



Naval Safety Center

LESSONS LEARNED



LL 20-14

FIREWORKS MISHAPS

"And the rockets' red glare, the bombs bursting [in hand]..."

As we continue through the 101 critical days of summer, Independence Day is just around the corner, and with it comes fireworks...and risk. Our Sailors, Marines, and civilians seem to have fared well over the last five years with fewer than ten fireworks mishaps per year, but... Our database only records reported incidents where the injuries resulted in lost work or significant injury or government property damage. It does not reflect our families, who are equally vulnerable to the risks associated with fireworks.



In an analysis of personal fireworks deaths and accidents, the U.S. Consumer Product Safety Commission found that more than 9,100 firework-related injuries were treated in U.S. hospital emergency rooms in 2018, including five fatalities. It's no surprise that 62 percent of the total injuries occurred from 22 June—22 July. What may surprise you is that 36 percent of those injuries involved children younger than 15 years old. Now if you're thinking, "I just do the small stuff," read on, because even those seemingly harmless sparklers contributed to more than 500 of the injuries (*we got burned by one too...and set fire to a car...but those are stories for another day*). Without getting too scientific, risk can be calculated as a function of probability times severity. As you'll see in these examples, that calculation was likely high on the risk scale from "Oops!" to "I'm on fire!" Our "Pyro-technots" would encourage you to read to the end. There are tips throughout (*and some may surprise you*) that will keep you safe as you celebrate one of our country's most cherished holidays.

- As part of the Independence Day celebrations, an off-duty Sailor was enjoying fireworks. As he prepared to light a fuse for one firework, a spark flew and lit the fuse to a different firework that he was holding in his hand. Before he even realized the one in his hand was lit, it went off, causing first and second degree burns to the entire inside part of his hand. He went to the local emergency room, where they cleaned and wrapped his burns. — *Remarkably he had no hospital stay or days of light duty, but good golly that must've hurt! We're glad he kept his fingers. Please be aware of where those sparks are going.*
- A Sailor was lighting a firework that, according to the report, "he thought to be a roman candle which does not explode." As you might imagine, since we are writing about it, what he "thought" and what the firework "knew" were two different things. Despite the Sailor's confidence, within only a few seconds of lighting, the roman candle exploded in his hand. The explosion severely damaged his left hand, resulting in the loss of the tips of two fingers. Two fellow Sailors who witnessed the event (*and could've said, "Hey bro. Maybe you shouldn't hold it!"*) provided first aid and called for an ambulance. — *Three days in the hospital and a permanent partial disability. Fireworks are, by design, explosive! Please treat every firework as if it will blow up. Safety Tip: Modern consumer roman candles are made differently and now have a "Do Not Hold in Hand" warning label. They aren't meant to be held in your hand anymore, so please don't.*
- While partaking in Independence Day festivities, a Sailor was struck in the face by "a rogue firework in the possession of a child," dislodging his incisors. — *In plain-English, he got his front teeth knocked out from being shot in the face by a firework. Ouch! The report doesn't mention it, but we'll bet there were burns involved too. We ponder whether the report should have said "a rogue firework in the possession of the child" or "a rogue child in possession of a firework." Either way, keep an eye on the kids and watch out for what others are doing around you. You aren't the only one who can hurt you!*

- A Marine was sitting in his car in the barracks parking lot. The report (which reads like a crime mystery, offering only hints for the reader to guess “whodunit”) states he “had something explode in his hand which could be heard inside the barracks and by nearby bystanders.” After hearing the loud noise, Marines from inside the barracks came out to investigate “and found [the Marine] in his car and immediately called 911.” Paramedics arrived and took him to the local hospital, who then transferred him to another hospital’s burn center. “Why?” you ask. Well, the report eventually gets to that. Base police determined that the victim (who was also the attacker) was playing with a firecracker similar to an M-80 in one hand and with a lighter in his other hand (*refer to “confused” and horrified” imogeess here*). The M-80 exploded in his hand and, *impressively*, also caused the lighter in his other hand to explode, which caused most of the burns. — *Between the “Boom” and the “Foom,” the victim received damage to two fingers on his left hand and burns to both hands and knees. The price? Four days in the hospital, and a lifetime of embarrassment.*
- While setting off a personal fireworks display, one of the fireworks malfunctioned, causing a small fire. The host of the gathering (*we’ll call him “Larry”*) called 911 to alert the fire department. One Sailor (“Moe”) grabbed a fire extinguisher that was on standby (*good*), and ran forward to extinguish the fire. In the excitement, he ran smack into a wooden pole, that knocked him flat (*with a “facial fracture of the orbital bone”*). Another guest (“Curly”) picked up the fire extinguisher and extinguished the fire. Firefighters soon arrived on the scene and declared the fire safely out. — *Great job planning ahead with the fire extinguisher, even if the execution wasn’t so great. Our first-responder literally “broke his face.” If (when) an emergency occurs with fireworks, please keep your wits about you. Otherwise, you become the emergency.*
- An officer was standing in the backyard during a cookout. His “friend” placed a lit sparkler in his back pocket. In the ensuing mayhem, the victim was burned on his right forearm. How bad? Enough to lose five workdays and earn 10 days of limited duty. — *Hmm. The report doesn’t say if they’re still friends. Pranks are funny, but not with burning objects. Even non-explosive fireworks are hazardous. Please think before you act. You’ll keep more friends that way.*



Lessons Learned / Key Takeaways

- 1. Respect the Pyrotechnics.** Whether you’re handling ordnance in the field or the flight deck or celebrating with fireworks in your backyard (*in states where it’s legal*), pyro is pyro. Fireworks aren’t safe just because you can buy them at a roadside stand. They come with instructions and warnings just as professional pyrotechnics do for a reason...to keep you safe. As you’re stocking up for July 4th, take the time to read and heed the safety instructions. This simple step can save your weekend, and your fingers.
- 2. Know the law.** Most municipalities and states have laws and regulations about personal fireworks. Know and follow your local laws for both use and disposal of fireworks (*and know if they are banned altogether*).
- 3. Here are some safety tips from the National Safety Council:**
 - Have a responsible person be in charge of the fireworks. Translation: “*Alcohol and fireworks don’t mix.*” Add that to our running list of things we should never need to say, but seem to have to.
 - Keep fireworks a safe distance from structures, vehicles, and anything else you don’t want to set on fire.
 - Pay attention to the trajectory of your fireworks. Hint: horizontal is not good.
 - Never relight a “dud” firework. Wait 20 minutes, and then soak it in a bucket of water.
 - Speaking of water, have a bucket of water and a charged water hose (or fire extinguisher) handy.
 - Never carry fireworks in your pocket.
 - Dispose of spent fireworks by wetting them down and placing them in a metal trash can away from any building or combustible materials until the next day.

From the Secretary’s 101 Days of Summer Safety Message; “Take some well-deserved time this summer to enjoy family and friends, and recharge your batteries, but do so wisely and safely. Assess and manage the risks in all you do. Apply risk management principles and self-discipline.”

And remember, let’s be careful out there.