Command Personnel Unite with Law Enforcement for Blast Mitigation Patent

Posted by TBN(Staff) On 01/30/2020

Indian Head, MD - January 30, 2020 - During the inaugural 2016 Explosive Ordnance Disposal (EOD) Campfire Event a patent was born. A group of Naval Surface Warfare Center Indian Head EOD Technology Division (NSWC IHEODTD) engineers and scientists met with bomb technicians from the Federal Bureau of Investigation; Bureau of Alcohol, Tobacco, Firearms and Explosives; New York City Police Department; and the Massachusetts and New Jersey State Police to discuss an EOD case study of the Boston Marathon Bombing. Just a few short minutes later, the group of 17 were wrapping up an idea for a transportable improvised explosive device mitigation device patent.

After approximately two years of working out the details, the patent was filed. And after another two years, on January 20, 2020, US Patent 10,539,404 was issued by the United States Patent and Trademark Office.

“Our Technology Transfer Office’s idea was to bring in civilian public safety bomb technicians, put them in contact with our scientists and engineers, and see if we had technologies that could assist in their mission set,” said Dr. Chris Wilhelm, NSWC IHEODTD Office of Research and Technology applications lead. “The goal was to discuss what sort of blast mitigation devices civilian law enforcement agencies could use that we’ve already developed in the government.”

One of the topics discussed was creating a device akin to a concrete, steel-reinforced barrel for law enforcement personnel to use when they encounter a suspicious package. This would allow an officer to take the package and place it into the barrel in an effort to mitigate the blast and subsequent fragmentation.

According to Wilhelm however, there was one significant drawback to this proposal — it is difficult and impractical to maneuver a steel barrel weighing several hundred pounds.

“Within 30 seconds, Ed Lustig [NSWC IHEODTD Systems Engineering Department Warhead and Propulsion Branch engineer] threw out the idea to use water to mitigate the explosive,” Wilhelm said. “As soon as he said it, the room got quiet and someone said that’s a great idea.”

The group started building upon this suggestion and working out the details of the invention that would ultimately receive a patent. When a blast fragment interacts with water, its drag coefficient greatly slows down. The proposed blast mitigation device uses water to control the detonation and subsequent fragmentations and resembles a 55-gallon plastic garbage can that retains an internal structure used to retain water or other materials.

“The other thing we can do with the patent is fill that inner layer with other material, such as ceramic that is better at negating the effects of spherical materials like BB pellets,” Wilhelm said. “A gelled layer can also significantly decrease the impact of those blast fragments, too. Because the design is open at the top, it allows for the blast event to go up. You’re not trying to contain the blast; you’re trying to direct it.”

The structure also makes it easier to transport and store when compared to the heavier concrete contraption. Since the units are essentially a reconfigured garbage can, the devices can even be stacked up and kept in a garage. Wilhelm believes the ultimate goal for this patent is to make the product available to law enforcement for use in large-scale events, such as New Year’s Eve in Times Square.

Since the 2016 event, the command continues to grow working relationships with the civilian public safety community. In December, a Partnership Intermediary Agreement was signed with the United States Bomb Technicians Association, and in January several law enforcement colleagues were invited to attend a demonstration of the Silent Spring Liquid Safing Fluid developed by NSWC IHEODTD EOD Department’s Ken Basom and Bryan Milani.

“It’s a very simple idea that doesn’t cost the Navy anything, it’s a great benefit to law enforcement, and it really is one of the things our command does best: leverage our knowledge and expertise in support of providing the end user with a better product,” Wilhelm said. “We look forward to exciting new opportunities and technology developments with the public safety and first responder communities and work towards more technology transfer efforts that can increase the safety of the public.”

NSWC IHEODTD — a field activity of the Naval Sea Systems Command and part of the Navy’s Science and Engineering Establishment — is the leader in ordnance, energetics, and EOD solutions. The Division focuses on energetics research, development, testing, evaluation, in-service support, and disposal, and provides warfighters solutions to detect, locate, access, identify, render safe, recover, exploit, and dispose of explosive ordnance threats.

Copyright © 2020 thebaynet.com. All rights reserved.