

bringing the past to light

antique electric meter lamps by Arcman

THE TITLE OF THIS ARTICLE IS the motto of Arcman Corporation, a company near Scranton, Pennsylvania, that prides itself on expertly restoring electrical artifacts, chiefly early ac residential meters, and incorporating them into decorative and useful lamps and displays. What follows is the story of Arcman and the inspiration, vision, and persistence of Jim Sovaiko, its founder and president. Jim has a keen interest in the history of electric power and is a preservationist whose goal is to help maintain the legacy of that rich history. He has successfully combined this passion for history with the production and marketing of attractive and useful electrical products having broad customer appeal.

The Early Days

The history of Arcman Corporation traces back to a chance encounter in 1972 when Jim Sovaiko was home on leave from his duties as a U.S. Marine Corps engineering officer. While searching through a local scrapyards for parts to use in an amateur science project, he happened upon a cache of antique electromechanical residential watt-hour meters that had been retired from service and consigned to the scrap heap some years earlier. Moreover, the meters were scheduled for imminent destruction and disposal.

Believing that the meters represented an as-yet-undefined but unique business opportunity, Jim met with several

In our continuing effort to offer articles that cover different and interesting aspects of the rich history of electrification and electric power technology, this article discusses the Arcman Corporation. Arcman, founded in 1974, is a small company in northeast Pennsylvania that produces and markets a variety of hand-crafted electric lamps that display and preserve early residential electric meter technology.

During the early years of electrification, engineers in Europe and North America realized the need for a mechanical meter that could register electrical energy usage on a set of dials. The following concept soon arose: using a small motor drawing a current directly proportional to the current supplying the metered load and using a damping disk reacting with permanent magnets as a load. The growth of alternating current (ac) systems and the commercial use of induction motors led to the development of at least a half dozen different induction watt-hour meters by 1900. Further development and refinement continued into the 20th century on both sides of the Atlantic Ocean.

Millions of ac induction meters were installed during the first decades of the last century. With ever-increasing average electric consumption per customer, electric utilities found the need to replace early meters with new devices. Millions of meters manufactured before 1940 have been removed and sold cheaply for further use in developing countries or simply destroyed. In producing its attractive and useful products, Arcman has saved thousands of these antique meters from destruction. By so doing, the company is preserving an important and interesting chapter in the history of electrotechnology.

The author is indebted to Arcman Corporation and to Jim Sovaiko, its founder and president, for providing much of the information in this article. Contact information is provided at the end of the article for readers interested in learning more about Arcman.

—Carl Sulzberger
Associate Editor, History

school friends at a local pizza parlor to further discuss the matter. The group decided that the meters could best be employed as working components of a line of table lamps. Since Jim was scheduled for a one-year tour of duty

in Japan, the immediate need was to acquire and store the antique meters for the time being. He and two friends became business partners in this new but uncertain venture. Before Jim left for Japan, the trio purchased the entire

lot of meters for US\$500. Some meters were stored in one of the partner's basement, and the rest were stored in an unused apartment house.

Upon Jim's return from Marine Corps service, the three partners began work on their idea in earnest. A major problem was that most of the meters had no glass cover or the cover was damaged or had deeply etched discoloration that defied removal. Further, the venture was not able to locate and acquire additional intact or restorable glass covers. Without adequate supplies of undamaged clear glass meter covers, the planned manufacture and sale of lamps featuring working meters could not succeed. This deficiency, combined with high operating and research and development costs, left the partnership with no monetary assets, no experience, no marketable product, and no sales prospects. The partnership was dissolved, but Jim still believed in his business model and remained determined to pursue his vision. Some additional funding became available from the last of his overseas military pay and by borrowing from family members.

After consulting an expert glassworking engineer, Sovaiko designed and built a meter glass polishing machine that solved the difficult discoloration problem and restored the antique glass to superior clarity. This unique machine remains in use by Arcman Corporation today. At the same time, Jim purchased a nationwide electric utility directory and hired a telephone canvasser to



figure 1. First manufacturing building of Arcman Corporation, now used to store meters for future restoration (photo courtesy of Arcman Corporation).

search out supplies of antique meters around the country. After some 500 hours of investigation and following leads, enough old meters and restorable meter glass were located to allow the venture to go forward. Many thousands of meters were purchased and trucked

from around the nation to Scranton for storage in a leased warehouse. Most of the meters were acquired from electric utilities that were then retiring outdated metering equipment, but some meters came from other sources. For example, Sovaiko acquired thousands of meters from the Atlantic Electric Meter Company in Freehold, New Jersey, a company that had previously refurbished retired meters destined for use in the Philippines.

While few of the early residential watt-hour meters remain in use today, Sovaiko still has a longstanding agreement with the Consolidated Edison Company of New York (Con Edison), to purchase any suitable meters that the utility retires.



figure 2. Present manufacturing building and main meter storage facility of Arcman Corporation (photo courtesy of Arcman Corporation).



figure 3. Office display of currently available Arcman products (photo courtesy of Arcman Corporation).

Armed with adequate supplies of restorable meters and meter glass, Sovaiko produced a few prototype meter lamps by 1974. Advertising circulars were designed, printed, and sent to a number of electric utilities. This first marketing of the lamps as employee service awards demonstrated that there was a strong unmet demand for these unique and attractive products. This led to Sovaiko hiring and training his first employees.

The Archans Manufacturing Company was established in Throop, just east of Scranton, in 1974 in a 22 ft by 24 ft backyard workshop built specially to launch the meter restoration business (see Figure 1). This building is still used today to warehouse meters for future restoration. Archans Manufacturing Company later became Arcman Corporation. After

later occupying two locations in Scranton, Arcman made its latest move to a 6,000 sq. ft building in Dunmore, between Throop and Scranton (see Figure 2). This facility also has 12 45-ft long storage trailers that provide an additional 4,300 sq. ft of storage space for thousands of antique meters awaiting restoration and use in Arcman lamps and displays.

Arcman Corporation Today

Arcman Corporation has come a long way from its very uncertain beginnings in the early 1970s. The company has two full-time and six part-time employees, each a craftsman in restoring antique meters and in creating the lamps and other products marketed by Arcman. Figure 3 shows a display of nine Arcman lamp varieties plus one static meter display piece (upper right). Also shown are two of a line of walnut presentation plaques that incorporate antique glass electric distribution line insulators and, in some cases, other antique power system hardware artifacts. The plaques are purchased primarily as service awards for electrical industry personnel.

The principal residential ac watt-hour meter used by Arcman for its products is the classic Westinghouse Electric & Manufacturing Company type OB meter. Certain design features of this 5-A, 115-V meter were covered by patents issued between 1911 and 1919, and millions of type OB meters were produced at the once-extensive Westinghouse Newark Works



figure 4. Model OB-DO, "The Edison," antique meter lamp with operating meter and glass dome (image courtesy of Arcman Corporation).



figure 5. Model OB-SH, "The Heritage," antique meter lamp with operating meter (image courtesy of Arcman Corporation).

in New Jersey until the mid 1930s. As electric power consumption per customer grew through increased lighting loads and more and newer appliances, these undersized, early meters had to be replaced with larger-capacity units. By the 1950s, the type OB meter was disappearing from utility service in the United States. (The author recalls seeing many large paperboard barrels of retired type OB meters packed for shipment to Brazil while he was assigned to the Public Service Electric

parts are cleaned and repainted in their original colors, and the glass cover is cleaned and polished to a crystal-clear clarity. When the meter is reassembled, the two brass cover glass retainer wing nuts and the base cover are sealed with copper-wire and pressed-lead security seals as was done when the meter was originally installed at a customer's premises decades earlier. Meter engineers that have examined restored and re-

finished Arcman meters have confirmed that they are in new or better than new condition and that they should provide smooth and reliable operation for generations.

High-quality brass lamp parts and three-way sockets are used where applicable in the manufacturing of the meter lamps, and all of the lamps and nonoperating static display meters are mounted on solid walnut bases. All of the wooden parts are cut and finished by a longstanding supplier located in New Hampshire. The lamps are furnished with an optional personalized engraved brass plate.



figure 6. Two Model OB-TI, "The Fifth Avenue," antique meter lamps with operating meters and Tiffany-style art glass shades (image courtesy of Arcman Corporation).

When completed, an Arcman lamp is an attractive and useful heirloom-quality restoration piece featuring an important artifact from the electrical industry's early years.

Figure 4 shows an Arcman model OB-DO lamp, an example of which is located in the artifact display cases in the main entrance lobby of the IEEE Operations Center in Piscataway, New Jersey. Figure 5 shows the Arcman model OB-SH meter lamp, and Figure 6 shows two examples of Arcman's new model OB-TI lamp featuring hand-lead-ed Tiffany-style art glass shades supplied in several colors and designs by the Meyda Tiffany Company of Yorkville, New York. The spiral filament visible through the shade on the left is in a replica antique



figure 7. Model I-30, "The Roosevelt," antique meter lamp with operating General Electric meter with the case and cover glass removed and with a custom-designed acrylic dome (image courtesy of Arcman Corporation).

25-W Edison-style light bulb that is provided with all Tiffany-style meter lamps. Figure 7 shows a Model I-30 lamp that features a General Electric Type I-30 watt-hour meter. The case and cover glass are removed on this model so that the operation of the interior recording mechanism can be easily observed.

The next four images show present-day meter restoration and lamp manufacturing. Figures 8 and 9 show skilled Arcman craftsmen at work. Figure 10 shows a group of partially completed meter lamps, and Figure 11 shows completed meter lamps bagged and ready for packing and shipping.

Arcman Corporation is also interested in the future restoration and display of other types of early electric power system



figure 8. Doug Evans assembling a Model OB-BA, "The Metropolitan." Antique meter lamp with operating meter (photo courtesy of Arcman Corporation).



figure 9. Leon Marzani working on Westinghouse Type OB meter brake magnets (photo courtesy of Arcman Corporation).



figure 10. Partially completed antique electric meter lamps with a walnut base shown at lower left (photo courtesy of Arcman Corporation).



figure 11. Completed antique electric meter lamps ready to be packed and shipped (photo courtesy of Arcman Corporation).



figure 12. Jim Sovaiko displaying antique electrical artifacts being stored for possible future restoration and use (photo courtesy of Arcman Corporation).

artifacts. For example, Figure 12 shows Jim Sovaiko with a General Electric type TA voltage regulator designed to operate at 100–125 V and at 25–125 Hz. The smaller device is a Westinghouse type OB, 115–120-V, 25-A single-phase kW demand meter. The company is a con-

tract manufacturer of energy-saving light bulb demonstration devices that use watt-hour meters as educational tools to show comparative electric power consumption. Arcman Corporation is the only known commercial antique electric meter restoration and electric meter lamp manufacturing team. Its customer base includes hundreds of engineering and manufacturing companies, electric utilities, and other organizations associated with the electrical industry. Other customers include federal, state, and local governmental agencies; educational institutions; research entities; and many individuals.

Arcman has the world's largest known inventory of early watt-hour meters in long-term protective storage. With its current product line and with new product ideas that may come to fruition, Arcman has enough un-restored meters to meet its production needs for decades to come.

To Learn More
Readers who seek further information about Arcman Corporation may contact the company by mail at 807 Center Street, Throop, Pennsylvania 18512–1124 USA. The company can also be contacted by telephone at +1 570 489 6402 or +1 800 731 6229, or by e-mail at jim@classicmeters.com. Additional information is also available online at <http://www.classicmeters.com>.

To Learn More

While Arcman is not yet equipped to accommodate drop-in visitors, a tour of the plant is gladly offered to visitors who contact the company in advance to schedule a date and time.

