

Magnetic Analysis Corporation: So much

Since being founded 87 years ago in Long Island City, New York, Magnetic Analysis Corporation (MAC) has become a leader in the nondestructive testing industry. The company was responsible for developing the first American made system using electromagnetic principles for the detection of flaws in steel products. Ever since then, MAC has grown to become a major worldwide source of nondestructive testing (NDT) services and eddy current, electromagnetic, flux leakage and ultrasonic inspection systems for testing metals. MAC has field engineers and experienced representatives located across the globe including the United States, Europe, Eastern Europe, Turkey, Russia, Brazil, Chile, China, India, South Korea and Australia. *Stainless Steel World Americas* recently had the pleasure of speaking with Mr. Dudley Boden, MAC's VP of Sales & Marketing, about MAC's highly experienced staff, superior customer support and goals for 2016 and beyond.

By Candace Allison

"As a company, the concept at Magnetic Analysis Corporation is that we are more than just an equipment manufacturer. Really to make NDT work you need both equipment and people; combining these two things is our forte and our strength," explained Mr. Boden. "We have a larger and more experienced field staff located around the world than any other NDT supplier. Our whole focus is to partner with the customer to figure out what their real needs are, what the right equipment is for their project and then work with them to configure that product and make it work in a way that is suitable for them. We aren't just selling the customer a piece of equipment."

Knowledgeable staff

Collaboration with the client is an essential part of the process for all of MAC's employees and is just one of the many value-added services that the company offers. In some instances a client will approach a MAC representative and know exactly the type of tester that is needed for their project, but as Boden clarified, more commonly it happens that a customer will approach MAC because they themselves have been confronted with a new client who has products requiring nondestructive testing, but they don't have enough knowledge to inform their client on what is needed to meet specifications. They don't know which direction to go in and this is where MAC's focus on hiring experienced and knowledgeable staff is absolutely crucial and helps them stand out amongst their competition.

Boden detailed that 95 percent of all MAC's field engineers and salespeople are engineers (electrical, mechanical, etc.) and approximately a dozen of them have ASNT (American Society for Nondestructive Testing) Level III NDT certifications. The majority of the staff also have over 20 years experience in the field of NDT so customers can really rely on their expertise and know-how.

In fact, just the US staff has a combined experience of more than 500 years. Of course, new employees without this extensive experience are being hired, but in order to help them learn, they must report to a co-worker that has over 20 years in the field. This is something that Boden is confident that no other NDT company can offer its clients.

"Our people are constantly in communication with each other. We have our own internal intranet where our employees can share documents and situations detailing how they were able to resolve situations. Many of our staff know each other well and have been working together for a long time even if they are all located on the far corners of the earth. For example, they know that if you are confronting a certain type of problem with rotary Eddy Current testing, Keith Brandt is the guy you call because he's had more experience in that area and everyone knows that. We even have a couple of senior guys that are 'floaters' that can go anywhere in the world to help with a sale or solve an installation problem," Boden described.

Supporting the customer

MAC's dedicated employees are always prepared to help a customer figure out exactly what is required. Boden explained that it all begins with asking lots of questions. The first two are always 'What is the application for this material/product?' and 'What is the specific standard that needs to be met?' Boden said that once those initial questions are answered, the MAC employee can then begin helping the client figure out what product or system would best suit their needs.

"For example, this product is going into the automotive industry, so chances are you need to be able to find this particular kind of notch in this location or orientation, that sort of thing. Then from there, we have to look at what is the best sort of equipment to give the client that desired result. We also



MAC's corporate headquarters in Elmsford, New York.

need to consider what kind of volume are we talking about? How fast do you need to test the product? Are you equipped to handle the material and present it in a way that will work for NDT testing or do we need to supply a complete system in order to make sure that you meet the requirements?"

Boden is also quick to maintain that this method of conducting business through client collaboration ties directly into the company's history and its growth over the years. He explained that MAC has expanded both geographically and from a product line perspective by helping clients find solutions to their problems. He went on to explain that in the past, and even now to this day, the company never ventures into a new market unless they already have a trusted and experienced partner already in that area. This allows MAC to have complete confidence and expertise in whatever territory they are branching out into. This way they can always provide customers with the superior customer service the company's insists upon. This strategy dates back to the 1970s,

when the company started expanding by opening subsidiaries in England, Italy and Australia. In 1999, MAC opened its Swedish subsidiary and they now have a full staff of experts at that location. In addition, for certain territories where the company doesn't feel as confident setting up a subsidiary, representatives with their own engineering staff are hired and are able to provide installation and training for customers just as if they were MAC employees. This strategy is all part of MAC's customer service vision to not just "air-mail equipment" into that market and walk away, but instead to work along with the customer and support them throughout the entire process of purchasing, installation and maintenance.

New and dependable technologies

The company's product line offerings grow once they have successfully helped a client solve a specific problem. In other words, MAC's product portfolio has grown directly as a response to customer needs. Boden clarified that it has been only in recent years



A complex test system designed to meet API standards for OCTG pipe at a Russian mill. Included is MAC's Echomac® 500mm Ultrasonic Rotary, at right, and Rotoflux® 500mm Transverse and Longitudinal Units at left.



Miles Jing, MAC's Chinese Field Engineer, checks out a new 50mm Echomac® Ultrasonic rotary at a customer's plant to test ERW pipes destined for automotive parts.

more than just an equipment manufacturer



This MAC Echomac® Ultrasonic system inspects stainless steel heat exchanger tube at Schoeller Werk GmbH. MAC also designed and supplied the conveyor system which helps ensure accurate testing.

that MAC has developed its AC Flux Leakage technology, which some companies had embarked upon years earlier, but this was because MAC's customers' requirements were successfully met with the MAC Eddy Current rotaries. There was no need to develop a new technology just because other companies were jumping on the latest and greatest bandwagon. The company's philosophy is that only when a client's needs are no longer being met with the current product offerings that the company should then begin development on something new. This is also the reason why MAC encourages customers to come to them with any problem they have so they can work together to solve it, perhaps by creating an innovative new product.

Boden provided the example of Phased Array Ultrasonics. "When we get to a point where we no longer have a product that can meet a customer's requirements, that's when we look at a new product and that's where we are right now. We are just now getting ready to install our first Phased Ar-

ray Ultrasonic system in Italy," he explained. He continued, "This is something new for us and yet Phased Array Ultrasonics have been in the market for 15 years or more. But again, as we said, from a practical standpoint, we can do everything that they do in the Phased Array with either our ultrasonic rotaries or some other technologies that we already have. There was no need to rush into it. We have now reached a point where Phased Array Ultrasonics are mature enough and there are now some applications where it clearly has some advantages and so now we are developing that product."

MAC has also recently developed a new type of Ultrasonic test system that it is just beginning to ship to customers. Boden described the new system as a spinning tube type tester where there is an ultrasonic head that sits under a tube, and the tube is spun past so it works like an ultrasonic rotary that provides complete coverage of the tube and moves forward past the test head. This works well for large diameter products and also where there isn't any high produc-

tivity requirements where a rotary would be a better solution. This new method allows more flexibility to test a wider size range than regular ultrasonic rotaries and was, once again, developed as a response to a client's needs. Boden recounted that a loyal customer approached MAC explaining they needed that particular product and MAC was able to create it for them. Now MAC will be able to offer this product to other customers. Boden also stated that the company is very upfront if its capabilities are unable to help a client. Instead they will refer the client to another company that could potentially help them, even if that company is often regarded as a competitor to MAC. This exemplifies the functional working relationships MAC has with similar companies as well as the lengths it will go to in order to help a customer.

Built to order

Boden believes that a contributing reason to MAC's staff having such a positive 'we work with customers' attitude stems from the company's history of leasing NDT equipment to clients. MAC would lease the product and under the terms of the leasing agreement, it would also be responsible for servicing the equipment and making sure it was operating properly. Because of this, MAC employees were in the leased customers' plants on a regular basis, as often as every week in some cases. Boden clarified that the company now gets about half its revenue from sales but the company itself has never strayed from the basic premise of its employees being the NDT experts. After all, the NDT equipment alone doesn't do anything for a customer if they don't know the basics of NDT or what the product can do to help them.

In terms of the production process for MAC's equipment and systems, Boden explains that in general almost all of the company's equipment is built to order. "We have no assembly lines, we have no automated assemblies, nothing like that. In most cases machinists assemble one off units. Obviously some of the basic testing products are pretty much the same, but even with those they are configured differently with different numbers of test channels for every customer; there are

so many variables with accessories to make it work for a particular customer. We have a test coil list that has probably 60, 70 different styles of coil for our Eddy Current testers. With over 80 years of customer collaboration, so we've built up this huge inventory of designs that we can apply as needed to a specific customer problem."

Challenges & future plans

Boden confessed however, that working closely with the client to create a dependable product isn't always easy. He explained, "There are a lot of challenges with working this closely with our customers. Some of the processes that they have require us to fit our tester into their production line. Whether it's on a weld mill or whether it's inline in their production process, we need to find the space for the product, figure out if it is too hot or not hot enough, is it clean enough to test, what do we need to do to make sure that we can test it without wrecking our tester, is the product straight enough to get a good test, etc." He continued, "Another challenge is educating the customers. To help with this learning process we put on our own Ultrasonic and Eddy Current training classes actually, Level I and Level II training classes here at our facility or in our customers' plants. So we will train them in how to use our equipment but also train them in the basics of NDT technology and how it all works."

With 2016 right around the corner, Boden predicted that it will be a busy but productive year. MAC will be fully launching its AC Flux Leakage products, its Phased Array products and its new Ultrasonic spinning tube system. But the company's main focus is leveraging the customer service aspect and expanding on the superior customer support they already provide. Part of this expansion includes looking to fully train newly added representatives in Indonesia, Vietnam and Thailand as well as branching out into the rest of Southeast Asia and the middle east. They currently have reps in Saudi Arabia and Dubai and are looking toward the future where they can do business in Iran.

All photos: MAC



Providing technical information for customers is a key part of MAC's thinking. Shown here is a technical seminar put on in China which included a presentation by VP Dudley Boden.

MAC at a glance

Company name:	Magnetic Analysis Corporation Inc.
Years in business:	87 years (Since 1928)
Global Headquarters:	103 Fairview Park Drive, Elmsford, New York, USA
Technologies:	Eddy Current, Flux Leakage, Ultrasonic, Multi-Test Systems, Materials Handling, Magnetism Detectors
Products:	ECHOMAC®, MULTIMAC®, MINIMAC 50®, MINIMAC 55®, ROTOFLUX®, VARIMAC®, DEMAGNETIZERS, etc.
Website:	www.mac-ndt.com