Laars celebrates more than 60 years of innovation

In 1942, and as the war raged overseas, Avy Lewis Miller was commissioned by the U.S. government to convert a civilian gas appliance company — Mission Appliance Corporation in Los Angeles — into a manufacturing plant producing generators to fire anti-aircraft guns and sheet metal shell casings for 105mm artillery Howitzers to replace casings made of brass.

Bill Root, vice president of sales and marketing for Laars, says with the backing of Bradford White, we developed a wave of new, cutting-edge technology.

Shortly after the war ended, Avy Miller — a registered professional engineer — turned his attention to technology he was most interested in: thermodynamics.

It was in a southern California garage in 1948 that the quiet, unassuming scientist and inventor began to develop an idea he had to improve the transfer of heat between metals. Later that same year, and with $25,000 — his entire savings — Avy Miller started Laars Engineering, a fledgling consulting firm that eventually focused its entire effort in developing his new concept for a commercial boiler.

Miller's crucible idea

Miller's revolutionary design was based on the principle that water could be heated rapidly through a finned copper tube heat exchanger exposed to gas flames. The technique he experimented with virtually eliminated the scaling and electrolytic corrosion that shortened the life of the cast iron and steel tube boilers used for commercial heating and hot water supply.

The post-war 'boom' economy was a time of eager growth and exploration for industrial firms large and small. It was during those crucible years that Avy Miller became a leading pioneer in the water heating and hydronics industry.

In the early 50s, the swimming pool industry blossomed in Southern California. The Laars copper tube design was ideally suited to the task of heating a large volume of pool water quickly and economically. For the pool owner, a heated pool meant more comfortable swimming, a longer swimming season, and a better value on investment. Laars grew and prospered as Avy Miller turned the attention of his firm to adapt the copper tube boiler to this water heating application.

The copper fin tube concept — quickly becoming dominant in the pool heater market — was applied to large, high volume water heating systems for industry. Miller knew that boilers using finned copper tube heat exchangers could also be adapted for multiple housing, restaurants, car washes and commercial laundries.

Anecdotes of post-war growth

"It was a time of robust growth," recalled Marlin Freel, and engineer who joined Laars during those years. He and another engineer, Leonard Rice, recall working tirelessly, refining Laars' heat transfer system.

Mike Pyle was a shop superintendent for the firm from '53 to '55. In a 1985 interview, he recalled a time when the handful of Laars employees invited the top 20 to 30 SoCal executives and salesmen of the American Gas Association to a luncheon to explain the workings of their new water heater technology.

"They were very suspicious of it," Pyle said. "We told them that the 102,000 Btu model we had with us could replace much larger cast iron or steel equipment. They couldn't believe that such a small heater could hold so many Btus. Initially, they didn't want to test it. But Avy stepped in reassuringly. The AGA guys still didn't want to activate the boiler in the room; we were told to start it in the hallway. All of them backed up to a distance of 25 feet or so when we started it up! It worked flawlessly."

Six or eight months later, AGA gave the Laars system their enthusiastic stamp of approval. In fact, one of AGA's sales supervisors, Guy Muto, soon joined Laars as their first sales professional. During an interview about 20 years ago, Muto recalled of a time shortly into his tenure there, that "I was finally making it. I hadn't made so many beans in all my life. At last, I was able to change my diet."

Three wheeled buggy & high-seas Shanghai

Muto recalled that, during the early 50s, there were five or six engineers working for Laars. "Miller had many offers to sell his copper fin tube concepts and design to large manufacturers, but he refused them all; he wanted to bring them to fruition. I was always amazed at what he and five or six engineers could accomplish in short order. The speed and quality of product development was amazing. Heck, if you wanted a buggy with three wheels and four horns, they'd develop it!"

Chuck Barbara recalled meeting several Laars national account distributors at a trade convention in Florida. They pleaded with him to join them for a bon voyage party aboard a luxury liner, bound for a cruise to the Bahamas. What Barbara didn't know was that they had an ulterior motive: to detain and "Shanghai" him, giving them the time to convince him to join the Laars sales team.

Aboard the docked ship, Barbara alerted at the ship's first whistle, but was assured that the ship would give several whistles before casting off. "When I got back on deck, the ship was already moving out to sea," re remembered. "I went to the ship's captain, an old and very indignant Dutchman who thought I was a jokester. He was about to confine me to a certain area of the ship, but eventually I was able to get them to lower a small, motorized boat that took me back to port. The weather was pretty ugly and the seas were real choppy . . . but that event changed the course of my life professionally."

Following his narrow escape from the Bahamian cruise, Barbara joined the Laars sales force in 1956. "Working with Avy Miller was one of the high points of my entire business life," he said. "Avy was one of the finest individuals and one of the most fair men I've ever had the pleasure of working for.

Standards of industry developed; training

"In addition to the copper fin tube technology that was setting the standard for heat transfer, Laars was also the forerunner of new techniques such as the kilovolt system and other special fittings that protected the heater from overheating," added Barbara. "These advances became the accepted standard of quality in the industry."

It was during this time that Barbara, Freel, Rice and others began to hold training clinics that — like the technology that was being developed by Laars — put the company "on the map" nationally. Trainer Al Shaver said of those early years, "People from all over the country were invited to participate in the two-day swimming pool heater clinics; they became one of the truly unique aspects of our culture, defining who we were. The success of our outreach in the industry was amazing to see."

The acquisition of Laars Engineering by Teledyne in 1966 provided further growth through substantial investment in plant equipment and the adoption of automated and semi-automatic manufacturing techniques which allowed the company to respond rapidly to the demands of the marketplace. Although a number of other copper tube boilers were available at the time, Laars remained the dominant force, both in reputation and sales volume.

The company next expanded into residential hydronic heating with gas and oil boilers. Continued product innovation also resulted in the development of the new commercial water heaters; these products represented a breakthrough in state-of-the-art technology, with the highest energy efficiency and lowest environmental emissions available. Research and development contracts with various universities, the Gas Research Institute, Battelle, and Southern California's South Coast Air Quality Management District further advanced the company's growth and diversification efforts.

Growth & diversification

Teledyne eventually merged with Allegheny Ludlom Steel, and became Allegheny Teledyne Industries.

In 1996, Teledyne Laars acquired Jandy Industries, a company that dominates the valve, electronic controls and water features markets in the pool industry. The 1998 acquisition of Trianco-Heatmaker added high efficiency sealed combustion systems to their heating technology base of gas and oil-fired boilers and

(Turn to Boiler... page 66.)

Boiler innovation

(Continued from page 64.)

water heaters for residential and commercial use.

In late 1999, Allegheny Teledyne spun off the Teledyne Laars and Teledyne Waterpik. The new Waterpik Technologies, Inc. included the divisions for personal health care, and pool products and heating systems — formerly Teledyne Laars. This was the genesis of Laars Heating Systems Company.

Bradford White

In June of 2005, Laars (www.laars.com) was purchased by the Bradford White Corporation. The acquisition by Bradford White Corporation greatly expanded Laars' scope and marketplace. Recently, Laars completed full consolidation of all manufacturing at its Rochester, N.H. plant; and with facilities in Canada, Laars is optimally poised for the future.

Laars' high-efficiency, high-performance and condensing boiler lines, and their commercial water heater systems, are today recognized industry-wide as leading technology. The range of coverage is amazing — from 50,000 to 5 million Btu.

In the last three years, with capital funding from Bradford White, its research and development efforts have expanded dramatically. Laars has introduced 20 new high-performance products into the marketplace since 2005, including the fan-assisted copper tube Pennant line, and the low-mass Rheos and Rheos+ systems.

One of the newest systems in the Laars lineup includes the NeoTherm, which now includes floor-standing models with 85, 105, 150, 210, 285, 400 & 500 MBH capacities. Laars will follow these models with the release of the volume water heating models (199, 285, 400 & 500 MBH) and wall hung hydronic models with 85, 105, 150, and 210 MBtu input ranges.

Laars is also now working on an entirely new line of commercial condensing boilers in the 750 and 1,000 MBH sizes . . . and substantially beyond. "We'd like more than anything to share our excitement about this new technology," said Root. "But our audience will just have to wait for the surprise. We won't disappoint them!"

The hydronic industry's innovations leader

"With the backing of Bradford White, we developed a wave of new, cutting-edge technology that's stranded competitors. The tsunami of product development came as a welcome surprise to many of our customers," said Bill Root, vice president of sales and marketing for Laars.

"For years — although we had some fine products on the market — we watched as other firms took the lead on the 'innovations' front. In the past couple of years, we've introduced more 25 new commercial models, now seen by contractors and consulting engineers as among the most advanced boilers available today."

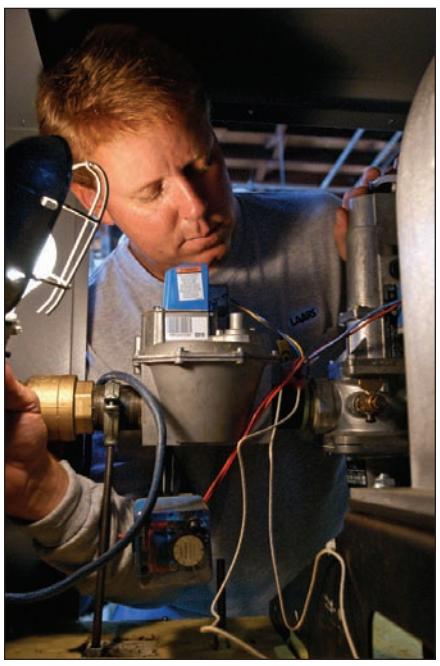
The crown jewels of the company's current product lineup are the Rheos+ boilers/volume water heaters, the largest Btu capacity condensing boiler built in the U.S. And yet it can slide through a standard, 36-inch doorway.

The high efficiency, fully-modulating Rheos+ commercial boiler/water heater provides industrial grade performance for hydronic and volume water applications with up to 98% combustion efficiency and infinite variability of modulation between

100% and 25% of the input rate to precisely meet heating load needs between 1.2 to 2.4 million Btus. So, for example, their 2.4 million Btu boiler easily modulates down to 600 MBH.

The ultra-high efficiency of the Rheos+ cuts operating costs as much as 50 percent over conventional non-modulating systems — saving tens of thousands of dollars over the life of the equipment with payback on initial cost usually seen in just a few years.

Rheos+ accomplishes the extraordinary efficiency with advanced combustion design, combining two internal heat exchangers — one copper, one stainless steel — and a sophisticated mixing system that permits condensation on the stainless heat



A technician examines the inner workings of a Laars boiler.

exchanger, exclusively. It also has an internal water mixing system to allow minimum 60ºF inlet temperatures and a built-in BAS interface. And, with its compact, through-the-door, fully-condensing, sealed combustion design and NOx emission levels of less than 10ppm, the boiler is truly an innovative breakthrough for commercial heating needs.

Another gem in the commercial boiler/water heater collection is the Pennant series. This equipment provides one of the most flexible modular designs in the industry. Pennant boilers, water heaters and pool heaters rank among the most versatile and environmentally friendly systems available on the market. The fan-assisted units are easy to use and easy to install and maintain in commercial hydronic and hot water applications from 500 to 2,000 MBTU/hour, and work effectively in altitudes up to 10,000 feet — even in harsh environments from — 40° to +140°F.

We can't ignore the firm's well-rooted commercial pool heater line for capacities from 500 to 5,000 MBH. Rheos and Pennant pool heaters can be configured together or separately to deliver the precise response to water heating demand to optimize efficiency for any pool heating application.

Are you thoroughly satisfied with the commercial hydronic or pool heating equipment you install? If not, you owe it to yourself and your customers to see what the innovations leader has to offer.

The Laars lineage is strong, with new strength, deeply rooted in 60 years of focused product innovation. The heart of Avy Miller's early product designs still beats in the newest and most advanced hydronic and volume water heating products on the market today with firm commitment to what the market needs — tomorrow. Find them at www.laars.com.