

Brockton Fires in 2004¹

194 Total Fires — 113 Structures, 55 Vehicles & 26 Other Fires

The Brockton Fire Department reported 194 fires to the Massachusetts Fire Incident Reporting System (MFIRS) in 2004. The 113 structure fires, 55 motor vehicle fires, two brush fires, one outside rubbish fire, and 23 unclassified fires, caused two civilian deaths, six civilian injuries, 14 fire service injuries and an estimated dollar loss of \$2.1 million.

Brockton Man Killed in Fire Caused by Smoking

- On January 1, 2004, at 12:18 a.m. the Brockton Fire Department was called to a fire in a single-family house caused by the improper use and disposal of smoking materials. The smoking material ignited a mattress in the front living room. Two occupants attempted to remove the burning mattress but it became lodged in the front hallway. These two occupants made it out of the structure; one of them received moderate injuries due to smoke inhalation. The victim, a 43-year old man, retreated to his second floor bedroom where he was overcome by the heat and smoke. There were no smoke detectors present. There were no other injuries associated with this fire. The fire caused an estimated \$65,000 worth of damages.

Brockton Woman Killed in Space Heater Fire

- On January 11, 2004 at 5:04 a.m., the Brockton Fire Department was called to a fatal fire in a three-unit apartment building caused by an electric heater on the three-season porch. The victim, a 63-year old woman, was blocked from escaping and was overcome by heat and smoke. She died from smoke inhalation. A 42-year old woman was also injured when she jumped from a window to escape the fire. It was undetermined if smoke detectors were present in the building. Damages from this fire were estimated to be \$300,000.

Structure & Motor Vehicle Fires Down

Total fires decreased by 19 from the 213 incidents reported in 2003. Reported structure fires decreased by 24 from the 137 reported during the previous year. Motor vehicle fires fell 13 from 68 the year before. Outside and other fires increased by 18 from eight in 2003.

¹ This report is compiled from individual incident reports submitted to the Massachusetts Fire Incident Reporting System (MFIRS). 2004 was the third year that Brockton submitted all of their incidents in the version 5 format.

BROCKTON FIRES FROM 2000 TO 2004

| | Total Fires | Structure Fires | Vehicle Fires | Other Fires | Total Arsons | Structure Arsons | Vehicle Arsons | Other Arsons |
|------|------------------------|----------------------------|--------------------------|------------------------|-------------------------|-----------------------------|---------------------------|-------------------------|
| 2000 | 274 | 151 | 122 | 1 | 49 | 16 | 33 | 0 |
| 2001 | 270 | 142 | 121 | 7 | 46 | 10 | 35 | 1 |
| 2002 | 214 | 123 | 76 | 15 | 14 | 7 | 7 | 0 |
| 2003 | 213 | 137 | 68 | 8 | 13 | 11 | 2 | 0 |
| 2004 | 194 | 113 | 55 | 26 | 8 | 6 | 2 | 0 |

Over 4/5 of Building Fires in Homes

The 113 structure fires that occurred in Brockton in 2004 can be broken down by fixed property use as follows: 92, or 81% of all structure fires, were in residential properties; six fires occurred in public assembly properties; five fires occurred in mercantile or business properties; four fires happened in storage facilities; three fires occurred in institutional facilities; two fires happened in educational properties; and one fire occurred in an unclassified structure.

Residential Structure Fires Are Down

There were 92 reported residential structure fires in Brockton in 2004. These 92 fires are a decrease of 18, or 16%, from the 110 residential structure fires reported in 2003.

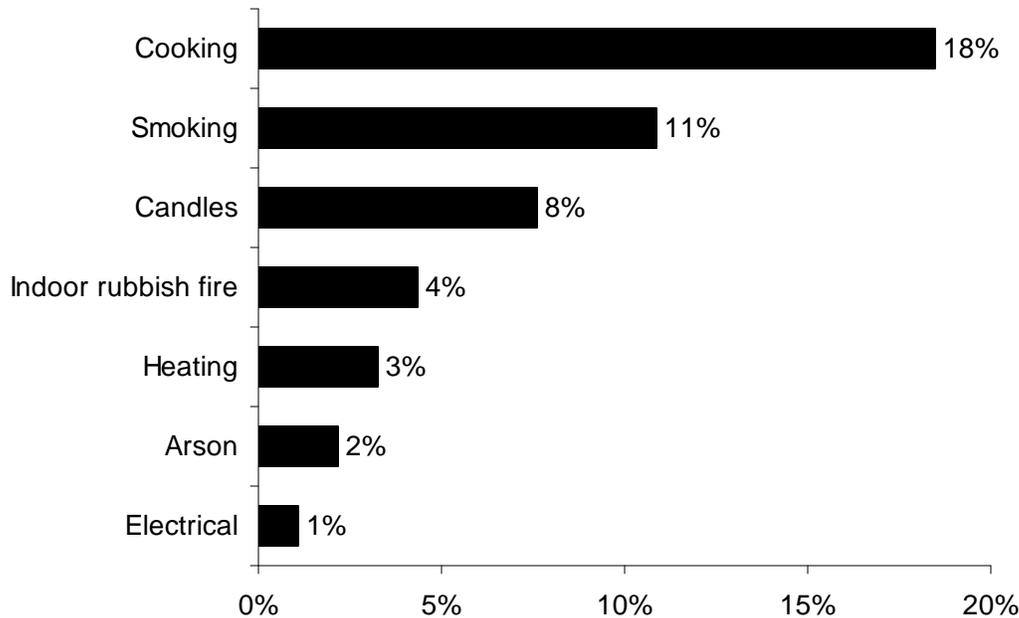
Apartments Accounted for 60% of Residential Structure Fires

The peak fixed property uses for residential structure fires were apartments, accounting for 60% of the structure fires in Brockton; 39% occurred in 1- or 2-family homes; 2% occurred in boarding houses; 1% occurred in hotels or motels; and another 1% occurred in a dormitory. This is a slight reversal as last year 1- or 2-family homes were the leading cause of residential structure fires accounting for 49% of these fires in 2003.

Unattended Cooking Leading Cause of Residential Fires

The leading cause of residential structure fires in Brockton was unattended cooking and other unsafe cooking practices, accounting for 18% of these fires. Smoking accounted for 11% of fires in residential occupancies. Eight percent (8%) of these fires were caused by candles. Indoor rubbish fires accounted for 4% of these fires. Heating caused 3% of these fires. Arson caused 2% of fires in peoples' homes. Electrical problems caused 1% of the residential fires in Brockton in 2004.

2004 Leading Causes of Fires in Brockton Homes



9% of Residential Structure Fires Are Confined to Non-Combustible Containers²

Eight (8), or 9% of all residential structure fires were confined to non-combustible containers in 2004. The other 84, or 91%, of fires in people's homes were not confined and extended beyond their original container. Five (5), or 5% of all residential structure fires reported in 2004, were cooking fires contained to a non-combustible container. One (1), or 1%, of these fires was a rubbish fire contained to a non-combustible container. Another fire (1%) was a reported fuel burner or boiler malfunction. And another fire (1%) was confined to a commercial compactator.

Detectors Alerted Occupants in 88% of Confined Fires

Smoke or heat detectors alerted the occupants in seven, or 88%, of the residential structure fires that were confined to non-combustible containers. In the other fire, or 12% of these fires, the detector failed to alert the occupants of the residence.

Smoke Detectors Operate in 58% of Fires

Smoke or heat detectors were present and operated in only 58% of the 70 residential fires where smoke detector performance was known. Detectors were present but did not

² 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.

operate in 8% of these incidents. In 18% of these fires, no detectors were present at all. In 8% of residential structure fires where smoke detector presence was known, the fire was too small to activate the detector. Smoke detector performance was undetermined in 13 incidents. These were excluded from the percentage calculations.

6% of Structure Fires Occurred in Vacant Buildings

Brockton reported seven fires that occurred in buildings that were vacant, under construction or demolition³. This represented 6% of the total 113 structure fires reported to MFIRS in 2004. Two apartment buildings, two specialty shops, one one- or two-family home, one shed, and one detached residential garage were reported as vacant structure fire incidents.

8 Total Arsons⁴

Eight (8), or 4%, of Brockton's 194 fires were considered intentionally set, or, for purposes of this analysis, arson. The six structure arsons and two motor vehicle arsons caused an estimated dollar loss of \$2,250.

Structure Arson Is Down

The total number of arsons fell five from the 13 reported in 2003. Reported structure arsons decreased five from 11 the year before. Motor vehicle arsons remained the same with two arsons being reported in both 2003 as well as 2004. There were no reported outside arson fires in 2004, the same as in 2003.

Fires Are 91% of All Reported Incidents to MFIRS

In 2004, Brockton voluntarily reported 214 incidents to MFIRS. Of these 214 incidents, 20, or 9%, were non-fire incidents⁵. Over one-third, seven, were carbon monoxide calls. Fire departments are only required to report fires and explosions with a dollar loss or human casualty. The State Fire Marshal has requested reports on carbon monoxide calls as well.

Of these 20 non-fire incidents seven, or 8% of all reported incidents in 2004, were reported hazardous condition calls with no fire; one, or 0.5%, was a reported false alarm or false call; one, or 0.5%, was a severe weather or natural disaster call to investigate a

³ 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.

⁴ 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.

⁵ In 2003 & 2004 Brockton reported their MFIRS reports to Office of the State Fire Marshal on paper forms. At the time only specific non-fire incidents from paper forms were being entered into MFIRS. In 2003, 11 of the 16 (69%) non-fire incidents were either carbon monoxide calls with carbon monoxide present or carbon monoxide calls with just a detector activation. In 2004, 7 of the 20 (35%) non-fire incidents were carbon monoxide calls.

lightning strike; and another one was a service call, or 0.5%, that was a call to investigate a water leak.

Brockton Received Aid in 5 Reported Incidents

In 2004, Brockton reported receiving mutual aid in five incidents, all of them fires. Brockton did not reported giving mutual aid to any other fire department.

Brockton**Population: 94,304****2.1 Fires/1,000 Population****Total Fires: 194 \$2,114,449**

| Situation | Fires | % of Fires | Dollar Loss |
|------------------|--------------|-------------------|--------------------|
| Structure Fires | 113 | 58% | \$2,070,949 |
| Vehicle Fires | 55 | 28% | 41,000 |
| Other Fires | 26 | 13% | 2,500 |

2 Civilian Deaths 10.31 Civilian Deaths per 1,000 fires
 2 Fatal Fires 0.21 Civilian Deaths per 10,000 population

6 Civilian Injuries 14 Fire Service Injuries

Residential Structure Fires: 92**Residential Structure Fires Confined to Non-Combustible Containers: 8****Unconfined Residential Structure Fires: 84**

2 Civilian Deaths 6 Civilian Injuries 12 Fire Service Injuries

| Occupancy | Fires | % | Detector Status | Fires | % | %Known |
|---------------------|--------------|----------|------------------------|--------------|----------|---------------|
| Apartments | 55 | 60% | Operated | 44 | 53% | 58% |
| 1- & 2-Family homes | 36 | 39% | Didn't operate | 6 | 7% | 18% |
| Dormitories | 1 | 1% | None | 14 | 17% | 18% |
| | | | Fire too small | 6 | 7% | 8% |
| | | | Unknown | 13 | 16% | |

| Area of Origin⁶ | % | Heat Source | % | %Unconfined⁷ |
|-----------------------------------|----------|-----------------------------|----------|--------------------------------|
| Kitchen | 30% | Heat from powered eq. | 26% | 28% |
| Bedroom | 13% | Radiated heat from op. eq. | 20% | 21% |
| Living room | 5% | Candle | 8% | 8% |
| Exterior balcony, unencl. porch | 4% | Cigarette | 7% | 7% |
| Substructure area or crawl space | 4% | Spark, ember, flame/op. eq. | 4% | 5% |
| Laundry room | 4% | | | |

⁶ This field does not need to be completed for confined fires. Certain codes are inferred from the Incident Type.

⁷ These figures were calculated only from those incidents, which were coded as Unconfined fires (Incident Types 111-112 or 120-129). The USFA & NFPA do not recommend inferring codes for Heat Source from the fires contained to non-combustible containers (Incident Types 113 – 118). This field does not need to be completed for confined fires, but is sometimes voluntarily reported.

| Item First Ignited⁸ | % | Factor Contrib. to Ignition | % | %Unconfined⁹ |
|---------------------------------------|----------|------------------------------------|----------|--------------------------------|
| Cooking materials | 14% | Too close to heat source | 2% | 2% |
| Mattress, pillow | 9% | Misuse of material/product | 2% | 2% |
| Interior wall coverings | 8% | Abandoned material | 1% | 1% |
| Structural member, framing | 8% | | | |
| Rubbish, trash, waste | 5% | | | |
| Elec. wire, cable insulation | 5% | | | |

| Equipment¹⁰ | % | Cause of Ignition | % | %Unconfined¹¹ |
|----------------------------------|----------|----------------------------|----------|---------------------------------|
| None | 60% | Unintentional | 42% | 48% |
| Cooking equipment | 12% | Failure of eq./heat source | 18% | 21% |
| Boiler, furnace, cent. heat unit | 1% | Cause under investigation | 22% | 25% |
| Trash compactor | 1% | Intentional | 2% | 2% |
| | | Undetermined | 3% | 4% |

**Detector Alerted Occupants
(Confined Fires in Non-Combustible Containers)**

| | |
|------------------------|-----|
| Alerted Occupants | 88% |
| Didn't Alert Occupants | 12% |

| All Reported Incidents | # of Incidents | % of Incidents |
|---|-----------------------|-----------------------|
| Fires | 194 | 91% |
| Hazardous conditions (no fire) | 17 | 8% |
| False alarms & false calls | 2 | 0.5% |
| Severe weather & natural disaster calls | 2 | 0.5% |
| Service calls | 1 | 0.5% |

⁸ This field does not need to be completed for confined fires. Certain codes are inferred from the Incident Type.

⁹ 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. These figures were calculated only from those incidents, which were coded as Unconfined fires (Incident Types 111-112 or 120-129). The USFA & NFPA do not recommend inferring codes for Factors Contributing to Ignition from the fires contained to non-combustible containers (Incident Types 113 – 118). This field does not need to be completed for confined fires.

¹⁰ This field does not need to be completed for confined fires. Certain codes are inferred from the Incident Type.

¹¹ These figures were calculated only from those incidents, which were coded as Unconfined fires (Incident Types 111-112 or 120-129). The USFA & NFPA do not recommend inferring codes for Cause of Ignition from the fires contained to non-combustible containers (Incident Types 113 – 118). This field does not need to be completed for confined fires.

| Month | Total Fires | Structure Fires | Vehicle Fires | Other Fires |
|--------------|------------------------|----------------------------|--------------------------|------------------------|
| January | 24 | 21 | 2 | 1 |
| February | 14 | 9 | 2 | 3 |
| March | 21 | 13 | 5 | 3 |
| April | 12 | 6 | 3 | 3 |
| May | 14 | 4 | 8 | 2 |
| June | 16 | 9 | 5 | 2 |
| July | 15 | 9 | 4 | 2 |
| August | 17 | 12 | 3 | 2 |
| September | 10 | 5 | 4 | 1 |
| October | 19 | 10 | 6 | 3 |
| November | 16 | 5 | 9 | 2 |
| December | 16 | 10 | 4 | 2 |

| Day | Total Fires | Structure Fires | Vehicle Fires | Other Fires |
|------------|------------------------|----------------------------|--------------------------|------------------------|
| Sunday | 35 | 14 | 16 | 5 |
| Monday | 31 | 17 | 11 | 3 |
| Tuesday | 24 | 16 | 4 | 4 |
| Wednesday | 15 | 12 | 1 | 2 |
| Thursday | 24 | 16 | 6 | 2 |
| Friday | 35 | 20 | 10 | 5 |
| Saturday | 30 | 18 | 7 | 5 |

| Time | Total Fires | Structure Fires | Vehicle Fires | Other Fires |
|---------------|------------------------|----------------------------|--------------------------|------------------------|
| 00:01 - 04:00 | 28 | 16 | 10 | 2 |
| 04:01 - 08:00 | 23 | 11 | 6 | 4 |
| 08:01 - 12:00 | 26 | 16 | 8 | 4 |
| 12:01 - 16:00 | 36 | 23 | 12 | 4 |
| 16:01 - 20:00 | 45 | 26 | 7 | 8 |
| 20:01 - 24:00 | 36 | 21 | 18 | 4 |

Motor Vehicle Fires

Total: 55

Automobiles: 52 (95%)

2 (4%) of the automobile fires considered intentionally set.

Arson Fires

Total Arsons: 8

Dollar loss: \$2,250

0.1 Arson Fires/1,000 Population

| Situation | Arsons | % Situation | % Arson | Dollar Loss |
|------------------|--------|-------------|---------|-------------|
| Structure Arsons | 6 | 5% | 75% | \$2,250 |
| Vehicle Arsons | 2 | 4% | 25% | 0 |
| Other Arsons | 0 | 0% | 0% | 0 |

No injuries

0.06 Structure arsons/1,000 population

0.02 Motor Vehicle arsons/1,000 population

0.0 Other arsons/1,000 population

Peak Times of Day for:

| Structure Arsons | # | % | Vehicle Arsons | # | % |
|------------------|---|-----|----------------|---|------|
| 12:01 - 16:00 | 2 | 33% | 20:01 - 24:00 | 2 | 100% |
| 16:01 - 20:00 | 2 | 33% | | | |

| Peak Fixed Property Uses for Structure Arsons | # | % |
|---|---|-----|
| 1- or 2-Family homes | 2 | 33% |
| Bar or nightclub | 1 | 17% |
| High/junior high/middle schools | 1 | 17% |
| Church, mosque, synagogue, temple | 1 | 17% |
| Health care, detention, correction, other | 1 | 17% |