

**Killer Show; The Station Nightclub
Fire, America's deadliest rock
concert**

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Introduction:

The main purpose of this report is to point out the issues which cause the structure to be unsafe against fire and to explain the possible solution for it. This is done by observing the fire incident happened in the station night club at West Warwick, Rhode Island, back in February 2003. The building construction field is vast. Buildings are constructed on basis of different standards which are set after experiences and researches done by engineers and experts. The main aim of such standards are to provide safety to the residents, and occupants of the building. Depending on occupancy of building, type buildings are either classified as residential-buildings, educational-buildings, commercial-buildings, industrial-buildings, and hospitals. There are different standards of building construction and safety for all these types of buildings, which are make sure by authorities before use of building. Building departments are responsible to maintain those standards under the light of the building and fire code regulations.

Buildings can be unsafe against the applied load, any disaster and fires. Presently, the main focus is on fire, how it may occur, what are its impacts on building and lives of people, rules and regulations/standards for fire resistant buildings and improvement in standards on basis of fire events happened. Building codes are improved with time after investigating these reasons and impacts of events. Another safety concerned matter is the legal occupancy of a building. Every building has its permitted capacity of occupants, which vary with type of building, its use and also the plan and area available in the building.

Fire in buildings can be caused by number of reasons, mainly by heating, electrical equipment, faulty wiring and flammable materials used for building construction. In present study, the main cause of fire was electrical equipment which caused fire (by flames) and flammable material burned so fast that, it leads to set whole building on fire and everything turned in to ashes. 100 people were dead, some got injured and many of them vacated the building. It shows, even if electrical equipment produce flame, the building material should be fire resistant. Another reason of loss of lives was the legal occupancy of building. The number occupants present in the building were above the legal number of occupants of such building. Building can only be safe, when safety rules and regulations building construction and maintenance are implemented strictly.

Description:

WHAT BOOK did you read (give a full bibliographic citation, Attach after report as an appendix)? WHAT HAPPENED in this book? WHAT was built, WHERE, WHEN? Give a short summary of the structures)/city part/city and its intended functioning.

For case study of fire event, the book consulted here is Killer Show: The Station Nightclub Fire, America's Deadliest Rock Concert written by John Barylick (Barylick 2012). This book covers one of the deadliest fire events in the history of United States of America at West Warwick. This fire was the fourth-deadliest at a nightclub in U.S. history, and the second-deadliest in New England, surpassed by the 1942 Coconut Grove fire which resulted in 492 deaths (Globe 2012). West Warwick is located at geographic center of America's smallest state known as Rhode Island. The building which was night club called "The Station" when the event occurred, was located at 211 Cowesett Avenue. The Station of the nightclub was a single-story wood frame building that had a small basement with a footprint approximately about 4484 square ft.

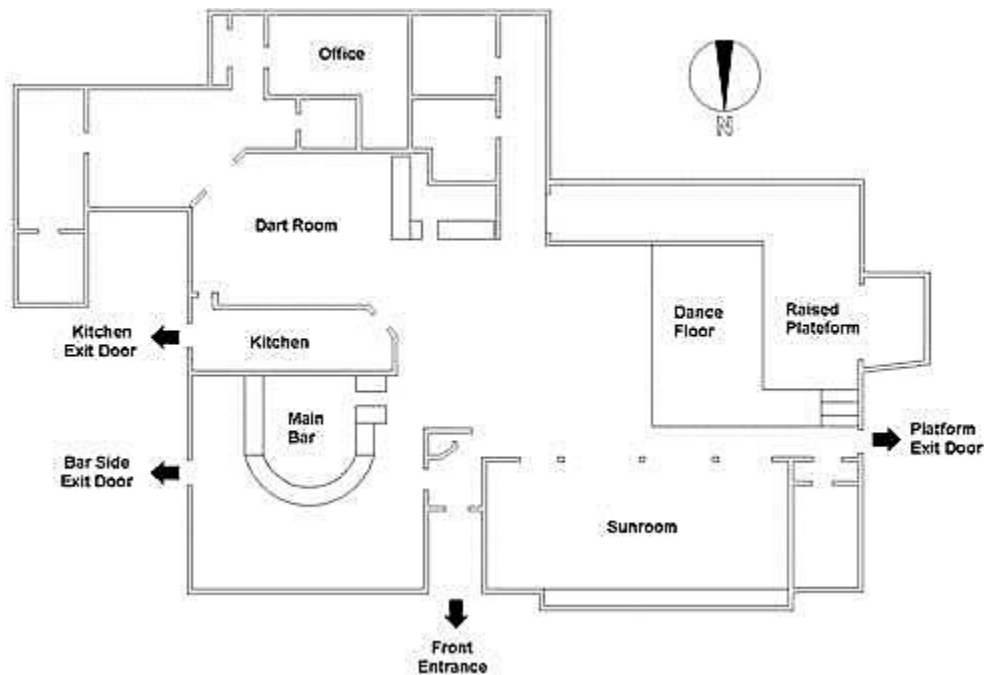


Figure 1: Plan of the building (2003)

The building was constructed back in 1946 according to the reports as a night club named as the nightclub (originally named Casey's Inn) (Grosshandler et al. 2005). In the year of March /1972,

the building was damaged by a fire, which lead firefighters to cut holes in the roof. The building sustained the fire. Later when the building was sold and permit work was done, the roof fire damage repair wasn't mentioned. It had been reported that the smoke was stained and remained there in the building till the date of the event of 2003. In 1974, it was reopened as restaurant, later in 1985 it was converted to pub. In 1991 it was reopened as night club. Owners changed thrice from 1991 to 2001, and the present owners on the time of event were Michael Derderian and Jeffrey Derderian. The walls and ceiling of the building was sound proofed by using polyurethane foam which is highly flammable.

From the history of building and its use, the main aim of the building structure was the area of gathering of people for multipurpose like dinner, party and meetings. In present case the building was serving as night club. The legal capacity of The Station was documented wrong in legal papers of building. On the night of the event there was a performance of America's famous hard rock band "Great White", which attracted many people and there were tickets sold out and the club was packed. The fire began as the pyrotechnics were used during the show of the band, the foam-filled parts of the stage walls and ceilings were ignited and scattered rapidly over the dance floor along the ceiling line. Within a minute, the smoke was visible at the exit window, and in less than five minutes, the fire burst through a section of the building. The escape from the nightclub was delayed by crowding at the main entrance to the hotel. A hundred people were killed in the blast. Dozens injured and escaped the club without any damage.

Impacts of the fire:

WHAT were the impacts of the fire? How did it impact the lives of people at the location where the fire happened! How did it impact the structure of the building, the city/State where it occurred?

During the time of the fire there were approximately 465 people present in the club. The licensed capacity of the club was for 404. Hundred people were died in the fire, two hundred and thirty people got non-fatal injuries and 135 people vacated the club safely. This event left trauma to the injured, non-injured people due to shock and the families of died people. Many injured people were burned up to different levels. This tragic event left some physically scarred but mentally strong. Some of serious injured remain ravaged by post-traumatic stress syndrome. Some of the specific persons, resilience in the aftermath of this tragic even has been completely

unpredictable. Even though, some have bounced back, but this event will remain the single defining moment of their lives.

The tragic event of fire not only took lives, and left traumas on people but also destroyed the structure of the building. Main roof of the building was collapsed after fifty minutes when the fire started. Emergency services responded within 4-5 mins of the fire. Few of the dead bodies were removed from the site which were under the collapsed roof. The fire and the resultant structural damage were primarily confined to single leveled floor, wood-framed, public and commercial buildings of relatively modest size approximately (412 m²)(4484 ft.²). The structure was facing north, at the left rear of a roughly rectangular entrance at the southwest intersection of Cowesett Avenue and Kulas Road. The State Fire Marshal and Medical Examiner staff made their best attempts during the incident. But the event left so many questions for the authority and management of the city and the state. How all the illegalities were allowed? All such like questions were investigated and concerned people were charged by the court.

Most important factors influencing the fire and lessons learned:

WHAT were the most important factors that led to the fire and loss of lives? Consider human and social aspects of the decisions made, existing laws/regulations/requirements in place at the time of the fire, business practices, and ethics.

There were several factors influencing the fire, the main factor was the structure stability and use of materials in the building. Neighborhood were disturbed from the music and noise produced in the night club and used to ask the owners do something about it. Some reports also mentioned that they reported against the stations several time. In order to overcome this issue, the owners visited the neighbor's and instead of ensuring them that they will take suitable steps to reduce noise, they tried to negotiate. They settled in a deal of buying soundproof foam which the owners were going to place on the walls in order to insulate the sound produced in the club. This was huge mistake and worst decision of mutual interest of the owner and the neighbor's; the foam was made up of polyurethane. This foam is defined as solid gasoline as it is highly flammable. This foam was placed on walls of the stations. Even after several inspection of the safety measurement authorities this sound insulation material was ignored. Another main factor was illegal use of pyrotechnics, unsuited to the venue, by unlicensed personnel. Pyrotechnics when produced flame, it touched the foamed wall and set the wall on fire, which turned to be

uncontrolled fire in seconds. There were no safety devices such as automatic sprinklers in the building. The Station was legally required to have a sprinkler system but they did not had it (Arsenault 2007).

Illegal overcrowding by owners was another issue which cause high number of deaths and injuries. On the event night there were 465 people inside the building which was greater than the licensed capacity of the building. This licensed capacity was already increased by the respective fire inspector illegally. The Rhode Island state fire code mandates that places of public assembly provide a specified number of square feet per occupant, depending upon how that space is used. If there are tables and chairs, the number of square feet is higher (and, hence, fewer people permitted); if the area is clear of obstructions, less space is required for each occupant. In 1999, the fire inspector quoted the capacity of 258, later on it was increased to 317 by mentioning that chairs and tables are removed, the calculation allowed seven square feet per standing-room patron. Two months later, the building's limit to 404 occupants quoting, "when all tables and chairs are removed from all areas," so long as a uniformed firefighter was privately hired by the club for all such events. (Nowhere does the fire code allow for relaxation of its limits when firefighters are present.) This time his calculation allowed only five square feet per person by designating the entire building as standing room. This was the physical equivalent of fitting 404 people onto half the surface of a high-school basketball court.

Other factors were lack of training for club employees, design of entranceway with pinch point inhibiting rapid egress, manufacturers' failure to warn of their products' foreseeable misuse, promoters' failure to observe hazards presented by the Great White tour in previous appearances.

Relationship to builders, place and time:

WHAT lessons did you learn from this book? How do they relate to existing buildings and building codes? How are these lessons used to design, build, and operate current buildings? HOW did the built environment influence survival in positive and negative ways? HOW innovative was the design of this particular structure(s), in terms of its methods and/or materials of construction, in terms of its environmental social impacts, and in terms of its use? Did it function in the way in which it was intended?

This event left scars to many but gave lesson to the authorities of the state, to builders, to owners, businessmen, workers and all the people concerned to ensure the safety. Being an authority of the state, it is its responsibility to implement the codes/laws strictly and make sure that they are being followed strictly. There should be no compromise on laws. Being a builder, one should make sure of using suitable and good quality material at suitable place. The use of material in the building caused the high fire rate in present case. Being a businessman, like the owners of the club, there should not be anything important than putting human life at risk by taking steps which are beneficent for business. The use of foam as sound insulation material was cheap and easily doable, therefore it was preferred. Being a person inspecting sites for safety, one should not compromise on safety codes. The building safety codes should be modified by learning from such events on basis of materials being used, emergency services and building occupancy capacity. Existing buildings should be modified if any changes are needed according to updated code of conduct. For new building designs, the design should be such as that the safety exits are provided at good locations, materials being used for construction is inflammable or is highly temperature resistant, and to design emergency services such as fire alarm, auto water sprinklers are installed. In public buildings signs of safety should be present and safe fire exits should be provided.

The design of the building of the station was old. Reports described that there were three doors under use but mainly crowd approached to entrance door at the time of fire. There wasn't enough to hold such a big crowd to exit safely. For fire safety exit, the design has to provide enough space for such public buildings. Secondly the materials used in the building was the same as of used when constructed and effected by the fire 1972. Use of low cost and quality materials applied for maintenance later by the owners whoever bought the place. The design wasn't modified later and every new owner using limited resources maintained the structure without

taking any safety measurements of the building. The use of such type of building for big crowd was mistake itself. Main design of building was to hold 200-250 persons, later on the increase in illegal capacity without any significant changes in plan of the building which had to be changed in order to fulfill the main function of the building. When the tragic event of fire occurred, there was smoke all over the building, suffocation caused many deaths, and the survivors faced negative impacts on their lives later on after the event.

Conclusions:

Did YOU like this hook? Would you recommend it to others? Produce a review of it as an object of entertainment. Produce a review of a book in a magazine or newspaper as an example.

After reading the book, it is concluded that new buildings construction should be done under the light of above learned lessons. For a similar building such as the stations is suitable for restaurant. Restaurant do not produce sound which disturb neighbors and building plan is also perfect for it. Also, the restaurants are less crowded than that of night clubs. Presently there are many heat and sound insulation materials are available in market. For such new buildings as in the case study, these materials are perfect for safety.

The author explained every part of the event in detail and in an investigative way, which develop the interest of the reader in very positive way. The book covers the history of the building, the details of the concerned people to the event, the present condition of few survivors, reason behind fire and negligence of authority persons. As reader, it felt like the scene of each character is running in front of an eye. Everything, place and person is explained in detail in very entertaining way. I would recommend my fellow colleges to read the book as a good source of information and to know about the real-life event.

Appendix

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