Operational Case Study: Brooklyn Second Alarm in a Marijuana Grow House

By Battalion Chief Jason Cascone and Battalion Chief Devon Maguire

Nearly five years ago, FDNY Battalion Chief Michael Fahy was killed in the line of duty while operating at an illegal clandestine drug lab in the Kingsbridge section of the Bronx. FDNY members had been working to mitigate a natural gas leak in the basement of a marijuana grow house when, suddenly, the two-story house exploded. Fahy, who was standing in the street, was struck with blast debris and instantly killed. In the ensuing examination, investigators concluded that the grow area had been sealed with spray-foam insulation and the windows had been covered with foil panels to contain the pungent, skunk-like odor of the marijuana plants. These alterations created air-tight rooms that allowed natural gas from a corroded pipe to accumulate in the explosive range, producing a deadly blast that leveled the house.

Since then, the FDNY has continued to encounter illegal clandestine drug labs throughout New York City. Brazen criminals persist in finding innovative ways to produce illegal drugs, undeterred by the hazards or legal consequences. They have no regard for public safety, and their last consideration is the safety of firefighters or other first responders.

On October 17, 2020, Brooklyn fire companies discovered yet another marijuana grow house as they began initial operations at a structural fire located at 3232 Fulton Street in East New York, Brooklyn. The fire building was a two-story, non-fireproof, mixed-occupancy structure. It had a flat roof and measured approximately 25 by 60 feet with a one-story setback in the rear. The building contained a commercial occupancy—which appeared to be vacant—on the first floor, and an apartment on the second floor. The elevated J/Z line of the NYC Subway ran directly in front of the commercial strip along Fulton Street, precluding aerial or tower-ladder operations.

When FDNY members arrived, they initially observed smoke emanating from the cornices of three adjacent buildings, making it difficult to determine the exact location of the fire. Battalion Chief James Ahrens, Battalion 39, transmitted a 10-75 and assumed the role of Incident Commander.

Fire in a Fortress

As Ladders 107 and 175 began to seek the origin of the smoke condition to determine the fire building, members encountered fortress-like barriers to entry at 3232 Fulton Street, indicating something unusual was going on. “The truck had to force through four doors just to get through the initial location,” said Chief Ahrens. “The chauffeur of [Ladder] 107 forced the roll-down gate, and when he pulled it up, I saw the fortress-like conditions with heavy plywood and sheetrock behind it.”

As Ahrens gathered information for his size-up, he began connecting the dots. He observed that there was no sign above the commercial storefront, which he originally interpreted as an indicator of an unoccupied or vacant building. But the heavy security added an additional variable to his calculation.

Finally, Ahrens received the key piece of information that confirmed his suspicions and altered his mindset from that of a standard fire operation. “I became aware that we had a serious situation when Ladder 175’s OV was on the rear setback and indicated to me that he had marijuana plants on the second floor of a grow house,” he said.

Once members gained entry to the building, it was obvious that the occupancy was designed to keep people out and facilitate an illicit drug operation. The growers had constructed heavy partition walls with wood studs and ¾-inch plywood that divided the occupancy into multiple sections. They also had covered the windows, including the front plate-glass window to the storefront, eliminating the critical means of egress that firefighters would need to escape quickly in an emergency. Once the drug operators had framed out their rooms, they added the equipment and paraphernalia needed to grow marijuana, such as grow lamps, fans and a heavy-duty heating unit. They had also constructed an irrigation system out of perforated garden hose to water their plants. This system allowed the growers to produce as many as 30 plants on the first floor and 40 plants on the second floor. The plants were grown in large planters filled with dirt and fertilizer; the fertilizer bags were labeled “Weed

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Candy."

Owing to the wood-framed alterations that needed to be opened up, Ahrens gave a second alarm. "I knew I was going to need more personnel to open up the plywood, get all these ceilings opened up when they got in there because it was very compartmented."

Haz-Mat Concerns

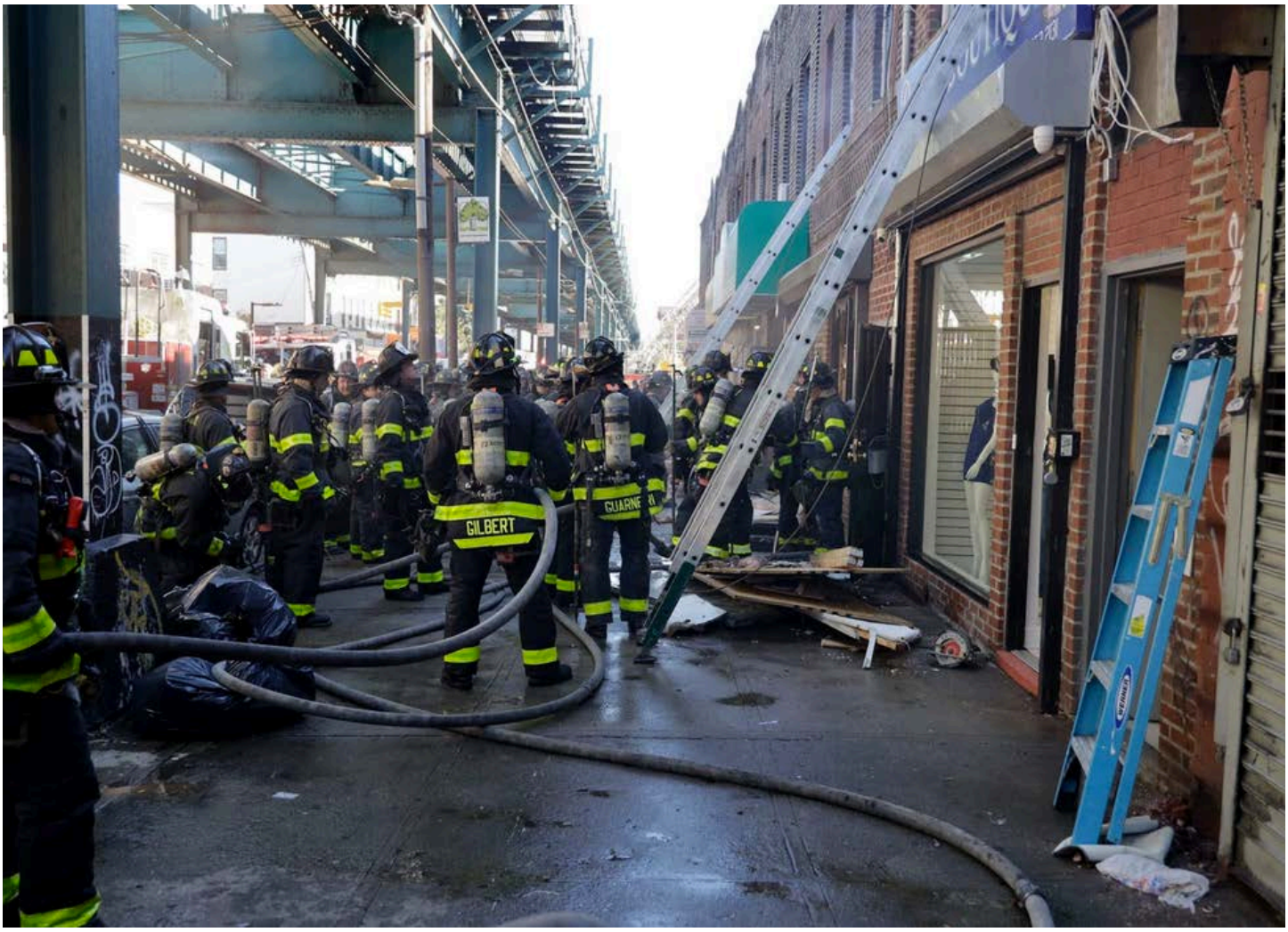
In addition to the dizzying array of plants and cultivation equipment, members searching inside the structure found several large steel tanks, the contents of which were unknown. "The only way we could find out what these tanks were was by Haz-Mat," said Ahrens. "We did see some markings on them, but we wanted to be sure. Haz-Mat and the Haz-Mat Battalion—they're the ones who can verify what they are and that they aren't compromised and we had no leaks."

Based on the radio reports he received, Chief Ahrens determined that he needed additional resources and expertise on the scene, so he transmitted a 10-80 for Haz-Mat resources. He also requested that Con Edison respond to the scene to assess the gas utilities and potentially mitigate a gas emergency that could arise from an illegal alteration. "As soon as I realized we had a grow house, I knew I needed Haz-Mat resources right away," said Ahrens. "So I called for Haz-Mat Battalion, Haz-Mat 1 to come to the scene and see what we had going on and to monitor the air. I had tanks in there, and I wanted to see if they were compromised."

Drawing on Past Experiences

The moment Chief Ahrens confirmed he was operating at an illegal marijuana grow house, he recognized the increased risks. Ahrens knew the occupancy was likely to be dangerous—he had already had a critical experience at a marijuana grow house that he would never forget. On September 27, 2016, Ahrens had been assigned as the subsequent Incident Commander to manage the aftermath of the gas explosion in the Bronx that killed Battalion Chief Fahy. He then assisted the FDNY's Safety Command with the investigation for Fahy's LODD Investigative Report. Months later, Ahrens worked with Deputy Assistant Chief John Buckheit on a Fire Officer Management Institute (FOMI) project to rewrite the Department's gas procedures. This background gave Ahrens the mental model to question the status of the utilities at 3232 Fulton Street, knowing that grow houses demand higher energy than a building's utilities typically deliver, and that in order to avoid detection by law enforcement, the growers were not likely to obtain that energy legitimately or safely.

"I wasn't sure of how the utilities were going to be rigged



because I figured the gas could have been jumped, the electric could have been jumped," explained Ahrens. "So my concerns were, what kind of levels do we have in here?"

Preplanning Plan B

With all that Chief Ahrens had on his plate, he decided to proactively set in motion an additional option for attacking the fire, just in case he needed to withdraw members from the fire building.

"I wasn't sure what kind of tanks I had in there, or if the place was booby trapped," said Ahrens. "When they forced a door, were they going to fall in a hole? I didn't know what was going to happen because I didn't know what was in there. If we didn't get a hold of it real quick, we would have to pull them out of there."

Ahrens was cautiously pursuing a standard interior attack, but he also wanted to have plan B in motion before he needed it. He had already decided that a tower-ladder operation from the front of the fire building was not feasible because of the "EL" train, so he ordered members to breach a hole in the brick wall from Exposure #2 into the fire building. This would provide an access point for an engine company to attack the fire with a hand-line from a safer location. "We needed to have another way to attack this fire, so my alternate strategy—I was thinking—was to have Ladder 103 breach the Exposure #2 brick wall," said Ahrens. "The elevated train track was above us, so there was no way we were going to be able to put a large-caliber stream into operation."

Carbon Dioxide: An Insidious Threat

When Haz-Mat Company 1 arrived, Chief Ahrens had two main concerns. First, he wanted to rule out a natural-gas leak using Haz-Mat 1's advanced metering capabilities. They were able to confirm that natural gas was not present in the building.

The second concern was assessing the contents and stability of the unidentified tanks found inside the fire building. Haz-Mat 1's size-up revealed that the tanks contained carbon dioxide (CO_2), which growers use to promote growth in plants. Carbon dioxide is essential to the natural process of photosynthesis. When it is used in a grow space, growers can increase their plant yield using either compressed CO_2 tanks or commercially sold CO_2 generators, which are powered by natural gas or propane, similar to patio heaters (this is a reason for growers to illegally bypass their natural gas meters or use propane cylinders indoors). Carbon dioxide is great for plants; the problem is that, at elevated levels, it can asphyxiate humans.

"We had five [CO_2] cylinders at this operation," said Battalion Chief David Drake, who was covering in the Haz-Mat Battalion. "Three of them were used, which they were completely empty, and two of them were brand new—they still had the shrink-wrap on the valves, and so they were just left in place. If it's in its con-

tainer, then we just leave it in place, and then that's evidence. Anything that we would need to over-pack would go into over-pack drums."

Although incidents are rare, CO2 has killed and injured several civilians and firefighters in the United States in the past ten years. Carbon dioxide is a colorless, odorless gas that is one-and-a-half times heavier than air. It can displace oxygen within a confined space. Oxygen displacement is the biggest concern because CO2 can asphyxiate unwitting victims or rescuers before they are aware that an oxygen-deficient atmosphere is causing their symptoms. Because of its high vapor density, CO2 settles in low-lying areas like basements, but it can accumulate in any confined space, especially if it is well sealed—like many marijuana grow houses. Carbon dioxide is insidious because—without any obvious signs of danger—firefighters can be lulled into thinking they are operating in a safe environment. They have no idea that the atmosphere is oxygen deficient unless they are carrying an activated oxygen meter like the Altair.

"The initial operating units have the Altair meter. It measures oxygen," said Chief Drake. "And if they know that there is oxygen displacement taking place, that's something that should be relayed to Haz-Mat as we are responding in, and they should maintain operational discipline by wearing their mask throughout that occupancy and the exposures."

In the past several years, fast-food restaurants have been the most common setting for CO2 incidents. There have been several documented cases in the U.S. involving people being overcome or asphyxiated by leaking CO2 tanks, which restaurants use for carbonation in soda fountains. In 2011, an 80-year-old woman died in a McDonald's bathroom near Savannah, Georgia, when a CO2 line—used for the restaurant's soda machine—became dislodged, filling the bathroom with CO2. Eight other people, including three firefighters who responded to the call, were hospitalized with serious injuries. In another incident that same year, two Phoenix firefighters on a seemingly routine EMS run were nearly asphyxiated by CO2. Again, the incident took place in a McDonald's restaurant, and it was caused by leaking CO2 cylinders used to run the restaurant's soda machines. After making patient contact and being confused by the patient's symptoms and behavior, two firefighters decided to check the basement. They both began feeling disoriented, but they were lucky enough to recognize their symptoms before succumbing to hypoxia. Firefighters evacuated the building and called for a Haz-Mat response. Phoenix Fire Department's Haz-Mat unit identified the leaking CO2 tank as the source of the problem.

Electrical Utilities: Mission Impossible

Although Chief Ahrens was now comfortable with the risks associated with natural gas and the CO2 tanks, he still needed to ensure the electrical utilities were de-energized. "When I was

looking up at the second floor, I could see everything strung above the ceilings and I'm like, you know, to grow the marijuana, they definitely did some crazy stuff," said Chief Ahrens. Based on past experience, Ahrens suspected the grow-house operators had illegally altered the building's electrical service.

To deal with this concern, Chief Ahrens requested that Con Ed Electric respond to the scene to evaluate and de-energize the building's electrical service. When Con Ed arrived, Ahrens' intuition was confirmed: the electrical system was still energized despite members' attempts to shut it down. In order to lower their overhead costs and avoid triggering alarm bells with the energy company owing to their inordinate energy consumption, the growers had illegally bypassed the electrical panel. To operate their lamps, fans and heaters, the grow-house operators had strung heavy-gauge black electrical wire throughout the building, feeding numerous metal outlet boxes that had been screwed into the makeshift plywood walls and ceilings. A feeder

cable that had been spliced into the building's main service—before the panel—was feeding the system. This meant it was impossible for FDNY members to shut power to the building.

"They were telling me they were getting the utilities," explained Chief Ahrens. "But I was telling them, please be careful because I don't think—I don't know if they're off or not. And when Con Ed did get there, they were not off. They had jumped it before the meter. Con Ed actually had to cut it in the street. So it was still live, the wires."

Evidence Preservation

At fires involving illegal clandestine drug labs, a natural tension exists between fire operations and evidence preservation. Firefighters' efforts to extinguish a fire and overhaul the fire area require them to destroy evidence. But criminal investigators need firefighters to preserve evidence so they can serve justice to the criminals who callously disregard public safety and the rule of law in their pursuit of profits in the illegal drug trade. Sometimes it is difficult to think about the interests of law-enforcement agents in the chaos of rapidly unfolding fire operations where life safety is the highest priority. But when illegal clandestine drug labs are involved, firefighters must consider the ensuing criminal investigation by overhauling judiciously, limiting the use of water and preventing an excessive number of firefighters from traveling in and out of the crime scene. And to the extent that fire-service personnel also want to remove bad actors—like the ones who caused the explosion that killed Michael Fahy—from society, our interests are aligned.

"You've got a job to do," said Supervising Fire Marshal Steven Tagliani. "You got to ensure that there's not going to be a rekindle, that the members are safe, but possibly one thing is to limit overhaul. Once you get to that spot that you feel all right, everything's secured and the chief officer feels everybody's safe and there is not going to be a rekindle, if you're looking to get that junior firefighter or that proby a little bit of work, possibly away from the area of origin could be a possibility on the other side of the wall. Because when we come in, we're looking for those [burn] patterns."

On August 17, 2018, the two men who operated the Bronx grow house that killed Michael Fahy were sentenced to prison in the Bronx Supreme Court. Garivaldi Castillo and Julio Salcedo pleaded guilty to manslaughter and marijuana charges in a courtroom packed with FDNY members and Michael Fahy's family. This is a testament to the hard work performed by the NYPD, FDNY fire marshals and the Bronx District Attorney's Office. But FDNY firefighters were the first ones on the scene, and—in some small way—they had a role in preserving the evidence that ultimately brought the perpetrators to justice. ■