

## **St. Croix Insider: NDT Solutions, Inc. Embracing Innovation and Providing Solutions**

By Brenda Bredahl

Since its founding, NDT Solutions, Inc. (NDTS), a game-changer in the paradigm of non-destructive inspection and ultrasonic aircraft testing, has steadily outgrown leased space in the New Richmond, Wis., Creamery building. Its newest home just might be the perfect fit—the New Richmond airport.

“Finding this location was a happy accident,” said Jesse Skramstad, president and founder of NDTS, which moved operations into a hangar October 2012. “We had been looking at options for expanding or moving. One day an employee was looking to buy a small airplane, and was checking Craigslist. He came running into my office and said, ‘We need to move here!’ and showed me the listing for the hangar.”

The hangar had previously been occupied by Baumann Floats, which made seaplane floats. Baumann closed and moved remaining operations to Basler Turbo Conversions of Oshkosh and consequently was selling the New Richmond hangar.

NDTS built two levels of offices for sales and administration, research/development and engineering, an assembly area, inventory room and fulfillment center. “We are lucky to have investors who purchased the building,” says Skramstad. “We are leasing the majority of it and sharing it with two small airplanes. Those are an inspiration to our employees, engineers and customers who come to training here.”

NDTS has been named the 2012 Small Business of the Year by the St. Croix Economic Development Corporation for its continued growth and innovation.

### ***Changing the NDT Paradigm***

The company started in 1999 when Skramstad became a consultant to various aircraft companies on improving methods and processes in non-destructive testing of aircraft. An inspector at Northwest Airlines, Skramstad’s private consulting business grew rapidly, and in 2001, he left his full-time position at Northwest Airlines.

The Sept. 11, 2001 national tragedy created a bit of turbulence for the company but a commitment to the need for new and better testing solutions and superior customer service prevailed. Soon NDTS partnered with Boeing to develop a method for inspecting its new 787 fuselage, which was the first fuselage to be composed of carbon fiber composite and required an innovative inspection solution using ultrasonic array technology and the VACRS (Variable Automatic Couplant and Recovery System).

The unique VACRS changes the way large area ultrasonic inspections are done. It works with Boeing’s MAUS® (Mobile Automated Scanner) and other scanning systems on the market. The VACRS system uses a lightweight couplant and delivery/recovery system that makes it possible to conduct a C-scan with large ultrasonic arrays without the large water mess and hazard that was the industry standard before the development of the VACRS.

NDTS continues to break new ground in developing testing equipment and methods for aircraft and other industries, including wind energy. It recently developed a specialized scanner to inspect a small complex-shaped carbon fiber part on the 787.

A new precision scanning system, DR11, was launched in September 2011. In addition, NDTs recently completed a study with Sandia National Laboratories on the probability of detection of solid laminates in composite materials using the MAUS/VACRS system. "The results were amazing, and compared with other participants our method was six to 10 times faster," said Skramstad. Results will be published in an upcoming technical journal using images NDTs provided.

The company embraces new technology and innovation and recently sought out a 3-D printer to create a prototype part that was built layer by layer with a filament material. While the part will be manufactured of other material, the technique worked so well as a prototype that NDTs is considering purchasing its own 3-D printer for its small prototype machine shop. For most projects, NDTs contracts with machine shops in Wisconsin and Minnesota, including frequent partnerships with a New Richmond machine shop located at the airport.

NDTS also created a scanning platform for a high-level military project and essentially worked to develop the platform without knowing the exact specifications about the object that need to be scanned. "It was three-and-a-half weeks of back-and-forth with their engineers," said Skramstad. "We would guess, and they would respond. It was quite a challenge but we got it done."

### ***Expansion, Growth & Future Plans***

NDTS provides a full range of solutions from consulting, research and development to equipment design, modification and manufacturing. It also offers training, service, sales, support and fulfillment for a range of testing products and equipment that are manufactured by NDTs or developed in collaboration with NDTs expertise. NDTs also serves as a distributor for other testing manufacturers' equipment.

The 16,000 square foot hangar can also serve as classrooms for training and service seminars. "We've held user groups and basic and advanced composite training meetings here, and the hangar is a great space for our customers," said Skramstad.

The company recently redesigned and expanded its online store, offering a full line of testing equipment, parts, products and supplies. The store features information and ordering capabilities for NDTs's full line of equipment, including VACRS, which works with MAUS®, FlawInspecta® and other inspection systems, plus accessories such as scanning tables, vertical scanners and gantry frames that can be customized to meet specific needs.

NDTS also distributes the MAUS® V, FlawInspecta®, SSEC III and LUMAZON inspection systems. NDTs offers on-site inspection using these technologies as well as evaluation and validation of inspection processes and in-house inspection of customer-provided test specimens. Other services include maintenance, troubleshooting and repair of equipment, on-site and off-site equipment training, and consulting services including research and development of inspection techniques and processes.

## *An Attitude of Gratitude*

“I’m deeply honored and humbled by the award from the St. Croix EDC,” said Skramstad. “It’s really one for the team; our employees are very dedicated. Sometimes I just stop and think back—like when I’m meeting with Boeing or other companies—about when I was 21 and woke up in the Air Force barracks every day. It’s been a pretty amazing journey.”

Skramstad says that he is thankful for the strong network of businesses and resources in the St. Croix Valley region for support over the years as well. “Other St. Croix EDC award winners have been role models,” says Skramstad. “I’ve learned so much from just talking with the business people in this area, even if they are in different industries.”

Making good use of mentors and other support is also important for success, Skramstad said. “I meet regularly with a CEO mentor and the New Richmond Business Owners Group. We are also lucky to have met a retired marketing analyst who comes in several times a year to freely share advice. I met him through a mutual friend who worked at 3M with him. He is an amazing guy, now working with ‘cleantech’ startups.”

Says Skramstad: “People are so amazed to find that in a small town like New Richmond, Wis., we are a company that touches every aircraft, military and aerospace company or supplier in the world.”