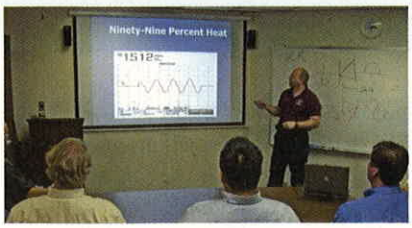
BY ABBE MILLER, MANAGING EDITOR

Resistance is trainable

The resistance welding industry's rookie class turns to T.J. Snow for industry expertise



"THE OLD-TIMERS ARE RETIRING, and the knowledge torch is not always being passed down," says James Dillard about the multitude of seasoned resistance welding engineers and setup people who are leaving the industry. Faced with this mass exodus, his goal is to keep that flame alive.

Dillard is vice president of engineering, manufacturing and service at T.J. Snow Co. Inc., Chattanooga, Tenn., a machinery sales and service provider for manufacturers using the resistance welding process. Training the industry's freshman class is one of the company's fortes; it's a pursuit that's meant to cultivate a new generation of skilled welders.

"We've been going like gangbusters," he says. "Since the first quarter of this year, we've done more training than ever before because people are starving for information. Since our customers are seeing more employee turnover than in the past, that's causing a gap in 'tribal knowledge' when it comes to resistance welding."

Attempting to pass on the torch is no easy task, though. What took the soon-to-be welding retirees an entire career to perfect can't simply be bestowed upon a novice in one course. Therefore, T.J. Snow has been refining the training process for both beginners and those who are seeking to improve their operations and methods.

"We used to do a quarterly, three-day seminar here," explains Tom Snow, CEO and son of the founder, T.J. (Jim) Snow. "It was two days in the classroom and then one day of hands-on instruction. That would be for groups of up to 60, but it got a little unwieldy. The backgrounds of the attendees were so diverse that it was hard to figure out what level of training was needed to include everyone. Now, we're focusing more on customized programs that we can do in the customer's facility, both classroom and shop floor."

Training day

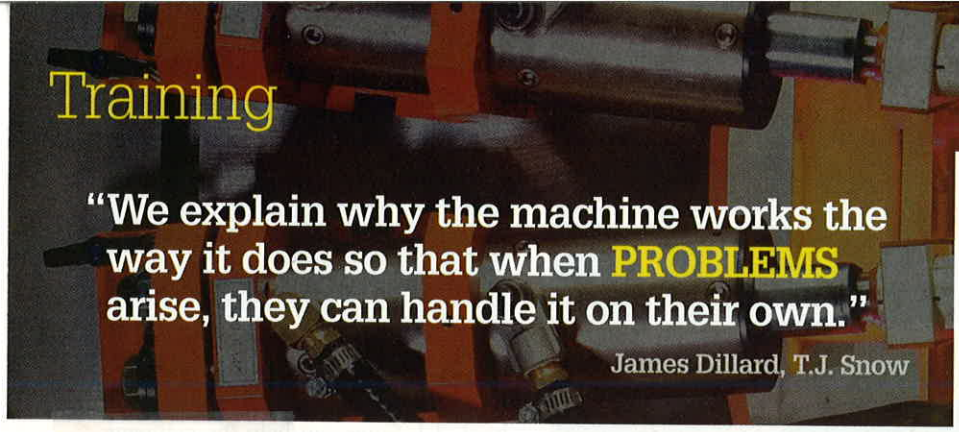
Regardless of the level of experience, T.J. Snow will customize a training session to a customer's needs. Randy Darby, senior service engineer at T.J. Snow, says if properly applied, basic principles can go a long way. And if a customer is beyond entry level, T.J. Snow can help the company achieve optimal resistance welding results.

According to Bruce McCurdy, area manager at Lozier Corp., Scottsboro, Ala., within an eight-hour session, Lozier's attendees were able to understand how resistance welders work, how to choose the right welder for a specific application, how to set up the equipment to get the best quality welds and how to correctly maintain the equipment. Lozier is a manufacturer of store fixtures for domestic and international markets. "I plan to have a seminar every couple of years to help new employees learn about resistance welders and to refresh the information for the guys that have already been through the course," he says.

"We try to keep the classes to six or eight people and 10 at the most," says Snow. "We work closely with the customer to customize the course. For example, the customer might say, 'I've seen the syllabus, and my operators won't need you to go into much depth on that subject.' So, like that, we'll tailor the course on the fly. PowerPoint allows us to easily add or eliminate anything from the various presentations we've developed over the years. For instance, sometimes we're talking to a room full of engineers, and sometimes it's a room full of setup operators. Sometimes it's maintenance people. So, we tailor the seminar to the customer's specific needs."

For Miller-Leaman Inc., Daytona Beach, Fla., T.J. Snow's instructor arrived the day before the seminar to tour the plant and review the company's resistance welding operations, which are dedicated to the production of water filtration products primarily made out of stainless steel.

"We've used resistance welders for years, but we were never formally trained on their operation," says Bill Fredo, production manager at Miller-Leaman. "[With T.J. Snow], we were able to learn the true textbook aspects of the equipment and were able to improve our setups. We



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put five personnel in the class, and as it was designed for a small group, we were allowed opportunities for lots of specific, personalized questions."

Resistance welding is suitable for a vast range of applications, but some customers have been moving away from the process because of a lack of understanding, which often results in quality problems. Others in the industry may have just been getting lucky when it comes to weld strength.

"Some users have no idea what they're doing when they're setting up these machines," says Dillard. "They don't know how they got to where they are or how to get back. We explain why the machine works the way it does so that when problems arise, they can handle it on their own. It's not black magic. What we do is go in and dispel all of the myths."

There are, of course, some things that can't be taught. For instance, you can't typically eyeball a resistance weld and tell whether it's good. Therefore, T.J. Snow also offers up a few basic tests that can help determine whether a joint is going to hold.

Imparting improvement

To produce a proficient work force, not only do employees need to know the ins and outs of the resistance welding process, they also need to understand how to set up and maintain the equipment. In many instances, when T.J. Snow arrives at a facility on a service call, it's apparent that the problem at hand is due to improper set up of the equipment rather than operator error or problems with the machine. The company's training seminars originated from quite a few of these unnecessary visits.

"It's usually not the operator's fault," says Snow. "Oftentimes, a problem is based on improper machine setup. The trick is to have at least one person in every factory properly trained to do resistance welder setup and then multiply their knowledge. Speaking of the operators, however, it's important for them to know enough about the process that they can warn the management if they feel that something is going wrong." The company's seminars can prepare any level of operator for that type of situation. And in addition to process knowledge, the in-

structors also explain how essential it is to maintain the welding machines.

"One of my dad's favorite stories is from when he used to do all the resistance welder service on his own," says Snow. "Back before we started flying our own plane on service trips, one morning, he drove way down into Mississippi after a customer called with a breakdown. It was about lunchtime when he finally arrived at the customer's facility after driving for five hours. When they showed him the machine, it was just filthy. There was grease everywhere. So he said, 'I tell ya what. I've been driving all morning, and I need to go grab a bite to eat, so why don't you clean this machine up, especially all the electrical connections, and I'll be right back.' When he returned, they said, 'Well, we don't need you now. The machine started working just fine once it was clean.'"

Anecdotes such as this reiterate the years of experience on the T.J. Snow team. In fact, if added up, the company's current staff boasts a combined 150 years of experience in the field. Their expertise allows them to go beyond just training. For many customers, T.J. Snow acts as a consultant, starting from how to engineer the product to what equipment to buy.

"We love to get involved early on," says Snow. "Oftentimes, if we're presented with a set of drawings after the part is already designed, we can see that they're going to have trouble welding it because perhaps the flanges are too narrow or the weld joint is inaccessible."

Darby chimes in to say that, in addition to problems resulting from improper setup and a lack of maintenance, sometimes it's the metallurgy of the parts at fault. As an example, high carbon content can cause bad resistance welds if the proper welder control options aren't selected and programmed.

Clay Thomas, manufacturing engineer at Donaldson Co. Inc., Greeneville, Tenn., says T.J. Snow has swooped down and solved many issues over the years. The trainers have been able to substantially improve production of the company's air filtration for engine intake products.

"T.J. Snow's staff has been highly effective," says Thomas. "We had a projection welding problem that they fixed right away. We were producing oversized threads and deformed weld nuts, and they were able to figure out a different welding schedule that didn't deform the threads. We also had a galvanized/galvanneal problem, which they immediately helped us with.

"T.J. Snow's phone numbers are saved in my phone," he explains. "They take their work seriously, just as I do, and sometimes we have to take it home." FFJ

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