

Fire in a Condominium Killed a Teenaged Male: Accidental or Intentional? Real Fire Scene Report

Nataraja Moorthy T^{1*}, Muhammad Fariduddin S²

¹Professor of Forensic Sciences, Faculty of Health and Life Sciences, Management and Science University (MSU), Shah Alam, Selangor, Malaysia

²Safety and Security Manager, An Nur Specialist Hospital, Bandar Baru, Bangi, Selangor, Malaysia

DOI: <https://doi.org/10.36347/sjmcr.2025.v13i05.087>

| Received: 11.04.2025 | Accepted: 17.05.2025 | Published: 21.05.2025

*Corresponding author: Nataraja Moorthy T

Corresponding author and Professor of Forensic Sciences, Faculty of Health and Life Sciences, Management and Science University (MSU), Shah Alam, Selangor, Malaysia

Abstract

Case Report

Forensic science is an incredible asset to decipher the flames in fire investigations. Fire investigation is sometimes referred to as origin and cause investigation. Fire investigators are working tirelessly to investigate the reality behind the fire, in the trenches of the devastation. After firefighters extinguished a fire, an investigation is launched to determine the origin and cause of the fire. Investigations require knowledge of basic fire science and a systematic approach. Fire investigation is a demanding area of expertise because there is uncertainty about the evidence, which means that, evidences are destroyed by the fire. In some countries, fire investigation is conducted by the Police Department, in some by the Fire Department, some countries by the Forensic Sciences Department. Private investigators' fire scene examination is also accepted in some countries for insurance claims. The important point to bear in mind is that an accurate fire investigation will provide a beacon of truth while pursuing justice for victims and their next of kin. In the present case study, the fire scene was visited by the coauthor along with the Fire and Rescue Department of Malaysia Officers under the supervision of the corresponding author, who finally identified the origin and cause of the fire. Also, the fire scene was reconstructed.

Keywords: Forensic Science, Fire Investigation, Condominium, Teenaged Death, Fire Origin, Fire Cause.

Copyright © 2025 The Author(s): This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY-NC 4.0) which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use provided the original author and source are credited.

INTRODUCTION

Fire investigators are working tirelessly to investigate the reality behind the fire, in the trenches of the devastation. After firefighters extinguished a fire, an investigation is launched to determine the origin and cause of the fire or explosion [1]. Investigations require knowledge of basic fire science and a systematic approach. Fire investigation is a demanding area of expertise because there is uncertainty about the evidence, which means that evidences are destroyed by the fire as well as by the Fire Officers while extinguishing the fire [2]. In some countries, fire scene is investigated by the Police Department, in some by the Fire and Rescue Department, and some by the Forensic Sciences Department. Private investigators' fire scene examination is also accepted in some countries for insurance claims [3]. In Malaysia, fire scenes are investigated by the Fire and Rescue Department of Malaysia (expressed in the Malay language as *Jabatan*

Bomba dan Penyelamat Malaysia [JBPM]) under the Forensic Division of the Fire and Rescue Department. In the present case study, a real fire scene was visited by the coauthor along with the Fire Officers, under the supervision of the corresponding author. The fire scene and the deceased were examined, and based on forensic evidence found at the fire scene, the origin and cause of the fire were determined.

CASE STUDY

On a day around 7.30 pm, the Fire and Rescue Department received a call from the Petaling Jaya region, stating that smoke was emanating from the 8th storey of a 30-storey condominium. The fire team arrived at the destination, and the fire was extinguished. On entering the scene, the team found a male victim lying on the floor, and immediately they sent him to the Government hospital. The fire scene was documented following the standard procedure.

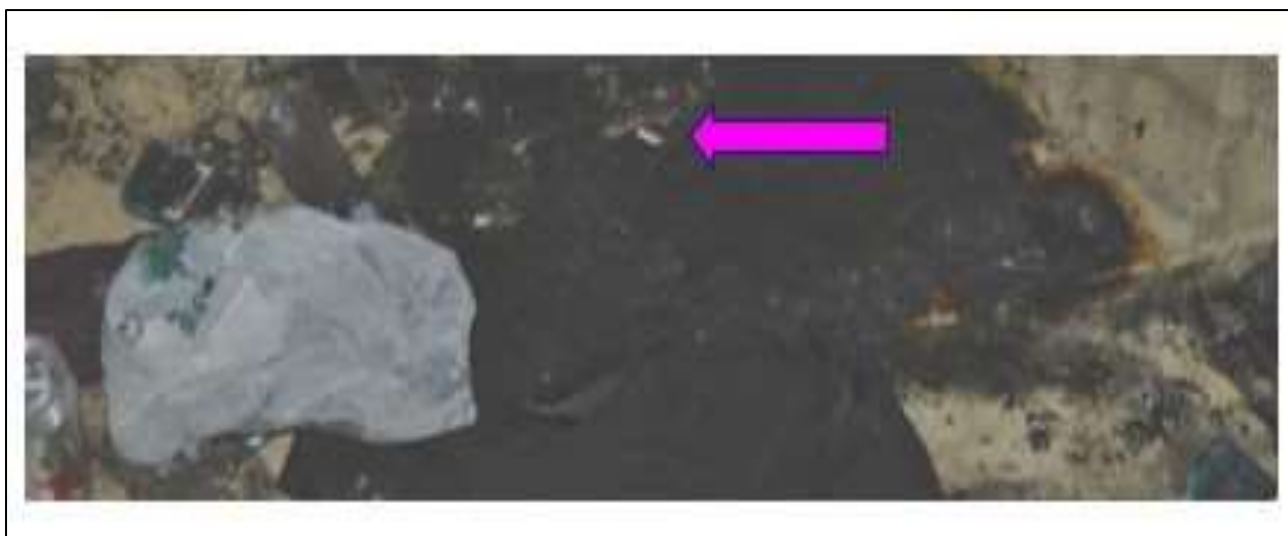


Figure 1: Cigarette butt

Smoke was deposited in the bedroom and other areas within the house unit. The fire caused 30% damage in the bedroom, and the metal springs cot were found collapsed, indicating the presence of high temperatures and hot radiation. There was a liquor bottle with little liquid and tumblers found near the bed. There was no evidence of accelerant, like petrol, diesel, kerosene or any other organic liquids, in the house unit. Keen examination was conducted in the bed room and interestingly, cigarette butts found on the bed as shown in Figure 1. Fire patterns are the visible physical effects that remain after a fire. Fire patterns include mainly thermal effects on materials and include oxidation, consumption of combustibles, smoke deposits, distortion of the metal spring in the cot, colour changes on the wall, floor and other household items. Based on the physical evidence, the experts decided that the origin of fire was from mattress on the cot and cause of fire was burned cigarette butts. There was no evidence for the possibility of arson, the intentionally set fire. The male victim, who was sent to the hospital, died on the way to the hospital.

DISCUSSION

It is a structure fire involving a house unit on the 8th storey in a 30-storey condominium. Fire is a series of exothermic oxidative reactions involving the fuels, oxygen and heat. Fire results from the chemical reactions between oxygen in the atmosphere, some sort of fuel and an ignition source, heat. It is known as the “Fire Triangle”. Later, researchers have renamed it as “Fire Tetrahedron”, added the fourth component, chemical reactions. The transfer of heat is normally from a high-temperature object to a low-temperature object [4]. Here, the high temperature object was a burned cigarette butt and the low temperature object was cushion bed. Crime scene reconstruction is an important tool to determine the sequence of events, understand the circumstances of a crime. Crime scene reconstruction helps to explain the nonforensic people like, the superior police officer, inmates, and even the court, to understand the occurred

crime [5]. It is reconstructed that the man was under the influence of alcohol, with simultaneous smoking. At one stage, because of excess of alcohol, he became subconscious and slept but the presence of burned cigarette butt in his hand fell on the bed and initiated fire, following the fire behaviours like incipient phase, growth phase, fully developed phase and others.

CONCLUSION

Baden recommends, "When you encounter a fire death, whether at a residence, a commercial area or after a vehicle crash or an explosion, you should approach it as if it were a homicide until proven otherwise. In this case report, the possibility of criminal activity or intentional set fire (arson) was ruled out without any doubt, and concluded scientifically as an accidental fire.

ACKNOWLEDGEMENTS

- The authors are thankful to the Fire and Rescue Department of Malaysia (JBPM), Selangor State, for their full support while conducting this fire research project.
- Sincere thanks are due to Dato' Soiman Bin Jahid, Deputy Director General (Development), Fire and Rescue Department of Malaysia, who monitored and helped the research work continuously and made it successful.
- We are always thankful to Management and Science University (MSU), Shah Alam, Selangor, Malaysia, for encouraging research and publications.

REFERENCES

1. Nataraja Moorthy, T et al., (2021). A challenging crime scene investigation report: Alleged murder, unravelled the mystery as lightning death. *J Krishna Inst Med Sci Uni*, 10(4): 111-115.
2. Nataraja Moorthy, T.(2024). Mysterious fire in a private hospital- A rare arduous forensic

- investigation report. *Academic J Foren Sci*, 7(1): 1-4.
3. Anne Steen, H., Karolina, S., & Christian, A. (2021). Learning from fire investigations and research- A Norwegian perspective on moving from a reactive to a proactive fire safety management. *Fire Safety J*, 120:1-8.
 4. Klaus Schmid, R.(2015). Why combustions are always exothermic, yielding about 418 kJ per mole of oxygen. *J Che, Edu*, 92(12): 2094- 2099.
 5. Nataraja Moorthy, T.(2020). Crime reconstruction: A tool to solve the mystery and achieve justice – An interesting crime scene report. *The Egyptian J Foren Sci Appl Tox*, 20(4): 85-89.