Winter Residential Fires

FINDINGS

- Each year, more than a half million winter fires cause $3 billion in property loss, 1,900 deaths, and nearly 8,000 injuries.
- Heating is the leading cause of winter fires, whereas cooking is the leading cause over the entire year.
- January is the peak month for residential fire deaths and injuries.
- Winter months put extraordinary strains on firefighter abilities—more hazardous getting to the fire, frozen water supplies, increased risk of injury and dehydration.

Thirty percent of all fires (543,600 averaged over 1996–98) occur during the winter months from November through February. These winter fires average 8,775 injuries, 1,910 deaths, and $3 billion in property loss each year.

In residences, however, more fires occur in the winter (37%) than in the other two-thirds of the year.¹ As shown in Figure 1, these residential fires are more damaging and deadly than that of all residential fires. This report examines the causes and characteristics of winter fires.

<table>
<thead>
<tr>
<th>MEASURE</th>
<th>ALL FIRES</th>
<th>WINTER RESIDENTIAL FIRES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dollar Loss/Fire</td>
<td>$11,271</td>
<td>$19,469</td>
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<tr>
<td>Injuries/1,000 Fires</td>
<td>48.0</td>
<td>49.1</td>
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<tr>
<td>Fatalities/1,000 Fires</td>
<td>7.7</td>
<td>9.8</td>
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Figure 1. Loss Measures for Winter Residential Fires
(3-year average, NFIRS data 1996–98, all reported fires)
The two leading causes of residential fires in the winter are heating and cooking (Figure 2). This contrasts with the all-year causes where cooking is the leading cause following by heating. The increase in residential heating fires in the winter is not surprising.

Figure 2. Leading Causes of Residential Fires (3-year average, NFIRS data 1996–98)
Nearly 40% of residential fire-related injuries (6,900) and 50% of residential fatalities (1,700) occur between the beginning of November and end of February. Figure 3 illustrates the numbers of deaths and injuries over the year; January is the peak month for both measures.

![Figure 3. Fire-Related Casualties](image)

With the exception of the difference in cause of residential fire, winter fires are not particularly different from those fires that occur throughout the year. There are slight variations, however, in the area of fire origin. As would be expected by the increase in heating fires, chimney fires, for example, increase during the winter months.

**Firefighting in the Winter**

Extinguishing cold weather fires presents unique challenges to firefighters. Snow and ice can impede the response to the fire. Slippery roads and hazardous conditions affect emergency apparatus in the same manner as any other vehicle. Additionally, since establishing an effective water supply is crucial to extinguishing a fire, firefighters might need to search for a hydrant that is not frozen. Once a water supply has been established, hose lines can become brittle and even break in extreme temperatures.

Firefighting is a physically demanding profession, which is exacerbated by cold weather. Firefighters are at increased risk of injury and dehydration during winter operations.
**Examples**

- Two fires ignited by space heaters killed five people in November 2000. Two children were killed when the space heater ignited nearby bedding. In the other instance, a state trooper, his wife, and his mother-in-law died when a space heater ignited nearby materials. ³

- Firefighter efforts in an early-morning residential fire were complicated by temperatures in the single digits. Several nearby hydrants were frozen and spray from fire hoses turned to ice. A woman was killed while she slept. ⁴

- In January 2001, a man burned paper in a coffee can to keep warm. The table on which the can was resting tipped over and ignited a small fire. The man died in his bed from carbon monoxide poisoning. ⁵

**Notes**


