

DEPARTMENT OF THE NAVY  
**SBIR/STTR TRANSITION PROGRAM**  
**SPOTLIGHT**

## TDA Research Leverages SBIR Funding to Solve Suppressor Need for Marines

By Julie Scuderi

When the Marine Corps sought a novel way to clean its suppressors for automatic rifles after heavy gunfire, Colorado-based TDA Research, Inc. (TDA) met the challenge using the same mindset that has resulted in over 30 years of SBIR success—addressing real world problems that don't have obvious solutions.

The Marine Corps System Command (MCSC) SBIR project, titled Automatic Maintenance of Sealed Firearm Suppressors, aimed to discover a sustainable solution for an expensive problem. Suppressors get dirty extremely quickly, especially after heavy gunfire. At \$1000 a suppressor, it becomes nearly impossible to replace them as quickly as they're needed. Suppressors are designed to absorb the noise from gunfire for two main reasons: 1) Reduce hearing loss, and 2) Aid in better communication among warfighters.

Reusing rather than replacing suppressors would save the Marine Corps millions of dollars. This had never been done before, mainly because removing carbon, lead and copper from the suppressor required the use of strong oxidizing agents that weren't feasible to handle regularly. Other cleaning solutions weren't environmentally sound, and TDA wanted to find an eco-friendly long-term solution.

Wallace Ellis, senior chemist at TDA, tackled the issue with his team and discovered a way to remove these elements using a combination of ultra-high frequency ultrasounds. The technology successfully removed nearly all the carbon build-up on the suppressors. This approach worked very well to extend the lifetime of sniper rifles. The current system cleans six suppressors at a time, and it takes about 40 minutes per cycle. TDA also designed a supplemental



MCSC is making a move to put suppressors on all its automatic rifles, both to reduce hearing loss and increase communication among warfighters.

suppressor dryer. The company hopes with further funding it can develop an appliance that can clean 100 suppressors at once.

Ellis credits his MCSC technical point of contact with working closely with his team and communicating the exact needs of the agency. The expectations were that the suppressor lifetime would meet or exceed the rifle barrel lifetime—or three to four thousand rounds. Although the target end user is the funding agency, TDA was approached by personnel within the Army, who wanted to put suppressors on all their infantry automatic rifles. A purchase order for TDA's suppressor cleaning system soon followed.

TDA is no newcomer to the SBIR program. For over 30 years, the company has answered the Department of the Navy's (DoN) call for innovative research and development solutions to meet the needs of the warfighter. TDA develops and manufactures advanced materials, chemical processes and aerospace and military hardware. Each year, the company brings in about \$20 million in revenue from its product line,

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which was developed with the help of SBIR. All in all, the company has amassed over \$250M in Phase III revenue and investments that have stemmed from its DoN-funded innovations.

“SBIR is great because there are a lot of projects out there that may not have huge commercial prospects,” says Ellis. “There are so many needs within the government for products that solve a problem but that a large corporation just wouldn’t be interested in.”

This was the case with a super soap developed by Proctor & Gamble that was used to clean aircraft and remove chemical weapon contamination. However, since it didn’t generate the sort of revenue a larger corporation may desire, the product was transitioned to TDA, which now produces and sells it.

Like many other small businesses, TDA adapted to the challenges that 2021 brought, and continued to forge connections with key DoN personnel and industry leaders via the 2021 Naval System Commands (SYSCOMs) Forum for SBIR/STTR Transition focused technology events (Navy SYSCOM FST Days). While some Navy STP participants presented at one or two of the online events, including The Naval Air Systems Command (NAVAIR), Naval Sea Systems Command (NAVSEA) and Naval Information Warfare Systems Command (NAVWAR) virtual FST Days, TDA was the only small business to present technologies at all three events. Working within Navy STP and having the chance to present at Navy SYSCOM FST Days was a positive experience for the company, and the team is busy leveraging the benefits and connections that came from the experience.

“The Navy STP Program helped us to fine tune our message and to reach more customers for all the technologies that TDA developed,” adds Ellis. “The exposure that we gained was critical to our recent sale of four suppressor cleaners to the Army.”

Looking to the future, TDA wants to bring its suppressor cleaner technology to law enforcement agencies around the country. The company is currently working with the SWAT team in Boulder, Colo. to service its line of suppressors. TDA also



Photo courtesy of TDA Research, Inc.

TDA’s suppressor cleaner removes carbon, lead and copper without the use of dangerous chemicals, extending the lifetime of the suppressor, resulting in significant cost savings.

hopes to transition to the private sector, where there is potential with gun shops who service their customers’ suppressors.

TDA exemplifies one of the goals of SBIR: solving a problem for a specific client, and then reaching others in need of the same solution.

For more information about the company, visit TDA’s website at <http://tda.com/>.