NATIONAL ALUMINUM PRODUCTION HERITAGE ASSOCIATION

February 2021 Vol. 2 No. 3

From the Board - Vision

What is your Vision? The answer defines an organization's purpose, which in turn helps define what we should be working on. Without asking the question, we could be spending time and resources on the wrong things, choosing the wrong opportunities, or missing the right opportunities. The answer to the question can change over time, but we need to always have a working vision so that we know we are working on the right things. At NAPHA, our vision is to educate and *remind us of our individual communities' national and global significance every day*. We do this through stories and artifacts/displays. These allow people, young and old, to look with wonder, maybe appreciation, pride, curiosity, inspiration (like artwork). And stories, well told, that might plant the seeds to a better future.

The Pittsburgh-Massena Smelting Pot Display

If you've ever visited Pittsburgh and toured Station Square, you might have seen the aluminum smelting pot display. That aluminum production artifact is a restored P-75 smelting pot from Massena NY. The National Aluminum Production Heritage Association (**NAPHA**), a Massena based 501c3 inquired about the status of this pot in early 2019 and discovered the current owners of Station Square were no longer interested in this display and were willing to donate it. NAPHA worked with various entities in both Massena and Pittsburgh to find a suitable location.

Pittsburgh-Massena Smelting Pot Display at Station Square

After a year and a half and contact with over a dozen locations we found a developer in New Kensington PA, about 16 miles from Pittsburgh, who was willing to provide a suitable public location outside a new Voodoo Brewery franchise. This developer plans to proudly incorporate the smelting pot into the brewery's motif, setting up bar stools around it with lights so people can have a drink and learn about the significance of aluminum's development in that community.

Pittsburgh-Massena Smelting Pot Display relocated in New Kensington PA

Recall New Kensington PA was the second full scale production facility for the Pittsburgh Reduction Company – a forerunner to Alcoa. The first centralized Alcoa Research Labs were also in New Kensington. New Ken is an aluminum community just like Massena NY, Shawinigan Quebec, Alcoa Tennessee, and others. In return for NAPHA's hard work to secure funding, we retained all naming and interpretive rights. Our donors LOVED the idea of placing this artifact in such a lively place. Placing these artifacts in an arts and recreation setting is a good way to meet our educational goals.

Do you know of another artifact or project or display that would remind people of their importance every day? Please use the suggestion form at the end of this newsletter, or send an email to info@naphausa.org and tell us about it!!

Completed Display in New Kensington PA

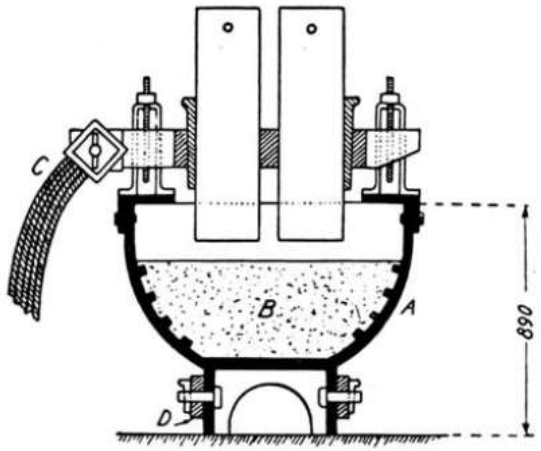
Charles Martin Hall – The Young Chemist

Much has been written about the two inventors of the electrolytic reduction process for making aluminum. Two young men; Charles Martin Hall, from Oberlin, Ohio at age 22, and Paul Louis-Toussaint Héroult, from Thury-Harcourt in Normandy, France at age 23, both discovered how to apply one of the game-changers of the industrial revolution, electricity, to produce "aluminium" metal at a much lower cost than by any other process.

If you think that invention is a senior scientist's game then think again! The dozens who were in pursuit of a lower cost way of making aluminum in the late-nineteenth century were mostly in their twenties. Most of the names of those who weren't as successful as Hall and Héroult have since faded into history.

In 1886 using electricity to drive chemical reactions was emerging technology. The light bulb had been patented in 1879 – a mere 7 years prior to Hall & Héroult's discoveries! However the challenge to Hall in particular was his "lab" – he mostly had simple articles of kitchen, camping and wood-shed equipment available. He had banks of homemade batteries as his power source. His "pots" were of cast iron that had come from his mother's kitchen. He was an ambitious, young chemist who tirelessly experimented in a wood-shed in the back yard [1] of his parent's home. Hall's family had moved his lab there after he had set part of the third floor of his parent's home on fire (a small one) the year before.

By the way, the term "pot" doesn't come from Hall. It comes from Héroult's first smelter in the village of Froges, near a small hydropower development in the French Alps. Héroult's third generation, round pot design, shown here, looked like large soup pots to the workers. The name stuck.



A "pot" with four anodes designed by Paul Héroult for the Froges plant in 1892 [2]

Think about this for a minute. Would you allow your 22 year old son to "experiment" in a back-yard wood-shed with dozens of jars full of sulfuric acid and a one-eye gasoline stove on maximum capacity to melt highly corrosive salts in a cast iron pot from your kitchen? Hall's family not only let him do it, they encouraged him to do so, even after the little fire in the cupola of the family home.

This early success to produce aluminum metal by electrolysis served as the foundation for a new industry. A little over a decade later work began on the power canal that was to make Massena, NY one of the early centers of mass production for this "new" metal.

The author, Stephen Lindsay, is a graduate of Clarkson College of Technology who began his 40-year career with Alcoa at Massena Operations in 1979 as a Process Engineer. For the complete article see www.naphausa.org

[1] Linda Hall Library https://www.lindahall.org/charles-martin-hall/

[2] Acknowledgements to Maurice Laparra and the Institut pour l'histoire de l'aluminium, and Revue Cahiers. https://www.cairn.info/revue-cahiers-d-histoire-de-l-aluminium-2012-1-page-84.htm

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www.naphausa.org

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