

Thesis Abstract cohort 2012-2014
The International Master of Science in Fire Safety Engineering

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Development of safety measures for nightclubs

There have been numerous tragic incidents in nightclubs leading to hundreds of fatalities. This thesis tries to help improving the current situation. Different nightclub fires from the past 17 years were analysed in order to identify the critical factors influencing the events. As most dominant negative factors the illegal operations of nightclubs; the use of pyrotechnics; the choice of materials; a rapid spread of fire and smoke; insufficient manual and active protection systems; insufficient means of egress and overcrowding were identified. It was never just a single factor influencing the events of the night but always a combination. Additional input has been found by analysing two different evacuation experiments. The influence staff can have on the occupants as well as the fact that single rooms can be overcrowded without the maximum number of occupants of the venue being reached have been identified. The identified factors are addressed in the regulations of the U.S.A. and the UK. It is recommended that developing countries adapt their codes to the more developed ones and implement aggressive enforcement, fight corruption and improve the fire safety culture. The sufficiency of the most developed codes should be verified. Additional recommendations for future research are given.
