

Richard L. Best. *Reconstruction of a Tragedy: The Beverly Hills Supper Club Fire*. Boston: National Fire Protection Association, 1977, 113 pp.

The Beverly Hills Supper Club fire on May 28, 1977, with its 164 fatalities, shook the world. It was the worst multiple death building fire in the United States since the Coconut Grove fire in 1942. When I spoke about it with fire engineers and architects in Moscow later that year, they asked the reasons for the large loss of life, something not well understood at the time. Now Richard Best of the National Fire Protection Association (NFPA) has prepared, with the cooperation of the National Fire Prevention and Control Administration

(NFPCA) and the National Bureau of Standards (NBS) an excellent, highly detailed analysis of the fire which provides a great many answers.

The investigation included a two-week on-site study, followed by five months of data collection, partly through questionnaires, interviews, and analysis. The report is broken down into sections: 1) on the building itself; 2) a painstaking reconstruction of the events and factors before, during and after the fire; and 3) a technical analysis of the fire itself, its origin, cause, development, etc. This latter section includes a short section on human behavior during the fire. The text throughout is well-supported by numerous photos, charts and diagrams, and excerpts from interviews vividly illustrate points under discussion. Included also is an analysis of the development and spread of the fire, by Richard Bright of the NBS's Center for Fire Research. The report presents some unsettling conclusions and findings and recommends further study in specific areas.

The analysts were able to determine that the fire — probably electrical in origin — started at one end of the huge, rambling restaurant and night club in a concealed place in the Zebra Room, a small function room. The staff discovered the fire between 8.45 and 8.50 p.m., but attempted to put it out with extinguishers instead of phoning the fire department. At 9.01, realizing that the fire was serious, they called for help. Flashover probably occurred shortly thereafter in the Zebra Room, creating sufficient thermal energy to push the fire through the doorway into the long corridor. Once there, it traveled with amazing speed (two to five minutes, the analysts theorize) the 150 feet to the Cabaret Room, where 1200–1300 patrons sat watching the evening show. At 9.06 a busboy mounted the stage and pointed out the two possible exits, adding only at the end that there was a fire. Exiting began, and within a minute or so thick black smoke rolled into the Cabaret

Room. Almost all of the 164 died bunched up near the exits, victims of smoke inhalation and carbon monoxide intoxication.

What did this team of investigators learn that sheds light on this disaster? Some of the factors which proved to be of importance are the following: fire extinguishers were the only form of fire protection in the Club; the Club was made essentially of unprotected, non-combustible construction, a type not permitted for Class A places of assembly by the Life Safety Code; the Club was not provided with sufficient exits for the occupant load and there were numerous deviations from the means of egress requirements of the Life Safety Code, e.g., in exit markings; additional electrical wiring put in over the years reflected little or no concern for correct installation, supply or load factors, and wiring methods were in violation of the National Electrical Code; the Club had no evacuation plan and employees had not been instructed about fire evacuation behavior; almost triple the safe load of people had been crowded into the Cabaret Room and double the safe load for the rest of the building; and interior finish in the corridor between the Zebra Room and the Cabaret Room exceeded the flame spread allowed for places of assembly in the Life Safety Code.

In the short section on human behavior, the data provided by the interviews and questionnaires led to some valuable hypotheses, inferences and questions. In the area of risk perception, it was found that almost all of the patrons assessed the risk as being well below what it actually was. Problems arising from this discovery concern how one alerts people to real risk without causing panic and what intervening factors can help with this problem, e.g., strong leadership, positive reinforcement from the staff, etc. Relevant to these problems are the work

of Keating and Loftus on vocal alarm systems and that of Black on panic.

From the data there repeatedly emerges a scenario in which confused patrons were guided from the building by attentive and concerned staff members. The calming effects of this behavior points up the immense importance to people of a sense of order and control in their environment and the relationship of panic to a loss of this sense. The report states in this section that "what has often been termed 'panic' seems not to have occurred." The term itself is rejected as inappropriate to what actually happened. However, excerpts from the interviews refer to panic "starting" and to "panicky behavior," including screaming and pushing. A later section on Findings confuses the subject further by conjecturing that "such behavior [panic] probably did occur when people knew that they could not escape." In the absence of more data (such as evidence of trampling on the bodies of those who died inside the room), there is no way to ascertain whether full-blown panic — as opposed to partial panic — took place. If it did, it is likely to have occurred — as the section on Findings suggests — among those who died in the minute or so when the combination of choking smoke and gases and entrapment became a reality for them. The contradictory statement about panic in the report and the lack of clarity in discussing it result in part from a major problem in the fire field — the lack of an unambiguous and generally-accepted definition of panic in all its complexity.

In conclusion, it can be said that this is an excellent report, filled with remarkably good data (in a field in which lack of data is often a problem) which have been thoughtfully and imaginatively analyzed. One hopes that the report will have a salutary effect, that its disturbing findings coupled with the magnitude of the tragedy will furnish the impetus for the

enforcement of fire safety codes and standards. Certainly the need for automatic sprinkler systems in all public occupancy buildings is dramatically emphasized. In addition, the report should serve as a stimulus for further research in a number of areas crucial to fire safety.

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