

DEPARTMENT OF THE NAVY
SBIR/STTR TRANSITION PROGRAM
SPOTLIGHT

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From Spin-offs to Phase IIIs: Creare is the Quintessential Navy SBIR Success Story

By Julie Scuderi

Not many companies can trace their SBIR heritage all the way back to the beginning—and for the history buffs here, we’re talking about 1982, when the Small Business Innovation Research (SBIR) program as we know it today was first signed into law from legislation enacted by New Hampshire Senator Warren Rudman. Creare, also based in New Hampshire, was one of the original SBIR innovators; and as the program gained steam and attention, the company’s profile rose right beside it.

Today, Creare has realized nearly \$170 million in Phase III revenue resulting from its Navy SBIR-funded technologies and continues to support significant programs within the Department of Defense (DoD). The company has carved out multiple paths to transition, including licensing its technologies, delivering specialized products to government and industry, and creating highly successful spin-off companies. One of its spin-offs, Edare LLC, was launched in 2010 and focuses exclusively on supplying low to medium volume highly engineered products that have transitioned from SBIR projects to government and commercial customers. Regardless of the customer base, Edare created a low resistance pathway to getting products to customers quickly.



Vice Adm. DeWolfe Miller, III, former commander, Naval Air Forces, left, discusses the fleet's first Compact Swaging Machine aboard USS Nimitz (CVN 68) in 2019.

“When it comes to SBIR, you not only need to have a good technology, but you need to understand the business side of it as well,” says Jay Rozzi, principal engineer at Creare. “Even though we know in most cases the technology will work prior to Phase I, it’s what we do in that stage that makes a big difference. We are reaching out to stakeholders. We’re finding out what’s important to them. Whether it’s a prime, the Navy, or another customer, there are transition discussions very early in the project. Business is all about relationships and reaching out. If stakeholders are gathered and aligned early in the process, then you have a transition path already laid out for you in Phase II.”

While being business savvy has certainly given Creare a leg up in the industry, SBIR is still about meeting the needs of the Navy, and

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that's exactly what the team has accomplished throughout the years. One of Creare's most successful innovations is its Compact Swaging Machine (CSM), which went from an SBIR Phase I all the way to multiple Phase III awards.

The CSM was designed to meet a pressing need on Navy aircraft carriers to replace a hazardous and time-consuming process. When an aircraft lands on the deck, arresting gear stops the aircraft rapidly and in less than 400 feet. Routine flight operations amass repeated "hits" on the arresting gear cables requiring frequent maintenance to keep the gear operational.

Creare used the Naval Air Systems Command (NAVAIR) SBIR program to develop the capability to automate the replacement of couplings on the purchase cables that transfer the landing force of the aircraft to the arresting gear engines. Creare engineered the CSM to be much smaller and lighter than existing swaging machines, enabling its below-deck use aboard aircraft carriers. It reduces workload and dramatically increases the quality of life for Sailors. The machine allows one Sailor to accomplish in just over an hour what used to require multiple Sailors more than eight hours to complete and it's estimated that the CSM reduces V-2 Division's workload requirements by up to 500 man-hours per deployment. The first six



U.S. Navy Photo

Creare has worked alongside Lockheed Martin on the F-35 program in various capacities throughout the years, bringing proven SBIR-funded technologies to the table that result in improved performance, reduced labor costs and a decrease in manufacturing cycle time.

systems were built and delivered to the U.S. carrier fleet in 2018, and since then, 22 more systems have been fabricated and delivered to the U.S. Navy with the final two delivered in 2021. Phase III funding for CSM was provided by The Aircraft Launch and Recovery Equipment Program Office (PMA-251).

Creare also leveraged the SBIR program to solve several key needs for Lockheed Martin's F-35 Joint Strike Fighter program. With Navy SBIR funding, Creare successfully developed a breakthrough cryogenic high-speed titanium machining process that significantly reduces the manufacturing cost of critical titanium parts on aircraft, including the F-35. A few years later, Creare again aligned with Lockheed Martin when the prime needed a quicker, more efficient solution to inspect the tens of thousands of fasteners present on the F-35. Using multiple SBIRs from both the Navy and Air Force, with support from the Air Force Manufacturing Technology (ManTech) program, Creare developed its handheld Fastener Measurement Tool (FMT™) and transitioned it through Edare. The highly accurate tool works by projecting multiple laser lines onto the surface of the aircraft and imaging the resulting pattern with a camera. This technique, called structured lighting, rapidly provides 3-D measurements and go/no-go determinations of filled and unfilled fastener profiles, saving thousands of hours in labor and decreasing manufacturing cycle time.

“SBIR has always been known as an R&D program, but there's been a big push in the past 10 to 20 years to integrate SBIR at the program level through technology roadmaps,

and to turn these mission-critical SBIR projects into transitioned technologies or actual products that benefit the warfighter,” adds Rozzi. “There are so many opportunities now to integrate SBIR technologies into systems that ultimately make our fleet stronger and our warfighters better. One of our biggest competitive advantages as a nation is our ability to develop innovative products. The technologies developed through the competitive merit-based SBIR program are technologies people want for their systems and our warfighters.”

The ability to take an idea born in SBIR and turn it into a tangible product found on major military programs of record can be attributed in large part to the talent Creare prides itself on finding and retaining. Increasing its employee base, creating new jobs through its spin-offs, and attracting the very best scientists, Creare is well positioned to continue its more than half-century of success in bringing products to market and providing sought-after solutions to government and industry. As new small businesses enter the SBIR arena every year and aren't sure where to turn for inspiration, Creare's business philosophy and forward-thinking mentality is certainly one to strive to emulate. As Rozzi adds, “The model works!”

For more information visit Creare's website at <https://www.creare.com/>.

