

## **Surviving fires in closed spaces: What makes it a disaster?**

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On New Year's Eve in Crans-Montana (Switzerland), what began as a crowded celebration at the Le Constellation bar - a popular venue in the Swiss Alps ski resort - turned into a devastating disaster in the early hours of January 1. During the festivities a fire erupted inside the packed bar, spreading with terrifying speed through the interior and trapping many revelers as smoke and flames overtook the space. Within moments, the scene shifted from celebration to chaos, with people struggling to escape as the blaze became unsurvivable. The fire ultimately claimed about 40 lives and left well over 100 people injured, many seriously, making it one of the deadliest public-space fires in recent Swiss history.

In the following article, a short synthesis and analysis of the survivor testimonies and eyewitness accounts that have been publicly reported so far (news interviews, broadcaster packages, wire-service reporting, and survivor statements quoted in the media) is offered.

These testimonies are mainly private, not clinical, but the accounts that are available on the internet already converge on a set of very consistent patterns.

What survivors' accounts repeatedly describe is that – due to the unknown speed and behavior of the fire - they were not aware of the danger of the fire that “happened in seconds” and confronted them with a fast transition from normal to unsurvivable

### **Sudden ignition and unexpected behavior of flames and heat**

Across outlets, survivors describe a sudden ignition near the ceiling and an almost immediate escalation: flames racing overhead, darkness, heat, and then dense black smoke that rapidly removed visibility and breathable air - what fire science would call a “flashover/rapid fire development” pattern in a confined space with combustible interior materials. This phenomenon is well-known and certainly also feared by fire rescue personnel.

What we learn from these accounts on the development of the fire is that in crowded indoor venues, smoke is the primary killer and time-to-incapacitation can be extremely short. “A little fire” can become “no survivable atmosphere” in under a minute when ceilings/wall linings are combustible and ventilation is poor. Being unfamiliar with the kind and type of the danger is critical in the chances one has to survive this kind of fires.

### **Disorientation + bottlenecks: the exit problem dominates the narratives**

It is important to note that not only the physical dynamics of the fire played a role, but also the **functioning of the human brain in life-threatening situations**. As described below, many survivor and eyewitness accounts focus less on the flames themselves and more on the inability to escape: a narrow exit route, people surging toward the same path, individuals falling, being separated from friends, and having to make split-second decisions such as choosing between stairs or windows.

Investigations reported so far likewise concentrate on whether exits were sufficient and accessible, and whether required safety checks had been properly carried out. What this

highlights is a well-documented phenomenon in emergencies: under extreme stress, most people instinctively revert to the **familiar route**, typically the way they entered. When that route is narrow, obstructed, or poorly managed, this instinctive behavior can lead to crowding, pile-ups, and crush dynamics that may prove fatal even before direct exposure to fire or smoke.

### **“I only survived because...”: rescue-by-others is a recurring theme**

A striking proportion of survivor stories include a named or unnamed “someone” who pulled them, guided them, or went back in - bystanders, friends, staff, or first responders. Swiss public broadcasting highlighted these risky rescue acts and how close many rescues were to failing.

The lessons from this is that the appearance of spontaneous rescuers is unpredictable in disasters but their sudden appearance and rescue behavior makes a huge difference in the experience of those who survived. Systems should assume these spontaneous rescuers will suddenly appear unexpectedly and save lives but this should not lessen the importance of making egress, lighting and signage visible and providing staff a robust training.

### **The “moral injury” layer: anger, blame, and the feeling of preventability**

As reporting moved from “what happened” to “how could this happen,” survivor and family narratives shifted toward preventability: questions about indoor pyrotechnics, combustible ceiling treatment, overcrowding, and inspection gaps, plus the broader debate about institutional responsibility (owners vs. authorities).

Attention has also turned to the owners and operators of the bar, as media reports and early investigative findings have raised serious questions about the management of safety measures. According to reporting, concerns have emerged regarding fire-safety compliance, including the condition and accessibility of exits, crowd management practices, and whether required inspections and preventive measures were consistently upheld. While formal responsibility has yet to be fully established, these reports have fueled public scrutiny and underline the possibility that lapses in safety oversight may have contributed to the severity of the incident.

We learn from this that when an event *feels preventable*, trauma is often compounded by anger and mistrust, which can complicate grieving, recovery, and cooperation with investigations. Communication and transparency become part of harm reduction.

### **After the escape: burns, airway injury, and long-tail psychological effects**

Public reporting also emphasizes the scale of severe injuries and the long medical trajectory (ICU capacity, transfers, long rehabilitation). Survivors’ accounts frequently include shock, fragmented memory, survivor guilt, and fear responses tied to smoke, crowds, music, or enclosed spaces.

Beyond the immediate toll of the disaster, the consequences for severely injured and burned survivors - and for their families - will extend far into the future. Many face prolonged hospitalizations, repeated surgeries, rehabilitation, and chronic pain, alongside permanent physical impairments and visible scarring. Psychological trauma, including post-traumatic stress, survivor’s guilt, and anxiety, is widely reported after such events and often persists for

years. Families are confronted with long-term caregiving responsibilities, financial strain, and the emotional burden of supporting loved ones whose lives have been irreversibly altered. These challenges underscore that the impact of the fire cannot be measured only in immediate casualties, but in the enduring human cost borne by survivors and those around them.

For this kind of fire disasters, “survival” is not the end point. Expect a multi-year recovery arc—physical (scar management, reconstructive pathways, pain, sleep) and psychological (PTSD, complicated grief, moral injury, identity disruption).

### **What these testimonies collectively teach us**

The disaster is “made” long before ignition

The ignition source matters, but testimonies consistently point to the same underlying risk stack:

- celebratory ignition sources used indoors (reported as sparklers/pyrotechnic candles)
- rapid flame spread along ceiling material (reported as foam/soundproofing)
- crowding + constrained egress
- governance gaps (inspection intervals, enforcement)

**Takeaway:** Catastrophic club/bar fires are rarely “one bad moment.” They’re usually a chain of small tolerances that line up.

### **Human behavior in fire is remarkably consistent - and design must match it**

Survivors describe predictable behaviors: “follow the crowd,” “go where you came in,” “freeze then run,” “try to find friends,” “go back for someone.” This is not stupidity; it’s normal human response under acute threat.

These reactions are often misinterpreted after the fact as poor judgment, but they are in fact normal, hard-wired responses to acute threat. Under extreme stress, the brain prioritizes speed, familiarity, and social bonds over abstract risk assessment, narrowing attention and limiting the ability to process new information. In such conditions, people do not behave as isolated, rational actors; they behave as social beings trying to survive together, which can tragically amplify danger when environments are not designed or managed with these realities in mind.

**Takeaway:** Prevention is not only about rules but also about designing environments that remain safe even when people behave like people.

### **Information ecology becomes a second disaster**

Public accounts show how quickly narratives proliferate (cause, locked doors, responsibility). Even when investigations are ongoing, the social environment fills the vacuum. In the absence of confirmed information, explanations about causes, locked or inaccessible doors, and questions of responsibility circulate almost immediately, shaped by fragments of testimony, prior assumptions, and emotional urgency. Even while official investigations are still ongoing, the social and media environment tends to fill the informational vacuum, often solidifying

provisional interpretations into seemingly established facts. This process is not driven by malice, but by a collective need to make sense of shock and loss; nonetheless, it can complicate investigations, polarize public debate, and add pressure on survivors and families whose experiences are still unfolding.

**Takeaway:** Authorities and institutions need fast, humble, evidence-bounded communication: what is known, unknown, what is being done, what support exists—repeated often.

### **Practical lessons (policy + venue safety + psychosocial response)**

#### **Venue safety and regulation (high-confidence lessons)**

Beyond the immediate response, the incident underscores the need for clear preventive measures aimed at reducing the likelihood and severity of fires in crowded indoor venues. The following points outline key regulatory, architectural, and operational safeguards that are critical to preventing similar disasters.

- **Ban or strictly control indoor pyrotechnics** in crowded venues; require explicit permitting and risk assessment.
- **Strict standards for interior linings** (especially ceilings): fire rating, smoke toxicity, installation verification.
- **Egress capacity and reliability:** sufficient width, outward-opening doors where required, clear signage, emergency lighting, and zero tolerance for blocked/locked emergency exits (with meaningful enforcement).
- **Inspection cadence + accountability:** if checks lapse, the system should fail safe (e.g., automatic reinspection triggers, temporary closure mechanisms).
- **Crowd management:** enforce capacity, staff training for evacuation leadership, and drills appropriate to the venue type.

#### **Emergency response and medical system lessons**

For emergency responders and health care systems: Plan for burn mass-casualty incidents: triage, airway management, rapid transfers, surge ICU capacity, cross-cantonal coordination. (Reporting already notes heavy hospital load and transfers.)

- **Mass-casualty burn triage:** Burn incidents require rapid differentiation between survivable and non-survivable injuries, prioritizing patients with airway involvement, inhalation injuries, and large but treatable burn surfaces. Triage protocols must be adapted specifically for fire and smoke exposure, not just trauma.
- **Early airway and smoke-inhalation management:** Many victims of indoor fires deteriorate hours after exposure due to airway edema and toxic inhalation. First responders and emergency departments must anticipate delayed respiratory failure and secure airways early, even when patients initially appear stable.
- **Rapid inter-hospital transfers:** Severe burn care is highly specialized and concentrated in a limited number of centers. Large-scale incidents demand pre-

established transfer pathways, including rapid decision-making on which patients require immediate relocation to burn units, sometimes across cantonal or national borders.

- **Surge ICU and operating capacity:** Burn victims often need prolonged intensive care, repeated surgeries, and strict infection control. Hospitals must plan for sudden surges in ICU beds, operating rooms, staffing, and supplies, potentially over weeks rather than days.
- **Cross-cantonal coordination and load balancing:** Reporting already indicates that local hospitals were quickly overwhelmed, requiring redistribution of patients. Effective coordination between cantons, emergency services, air rescue, and hospital networks is essential to prevent bottlenecks and ensure equitable care during the acute phase.

### **Psychosocial and community recovery lessons**

In parallel with technical and regulatory lessons, the aftermath of such events highlights the importance of sustained, survivor-centered support. The following points address the psychosocial and societal responsibilities that arise once the immediate emergency has passed.

- Provide immediate family liaison + long-term psychosocial follow-up, with special attention to survivor guilt, bereavement, and anger/mistrust dynamics.
- Protect against “secondary harm”: chaotic information, insensitive imagery, and adversarial processes that re-traumatize survivors.
- **Long-term trauma care:** Many survivors experience delayed or prolonged psychological effects, including post-traumatic stress, depression, anxiety, and sleep disturbances. Access to sustained, specialized trauma-informed mental health care is essential, often extending years beyond the event.
- **Reconstruction of identity and social life:** Severe burns and life-altering injuries can profoundly affect self-image, relationships, and social participation. Psychological recovery involves not only symptom reduction, but support in rebuilding a sense of identity, dignity, and belonging in everyday life.
- **Support through life transitions:** Recovery is not linear; setbacks often occur at anniversaries, during legal proceedings, or at medical milestones such as surgeries or rehabilitation phases. Psychological support must be flexible and available across these critical moments, rather than limited to the immediate aftermath.

### **Conclusion distilled from the testimonies**

The disaster in Crans-Montana could be summarized in one sentence: In high-density leisure spaces, fire safety is fundamentally an exit-and-smoke problem - and survivors’ stories show that survival hinges less on individual bravery than on whether the environment was built and governed to remain survivable for the first 60–120 seconds.