

U.S. Fire Administration/National Fire Data Center

# Nightclub Fires in 2000

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**FEMA**



## Nightclub Fires in 2000

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### FINDINGS

- Among all structure fires, nightclub fires in the United States are proportionately few in number (0.3%). However, maximum or over-capacity crowds at popular nightclubs create the potential for high numbers of casualties in the event of a fire.
- Local jurisdictions that do not routinely inspect nightclubs or are lax in enforcing existing safety regulations, coupled with the exemption of small clubs from installing sprinkler systems, all increase the potential for a fatal nightclub fire.
- A common safety violation at nightclubs is locked or blocked exits.
- The most common causes of fire at nightclubs and bars are incendiary, electrical, cooking, and smoking. Incendiary fires at nightclubs are nearly twice as frequent as those in all structures.

### OVERVIEW

This paper examines the incidence and characteristics of nightclub fires. In February of 2003, a fire in The Station nightclub in the Town of West Warwick, RI killed 100 people. This tragic fire focused national attention on fire safety at nightclubs and other small venues and caused local fire jurisdictions to reevaluate their fire safety regulations.

Based on data from the National Fire Incident Reporting System (NFIRS),<sup>1</sup> more than 1,500 nightclub and bar fires<sup>2</sup> caused \$46 million in property damage in 2000.<sup>3</sup> These constituted only 0.3% of all structure fires in 2000.<sup>4</sup> Due to the relatively small frequency of nightclub fires the statistical estimates in this report may have considerable margins of error. Additionally, many small fires, such as cooking fires or small fires caused by smoking may be extinguished by nightclub staff and not reported to the local fire department. Although only a small proportion of annual fires, nightclub fires have the potential to cause high fire casualties due to maximum or over-capacity crowds on weekends or during live music performances. In the event of a fire, a full-capacity crowd may have difficulty completely exiting the building, trapping some patrons inside.

### FIRE SAFETY CODES

Following the Rhode Island nightclub fire, many local jurisdictions across the country reviewed their fire safety codes or increased inspections of local nightclubs to enforce existing codes. These typically included sufficient egress, illuminated exit signs, occupancy limits, and requirements for sprinkler systems for clubs based on size and occupancy. Implementation of these regulations by nightclub owners are heavily dependant on the frequency of inspections by local authorities and the severity of penalties involved for failure to comply.

Anecdotal evidence from a variety of local news reports captured similar themes regarding the state of fire safety in local clubs.<sup>5</sup> Several local news stories reported cases of clear disregard for safety on the part of some nightclub owners. Examples often include exit doors that were blocked by equipment or storage, locked exit doors (often to keep patrons from sneaking in to avoid cover charges or entrance lines), exit hallways used as storage, missing or unlighted exit signs, or owners who routinely allowed the club to exceed occupancy limits.

## EGRESS AND EXIT SIGNS

The most tragic nightclub fires are often caused by lack of sufficient egress, such as exits or fire escapes. Human nature compounds the problem of evacuation during a fire, as most patrons will attempt to leave out of the same door they entered, rather than looking for an alternate escape route. Therefore, even if a building has a sufficient number of exits for an evacuation, the majority of the crowd may rush for the main entranceway. Sometimes the patrons become packed so tightly in the main entranceway that the fire service cannot enter.<sup>6</sup> In the case of The Station fire, several people fell in a pile in the main doorway and were unable to free themselves, trapping everyone behind them inside. Many of the victims were later found in the area just inside the main doorway. Although not fire related, 21 people were killed at the E2 club in Chicago in February 2003 as the crowd panicked when a fight broke out. The patrons crammed into a single stairwell exit, trampling or suffocating patrons who became trapped at the bottom.

## AUTOMATIC EXTINGUISHING SYSTEMS

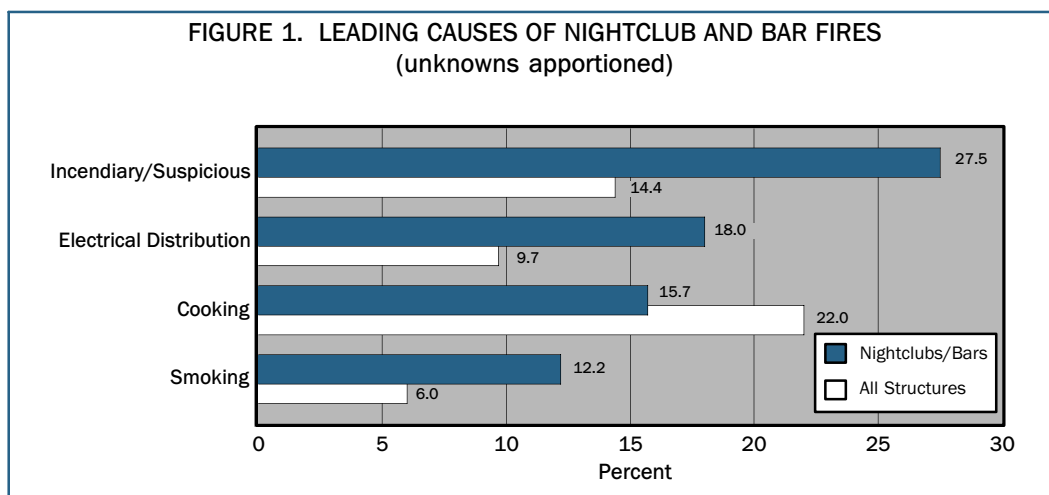
Local fire safety regulations may or may not require the presence of automatic extinguishing systems (AESs)—typically automatic sprinklers—for nightclubs. These regulations are often based on maximum occupancy or floor space. Many nightclubs, including The Station in RI, are small enough that AESs are not mandatory. Based on 2000 NFIRS data, only 13% of nightclub or bar structure fires occurred in a building with an AES.

## PATRONS

The type of crowd involved in a fire can significantly influence the possibility of casualties. Patrons who have been drinking alcohol during the evening may not be able to respond quickly or be able to recognize the safest exit from the building. As with bars, nightclubs often have patrons who smoke, and several nightclub fires in 2000 were started with lighters, matches, or smoking materials. Accidental smoking-related fires accounted for 12% of nightclub and bar structure fires.

## CAUSES

The top four causes of nightclub and bar fires are shown in Figure 1. The distribution of these fires is quite different from that of all structure fires. Incendiary, electrical, and smoking fires occur in nightclubs and bars at approximately twice the rate of all structure fires. Cooking fires, in contrast, occur proportionately less often in nightclubs and bars than in all structures, which is significantly weighted by residential cooking fires.

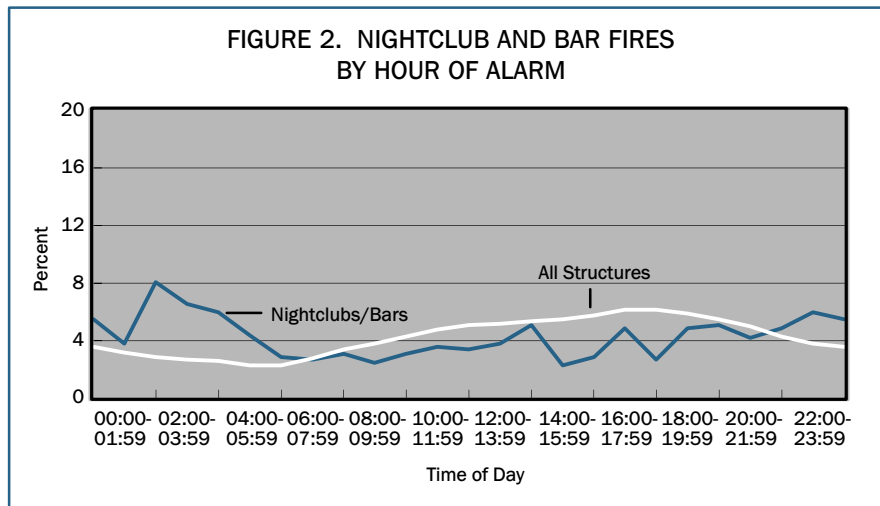


Source: NFIRS

Approximately 27% of incendiary fires are set against the exterior wall of the building and 10% occur in the bathroom inside the building. Of all locations where these incendiary fires occur, 48% are started by cigarettes or other smoking material. Where the cause of fire was electrical, the leading types of equipment involved were electrical wiring and lighting, which logically corresponds to the significant use of live music equipment and dance floor lighting. The leading types of equipment involved with cooking fires were deep fat fryers and cooking ranges.

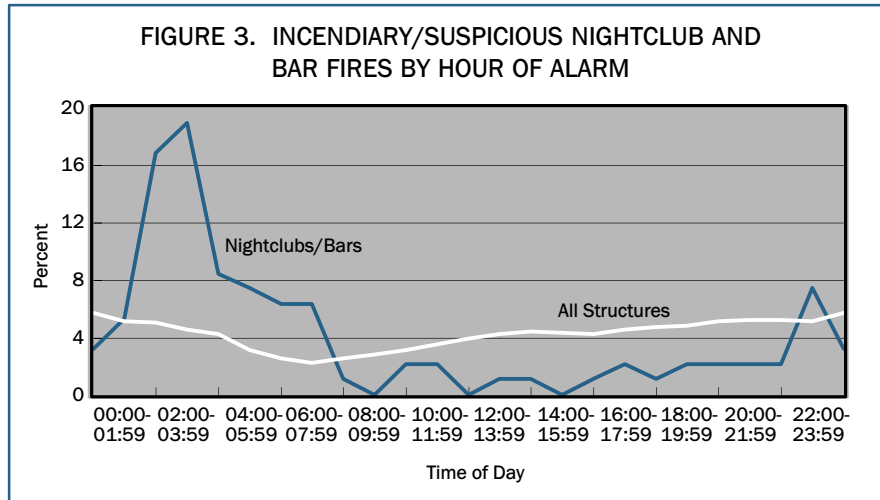
## HOURLY PROFILE

Figure 2 shows that fire incidence for nightclubs and bars peaks in the early morning hours, with nearly 15% of nightclub and bar structure fires occurring between 2 and 4 a.m. This correlates in part to the late-night operating hours of these establishments and contrasts with the hourly incidence of all structure fires, which tends to peak in the early evening.



Source: NFIRS

Looking at the hourly distribution of incendiary and suspicious fires (the leading cause of nightclub and bar fires), the contrast with all structure fires is notable (Figure 3). Over half of incendiary or suspicious nightclub and bar fires occurred between midnight and 5 a.m.



Source: NFIRS

## CONCLUSION

The relative infrequency of nightclub fires may cause public awareness for the need for fire safety to subside. Nightclubs pose a challenge for fire prevention and public safety. Their style of entertainment, late-night operating hours, and activities of their patrons, including drinking and smoking, make these structures unique. Because many clubs are relatively small in area, they may be excluded from the mandatory installation of automatic sprinkler systems. Additionally, nightclubs that draw maximum capacity crowds can lead to a high number of casualties in the event of a fire. Insufficient egress, the natural urge of the crowd to all leave by the same door from which they entered, and individual nightclub owners who ignore safety regulations by blocking or locking fire exits can lead to high numbers of casualties in the event of a fire. The safety of local nightclubs is often dependent on the frequency of inspections by local safety officials and the significance of the sanctions imposed for noncompliance.

To request additional information, comment on this report, or review the detailed methodology used in this analysis, visit <http://www.usfa.fema.gov/feedback/> .

**Notes:**

1. At the time of this report, NFIRS was in the process of transitioning from version 4.1 to 5.0. Approximately 79% of the fire incident data for 2000 was reported to the USFA in NFIRS 4.1 format and converted to 5.0.
2. NFIRS 5.0 uses the same property use code for “bars” and “nightclubs.” All proportional statistics in this report combine these two establishments.
3. National estimates are based on data from NFIRS and the National Fire Protection Association’s (NFPA’s) annual survey, *Fire Loss in the United States*.
4. Structure fire statistics in this report exclude mobile structures.
5. Representative stories: “Nightclub Safety Codes,” KAKE (Wichita, KS), January 14, 2004; “Bonne Terre to review safety codes on building overcrowding,” *Daily Journal* (Park Hills, MO), January 14, 2004; “Session To Outline Changes in State Fire Code,” *The Westerly (RI) Sun*, December 31, 2003.
6. Kirstner, Danny (Garland TX Fire Dept.), *Fire Engineering*, January 2004, p. 49.