



CMW Global, Carver Machine Works, Realizes Multiple Rewards from a Commitment to Quality

Shurtape Technologies, LLC, CMW Global, Carver Machine Works, Washington, North Carolina, is a high-mix, low-volume manufacturer. For 45 years, CMW has been repairing and overhauling heavy equipment for the process industry and specializes in build-to-print fabrication and mechanical assembly. Half of the industries they serve are in the process industry, petrochemical, pulp and paper, and mining. The other half of their business is from the defense industry, concentrating on naval defense. They repair and overhaul major systems on aircraft carriers’ half-life. They build-to-print for large missile defense systems subcomponents and fabrication for specialized applications.

At any given point, CMW will have 100 projects on the shop floor at different stages of cutting metal, welding metal together, fabrication, and machining operations. They also provide finishing processes such as coating, painting, and specialized mechanical assembly. Materials used in CMW’s projects range from titanium to aluminum, various grades of stainless steel, and ballistics-grade carbon steel.

The U.S. Department of Labor recently recognized CMW Global, Carver Machine Works, with a 2024 Honoring Investments in Recruiting and Employing American Military Veterans (HIRE Vets Act) Medallion Award. HIRE Vets is the only federal award program recognizing employers who successfully recruit, hire and retain veterans. Lindsey Crisp, President and CEO of CMW Global, said, “Because of the technology and equipment we use, our staff has to be very skilled. I’ve been with Carver for over 19 years, and finding experienced and skilled welders, machinists, and industrial mechanics has been challenging. Experienced welders and technicians are retiring, and few people coming out of high school and into the workforce understand how purposeful welding and machining trades are.” He continued, “We’re doing a lot with local school systems and local community colleges to recruit folks, and in addition to that, 2 years ago, we joined a program funded by the Navy to increase



the industrial workforce for the military. This group works with employers like CMW to teach us how to expand our recruitment pipeline. Recently retired military Veterans looking for their next civilian role are part of one of those pipeline channels.”



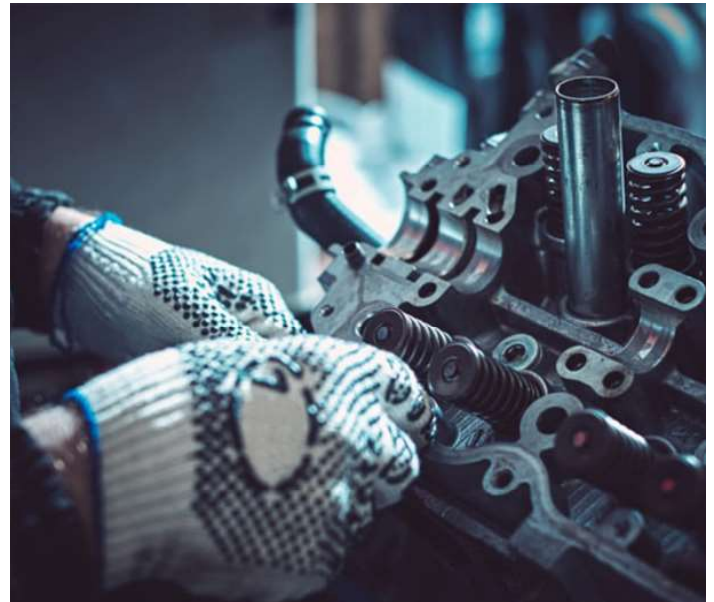
Veterans can utilize their VA benefits through the Veterans Administration to participate in on-the-job apprenticeship programs. Crisp said, “This program helps us because we can hire someone who’s clearly shown through their military service that they can show up and work on time, has discipline, all the things that they’re taught if you serve in the military and the employee receives on-the-job training. For our defense industries, we’re bringing on somebody who understands how important it is that what we make is correct. That’s a big deal for us, too.”

Crisp shared, “The rigors required by the defense industry have helped us be a better company for all our customers.” The defense critical projects require the company to meet quality certifications from the National Aerospace and Defense Contractors Accreditation Program (NADCAP), Non-Destructive Testing (NDT), ISO 9001:2015, AS9100D, CWI, and other military standards, and specialized welding and machining credentials that require high-level training and skillsets.

In 2012, CMW developed a total quality management program to earn NADCAP and AS9100D certification. They also operate a quality system to meet ASME standards for building or repairing pressure-rated vessels. In addition, due to the unique nature of each project, they receive specialized and specific customer requirements. Initially 6-7 inches thick, their quality standard manual

became unmanageable because of the sheer volume of information added over 10 years. Crisp explained, “We hired a new quality manager, and we felt like it was an opportunity to take a fresh look at our manual.”

The company has a multiple-year history of working on quality management projects with NC State University Industry Expansion Solutions. So, CMW knew who to contact for coaching and guidance to approach the overwhelming task of revising the manual. Crisp shared, “Industry Expansion Solutions helped us develop a structure and a format to take this in manageable bites because we wear many hats and have other day-to-day obligations.”



For 14 months, a cross-functional CMW team, a mix of quality team members, management and staff, and Industry Expansion Solutions product specialists reviewed every standard requirement and updated and streamlined the manual. “After hundreds and hundreds of hours of work, we could reconcile what the manual stated and what we do. We reduced the size of the manual to less than a tenth of its original size, and now it is concise, relevant, and current. In addition to that, because it is a more manageable size, we’re publishing the manual through Microsoft Teams now instead of having all these hardbound copies, which makes revision changes and managing control of documents much more efficient,” Crisp stated. The final product and the support we got from Industry Expansion Solutions was outstanding,” said Crisp.



“We’re going through our procedures and applying the approach we learned from our project with Industry Expansion Solutions. We are asking what makes sense, what adds value, and what is required for us to do things right. That’s flowing down from the manual to our procedures to our desktop instructions now,” Crisp added.

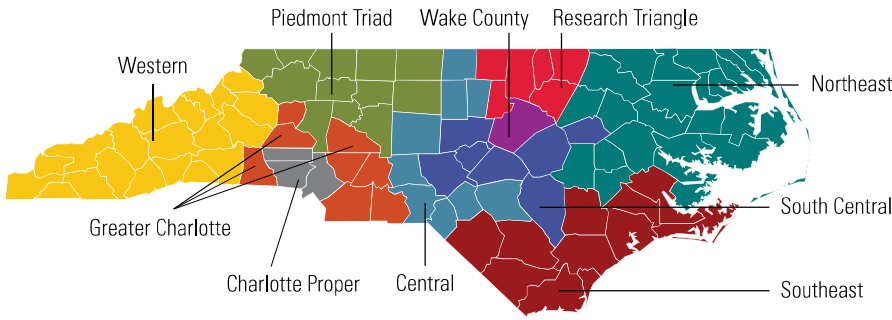
Another area of improvement that was influenced by implementing a more concise standards manual included revising the structure of the management review meetings. Instead of an annual review, the CMW management team now does a more timely weekly and quarterly standards review. “It’s not part of how we operate when you review standards once a year. When you’re meeting requirements and management reviews weekly and quarterly, it’s much more relevant because you’re living it as opposed to just trying to meet a requirement for an annual analysis. We’re implementing continuous improvements in real-time. It gives everybody visibility of everything we’re doing beyond just making our product and trying to meet our customers’ expectations. Visibility and communication are crucial as well,” said Crisp.

The CMW standards manual update project with Industry Expansion Solutions generated a total economic impact of \$175,000. There was a \$20,000 investment in new

processes, a \$20,000 investment in new equipment, a \$5,000 investment in info systems, and a \$50,000 impact on workforce improvement.



NC State University Industry Expansion Solutions Regional Managers Serve All 100 Counties in North Carolina.



Piedmont Triad

Kami Baggett
919.830.7292
kami_baggett@ncsu.edu



Northeast

Lori Benn
919.988.7475
lori_benn@ncsu.edu



Wake County

Robert Crew
919.830.2941
robert_crew@ncsu.edu



Southeast

Mark Everett
919.274.8572
mark_everett@ncsu.edu



Charlotte Proper

Jennifer Fielder
704.380.0063
jennifer_fielder@ncsu.edu



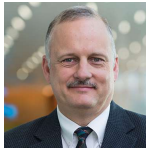
Greater Charlotte

Tamara Mack
803.206.5686
tamara_mack@ncsu.edu



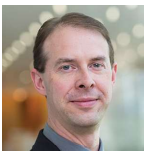
South Central

Anna Mangum
919.210.6050
anna_mangum@ncsu.edu



Western

Chris McGraw
828.329.3119
chris_mcgraw@ncsu.edu



Research Triangle

Mitch Poteat
919.607.0684
mitch_poteat@ncsu.edu



Central

Mary Tillery
910.622.5849
mary_tillery@ncsu.edu



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Manager in your area.
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Industry Expansion Solutions administers the National Institute of Standards and Technology Manufacturing Extension Partnership (NIST MEP) for North Carolina (NCMEP).

