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Electrical Apparatus

The Magazine of Electromechanical
& Electronic Application & Maintenance

A photograph of two male technicians in a workshop. They are wearing blue work shirts and caps. One technician is using a screwdriver on a large industrial motor. The other is observing. The motor is mounted on a workbench. There are other tools and equipment in the background.

**Building a
business in
a new land**

Electrical Apparatus

The Magazine of Electrical &
Electronic Application & Maintenance

A Barks Publication

Vol. 66, No. 3

MARCH 2013

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Cover photo: By Joseph S. Hoff, at Alexandria Armature Works, Alexandria, Va.



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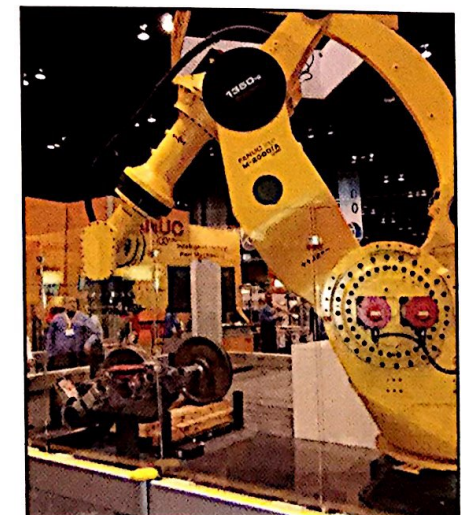
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Revisiting counterfeits and finding nothing has changed

Nearly three years ago, in the May 2010 issue of *Electrical Apparatus*, Engineering Editor Richard Nailen described product counterfeiters around the world who had flooded North American and European markets with fake electrical goods—devices that were tempting buyers with low prices while putting them at risk of fire damage, injury, or worse.

In his carefully researched description of a problem that manufacturers and U.S. Customs officials were fighting as an “unintended consequence of globalization,” Dick addressed the extent of counterfeiting at that time, providing tips for avoiding the purchase of electrical products for which the name and contact information of their manufacturer was missing, or whose certification marks (UL, for example) seemed questionable.

He predicted that countering counterfeiters would prove to be complex. “We can expect the battle against cheap knock-offs of electrical products to continue at some level as long as global markets exist,” he wrote.

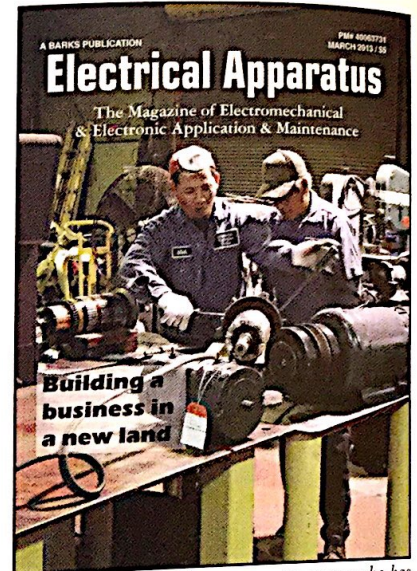
In this issue, he has taken another critical look at the problem after nearly three years and has written that, despite the cooperation among nations through symposia, conferences, publications, and programs designed to focus attention on counterfeit detection, dangerous products continue to flood the market.

Distributors and users alike will not want to miss “Business still booming for counterfeit products,” beginning on page 23.

Viet Nam to Virginia: an inspiring service shop story

When Associate Editor Joseph S. Hoff left for vacation last month, his computer and camera went along. He came back to work with one of the most interesting stories, and some of the best shop pictures, that we have had the pleasure of publishing.

“Building a business in a new land,” the text accompanying the photograph on the cover of this issue, refers to Quan Hoang, founder of Alexandria Armature Works, who, after fleeing Vietnam, built a business in his adopted country—the U.S.



This month, we visit a company owner who has built a business in his adopted country—the U.S.

Nam at the age of 15 to immigrate to the U.S. After earning a B.S. degree in aerospace engineering, he built a business in the IT industry, which he later sold, then acquired a company that he transformed into AAW of Alexandria, Va. It has thrived, partly because he has focused on markets for static and dynamic testing.

A friend who is also an immigrant from Viet Nam owns a company, EU-BMW, that ships motorcycle parts and services motorcycles from his space within AAW's headquarters. You will enjoy reading about both businesses in “What is sown will yield manifold,” pages 19 through 22.

Coming next month

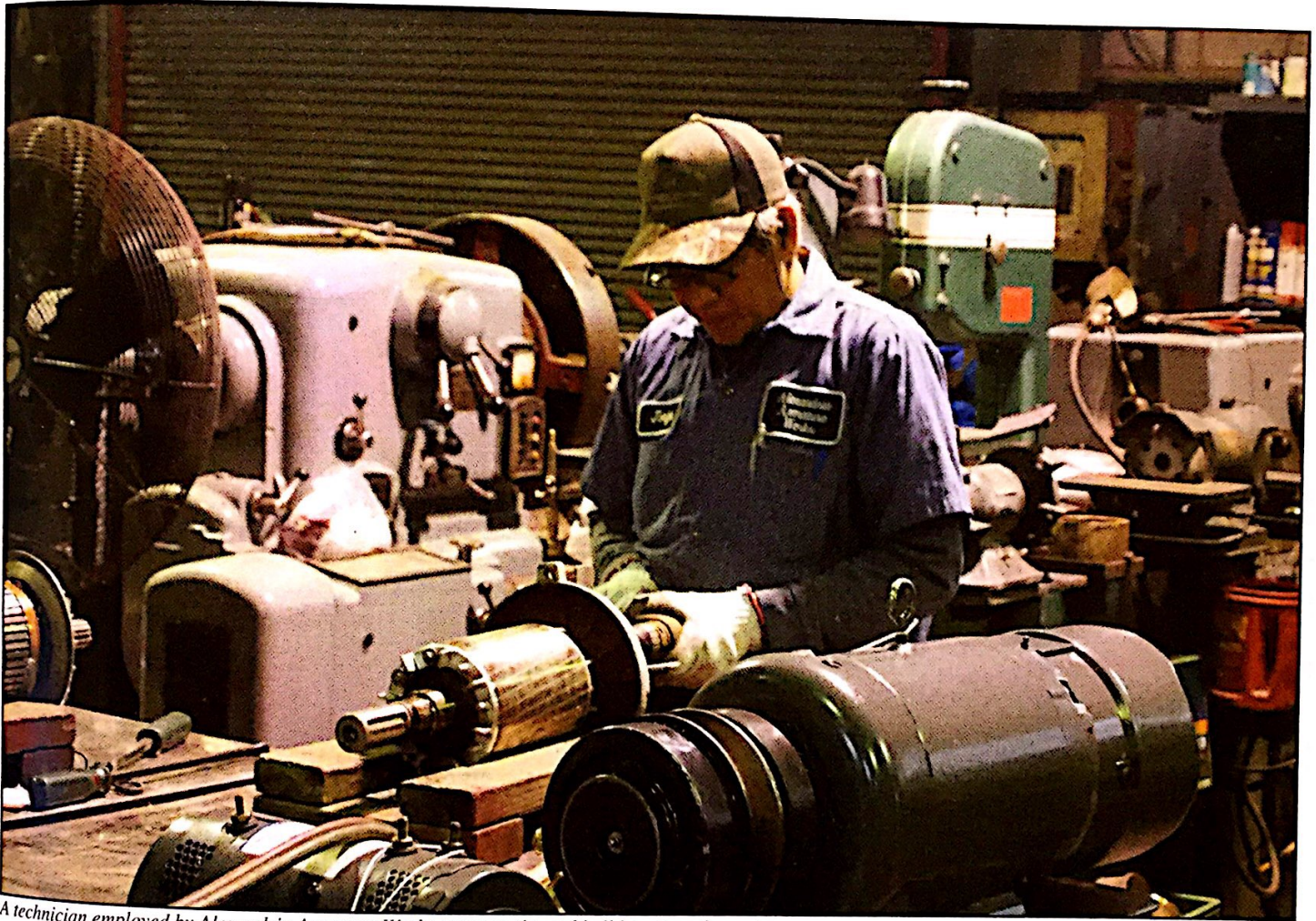
Readers of *EA* have come to expect articles covering current business developments as well the latest in technology, and the April issue will not disappoint.

Contributing Editor William Wiersema will take a look at the new healthcare law and explain how it might affect your business, while Engineering Editor Richard Nailen will examine the limitations of motor redesign.

These articles—along with our usual reporting on developments in associations, safety, training, business, and more—promise to make the April issue another issue worth keeping!

What is sown will yield manifold

How an immigrant from Viet Nam has made his Virginia service shop grow



A technician employed by Alexandria Armature Works removes the end bell housing of a motor.

By Joseph S. Hoff,
EA Associate Editor

THE RAVAGES of war in Viet Nam and subsequent diaspora resulted in the ensuing export of talent to places elsewhere in the world, scattering seeds on shores to produce crop. Nowhere is this more evident than it is at Alexandria, Va.-based Alexandria Armature Works (AAW), an enterprise founded and operated by Quan Hoang.

Hoang is testament to the truth that when a seed falls, it may produce more than what was originally sown. After leaving his native Viet Nam with his brother at the age of 15, Hoang immigrated to the U.S., where he attended college and earned a B.S. degree in aerospace engineering—training that he may still draw upon. As a serial entrepreneur, he initially tested his mettle in the IT industry, where he built a business that he later sold.

He subsequently acquired Anlac LLC and transformed the business into Alexandria Armature Works, the motor sales and service company housed in a 10,000-square-foot facility that has thrived in part through focusing on markets for static and dynamic testing.

Today, the company employs six people—five in the shop and one in the office. Although the company has bid on larger units, it services motors ranging from fractional to 200 horsepower. Sales account for roughly 10% to 15% of the company's business. The company also sells generator parts. But AAW generates the majority of its revenue through service and repair. Its staff also performs on-site testing.

"We do motor rewinding, reconditioning, and preventive and predictive maintenance," noted Yvonne Boysen, who is originally from Manila and formerly worked in the purchasing department and then in product development at Procter & Gamble in the Philippines.

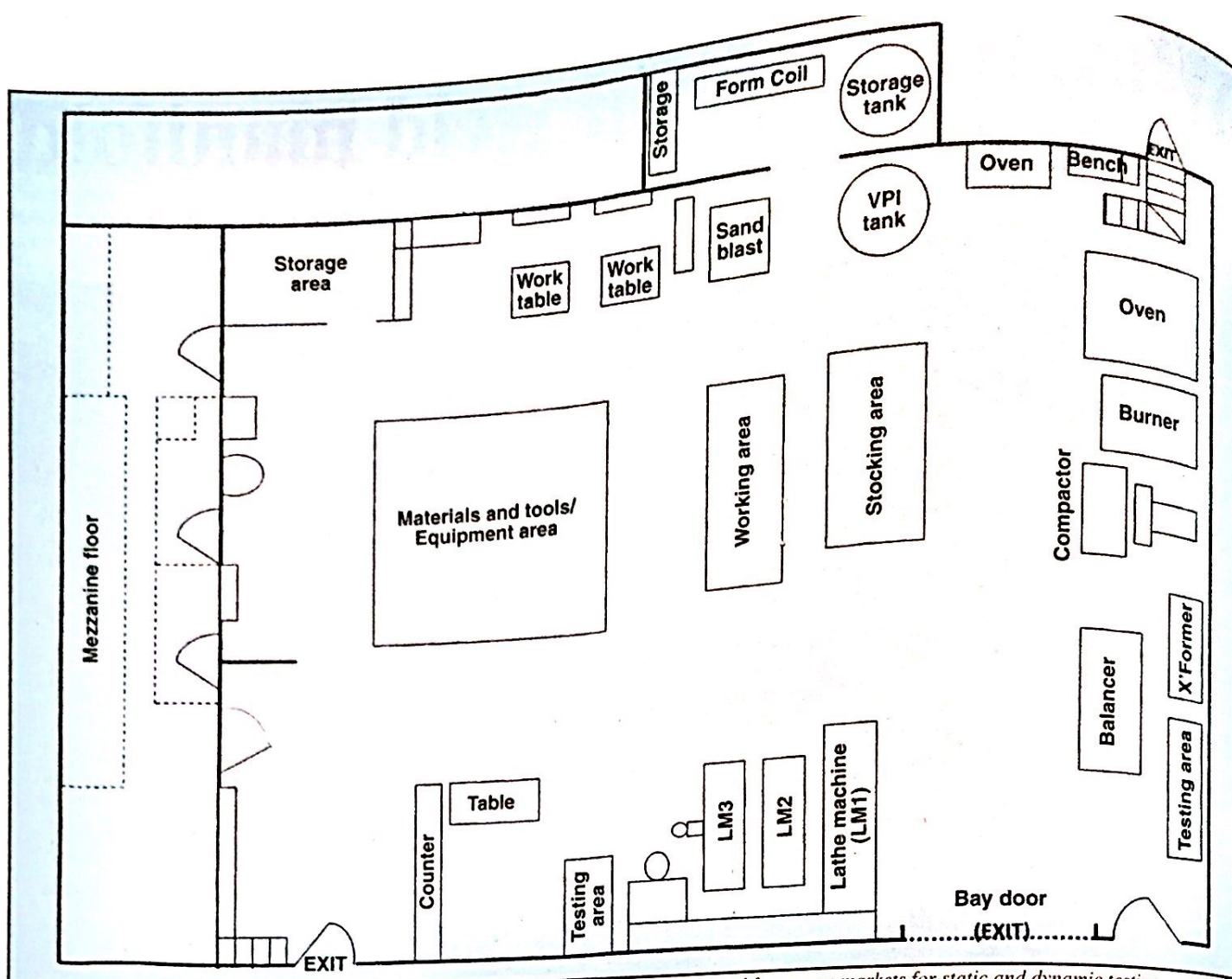
She currently serves as operations manager for the company, overseeing a wide variety of responsibilities, including accounting.

As an IT entrepreneur, Hoang depended in part on federal contracts. AAW also services the federal government, performing preventive and predictive maintenance in the form of static and dynamic testing for the Government Services Administration (GSA). (Quan Hoang was unavailable for an interview the day EA visited the shop.)

Other customers include local county governments (Arlington, Prince William, and Fairfax Counties) and the Metropolitan Washington Airport Authority, which has jurisdiction over Dulles and Reagan. Construction companies are also among its customers. AAW's service territory covers Maryland, the District of Columbia, and Vir-

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Alexandria Armature Works is housed in a 10,000-square-foot facility, employs six people, and focuses on markets for static and dynamic testing.

Continued from previous page

The transition into a new industry isn't without its trials and tribulations. Hoang and his team spent the first year learning the operation and its customers. Furthermore, the staff has



AAW counts local governments among its customers. Pictured is a 250-horsepower vertical pump motor that was recently reconditioned.

contended with an easing in demand for repair, which is attributable to the relatively cheap price for a new motor—a cost-efficient alternative to repair.

"That is true for 50 horsepower and downward," explained Boysen. "They normally replace motors for 50 and down."

According to Boysen, the demand for repair of these motors is there only if there is an availability issue or if it is a specialized product. In response, the company has looked for new markets, expanding its ability to provide other services such as on-site service.

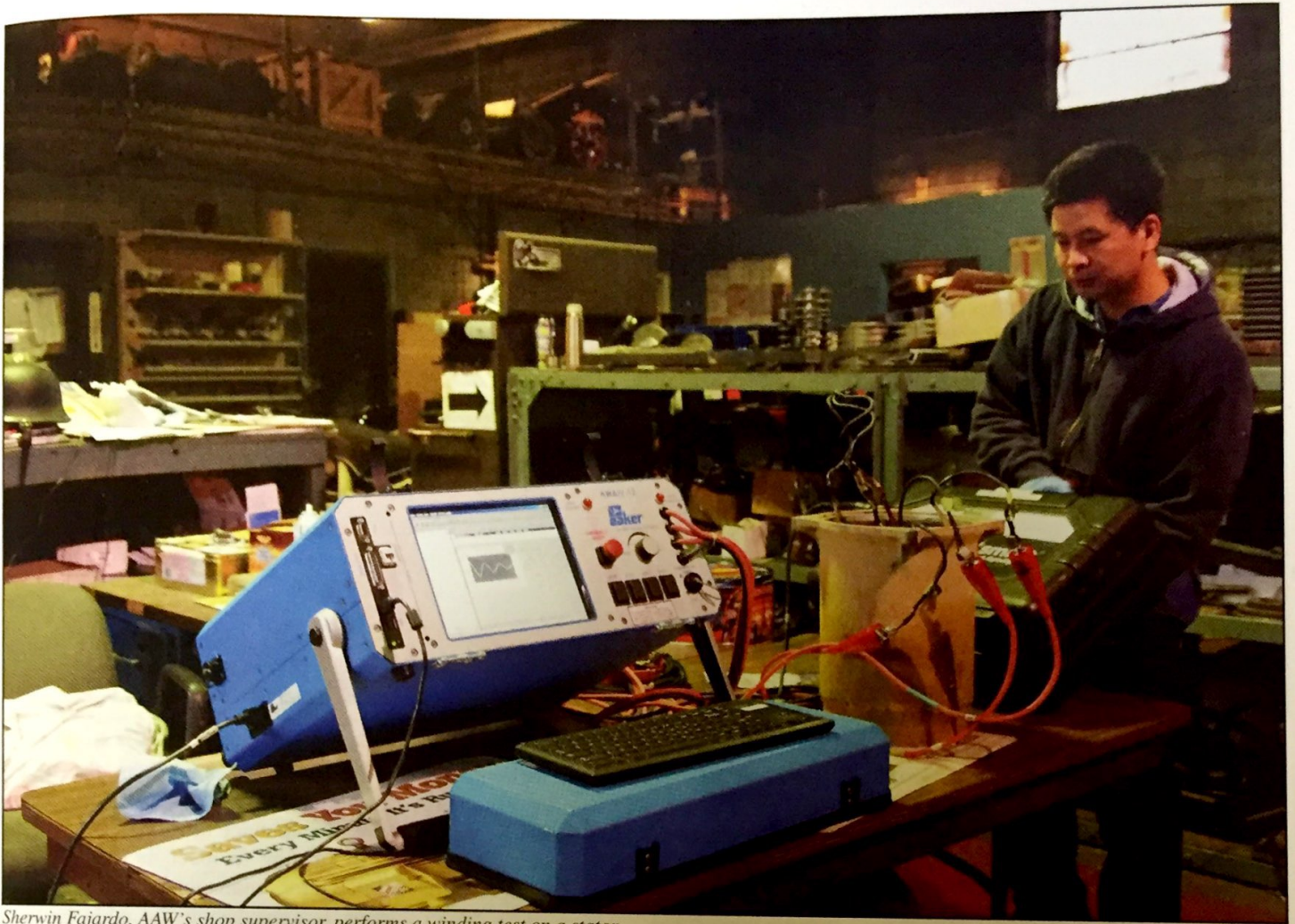
The company acquired new testing equipment (online and offline testers) and machine alignment tools that have enhanced its capabilities in field services.

"Now we are capable of testing motors up to 12 kV and able to assess the winding, power, and load conditions of the motor," said Boysen. "Our clients are saving money as well as downtime because we are able to perform full winding tests on-site without uninstalling the motors and transporting them to our shop."

The company's offline or static tester performs full winding analysis, which includes a resistance test, megohm test, polarization index or dielectric absorption test, and surge test with one click of a button. By contrast, its new online or dynamic tester checks on power-related issues such as voltage and current imbalances and load problems. Both of these testers can be used for fractional-horsepower and large-horsepower motors as long as the voltage is under 12 kV. In addition to testing equipment, AAW acquired a laser alignment tool to help customers eliminate and reduce downtime and cost.

Its investment in technology (particularly the new static tester) is ultimately intended to assist customers in achieving the objective of reducing downtime. Sherwin Fajardo, who serves as shop supervisor, is committed to the task. He performs predictive maintenance—both static and dynamic.

He demonstrated how he doesn't have to go directly to the motor conduit box in performing a static test on the stator of the motor. Rather, "you connect to the motor control panel and test the motor from there," he explained. "That means shorter downtime because you



Sherwin Fajardo, AAW's shop supervisor, performs a winding test on a stator.

don't have to disconnect and take out the lead wires from the motor conduit box or even uninstall the motor and take it to the shop for testing."

In its contract with GSA, AAW maintains the Administration's motors at their Heating, Operation & Transmission District plant in downtown D.C. The motors range in capacity from 20 horsepower to 700 horsepower. The company performs both preventive and predictive maintenance on these motors. The service includes but is not limited to cleaning the motor, checking motor alignment and vibration levels, and performing static and dynamic testing.

"Based on the tests, we will tell them the condition of the motor," said Boysen.

As part of preventive maintenance, AAW will recommend whether the motor needs to be taken down for reconditioning or rewinding.

Beyond motor rewinding, reconditioning, and preventive and predictive maintenance, the company provides warranty repair service.

"The customer sends the failed motor to us for warranty inspection," said Boysen. "We do checking and send a

test report to the manufacturer. They decide based on the report whether the motor is covered or not."

Although AAW adapts to meet changes in the nature and scope of work, its methods and attention to quality remain largely unchanged. Upon receipt of a job, a person within the company will perform an initial inspection.

"When we do the initial inspection, we have a form we fill out and write down what was found during the initial inspection," said Boysen. "Once final work is approved by the customer, AAW starts the repair and performs the final test run prior to customer pick up or delivery of the motor."

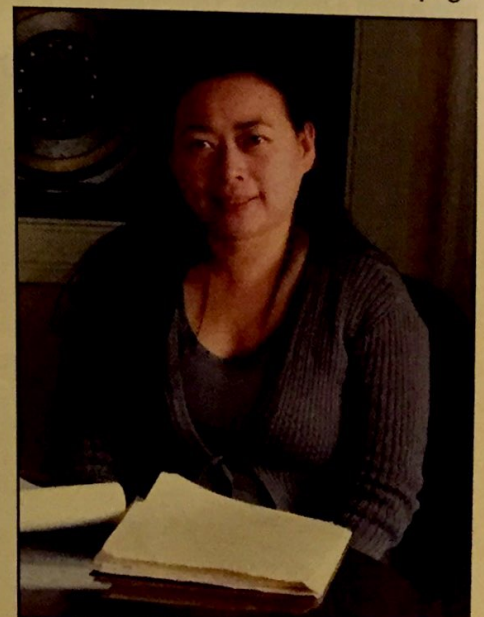
The company has maintained a measure of continuity from the time of Hoang's initial acquisition until the present. The transition was facilitated by the decision of several employees to stay with the company under its new ownership. Five years later, one employee from the original group remains with the company. Yet an underlying cohesiveness may account for some of the firm's success.

"Alexandria Armature Works is a very small-type family business where everyone brings their own skills and

and eats together during lunch," said Boysen. "We treat our customers with high respect and are very attentive to their needs."

This cohesiveness may contribute to the overall consistency of quality and service that customers have come

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Yvonne Boysen, who earned a B.S. degree in industrial engineering, serves as operations manager at AAW, a role in which she oversees a range of projects and manages the company's production.



AAW, situated in Alexandria, Va., outside Washington, D.C., serves the needs of local governments and federal contractors as well as private industry.

Continued from previous page

to count on. The consistency is maintained in part through a commitment to training, which enables employees to continue meeting new challenges and finding new opportunities.

Employees are trained in how to use the equipment. They also undergo training with respect to the purpose and results of each test that they perform,

and they stay current on technology through webinars and training provided by the Electrical Apparatus Service Association, manufacturers, and distributors of motors and electrical testing equipment.

Some of the training is provided in-house. The in-house training is supplemented with opportunities for employees to attend training programs elsewhere.

In Boysen's estimation, the future potential lies in preventive and predictive maintenance of motors.

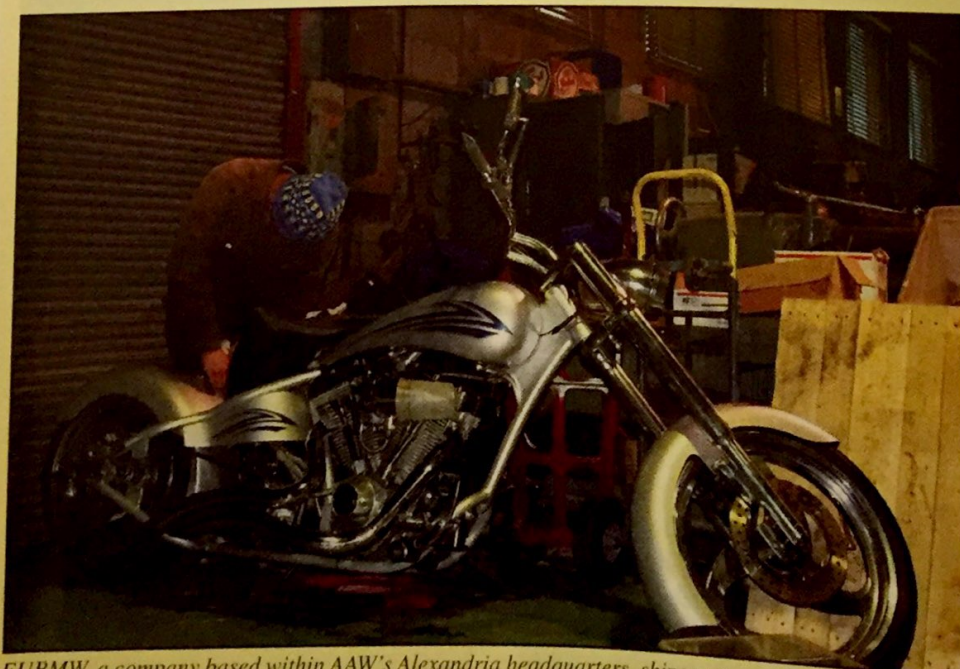
In striving to meet its objectives in this sector, management at the company is considering the addition of a marketing person to its payroll.

The crop is indeed abundant—evidence that an immigrant can come to America with a dream—or dreams—and watch them come to fruition. ■

Success breeds success

EUBMW is a shop within a shop—a business within a business. That is because it is housed within Alexandria Armature Works.

It focuses on the shipment of motorcycle parts in both domestic and international markets and the service of a wide variety of motorcycles.



EUBMW, a company based within AAW's Alexandria headquarters, ships motorcycle parts and services motorcycles. It is owned and operated by Khanh Nguyen.

The business is owned by Khanh Nguyen, who emigrated from Da Lat in South Viet Nam to the U.S. In his homeland, Nguyen earned an M.S. degree in electrical engineering and worked for an electrical power company.

He also started a power service systems business in Viet Nam prior to leaving for the U.S.

"I left everything in Viet Nam and had to start over," said Nguyen.

Initially, he worked in a motorcycle repair shop owned with his father. When his father's shop closed, Nguyen opened a new one. His father died in 2007.

"After my dad passed away, I moved into this building," explained Nguyen, describing how Hoang (an old friend of Nguyen's father) tried to help him.

Thus far, Nguyen is showing his mettle in the aftermath of his father's death and the birth of his new business.

"Fifty percent of my customers own BMW," explained Nguyen. "Fifty percent own other kinds of bikes."

Nguyen is optimistic about the future. "Anybody can make money. I work with," he said.