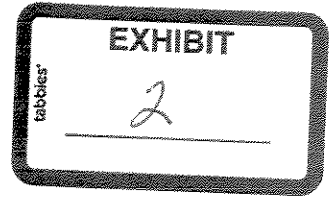


U.S. Fire Administration/National Fire Data Center

# The Dangers of Fireworks



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Homeland  
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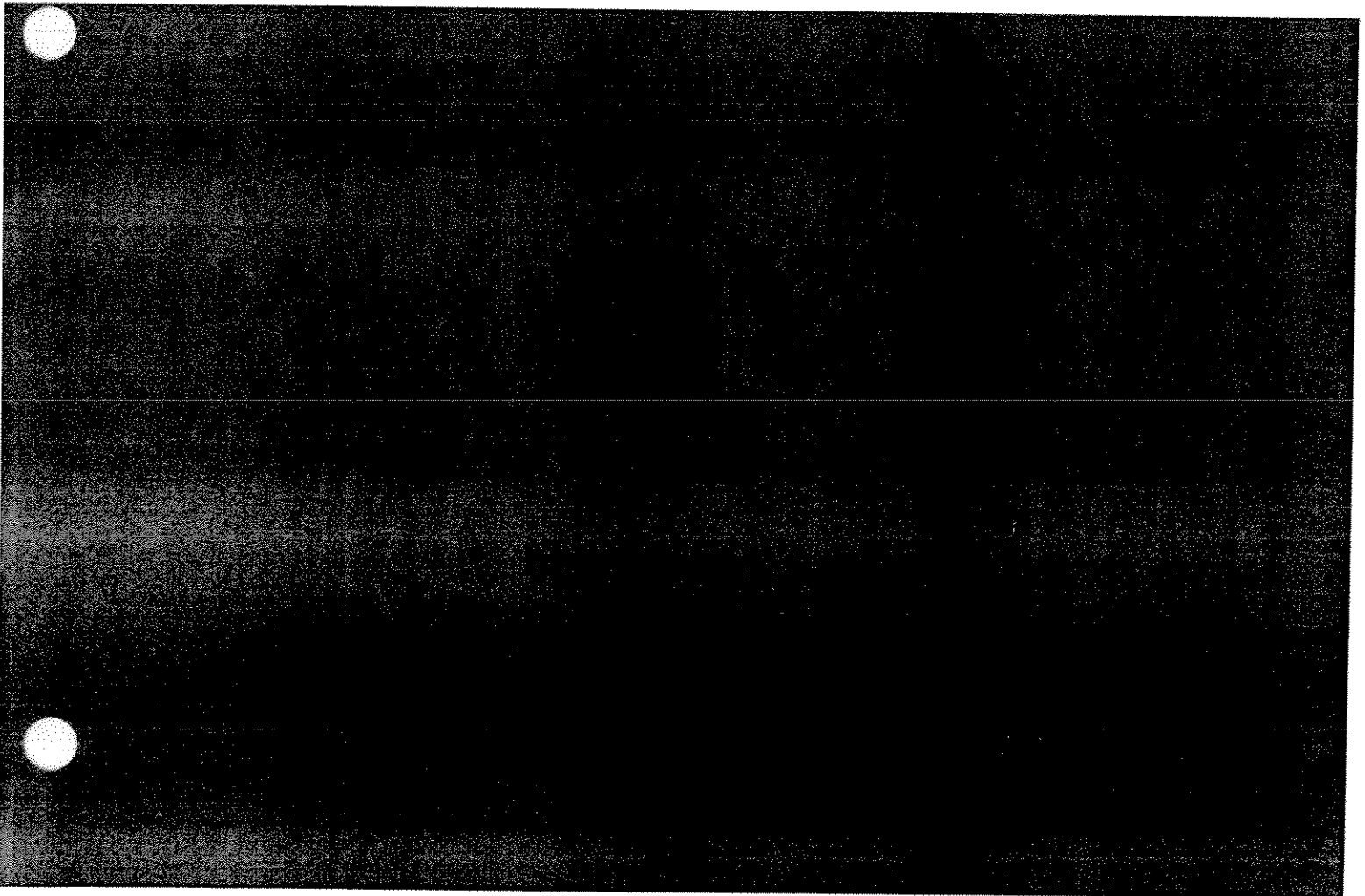


FIGURE 1. STATE REGULATIONS OF  
CONSUMER FIREWORKS

| STATES THAT PERMIT CONSUMER FIREWORKS  |                |
|--|----------------|
| Alabama                                | Montana        |
| Alaska                                 | Nebraska       |
| Arkansas                               | New Hampshire  |
| California                             | New Mexico     |
| Colorado                               | Nevada         |
| Connecticut                            | North Carolina |
| District of Columbia                   | North Dakota   |
| Florida                                | Oklahoma       |
| Hawaii                                 | Oregon         |
| Idaho                                  | South Carolina |
| Indiana                                | South Dakota   |
| Kansas                                 | Tennessee      |
| Kentucky                               | Texas          |
| Louisiana                              | Utah           |
| Maryland                               | Virginia       |
| Michigan                               | Washington     |
| Minnesota                              | West Virginia  |
| Mississippi                            | Wisconsin      |
| Missouri                               | Wyoming        |
| STATES THAT ALLOW ONLY SPARKLERS       |                |
| Illinois                               | Ohio           |
| Iowa                                   | Pennsylvania   |
| Maine                                  | Vermont        |
| STATES THAT BAN ALL CONSUMER FIREWORKS |                |
| Arizona                                | New York       |
| Delaware                               | Massachusetts  |
| Georgia                                | Rhode Island   |
| New Jersey                             |                |

Source: Consumer Product Safety Commission

Previous studies have indicated that state laws regulating the sale of fireworks directly affect the occurrence of fireworks-related injuries. In one state, the number of injuries seen in emergency departments more than doubled following the legalization of fireworks.<sup>5</sup>

### INJURIES FROM FIREWORKS

In 2003, firework devices caused approximately 9,300 injuries, an increase from 8,800 injuries in 2002.<sup>6,7</sup> The vast majority of these injuries are associated with Independence Day celebrations. CPSC estimated that 6,800 people were treated in hospital emergency departments for fireworks-related injuries during the 1-month period surrounding July 4th (June 20–July 20, 2003). There were six deaths from consumer fireworks reported that year.<sup>8</sup>

According to National Electronic Injury Surveillance System (NEISS) survey data, CPSC estimated that nearly half of all fireworks-related injuries (45%) were suffered by children under age 15.<sup>9</sup> Males were disproportionately injured by fireworks (72%) with almost three times as many males as females (28%) injured. The large majority of fireworks injuries occurred with consumer products. CPSC also reported that of the estimated 9,300 fireworks injuries in 2003, only a small number of injuries—100—occurred at public fireworks events.

FIGURE 3. ESTIMATED FIREWORKS-RELATED INJURIES

| Year | Estimated Fireworks-Related Injuries | Fireworks Injury Rate* |
|------|--------------------------------------|------------------------|
| 1991 | 10,900                               | 4.3                    |
| 1992 | 12,500                               | 4.9                    |
| 1993 | 12,100                               | 4.6                    |
| 1994 | 12,500                               | 4.8                    |
| 1995 | 10,900                               | 4.1                    |
| 1996 | 7,300                                | 2.7                    |
| 1997 | 8,300                                | 3.0                    |
| 1998 | 8,500                                | 3.1                    |
| 1999 | 8,500                                | 3.1                    |
| 2000 | 11,000                               | 3.9                    |
| 2001 | 9,500                                | 3.3                    |
| 2002 | 8,800                                | 3.0                    |
| 2003 | 9,300                                | 3.2                    |

\*Injuries per 100,000 people

Notes: Estimates based on 291 fireworks-related injuries recorded by NEISS in 2003.

Sources: Consumer Product Safety Commission, "2003 Fireworks Annual Report," NEISS.  
 U.S. Consumer Product Safety Commission, U.S. population estimates from 1991-1999  
 from <http://eire.census.gov/popest/data/national/tables/intercensal/US-EST90INT 04.php>;  
 population projections for 2000-2003 from <http://eire.census.gov/popest/data/states/tables/NST-EST2003-01.xls>

Even declining trends cannot mask the issue that fireworks remain dangerous. Each year, many people are injured and some are killed by fireworks. The following 2003 deaths illustrate the problems:<sup>11</sup>

- A 2-year-old child died in Florida from smoke inhalation from a fire that was started in the laundry room of a mobile home. The fire started when a 3-year-old child lit combustibles with a sparkler.
- Leaning over a pipe where he placed a commercial-type firework projectile, a 38-year-old man in Iowa was killed when he lit the fuse.
- Attempting to block the wind around a launching tube, an 18-year-old man was fatally injured in Michigan when lighting a mortar-type firework.

#### FIRES CAUSED BY FIREWORKS

The following discussion is based on 2002 National Fire Incident Reporting System (NFIRS, version 5.0) data and reflects injuries, fatalities, and fire loss associated only with the fires caused by fireworks. These losses differ from the figures presented earlier that reflect injuries, fatalities, and property loss caused directly by fireworks.

An estimated 23,200 fireworks fires in 2002 caused approximately \$35 million in property loss and injured 75 persons.<sup>12, 13</sup> No deaths were reported in the NFIRS data. Most fires are clustered around Independence Day, New Year's Eve, and other holidays or celebrations.

Fifty-nine percent of fires caused by fireworks occur around the Independence Day holiday on July 4th (Figure 4), often in open fields or vacant lots. As such, the materials most commonly ignited (68%) by fireworks are organic materials such as grass and trees. Grass alone was the first material ignited in 47% of all fireworks fires.<sup>14</sup> Because these types of fires are located outdoors, they have a relatively low property loss (Figure 5).

## Notes:

1. Fireworks Publication #12, Consumer Product Safety Commission, March 2004, <http://www.cpsc.gov/CPSC/PUB/PUBS/012.pdf>.
2. U.S. Consumer Product Safety Commission, Office of Compliance, Summary of Fireworks Regulations, 16 C.F.R. Part 1500 & 1507.
3. Fireworks Publication #12, loc. cit.
4. "CPSC Holds Fireworks Safety Press Conference on Mall in Washington," Press Release, CPSC, June 28, 2000, <http://www.cpsc.gov/cpsc/pub/prerele/prhtm101/011179.html>.
5. Centers for Disease Control and Prevention, "Serious Eye Injuries Associated With Fireworks, United States 1990-1994," *Morbidity and Mortality Weekly Report*, 1995; 44: 449-452.
6. Michael A. Greene and James Joholske, "2003 Fireworks Annual Report, Fireworks-Related Deaths, Emergency Department-Treated Injuries, and Enforcement Activities During 2003," Consumer Product Safety Commission.
7. One hundred people died and 200 were injured in a nightclub fire in West Warwick, RI, ignited by nonconsumer fireworks. These numbers are not included in this report.
8. Michael A. Greene, loc. cit.
9. Idem.
10. Monique Stuart, "Fireworks Sales," *The Washington Times*, <http://washtimes.com/culture/20040616-094306-2607r.htm>.
11. Michael A. Greene, loc. cit.
12. Loss estimates are based on 2002 National Fire Incident Reporting System (NFIRS) data and national residential structure fire loss estimates from the National Fire Protection Association's (NFPA's) *Fire Loss in the United States During 2002*. Fireworks fire loss estimates are rounded as follows: fires to the nearest 100 fires; injuries to the nearest 25 injuries, and dollar loss to the nearest \$million.
13. Fireworks fire loss estimates are based on the total number of NFIRS fires in 2002 for which the heat source was known and on NFPA's *Fire Loss in the United States During 2002*. Approximately 42% of fires in NFIRS reported a heat source. If the fireworks estimates were based on all reported fires, including those with unknown heat sources, the estimates of firework fire losses would decrease to 9,700 fires, 50 injuries, and \$19 million in dollar loss.
14. Distribution statistics are based on data from the NFIRS 2002. At the time of this report, NFIRS continues to transition from version 4.1 to 5.0. Due to issues related to accurately converting version 4.1 data to version 5.0, this report is based on data reported only in version 5.0.
15. Statistics for ignition factors reflect those fires for which a factor was noted as contributing to the ignition of the fire. Sixty-five percent of firework-related fires have a factor contributing to ignition, 18% indicate that no factor contributed to ignition, and 17% had no factor specified.