuries and smoke inhalation. There was one firefighter injury associated with this fire. It was undetermined if detectors were present. Damages from this fire were estimated to be $60,000.

- On November 23, 2005, at 4:52 p.m., the Boston Fire Department was called to a fatal smoking fire in an 8-unit apartment building. The victim, a 64-year old man fell asleep in the bathroom while smoking. Embers from the cigarette ignited his clothes. The victim was transported to a local hospital where he later died from his burn injuries. Smoke detectors were present and alerted other occupants in the building. Damages from this blaze were estimated to be $50,000.

- On December 16, 2005, at 3:03 a.m. the Boston Fire Department was called to a fatal smoking fire in the basement of a two-family residence. The victim, a 60-year old homeless man, sometimes sought shelter and bedded down in the basement. He fell asleep while smoking, igniting his clothing. The fire was confined to the victim and some surrounding storage materials in the basement. It was undetermined if the smoke detectors operated. Damages were estimated to be $1,000.

3 Fatal Arson Fires Cause 3 Deaths

Three (3) people died in three (3) residential arson fires in 2005. Arson accounted for 5% of fire deaths and 6% of the fatal fires in residential structures. One of these three victims committed self-immolation. Self-immolation is considered arson because the fire is intentionally set.

- On May 4, 2005, at 5:44 p.m., the Winthrop Fire Department was called to a fatal arson fire in a two-family home. The victim, a 27-year old woman, ignited the bedding in a bedroom with a cigarette lighter in a successful attempt at self-immolation. There was one civilian injury, the victim's father and one firefighter injury associated with this fire. Detectors were not present in the building. Damages from the blaze were estimated to be $400,000.

- On May 7, 2005, at 5:58 p.m., the Kingston Fire Department was called to a fatal arson in a single-family home. The victim, a 50-year old man, was beaten unconscious by his attackers and the fire was set to finish the homicide. He died from burns and smoke inhalation. Smoke detectors were not present in the home. There were no other injuries associated with this fire. Damages from this blaze were estimated at $250,000.

- On August 6, 2005, at 12:15 p.m., the Cambridge Fire Department was called to a fatal arson fire in a six-unit apartment building. The fire was set on the second floor landing of the front stairwell. The victims, a 76-year old woman and her seven-year old granddaughter were trapped by the flames in their third floor apartment. They were overcome by the heat and smoke as they attempted to escape. Nine firefighters were injured battling this fire. Smoke detectors were present and operated. Damages from this fire were estimated to be $250,000.

1 Fatal Cooking Fire Caused 3 Deaths
While cooking is the leading cause of residential structure fires, it is the fourth leading cause of residential fire deaths. Three (3) Massachusetts residents died in one residential fire caused by cooking in 2005. Cooking fires accounted for 5% of the fire deaths and 6% of fatal fires in people's homes in Massachusetts.

- On May 30, 2005 at 1:30 p.m., the New Bedford Fire Department was called to a fatal cooking fire in a four-unit apartment building. The point of origin was determined to be the gas stove located in the second floor kitchen. The victims, a 29-year old mother and her two sons, ages five and three, were trapped on the third floor while trying to escape. All three were overcome and died from smoke inhalation. There were seven firefighter injuries associated with this fire. Smoke detectors were present and alerted the occupants. Sprinklers were not present in the building. No estimate was made as to the damages from this fire.

2 Fatal Flammable Materials Fires Caused 2 Deaths
Two (2) fatal fires involving flammable materials, or 3% of fatal residential structure fires, caused two, or 5%, of residential structure fire deaths in 2005.

- On July 2, 2005, at 4:46 p.m., the Hull Fire Department was called to a fire in a single-family home. The victim, a 43-year old man, was part of a floor sanding crew that was refinishing the hardwood floors in the home. The fumes from the sealant came into contact with the pilot of the gas water heater causing an explosion and ensuing fire. No one else was injured in this fire. Smoke detectors were not present. Damages from this blaze were estimated at $180,000.

- On August 20, 2005, at 9:55 a.m., the Newburyport Fire Department was called to a fatal fire in a single-family home. The victim, a 51-year old man, and his son were applying a flammable water proofing substance when vapors from the substance were ignited by the water heater. They were both immediately caught in the flames. He was transported to a local hospital where he later died from burns and smoke inhalation. His son and three other civilians who attempted rescues were also injured in this fire. Smoke detectors were present and operated but all of the casualties were either intimately involved with the ignition or injured during rescue attempts. Damages from this fire were estimated at $75,000.

1 Candle Fire Caused 1 Death
One fatal candle fire, or 3% of all fatal residential structure fires, caused one, or 3%, of residential structure fire deaths in 2005.

- On October 1, 2005, at 11:03 a.m., the Hyannis Fire Department was called to a fatal candle fire in a single-family home. The victim, a 54-year old man who was possibly impaired by alcohol and drugs, was using candles in the house for light since the electricity had been shut off. An unattended candle in the bathroom started the fire. He died from burns and smoke inhalation. Smoke detectors were present in the building but failed to operate because the power had been shut off. Damages from this blaze were estimated to be $35,000.

1 Fatal Heating Fire Caused 1 Death
One fatal heating fire, or 3% of fatal residential structure fires, caused one, or 3%, of residential structure fire deaths in 2005. A wood pellet stove caused this fatal fire.

- On February 24, 2005, at 1:29 p.m., the Sterling Fire Department was called to a fatal heating fire in a single-family home. The victim, a 70-year old man, was attempting to light his wood pellet burning stove when it flashed back on him. The victim was transported to a local hospital and later died from the burns sustained in this fire. Damages from the blaze were estimated to be $500. Smoke detectors were present but it was determined that the fire was too small to activate them.

11 Fatal Fires of Undetermined Cause
Eleven (11) fatal residential structure fires that took the lives of 11 Massachusetts residents in 2005 remain undetermined after investigation. These represent 32% of the fatal fires, and the 11 related deaths represent 28% of the fire deaths in 2005. The cause of over one-quarter of all residential fire deaths could not be definitely determined after investigation. According to the National Fire Protection Association (NFPA) standard 921, Chapter 16.2.4, whenever the cause of a fire cannot be proven, the proper classification is “undetermined.” Undetermined is also acceptable when multiple fire causes or ignition factors cannot be eliminated, leaving the investigator with most probable causes – NFPA 921, Chapter 16.2.5.

- On January 14, 2005, at 3:00 a.m., the Athol Fire Department was called to a fatal fire in an eight-unit apartment building of undetermined cause. The victim, a 76-year old physically disabled woman, was rescued from the fire. She was transported to a local hospital where she later succumbed to injuries associated with smoke inhalation. Detectors were present and they operated. However the victim was intimately involved with the ignition. One firefighter was injured fighting this fire. Damages were estimated to be $125,000.

- On January 27, 2005, at 2:27 p.m., the Hadley Fire Department was called to a fatal fire in a single-family home of undetermined cause. The victim, a 68-year old woman, was found by firefighters in her bedroom. The most probable cause is clothes placed too close to an electric baseboard heater. There were no other injuries

associated with this fire. It was undetermined if detectors were present in the building. Damages from the blaze were estimated to be $227,600.

- On February 5, 2005, at 6:24 a.m., the Boston Fire Department was called to a fatal fire in a 3-unit apartment building of undetermined cause. The victim, a 49-year old man, was sleeping when found by firefighters. He was transported to a local hospital where he later died. There were no other injuries associated with this fire. Detectors were present but failed to operate because of a missing battery. Damages from the blaze were estimated to be $100,000.

- On February 7, 2005, at 8:03 a.m., the Greenfield Fire Department was called to a fatal fire of undetermined cause in a 3-unit apartment building. The victim, a 50-year old woman, was found unconscious near the bathroom door. Investigators believe that she became disoriented in all the smoke and succumbed to the heat and smoke. Smoke detectors were present but it is undetermined if they operated. There were no other injuries associated with this fire. Damages from this blaze were estimated to be $90,000. The most probable causes were either improper disposal of smoking materials or an unattended candle.

- On March 15, 2005, at 4:51 p.m., the Boston Fire Department was called to a fatal fire in a 30-unit apartment building of undetermined cause. The victim, a 68-year old woman, was overcome by the heat and smoke of the fire as she was trying to escape. Smoke detectors were present and operated. Damages from this blaze were estimated to be $65,000.

- On May 18, 2005, at 1:12 a.m., the Methuen Fire Department was called to a fatal fire in a single-family house of undetermined cause. The victim, a 59-year old man, was sleeping at the time of the fire and was overcome by the heat and smoke. The fire began in the living room where the victim had fallen asleep. The most probable cause of the fire was careless disposal of smoking material. Two firefighters were injured battling this fire. It was undetermined if smoke detectors were present. No estimation was made as to damages from the incident.

- On July 30, 2005 at 2:12 p.m., the Brockton Fire Department was called to a fatal fire in a two-family home of undetermined cause. The most likely cause was the improper disposal of smoking materials. The victim, a 74-year old physically disabled woman, was blocked from escaping and overcome by heat and smoke. She died from smoke inhalation. Smoke detectors were present and operating in the building. Damages from this fire were estimated to be $75,000.

- On September 7, 2005, at 12:23 a.m., the Salem Fire Department was called to a fatal fire in a single-family house, of undetermined cause. The victim, a 46-year old man, was sleeping at the time of the fire and was overcome by the heat and smoke. The fire began in bedroom. The most probable cause of the fire was improper disposal of smoking material. Two firefighters were injured battling this fire. Smoke detectors

were present but it was undetermined if they operated. Damages from this fire were estimated at $50,000.

- On October 19, 2005, at 8:58 a.m., the Boxford Fire Department was called to a fatal fire in a single-family house, of undetermined cause. The victim, an 87-year old man, lived alone in the 246-year old cottage. The house sat far off of the road and the fire was not detected until the morning after the home had been totally destroyed. It was undetermined if smoke detectors were present. Damages from this fire were estimated at $196,493.

- On December 4, 2005, at 2:33 a.m., the Orange Fire Department was called to a fatal fire in a single-family home of undetermined cause. The victim, a 30-year old man, was badly burned and showing signs of cardiac arrest during the fire. He was transported to a local hospital where he succumbed to his injuries. There were no other injuries associated with this fire, and no estimate was made as to the damages incurred. It was undetermined if smoke detectors were present.

- On December 12, 2005, at 8:18 p.m. the North Brookfield Fire Department was called to a fatal fire in a three-unit apartment building of undetermined cause. The fire originated in the kitchen. The victim, an 83-year old man died from burns and smoke inhalation. There were no other casualties. Detectors were present and operated. No sprinklers were present. The estimated damages from this blaze were $400,000.

Bedroom or Kitchen is the Area of Origin for Almost 1/2 of All Victims
Nearly half, 16, or 47%, of the civilians that died in residential fires were killed in fires that started in the bedroom or kitchen. Ten (10), or 29%, succumbed to fires that originated in the bedroom, another six victims, or 18%, died in fires that began in the kitchen, and four victims, or 10%, perished in fires that began in the living room. The area of origin for the remaining 14 fatalities, or 41%, were spread throughout the structure with no one area being associated with more than three deaths. The area of origin was undetermined for three fire fatalities. These victims were excluded from the percentage calculations.

Over 1/5 of Deaths Involved Smoking Materials as a Heat Source
Over one-fifth of deaths involved smoking materials as a heat source. Of the 39 residential structure fire deaths, 21% involved smoking materials: 15% were from cigarettes, and 5% were from unspecified smoking materials. Ten percent (10%) of the deaths involved a spark, ember or flame from operating equipment; 5% of the deaths involved radiated or conducted heat from operating equipment; and another 5% of the deaths were from a flame or torch used for lighting. Arcing, candles, a lighter[43], an unspecified hot or smoldering object, and an undetermined type of heat from operating equipment were each the heat source of 3% of the 2005 residential structure fire deaths. Heat source was undetermined in 18 deaths, or 46%, of the residential structure fire deaths in 2005.

[43] The lighter was used in a successful self-immolation attempt and therefore not counted as smoking material.

Interior Wall Coverings Ignited First in 13% of Deaths
Of the 39 residential structure fire deaths, 13% of the fire deaths were from fires where an interior wall covering was the item first ignited. Bedding materials such as blankets, sheets or comforters were the first item ablaze in 10% of these deaths. Upholstered sofa or chairs were the first item to burn in 8% of deaths. Electrical wire or cable insulation and flooring coverings such as rugs, carpets or mats, and multiple items were each the first item ignited in 5% of these fires. An uncontained flammable liquid, a vaporized liquid, wearing apparel on a person, unspecified soft goods, and unspecified furniture or utensils were each the item first ignited in 3% of the fatal fire deaths in 2005. First material ignited was undetermined in 16, or 41%, of the residential structure fire deaths in 2005.

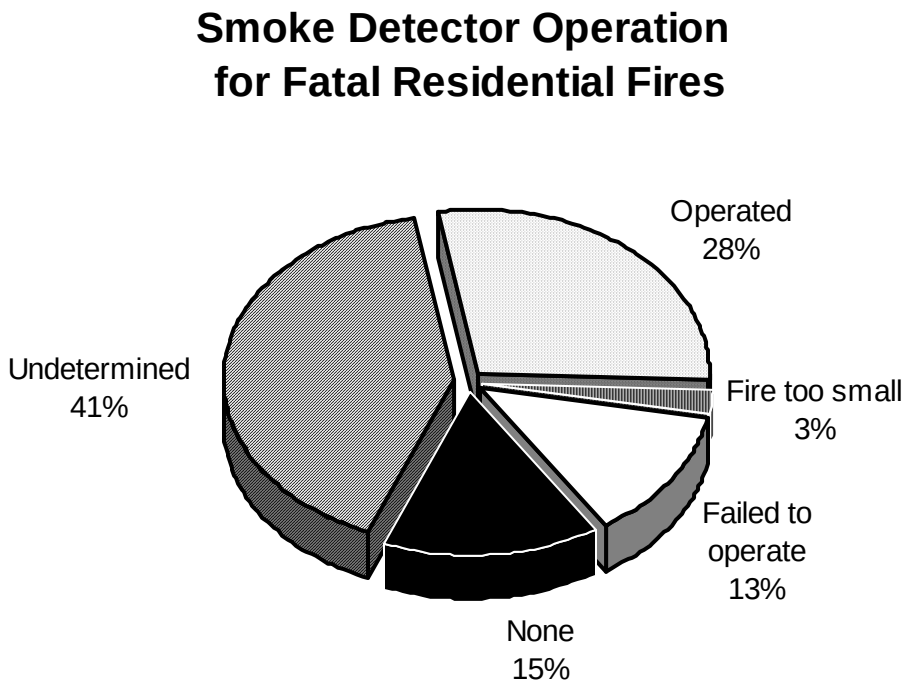
The fire service through the National Association of State Fire Marshals (NASFM) has supported mandatory national fire safety standards for mattresses and upholstered furniture for the past decade. NASFM and the CPSC has recommended the national adoption of the most recently revised California standard (California Technical Bulletin 117) for upholstered furniture that addresses both small open flame (match, lighter, candle) and cigarette ignitions and the recently implemented California standard (California Technical Bulletin 603) for resistance of a mattress/box spring set to a large open flame. These standards make the average piece of furniture less likely to ignite rapidly, and if ignited, less likely to burn quickly or sustain burning.

Although many buildings and building materials help contain fires, the problem is still all of the contents we have inside our homes are more flammable than ever and create ever increasing levels of toxic gases when they burn.

No Working Detectors for Over 1/4 of Residential Fire Victims
Of the thirty-nine (39) people who died in residential structure fires in 2005, the smoke detector performance was known for 23 of the victims. Victims were not alerted by smoke detectors in eight fires that killed 11 people, or 28% of the victims. In six of these incidents, no detectors were present at all, killing six (15%) individuals. Detectors were present, but did not operate in five fires that killed five people (13%). One person, or 3% of the victims, died in one fire where the fire was too small to activate the detector.

Eleven (11) people died in 10 separate residential fires with detectors that did operate, accounting for 28% of fatal fire victims. It is important to remember that detectors provide an early warning of a fire. They do not guarantee an escape if exits are blocked or an individual's clothing ignites. A fire that appears small when discovered can quickly grow beyond an individual's ability to control or escape it. In 2005, four of the fatal residential fire victims that were intimately involved in ignition had their smoke detector operate. While smoke detectors cannot by themselves save a person who is directly involved in the ignition, they alert other occupants to the danger and give them precious time to escape to safety.

Detector performance was undetermined in 12 residential structure fires that killed 16 people accounting for 41% of the residential structure fire deaths in 2005. In five of these 12 fires, detectors were present but it was undetermined as to whether they operated or not. The pie chart shows the smoke detector status as a percentage of the civilian residential structure fire deaths in 2005.

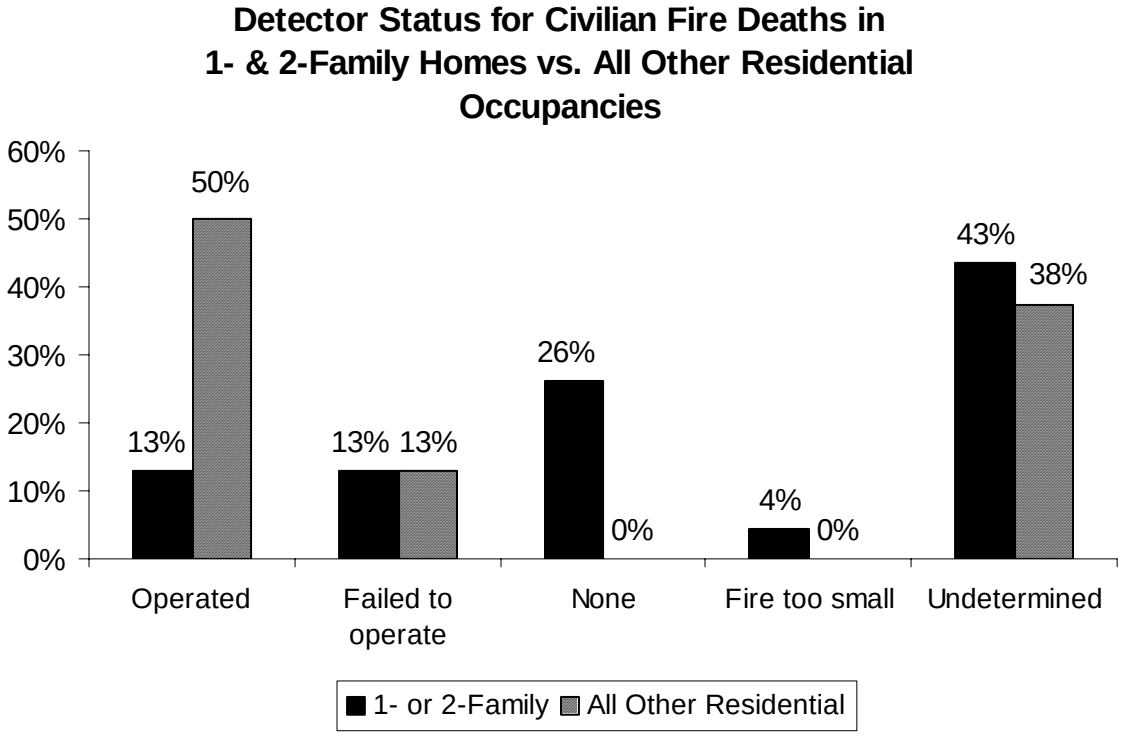


No Working Smoke Detectors in 39% of Fire Deaths in 1 & 2-Family Homes
There were 44% more fire deaths in 1- & 2-family homes than all other residential occupancies combined. Twenty-three (23) people died in 21 one- and two-family dwelling fires in 2005. Nine (9), or 39%, of the fire deaths in one- and two-family homes occurred in fires with no detectors at all or with detectors that failed to operate. Of these nine deaths, three occurred in homes where smoke detectors failed to work while the other six deaths were in homes where there were no smoke detectors present. Three (3) deaths, or 13%, occurred in homes where the smoke detectors operated. One death in a single-family home occurred when the fire was too small to activate the detector. Ten (10) deaths, or 43%, occurred in three fires where smoke detector performance was undetermined.

2 Detectors Failed from a Power Shutoff or Disconnect
Of the five residential fire deaths where smoke detectors were present but failed to operate, two, or 40%, failed to operate because the power had been shutoff or disconnected. One detector (20%) did not operate because of a missing or disconnected battery. Another detector (20%) failed because of a lack of maintenance. It was undetermined why the other detector (20%) failed.

Other Residential Occupancies More Likely to be Protected by Smoke Detectors
Sixteen (16) people died in 13 apartment fires in 2005. The detector performance was known for 10 of the 16 victims. Two (2) individuals perished in two fires where smoke detectors were present but did not function. Eight (8) people died in seven apartment or other residential fires where smoke detectors were present and working. Detector performance was unknown or not reported in four fires where six people lost their lives.

The following graph illustrates the detector status in the percentage of deaths between 1- and 2-family homes and all other residential occupancies.



Sleeping Was the Leading Human Factor Contributing to Injury[44]
Of the 39 fatal residential structure fire victims, 17 had some human factor contributing to their injury reported to MFIRS. Fifteen percent (15%) of the fatalities were asleep before they died; 13% were unconscious; 6% were possibly impaired by alcohol; another 4% were bedridden or had another physical handicap; another 4% were unattended or unsupervised; and 2% were possibly impaired by drugs or chemicals. Twenty-two (22), or 47%, of the 39 civilians fire deaths did not have a human factor contributing to injury reported.

[44] Some fields in version 5 allow for multiple entries. Therefore the number of entries may be greater than the actual number of incidents being analyzed.

Time is the Enemy in a Fire
In version 5, a human factor contributing to injury is defined as the physical or mental state of the person shortly before becoming a casualty. Our data reports 15% of fatalities were asleep shortly before becoming a casualty. It also shows that 36% of these victims were attempting to escape the fire when they were overcome. This would seem to indicate that some people were awoken from their sleep and attempted to escape before being overcome. This combined with the lack of working smoke detectors in 28% of the fire deaths indicates that victims did not have enough time to get to safety.

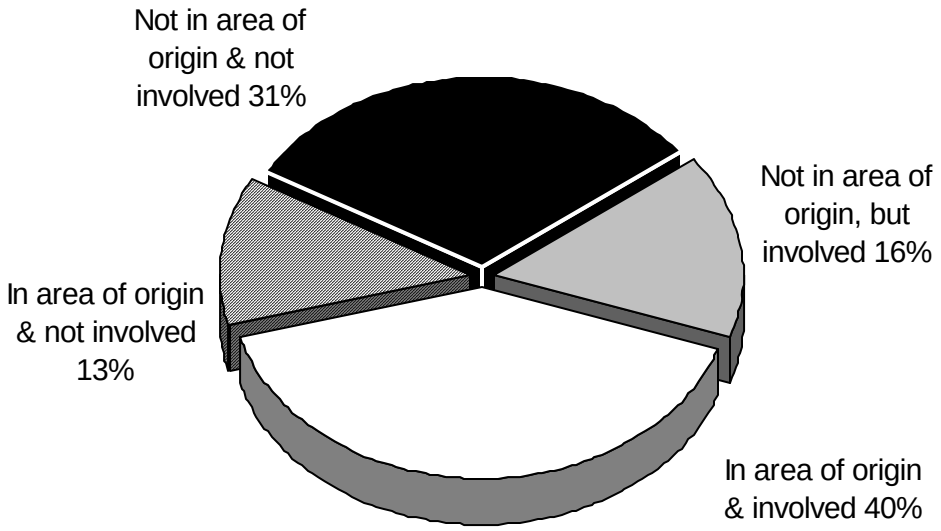
Escaping & Sleeping Were Leading Activities at Time of Death
Fourteen (14), or 36%, of the 39 fatal fire victims were trying to escape when they died. Twenty-three percent (23%) of the victims were sleeping; 5% were unable to act; while 3% were involved in an irrational action. Activity at time of death was undetermined for 13, or 33%, victims of fatal fires in 2005.

93% of Victims Suffered Burns, Smoke Inhalation or Both
Burns or smoke inhalation was the primary apparent symptom for 28, or 93%, of the victims where the primary apparent symptom of their injury was known; 15, or 50%, suffered burns and smoke inhalation; 12, or 40%, suffered from smoke inhalation only, and one victim, or 3% died from only the burns incurred in the fire. Cardiac arrest was the primary apparent symptom for one, or 3%, of these victims. The primary apparent symptom for the other victim (3%) was breathing difficulty or shortness of breath. The primary apparent symptom was undetermined in nine deaths. These victims were excluded from the percentage calculation.

53% of the Victims Were in the Area of Origin
Knowing where the victim was at the time of the incident and if they were involved in starting the fire, helps us determine if they could have escaped to safety with appropriate warning from smoke or heat detectors.

Seventeen (17), or 53%, of the residential fatal fire victims were in the area of origin of the fire. The majority of these victims (13), or 40%, were intimately involved with the ignition of the fire that killed them. These 13 were in the area of origin and somehow involved with the fire's ignition. Four (4), or 13%, were in the area of origin but not involved with the ignition, such as the sleeping woman whose electric blanket started the fire. Five (5), or 16%, of these victims were not in the area of origin but were somehow involved in starting these fires. Ten (10), or 31%, of the victims were not in the area of origin and not involved with the ignition of the fire that claimed their lives. The *Location at Time of Incident* was unknown for seven of the residential fatal fire victims. These seven were excluded from the calculations.

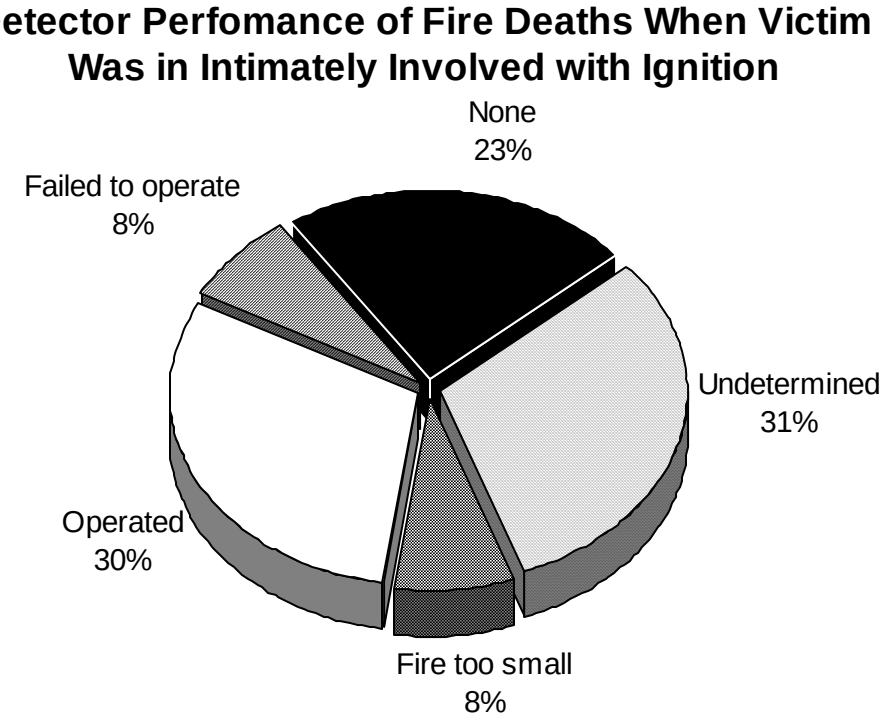
Civilian Fatalities
Location at Time of Incident



31% of Detectors Operated When the Victim Was Intimately Involved in Ignition
There were 13 victims that were reportedly in the area of origin and involved with the ignition of the fire that killed them. Four (4), or 30%, of these 13 victims, actually had a working smoke detector in their home at the time of the fire. Three (3) victims, or 23%, did not have any smoke detectors in their home. One victim (8%) had a detector but it failed to operate. For another victim, or another 8%, the fire was too small to activate their smoke detectors. It was undetermined for four (31%) of the victims that were intimately involved with ignition whether their homes had operating smoke detectors.

In the case of one of the four victims where the detectors operated and they were involved with the ignition, the victim fell asleep while smoking in the bathroom, and the cigarette ignited his clothes. Another of the four victims started the fire with the careless disposal of smoking materials when she fell asleep while sleeping. The third victim was killed when the wood pellet stove he was attempting to light, flashed on him burning his face and upper torso. The cause of the fire for the last victim was undetermined, but may have been smoking in bed.

It is most probable that no amount of early warning would have saved any of these victims. This is where fire prevention and education become key components in saving lives.



Fatal Motor Vehicle Fires

In 2005, five motor vehicle fires killed seven civilians. Motor vehicle fire deaths are determined subsequent to the autopsy of the victim. When smoke is found in the lungs of the victim, it is an indication the victim survived the impact of the collision and was killed by the fire and not the crash. Four (4) of the fires and six of the deaths involved automobile accidents, and one was a case of self-immolation. All of these fatal motor vehicle fires occurred between February and October.

3 Motor Vehicle Collisions Cause 3 Fires and 5 Deaths
Five (5) Massachusetts residents were killed in three separate motor vehicle collisions resulting in three motor vehicle fires. These three incidents accounted for 7% of the fatal fires and 10% of the fire fatalities in 2005.

- On March 26, 2005 at 12:18 a.m., the Weston Fire Department was called to a fatal motor vehicle fire. The pick-up truck that the victim was driving was involved in a motor vehicle collision. The victim, a 23-year old man, was trapped in the wreckage and died from the burns sustained in the ensuing fire. There were no other injuries associated with this fire. No estimation was made as to the damages incurred by this fire.

- On April 21, 2005, at 3:15 a.m., the Stoneham Fire Department was called to a motor vehicle fire caused by a single vehicle crash of Interstate 93. There were four people in the SUV when it crashed. The victims, 23- and 24-year old men, were trapped inside the wreckage and could not escape. Bystanders were unable to help. The

victims died from burns and trauma sustained in the accident. Two other passengers were also injured from the collision. No estimation was made as to the damages incurred by this fire.

- On July 29, 2005 at 11:15 p.m., the Holden Fire Department was called to a fatal motor vehicle fire caused when a passenger car drove through a 'STOP' sign and collided with a gasoline tanker truck. The car soon burst into flames. The driver, a 16-year old male and his 15-year old male passenger, were trapped inside of the car. They died from trauma and the burns incurred while trapped inside the vehicle. No estimation was made as to damages from the blaze.

1 Motor Vehicle Arson – Self-Immolation
One (1) Massachusetts resident committed suicide by lighting himself on fire inside of a car. Self-immolation is considered arson because the fire is intentionally set. This incident accounted for 2% of the fatal fires and 2% of the fire fatalities in the Commonwealth in 2005.

- On October 6, 2005, at 9:24 p.m., the Norwood Fire Department was called to a fatal motor vehicle arson. Upon arrival firefighters extinguished the fire and found the body of the victim, a 28-year old man, in the trunk. It is believed that this was a successful attempt at self-immolation. Damages from this blaze were estimated to be $1,700. No other injuries were associated with this fire.

1 Fishing Boat Fire Kills 1 Massachusetts Fisherman
One (1) Massachusetts resident died when the fishing boat he was working on caught fire off the coast. This incident accounted for 2% of the fatal fires and 2% of the fire fatalities in the Commonwealth in 2005.

- On February 20, 2005, at 4:26 p.m. the Scituate Fire Department was notified of fire on a fishing boat approximately five miles off the coast. The fire eventually involved the entire boat which sank. The victim, a 21-year old man, was severely burned and succumbed to his injuries in the water. His remains washed ashore a month later. Two other crewmembers were injured in this fire. The fire caused an estimated $100,000 worth of damages.

Other Fatal Fires & Explosions

In 2005, four outside and other fire or explosion incidents killed four civilians. These four incidents accounted for 9% of the fatal fires and 8% of the fire fatalities in Massachusetts in 2005.

Homeless Man Killed While Smoking

- On May 18, 2005 at 7:31 p.m., the Fall River Fire Department was called to a fatal outside fire under a highway overpass. The first arriving firefighters found three mattresses on fire with the victim beside them. The victim, a 44-year old homeless man, had been smoking and had somehow ignited one of the mattresses. He was transported to a local hospital where he later died from burns and smoke inhalation. No other injuries were associated with this fire.

Woman Dies from Self-Immolation

- On November 8, 2005 at 2:35 a.m., the Brockton Fire Department was called to a fire in a street. Firefighters extinguished the fire with a booster line and determined that the object burning was a person. It was a successful attempt at self-immolation. A five-gallon can of gasoline in a nearby shopping cart was also burning. The victim, an unidentified woman, poured gasoline over herself and ignited it. She died from the burns and smoke inhalation.

Homeless Woman Killed in Dumpster

- The Framingham Fire Department was called to a dumpster fire on December 7, 2005, at 2:52 a.m. During overhaul the victim's body, an unidentified woman was found in the rear of the dumpster on a burnt mattress. It was undetermined how the fire began. No other injuries were associated with this fire. There was no estimation as to the dollar loss incurred by this fire.

Homeless Man Killed By Campfire

- On December 24, 2005 at 7:59 a.m., the Fall River Fire Department was called to a fatal camping fire in the woods. The first arriving firefighters found the remains of a campfire with the victim's deceased body beside it. The victim, a 39-year old homeless man, had somehow ignited his clothes. He died from the burns he sustained. No other injuries were associated with this fire.

Multiple Fire Deaths

For statistical purposes, a fire is considered a multiple death fire if it kills three or more people. There were two multiple death fires in Massachusetts in 2005. The first multiple death fire occurred in Franklin on May 13, 2005[45] and was caused by a malfunctioning television set. The other multiple death fire in Massachusetts was a cooking fire that happened in New Bedford on May 30, 2005[46].

[45] The anecdote to this multiple death fire is on page 89.

[46] The anecdote to this multiple death fire is on page 92.

Civilian Fire Deaths - Conclusion

In 2005, there were 46 fatal fires in Massachusetts with 52 accompanying fatalities. The number of deaths remained the same as the number reported in 2004, the lowest number of fire fatalities on record. Of these 52 deaths, 39 occurred in residential structure fires.

Majority of Fire Deaths Occur in Residential Occupancies
Ninety-five percent (95%) of all fatal structure fire victims, died in residential structure fires. Twenty-three (23) of these deaths occurred in one- and two-family homes. We focus our analysis on these deaths because it is where prevention can have the most impact.

Electrical Fires Were the Leading Causes of Fire Deaths
In 2005, electrical fires started by electrical equipment and appliances were the leading cause of residential structure fire deaths. These fires accounted for nine, or 23%, of residential fire deaths. For years, smoking has been far and away the leading cause of fatal fires and fire deaths in Massachusetts, with no other cause coming close except in 1999. In 1999, cooking and smoking tied as the leading causes of fires that kill. In 2005, smoking was the second leading cause of residential fire deaths accounting for eight deaths or 21% of residential fire deaths, but still is the leading cause of fatal fires.

Older Adults (65+) at Greatest Risk of Dying in Fires – Twice as Likely
Older adults (65 years+) were at a greater risk for dying in a Massachusetts fire in 2005. Older adults accounted for 14% of the population but 30% of the fire deaths. They were twice as likely to become a fire victim. Two people over the age of 65 died in smoking-related residential structure fires in 2005.

People Were More Likely to Die in Fires That Occurred While They Slept
People were more likely to die in fires that occurred while they slept. Twenty-three percent (23%) of fire fatalities were sleeping at the time of their injury. Twenty-eight percent (28%) of the residential fire victims did not have a working smoke detector so they were never afforded the chance of escape because they had no prior warning. Almost half (47%) of the victims died in fires that began in either the bedroom or kitchen. Interior wall coverings were the leading item first ignited in residential structure fire deaths; bedding, and upholstered sofa or chair were the second and third leading item first ignited, respectively. Also, 93% of these victims suffered burns, smoke inhalation or both.

Seventeen (17), or 44%, of all the civilians that died in residential fires were reported to be in the area of fire origin. Of these 17 victims, 13, or 65%, were intimately involved in the ignition of the fire that killed them. It is most probable that no amount of early warning would have saved any of these victims. This is where fire prevention and education become key components in saving lives.

Growing Trend of Homeless Fire Deaths
There seems to be a growing trend of fire deaths involving homeless people and people living in places not considered as traditional residential structures. In 2005, four homeless men died in fires. Two of the men died in outside fires, and the other two men died in fires in the basement of homes that they were sometimes allowed to sleep in. A possible fifth homeless person died in dumpster; it is believed that the woman was sleeping in the dumpster when the fire began. In 2004, we saw one homeless man die in an outside fire. He was sleeping in a tent at a makeshift campsite and knocked over a candle igniting the fire. There were two such fires causing three fire deaths in 2003.

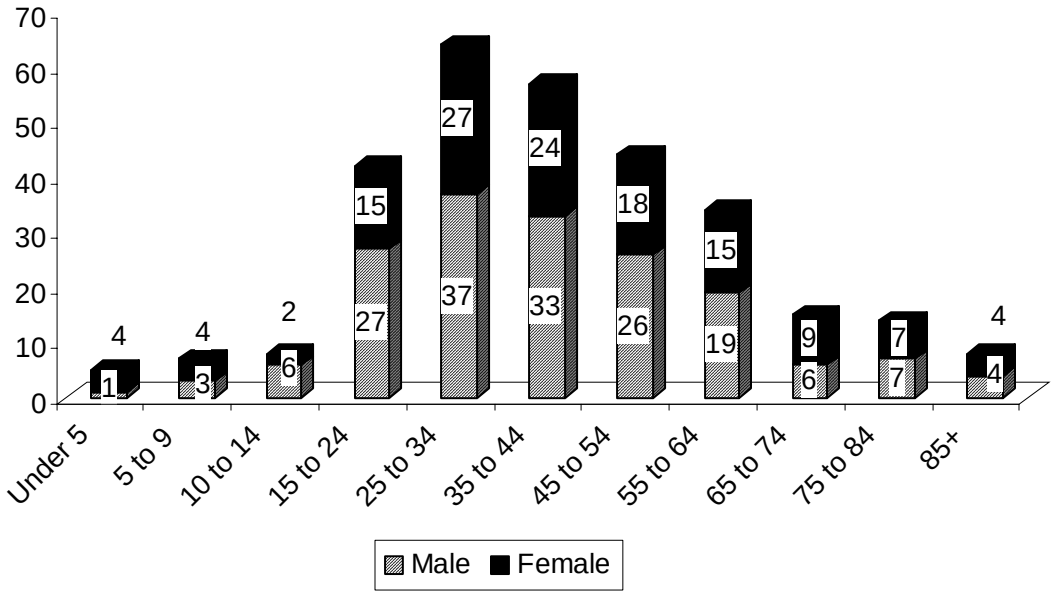
Civilian Injuries

359 Civilians Injured in Fires in 2005 – Mostly at Home
Massachusetts' fires injured 359 civilians in 2005, but only 356 of these injuries had casualty reports completed in full. Three hundred and one (301), or 84%, of civilian injuries occurred in structure fires. Two hundred and seventy-two (272), or 90%, of all the structure fire injuries occurred in residential structure fires. Twenty-seven (27), or 8%, occurred in motor vehicle fires. Seven (7), or 2%, occurred in special outside fires such as mailbox or outside equipment fires. Brush fires accounted for one, or 0.3%, of civilian fire injuries; outside rubbish fires also accounted for one, or 0.3%, of civilian injuries. Twenty-two (22), or 6%, of civilian injuries were caused by unclassified fires.

Structure Fire Injuries

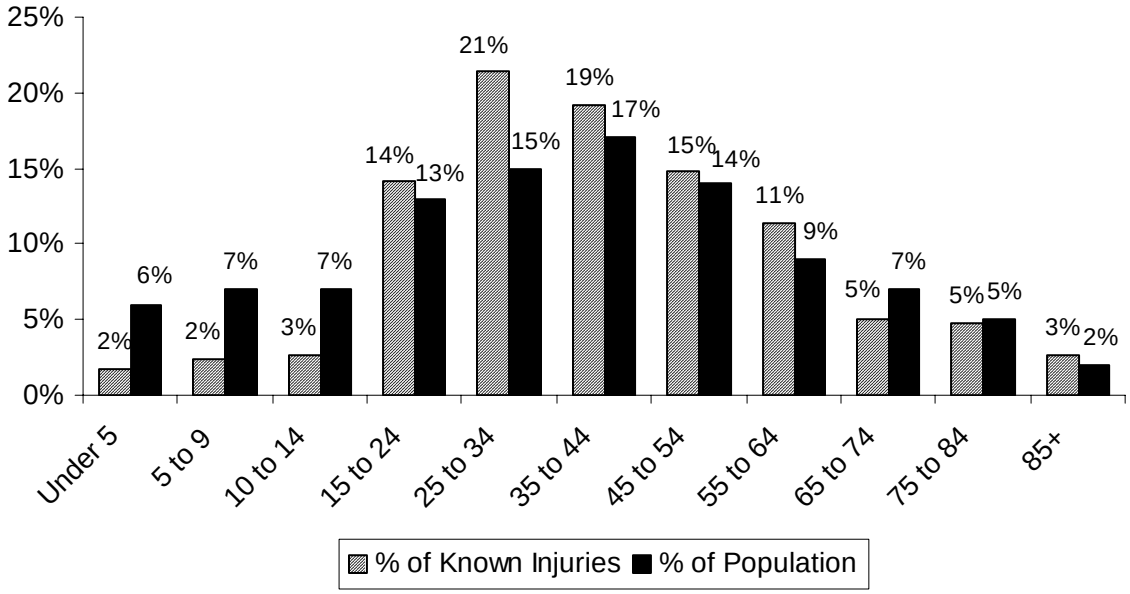
Of the 301 civilian injuries resulting from structure fires where gender was reported, 171, or 57%, were men and 130, or 43%, were women. Overall, 26 children under 18 years of age, 235 adults and 37 older adults (65+) were injured by structure fires in 2005. The following chart illustrates the structure fire injuries by age and gender in 2005. Men and women ages 25-34 and 35-44 were injured the most and children under five and between five and nine were injured the least in 2005. Five (5) children ages 0-4 were injured; seven children ages 5-9; eight (8) children ages 10-14; 42 people ages 15-24; 64 people ages 25-34; 57 people ages 35-44; 44 people ages 45-54; 34 people ages 55-64; 15 people ages 65-74; 14 people ages 75-84; and eight people were injured that were over 85 years of age, of which four were women and four were men.

Structure Fire Injuries by Age & Gender



The following graph shows the percentage of injuries by age group and the percent of the population that age group represents in Massachusetts. When the percentage of injuries is greater than the percentage of population, that group is at a greater risk for being injured in a fire.

Injuries vs. Percentage Population



Adults 15 to 64 at High Risk for Fire Injury
Young adults between the ages of 15 and 24 represent 13% of the Massachusetts population, yet they accounted for 14% of the injuries at structure fires in 2005. Adults between the ages of 25 and 34 represent 15% of the population and yet they accounted for 21% of the injuries in 2005. Adults between the ages of 35 and 44 represent 17% of the population and yet they accounted for 19% of the injuries in 2005. Adults between the ages of 45 and 54 represent 14% of the population and yet they accounted for 15% of the injuries in 2005. And adults between the ages of 55 and 64 represent 9% of the population and accounted for 11% of the injuries. The disparity in the percentage of injuries to the percentage of population is most likely caused by the tendency to try and control the fire. In these age groupings, almost half, 48%, of the fire-related injuries were incurred while trying to control the fire.

In 2001, older adults over the age of 85 accounted for 9% of the civilian fire injuries. In 2003, as in 2002, they only accounted for 2% of these injuries. They also account for 2% of the Commonwealth's population. In 2005, as in 2004, they accounted for 3% of the injuries and thus were at a slightly higher risk of receiving a fire-related injury.

85% of Injuries Were Directly Related to Exposure to Fire Products
Of the 274 civilian injuries in structure fires where the Cause of Injury was known, 85% were directly linked to exposure to fire products; 7% of the casualties were exposed hazardous materials or toxic fumes; 3% were caused by being struck by or contact with an object; 1% were caused by the victim falling, slipping or tripping; overexertion and jumping in an escape attempt, each caused less than 1% of the known injuries. Two percent (2%) of the civilian fire injuries were caused by 'Other' causes; and 1% were reported to have multiple causes. The Cause of Injury was undetermined or not reported for 27 victims. These figures were not included in this analysis.

81% of Injuries Were Due to Smoke Inhalation or Burns or Both
Eighty-one percent (81%) of injuries were due to smoke inhalation or burns or both. Of the 246 civilian injuries in structure fires where the Primary Apparent Symptom was known, 40%, were caused by smoke inhalation only. Twenty-seven percent (27%) were caused by thermal burns only. Burns and smoke inhalation together caused 14% of the injuries. Breathing difficulty or shortness of breath was responsible for 6% of these injuries. Three percent (3%) of injuries were each caused by scald burns or cuts and lacerations. Cardiac symptoms and pain each caused 1% of these injuries. Abrasions, contusions, chemical burns, dizziness, fainting or weakness, numbness or tingling, eye trauma, pain, emotional or psychological stress, and shock each accounted for less than 1% of the structure fire-related injuries in 2005. 'None' was reported as the Primary Apparent Symptom for three, or 1%, of these victims. The nature of injury was undetermined or not reported in 55 civilian fire injuries. These were excluded from the percentage calculations.

47% Injured While Trying to Control the Fire; Get Out & Stay Out
Those who attempt to control a fire rather than escape and summon professional firefighters are much more likely to suffer injuries. Almost one-half were injured while

attempting to control the fire themselves. It is important for people to exit a burning building, closing doors behind them to contain the fire, and to call the professionals from outside the burning building. Of the 228 victims for which activity at time of injury was known, 47%, were attempting to control the fire, up from 37% in 2004; 18% were escaping; 11% were sleeping; 7% were attempting a rescue; 4% were acting irrationally; another 4% returned to the vicinity of the fire before it was under control; and 2% were unable to act. Eleven percent (11%) were injured in 'Other' activities. There were 73 injuries where the activity at time of injury was unknown; these were excluded from the percentage calculations.

Women More Likely to Be Injured Trying to Control the Fire

In 2005, 51% of female victims sustained their injuries while attempting to control the fire as compared to only 44% of male victims. This continued a new trend started in 2003 of women being more likely to be hurt while attempting to control the fire. A higher percentage of men (10%) sustained their injuries while making a rescue attempt than did women (3%), and 20% of women were attempting to escape compared to 16% of men. There is a 1% or less difference between men and women in every other activity except the 'Other' activity.

Historically, a higher percentage of men received fire-related injuries from trying to extinguish the fire themselves. In 2000, twice as many men than women were injured while trying to control the fire. In 2001, men and women were equally likely to be injured attempting to control the fire. In 2002, men were 1.2 times more likely to be injures attempting to control the fire.

The key to prevention of these injuries is to make and practice a home escape plan, remember to get out and stay out, and leave firefighting to the professionals. They have the training, equipment and protective clothing to do the job.

Over 1/2 of Victims Were Asleep Just Before the Injury[47]

Of the 76 victims for which the human factor contributing to the injury was known, 51%, or more than half, were asleep; 12% were possibly impaired by alcohol; 11% were possibly impaired by drugs; another 11% were unattended or unsupervised persons; 7% were physically disabled; 5% were possibly mentally disabled; and 4% were unconscious.

The following table is a cross tabulation which allows us to know what the person was doing when injured and what was either their physical or mental state shortly before becoming a victim. The overall majority of civilian fire injuries came about through trying to control the fire. In version 4 being awake was a valid entry for *Condition Before*

[47] This is a new field. It is not mandatory that it be completed. It loosely corresponds to the version 4 field Condition Before Injury. This is the reason for the low number of victims for which the field had been completed. It also does not contain a corresponding value for the version 4 code - awake and unimpaired.

Injury. However in version 5 there is no equivalent code in the field *Human Factors Contributing to Injury*.

When both of the fields were completed, the majority of civilian fire injuries occurred when people were asleep at the time of injury and were still asleep at the time of the fire. The next leading result was when someone was asleep and then tried to escape.

CIVILIAN INJURIES BY ACTIVITY AND PRIOR CONDITION

Human Factors Contributing to Injury

Activity At Injury	Asleep	Uncon-scious	Possibly Impaired		Mentally Disabled	Physically		Unsuper-vised
			Alcohol	Drugs		Disabled	Restrained	
Escaping	**10**	0	1	0	0	0	0	2
Rescue attempt	1	0	0	1	0	1	0	1
Fire control	7	2	3	0	0	1	0	1
Return before fire control	1	0	1	1	0	0	0	1
Return after fire control	0	0	0	0	0	0	0	0
Sleeping	**16**	1	1	0	0	0	0	0
Unable to act	0	1	2	1	0	1	0	1
Irrational action	0	0	0	0	2	0	0	0
Other	25	0	0	0	0	0	0	0
Unknown	1	0	0	0	2	0	0	0
Total	37	3	8	2	4	3	0	6

Over 1/2 of All Victims Were Involved With the Ignition of the Fire

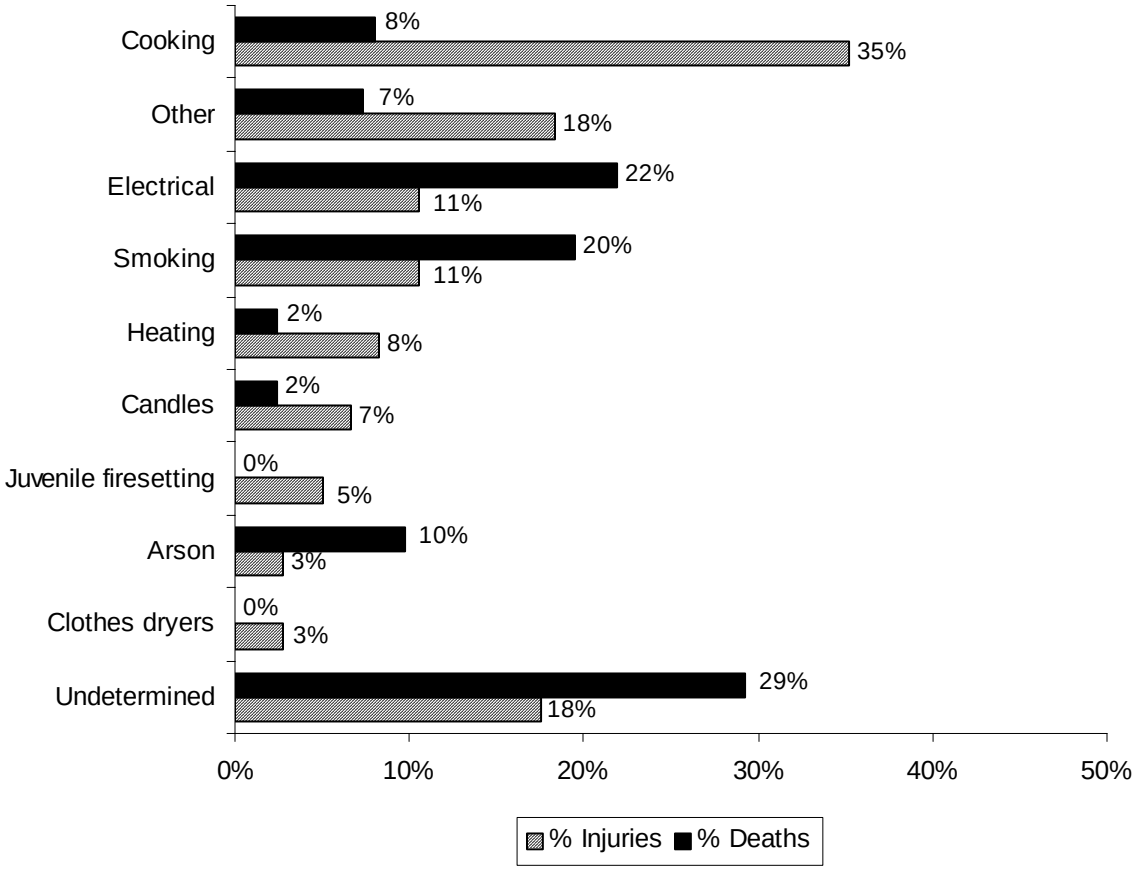
Over half, 51%, of all victims were involved with the ignition of the fire that injured them. One hundred (100), or 43%, of the 231 civilian victims where *Location at Time of Incident* was known, were in the area of origin and intimately involved with the ignition of the fire. Seventeen (17), or 7% were not in the area of origin but were involved with the start of the fire. An example of this is when someone is involved with the start of the fire (e.g. cooking, smoking, arson), leaves the area but becomes trapped by the heat or smoke of the fire and is injured in their attempt to escape. Seventy (70), or 30%, of the 231 victims were in the area of origin but not involved with the ignition of the fire. An example of this is when someone leaves food unattended on the stove in the kitchen and leaves the room. After the fire starts and the individual is alerted to its presence they are injured trying to put out the fire. Forty-four (44), or 19%, of these victims were not in the area of fire origin and were also not involved with its ignition The *Location at Time of Incident* was undetermined or not reported in 70 civilian fire injuries. These were excluded from the percentage calculations.

Cooking Was the Leading Cause of Injuries in Structure Fires

Cooking was the leading cause of injuries in structure fires. Fires started by cooking caused 35% of structure fire injuries and 8% of structure fire deaths. Electrical fires caused 11% of structure fire injuries and 22% of structure fire deaths. Smoking fires also caused 11% of structure fire injuries and 20% of structure fire deaths. Heating equipment

fires caused 8% of injuries and 2% of deaths. Candles caused 7% of injuries and 2% of the deaths. Juvenile-set fires caused 5% of structure fire injuries and none of the structure fire deaths in 2005. Arson caused 3% of structure fire injuries and 10% of structure fire deaths. Clothes dryer fires caused 3% of the structure fire injuries and none of the structure fire deaths. All the other known causes of structure fires combined caused 18% of the structure fire injuries and 7% of structure fire deaths[48]. In 2005, undetermined fires caused 18% of structure fire injuries and 29% of structure fire deaths in Massachusetts.

Causes of Structure Fire Injuries vs. Deaths



The leading cause of fire-related injuries is most often not the leading cause of fire-related deaths. 2005 followed the long standing trend of cooking causing the most injuries. Fires from smoking tied with electrical fires as the second leading cause of fire-related injuries in 2005. Although smoking fell to the second leading cause of structure fire deaths in 2005, the traditional main reason for this difference still holds true, that in most smoking-related fire deaths, the victim is intimately involved in the ignition of the fire. The victim usually falls asleep with a lit cigarette or cigar and the ashes or butt fall down upon and ignite the victim's clothing, bedding or furniture that they were sleeping

[48]The three deaths in the Other category of fires were from two flammables explosions and a suicide.

upon. The resulting smoke usually renders the victim unconscious and unable to respond to any alarms and attempt an escape, and thus succumb to burns, smoke inhalation or both. In cooking fires, most of the victims leave the cooking materials unattended. When the fire begins they are either alerted by working smoke alarms or by the smell of the smoke itself. The alerted individual usually either tries to control the fire or escape from the flames, incurring their injury in the process.

The fire service needs to redouble its efforts to get manufacturers to agree to produce and sell a self-extinguishing cigarette or to get federal legislation passed requiring them. The Moakley Bill has been submitted to Congress at the national level for this purpose. New York, Vermont, California and Canada have passed the Safer Cigarette Law and similar legislation has recently been passed in Massachusetts.

Detectors Operated in 1/2 of Structure Fires that Caused Injuries
Of the 301 injuries 50% occurred where smoke detectors were present and operated. In 5% of these fires[49], the detectors did not alert the occupants. Seven percent (7%) of the injuries occurred in structure fires where detectors were present but did not operate. Twelve percent (12%) of the injuries occurred where there were no detectors present in the structure at all. Four percent (4%) of civilian structure fire injuries occurred where the fire was too small to activate the smoke detector. Smoke detector performance was undetermined in 67, or 22% of all injuries. The presence of operating smoke detectors generally gives the victim the time needed to escape the byproducts of the fire: heat, flame and smoke.

Motor Vehicle Fire Injuries

There were 27 motor vehicle fire injuries in 2005. Seventy-eight percent (78%) were men and 22% were women. Fifty-two percent (52%) of the injuries were caused by exposure to fire products, when cause was known. Nineteen (19%) were unconscious. Seven (7%) of the injuries were caused when the victim was struck by or from contact with an object. When the primary apparent symptom was reported 56% of these were reported as burns only; 13% were reported as smoke inhalation only; and another 13% as burns and smoke inhalation. Where activity at time of injury was known, 47% of the victims were trying to control the fire when injured; 13% were trying to escape; and 7% each were attempting a rescue, returning to the vicinity after the fire was under control, and returning to the vicinity before the fire was controlled. The causes of motor vehicle fires that injured civilians in 2005 included fuel spills, collisions, arson, and mechanical malfunctions. See the Motor Vehicle Fire section for safety tips in the event of a car fire.

Outside and Other Fire Injuries

Thirty-one (31), or 8%, of civilian fire injuries occurred in outside and other fire incidents in 2005. Seven (7), or 2% of civilian injuries were caused by special outside fires. One (1), or 0.3%, of civilian injuries occurred in brush fires; and one, or 0.3%, occurred

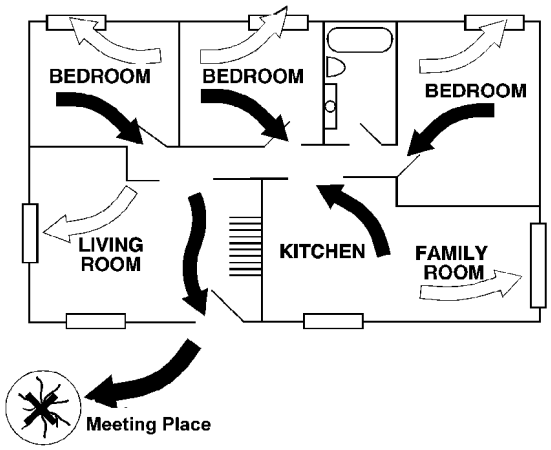
[49] These represent confined fires where it was reported that the detector did not alert the occupants.

during outdoor rubbish fires. Twenty-two (22), or 6%, of civilian injuries were caused by unclassified fires.

Where gender was known, 68% of the civilian victims were men and 32% were women. Burns accounted for over half, 58%, of the injuries to this group, when the primary apparent symptom was known. The victim was intimately involved with the ignition in 89% of these injuries where location at ignition was known.

Safety Practices Are the Best Prevention Methods

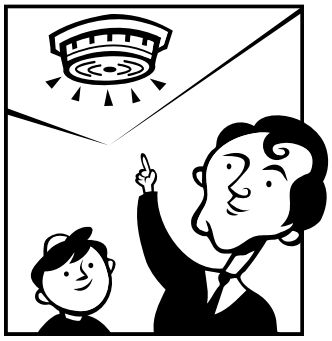
In a typical nighttime fire, there is a window of 2-4 minutes in the average home after the smoke alarm sounds for the family to get out safely. In a few minutes, heat and toxic gases make escape impossible. To survive a fire, one must install and maintain smoke detectors as well as make and practice an escape plan. It is these types of basic fire safety practices that are ignored by too many Massachusetts residents and results in fires, injuries, and deaths.



Home Escape Plan

- Practice your home escape plan with the whole family at least twice a year.
- Hold a nighttime drill to test if your children will react properly to a smoke alarm activation. Adjust your escape plan accordingly.
- Plan two ways out of each room. The easy way out is probably a door and the second way out might be a window.
- If you plan for a child or a senior to exit a window, make sure they can open it easily.
- If you can't get out, close your door and go to the window and signal for help. Teach children to never hide under beds or in closets.
- If you must go through smoke, crawl low. The coolest, cleanest air will be about 18 inches off the ground.
- Have a meeting place outside where everyone will meet. Be able to tell the fire department if everyone is out safely.
- Get out and stay out; don't go back into a burning building for anything.
- Telephone the fire department from a neighbor's house or use the fire alarm emergency box or use a cell phone a safe distance from the building.

Smoke Detectors



- Install smoke detectors on every level and outside each sleeping area.
- Test smoke detectors monthly.
- Replace the batteries twice a year.
- Never disable your detector.
- Replace detectors every 10 years.

Cooking Safety

- Put a lid on a grease fire to smother it then turn off the heat. Baking soda will also work.
- Wear short or tight fitting sleeves when cooking. Loose sleeves easily catch fire.
- Never throw water on a grease fire. Water will only spread the fire around.
- Never move a burning pan. You can too easily ignite your clothes or spill the fire onto someone or something else.
- Stand by your pan! Never leave cooking unattended.

Safe Smoking

- Quit!
- Never smoke in bed.
- Use large ashtrays with center rests so cigarettes fall into the ashtray not on the floor.
- Restrict smoking to outdoors.
- Do not smoke in homes or buildings where oxygen is used. Oxygen soaks into clothes, rugs, furniture, hair and bedding, creating an oxygen enriched environment, which make fires start more easily and burn more rapidly, even when the oxygen is "turned off."

Dryer Safety

- Clean the filter screen after each load.
- Stay home while the dryer is in use.
- Clean vents to outside.
- Vacuum the motor area periodically.
- Clean dryer vents regularly.

Fire Service Injuries

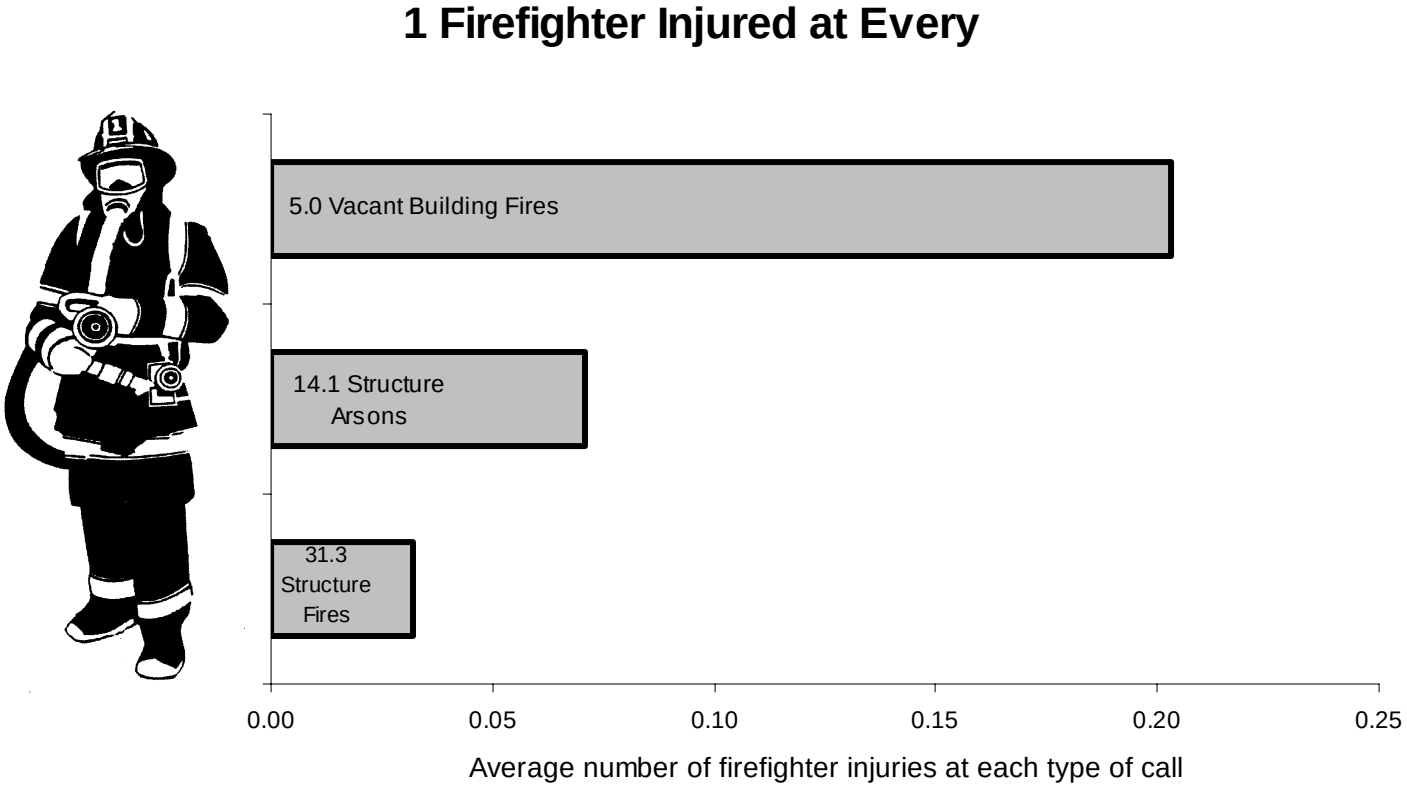
523 Firefighters Injured in 2005
In 2005, 523 firefighters were injured while fighting the 28,793 reported fires in Massachusetts. There were no firefighter deaths in 2005. On average, one firefighter was injured at one of every 55 fires in 2005. Four hundred and sixty-nine (469) firefighters were injured at structure fires. Twenty-three (23) firefighters were injured at motor vehicle fires. Thirty-one (31) firefighters were injured at outside and other fires.

9 Out of Every 10 Firefighter Injuries Occurred at Structure Fires
Firefighters were injured more frequently at structure fires than any other fire incident type. Ninety percent (90%) of firefighter injuries occurred at structure fires. While structure fires only accounted for 51% of all fires.

We ranked the total number of firefighter injuries at structure fires by fire cause. The largest number of firefighter injuries took place at electrical-caused fires. Sixty-seven (67), or 14% of structure fire firefighter, injuries occurred at electrical fires. Thirty-eight (38) fire service injuries, or 8%, occurred at smoking fires. Fires caused by heating equipment accounted for 26, or 6%, of all structure fire injuries. Cooking (24) and arson (24) fires each accounted for 5%; and candle fires accounted for 17, or 4%, of fire service injuries at structure fires.

Firefighters Injured at One of Every 5 Vacant Building Fires
One of the most dangerous types of fires for firefighters in 2005 were vacant building fires. Vacant building fires accounted for 76, or 15%, of firefighter injuries in 2005. These 76 injuries also represent 16% of the number of firefighter injuries incurred fighting structure fires in 2005. On average there was one firefighter injury for every 5.0 vacant building fires, or 0.20 firefighter injuries at every vacant building fire. On average there was only 0.07 reported firefighter injuries per structure arson in 2005, or one firefighter injured at every 14.1 structure arsons. On average there was 0.03 reported firefighter injuries per structure fire in the Commonwealth in 2005, or one firefighter injured at every 31.3 structure fires.

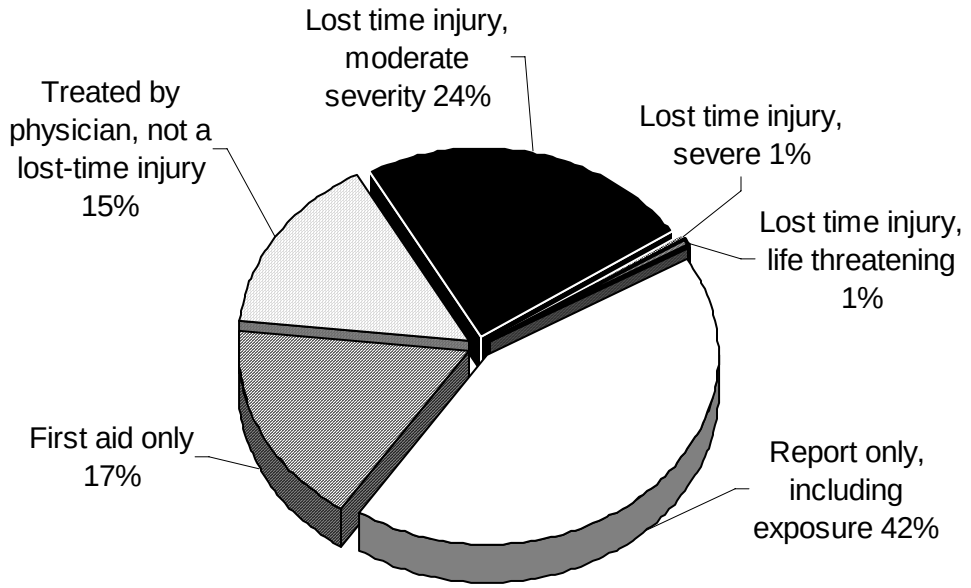
The graph on the following page illustrates this.



3/4 of Firefighter Injuries Minor

Three-quarters of reported firefighter injuries were minor. When examining the severity of the 511 firefighter injuries that reported severity, 43% of the injuries were reports only, including exposures to toxic substances or harmful physical agents through any route of entry into the body. Moderate severity injuries accounted for 24% of firefighter injuries, meaning that immediate medical attention was needed but there is little danger of death or permanent disability. Seventeen percent (17%) of these injuries were recorded as only needing first aid. Fifteen percent (15%) reported having been treated by a physician with no time lost. One percent (1%) of firefighter injuries were coded as severe. This means that the injury was potentially life threatening if the condition was not controlled. Another 1%, of the firefighter injuries were life threatening, where body processes and vital signs were not normal. The severity was not reported for 12 firefighter injuries. These injuries were excluded from the percentage calculations.

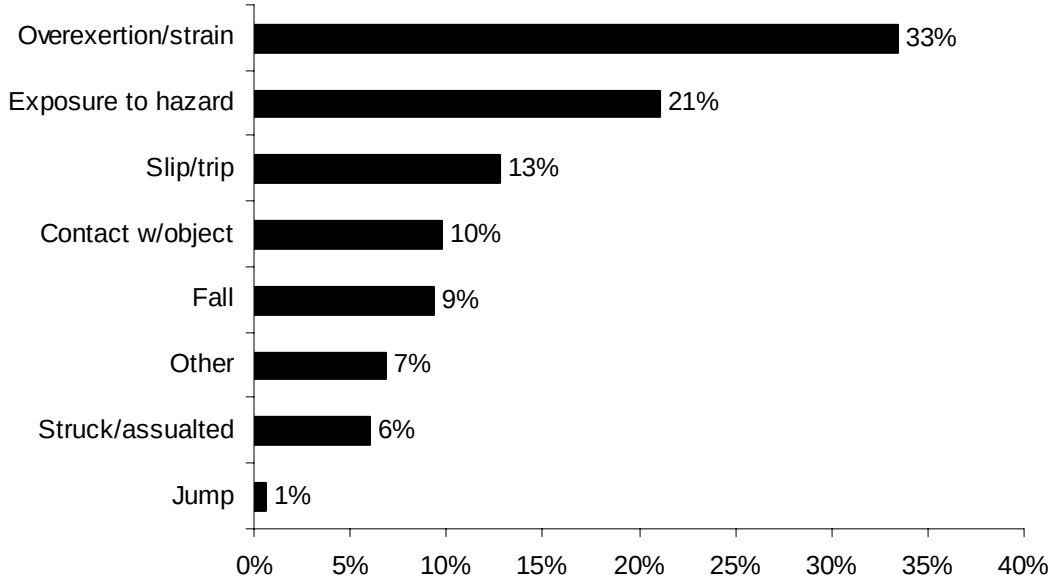
Severity of Firefighter Injuries



1/3 of Injuries from Overexertion or Strain

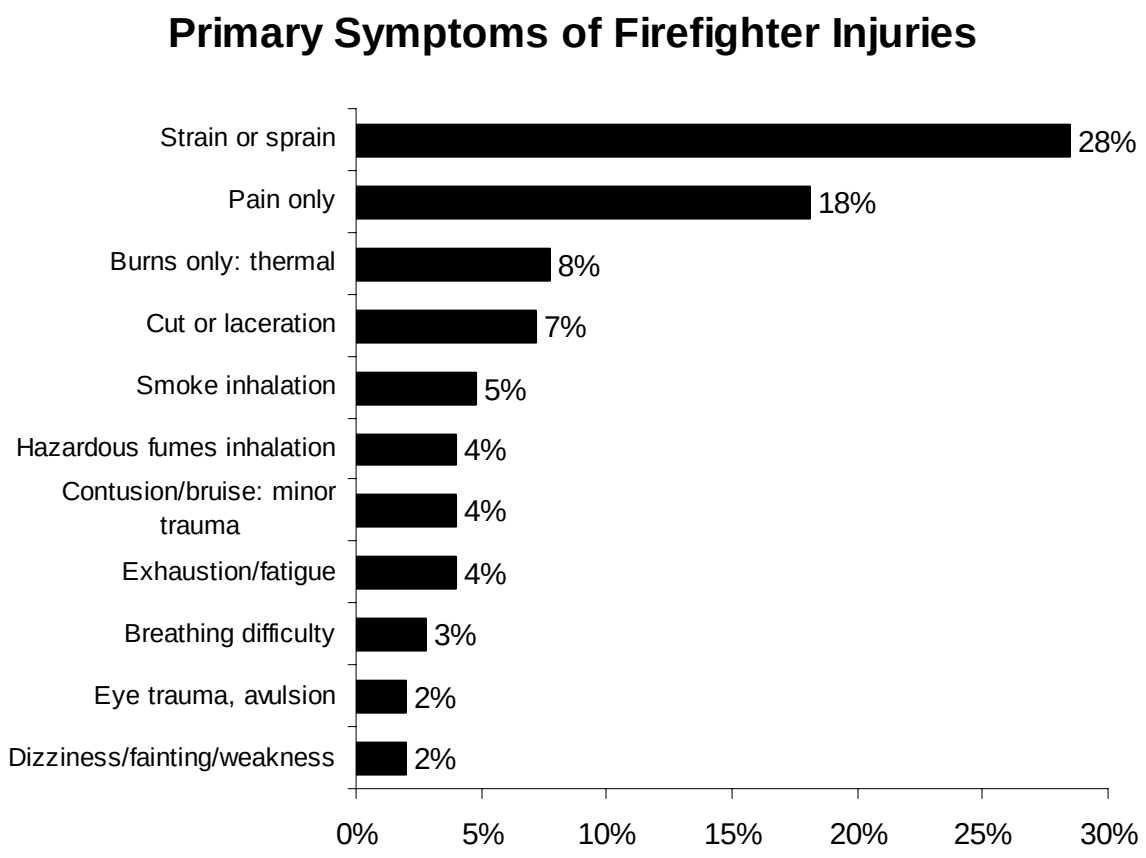
Thirty-three percent (33%), or one-third, of the 479 firefighter injuries where cause is known were due to overexertion or strain; 21% were exposed to some form of hazard including heat, smoke or toxic agents; 13% were injured when they slipped or tripped; 10% were caused by contact with some object; 9% of firefighters were injured from falls;

Causes of Firefighter Injuries



6% were injured when they were struck or assaulted by a person, animal or object; 1% were injured when they jumped; and 7% of the Massachusetts fire service injuries were caused by other conditions where no code was available to describe the situation. The cause was not reported for 44 firefighter injuries, and these injuries were excluded from the percentage calculations.

Over 1/4 Experienced Sprains or Strains; 16% of Firefighters Reported Pain
Of the 502 firefighter injuries where primary symptom was known, more than one-quarter, 28%, of injured firefighters reported sprains or strains as their primary symptom; 18% reported pain only; 8% reported thermal burns; 7% reported lacerations or cuts; 5% reported smoke inhalation; 4% of the fire-related fire service injuries in 2005 were caused each by hazardous fumes inhalation, contusion or bruises, or exhaustion and fatigue. Breathing difficulty was the cause of 3% of these injuries. Eye trauma and dizziness, fainting or general weakness each caused of 2% of firefighter injuries in Massachusetts in 2005. Primary apparent symptom was undetermined or not reported for 21 firefighter injuries. These injuries were excluded from the percentage calculations.



Firefighters Face Other Risks in Addition to Fires
The Massachusetts Fire Incident Reporting System (MFIRS) primarily only collects information about injuries at fires. Firefighters face many other dangerous situations in

addition to those found at fires. Many are also injured while controlling hazardous materials incidents, performing rescues and extrications, performing emergency medical services, investigations, inspections and other activities.

Look at Symptoms Incurred by Different Parts of Body to Prevent Injuries
Different parts of the body suffer different types of injuries. The following chart shows the types of injuries suffered by different parts of the body. For example, 52% of eye injuries were caused by avulsions; cuts or lacerations caused 41% of the injuries to the hands and fingers; 66% of the injuries to the back and spine were sprains or strains; and hazardous fume inhalation and smoke inhalation caused 53% of the internal injuries.

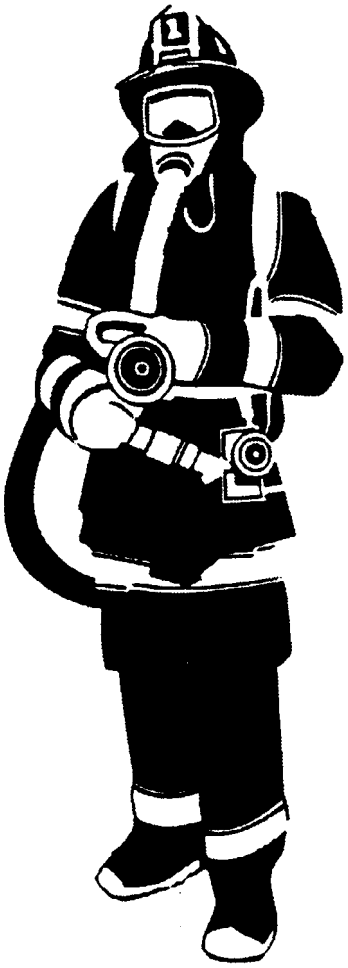
6-Alarm Fire Injures 11 Firefighters – Most Fire Service Injuries

- On January 29, 2005, at 7:20 a.m., the Somerville Fire Department was called to an electrical fire in a 3-story apartment building with a barbershop located on the first floor. The fire was started by an overloaded extension cord in the barbershop. Eleven (11) firefighters received injuries such as strains and sprains, dehydration and overexertion or fatigue. Six (6) of these 11 firefighter injuries were only reported injuries where not even first aid was required; four of these injuries were moderate; and one firefighter received first aid treatment at the scene. Smoke detectors were present and alerted the occupants of the building. This six-alarm fire caused $700,000 in estimated damages and an exposure fire to a neighboring building.

Almost 1/5 of All Firefighter Injuries Were To the Trunk Part of the Body
Almost 1/5 of all firefighter injuries were to the trunk part of the body. Ninety-four (94), or 19%, of all known firefighter injuries occurred to firefighters' trunks. Forty-three (43), or 46% of these injuries were from strains or sprains and 25, or 27%, were only reports of pain. The chart below shows the distribution of firefighter injuries by body part. The percentages given are the ratio of the number of reported primary apparent symptoms for each given body part grouping.

Firefighter Injuries by Part of Body

Eyes (23)	
Avulsion	52%
Pain only	17%
Trunk (94)	
Strain or sprain	46%
Pain only	27%
Thermal burns	9%
Internal (53)	
Smoke inhalation	32%
Hazardous fumes inhalation	21%
Breathing difficulty	19%
Cardiac symptoms	6%
Hand, Fingers (56)	
Cut, laceration	41%
Strain or sprain	14%
Thermal burns	11%
Legs (15)	
Pain only	33%
Contusion, bruise	27%
Strain, sprain	20%



Ears & Face (17)	
Thermal burns	53%
Cut or laceration	35%
Back & Spine (56)	
Sprain, strain	66%
Pain only	34%
Arm (19)	
Sprain, strain	32%
Pain only	32%
Contusion, bruise	16%
Wrist (10)	
Sprain, strain	40%
Thermal burns	20%
Knee (35)	
Sprain, strain	40%
Pain only	31%
Foot & Toes (12)	
Strain or sprain	33%
Puncture wound	17%
Pain only	17%

Arson Fires

1,218 Arsons - 339 Structures, 176 Vehicles, 703 Other Arsons
One thousand two hundred and eighteen (1,218), or 4%, of the 28,793 fire incidents reported to the Massachusetts Fire Incident Reporting System, were considered to be intentionally set, or for the purpose of analysis, arson[50]. The 339 structure arsons, 176 motor vehicle arsons, and 703 outside and other arsons caused seven civilian deaths, accounting for 13% of civilian fire deaths, 12 civilian injuries and 27 fire service injuries. The estimated dollar loss from arsons was $12 million. The average dollar loss per arson fire was $9,818. Total arson was down 18% from 1,477 in 2004.

'Suspicious' Eliminated as a Cause of Ignition
In version 5, arson is defined as Cause of Ignition is intentional and the age of the person involved is greater than 17, whereas in version 4 we included both intentionally set and suspicious fires in our definition of arson. In version 5, suspicious is eliminated, and the more accurate description Cause of Ignition = Cause Under Investigation is used.

1,186 Fires with Cause Still Under Investigation
In 2005, 1,186 Massachusetts fires were still listed as Cause Under Investigation. There were 2,776 fires where the Cause of Ignition was listed as Undetermined. In the past (in version 4) many of these fires would have been coded as 'Suspicious' and would have been counted as arsons. The change in coding requirements did create a larger drop than expected in reported arsons; only after we have five or more years of version 5 data will we be able to tell how substantial this drop really is. It is important that fire departments update their fire incident reports when either a cause is determined or its cause is deemed to be undetermined after investigation.

Rubbish Fires Collect No Causal Data
Another reason for this large drop is that in version 5, outside rubbish fires such as dumpster fires and confined indoor rubbish fires use the abbreviated reporting format where a Fire Module is not needed and the field Cause of Ignition is not captured. Thus many intentionally set rubbish fires will not be counted as arsons.

New Arson Module Will Bring Better Understanding & Tracking of Arsons
One of the new modules in version 5 is the Arson Module. This module contains many new data fields that we can use to identify when and where the crime takes place, what form it takes, and the characteristics of its targets and perpetrators. With this information we can develop and implement arson prevention initiatives and track trends to see if any arsons in an area exhibit similar characteristics.

[50] In MFIRS v5 a fire is considered an arson if the Cause of Ignition = 1 (Intentional) and the Age of Person (Fire Module) is greater than 17 or if the field is blank; or if the Wildland Module is used, the Wildland Fire Cause = 7 (Incendiary) and the Age of the Person (Wildland Module) is greater than 17 or if the field is left blank.

One of the new fields is 'Other Investigative Information.' This field identifies other information pertinent to the case. In 2005, 31%, of the 54 reported arsons which had this field completed, occurred in vacant structures; 26% had some other crimes involved; 13% had some code violations; 9% were reported to have criminal or civil actions pending; another 9% occurred in structures that were for sale; 6% reported financial problems; 4% were involved with some illicit drug activity; and in 1% of these incidents there was a recent change in insurance.

Suspected Motive

Another new field is 'Suspected Motivation Factors.' It indicates the suspected stimulus that caused the subject to burn any real or personal property. In 37% of the 258 reported arsons that had this field completed, the motive was thought to be from playing with fire or curiosity of fire. Personal motivation was suspected in 16% of these arsons; in 10% the motive was for thrills; in 8% was looking for some attention or sympathy; in 4% the arsonist was suicidal; in 3% each, the arsonist was believed to be acting out against society, trying to intimidate someone, was concealing an auto theft, was concealing a burglary, was an act of domestic violence or was an act of vanity or for recognition. In 2% of these incidents the arson was believed to be a hate crime or an act against a specific institution. In 1% of these arsons, the fire was set to conceal a homicide, destroy records or evidence, or happened during a burglary.

Incendiary Devices

Gasoline or other fuel cans were the leading container of incendiary devices. Ordinary combustibles such as paper and wood, and ignitable liquids were the leading fuels of reported incendiary devices.

The following table shows the total number of reported arsons for the past 10 years. The total is then broken down into total number of reported structure, vehicle and all other types of arsons along with that subtotal's percentage of the total number of arsons. It also illustrates that structure arsons and motor vehicle arsons are at an all time low. 2005 was the lowest total for outside and other arsons in the last 10 years.

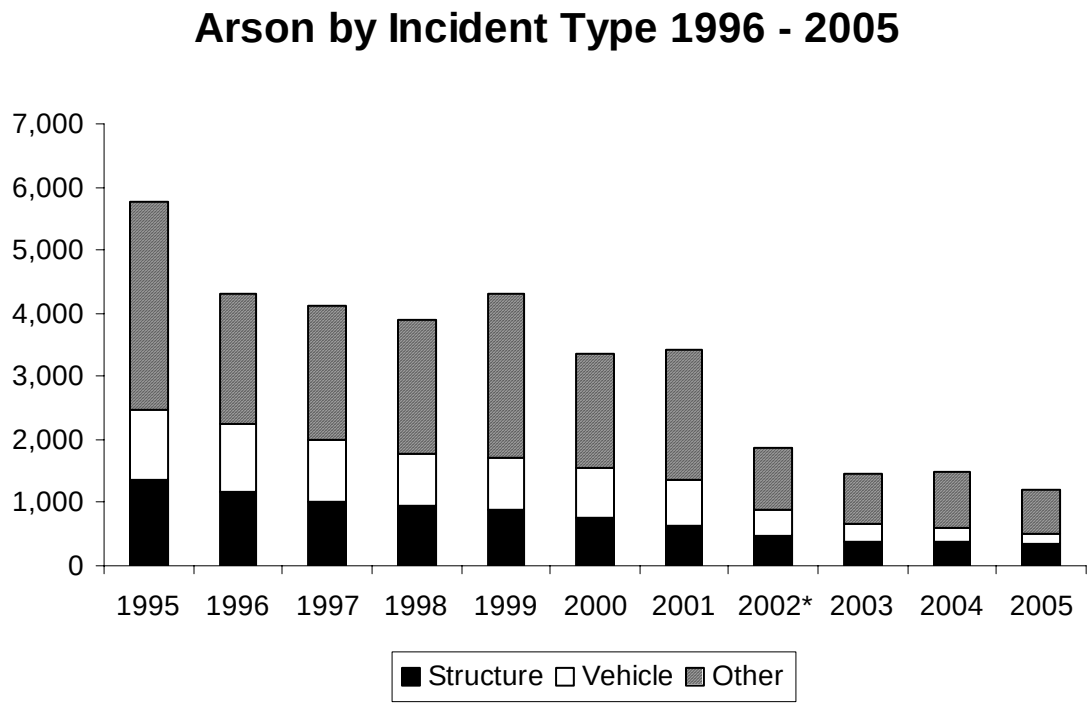
ARSONS BY YEAR

Year	Total Arsons	Structure Arsons	% All Arsons	Vehicle Arsons	%All Arsons	Other Arsons	% All Arsons
2005	1,218	339	28%	176	14%	703	58%
2004	1,477	373	26%	227	15%	877	59%
2003	1,491	381	26%	280	19%	830	56%
2002*	1,867	488	26%	395	21%	991	53%
2001	3,426	620	18%	743	22%	2,063	60%
2000	3,360	747	22%	798	24%	1,815	54%
1999	4,307	886	21%	818	19%	2,603	60%
1998	3,882	939	24%	836	22%	2,107	54%
1997	4,131	1,020	25%	979	24%	2,132	52%
1996	4,296	1,168	27%	1,082	25%	2,046	48%

*2002 was the 1st full year of version 5 with a new definition of arson with 'suspicious' eliminated.

Largest Reduction in Outside & Other Arsons

The following chart illustrates arson by incident type over the past decade. This type of chart can be used as a visual representation of the ratios between the three types of arson, structure, motor vehicle and outside and other arsons. The trend has been for structure arsons to comprise a smaller percentage of total arsons, while the percentage of outside and other arsons of total arsons has risen during the same time span. Looking at these ratios allows one to more clearly identify specific fire problems, such as increases in structure or motor vehicle arsons. Trends may be masked if you were to look just at total numbers.

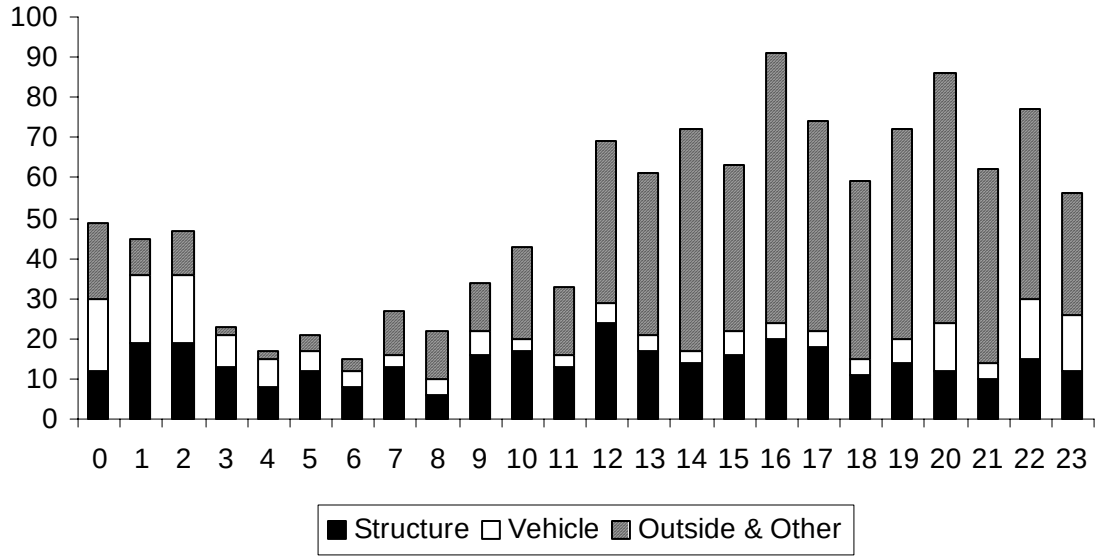


*2002 was the 1st full year of version 5 with a new definition of arson with 'suspicious' eliminated.

For instance, outside and other arsons numbered 2,046 in 1996 and 703 in 2005. While we have a huge drop in the total numbers of reported outside and other arsons, the ratio or percentage of outside and other arsons to total arsons has remained at or above 50%.

The following chart illustrates the types of arsons by the time of day they occur. Midnight to 1:00 a.m. is represented by 0, 1:00 a.m. to 2:00 a.m. is represented by 1, etc. Arson is most likely to occur between the hours of 4:00 p.m. to 10 p.m. The peak times for structure arson were from 12:00 p.m. and 5:00 p.m. Motor vehicle arsons were most likely to occur between 10:00 p.m. and 2:00 a.m. Outside and other arsons peaked from 2:00 p.m. to 8:00 p.m.

Type of Arson by Time of Day



Marblehead has Largest Loss Arson in 2005

- On November 12, 2005, at 9:37 p.m., the Marblehead Fire Department was called to a fire in a 5-story, 40-unit apartment building that was under construction. The fire is believed to have been intentionally set in the basement. The project was a Chapter 40B development project and there was some opposition to it in the community. There were no injuries associated with this fire. It was undetermined if detectors were present in the building. Sprinklers were not present. Damages from this fire were estimated to be $4,000,000.

Bourne Had 2nd Largest Loss Arson in 2005

- On January 4, 2005 at 5:03 a.m., the Bourne Fire Department was called to an arson fire at a restaurant. The fire began in a storage area in the basement. This blaze was the largest loss fire in this category of structure fires, with an estimated $600,000 worth of damage done. One firefighter was injured fighting this fire. It was undetermined if smoke detectors were present. Sprinklers were not present.

Structure Arson

339 Arsons, 5 Civilian Deaths, 7 Civilian Injuries, 24 Fire Service Injuries

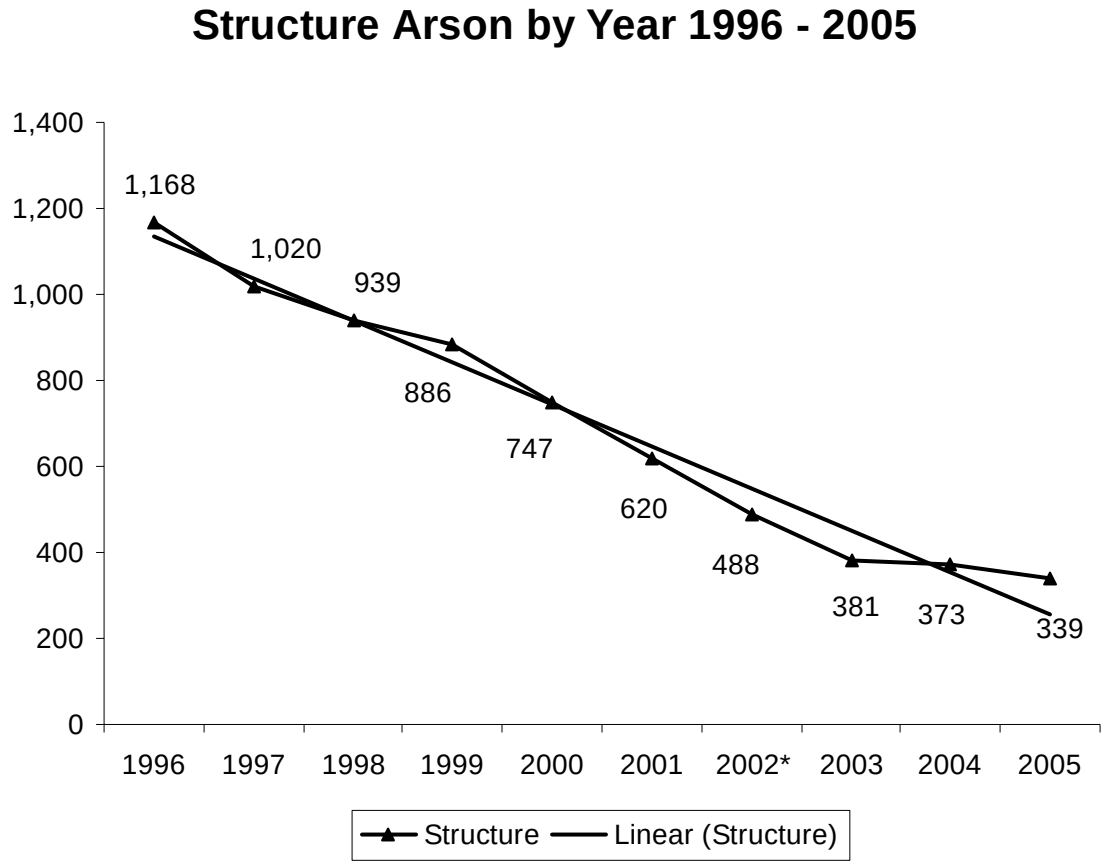
In 2005, there were 339 reported structure arsons. They caused five civilian deaths, seven civilian injuries, 24 fire service injuries and an estimated dollar loss of $10.9 million. These 339 incidents accounted for 2% of the 14,662 structure fires in 2005, down 9% from the 373 reported structure arsons in 2004. The five civilian deaths accounted for 10% of the total civilian death count and 12% of all structure fire deaths. The seven civilian injuries accounted for 2% of the overall civilian injuries and 2% of all civilian

injuries at structure fires. Twenty-four (24) fire service injuries accounted for 5% of the total fire service injuries and 5% of the injuries fire fighters sustained at all structure fires in 2005. The estimated dollar loss for structure arsons was $10,885,307, accounting for 5% of the overall dollar loss and 5% of the estimated dollar loss in all reported structure fires. The average loss per structure arson was $32,110.

In 2005, 564 Massachusetts structure fires were still listed as Cause Under Investigation. There were 426 structure fires where the Cause of Ignition was listed as Undetermined After Investigation. In the past (in version 4) many of these fires would have been coded as 'Suspicious' and would have been counted as arsons. The change in coding requirements did create a sudden drop in reported structure arsons in 2002.

Structure Arson Down 73% Since 1995

Structure arson has been on a downward trend since 1991 when 1,974 structure arsons were reported to MFIRS[51]. Structure arsons have decreased 71% since 1,168 were reported in 1996. The chart below shows the trend of structure arsons in the past decade.



*2002 was the 1st full year of version 5 with a new definition of arson with 'suspicious' eliminated.

[51] The highest number of reported structure arsons in the past 20 years, occurred in 1984 when 2,133 structure fires were considered to be intentionally set.

Over 1/2 of Structure Arsons Occurred in Residences
One hundred and ninety-one (191), or 56%, of the 339 structure arsons occurred in residential occupancies. Educational occupancies accounted for 44, or 13%, of the 339 structure arsons in 2005. The following table shows the number of structure arsons, civilian deaths, civilian injuries, fire service injuries, dollar loss and the percentage of the total structure arsons for each occupancy type.

STRUCTURE ARSON BY OCCUPANCY TYPE

Occupancy	Structure Arsons	Percent of Total	Injuries FF	Injuries Civ	Deaths FF	Deaths Civ	Dollar Loss
Assembly	21	6.2%	1	0	0	0	$1,151,061
Educational	44	13.0%	0	1	0	0	109,485
Institutional	18	5.7%	0	1	0	0	77,400
Residential	**191**	**56.3%**	**18**	**3**	**0**	**4**	**8,707,586**
1- & 2- Family	*98*	*28.9%*	*3*	*3*	*0*	*2*	*2,272,600*
Multifamily	*79*	*23.3%*	*15*	*0*	*0*	*2*	*6,356,336*
All Other Residential	*14*	*4.1%*	*0*	*0*	*0*	*0*	*69,650*
Mercantile, business	29	8.6%	4	2	0	0	455,300
Basic Industry	1	0.3%	0	0	0	0	0
Manufacturing	3	0.9%	0	0	0	0	70,000
Storage	22	6.5%	1	0	0	0	306,475
Special Properties	6	1.8%	0	0	0	0	3,000
Unclassified	4	1.2%	0	0	0	0	5,000
Total	**339**	**100%**	**24**	**7**	**0**	**5**	**$10,885,307**

Communities Reporting Most Structure Arsons
The following table shows the cities that reported the most structure arsons in 2005, their 2000 population according to the United States Census, the number of structure arsons reported in 2005, the rate of structure arsons per 1,000 people in 2005, and the same information for 2004. The cities are ranked by the 2005 rate of arsons per 1,000 population. Cities with the most structure arsons may not have the highest rate of structure arsons.

The City of Boston, as the largest city in the Commonwealth, leads the state in the number of structure arsons, the Village of Hyannis had a higher structure arson rate[52]. Although the Village of Hyannis ranked 15th in total structure arsons, its rate of 0.40 structure arsons per 1,000 population was the highest in the state and was eight times the state structure arson rate of .05 per 1,000 population.

[52] Four of the eight structure arsons that occurred in Hyannis happened at Barnstable High School, which is located in the Village of Hyannis. None of these fires had any reported dollar loss. All four occurred during a three-week period from later September through mid October. Three of the 4 high school fires were rubbish fires that occurred in a bathroom.

MASSACHUSETTS CITIES WITH THE MOST STRUCTURE ARSONS IN 2005

City	Population	2005 Struc. Arsons	2005 Rate/ 1,000 Pop.	2004 Struc. Arsons	2004 Rate/ 1,000 Pop.
Hyannis	12,543	5	0.40	8	0.64
Walpole[53]	22,824	8	0.35	11	0.48
Saugus	26,078	9	0.35	1	0.04
Everett	38,037	10	0.26	3	0.08
Fall River	91,938	21	0.23	15	0.16
Pittsfield	45,793	9	0.20	9	0.20
Fitchburg	39,102	6	0.15	3	0.08
Revere	47283	7	0.15	1	0.02
Amherst	34,874	5	0.14	6	0.17
Chicopee	54,653	7	0.13	10	0.18
Falmouth	32,660	4	0.12	1	0.03
Boston	589,141	62	0.11	75	0.13
Haverhill	58,969	5	0.08	1	0.02
Cambridge	101,355	7	0.07	9	0.09
New Bedford	93,768	5	0.05	13	0.14
Massachusetts	**6,349,097**	**339**	**0.05**	**373**	**0.06**

Motor Vehicle Arson

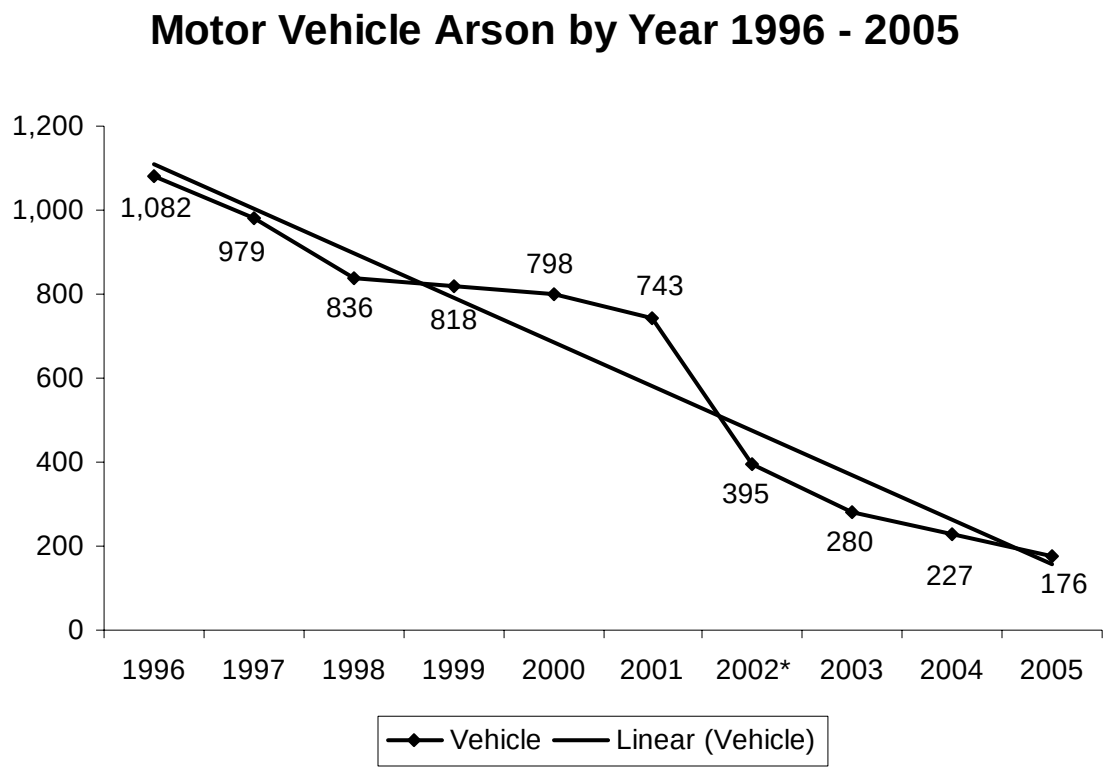
176 Arsons, 1 Civilian Death, 2 Civilian Injuries & 1 Fire Service Injury
One hundred and seventy-six (176), or 5%, of the 3,666 vehicle fires were considered intentionally set in 2005. The one civilian death, an act of self-immolation, accounted for 2% of the overall civilian deaths and 14% of the motor vehicle deaths. The two civilian injuries accounted for 1% of the total civilian injuries and 7% of civilian injuries associated with motor vehicle fires. The one fire service injury accounted for less than 1% of the total fire service injuries and 4% of firefighter injuries associated with motor vehicle fires. The estimated dollar loss in motor vehicle arsons was $1 million, accounting for less than 1% of the overall fire dollar loss and 7% of the dollar loss associated with all the 2005 motor vehicle fires. The average loss per vehicle arson was $5,686. Passenger cars and vans accounted for 83% of the 165 motor vehicle arsons for which mobile property type was reported.

In 2005, 428 Massachusetts motor vehicle fires were still listed as Cause Under Investigation. There were 809 motor vehicle fires where the Cause of Ignition was listed as Undetermined. In the past (in version 4) many of these fires would have been coded as 'Suspicious' and would have been counted as arsons. The change in coding requirements did create a sudden drop in reported motor vehicle arsons in 2002. Only after we have

[53] All 8 of these structure arsons in Walpole occurred at MCI - Cedar Junction.

five or more years of version 5 data will we be able to tell how substantial this drop really is. After four years of version 5 however, the data clearly shows a downward trend.

The Burned Motor Vehicle Reporting Law
The Massachusetts Fire Incident Reporting System first identified motor vehicle fires and motor vehicle arson as a major problem in 1985 and the Burned Motor Vehicle Reporting Law took effect in August of 1987. The law requires owners of burned motor vehicles to complete and sign a report that must also be signed by a fire official from the department in the community where the fire occurred. The graph below shows the effectiveness of this law. Since the law took effect in 1987, motor vehicle arsons have decreased 97% from 5,116 in 1987 to 176 in 2005.



*2002 was the 1st full year of version 5 with a new definition of arson with 'suspicious' eliminated.

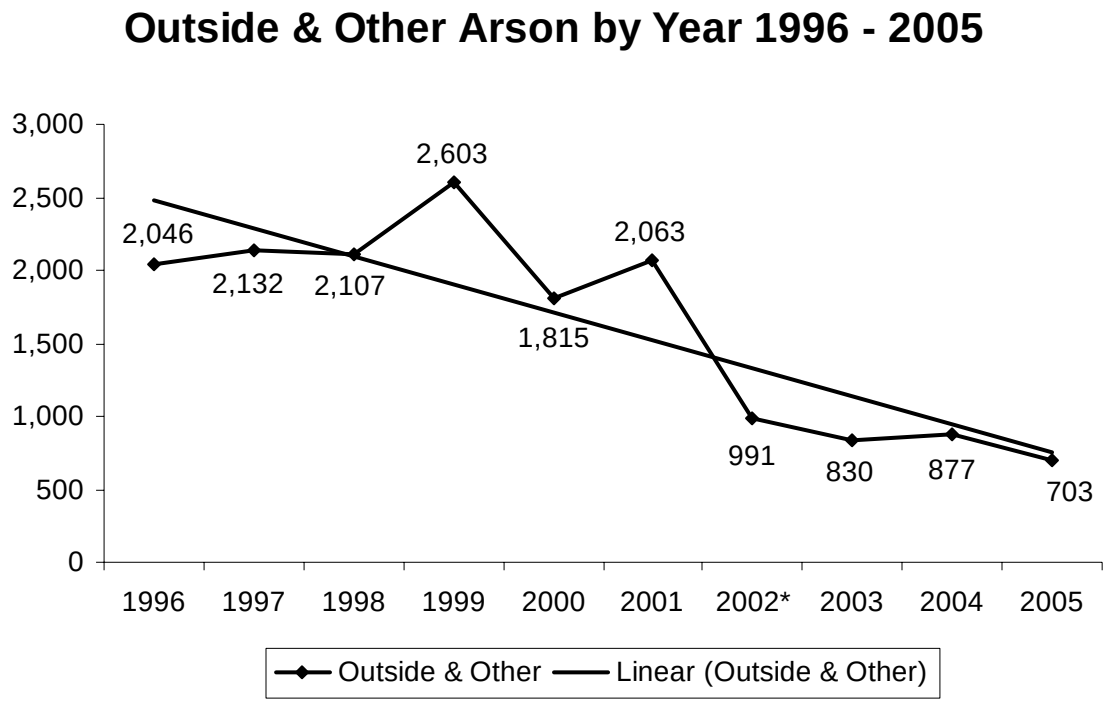
Outside and Other Arson

703 Arsons, 1 Civilian Death, 3 Civilian Injuries, 2 Fire Service Injuries
Seven hundred and three (703), or 7%, of the total outside and other fires and explosions were considered intentionally set in 2005. The civilian death accounted for 2% of the overall civilian deaths and 25% of the outside and other fire deaths. The three civilian injuries in outside and other arson fires accounted for 1% of the total civilian injuries and

10% of civilian injuries in all outside and other fires. The two fire service injuries accounted for less than 1% of the total fire service injuries and 6% of firefighter injuries associated with outside and other fires. The estimated dollar loss for these arsons was $72,422. The average loss per outside and other arson was $103.

In 2005, 194 outside and other fires were still listed as 'Cause Under Investigation.' There were also 1,541 outside and other fires where the "Cause of Ignition" was listed as 'Undetermined.' In the past (in version 4) many of these fires would have been coded as 'Suspicious' and would have been counted as arsons. The change in coding requirements did create a sudden drop in reported outside and other arsons in 2002. Only after we have five or more years of version 5 data will we be able to tell how substantial this drop really is. After four years of version 5 however, the data clearly shows a downward trend.

No Causal Data for Outside Rubbish Fires
Another reason for this large drop is that in version 5, outside rubbish fires such as dumpster fires use the abbreviated reporting format where a Fire Module is not needed and the field Cause of Ignition is not captured. Thus many intentionally set outside rubbish fires will not be counted as arsons.



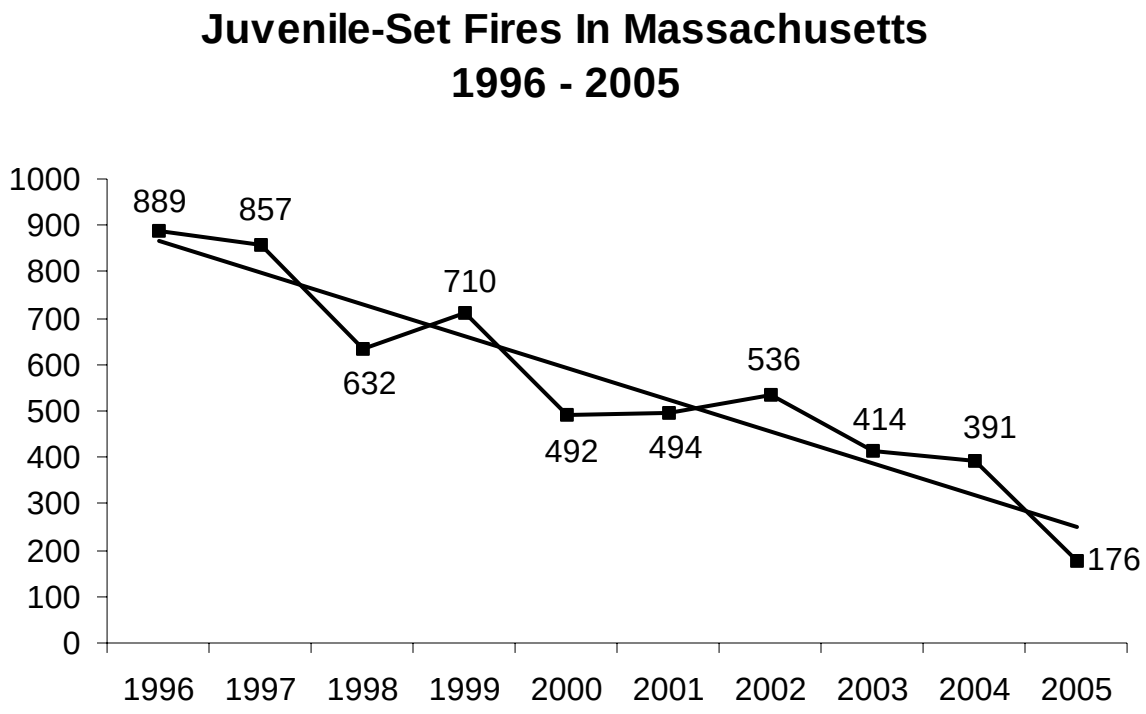
*2002 was the 1st full year of version 5 with a new definition of arson with 'suspicious' eliminated.

It is important to keep in mind that no-loss fires are voluntarily reported and these numbers represent only a fraction of the problem.

Juvenile-set Fires

Children Playing With Fire Caused 176 Fires, 2 Civilian Deaths & $1.6 Million

In 2005, children playing with matches, lighters and other heat sources caused 176 reported fires, two civilian deaths, 15 civilian injuries, eight fire service injuries and an estimated dollar loss of nearly $1.6 million. The average dollar loss per fire was $8,952. These fires were down 55% from 391 incidents in 2004. This continues the declining trend over the past decade. This may be due to the number of juvenile firesetters' intervention programs across the Commonwealth. We expected the number of juvenile-set fires to increase in 2002 with the implementation of v5 and our increased ability to capture these incidents. This makes the drop all the more remarkable.



Version 5 Should Give Us A Better Understanding of the Problem

In the past in version 4, you could not code a fire as suspicious or incendiary and also as juvenile-set. The fire department may have considered a fire deliberately set by a juvenile or a group of children to be incendiary; these statistics should be considered an underestimate of the severity of the juvenile firesetting problem. Version 5 is able to capture these types of incidents by allowing the recording of multiple causal factors. The Arson/Juvenile Firesetting Module can collect information when a fire is intentionally set by an adult or set by a child. The information that will be collected with regard to juvenile firesetting will include age, race, family type, gender and ethnicity. Also

included will be the motivation and risk factors associated with firesetting, for example, if there is a history of shoplifting, stealing, physical assault, fire play, transiency, etc.

The second half of the new Arson Module is the new Juvenile Firesetter[54] Module. This module contains many new data fields that we can use to identify key items of information that could be used for local, state and national intervention programs. With this information we can develop and implement juvenile firesetting prevention initiatives and track trends to see if they exhibit similar characteristics.

79% of Juvenile Firesetters Were Male

Other than identify the age, gender and race of the subject, one of the new fields is called Motivation Risk Factors. It is an attempt to identify the possible motivation for the subject to burn, or attempt to burn, any real or personal property. The leading Motivation Risk Factors reported to MFIRS in 2005 were mild, moderate and extreme curiosity about fire. The leading family type was two-parent families followed by single-parent families. When age was given, the majority of the subjects were between 12 and 17 years old. When gender was completed 79% of the children were listed as males.

The 176 fires set by children included: 83 structure fires; 58 brush, tree or grass fires; 17 special outside fires; six motor vehicle fires; three outside rubbish fires; and nine fires that could not be classified further.

Juvenile-set Structure Fires Cause 13 Civilian Injuries & $1.6 Million in Damages

Thirteen (13) civilian injuries and eight fire service injuries occurred in the 83 structure fires set by children. Child-set structure fires caused an estimated dollar loss of $1.6 million with an average dollar loss of $18,804 per fire.

Forty-eight percent (48%) of the 83 structure fires caused by children occurred in one- or two-family homes; 35% occurred in multifamily homes; and 8% occurred in high schools, junior high schools or middle schools. Thirty-seven percent (37%) of the juvenile-set fires started in the bedroom; 14% started in the bathroom; and 12% began in the kitchen.

Almost 2/3 of Structure Fires Set by Children Using Smoking Materials

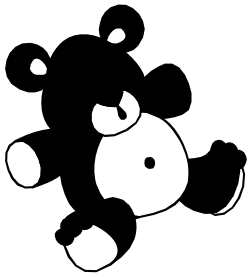
Nearly two-thirds, or 63%, of juvenile-set fires were started by smoking materials[55]. Twenty-nine percent (29%) of the structure fires were started using lighters. Twenty-three percent (23%) of the structure fires set by children were started with matches. Nine percent (9%) were caused by unspecified smoking materials and 1% were started by cigarettes. Four percent (4%) of the juvenile-set structure fires were started by fireworks; and 3% involved candles. This demonstrates a need for education to both parents and

[54] Each juvenile-firesetter is assigned a unique number for that particular incident. No other personal identification information for juvenile firesetters is recorded on an MFIRS report.

[55] Smoking materials = cigarettes, pipes, cigars, cigarette lighters, matches, and heat from unspecified smoking materials.

children on the danger of matches and lighters, the use of illegal fireworks and safer candle use.

Child Playing Causes 6 Civilian Injuries



- On November 24, 2005 at 12:51 p.m., the Boston Fire Department was called to a fire in a nine-unit apartment building caused by a 5-year old girl playing with fire in the stairway. The fire damaged all three stories of the building, and damages were estimated to be $25,000. Six civilians were injured at this fire. One woman was severely injured when she jumped from the building in order to escape the fire. Smoke detectors were present and alerted the residents; there were no sprinklers present.

Parents and Caregivers Must Protect Children from Themselves

Parents and caregivers must take steps to protect their children from the dangers of fire.

- Make sure that all matches and lighters are stored out of children's reach.
- If you need a lighter, buy one that is child resistant. Since, 1994, all disposable butane lighters and most novelty-lighters must be able to resist the efforts of 85% of children under 5 who tried to operate them in a specified test. Some are easier to use than others. If one brand is cumbersome, switch to another. *Do not disable the child-resistant feature.*

- Supervise young children at all times. Teach children the safe uses of fire, such as birthday candles and barbecuing. When a child is old enough, let him or her light the candles while you watch. It is only safe for children to use fire when adults are present.
- If your child seems overly curious about fire or has set a fire, call your local fire department and ask if they have a juvenile firesetters intervention program. Don't assume the child will 'grow out of it.' Juvenile firesetting is dangerous and must be addressed.
- Smoking parents should keep their lighter on their person at all times, not on the table or in a purse.

Cooking Fires

Cooking Caused 7,326 Fires, 3 Civilian Deaths, 90 Civilian Injuries

Unattended cooking, other unsafe cooking practices and defective cooking equipment caused 7,326 fires, three civilian deaths, 90 civilian injuries, 26 firefighter injuries and an estimated dollar loss of $6.9 million. The average dollar loss per fire was $937. Cooking fires accounted for 25% of the total 28,793 fires that occurred in 2005.

Ninety-nine percent (99%) of the fires caused by cooking occurred in structures. The 7,326 fires included: 7,246 structure fires; 39 special outside fires; two motor vehicle fires; and another 39 fires that could not be classified further.

Confined Cooking Fires Account for Almost 1/4 of Total Fires
There were 6,726 cooking fires confined to a non-combustible container. These 6,726 fires represent 23% of the total 28,793 fires that occurred in Massachusetts in 2005. This is the largest single cause of fires in Massachusetts. These fires are also an 11% increase over the 6,045 confined cooking fires that were reported in 2004.

84% of Cooking Fires Were Unintentional
In 84% of 1,082 cooking fires where the 'Cause of Ignition' was reported, it was reported as unintentional. Six percent (6%) of these fires were the result of a failure of equipment or heat source. Only 2% of the reported cooking fires were classified as intentional. In 6% of cooking fires, the cause of ignition was undetermined. Six thousand one hundred and forty-five (6,145), or 84%, of all cooking fires, were fires contained to non-combustible containers that did not have a Fire Module completed.[56]

Unattended Cooking Starts 17% – Stand by Your Pan!

Human error was responsible for the majority of cooking fires. Seventeen percent (17%) of cooking fires where 'Factors Contributing to Ignition' was completed were caused by unattended cooking; 5% were caused by combustibles left too close to the cooking equipment; 4% of the fires started because the cooking equipment had not been cleaned; another 4% were caused both by the misuse of materials or product, abandoned or discarded cooking materials; and 4% started when the equipment was accidentally turned on or not turned off. Ninety-one percent (91%) of cooking fires were confined fires where only a Basic Module was completed and therefore none of the information that is contained in the Fire and Structure Fire Modules was collected.

Cooking Was the Leading Cause of Injury in Fires in 2005
Cooking was the leading cause of injury in fires in 2005. This is not surprising considering that almost one-half (49%) of residential structure fires start in the kitchen. Of the 90 cooking fire injuries, 43% of victims were male and 57% were female. Of the 89 victims where age is known, 3% of victims were under age 10; 2% of victims were between the ages of 10-14; 8% were 15-24; 29% were 25-34; 20% were 35-44; 10% were 45-54; 9% were 55-64; 3% were 65-74; 10% were 75-84 and 4% were over the age of 85. People aged 25 to 54 accounted for 60% of the people injured in cooking fires.

[56] In version 5, a fire contained to a non-combustible container has a special incident type code. If one of these codes is used then only a Basic Form is completed and the Cause of Ignition field on the Fire Module does not have to be populated. A fire department may still elect to complete the Fire & Structure Fire Modules and all associated fields if it wants to. In 2005, there were 6,726 confined cooking fires. However fire departments filed a Fire Module in 581, or 9%, of these incidents.

82% of Victims in Room or Area of Fire Origin
Of the 73 cooking fire injuries where location at ignition is known 82% of the victims were injured in the room or area of fire origin. Fifty-two percent (52%) were intimately involved with the ignition; 30% of victims were in the room or space of fire origin but not involved; 5% were not in the area of origin but involved, most likely these are the people who initially left the cooking unattended; and 12% were not in the area of origin and not involved.

Almost 3/4 of Cooking Injuries Occurred When Trying to Control Fire
Almost three-fourths of cooking injuries occurred when trying to control fire. Of the 71 cooking fire injuries for which activity at time of injury was known, 72% of victims were attempting to control the fire; of the 51 victims injured while attempting to control the fire 59% were female. Seven percent (7%) were escaping; 6% were sleeping; 3% were unable to act; 3% acted irrationally; 1% were attempting to return to the vicinity of the fire before the fire was under control; another 1% were attempting a rescue; and 7% of the victims activities were classified as 'Other'.

41% of All Cooking Injuries Were Breathing Related
Stovetop fires tend to produce a lot of smoke and when people choose to attempt to extinguish them, they run the great risk of being overcome by toxic smoke. Of the 78 cooking fire injuries where nature of injury was known, 41% suffered only from smoke inhalation or breathing difficulty; 35% of victims suffered only from burns; 17% suffered from burns and asphyxia; 6% received scald burns; and 1% of cooking fire injuries was attributed to cardiac problems.

Cooking Was the Fourth Leading Cause of Residential Fire Deaths
While cooking is the leading cause of residential structure fires, it was the fourth leading cause of residential fire deaths. Three (3) Massachusetts residents died in one residential fire caused by cooking in 2005. Cooking fires accounted for 8% of the fire deaths and 3% of fatal fires in people's homes in Massachusetts. The importance of responding correctly to a clothing ignition – stop, drop and roll – cannot be overemphasized. Older adults, who often are more afraid of falling than of fire, are the most common victims of cooking fires. They must be persuaded that they can indeed safely lower themselves to the ground and roll to smother the flames. They should also wear tight fitting clothes to keep from having their sleeves ignite while they are cooking.

For a listing of cooking-related fire deaths in 2005, please refer to the 2005 Massachusetts Fire Deaths section of this report.

- **Put a lid** on a grease fire to smother it then turn off the heat. Baking soda will also work.
- Wear short or tight fitting sleeves when cooking. Loose sleeves can easily catch fire.
- Never throw water on a grease fire. Water will only spread the fire around.
- Never move a burning pan. You can too easily ignite your clothes or spill the fire onto someone or something else.
- Stand by your pan! Never leave cooking unattended.
- Stop, drop and roll if clothing ignites, no matter how young or old.

Fires Caused by Smoking

Smoking Caused 5% of Fires and 18% of Deaths

During 2005, 1,480, or 5%, of the 28,793 reported incidents were caused by the improper use or disposal of smoking materials. These 1,480 fires caused nine, or 18% of the 51 civilian deaths and eight, or 16%, of the 40 structure fire deaths, 37 civilian injuries, 44 fire service injuries, and an estimated dollar loss of $10.7 million. The average dollar loss per fire was $7,474. The number of smoking fires increased by 10% from 1,305 in 2004 to 1,480 in 2005.

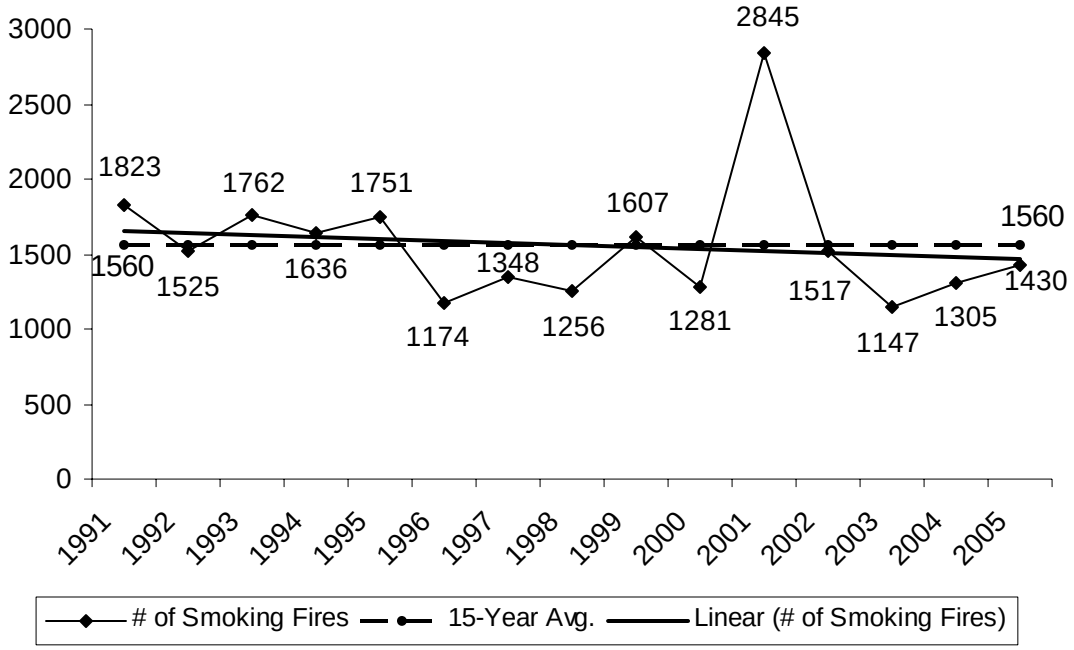
468 Structure Fires - Down From 497 In 2004

The 1,480 fires caused by smoking included: 468 structure fires, down from 497 in 2004; 50 motor vehicle fires, up from 45 in 2004; 717 tree, brush or grass fires, up from 585 in 2004; 63 trash or rubbish fires, up from 54 in 2004; 89 special outside fires, up from 67 in 2004; 12 cultivated vegetation or crop fires, up from 10 in 2004, and 31 fires that could not be classified further, down from 47 in 2004. The total number of fires caused by smoking has increased 10% from 2004 to 2005.

For the second year in a row, the largest increase came in tree, brush or grass fires with an increase of 132 fires (23%) over the 585 reported in 2004 to 717 in 2005.

Except for a peak anomaly of 2,845 smoking fires of all types in 2001, smoking fires are have been on a declining trend since 1995, even with the increases from 2003 to 2004 and from 2004 to 2005. The 15-year average, including the 2001 figures, is 1,560 smoking fires.

Smoking Fires 1991 - 2005



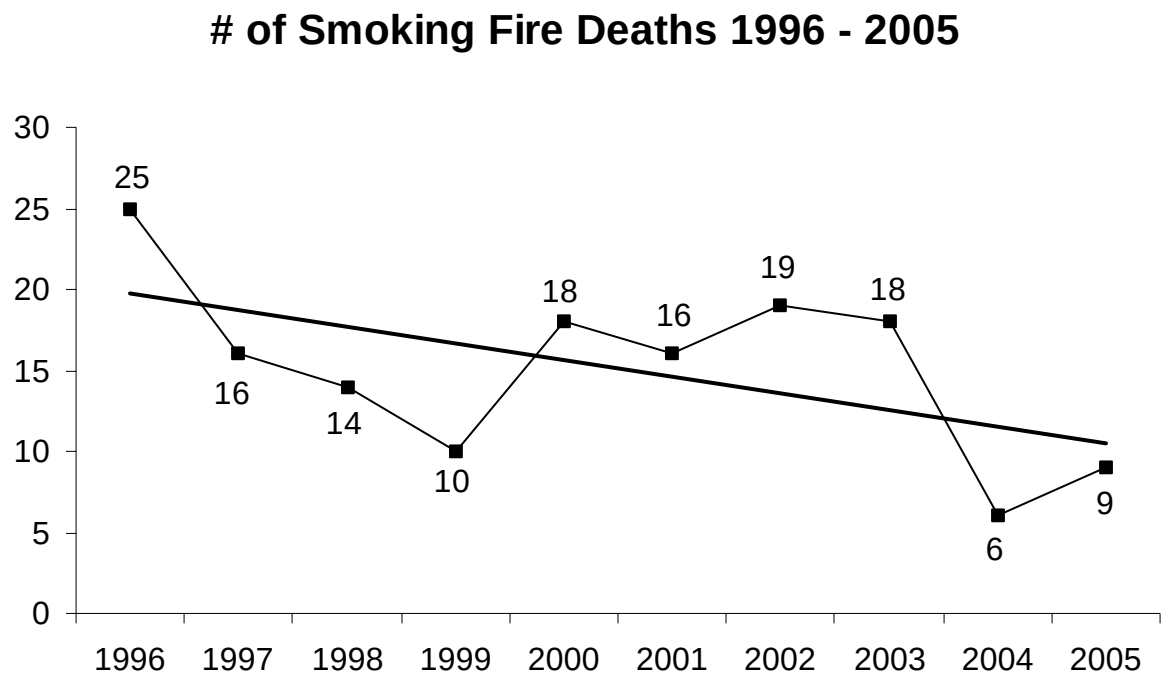
Eighty percent (80%) of all smoking-related structure fires occurred in residential occupancies. The occupancy groupings with the next highest percentages of smoking-related structure fires in Massachusetts in 2005 were mercantile and business properties accounting for 7% and public assembly properties accounting for 6%.

A reason for this is all of the new statutes that prohibit smoking in public places. These new laws have forced smokers to smoke outside where they may not be as careful disposing of their cigarettes or cigars. People are now more likely to smoke more heavily at home because it is one of the few 'sanctuaries' where they can partake in smoking.

Smoking is the Second Leading Cause of Residential Structure Fire Deaths
The 468 smoking-related structure fires caused eight of the nine smoking-related fire deaths, 31 civilian injuries, 39 fire service injuries, an estimated dollar loss of $10.3 million and an average dollar loss of $22,166. Smoking fires were the second leading cause of residential fire deaths, but were still the leading cause of fatal residential fires. Smoking fires accounted for 20% of the fatal structure fires in 2005. The unsafe and improper use of smoking materials caused 21% of residential structure fire deaths and 24% of fatal residential structure fires. Two of the 14 (14%) residential structure fire deaths to people over the age of 65 were caused by smoking.

While smoking fires are still one of the top causes of fire fatalities, the total number of smoking deaths declined dramatically in 2004 and 2005. The nine deaths in 2005 is also 40% below the 10-year average of 15 smoking-related fire deaths per year since 1995. In 2004, six people died in six smoking-related fires of all types. In 2003, 18 people died in

18 smoking-related fires of all types. The drastic decline in smoking fire deaths is one of the principle reasons for the record low number of fire deaths in 2005.



No Working Detectors in 1/2 of Fatal Smoking Fires
In four, or half, of these deaths, there were no working smoke detectors; two of these deaths occurred where smoke detectors did not operate and another two of these deaths occurred where there were no detectors present at all. Two (2) smoking fire deaths occurred in a structure where smoke detectors were present and operated, however both of these victims were intimately involved with the ignition when they fell asleep while smoking. The smoke detectors helped prevent this fire from claiming any additional lives. In two of these fires, the smoking-related deaths occurred where smoke detector status was undetermined.

For a listing of all the smoking-related fire deaths in 2005, please refer to the Fire Deaths section of this report.

Smoking on Oxygen
Although the use of oxygen while smoking caused none of the smoking-related structure fire deaths in 2005, there were two known cases where it could have led to a more tragic ending.

- According to M-BIRS, on August 20, 2005, a 73-year old Springfield man received burns to his face, chest, right arm and right leg when he was smoking while using oxygen.

- On August 30, 2005, at 9:12 p.m., the Marshfield Fire Department was called to a small fire in a single-family home. Upon entering the bedroom the firefighters found a small fire on the floor and quickly extinguished it. The 55-year old female resident, was smoking while using home oxygen and was still in her bed. She told investigators that she was smoking and had accidentally dropped her cigarette on the floor and watched it ignite the carpet. She was transported to a local hospital for smoke inhalation. Smoke detectors were present and operated. There was no estimation as to the amount of damaged caused by this fire. The fire department had responded to numerous calls to this residence over the past three years and had spoken both to the resident and her family about their concerns for her safety.

80% of Structure Smoking Fires Occurred in Residences
Of the 453 smoking-related structure fires, 360, or 80%, occurred in residences. Smoke detectors operated in 42% of the smoking-related residential structure fires. Detectors were present but failed to operate in an additional 10% of these incidents. No smoke detectors were present in 15% of these incidents. In 12% the fire was too small to activate the smoke detector. It was undetermined if the detectors were present or if they operated in 21% of these fires. The leading areas of origin were the bedroom, where 23% of residential smoking fires occurred; exterior balconies or porches, where 11% of the fires occurred; kitchens, where 10% of the fires occurred; living rooms, where 8% of the fires occurred; and unclassified function areas, where 5% started.

Leading Items Ignited by Smoking Fires = Rubbish, Bedding & Upholst. Furniture
Over one-third, or 39%, of smoking fires first ignited rubbish, bedding or upholstered furniture. If smokers were using self-extinguishing cigarettes, many of these fires could have been avoided. Some tobacco companies have begun to sell self-extinguishing cigarettes in test markets. There is no federal standard for self-extinguishing cigarettes despite nearly 20 years of proposed legislation. The state of New York mandates that all cigarettes sold in New York are of the self-extinguishing type. Canada passed similar legislation in March of 2005. California and Vermont have also passed legislation for self-extinguishing cigarettes. As of the writing of this report, Governor Mitt Romney signed the Resistant Ignition Propensity (RIP) legislation or ‘fire safe cigarette’ law making it mandatory for cigarette manufacturers to start selling only the self-extinguishing type of cigarettes in Massachusetts in 2008.

Another safety aspect to think about is purchasing only upholstered furniture that meets the California flammability standard, because many smoking-related fires start by igniting upholstery.

Until they can quit, smokers should use deep ashtrays, store ashes in metal containers and never smoke in bed. Families should consider banning smoking inside the house for health and fire safety reasons. Children of smokers often have easy access to matches and lighters. Adults must keep these tools out of the reach of small children.

State and federal regulations require most children's sleepwear to be flame-retardant. However, no such requirements apply to adult clothing. Physically disabled and elderly people may not be able to easily 'stop, drop and roll' if their clothing ignites.

While everyone needs at least one working smoke detector on every level of their home, this is even more important to smokers because of the high risk of fire death. Placing a detector inside every bedroom increases the probability that if a fire occurs, residents will wake up in time to escape. A cigarette accidentally left on a sofa, places the smoker and everyone else in the building at risk. A smoke detector's warning may enable a smoker to live long enough to quit.

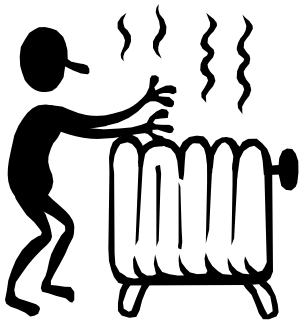
No smoking should ever be permitted in a home where oxygen is in use. The oxygen-enriched environment increases the speed at which the fire will burn once it starts. It lowers the ignition temperature, allowing fires to start more easily than usual.

Oxygen can saturate clothing, rugs, and upholstery, increasing the fire danger even when the home oxygen system is "turned off".

Illegal to Throw Cigarettes Out Car Window
The improper disposal of smoking materials has been a major problem to the fire service for years. Massachusetts General Law Chapter 148 Section 54 states, "Whoever drops or throws from any vehicle while the same is upon a public or private way running along or near forest land or open fields, or, except as permitted by law, drops, throws, deposits or otherwise places in or upon forest land, any lighted cigarette, cigar, match, live ashes or other flaming or glowing substance, or any substance or thing which in and of itself is likely to cause a fire, shall be punished by a fine of not more than one hundred dollars or by imprisonment for not more than thirty days."

Heating Equipment Fires

2,893 Fires, 4 Civilian Deaths, 21 Civilian Injuries
Massachusetts fire departments reported that some form of heating equipment was involved in 2,893, or 20%, of the 14,662 structure fires in 2005. These heating equipment fires caused four civilian fire deaths[57], 21 civilian injuries, 26 fire service injuries, and an estimated dollar loss of $5.9 million. The average loss per fire was $2.033.



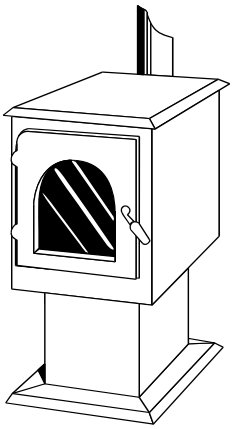
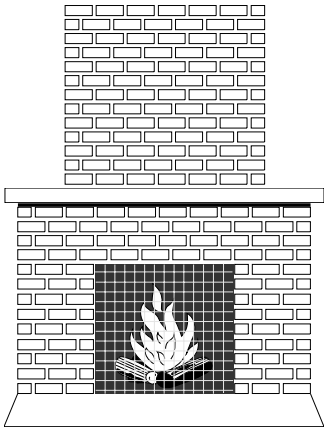
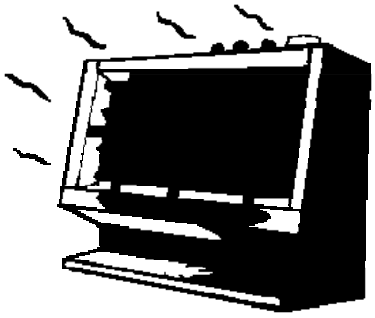
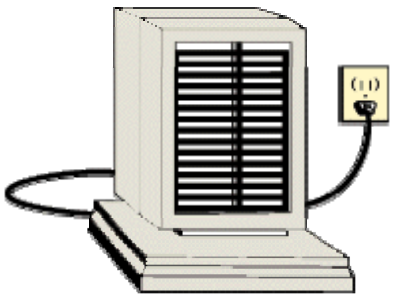
[57] Two of these deaths were classified as being caused by flammables as vapors from wood refinishing products and water proofing materials were the main cause of the fires; the water heaters' pilot lights were only the heat source. In the third instance the wiring in the hot water heater's control box is what started the fire and that fire was classified as an electrical fire death.

94% of All Heating Fires Were Confined Fires
In 2005, 94% of heating fires were confined to the container of origin. In version 5, you are able to report two types of structure fires caused by heating equipment that are contained to its non-combustible container. When one of these incidents is reported, the official writing the report only needs to complete a Basic Module, so causal data fields that would otherwise be captured on the Fire Module are not required. One thousand nine hundred and thirty-two (1,932), or 67% of all heating related structure fires in Massachusetts, were coded as fuel burner/boiler malfunction, fire contained. Seven hundred and sixty-eight (768), or 27%, were determined to be chimney or flue fires, confined to the chimney or flue.

The number of contained heating fires rose in 2005. Confined heating equipment fires increased by 76 incidents, or 3%, from the 2,624 reported in 2004.

Types of Heating Equipment
Only one type of equipment per fire incident may be reported to MFIRS. Consequently, the totals for specific types of equipment, should, in many cases, be considered underestimates. For example, sparks from a wood stove may ignite a fire in the chimney. The recorded equipment involved might be either the chimney or the wood stove. When a fire results from an extension cord overloaded by the demands of a portable heater, the extension cord might be recorded instead of the heater.

The following table shows the number of fires caused by each of the top types of heating equipment (which caused fires), the percentage of heating equipment fires for each type of equipment, the number of civilian and fire service deaths and injuries, and the estimated dollar loss for each type of heating equipment.

HEATING EQUIPMENT FIRES

Equipment	# of Fires	% of Heat Eq.	Injuries FF	Injuries Civ	Deaths FF	Deaths Civ	Dollar Loss
Central heating units	1,959	68%	12	9	0	1	$1,172,225
Confined	*1,863*	*64%*	*4*	*6*	*0*	*0*	*787,325*
Furnace, central heating unit	*77*	*3%*	*8*	*2*	*0*	*1*	*285,850*
Boiler[58] (power, process, heating)	*19*	*1%*	*0*	*1*	*0*	*0*	*99,050*
Chimney, flue	783	27%	4	1	0	0	928,426
Confined (no equip. reported)	*762*	*26%*	*2*	*1*	*0*	*0*	*238,876*
Fireplace, chimney, other	*6*	*0.2%*	*1*	*0*	*0*	*0*	*603,000*
Chimney, brick, stone, masonry	*5*	*0.2%*	*0*	*0*	*0*	*0*	*35,050*
Chimney connector, vent connect.	*1*	*0.03%*	*0*	*0*	*0*	*0*	*0*
Chimney, metal, incl. stovepipe	*9*	*0.3%*	*1*	*0*	*0*	*0*	*51,500*
Fixed, local heating	71	2%	1	7	0	1	1,512,570
Stove, heating	*48*	*2%*	*0*	*5*	*0*	*1*	*1,132,850*
Furnace, local heat. unit, built-in	*23*	*1%*	*1*	*2*	*0*	*0*	*379,720*
Water heater[59]	24	1%	0	5	0	2	549,754
Fireplace	8	0.3%	2	0	0	0	10,400
Fireplace insert/stove	*4*	*0.1%*	*2*	*0*	*0*	*0*	*46,000*
Fireplace, masonry	*4*	*0.1%*	*0*	*0*	*0*	*0*	*58,000*
Space heaters	20	1%	2	1	0	0	714,205
Portable space heaters	*10*	*0.3%*	*1*	*1*	*0*	*0*	*229,300*
Heating, vent. & air cond., other	59	2%	3	0	0	0	878,825
Total	**2,893**	**100%**	**26**	**21**	**0**	**4**	**$5,882,580**

Central Heating Units

1,959 Fires, 1 Civilian Death, 9 Civilian Injuries & 12 Fire Service Injuries

Central heating units[60] were involved in 1,959 structure fires in 2005. These fires caused one civilian death[61], nine civilian injuries, 12 fire service injuries, and an estimated dollar loss of $1.2 million. The average loss per fire was $598. One thousand nine hundred and thirty-two (1,932) of these fires involving central heating units were confined fires.

[58] This death was categorized as an electrical death because the problem was in the wiring in the furnace's switchbox.

[59] These two deaths were caused by vapors of flammable materials reaching the water heater pilot lights and not caused by the water heaters themselves.

[60] These include all structure fires with Equipment Involved = 132: Furnace & 133: Boiler, central heating unit. And all Incident Type = 116 Fuel burner/boiler malfunction, fire confined that did not complete a Fire Module.

[61] This death was classified as an electrical fire death because the fire was caused by wiring in the furnace's switchbox.

11% Caused by Mechanical Failures or Malfunctions
Of the 216 central heating unit fires where Factors Contributing to Ignition was completed, 11% were caused by mechanical failures or malfunctions; automatic control failures caused 8% of these fires; 7% were caused by backfires; 6% were caused by a failure to clean the equipment; and 3% were caused by operational deficiencies.

Eighty-one (81), or 60%, of the 136 central heating unit fires where the power source was known were caused by liquid-fueled equipment. These fires caused an estimated dollar loss of $143,950. The average loss per fire was $1,777.

Thirty-seven (37), or 27%, were caused by electrically powered equipment[62]. Seventeen (17), or 13%, of the central heating unit fires were caused by gas-fueled equipment; and one, 1% were caused by wood-fueled equipment.

Furnaces Should Be Cleaned and Checked Annually

- Homeowners should have furnaces cleaned and checked annually to ensure that they are working well.
- Combustible materials such as trash or supplies should never be stored near heating equipment.
- Keep a 3-foot clear space around the furnace.
- Only licensed trades people may install oil, gas, or electric heating units.
- Regulations about oil burners may be found in 527 CMR 4.

Chimney Fires

783 Fires Caused 4 Fire Service Injuries & $928,426 in Damages
Seven hundred and eighty-three (783) structure fires involved chimneys[63], gas vent flues, chimney connectors or vent connectors. These 783 fires caused one civilian injury, four fire service injuries and an estimated dollar loss of $928,426. The average dollar loss per fire was $1,186.

Seven hundred and sixty-eight (768) of these chimney or flue fires were confined to the chimney or flue. Seven hundred and twenty (720) of these did not report any equipment involved or they were reported using only a Basic Module.

Twenty-nine percent (29%) of the 131 fires where heat source was reported, were caused by a failure to clean the creosote buildup and 3% were caused by combustibles being too close to the heat source.

[62] Version 5 has a data field called Equipment Power Source that describes the power source of the equipment involved in ignition.
[63] These include all incidents with an Incident Type = 114: Chimney or flue fire, confined to the chimney or flue, and all other structure fires with Equipment Involved = 120 or between 125 and 127.

Have Chimneys Cleaned Annually to Remove Creosote
Creosote is a black, tar-like by-product of fire. It can accumulate in your chimney and cause a fire. Have your chimney cleaned at the start of each heating season and check it monthly for soot build-up. It should also be checked for loose mortar. If you use a wood or coal stove, keep the temperature in the recommended range. Use chimney guards to prevent animals from nesting in your chimney. If you should have a chimney fire, have the chimney inspected by a professional before using it again.

Fixed Heater Fires

71 Fires, 1 Civilian Death, 7 Civilian Injuries, 1 Fire Service Injury & $1.5 Million
Seventy-one (71) fixed heater structure fires caused one civilian death, seven civilian injuries, one fire service injury and an estimated dollar loss of $1.5 million. The average dollar loss per fire was $21,304.

Fixed heaters include stationary local units such as wood stoves and in-room gas heaters. A central heating unit heats the entire building or apartment, whereas a fixed local heating unit is set in a specific room to heat just that room or immediate area.

13% Caused by Combustibles Being Too Close to the Heat Source
Thirteen percent (13%) of fixed heater fires were caused by combustibles being to close to the heat source. Ten percent (10%) were caused from a failure to clean the heater. Unattended equipment caused 4% of fixed heater fires in 2005. Misuse of materials or products caused 6% of these fires. Four percent (4%) of these fires were caused by unclassified mechanical failures or malfunctions.

Electrical powered fixed heaters caused 28, or 42%, of these fires and were responsible for five civilian injuries and a dollar loss of $236,750. Nineteen (19), or 29% of fixed heater fire incidents in 2005, involved solid fueled fixed heaters, 17 of which were wood fueled and two of which burned coal. These fires caused one civilian death and an estimated dollar loss of $757,000 and the average dollar loss was $39,842. Thirteen (13), or 20%, were caused by gas-fueled fixed heaters and they were responsible for one civilian injury, one fire service injury and a dollar loss of $513,070. The average loss per fire was $39,467. Six (6), or 9%, of these heater fires were caused by liquid-fueled heaters, and they were responsible for $2,600 in losses. There were five fires where the power source of the fixed heater was undetermined. These were excluded from the calculations.

Install Wood Stoves According to Building Code Standards
A homeowner must obtain a building permit prior to installing a wood or coal stove and the installation must be inspected upon completion. In general, the stove should be at least three feet away from walls, ceilings and furnishings. If the flue does not draw properly, deadly levels of carbon monoxide may accumulate in the home.

- Keep the temperature within the manufacturer's suggested range. Wood and coal stoves should be operated at moderate heat. If the fire is too low, creosote, a black tarry fire by-product, may accumulate in the chimney and eventually cause a fire. If the fire is too hot, nearby combustibles or creosote in the chimney could ignite.
- Only burn fuels intended for use in these stoves. Other items may cause overheating and the release of toxic gases. Never use gasoline or flammable liquids to stoke the fire — doing so could cause a flash fire or explosion.
- Install and regularly test smoke and carbon monoxide detectors.
- Have your chimney cleaned and inspected for creosote build-up before each heating season, and check it at least once a month during the season.
- Place ashes in a covered metal container until they are completely cool. Store outdoors, away from the house, porch or other outside buildings. Hot ashes may stay "live" for 24 hours.

Fires Caused by Hot Water Heaters

24 Fires, 2 Civilian Deaths, 5 Civilian Injuries & $549,754 in Damages
Twenty-four (24) structure fires were caused by hot water heaters[64] in 2005. These 24 fires caused two civilian deaths, five civilian injuries and an estimated dollar loss of $549,754. The average dollar loss per fire was $22,906. Combustibles placed too close to the water heater caused 25% of these fires. Thirty-two percent (32%) were ignited from a spark, ember or flame from operating equipment and 8% of these fires were started by a short-circuit arc.

Both of the deaths that involved water heaters were caused by the vapors of flammable materials that were being applied in an area around the water heaters and the heaters' pilot light ignited the vapors.

Fifty-two percent (52%) of the 24 fires involving hot water heaters were identified as gas-fueled water heaters. Forty-three percent (43%) were identified as electric powered water heaters; 4% were identified as liquid-fueled water heaters; and there was one fire where the power source was undetermined.

Fires Caused by Fireplaces

8 Fires, 2 Fire Service Injuries & $10,400 in Damages
Eight (8) fireplaces[65] were involved in Massachusetts structure fires in 2005. These eight fires caused two fire service injuries and an estimated dollar loss of $10,400. The average dollar loss per fire was $1,300.

[64] These include all structure fires with Equipment Involved = 151: Water Heater.
[65] These include all structure fires with Equipment Involved = Between 121 and 123.

Twenty-five percent (25%) were caused by construction deficiencies; and another 25% were caused when combustibles were placed too close to the fireplace.

Six (6), or 75%, of fireplaces involved in fires were solid-fueled. One (1), or 13%, was electric; and another incident (13%) was gas-fueled.

Space Heater Fires

20 Fires, 1 Civilian Injury & 2 Fire Service Injuries
Space heaters of all kinds accounted for 20 fires and caused one civilian injury, two fire service injuries, and an estimated dollar loss of $714,205. The average dollar loss per fire was $35,710

Portable Space Heater Fires

10 Fires, 1 Civilian Injury & 1 Fire Service Injury
History has taught us that the larger problem is from portable space heater fires. Ten (10) portable space heater[66] fires caused one civilian injury, one fire service injury and an estimated dollar loss of $229,300. The average dollar loss per fire was $22,930. Half (50%) of these fires were caused by combustible materials such as bedding, rubbish, or furniture that were too close to the heater, and 30% were caused when the heater was unattended.

Nine (9), or 90% of the portable heaters involved in fires were electric; and one, or 10%, was gas-fueled.

If you must use a space heater for heat, use it as safely as possible.

- When buying a heater, look for one that has been tested and labeled by a nationally recognized testing company.
- Keep the heater three feet away from drapes, furniture or other things that can burn. Place it on a level surface away from areas where a person or a pet might bump it and knock it over.
- If you must use an extension cord, make sure it is a heavy-duty cord marked with a power rating as least at high as that on the label of the heater itself.
- Never leave a space heater unattended or running while you sleep.
- Keep electric heaters away from water. Never use them near a sink or in the bathroom.

[66] These include all structure fires with Equipment Involved = Between 141 and 143; and Equipment Portability = 1: Portable

- Do not use space heaters to thaw pipes. They were not designed for this task. Space heaters must be kept at least 3 feet away from any combustibles including walls and wall coverings.

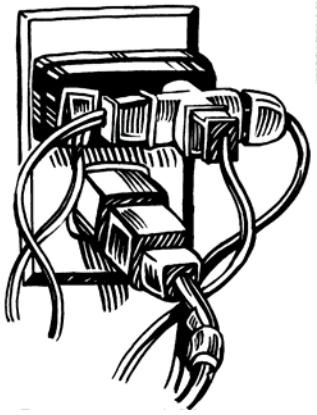
According to MGL Chapter 148, Section 5A, 25A and 25B, the sale and use of liquid-fired unvented space heaters using kerosene, range oil, number 1 fuel oil, or any oil as fuel are illegal in Massachusetts. The use of unvented space heaters using natural gas or propane gas as fuel is acceptable only if they meet the requirements of 780 CMR 30.00.

Fires Caused by HVAC, Other

59 Fires, 3 Fire Service Injuries and $878,825 in Damages
Fifty-nine (59) structure fires were caused by unclassified heating, ventilation and air conditioning equipment (HVAC, other)[67] in 2005. These 59 fires caused three fire service injuries and an estimated dollar loss of $878,825. The average dollar loss per fire was $14,895. Unclassified mechanical failures or malfunctions caused 14% of these fires; unspecified electrical failures caused 12% of the fires; combustibles placed too close to the equipment caused 10%; and worn out equipment caused 3%.

Forty-four percent (44%) of the 59 fires involving unclassified heating, ventilating or air conditioning equipment were identified as electric powered. Forty-two percent (42%) were identified as liquid-fueled equipment, 12% were identified as gas-fueled equipment, and 1% was identified as solid-fueled equipment.

Electrical Fires



690 Electrical Fires Caused 9 Civilian Deaths
Local fire departments reported that there were 690 structure fires caused by electrical problems in Massachusetts in 2005. These fires caused nine civilian deaths, 29 civilian injuries, 68 fire service injuries and an estimated dollar loss of $25.2 million. The average loss per fire was $36,589.

Electrical Fires Were the Leading Cause of Fire Deaths
Electrical fires were the leading cause of fire deaths in 2005. Seven (7) fatal electrical fires, or 16% of fatal fires, caused nine, or 17%, of

[67] These include all structure fires with Equipment Involved = 100: Heating, ventilating & air conditioning, other.

fire deaths in 2005. Smoking caused more fatal fires (8), but only eight deaths; making 2005 the first time smoking was not also the leading cause of fire deaths, according to available records.

When we used MFIRS version 4, this section of the annual report used to count electrical equipment fires. The criteria to qualify for an electrical equipment fire was to have the Form of Heat of Ignition – heat from electrical equipment arcing, overloaded. In version 5 this section has been expanded to include all fires caused by electrical problems or malfunctions. The new criteria is to have Factors Contributing to Ignition – equipment overloaded or – electrical failure malfunction or to have Equipment Involved in Ignition in the 200 series – electrical distribution, lighting and power transfer equipment.

Unspecified Electrical Failure Responsible for 1/3 of Electrical Fires[68]
One-third of electrical fires caused by unspecified electrical failure. Two hundred and thirty (230), or 33% of electrical fires, were caused by an unclassified electrical failure or malfunction. One hundred and forty-two (142), or 21%, were caused by an unspecified short circuit arc. Twelve percent (12%), or 84 of these fires, had a short circuit arc from defective or worn insulation. Thirty-four (34), or 5%, of electrical fires were caused by an arc from a faulty contact or broken conductor. Five percent (5%), or 32 of the fires, were caused by overloaded equipment. Twenty-seven (27), or 4%, of electrical fires were caused by a short circuit arc from mechanical damage. An arc or spark from operating equipment caused 21, or 3% of these fires. The heat source being too close to combustibles also caused 21, or 3%, of these fires. Water caused a short circuit arc in 19, or 3%, of electrical fires. Mechanical failure caused 13, or 2%, of electrical fires in 2005.

Electrical Equipment Fires

Three hundred and seventy-seven (377), or 55%, of the 690 electrical fires reported the type of equipment involved in ignition. These 377 fires caused nine civilian deaths, 22 civilian injuries, 32 fire service injuries and an estimated dollar loss of $11.7 million. The average dollar loss per fire was $31,060.

126 Electrical Service, Wiring, Meter Boxes & Circuit Breaker Fires
The most common equipment involved in ignition in electrical fires that was reported was electrical service, wiring, meter boxes and circuit breakers accounting for 126, or 34%, of the fires. These fires caused one civilian injury, seven fire service injuries and an

[68] *Factors Contributing to Ignition* is one of the fields in version 5 that allows for multiple codes. Two factors contributing to ignition may be coded. For example, in the case of a malfunctioning electrical heater, we can capture not only the electrical malfunction, but also a contributing factor such as: was the heater too close to combustibles; did the automatic control fail; was it knocked over; was it worn out; or was the equipment overloaded. This field also is not a mandatory field, although fire departments are strongly encouraged to complete it, should it apply to the incident. Because of these factors, the percentages may not add up to 100%.

estimated dollar loss of $3.7 million. The average dollar loss per electrical wiring fire was $29,576.

Lamp, Lighting Fixtures Involved in 70 Fires
Lamps and other lighting fixtures were involved in 70, or 19%, of electrical equipment fires where equipment involved in ignition was reported. These fires caused one civilian death, seven civilian injuries, five fire service injuries and an estimated dollar loss of $2.7 million. The average loss per fire was $39,567.

27 Fires Involving Kitchen & Cooking Equipment
Twenty-seven (27) electrical equipment fires involving kitchen or cooking equipment caused one civilian injury, three fire service injuries and an estimated dollar loss of $296,450. These fires accounted for 7% of the structure fires involving electrical equipment when equipment involved in ignition was reported. The average dollar loss per fire was $10,980.

Cords or Plugs Caused 25 Fires
Twenty-five (25), or 7%, of the structure fires where electrical equipment involved was reported were caused by cords or plugs. These fires caused three civilian deaths, four civilian injuries, 15 fire service injuries and an estimated dollar loss of $2 million. The average dollar loss per fire was $80,565.

Transformer, Generator, Battery or Chargers Caused 25 Fires
Transformers, generators, batteries and chargers were involved in 25, or 7%, of the electrical fires where equipment involved in ignition was reported. These fires caused two civilian injuries, one fire service injury and an estimated dollar loss of $857,100. The average loss per fire was $34,284.

Ventilation & Air Conditioners Caused 25 Fires
Twenty-five (25), or 7%, of the structure fires involving known electrical equipment were caused by air conditioning or ventilation units. These fires caused an estimated dollar loss of $148,450. The average dollar loss per fire was $5,938.

Household Appliances (Non-Cooking) Caused 21 Fires
Non-cooking household appliances such as clothes dryers, washing machines and trash compactors, caused 21, or 6%, of the 377 electrical structure fires where equipment involved in ignition was reported. These 21 fires caused one civilian death, three civilian injuries and an estimated $1.2 million in damages. The average dollar loss was $56,815.

Heating Equipment Caused 20 Fires
Twenty (20), or 5%, of the structure fires involving known electrical equipment were caused by various heating equipment. These electrical fires involving heating equipment caused one civilian death, one civilian injury, two fire service injuries and an estimated dollar loss of $447,656. The average dollar loss per fire was $22,383.

18 Fires Involving Electronic & Other Electrical Equipment
Eighteen (18) electrical equipment fires involving electronic and other electrical equipment caused three civilian deaths, three civilian casualties, two fire service casualties and an estimated dollar loss of $681,200. These fires accounted for 5% of the structure fires involving reported electrical equipment. The average dollar loss per fire was $40,071.

10 Fires Involving Unspecified Electrical Distribution Equipment
Ten (10) electrical equipment fires involving unspecified electrical distribution equipment caused an estimated dollar loss of $163,000. These fires accounted for 3% of the structure fires involving reported electrical equipment. The average dollar loss per fire was $16,300.

7 Fires Involving Shop Tools & Industrial Equipment
Seven (7) electrical fires involving shop tools or industrial equipment caused an estimated dollar loss of $25,000. These fires accounted for 2% of the structure fires involving electrical equipment. The average dollar loss per fire was $3,571.

3 Fires Involving Commercial & Medical Equipment
Three (3) electrical fires involving commercial or medical equipment caused an estimated dollar loss of $31,200. These fires accounted for 1% of the structure fires involving electrical equipment. The average dollar loss per fire was $10,400.

313 Unspecified Electrical Equipment Fires Caused $11.2 Million in Damages
There were 313 electrical fires where the piece of equipment involved in ignition was unknown or not reported. These 313 fires caused eight civilian injuries, 39 fire service injuries and an estimated dollar loss of $22 million. The average dollar loss per fire was $70,063.

Large Loss Electrical Fires

- On July 14, 2005 at 11:30 p.m., the Beverly Fire Department was called to an electrical fire at the North Shore Music Theater. The fire began under the stage in the basement. This fire caused $3 million in property damage. There were no injuries associated with this fire. Detectors were present and operated, but there were no occupants inside the building. Sprinklers were present but operated ineffectively because the fire was not in the area protected by the system.

- On March 3, 2005 at 11:34 p.m. the Somerville Fire Department was called to a fire in a six-unit apartment building. The fire was caused by arcing in a second floor bedroom. Four (4) firefighters were injured fighting this fire. Detectors were present and alerted the occupants. Sprinklers were not present. Damages from this fire were estimated to be $900,000. This fire also started a fire in the building next door that caused an estimated dollar loss of $85,000 to that building.

- On January 29, 2005 at 7:20 a.m., the Somerville Fire Department was called to a fire at a mixed use, commercial and residential building. An extension cord in one of the

bedrooms caused this fire. Eleven (11) firefighters were injured battling this blaze. Smoke detectors alerted the occupants of the building. Sprinklers were not present in this building. Damages from this blaze were estimated to be $700,000. There was one exposure fire to the building next door. The damages to this building were estimated to be $400,000.

Over 3/4 of Electrical Fires Occurred in Residential Occupancies
Over three-quarters of electrical fires occurred in residential occupancies. Of the 690 electrical fires where property use was known, 529, or 77% occurred in residential occupancies. Seventy-one (71), or 10%, occurred in mercantile or business properties, such as offices, banks, retail stores or markets. Public assembly buildings like restaurants, libraries and courthouses accounted for 26, or 4%, of these fires. Institutional buildings such as hospitals and asylums had 21, or 3%, of the 2005 electrical fires occur on their premises. Storage properties accounted for 15, or 2%, of these fires. Manufacturing or processing facilities had 11, or 2%, of these incidents. Educational properties accounted for 10, or 1%, of Massachusetts' electrical fires in 2005. Four (4), or 1%, of Massachusetts' electrical fires occurred in basic industry properties such as laboratories, communications centers, electrical distribution sites and utility and distribution centers. Three (3), or less than 1%, of electrical fires occurred in special or outside properties.

22% of Electrical Fires Began in the Kitchen or Bedroom
Eighty-nine (89), or 13%, originated in the bedroom. Sixty (60), or 9%, of the 690 electrical fires occurred in the kitchen. The ceiling and floor assembly or crawl space between stories accounted for 7%, or 46, of the electrical fires. The attic or crawl spaces and the substructure area or crawl space, each accounted for 6%, or 39, of these fires. A wall assembly was the area of origin for 38, or 6%, of these fires. Four percent (4%), or 31, occurred each in the living room or unclassified function area. The bathroom accounted for 3%, or 29, of these fires; and the laundry room accounted for 2%, or 24, of the electrical fires in Massachusetts in 2005.

Electrical Wiring Was the Item First Ignited in Almost 1/3 of Electrical Fires
Electrical wiring was the item first ignited in almost one-third of electrical fires. In 217, or 31%, of electrical fires, electrical wiring or cable insulation was the item first ignited. This includes fixed wiring and appliance cords. Appliance housing or casing were the item first ignited in 5% of electrical structure fires. In 102, or 15% of these fires, a structural member or framing, was the first item ignited. Thermal or acoustical insulation within a wall and structural components or finishes were each the item first ignited in 4% of electrical fires in 2005.

Watch For Warning Signs
People should watch for warning signs of electrical problems. These include:

- Fuses blowing or circuit breakers tripping frequently.
- Unusually warm or faulty outlets or switches.
- A vague smell of something burning.
- A sizzling sound in the wall.

Any of these signs may indicate a potential problem. Contact a licensed electrician if you notice any of these signs. Or contact the local fire department. Many departments now have new technologies such as thermal imaging cameras that can see inside walls to detect potential problems before they expand and extend to other parts of the building.

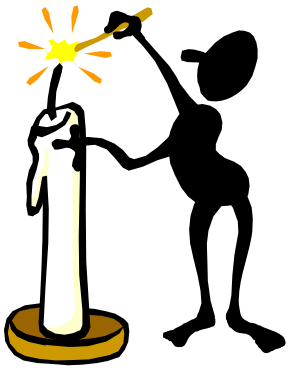
Fuses and circuit breakers are safety devices. They blow or trip when the amount of current cannot safely travel through the wires. *Trying to bypass the fuse or circuit breaker protection is an invitation to danger.*

Electrical Systems Pose Unseen Dangers
Just as all systems need maintenance and inspection, so does electrical wiring. As switches, receptacles and connections age, heat is generated and the risk of fires inside walls and at poor connections greatly increases. Because wiring is often hidden behind walls, electrical faults may be hard to detect except by properly trained electricians.

Have Electrical Systems Examined by a Licensed Electrician Every 10 Years
Have electrical systems examined by a licensed electrician every 10 years. A good electrician will look for electrical faults, check for warm switch plates and receptacles, and analyze the use of electricity to see if additional capacity is needed. It is important to help our homes keep up with the electrical demands of our changing lifestyles, changes in society and new technologies.

Candle Fires

191 Candle Fires Caused 1 Civilian Death & $5.1 Million in Damages
In 2005, candles caused 191 fires of all types. These fires caused one civilian death, 19 civilian injuries, 17 firefighter injuries and an estimated dollar loss of $5.1 million in damages. There was a 16% decrease from the 227 fires of all types started by candles in Massachusetts in 2004.



94% of Candle Fires are Structure Fires
Of the 191 candles fires in 2005, 179, or 94%, were classified as structure fires. One (1), or 1%, was a reported motor vehicle fire; two, or 1%; were brush fires; two, or 1%, were outside rubbish fires; and seven, or 4%, were unclassified fires.

Largest Loss Candle Fire Injured 4 Firefighters
On February 7, 2005 at 6:32 a.m., the Worcester Fire Department was called to a candle fire in a single-family home. The fire began when a candle in a bedroom ignited some magazines. Four (4) firefighters were injured battling this blaze. Damages from this fire were estimated to be $400,000. Smoke detectors were present and they alerted the home's occupants. There were no sprinklers in the building.

1 Person Died in Candle Fires in 2005
In 2005, one person died in a fire started by a candle. The victim's power had been shut off and he was using the candle instead of a flashlight for light.

For anecdotes on all fatal fires please see the fatal fire section in this report.

96% of Candle Fires Occurred in Homes
Of the 179 candle fires that occurred in structures, 96% were residential structure fires. Candles caused 172 residential structure fires, one civilian death, 17 civilian injuries, 17 firefighter injuries and an estimated dollar loss of $5.1 million. Three candle fires, or 2%, each occurred in public assembly properties and mercantile or business properties; and one candle fire, or 2%, occurred in a storage facility.

Over 1/3 of Candle Fires in Homes Occurred in the Bedroom
Of the 172 candle fires in residential structures, 34% occurred in the bedroom. Seventeen percent (17%) occurred in the living room; 12% started in the bathroom; 7% occurred in the kitchen; 5% occurred in some other function rooms such as enclosed patios and three-season rooms; and 3% began on an exterior balcony or unenclosed porch.

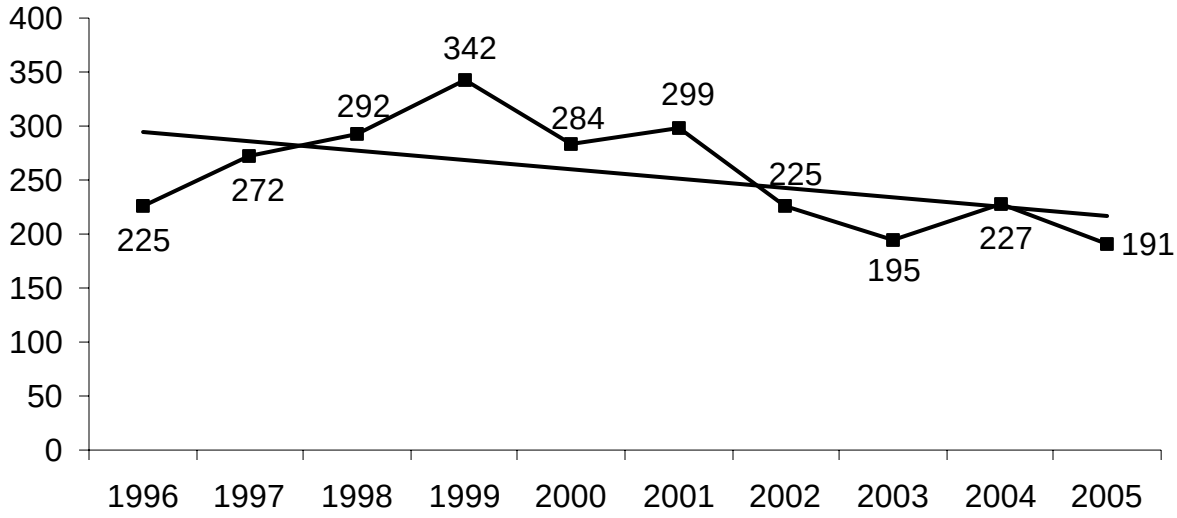
Smoke Detectors Operated in Over 1/2 of Candle Fires in Homes
Of the 172 candle fires in homes, smoke alarms operated in 56%. Smoke detectors were present but did not operate in 8% of these incidents. No detectors were present in 10% of candle fires in people's homes. Nine percent (9%) of the candle fires were too small to activate the smoke detector. In 36 incidents, or 21%, the smoke detector status was undetermined.

Candle Safety Tips

- Burn candles in the center of a 1-foot **Circle of Safety,** free of anything that can burn.
- Stay in the same room with burning candles; do not leave unattended.
- Burn candles on a non-combustible surface such as a ceramic saucer, or plate.
- Be sure to snuff out candles before falling asleep, going out, or leaving the room.
- Teach everyone in the family the rules of safe candle use.
- Keep candles out of reach of small children and pets.

Candle fires had become a serious problem in Massachusetts during the decade of the 1990's, nearly tripling from 93 incidents in 1990 to an all time high of 342 in 1999. The following chart shows candle fires over the past decade increasing from 225 candle fires in 1996 to the peak of 342 candle fires in 1999 and then decreasing to 191 in 2005. In 1999, a new effort to analyze these incidents began. In conjunction with the National Fire Protection Association (NFPA), the Office of the State Fire Marshal conducted a follow-up survey that went out to any fire department having a candle fire for one year. The goal was to gain a greater understanding of these incidents, why they are happening and what we can do to prevent them.

Candle Fires by Year 1996 - 2005



Major findings from the report were:

- 75% of the fires occurred when the candle was left unattended.
- 40% of the fires resulted from combustible materials being too close to the candle.
- Teenagers face the greatest risk of starting candle fires. Although teens account for only 9% of the state population, 21% of the candle fires were attributed to them. Two-thirds of candle users, however, were between 20 and 64 years old.
- 98% of the candles used in Massachusetts' candle fires were not needed as sources of light but were used for other purposes such as decoration, pleasure or mood.

There has been a downward trend in candle fires since the year 2000. Stronger public education and tougher industry standards are the main reasons for this downturn. From 1999 to 2005 this drop increased to 44%. In 2000, State Fire Marshal Coan began reaching out to candle manufacturers and retailers in Massachusetts to ask for their help in educating consumers on candle fire safety and to highlight and separate fire safety information from other fire safe use tips. He also asked them to adopt the candle **Circle of Safety** logo, to use it in their printed materials and on their webpages.

The downward trend is contrary to the national trend of the increasing problem of candle fires, especially in residences. According to the NFPA's most recent statistics[69], the share of fires started by candles in homes has jumped to 5%. In Massachusetts candle fires only represent 1% of total residential structure fires.

[69] Arhens, Marty, "Home Candle Fires," NFPA, Quincy, MA (August 2005); pg. 1.

More information on candle fire safety can be found on our webpage at http://www.mass.gov/dfs.htm.

Clothes Dryer Fires

80% of Dryer Fires are in Homes
Ninety-eight (98) clothes dryer fires caused seven civilian injuries, three firefighter injuries, and an estimated dollar loss of $513,131. The average dollar loss per fire was $5,290. Of these 98 fires, 78, or 80%, occurred in residential occupancies.

Failure to Clean Caused 16% of Dryer Fires
Sixteen percent (16%) of the dryer fires were caused by a failure to clean the machines; 13% were caused by mechanical failures or malfunctions; 7% were caused by operational deficiencies; 4% each were caused by electrical failures or malfunctions, combustibles being placed to close to the machine, an automatic control failure, and overloaded equipment; and 3% were caused by unattended equipment.

Over half, or 54%, of the 98 dryers involved in fires were identified as having electricity as their power source. Forty-six percent (46%) involved gas-fueled clothes dryers. This may be a reflection of the market share of electrical and gas-powered dryers rather than any inherent danger of one power source over another.

Fifty percent (50%) of clothes dryer fires identified the heat source as radiated or conducted heat from equipment inside the dryer itself. Twenty-six percent (26%) of dryer fires identified the heat source as heat coming from the dryer itself but could not be any more specific.

Over 1/2 of Clothes Dryer Fires Occurred In 1- & 2-Family Homes
Fifty-four percent (54%) of the dryer fires occurred in one- and two-family homes; 13% occurred in apartments; 11% occurred in mercantile or business properties such as laundry or dry cleaning businesses; 5% occurred in hotel and motels; 3% occurred in dormitories; another 3% occurred in institutional properties such as nursing homes hospitals and jails; 3% occurred in assembly properties, such as restaurants and athletic or health clubs; 2% occurred in rooming houses; another 2% occurred in unclassified residential occupancies; 2% occurred at educational facilities; and 1% happened in storage facilities.

Clean the Lint Filter After Every Load
The public should be reminded to clean the dryer filter screen after each load of laundry, to clean the outside vents twice a year and to occasionally vacuum the motor area of the dryer. If materials such as cooking oil, solvents and other combustible or flammable liquids were not removed completely during the laundry cycle, heat from the dryer may cause them to ignite. This is the reason that mop heads should not be put into the dryer. An adult should be at home whenever the dryer is in use and the home should have working smoke alarms. Remember to keep dryer vents clear during heavy snowstorms to prevent the risk of carbon monoxide poisoning.

Largest Loss Clothes Dryer Fire
- On June 4, 2005 at 7:01 p.m., the Saugus Fire Department was called to a dryer fire in a single-family home. The fire began in a gas-powered clothes dryer in the first floor laundry room. One civilian was injured with burns and smoke inhalation when she went back into the house before the fire department extinguished the fire. Damages from this fire were estimated to be $200,000. It was undetermined if detectors were present in the building.

Fireworks Incidents

76 Incidents Involving Fireworks Caused $44,925 In Damages
There were 76 fire and explosion incidents reported that involved fireworks in 2005. This is a 16% decrease from the 90 fire and explosion incidents reported in 2004. Incidents involving fireworks caused an estimated $44,925 in property damages. The average dollar loss per fireworks incident was $936. Nineteen (19), or 40%, of the fireworks-caused fires in 2005 took place during the week of the 4th of July. Sixteen (16) of the 19 incidents, occurred between July 3 and July 5. Over two-thirds (67%) of the fireworks incidents were brush fires, while almost a fifth, 19%, were structure fires.

In version 5, a fireworks explosion without fire is coded as an Incident Type 243 – Fireworks explosion (no fires). In 2005, 28 such incidents were reported.

Largest Loss Fireworks Fire – Boat Fire

- On July 3, 2005, at 11:25 p.m., the Rowley Fire Department was called to a boat fire at a single-family home. An ember from a neighbor's illegal fireworks display ignited the tarp covering the boat. The fire engulfed the trailered boat and extended to the house. There were no injuries associated with this fire and damages were estimated to be $21,000 between the house and the boat. Smoke detectors were present in the house but it was undetermined if they operated. No one was home at the time of the fire. There were no sprinklers in the residence.

Refer to M–BIRS Annual Report for More Information about Fireworks Injuries

For more information about the causes of burn injuries, please refer to the *Massachusetts Burn Injury Reporting System — 2005 Annual Report.* According to Massachusetts General Law (MGL) Chapter 112, Section 12A, the treatment of all burn injuries extending over 5% or more of a person's body surface area must be reported immediately to the State Fire Marshal. All burn reports received by the Office of the State Fire Marshal are reviewed for possible suspicious circumstances. Gasoline burns, burns on the hands and arms or other unusual scenarios are referred for further investigation.

There were five fireworks-related burn injuries reported to M-BIRS in 2005. Since we started collecting burn injury reports in M-BIRS in 1984, the average number of fireworks-related burns per year is 12 burns. The highest number of reported fireworks-related burns occurred in 1989, with 45 reported burn injuries.

Grill Fires

38 Incidents Involving Grills in 2005

In 2005, there were 38 fires and explosion incidents reported to the Massachusetts Fire Incident Reporting System (MFIRS) involving open fired grills. These incidents caused an estimated dollar loss of $272,494. There were no reported injuries associated with these fires. Predictably, 63% of these incidents occurred in the months of May to September when people are most likely to use their outdoor grills.

Gas Grill Fires

Of the 38 grill incidents, 36, or 95%, of the grills were gas grills. Three percent (3%) were grills fueled by liquid fuels and 3% were electrically powered. LP-gas grill fire incidents caused an estimated $155,500 in damage. Sixty-seven percent (67%) of the LP-gas grill fires in Massachusetts occurred between May and September.

It is illegal to have LP-gas on balconies or porches above the first floor. Section 5a of 527 Code of Massachusetts Regulation 6:07 states "…Storage or use of LP-Gas containers above the first floor of a building used for habitation is prohibited…" The reason for this is that LP-Gas is heavier than air and will sink. A spark from below could ignite gas that has leaked.

Largest Loss Grill Fire

- On April 11, 2005 at 1:48 p.m. the Arlington Fire Department was called to a fire where a gas grill located on the first floor exterior balcony ignited the wall of a single-family home. The fire quickly spread to other parts of the building. There were no injuries associated with this fire. There were no smoke detectors in the building. The estimated dollar loss of this incident was $175,000. Sprinklers were not present.

Refer to MBIRS Annual Report for More Information about Grill Injuries

For more information about the causes of burn injuries, please refer to the *Massachusetts Burn Injury Reporting System — 2005 Annual Report.* According to Massachusetts General Law (MGL) Chapter 112, Section 12A, the treatment of all burn injuries extending over 5% or more of a person's body surface area must be reported immediately to the State Fire Marshal. Five (5) civilians were reported to M-BIRS in 2005 with burn injuries from a grill. All five of these injuries occurred between April and July.

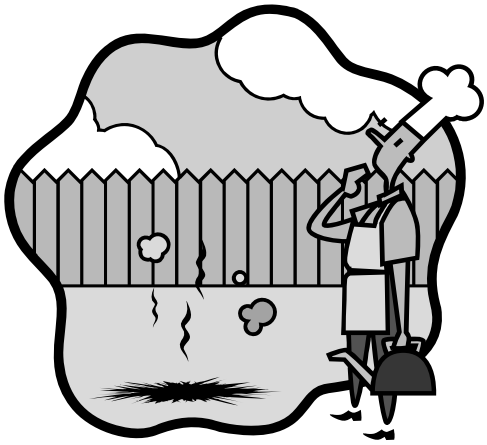
Grill Safety

Follow these safety tips when using a grill:

- Use all barbecue grills away from the house in the backyard.
- Supervise children whenever any grill is in use.
- Never use gasoline on any grill!

Gas Grill Safety

- Keep all LP-gas outside, three feet away from building openings such as doors, windows, dryer vents and air intake vents. Gas grill containers must be kept at least five feet away from possible ignition sources such as air conditioners, compressors, cars, and pilot lights. It is recommended LP-gas canisters be ten feet away from the house, if possible, especially when in use.
- LP-gas grills are not permitted inside or on balconies above the first floor of any building where people live. LP-gas is heavier than air and sinks. A leaky grill could pose a hazard to people below.
- Make sure all connections are tight and secure.



Charcoal Grill Safety

- Use only charcoal lighter fluid to start charcoal grills.
- Once the coals have been lighted, never add more lighter fluid to the fire — flames may travel up the stream of lighter fluid resulting in serious burns.

Carbon Monoxide Incidents

In 2005, 233 fire departments voluntarily reported 4,893 carbon monoxide (CO) incidents; hazards[70], carbon monoxide detector activation due to malfunction[71] and carbon monoxide detector activation – no CO[72]. A CO hazard is an identifiable carbon monoxide emergency whether or not a CO detector activated, the presence of CO was confirmed, and some corrective action was indicated. Fire departments responded to some 2,377 confirmed CO hazard incidents.

Almost a 3/4 Increase from 2004

There was almost a three-quarter increase in reported carbon monoxide incidents between 2004 and 2005. In 2005, the number or reported carbon monoxide incidents increased by 2,017 calls, or 70%, from the 2,876 calls reported in 2004. Many reasons can explain this increase including but not limited to: an increase in fire departments voluntarily reporting these types of calls to MFIRS; a better educated public that may have purchased CO detectors for the first time after the tragedies of the Winter of 2004 – 2005; and the installation of CO detectors for the anticipated implementation of Nicole's Law, which made them mandatory in most residential occupancies throughout the Commonwealth.

Boston, the largest city in the Commonwealth, reported the most CO incidents in 2005, 267 carbon monoxide incidents. The City of Newton reported the second most CO incidents in 2005, 112 CO calls. The next five cities in terms of the number of carbon monoxide calls reported were: Plymouth, 108 calls; Yarmouth, 77 calls; Pittsfield, 74 calls; Marshfield, 68 calls; and Milton, Wellesley and Framingham each reported 66 carbon monoxide incidents in 2005.

CO detector activation is when a CO detector activated in response to pollution, an unknown trigger or a non-threatening situation. Fire departments responded to 2,516 CO detector activations. In version 5, these types of calls are split into two categories: CO detector activation due to malfunction and CO detector activation – no CO found. One hundred and eighty-four (184) fire departments reported 1,299 CO detector activations due to malfunction. While 172 fire departments reported 1,217 CO detector activations with no CO found after investigation.

Finding little or no CO when the fire department arrives does not prove conclusively that no problem exists. An appliance may release large quantities of CO at one particular stage in its operation. Knowledgeable repair people must check out the equipment.

95% of All CO Incidents Occur in Residences

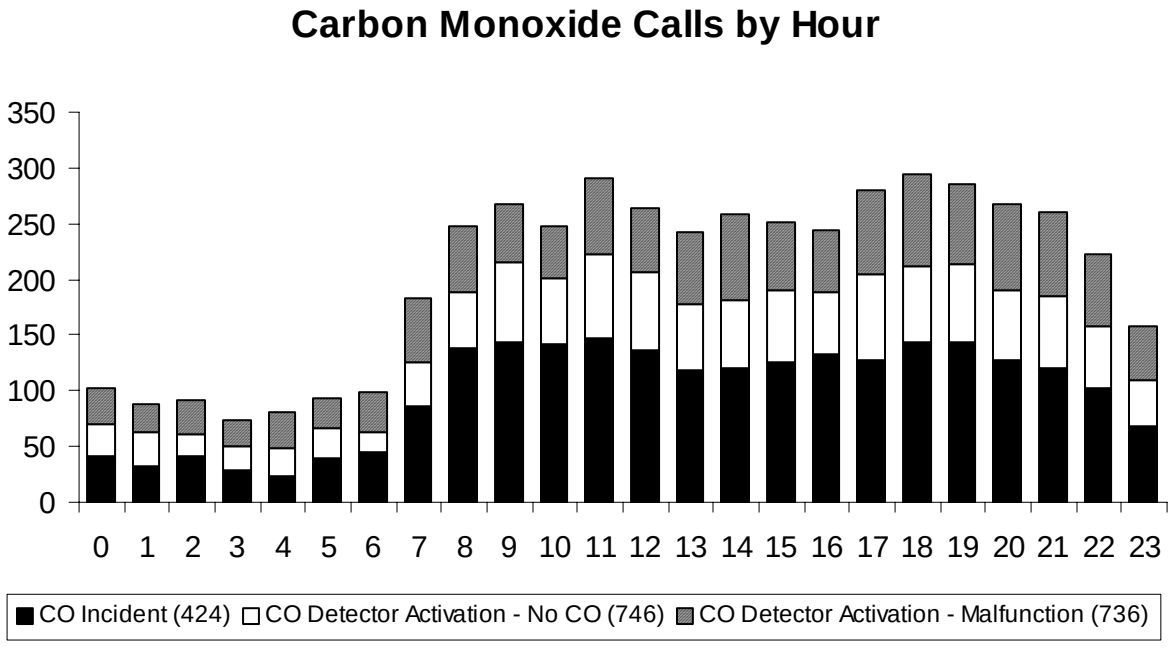
Ninety-five percent (95%) of all carbon monoxide calls occurred in residential occupancies. Mercantile and business properties are the next leading property use for CO

[70] Carbon monoxide hazards = Incident Type – 424.
[71] Carbon monoxide detector activation due to a malfunction = Incident Type – 736.
[72] Carbon monoxide detector activation, no CO = Incident Type – 746.

calls accounting for 1% of the incidents. Public assembly, educational, institutional and special properties each also accounted for 1% of these calls. Storage facilities, basic industrial, and manufacturing and processing facilities each accounted for less than 1% of the carbon monoxide calls in 2005.

Over 1/2 of All CO Calls Occur During the Winter
Just over half, 51%, of all the CO calls that occurred in 2005 happened during the colder months of November, December, January and February. Most CO calls occurred between the hours of 8:00 and 12:00 in the morning and 5:00 and 9:00 in the evening.

These seem to be the times when most people are waking up and coming home from work or school. This would also be the time that people would turn the heat up. Heating equipment is a leading cause of carbon monoxide incidents.



According to the U.S. Consumer Product Safety Commission (CPSC), an acceptable level of CO is a 15 PPM average over a time span of eight hours or a 22 PPM average for an hour. If you have 1,000 PPM for over thirty minutes, it puts you at a high level of danger in the form of a collapse into a coma or permanent brain damage.

Only a gas meter can detect if carbon monoxide is present and in what quantities. Because you can't see it or smell it, you may not know that it is there. Human senses don't provide enough information. Carbon monoxide is a by-product of combustion. It is one of the toxic gases produced in a fire. Many people falsely believe they will awaken to the smell of smoke. In fact, when a person falls asleep, so does their sense of smell. Carbon monoxide usually causes fatigue and will put someone into a deeper sleep so that people are less likely to awaken before their life slips away. This is why smoke detectors are so important. Large amounts of carbon monoxide are produced in a fire.

Nicole's Law Now Requires CO Alarms in Homes
In November of 2005, the Legislature passed Nicole's Law, requiring CO alarms in any residence with a potential source of CO. The law directed the Board of Fire Prevention Regulations to promulgate technical regulations on the type and placement of CO detectors, with a March 31, 2006 implementation data for non-hardwired and a January 1, 2007 implementation date for hardwired detectors.

Mapping the Fire Experience

Boston & Worcester Had the Most Reported Fires
Boston reported having the most fires, with 3,874 in 2005. Worcester had the second highest number of reported fires at 1,239. Springfield (1,004), Quincy (663), Fall River (596), and Cambridge (482) rounded out the top six communities in the Commonwealth in terms of reported fires.

However if we look at the number of reported fires compared to the total population of the individual community we get a different picture. One would expect that the bigger cities and towns to have more fires because of their populations. When we calculate the rate of reported fires for every 10,000 people in a given municipality, the ranking changes. Usually the top communities in terms of number of reported fires fall towards the bottom of the rankings. Communities with one, two or three reported fires take over the top spots. These communities may have a rate that far exceeds that actual number of fires that they reported.

2005 Fires per 10,000 Population by Community, on page 162, displays the rate of reported fires by community for every 10,000 of that community's population. The map's legend indicates to which group a municipality belongs. Cities and towns that are blank had reported no fires or failed to report at all. The more shading a community shows the more fires per 10,000 people were reported from that municipality. These legend symbols are consistent through the other three maps.

Berlin had the highest rate of 185 reported fires per 10,000 population. Next highest was Wrentham with 150 structure fires per 10,000 population; Heath also had 150; Warwick had 146; Wellfleet had 138; and Nantucket had 121 structure fires per 10,000 population.

Boston & Worcester Had the Most Reported Structure Fires
Boston reported having the most structure fires, with 2,239 in 2005. Worcester had the second highest number of reported structure fires at 690. Springfield (574), Quincy (355), Cambridge (354), and Framingham (281) rounded out the top six communities in the Commonwealth in terms of reported structure fires.

2005 Structure Fires per 10,000 Population by Community, on page 163, displays the rate of reported structure fires by community for every 10,000 of that community's

population. The more shading a community shows the more structure fires per 10,000 people were reported from that municipality. Cities and towns that are blank did not report any structure fires or failed to report at all.

Heath, with 10 structure fires, had the highest rate of 124 structure fires per 10,000 population. Hawley was the next highest with three structure fires and 89 structure fires per 10,000 population; Great Barrington had 86; Lenox had 77; and Stoughton had 76 structure fires per 10,000 population.

Boston & Worcester Had the Most Reported Residential Structure Fires
Boston reported having the most residential structure fires, with 1,849 in 2005. Worcester had the second highest number of reported structure fires at 596. Springfield (498), Quincy (301), Cambridge (281), and Framingham (227) rounded out the top six communities in the Commonwealth in terms of reported residential structure fires.

2005 Residential Structure Fires per 10,000 Population by Community, on page 164, displays the rate of reported structure fires by community for every 10,000 of that community's population. The more shading a community shows the more residential structure fires per 10,000 people were reported from that municipality. Cities and towns that are blank did not report any residential structure fires or failed to report at all.

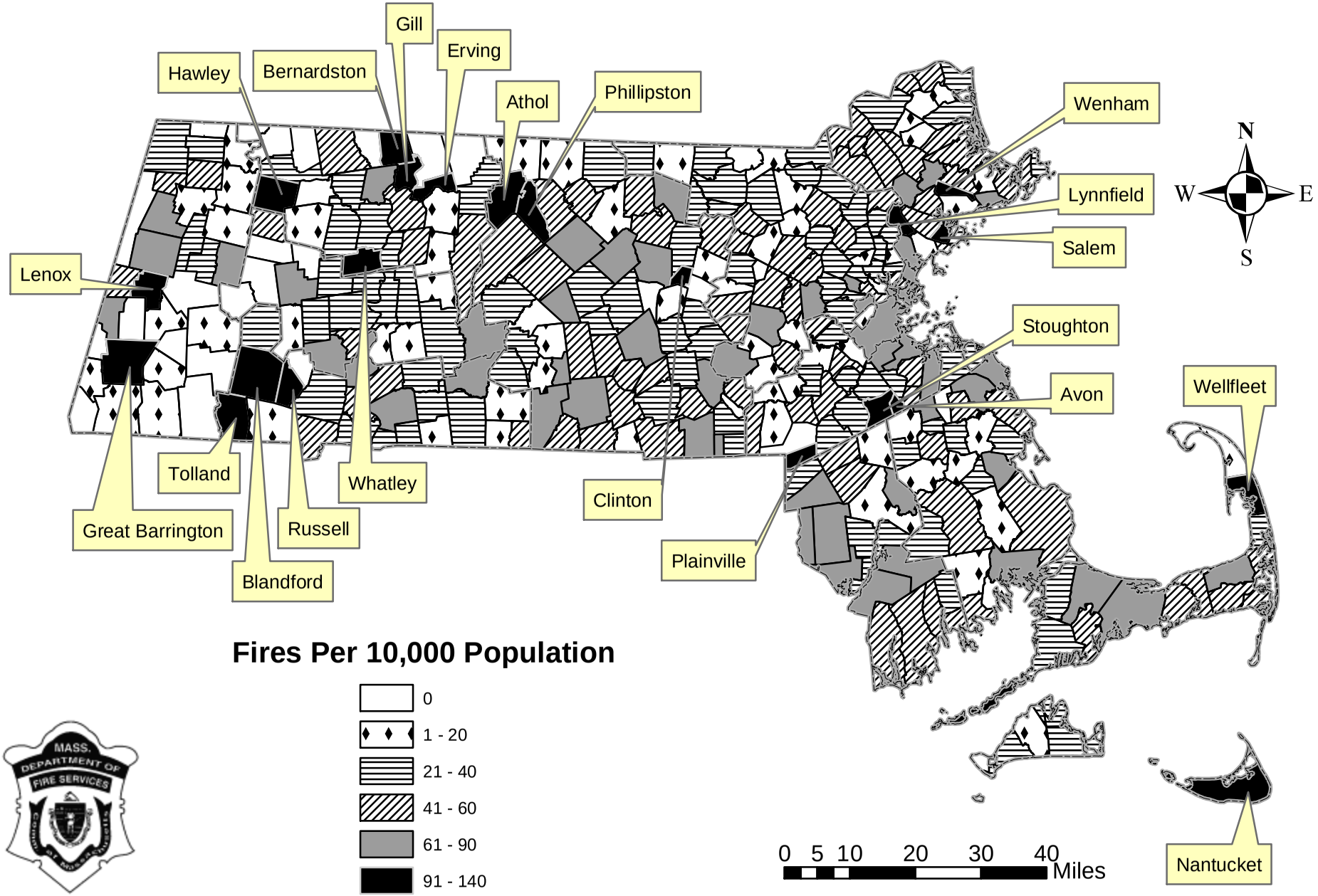
Heath, with 10 residential structure fires, had the highest rate of 125 residential structure fires per 10,000 population. Next highest was Hawley with 89 residential structure fires per 10,000 population; Lenox had 61; Lynnfield had 59; Stoughton also had 59; and Nantucket had 58 residential structure fires per 10,000 population.

Boston & Worcester Had the Most Reported Arsons
Boston reported having the most arsons, with 118 in 2005. Worcester had the second highest number of reported arsons at 45. Pittsfield (41), Fall River (38), Springfield (30), and Chicopee (29) rounded out the top six communities in the Commonwealth in terms of reported arsons.

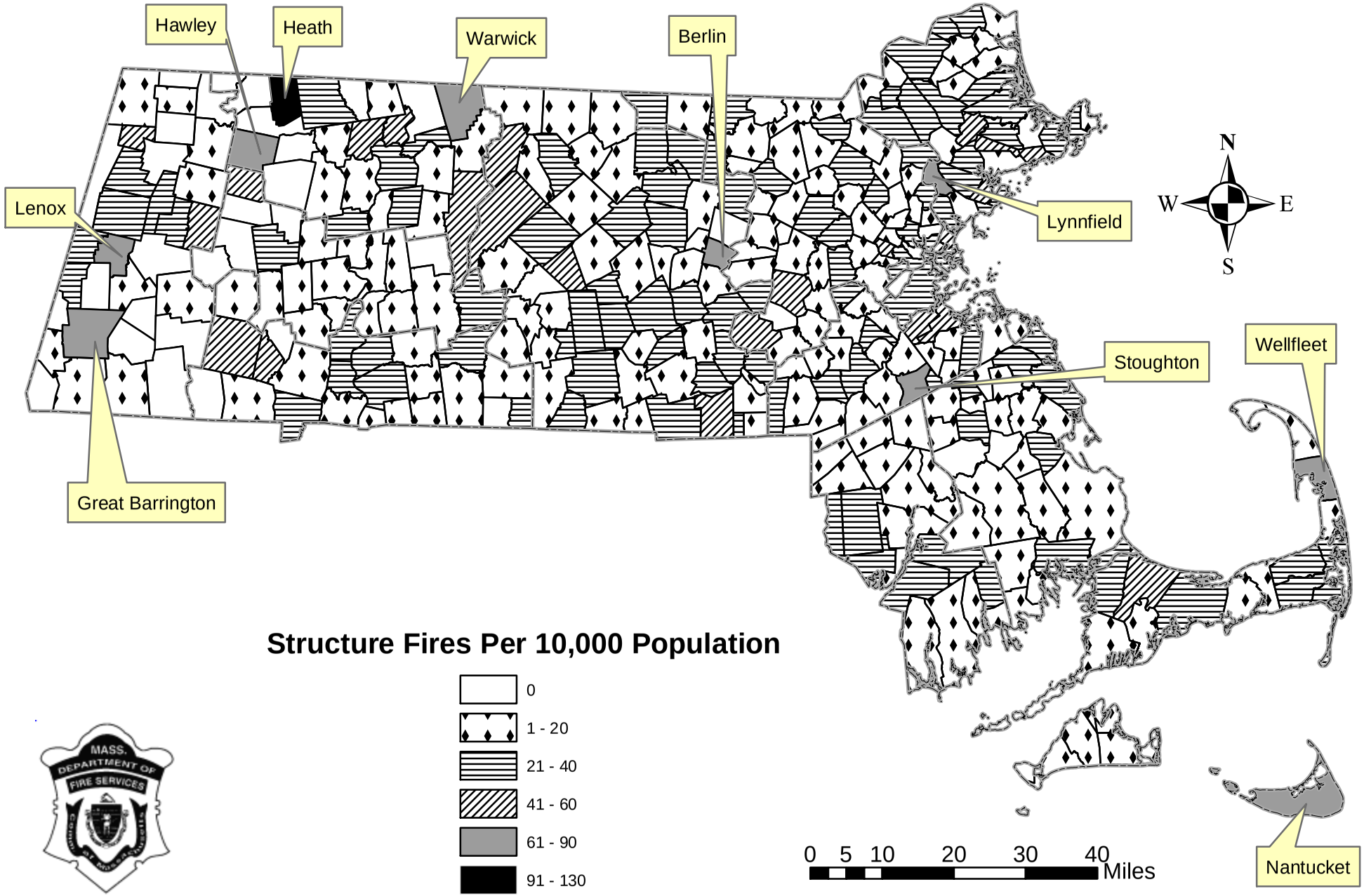
2005 Arsons per 10,000 Population by Community, on page 165, displays the rate of the total reported arsons by community for every 10,000 of that community's population. The more shading a community shows the more arsons per 10,000 people were reported from that municipality. Cities and towns that are blank had no reported of arsons or failed to report at all.

Tolland, with two arsons, had the highest rate of 47 reported arsons per 10,000 population. Next highest was Berlin with 25 arsons per 10,000 population; Bernardston had 19; Plainfield had 17; Princeton had 15, and Hamilton had 14 arsons per 10,000 population.

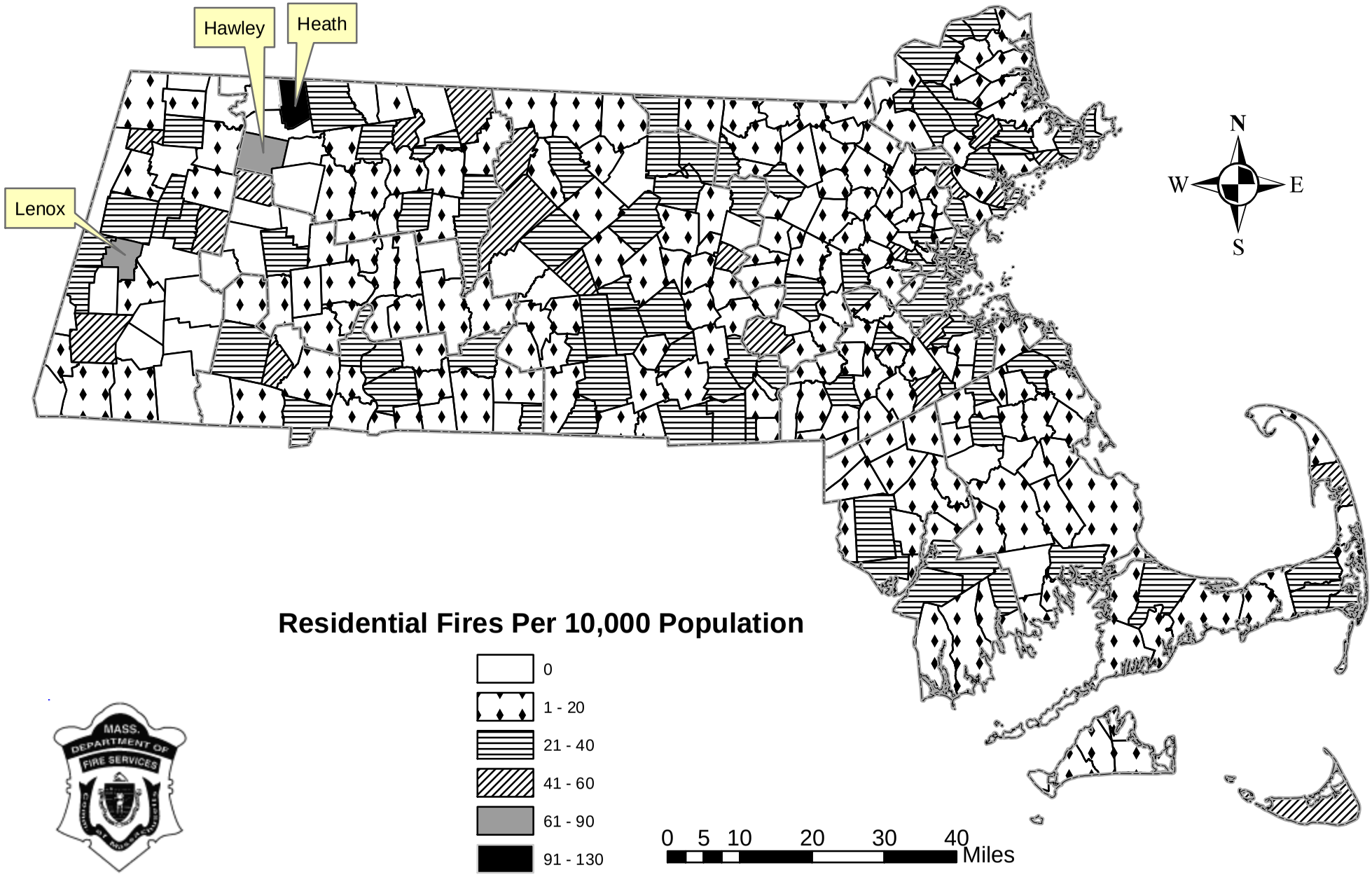
2005 Fires by 10,000 Population by Community



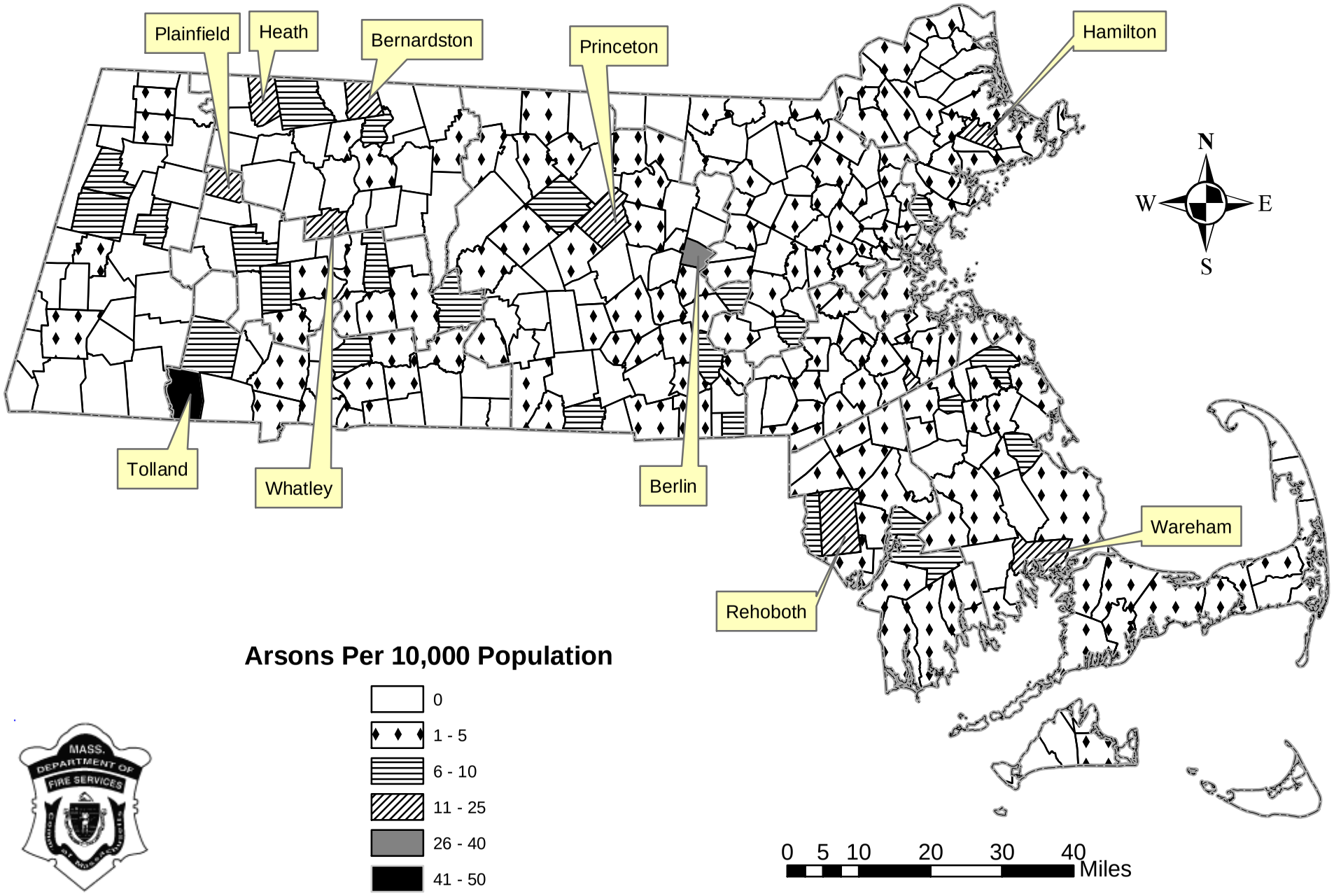
2005 Structure Fires by 10,000 Population by Community



2005 Residential Structure Fires by 10,000 Population by Community



2005 Arsons by 10,000 Population by Community



Appendix

2005 Fire Experience By Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Abington	91	44	10	37	0	2	0	2	$1,433,135
Acton	1	0	1	0	0	0	0	0	$6,000
Acushnet	31	24	2	5	1	2	0	0	$401,600
Adams	36	23	3	10	0	0	0	0	$58,075
Agawam	93	42	10	41	0	2	0	0	$630,220
Alford	Fire Department In Good Standing, Certified No Fires To Report								
Amesbury	73	39	12	22	0	2	0	1	$778,800
Amherst	122	54	5	63	0	0	0	0	$320,340
Andover	173	63	30	80	0	0	0	0	$1,559,082
Aquinnah	Fire Department In Good Standing, Certified No Fires To Report								
Arlington	123	64	11	48	0	0	0	0	$819,800
Ashburnham	13	4	0	9	0	0	0	1	$141,400
Ashby	11	9	0	2	0	0	0	0	$35,100
Ashfield	1	0	1	0	0	0	0	0	$0
Ashland	2	0	1	1	0	0	0	0	$0
Athol	102	57	7	38	1	1	0	6	$1,176,000
Attleboro	255	71	38	146	0	2	0	0	$199,000
Auburn	64	30	7	27	0	0	0	1	$331,500
Avon	48	11	13	24	0	0	0	0	$38,500
Ayer	26	9	1	16	0	0	0	0	$23,000
Barnstable Fire Districts									
Barnstable	*32*	*10*	*4*	*18*	*0*	*3*	*0*	*1*	*$336,975*
C.O.M.M.	*82*	*40*	*11*	*31*	*0*	*3*	*0*	*0*	*$3,349,987*
Cotuit	*1*	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*$235,000*
Hyannis	*147*	*56*	*22*	*69*	*1*	*8*	*0*	*5*	*$721,250*
West Barnstable	*37*	*10*	*5*	*22*	*0*	*0*	*0*	*0*	*$0*
Barre	27	18	2	7	0	0	0	0	$1,991
Becket	1	1	0	0	0	0	0	0	$55,000
Bedford	31	14	4	13	0	3	0	0	$330,500
Belchertown	48	23	5	20	0	0	0	0	$0
Bellingham	82	38	10	34	0	0	0	0	$747,000
Belmont	183	144	7	32	0	1	0	1	$273,131
Berkley	17	4	4	9	0	0	0	0	$31,000
Berlin	44	15	11	18	0	0	0	2	$929,350
Bernardston	23	3	3	17	0	0	0	0	$3,000
Beverly	27	20	6	1	0	0	0	1	$3,063,755

2005 Arson Experience by Community

Community	Total Arson	Structure Arson	Vehicle Arson	Other Arson	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Abington	3	0	0	3	0	0	0	0	$0
Acton	0	0	0	0	0	0	0	0	$0
Acushnet	2	1	1	0	0	0	0	0	$185,100
Adams	2	0	0	2	0	0	0	0	$0
Agawam	9	1	1	7	0	0	0	0	$11,250
Alford	Fire Department In Good Standing, Certified No Fires To Report								
Amesbury	3	1	0	2	0	0	0	0	$50,300
Amherst	20	5	0	15	0	0	0	0	$500
Andover	7	3	1	3	0	0	0	0	$203,400
Aquinnah	Fire Department In Good Standing, Certified No Fires To Report								
Arlington	3	1	0	2	0	0	0	0	$0
Ashburnham	0	0	0	0	0	0	0	0	$0
Ashby	0	0	0	0	0	0	0	0	$0
Ashfield	0	0	0	0	0	0	0	0	$0
Ashland	0	0	0	0	0	0	0	0	$0
Athol	3	2	0	1	0	1	0	0	$100,000
Attleboro	8	2	2	4	0	0	0	0	$0
Auburn	4	0	1	3	0	0	0	0	$2,100
Avon	5	0	2	3	0	0	0	0	$0
Ayer	2	2	0	0	0	0	0	0	$5,000
Barnstable Fire Districts									
Barnstable	*1*	*0*	*0*	*1*	*0*	*0*	*0*	*0*	*$750*
Cotuit	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*$0*
C.O.M.M.	*6*	*1*	*1*	*4*	*0*	*0*	*0*	*0*	*$0*
Hyannis	*12*	*5*	*0*	*7*	*0*	*1*	*0*	*4*	*$20,150*
West Barnstable	*1*	*0*	*0*	*1*	*0*	*0*	*0*	*0*	*$0*
Barre	1	1	0	0	0	0	0	0	$210
Becket	0	0	0	0	0	0	0	0	$0
Bedford	4	2	1	1	0	0	0	0	$90,500
Belchertown	6	0	0	6	0	0	0	0	$0
Bellingham	0	0	0	0	0	0	0	0	$0
Belmont	5	3	0	2	0	0	0	0	$2,500
Berkley	5	1	0	4	0	0	0	0	$0
Berlin	6	1	0	5	0	0	0	0	$0
Bernardston	4	0	0	4	0	0	0	0	$0
Beverly	1	1	0	0	0	0	0	0	$200

2005 Fire Experience By Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Billerica	193	80	28	85	0	1	0	4	$729,320
Blackstone	31	13	4	14	0	0	0	0	$0
Blandford	14	6	4	4	0	0	0	0	$81,500
Bolton	5	0	5	0	0	0	0	0	$11,300
Boston	3,874	2,239	397	1,238	5	19	0	8	$26,637,139
Bourne	73	39	12	22	0	2	0	5	$2,327,290
Boxborough	26	8	8	10	0	1	0	0	$21,400
Boxford	37	19	7	11	1	0	0	0	$196,493
Boylston	8	3	1	4	0	0	0	0	$15,500
Braintree	141	26	31	84	0	0	0	9	$1,661,350
Brewster	66	31	2	33	0	1	0	0	$445,800
Bridgewater	2	0	1	1	0	0	0	0	$0
Brimfield	3	3	0	0	0	0	0	1	$0
Brockton	182	108	58	16	3	6	0	4	$1,674,965
Brookfield	1	1	0	0	0	0	0	0	$0
Brookline	42	32	10	0	0	3	0	3	$1,266,255
Buckland	Fire Department In Good Standing, Certified No Fires To Report								
Burlington	122	47	18	57	1	1	0	3	$559,575
Cambridge	482	354	30	98	3	3	0	37	$25,327,336
Canton	52	30	18	4	0	4	0	0	$177,265
Carlisle	3	1	1	1	0	0	0	0	$0
Carver	6	4	2	0	0	0	0	0	$230,500
Charlemont	3	0	0	3	0	0	0	0	$0
Charlton	70	41	11	18	0	1	0	0	$130,800
Chatham	36	16	3	17	0	1	0	0	$141,501
Chelmsford	66	36	22	8	0	1	0	0	$497,225
Chelsea	181	141	14	26	0	0	0	5	$1,067,920
Cheshire	1	0	0	1	0	0	0	0	$15,000
Chester	3	1	1	1	0	0	0	0	$20,000
Chesterfield	9	3	0	6	0	0	0	0	$0
Chicopee	307	140	54	113	0	8	0	3	$975,670
Chilmark	3	1	2	0	0	0	0	0	$0
Clarksburg	1	0	1	0	0	0	0	0	$8,800
Clinton	149	15	3	131	0	0	0	0	$0
Cohasset	27	13	1	13	0	0	0	0	$3,000

2005 Arson Experience by Community

Community	Total Arson	Structure Arson	Vehicle Arson	Other Arson	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Billerica	17	1	1	15	0	0	0	0	$20,000
Blackstone	8	1	1	6	0	0	0	0	$0
Blandford	1	0	0	1	0	0	0	0	$0
Bolton	0	0	0	0	0	0	0	0	$0
Boston	118	62	24	32	0	1	0	0	$1,725,756
Bourne	3	1	0	2	0	0	0	1	$1,000,050
Boxborough	2	0	0	2	0	0	0	0	$0
Boxford	1	0	0	1	0	0	0	0	$0
Boylston	0	0	0	0	0	0	0	0	$0
Braintree	11	0	3	8	0	0	0	0	$21,000
Brewster	5	1	0	4	0	0	0	0	$0
Bridgewater	0	0	0	0	0	0	0	0	$0
Brimfield	0	0	0	0	0	0	0	0	$0
Brockton	10	4	4	2	1	1	0	0	$21,600
Brookfield	0	0	0	0	0	0	0	0	$0
Brookline	3	2	1	0	0	0	0	0	$4,610
Buckland	Fire Department In Good Standing, Certified No Fires To Report								
Burlington	2	0	0	2	0	0	0	0	$0
Cambridge	13	7	1	5	2	0	0	9	$251,370
Canton	1	1	0	0	0	0	0	0	$300
Carlisle	0	0	0	0	0	0	0	0	$0
Carver	0	0	0	0	0	0	0	0	$0
Charlemont	0	0	0	0	0	0	0	0	$0
Charlton	0	0	0	0	0	0	0	0	$0
Chatham	1	1	0	0	0	0	0	0	$1
Chelmsford	0	0	0	0	0	0	0	0	$0
Chelsea	1	0	0	1	0	0	0	0	$10
Cheshire	0	0	0	0	0	0	0	0	$0
Chester	0	0	0	0	0	0	0	0	$0
Chesterfield	1	0	0	1	0	0	0	0	$0
Chicopee	29	7	5	17	0	1	0	0	$18,650
Chilmark	0	0	0	0	0	0	0	0	$0
Clarksburg	0	0	0	0	0	0	0	0	$0
Clinton	1	0	0	1	0	0	0	0	$0
Cohasset	1	0	0	1	0	0	0	0	$0

2005 Fire Experience By Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Colrain	9	5	1	3	0	0	0	0	$11,000
Concord	73	37	6	30	0	3	0	1	$1,938,573
Conway	7	2	0	5	0	0	0	0	$0
Cummington	Fire Department In Good Standing, Certified No Fires To Report								
Dalton	19	15	0	4	0	0	0	0	$250,300
Danvers	118	72	16	30	0	1	0	1	$239,435
Dartmouth Fire Districts									
Dartmouth #1	*5*	*2*	*1*	*2*	*0*	*0*	*0*	*0*	*$0*
Dartmouth #2	*3*	*1*	*0*	*2*	*0*	*0*	*0*	*0*	*$0*
Dartmouth #3	*129*	*35*	*13*	*81*	*0*	*0*	*0*	*0*	*$0*
Dedham	3	3	0	0	0	1	0	0	$2,200,500
Deerfield Fire Districts									
Deerfield	*6*	*0*	*1*	*5*	*0*	*0*	*0*	*0*	*$0*
South Deerfield	*7*	*3*	*0*	*4*	*0*	*0*	*0*	*0*	*$1,000*
Dennis	85	20	8	57	0	1	0	2	$583,000
Devens	15	7	2	6	0	0	0	0	$853
Dighton	23	7	4	12	0	0	0	0	$38,500
Douglas	35	20	4	11	0	0	0	0	$0
Dover	1	1	0	0	0	0	0	0	$1,000
Dracut	89	32	17	40	0	0	0	0	$519,900
Dudley	52	16	10	26	0	1	0	0	$13,500
Dunstable	Fire Department In Good Standing, Certified No Fires To Report								
Duxbury	40	21	5	14	0	0	0	3	$920,500
East Bridgewater	64	33	8	23	0	0	0	0	$469,700
East Brookfield	15	5	0	10	0	0	0	1	$74,700
East Longmeadow	40	17	10	13	0	2	0	0	$235,550
Eastham	21	8	6	7	0	0	0	0	$2,300
Easthampton	71	31	11	29	0	4	0	0	$311,735
Easton	20	14	3	3	0	0	0	0	$127,310
Edgartown	15	4	6	5	0	3	0	0	$0
Egremont	1	1	0	0	0	0	0	0	$325,000
Erving	16	5	1	10	0	0	0	0	$0
Essex	3	0	2	1	0	0	0	0	$0
Everett	168	94	22	52	0	4	0	2	$1,640,760
Fairhaven	71	21	8	42	0	0	0	0	$410,000
Fall River	596	248	94	254	2	6	0	6	$3,153,595

2005 Arson Experience by Community

Community	Total Arson	Structure Arson	Vehicle Arson	Other Arson	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Colrain	1	0	0	1	0	0	0	0	$0
Concord	2	0	0	2	0	0	0	0	$0
Conway	0	0	0	0	0	0	0	0	$0
Cummington	Fire Department In Good Standing, Certified No Fires To Report								
Dalton	0	0	0	0	0	0	0	0	$0
Danvers	2	1	1	0	0	0	0	0	$0
Dartmouth Fire Districts									
Dartmouth #1	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*$0*
Dartmouth #2	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*$0*
Dartmouth #3	*5*	*0*	*0*	*5*	*0*	*0*	*0*	*0*	*$0*
Dedham	0	0	0	0	0	0	0	0	$0
Deerfield Fire Districts									
Deerfield	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*$0*
South Deerfield	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*$0*
Dennis	3	0	0	3	0	0	0	0	$0
Devens	1	1	0	0	0	0	0	0	$0
Dighton	1	1	0	0	0	0	0	0	$1,000
Douglas	1	0	0	1	0	0	0	0	$0
Dover	0	0	0	0	0	0	0	0	$0
Dracut	6	2	2	2	0	0	0	0	$40,000
Dudley	8	1	0	7	0	0	0	0	$0
Dunstable	Fire Department In Good Standing, Certified No Fires To Report								
Duxbury	0	0	0	0	0	0	0	0	$0
East Bridgewater	0	0	0	0	0	0	0	0	$0
East Brookfield	0	0	0	0	0	0	0	0	$0
East Longmeadow	2	0	0	2	0	0	0	0	$250
Eastham	0	0	0	0	0	0	0	0	$0
Easthampton	0	0	0	0	0	0	0	0	$0
Easton	2	1	1	0	0	0	0	0	$63,500
Edgartown	1	0	0	1	0	0	0	0	$0
Egremont	0	0	0	0	0	0	0	0	$0
Erving	0	0	0	0	0	0	0	0	$0
Essex	0	0	0	0	0	0	0	0	$0
Everett	16	10	2	4	0	1	0	0	$399,100
Fairhaven	2	1	0	1	0	0	0	0	$9,000
Fall River	38	21	6	11	0	0	0	1	$106,525

2005 Fire Experience By Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Falmouth	115	62	16	37	2	9	0	1	$1,583,720
Fitchburg	220	129	26	65	0	4	0	9	$2,422,247
Florida	1	0	0	1	0	0	0	0	$0
Foxborough	47	18	14	15	0	0	0	0	$327,500
Framingham	423	281	36	106	1	3	0	7	$1,984,293
Franklin	1	1	0	0	3	3	0	1	$0
Freetown	59	24	16	19	0	1	0	1	$432,025
Gardner	99	40	13	46	0	2	0	2	$260,770
Georgetown	4	4	0	0	0	2	0	1	$1,900
Gill	13	7	3	3	0	0	0	0	$0
Gloucester	166	85	17	64	0	4	0	0	$350,000
Goshen	Fire Department In Good Standing, Certified No Fires To Report								
Gosnold	1	0	0	1	0	0	0	0	$0
Grafton	57	27	7	23	0	0	0	0	$0
Granby	10	3	1	6	0	0	0	0	$6,000
Granville	1	1	0	0	0	0	0	0	$0
Great Barrington	81	65	4	12	0	0	0	0	$134,785
Greenfield	141	80	7	54	1	3	0	3	$495,600
Groton	23	17	3	3	0	0	0	0	$160,000
Groveland	8	5	3	0	0	0	0	0	$37,300
Hadley	12	4	2	6	1	2	0	0	$236,783
Halifax	1	0	1	0	0	0	0	0	$40,000
Hamilton	43	23	3	17	0	0	0	0	$115,000
Hampden	1	1	0	0	0	0	0	0	$11,000
Hancock	Fire Department In Good Standing, Certified No Fires To Report								
Hanover	56	21	14	21	0	0	0	0	$5,200
Hanson	35	13	5	17	0	0	0	0	$30,000
Hardwick	10	2	3	5	0	0	0	0	$4,100
Harvard	32	16	2	14	0	0	0	0	$110,000
Harwich	52	30	8	14	0	6	0	10	$732,355
Hatfield	12	6	2	4	0	0	0	0	$821,000
Haverhill	235	166	17	52	0	0	0	1	$138,150
Hawley	4	3	1	0	0	0	0	0	$200
Heath	12	10	1	1	0	0	0	0	$0
Hingham	64	31	13	20	0	2	0	0	$475,645

2005 Arson Experience by Community

Community	Total Arson	Structure Arson	Vehicle Arson	Other Arson	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Falmouth	12	4	1	7	0	1	0	0	$12,470
Fitchburg	14	6	1	7	0	0	0	0	$197,335
Florida	0	0	0	0	0	0	0	0	$0
Foxborough	1	0	0	1	0	0	0	0	$0
Framingham	5	3	1	1	0	0	0	0	$501,100
Franklin	0	0	0	0	0	0	0	0	$0
Freetown	7	0	3	4	0	0	0	0	$24,100
Gardner	8	2	2	4	0	0	0	0	$4,180
Georgetown	0	0	0	0	0	0	0	0	$0
Gill	1	0	0	1	0	0	0	0	$0
Gloucester	11	0	0	11	0	0	0	0	$0
Goshen	Fire Department In Good Standing, Certified No Fires To Report								
Gosnold	0	0	0	0	0	0	0	0	$0
Grafton	3	0	0	3	0	0	0	0	$0
Granby	1	0	0	1	0	0	0	0	$0
Granville	0	0	0	0	0	0	0	0	$0
Great Barrington	2	1	0	1	0	0	0	0	$700
Greenfield	3	1	1	1	0	0	0	1	$17,000
Groton	0	0	0	0	0	0	0	0	$0
Groveland	0	0	0	0	0	0	0	0	$0
Hadley	2	0	0	2	0	0	0	0	$0
Halifax	0	0	0	0	0	0	0	0	$0
Hamilton	12	0	0	12	0	0	0	0	$0
Hampden	0	0	0	0	0	0	0	0	$0
Hancock	Fire Department In Good Standing, Certified No Fires To Report								
Hanover	2	0	0	2	0	0	0	0	$200
Hanson	1	0	0	1	0	0	0	0	$0
Hardwick	1	0	0	1	0	0	0	0	$0
Harvard	0	0	0	0	0	0	0	0	$0
Harwich	0	0	0	0	0	0	0	0	$0
Hatfield	0	0	0	0	0	0	0	0	$0
Haverhill	26	5	0	21	0	0	0	0	$2,000
Hawley	0	0	0	0	0	0	0	0	$0
Heath	1	1	0	0	0	0	0	0	$0
Hingham	1	0	0	1	0	0	0	0	$0

2005 Fire Experience By Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Hinsdale	5	5	0	0	0	0	0	0	$131,000
Holbrook	45	17	5	23	0	0	0	0	$67,905
Holden	47	28	3	16	2	0	0	0	$95,000
Holland	13	6	1	6	0	0	0	0	$2,000
Holliston	13	9	3	1	0	0	0	0	$112,250
Holyoke	321	148	43	130	0	1	0	3	$564,852
Hopedale	9	8	1	0	0	2	0	0	$9,350
Hopkinton	116	73	14	29	0	0	0	0	$90,400
Hubbardston	30	7	4	19	0	0	0	0	$63,970
Hudson	22	14	4	4	0	3	0	4	$535,105
Hull	53	27	6	20	1	0	0	0	$730,300
Huntington	1	1	0	0	0	0	0	0	$0
Ipswich	57	28	6	23	0	0	0	0	$13,650
Kingston	84	28	10	46	1	0	0	1	$888,819
Lakeville	35	4	9	22	0	0	0	0	$12,650
Lancaster	19	7	7	5	0	0	0	0	$75,650
Lanesborough	24	7	4	13	0	0	0	0	$0
Lawrence	321	187	35	99	0	5	0	6	$2,835,875
Lee	9	7	2	0	0	1	0	0	$151,240
Leicester	52	27	3	22	0	0	0	0	$190,000
Lenox	60	39	2	19	0	0	0	0	$114,500
Leominster	196	137	14	45	0	4	0	5	$25,124
Leverett	7	5	0	2	0	0	0	0	$10,000
Lexington	62	39	16	7	0	5	0	0	$1,503,557
Leyden	Fire Department In Good Standing, Certified No Fires To Report								
Lincoln	39	17	3	19	0	0	0	0	$130,500
Littleton	49	25	14	10	0	1	0	0	$306,100
Logan Airport FD	63	12	16	35	0	1	0	0	$0
Longmeadow	36	22	6	8	0	0	0	1	$323,300
Lowell	393	227	49	117	0	4	0	4	$944,925
Ludlow	68	32	12	24	0	1	0	0	$191,100
Lunenburg	58	31	10	17	0	0	0	0	$97,140
Lynn	69	39	29	1	0	2	0	11	$602,775
Lynnfield	113	83	6	24	0	0	0	0	$105,000

2005 Arson Experience by Community

Community	Total Arson	Structure Arson	Vehicle Arson	Other Arson	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Hinsdale	1	1	0	0	0	0	0	0	$25,000
Holbrook	1	0	0	1	0	0	0	0	$0
Holden	0	0	0	0	0	0	0	0	$0
Holland	0	0	0	0	0	0	0	0	$0
Holliston	0	0	0	0	0	0	0	0	$0
Holyoke	14	3	4	7	0	0	0	0	$1
Hopedale	1	1	0	0	0	0	0	0	$2,000
Hopkinton	1	0	0	1	0	0	0	0	$0
Hubbardston	2	0	1	1	0	0	0	0	$15,025
Hudson	0	0	0	0	0	0	0	0	$0
Hull	0	0	0	0	0	0	0	0	$0
Huntington	0	0	0	0	0	0	0	0	$0
Ipswich	6	3	1	2	0	0	0	0	$10,600
Kingston	8	2	1	5	1	0	0	0	$265,000
Lakeville	2	1	0	1	0	0	0	0	$650
Lancaster	0	0	0	0	0	0	0	0	$0
Lanesborough	2	0	0	2	0	0	0	0	$0
Lawrence	16	3	5	8	0	0	0	0	$22,300
Lee	0	0	0	0	0	0	0	0	$0
Leicester	4	0	1	3	0	0	0	0	$10,000
Lenox	1	1	0	0	0	0	0	0	$100,000
Leominster	1	1	0	0	0	0	0	0	$0
Leverett	0	0	0	0	0	0	0	0	$0
Lexington	2	2	0	0	0	0	0	0	$0
Leyden	Fire Department In Good Standing, Certified No Fires To Report								
Lincoln	0	0	0	0	0	0	0	0	$0
Littleton	1	0	0	1	0	0	0	0	$0
Logan Airport FD	0	0	0	0	0	0	0	0	$0
Longmeadow	2	0	0	2	0	0	0	0	$0
Lowell	3	0	3	0	0	0	0	0	$0
Ludlow	3	1	0	2	0	0	0	0	$100
Lunenburg	1	0	1	0	0	0	0	0	$7,000
Lynn	4	3	1	0	0	0	0	0	$9,000
Lynnfield	0	0	0	0	0	0	0	0	$0

2005 Fire Experience By Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Malden	191	109	16	66	0	0	0	0	$500
Manchester	35	24	2	9	0	0	0	0	$500,000
Mansfield	91	25	17	49	0	3	0	1	$404,625
Marblehead	79	46	5	28	0	0	0	0	$4,322,400
Marion	8	6	2	0	0	0	0	2	$395,590
Marlborough	146	72	23	51	0	3	0	5	$2,776,171
Marshfield	139	54	9	76	0	1	0	1	$0
Mashpee	64	24	6	34	0	0	0	1	$428,512
Mattapoisett	27	6	4	17	0	0	0	0	$0
Maynard	3	3	0	0	0	0	0	0	$83,250
Medfield	48	21	0	27	0	0	0	0	$0
Medford	221	129	20	72	0	1	0	1	$923,340
Medway	21	9	0	12	0	0	0	0	$10,000
Melrose	37	18	11	8	0	1	0	5	$680,850
Mendon	11	5	0	6	0	0	0	0	$240,000
Merrimac	30	16	4	10	0	0	0	0	$0
Methuen	193	79	33	81	1	2	0	5	$135,300
Middleborough	111	27	27	57	0	0	0	1	$0
Middlefield	Fire Department In Good Standing, Certified No Fires To Report								
Middleton	57	8	7	42	0	0	0	0	$0
Milford	159	82	23	54	0	3	0	3	$633,775
Millbury	54	35	11	8	0	3	0	5	$655,450
Millis	7	4	3	0	0	0	0	0	$1,012,500
Millville	18	8	1	9	0	0	0	0	$18,500
Milton	209	148	19	42	0	1	0	3	$85,800
Monroe	Fire Department In Good Standing, Certified No Fires To Report								
Monson	32	8	6	18	0	0	0	0	$10,000
Montague Fire Districts									
Montague Center	*18*	*2*	*1*	*15*	*0*	*0*	*0*	*0*	*$0*
Turners Falls	*31*	*19*	*2*	*10*	*0*	*2*	*0*	*1*	*$22,650*
Monterey	1	0	1	0	0	1	0	0	$15,000
Montgomery	Non-Reporting Community								
Nahant	6	2	0	4	0	0	0	0	$0
Nantucket	115	66	17	32	0	0	0	0	$149,125
Natick	17	12	3	2	0	1	0	2	$1,460,276
Needham	74	40	14	20	0	2	0	0	$45,000

2005 Arson Experience by Community

Community	Total Arson	Structure Arson	Vehicle Arson	Other Arson	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Malden	1	0	0	1	0	0	0	0	$0
Manchester	0	0	0	0	0	0	0	0	$0
Mansfield	7	1	0	6	0	0	0	0	$0
Marblehead	1	1	0	0	0	0	0	0	$4,000,000
Marion	0	0	0	0	0	0	0	0	$0
Marlborough	5	1	0	4	0	0	0	0	$230,250
Marshfield	9	0	0	9	0	0	0	0	$0
Mashpee	1	1	0	0	0	0	0	0	$500
Mattapoisett	1	0	0	1	0	0	0	0	$0
Maynard	1	1	0	0	0	0	0	0	$80,000
Medfield	3	0	0	3	0	0	0	0	$0
Medford	12	1	2	9	0	0	0	0	$500
Medway	0	0	0	0	0	0	0	0	$0
Melrose	1	0	0	1	0	0	0	0	$0
Mendon	0	0	0	0	0	0	0	0	$0
Merrimac	2	0	0	2	0	0	0	0	$0
Methuen	7	1	1	5	0	0	0	0	$0
Middleborough	8	2	4	2	0	0	0	0	$0
Middlefield	Fire Department In Good Standing, Certified No Fires To Report								
Middleton	0	0	0	0	0	0	0	0	$0
Milford	4	1	1	2	0	0	0	0	$10,500
Millbury	1	1	0	0	0	0	0	1	$5,000
Millis	0	0	0	0	0	0	0	0	$0
Millville	0	0	0	0	0	0	0	0	$0
Milton	11	1	2	8	0	0	0	0	$0
Monroe	Fire Department In Good Standing, Certified No Fires To Report								
Monson	0	0	0	0	0	0	0	0	$0
Montague Fire Districts									
Montague Center	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*$0*
Turners Falls	*3*	*1*	*0*	*2*	*0*	*0*	*0*	*0*	*$550*
Monterey	0	0	0	0	0	0	0	0	$0
Montgomery	Non-Reporting Community								
Nahant	0	0	0	0	0	0	0	0	$0
Nantucket	0	0	0	0	0	0	0	0	$0
Natick	0	0	0	0	0	0	0	0	$0
Needham	1	0	1	0	0	0	0	0	$0

2005 Fire Experience By Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
New Ashford	1	1	0	0	0	0	0	0	$10,000
New Bedford	432	153	102	177	3	9	0	8	$1,774,250
New Braintree	Non-Reporting Community								
New Marlborough	1	1	0	0	0	0	0	0	$10,000
New Salem	5	4	1	0	0	0	0	0	$99,000
Newbury	14	7	3	4	0	0	0	0	$85,000
Newburyport	19	14	3	2	1	11	0	0	$160,400
Newton	189	119	13	57	0	2	0	1	$2,749,050
Norfolk	44	31	6	7	0	0	0	0	$257,700
North Adams	54	21	5	28	0	1	0	1	$191,660
North Andover	139	74	14	51	1	1	0	1	$512,850
North Attleboro	95	30	15	50	0	5	0	2	$445,200
North Brookfield	1	1	0	0	1	0	0	0	$400,000
North Reading	65	36	8	21	0	0	0	0	$225,300
Northampton	114	48	22	44	0	2	0	3	$3,196,813
Northborough	41	13	5	23	0	0	0	0	$509,500
Northbridge	63	38	10	15	0	0	0	0	$78,250
Northfield	Non-Reporting Community								
Norton	75	20	8	47	0	0	0	0	$512,640
Norwell	66	27	12	27	0	0	0	0	$10,000
Norwood	110	40	23	47	1	3	0	6	$1,389,850
Oak Bluffs	9	5	2	2	0	1	0	0	$5,000
Oakham	13	9	0	4	0	0	0	0	$0
Orange	29	11	4	14	1	0	0	1	$0
Orleans	36	15	2	19	0	0	0	1	$50,000
Otis	Fire Department In Good Standing, Certified No Fires To Report								
Oxford	54	11	15	28	0	2	0	0	$193,000
Palmer Fire Districts									
Bondsville	*6*	*5*	*0*	*1*	*0*	*0*	*0*	*0*	*$123,550*
Palmer	*60*	*26*	*15*	*19*	*0*	*0*	*0*	*0*	*$283,480*
Three Rivers	*15*	*6*	*2*	*7*	*0*	*0*	*0*	*0*	*$0*
Paxton	10	9	1	0	0	0	0	0	$76,500
Peabody	243	107	29	107	0	3	0	5	$4,136,695
Pelham	2	0	2	0	0	0	0	0	$6,000
Pembroke	17	9	6	2	0	0	0	0	$53,725
Pepperell	38	23	1	14	0	3	0	2	$1,363,800

2005 Arson Experience by Community

Community	Total Arson	Structure Arson	Vehicle Arson	Other Arson	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
New Ashford	0	0	0	0	0	0	0	0	$0
New Bedford	20	5	8	7	0	0	0	0	$9,700
New Braintree	Non-Reporting Community								
New Marlborough	0	0	0	0	0	0	0	0	$0
New Salem	0	0	0	0	0	0	0	0	$0
Newbury	0	0	0	0	0	0	0	0	$0
Newburyport	1	1	0	0	0	0	0	0	$2,500
Newton	7	3	1	3	0	0	0	0	$74,000
Norfolk	1	0	0	1	0	0	0	0	$0
North Adams	3	0	0	3	0	0	0	0	$160
North Andover	4	0	1	3	0	0	0	0	$3,000
North Attleboro	0	0	0	0	0	0	0	0	$0
North Brookfield	0	0	0	0	0	0	0	0	$0
North Reading	2	1	0	1	0	0	0	0	$0
Northampton	2	0	0	2	0	0	0	0	$0
Northborough	3	2	0	1	0	0	0	0	$2,500
Northbridge	1	0	0	1	0	0	0	0	$0
Northfield	Non-Reporting Community								
Norton	8	0	1	7	0	0	0	0	$13,500
Norwell	5	1	0	4	0	0	0	0	$0
Norwood	4	0	2	2	1	0	0	0	$4,200
Oak Bluffs	0	0	0	0	0	0	0	0	$0
Oakham	0	0	0	0	0	0	0	0	$0
Orange	3	0	1	2	0	0	0	0	$0
Orleans	0	0	0	0	0	0	0	0	$0
Otis	Fire Department In Good Standing, Certified No Fires To Report								
Oxford	2	0	1	0	0	0	0	0	$3,000
Palmer Fire Districts									
Bondsville	*1*	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*$121,500*
Palmer	*1*	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*$70,000*
Three Rivers	*4*	*1*	*2*	*1*	*0*	*0*	*0*	*0*	*$0*
Paxton	0	0	0	0	0	0	0	0	$0
Peabody	3	1	0	2	0	0	0	0	$170,000
Pelham	0	0	0	0	0	0	0	0	$0
Pembroke	2	1	1	0	0	0	0	0	$15,500
Pepperell	4	0	0	4	0	0	0	0	$0

2005 Fire Experience By Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Peru	7	4	1	2	0	0	0	0	$0
Petersham	7	6	1	0	0	0	0	2	$193,000
Phillipston	15	1	0	14	0	0	0	0	$0
Pittsfield	379	168	21	190	1	3	0	15	$2,508,947
Plainfield	3	3	0	0	0	0	0	0	$0
Plainville	80	5	4	71	0	0	0	0	$0
Plymouth	224	66	31	127	1	3	0	9	$2,490,230
Plympton	6	2	0	4	0	0	0	0	$126,100
Princeton	22	9	2	11	0	0	0	0	$0
Provincetown	Non-Reporting Community								
Quincy	663	355	59	249	0	1	0	19	$536,001
Randolph	107	52	17	38	0	0	0	1	$793,200
Raynham	87	23	23	41	0	1	0	1	$2,016,500
Reading	48	38	8	2	0	0	0	1	$799,760
Rehoboth	74	36	6	32	0	1	0	0	$40,000
Revere	339	195	40	104	0	3	0	4	$1,707,637
Richmond	8	5	0	3	0	0	0	0	$0
Rochester	4	1	3	0	0	0	0	0	$83,000
Rockland	11	9	1	1	0	1	0	0	$188,000
Rockport	20	4	1	15	0	0	0	0	$12,000
Rowe	Fire Department In Good Standing, Certified No Fires To Report								
Rowley	31	12	7	12	0	0	0	0	$82,925
Royalston	1	1	0	0	0	0	0	0	$0
Russell	15	9	2	4	0	0	0	0	$33,500
Rutland	24	8	3	13	0	0	0	0	$73,080
Salem	374	223	18	133	1	1	0	2	$777,000
Salisbury	22	8	3	11	0	1	0	0	$804,306
Sandisfield	Fire Department In Good Standing, Certified No Fires To Report								
Sandwich	174	111	15	48	1	6	0	2	$361,151
Saugus	202	80	29	93	0	5	0	9	$2,033,845
Savoy	1	1	0	0	0	0	0	0	$20,000
Scituate	114	48	9	57	1	3	0	1	$462,500
Seekonk	85	27	13	45	0	0	0	0	$461,190
Sharon	53	27	9	17	0	0	0	0	$13,135
Sheffield	2	1	1	0	0	0	0	0	$0

2005 Arson Experience by Community

Community	Total Arson	Structure Arson	Vehicle Arson	Other Arson	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Peru	0	0	0	0	0	0	0	0	$0
Petersham	0	0	0	0	0	0	0	0	$0
Phillipston	0	0	0	0	0	0	0	0	$0
Pittsfield	41	9	1	31	0	0	0	1	$5,400
Plainfield	1	1	0	0	0	0	0	0	$0
Plainville	1	0	0	1	0	0	0	0	$0
Plymouth	7	3	2	2	0	0	0	0	$43,200
Plympton	1	0	0	1	0	0	0	0	$0
Princeton	5	3	0	2	0	0	0	0	$0
Provincetown	Non-Reporting Community								
Quincy	17	2	1	14	0	0	0	1	$0
Randolph	6	1	3	2	0	0	0	0	$0
Raynham	0	0	0	0	0	0	0	0	$0
Reading	1	1	0	0	0	0	0	0	$220,000
Rehoboth	13	3	0	10	0	0	0	0	$40,000
Revere	13	7	4	2	0	1	0	1	$118,625
Richmond	0	0	0	0	0	0	0	0	$0
Rochester	0	0	0	0	0	0	0	0	$0
Rockland	0	0	0	0	0	0	0	0	$0
Rockport	1	0	0	1	0	0	0	0	$0
Rowe	Fire Department In Good Standing, Certified No Fires To Report								
Rowley	0	0	0	0	0	0	0	0	$0
Royalston	0	0	0	0	0	0	0	0	$0
Russell	0	0	0	0	0	0	0	0	$0
Rutland	1	0	0	1	0	0	0	0	$0
Salem	5	2	1	2	0	0	0	0	$1,000
Salisbury	0	0	0	0	0	0	0	0	$0
Sandisfield	Fire Department In Good Standing, Certified No Fires To Report								
Sandwich	8	2	1	5	1	0	0	0	$4,200
Saugus	23	9	1	13	0	1	0	0	$36,550
Savoy	0	0	0	0	0	0	0	0	$0
Scituate	4	1	1	2	0	0	0	0	$0
Seekonk	10	2	0	8	0	0	0	0	$150,000
Sharon	3	1	0	2	0	0	0	0	$0
Sheffield	0	0	0	0	0	0	0	0	$0

2005 Fire Experience By Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Shelburne Fire Districts									
Shelburne	*5*	*1*	*1*	*3*	*0*	*0*	*0*	*0*	*$166,000*
Shelburne Falls	*1*	*1*	*0*	*0*	*0*	*0*	*0*	*0*	*$0*
Sherborn	23	5	2	16	0	0	0	0	$0
Shirley	23	19	2	2	0	1	0	0	$0
Shrewsbury	117	67	13	37	0	1	0	0	$1,091,670
Shutesbury	3	1	0	2	0	0	0	0	$25
Somerset	52	20	10	22	0	0	0	0	$580,601
Somerville	69	30	39	0	0	2	0	38	$2,781,050
South Hadley Fire Districts									
S. Hadley Dist.#1	*4*	*3*	*1*	*0*	*0*	*0*	*0*	*0*	*$40,500*
S. Hadley Dist.#2	*8*	*2*	*2*	*4*	*0*	*1*	*0*	*0*	*$17,000*
Southampton	41	6	2	33	0	3	0	0	$199,500
Southborough	50	21	5	24	0	0	0	0	$98,220
Southbridge	100	67	10	23	0	5	0	1	$1,583,000
Southwick	44	24	3	17	0	1	0	2	$193,950
Spencer	53	29	10	14	0	1	0	4	$231,490
Springfield	1,004	574	128	302	0	13	0	26	$3,250,463
Sterling	50	20	12	18	1	2	0	0	$192,900
Stockbridge	Non-Reporting Community								
Stoneham	63	35	14	14	2	1	0	0	$458,500
Stoughton	273	206	25	42	0	2	0	7	$2,109,000
Stow	17	5	0	12	0	0	0	0	$194,500
Sturbridge	57	14	18	25	0	2	0	0	$99,600
Sudbury	69	30	2	37	0	0	0	3	$8,000
Sunderland	14	6	1	7	0	2	0	1	$7,100
Sutton	18	5	6	7	0	0	0	0	$227,000
Swampscott	70	44	4	22	0	1	0	1	$1,216,000
Swansea	124	44	23	57	0	1	0	2	$0
Taunton	108	28	15	65	0	1	0	0	$90,000
Templeton	36	22	5	9	0	1	0	0	$250,000
Tewksbury	99	32	14	53	0	0	0	0	$375,110
Tisbury	12	6	1	5	0	0	0	0	$0
Tolland	5	0	2	3	0	0	0	0	$32,000
Topsfield	52	34	6	12	0	0	0	0	$0
Townsend	11	8	2	1	0	0	0	0	$45,000
Truro	3	3	0	0	0	0	0	0	$613,500

2005 Arson Experience by Community

Community	Total Arson	Structure Arson	Vehicle Arson	Other Arson	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Shelburne Fire Districts									
Shelburne	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*$0*
Shelburne Falls	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*$0*
Sherborn	4	0	0	4	0	0	0	0	$0
Shirley	0	0	0	0	0	0	0	0	$0
Shrewsbury	5	0	0	5	0	0	0	0	$0
Shutesbury	0	0	0	0	0	0	0	0	$0
Somerset	1	0	0	1	0	0	0	0	$0
Somerville	4	1	3	0	0	0	0	4	$191,000
South Hadley Fire Districts									
S. Hadley Dist.#1	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*$0*
S. Hadley Dist.#2	*1*	*0*	*0*	*1*	*0*	*0*	*0*	*0*	*$0*
Southampton	1	1	0	0	0	0	0	0	$151,500
Southborough	7	3	0	4	0	0	0	0	$8,000
Southbridge	6	2	1	3	0	0	0	0	$2,100
Southwick	2	0	1	1	0	0	0	0	$11,550
Spencer	0	0	0	0	0	0	0	0	$0
Springfield	30	7	5	18	0	0	0	1	$51,141
Sterling	3	1	0	2	0	0	0	0	$25,000
Stockbridge	Non-Reporting Community								
Stoneham	1	0	1	0	0	0	0	0	$0
Stoughton	7	1	0	6	0	0	0	0	$0
Stow	2	0	0	2	0	0	0	0	$0
Sturbridge	2	0	0	2	0	0	0	0	$0
Sudbury	0	0	0	0	0	0	0	0	$0
Sunderland	0	0	0	0	0	0	0	0	$0
Sutton	0	0	0	0	0	0	0	0	$0
Swampscott	2	1	1	0	0	0	0	0	$500
Swansea	6	1	1	4	0	0	0	0	$0
Taunton	7	1	2	4	0	0	0	0	$0
Templeton	1	1	0	0	0	0	0	0	$0
Tewksbury	4	0	0	4	0	0	0	0	$10
Tisbury	0	0	0	0	0	0	0	0	$0
Tolland	2	0	1	1	0	0	0	0	$23,000
Topsfield	1	1	0	0	0	0	0	0	$0
Townsend	0	0	0	0	0	0	0	0	$0
Truro	0	0	0	0	0	0	0	0	$0

2005 Fire Experience By Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Tyngsborough	20	4	9	7	0	1	0	0	$67,000
Tyringham	Fire Department In Good Standing, Certified No Fires To Report								
Upton	41	20	3	18	0	0	0	0	$5,080
Uxbridge	93	45	12	36	0	4	0	1	$404,630
Wakefield	74	58	14	2	0	1	0	3	$151,000
Wales	2	0	1	1	0	0	0	0	$55,000
Walpole	99	56	8	35	0	0	0	0	$1,203,000
Waltham	217	93	26	98	0	4	0	2	$605,510
Ware	74	21	10	43	0	2	0	0	$317,305
Wareham Fire Districts									
Onset	*54*	*32*	*5*	*17*	*0*	*4*	*0*	*0*	*$0*
Wareham	*119*	*38*	*25*	*56*	*0*	*4*	*0*	*0*	*$1,017,000*
Warren	18	8	5	5	0	0	0	0	$34,825
Warwick	11	5	3	3	0	0	0	0	$2,200
Washington	Fire Department In Good Standing, Certified No Fires To Report								
Watertown	87	52	8	27	0	1	0	14	$5,616,500
Wayland	56	16	4	36	0	1	0	2	$504,570
Webster	3	2	1	0	1	0	0	0	$0
Wellesley	110	93	7	10	0	1	0	4	$679,675
Wellfleet	38	19	9	10	0	0	0	0	$106,200
Wendell	1	1	0	0	0	0	0	0	$220,000
Wenham	51	21	1	29	0	0	0	0	$13,000
West Boylston	8	2	6	0	0	0	0	0	$64,600
West Bridgewater	19	12	7	0	0	0	0	0	$8,500
West Brookfield	12	3	2	7	0	0	0	0	$0
West Newbury	4	4	0	0	0	0	0	0	$1,000
West Springfield	144	65	20	59	0	0	0	1	$462,520
West Stockbridge	10	3	2	5	0	0	0	0	$500
West Tisbury	2	1	1	0	0	0	0	0	$0
Westborough	69	37	8	24	0	0	0	0	$249,225
Westfield	150	75	18	57	0	2	0	2	$973,250
Westford	60	30	8	22	0	0	0	0	$228,211
Westhampton	4	2	0	2	0	0	0	0	$0
Westminster	6	1	5	0	1	0	0	0	$515,000
Weston	98	31	18	49	1	5	0	2	$531,800
Westport	57	15	4	38	1	0	0	2	$338,100
Westwood	75	54	7	14	0	0	0	1	$398,950
Weymouth	379	215	32	132	0	1	0	18	$11,076,600

2005 Arson Experience by Community

Community	Total Arson	Structure Arson	Vehicle Arson	Other Arson	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Tyngsborough	0	0	0	0	0	0	0	0	$0
Tyringham	Fire Department In Good Standing, Certified No Fires To Report								
Upton	3	0	0	3	0	0	0	0	$0
Uxbridge	2	1	0	1	0	0	0	0	$1,000
Wakefield	0	0	0	0	0	0	0	0	$0
Wales	0	0	0	0	0	0	0	0	$0
Walpole	8	8	0	0	0	0	0	0	$0
Waltham	7	4	1	2	0	0	0	0	$2,000
Ware	8	0	0	8	0	0	0	0	$17
Wareham Fire Districts									
Onset	*4*	*0*	*2*	*2*	*0*	*0*	*0*	*0*	*$0*
Wareham	*25*	*0*	*1*	*24*	*0*	*2*	*0*	*0*	*$6,000*
Warren	1	0	0	1	0	0	0	0	$0
Warwick	0	0	0	0	0	0	0	0	$0
Washington	Fire Department In Good Standing, Certified No Fires To Report								
Watertown	0	0	0	0	0	0	0	0	$0
Wayland	3	0	0	3	0	0	0	0	$100
Webster	0	0	0	0	0	0	0	0	$0
Wellesley	1	1	0	0	0	0	0	0	$100
Wellfleet	0	0	0	0	0	0	0	0	$0
Wendell	0	0	0	0	0	0	0	0	$0
Wenham	1	1	0	0	0	0	0	0	$0
West Boylston	0	0	0	0	0	0	0	0	$0
West Bridgewater	2	1	1	0	0	0	0	0	$0
West Brookfield	0	0	0	0	0	0	0	0	$0
West Newbury	0	0	0	0	0	0	0	0	$0
West Springfield	7	2	2	3	0	0	0	0	$270
West Stockbridge	0	0	0	0	0	0	0	0	$0
West Tisbury	0	0	0	0	0	0	0	0	$0
Westborough	4	0	0	4	0	0	0	0	$0
Westfield	4	1	1	2	0	0	0	0	$4,900
Westford	0	0	0	0	0	0	0	0	$0
Westhampton	1	0	0	1	0	0	0	0	$0
Westminster	0	0	0	0	0	0	0	0	$0
Weston	2	0	0	2	0	0	0	0	$0
Westport	2	1	1	0	0	0	0	0	$15,000
Westwood	1	1	0	0	0	0	0	0	$300
Weymouth	9	1	1	7	0	0	0	0	$1,800

2005 Fire Experience By Community

Community	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Whately	19	4	6	9	0	0	0	0	$74,000
Whitman	48	22	2	24	0	0	0	0	$253,350
Wilbraham	41	20	5	16	0	2	0	1	$107,900
Williamsburg	5	4	1	0	0	0	0	0	$5,500
Williamstown	19	12	4	3	0	1	0	1	$367,860
Wilmington	44	20	8	16	0	0	0	0	$229,000
Winchendon	11	7	4	0	0	2	0	0	$848,700
Winchester	7	3	4	0	0	0	0	0	$21,950
Windsor	1	1	0	0	0	0	0	0	$150,000
Winthrop	108	69	8	31	1	2	0	2	$3,369,376
Woburn	83	55	15	13	0	2	0	2	$950,150
Worcester	1,239	690	166	383	0	1	0	65	$6,963,315
Worthington	Fire Department In Good Standing, Certified No Fires To Report								
Wrentham	158	15	10	133	0	0	0	0	$190,801
Yarmouth	110	44	15	51	0	4	0	3	$482,187

2005 Arson Experience by Community

Community	Total Arson	Structure Arson	Vehicle Arson	Other Arson	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Whately	2	0	0	2	0	0	0	0	$0
Whitman	8	1	0	7	0	0	0	0	$350
Wilbraham	5	1	2	2	0	0	0	1	$10,000
Williamsburg	0	0	0	0	0	0	0	0	$0
Williamstown	0	0	0	0	0	0	0	0	$0
Wilmington	0	0	0	0	0	0	0	0	$0
Winchendon	1	0	1	0	0	0	0	0	$5,000
Winchester	0	0	0	0	0	0	0	0	$0
Windsor	0	0	0	0	0	0	0	0	$0
Winthrop	7	1	0	6	1	1	0	1	$401,172
Woburn	0	0	0	0	0	0	0	0	$0
Worcester	45	11	15	19	0	0	0	5	$165,160
Worthington	Fire Department In Good Standing, Certified No Fires To Report								
Wrentham	4	0	1	3	0	0	0	0	$5,201
Yarmouth	4	0	1	3	0	0	0	0	$100

2005 Fires By Incident Type

Incident Type	Total Fires	% of Total	Civilian Deaths	Civilian Inj.	Fire Service Deaths	Fire Service Inj.	Dollar Loss
Structure Fires	14,662	51%	41	301	0	469	$202,087,443
Vehicle Fires	3,666	13%	7	27	0	23	14,799,647
Brush Fires	4,166	14%	0	1	0	21	601,169
Outside Rubbish Fires	3,489	12%	1	1	0	4	225,996
Special Outside Fires	868	3%	1	7	0	1	672,320
Cult. Veg.& Crop Fires	60	0.2%	0	0	0	0	1,706
Other Fires	1,882	7%	2	22	0	5	3,496,088
Total Fires	**28,793**	**100%**	**52**	**359**	**0**	**523**	**$221,884,369**

2005 Arsons* By Incident Type

Incident Type	Total Fires	% of Total	Civilian Deaths	Civilian Inj.	Fire Service Deaths	Fire Service Inj.	Dollar Loss
Structure Arsons	339	28%	5	7	0	24	$10,885,307
Vehicle Arsons	176	14%	1	2	0	1	1,000,670
Brush Arsons	421	35%	0	0	0	2	2,664
Outside Rubbish Arsons	104	9%	0	0	0	0	2,610
Special Outside Arsons	142	12%	1	1	0	0	61,507
Cult. Veg.& Crop Arsons	3	0.2%	0	0	0	0	500
Other Arsons	33	3%	0	2	0	0	5,141
Total Arsons	**1,218**	**100%**	**7**	**12**	**0**	**27**	**$11,958,399**

*For statistical purposes in MFIRS v5 a fire is considered an arson if the Cause of Ignition = 1 (Intentional) and the Age of Person (Fire Module) is greater than 17 or if the field is blank; or if the Wildland Module is used, the Wildland Fire Cause = 7 (Incendiary) and the Age of the Person (Wildland Module) is greater than 17 or if the field is left blank.

2005 Fires By County

County	Total Fires	Structure Fires	Vehicle Fires	Other Fires	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Barnstable	1,117	510	142	465	4	43	0	31	$12,056,928
Berkshire	723	381	51	291	1	7	0	17	4,517,667
Bristol	2,487	868	419	1,200	7	32	0	23	11,453,136
Dukes	42	17	12	13	0	4	0	0	5,000
Essex	3,086	1,637	358	1,091	5	41	0	45	24,742,286
Franklin	386	178	38	170	2	7	0	6	1,111,775
Hampden	2,417	1,231	342	844	0	32	0	40	8,551,805
Hampshire	539	213	66	260	1	14	0	3	5,478,476
Middlesex	4,791	2,700	606	1,485	8	64	0	146	61,764,101
Nantucket	94	50	16	28	0	0	0	0	143,925
Norfolk	2,999	1,560	345	1,094	4	22	0	70	26,291,487
Plymouth	1,680	693	285	702	7	26	0	24	11,999,409
Suffolk	4,565	2,655	475	1,435	6	25	0	19	32,782,072
Worcester	3,867	1,969	511	1,387	7	42	0	99	20,986,302
Total	**28,793**	**14,662**	**3,666**	**10,465**	**52**	**359**	**0**	**523**	**$221,884,369**

2005 Arsons* By County

County	Total Arsons	Structure Arsons	Vehicle Arsons	Other Arsons	Civilian Deaths	Civilian Injuries	Fire Service Deaths	Fire Service Injuries	Dollar Loss
Barnstable	58	16	4	38	1	2	0	4	$38,211
Berkshire	52	12	1	39	0	0	0	1	131,260
Bristol	144	42	26	76	0	0	0	1	617,425
Dukes	1	0	0	1	0	0	0	0	0
Essex	142	40	14	88	0	1	0	0	4,511,350
Franklin	18	3	2	13	0	0	0	1	17,550
Hampden	116	26	24	66	0	1	0	2	322,612
Hampshire	44	7	0	37	0	0	0	0	152,017
Middlesex	148	47	19	82	2	1	0	13	2,107,430
Nantucket	0	0	0	0	0	0	0	0	0
Norfolk	100	20	17	63	1	0	0	1	37,511
Plymouth	103	17	17	69	2	3	0	0	352,500
Suffolk	139	70	28	41	1	3	0	2	2,245,563
Worcester	153	39	24	90	0	1	0	1	424,960
Total	**1,218**	**339**	**176**	**703**	**7**	**12**	**0**	**27**	**$11,958,399**

*For statistical purposes in MFIRS v5 a fire is considered an arson if the Cause of Ignition = 1 (Intentional) and the Age of Person (Fire Module) is greater than 17 or if the field is blank; or if the Wildland Module is used, the Wildland Fire Cause = 7 (Incendiary) and the Age of the Person (Wildland Module) is greater than 17 or if the field is left blank.

2005 Fires, Arsons and Deaths By County and By Population*

County	Population	Total Fires	Fires per 1,000 Pop.	Fire Deaths	Deaths per 1,000 Fires	Deaths per 10,000 Pop.	Total Arsons	Arsons per 1,000 Pop.
Barnstable	222,230	1,117	5.0	4	3.6	0.18	57	0.3
Berkshire	134,953	723	5.4	1	1.4	0.07	52	0.4
Bristol	534,678	2,487	4.7	7	2.8	0.13	144	0.3
Dukes	14,987	42	2.8	0	0.0	0.00	1	0.1
Essex	723,419	3,086	4.3	5	1.6	0.07	144	0.2
Franklin	71,535	386	5.4	2	5.2	0.28	18	0.3
Hampden	456,228	2,417	5.3	0	0.0	0.00	116	0.3
Hampshire	152,251	539	3.5	1	1.9	0.07	44	0.3
Middlesex	1,465,396	4,791	3.3	8	1.7	0.05	148	0.1
Nantucket	9,520	94	9.9	0	0.0	0.00	0	0.0
Norfolk	650,308	2,999	4.6	4	1.3	0.06	100	0.2
Plymouth	472,822	1,680	3.6	7	4.2	0.15	103	0.2
Suffolk	689,807	4,565	6.6	6	1.3	0.09	139	0.2
Worcester	750,963	3,867	5.1	6	1.6	0.08	153	0.2
Massachusetts	6,349,097	28,793	4.5	52	1.8	0.08	1,219	0.2

*Population statistics based on 2000 U.S. Census Bureau data.

2005 Non-Fire Responses By County and By Incident Type

County	Total Non-Fire Responses	Overpressure Rupt. & Explos. (No-fire)	Rescue EMS Incidents	Hazardous Conditions (No-fire)	Service Calls	Good Intent Calls	False Alarm Calls	Severe WX[1] & Natural Disaster	Special Incident Type
Barnstable	33,229	67	23,556	1,973	2,419	1,315	3,664	114	121
Berkshire	10,489	18	5,471	875	1,818	534	1,715	22	36
Bristol	41,328	73	22,809	2,295	4,353	3,603	7,967	50	178
Dukes	116	1	13	4	3	1	93	0	1
Essex	56,625	120	29,204	3,840	8,505	3,625	10,843	129	359
Franklin	4,383	17	1,741	470	869	317	611	69	283
Hampden	35,175	88	19,915	1,617	4,359	2,628	6,338	77	153
Hampshire	7,550	43	3,594	578	595	497	2,119	39	85
Middlesex	104,433	205	55,434	7,550	12,542	6,121	20,370	156	2,055
Nantucket	2,207	5	965	148	328	139	578	4	40
Norfolk	67,363	130	37,707	5,194	9,499	3,883	9,728	207	1,015
Plymouth	36,089	84	20,631	3,574	4,523	2,645	4,313	151	168
Suffolk	85,539	76	40,915	5,481	10,365	13,520	14,746	30	407
Worcester	66,196	134	39,676	4,703	6,874	3,671	10,296	442	400
Massachusetts	550,722	1,061	301,630	38,302	67,052	42,499	93,387	1,490	5,301

[1] WX is the abbreviation for Weather.

M.G.L. Chapter 148 §26G – Sprinklers in Buildings or Additions

"In any city or town which accepts the provisions of this section, every building of more than seventy-five hundred gross square feet in floor area or every addition of more than seventy-five hundred gross square feet in floor area shall be protected throughout with an adequate system of automatic sprinklers in accordance with the state building code; provided, however, that in the case of said addition, such an adequate system of automatic sprinklers shall be installed in said addition only. No such sprinkler system shall be required unless sufficient water and water pressure exists. For the purposes of this section, the gross square feet of a building or addition shall include the sum total of the floor areas for all floor levels, basements and sub-basements, measured from outside walls, irrespective of the existence of interior fire resistive walls, floors and ceilings.

In such buildings or additions, or in certain areas of such buildings or additions, where the discharge of water would be an actual danger in the event of fire, the head of the fire department shall permit the installation of such other fire suppressant systems as are prescribed by the state building code in lieu of automatic sprinklers, Automatic suppressant or sprinkler systems shall not be required in rooms or areas of a telephone central office equipment building when such rooms or areas are protected with an automatic fire alarm system. Sprinkler systems shall not be required in a one-story building having a fire resistance rating as prescribed in the state building code that is used solely for offices provided the building is protected by an automatic fire alarm system. Sprinkler systems shall not be required in open-air parking structures, defined as: buildings, structures, or portions thereof, used for parking motor vehicles and having not less than twenty-five per cent of the total area open to atmosphere at each level, utilizing at least two sides of the structure. This section shall not apply to buildings or additions used for residential purposes.

The head of the fire department shall enforce the provisions of this section.

Whoever is aggrieved by the head of the fire department's interpretation, order, requirement, direction or failure to act under the provisions of this section, may, within forty-five days after the service of notice thereof, appeal from such interpretation, order, requirement, direction or failure to act to the automatic sprinkler board as provided in section two hundred and one of chapter six."

Communities Which Have Adopted M.G.L. Chapter 148 Section 26G

Abington
Acton
Acushnet
Agawam
Amesbury
Amherst
Arlington
Ashburnham
Ashland
Attleboro
Auburn
Avon
Ayer
Barnstable
Barre
Belchertown
Bellingham
Belmont
Berkley
Beverly
Billerica
Boston
Boxborough
Braintree
Bridgewater
Brockton
Brookfield
Brookline
Burlington
Cambridge
Centerville
Chatham
Chelsea
Chelmsford
Chicopee
Cohasset
Concord
Cotuit
Danvers
Dartmouth Dist. 1
Dartmouth Dist. 3
Dedham
Dighton
Duxbury
East Bridgewater
East Longmeadow
Easton
Edgartown
Everett
Fairhaven
Fall River
Falmouth
Fitchburg
Foxborough
Framingham
Franklin
Gardner
Georgetown
Grafton
Granby
Groton
Hamilton
Hanover
Hanson
Harwich
Haverhill
Hingham
Holbrook
Holden
Holliston
Holyoke
Hopedale
Hubbardston
Hudson
Hull
Hyannis
Ipswich
Kingston
Lakeville
Lancaster
Lawrence
Leicester
Leominster
Lexington
Lowell
Ludlow
Lunenburg
Manchester
Mansfield
Marblehead
Marlborough
Marshfield
Mashpee
Maynard
Medfield
Medford
Medway
Melrose
Methuen
Middleborough
Middleton
Milford
Millbury
Natick
Needham
Newburyport
Newton
North Andover
North Attleboro
North Reading
Northborough
Norton
Norwell
Orange
Paxton
Pelham
Pittsfield
Plainville
Plymouth
Randolph
Raynham
Reading
Revere
Rockland
Rutland
Salem
Sandwich
Saugus
Scituate
Seekonk
Sharon
Shirley
Shrewsbury
Somerset
Somerville
S. Hadley-Dist. 2
Southborough
Southbridge
Sterling
Stoneham
Stoughton
Sudbury
Sutton
Swampscott
Swansea
Taunton
Tewksbury
Tisbury
Turners Falls
Tyngsboro
Upton
Wakefield
Walpole
Waltham
Ware
Wareham
Warren
Watertown
Wayland
Wellesley
Wenham
West Barnstable
West Boylston
West Bridgewater
West Brookfield
West Springfield
Westborough
Westfield
Westford
Westminster
Westport
Westwood
Whitman
Wilbraham
Wilmington
Winchester
Winthrop
Woburn
Worcester
Wrentham
Yarmouth

Total : 181

M.G.L. Chapter 148 §26H – Sprinklers in Boarding & Lodging Houses

"In any city or town which accepts the provision of this section, every lodging house or boarding house shall be protected throughout with an adequate system of automatic sprinklers in accordance with the provisions of the state building code…The head of the fire department shall enforce the provisions of this section.

For the purpose of this section, 'lodging house' or 'boarding house' shall mean a house where lodgings are let to six or more persons not within the second degree of kindred to the person conducting it, but shall not include fraternity houses or dormitories, rest homes or group home licensed to or regulated by the agencies of the Commonwealth.

Any lodging or boarding house subject to the provisions of this section shall be equipped with automatic sprinklers within five years of the acceptance of this act by a city or town…Whoever is aggrieved by the head of the fire department's interpretation…under the provisions of this section, may within forty-five days after the service of notice thereof, appeal from such interpretation, order or requirement to the board of appeals of the fire safety commission in section two hundred and one of chapter six."

Communities Which Have Adopted M.G.L. Chapter 148 Section 26H

Abington
Acton
Acushnet
Amesbury
Amherst
Arlington
Ashland
Auburn
Ayer
Belmont
Berkley
Beverly
Billerica
Boston
Braintree
Brockton
Brookfield
Brookline
Burlington
Chatham
Chelsea
Chelmsford
Chicopee
Clinton
Cohasset
Concord
Danvers
Dartmouth Dist. 1
Dartmouth Dist. 3
Dennis
Everett
Fairhaven
Fall River
Fitchburg
Framingham
Franklin
Gardner
Georgetown
Grafton
Hamilton
Hanson
Haverhill
Holyoke
Hopedale
Hull
Ipswich
Kingston
Lancaster
Lawrence
Lee
Lowell
Ludlow
Lunenburg
Mansfield
Marlborough
Marshfield
Maynard
Medford
Medway
Melrose
Middleton
Milford
Natick
Needham
Newburyport
Newton
North Andover
North Reading
Northborough
Norton
Pelham
Plainville
Randolph
Raynham
Revere
Rutland
Salem
Saugus
Scituate
Seekonk
Sharon
Somerset
Somerville
Southborough
Sterling
Stoneham
Stoughton
Sudbury
Sutton
Swampscott
Taunton
Tewksbury
Turners Falls
Tyngsboro
Upton
Wakefield
Ware
Warren
Watertown
Wayland
Wenham
Westborough
Westford
Westminster
Westport
Westwood
Whitman
Wilmington
Winchester
Winthrop
Woburn
Worcester
Wrentham

Total: 112

M.G.L. Chapter 148 §26I – Sprinklers in New Dwelling Units (4+ units)

"In a city, town or district which accepts the provisions of this section, any building hereafter constructed or hereafter substantially rehabilitated so as to constitute the equivalent of new construction and occupied in whole or in part for residential purposes and containing not less than four dwelling units including, but not limited to, lodging houses, boarding houses, fraternity houses, dormitories, apartments, townhouses, condominiums, hotels, motels and group residences, shall be equipped with an approved system of automatic sprinklers in accordance with the state building code. In the event that adequate water supply is not available, the head of the fire department shall permit the installation of such other fire suppression systems as are prescribed by the state building code in lieu of automatic sprinklers. Owners of building with approved and properly maintained installations may be eligible for a rate reduction on fire insurance."

Communities Which Have Adopted M.G.L. Chapter 148 Section 26I

Abington	Easton	Mansfield	S. Hadley-Dist. 2
Acton	Everett	Marblehead	Southborough
Acushnet	Fairhaven	Marlborough	Sterling
Agawam	Fall River	Marshfield	Stoneham
Amesbury	Falmouth	Mashpee	Stoughton
Amherst	Fitchburg	Maynard	Sudbury
Arlington	Foxborough	Medfield	Swansea
Ashland	Framingham	Medford	Taunton
Athol	Franklin	Medway	Tewksbury
Avon	Georgetown	Melrose	Tyngsboro
Ayer	Grafton	Milford	Upton
Barnstable	Great Barrington	Millbury	Wakefield
Barre	Groton	Natick	Walpole
Bellingham	Hamilton	Newton	Waltham
Belmont	Hanover	North Andover	Ware
Berkley	Hanson	North Attleboro	Watertown
Beverly	Harwich	North Reading	Wayland
Billerica	Haverhill	Northborough	Wellesley
Boston	Hingham	Norton	Wenham
Brewster	Holden	Norwell	West Barnstable
Brookfield	Holliston	Orange	West Boylston
Brookline	Holyoke	Paxton	West Springfield
Burlington	Hopedale	Pelham	Westborough
Centerville	Hopkinton	Plainville	Westford
Chatham	Hudson	Randolph	Westminster
Chelmsford	Hull	Raynham	Westport
Clinton	Hyannis	Revere	Westwood
Cohasset	Ipswich	Rockland	Whitman
Concord	Kingston	Rutland	Wilmington
Cotuit	Lancaster	Salem	Winthrop
Dartmouth Dist. 1	Lawrence	Saugus	Woburn
Dartmouth Dist. 3	Lexington	Scituate	Wrentham
Dedham	Longmeadow	Shrewsbury	Yarmouth
Duxbury	Lowell	Somerset	
E. Longmeadow	Lunenburg	Somerville	**Total: 113**


SMALL CAN SAVE big
It's time to get alarmed!
Check your smoke alarms