

# Indoor Marijuana Grow House Hazards

By Battalion Chief Joseph McHugh and Investigator Shawne Maile

**O**n September 27, 2016, FDNY units responded to a report of an odor of gas at 300 West 234<sup>th</sup> Street in the Bronx. Within one hour of their arrival, an explosion occurred. This explosion resulted in the line-of-duty death of then-Battalion Chief Michael Fahy, Battalion 19. After further investigation following the explosion, it was determined that this occupancy was being used as an illegal marijuana grow house. The features of this grow house directly contributed to a gas leak and subsequent explosion. These grow houses present several hazards to FDNY members. This article will discuss some of the hazards associated with grow houses.

300 West 234<sup>th</sup> Street was a two-story, Class 3 private dwelling. The first floor had a living room and a kitchen. The second floor, where the explosion occurred, was altered to accommodate a grow house. The three second-floor bedrooms were used to grow the marijuana.

Each second-floor bedroom was sealed up with a material called Mylar; also referred to as "white walls." Mylar was used to seal in the odor of the marijuana, which limited the ventilation available to vent the gas from the second floor. Mylar is reflective on one side, which is placed on the interior of the room. This reflective side is used in conjunction with the many high-intensity lights, which expedite the growth of the marijuana.

In the second-floor bathroom, there was a 55-gallon drum filled with a fertilizer (labeled "Tiger Blume"). Hoses coming from this drum led into each bedroom. There were lights, fans, air ducts and other equipment inside at least one of the bedrooms, the only room that was briefly entered by FDNY units.

Indoor grow houses are created to produce high-quality marijuana, while hindering detection by law enforcement. Marijuana grow houses can be located anywhere in New York City. Their detection is not always obvious to units when they first arrive. One thing for certain--there are plenty



Photo of a large-sized IMGO.

of hazards associated with grow houses. In recent years, the United States has seen a dramatic increase in the number of Indoor Marijuana Grow Operations (IMGO). Domestic indoor production is worth billions. Indoor cannabis cultivation is increasing nationally, especially in the Northeast.

## IMGO Hazards

**Electrical (electrocution/burns)**—Lighting is used to replicate the sun. Some electrical concerns and hazards are overloading circuits, mismatch of ballast (the ballast is not large enough to handle the high wattage used for lighting and could overheat) and electrical sources placed near water. To produce premium marijuana, many elec-

trical devices are used. These devices can require significant voltage, which usually results in the installation of a separate electrical panel that bypasses the main electrical meter coming into the house. The separate electrical components may be poorly wired. This could lead to overloaded circuits and shock hazards. Bypassing the electrical meter might give units a false impression regarding power removal. Power will remain live in areas where the meter has been bypassed. All circuits should be treated as live. There also could be backup generators used in case of loss of utility power.

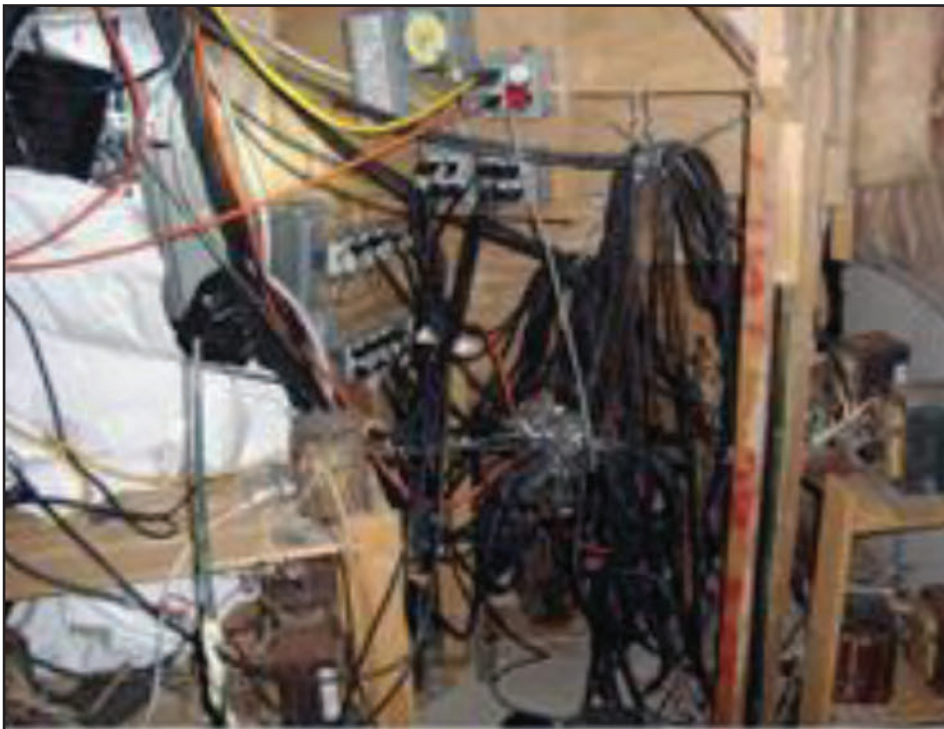
Here are two examples of first responders being injured from the electrical hazards associated with grow houses:



## About the Authors

Battalion Chief Joseph McHugh has served the FDNY since 1991. He is assigned to Safety. Previous assignments include Division 7; Ladder 25 as a Firefighter; Ladder 41 as a Lieutenant; and Captain of Ladder 10. He is a member of the BISP unit. Holds a Bachelor's degree from the University of New Haven. He is a graduate of the FDNY Officers Management Institute (FOMI), attended the West Point Counterterrorism program and is a certified Safety Officer and FDSOA-certified Health and Safety Officer. Additionally, he sits on the NFPA 1500 Committee. He is a frequent contributor to *WNYF*.

Investigator Shawne Maile is assigned to the New York State Police Contaminated Crime Scene Emergency Response Team and has been involved in narcotic investigations for more than 15 years, specializing in clandestine drug laboratories, indoor marijuana grows and Fentanyl operations. Investigator Maile is a subject matter expert and instructs for both the New York State Police and the U.S. Drug Enforcement Administration and has instructed more than 100 federal, state, local and Canadian law enforcement and first responder agencies. Investigator Maile has co-authored articles on the dangers of Fentanyl and his work has been featured on *DiamondPlate*. He is a New York State Hazardous Materials Technician.



Grow house entanglement hazard.



Black mold found in a grow house.

- A law enforcement officer was electrocuted while dismantling an indoor grow operation in Phoenix, Arizona.
- A firefighter was electrocuted while battling a fire at an indoor grow operation in Alameda, California.

**Structural**—Alterations may be made in walls or ceilings to accommodate hoses or ductwork. Structural members may be weakened due to high moisture content in these rooms. High moisture could lead to the rotting of structural members. Sometimes, load-bearing walls are altered to accommodate production of the marijuana. Units should consider the limited access and egress. Grow house operations may be discovered in basements and attic spaces and these concerns of limited access and egress should be addressed prior to entry.

**Entanglement**—Many entanglement hazards exist. Exposed electrical wires and chords present a dangerous condition. Flexible ventilation ducts throughout could entrap members. Hoses used for fertilizers or watering these plants also could lead to entanglement. These hoses might be found in every room used in marijuana production.

**Health**—There are numerous health concerns related to grow houses. High moisture content, which leads to possible rotting of structural members, also leads to high levels of mold. Exposure to high levels of mold is a serious health hazard. The abundance of different chemicals used presents another health problem. Some of these chemicals may be labeled improperly or not labeled at all. Chemicals also may be mixed, which could cause them to produce

dangerous vapors. The insecticides and pesticides used are other concerns for first responders.

Examples of illnesses with which police officers have been afflicted:

- A few days after processing a 1,000-plant grow, the officer felt extreme back pain. Exploratory surgery resulted in finding white fungus between the vertebrae.
- An officer processed a “small grow.” The next morning, he developed a sore throat and a cough. Over time, the cough developed into shortness of breath. Post-emergency room and doctor visit, it was determined his symptoms were consistent with a reaction to mold exposure.
- An officer processed a large grow and at the end of the processing, noticed a small cut on his finger. The following day, the officer endured chills, sweat and muscle and joint pain. Post-doctor visit, it was determined he had pesticide poisoning.

**Other hazards**—Ozone generators can be used to eliminate or reduce the odor of a grow house. Ozone is a known carcinogen. The lamps used to produce the lighting can be low-hanging and generate up to a 100- to 125-degree temperature. The surface temperature of these lamps can reach 500 degrees.

A new method in extracting the active ingredient, THC, from the female marijuana plant is called butane honey oil. The technical term is THC extraction, where a solvent is used to extract the THC from the plant. Butane hash/honey oil (BHO) marijuana wax, also is known as “wax,” “budder,” “honey oil,” “butane hash oil,” “ear wax,” “dabbers” and “shatter.” Mixing the mari-

juana with a solvent inside an extraction tube, the solvent removes the cannabinoids. Popular types of solvents include butane ether, alcohol, acetone Coleman fuel, methanol “Heet,” toluene and methyl ethyl ketone. This action converts the marijuana into a controlled substance. Numerous house fires and explosions are on the rise in the United States, as well as in Canada, due to THC extraction.

**DANGER:** *There is a chance of explosions or bursts of fire if the butane is dripped too quickly. Butane is a highly flammable gas. Butane is heavier than air and will pool in low areas. If left to collect, butane becomes flammable when it reaches 1.8 to 8.5 percent concentration in air.*

Grow houses might not be detected from the exterior of the building. Grow operations are designed to avoid identification. Units encountering grow houses immediately should notify the Incident Commander (IC). If a grow house is encountered, units shall be withdrawn to a safe area and the proper authorities (NYPD, Fire Marshals and NY State Police) shall be notified. These marijuana grow houses pose many dangers and health concerns for our members. It is vital that proper personal protective equipment (PPE), including SCBA, be used at all times. Units should remember that these grow houses can be found anywhere in the City. ■

#### Reference

“Dangers Found at Indoor Marijuana-Growing Operations,” by Captain Carlos Vazquez, in the 3<sup>rd</sup>/2009 issue of *WNYF*.