



Early Aluminum Industry in the United States

This newsletter continues its mission of highlighting the people and places of the early aluminum industry. With this issue we highlight the early years of aluminum in Tennessee.

Tennessee Operations

The Pittsburgh Reduction Company's first taste of inexpensive, hydroelectric power was realized at Niagara Falls in 1895. The company built two aluminum smelters there and began to look for new hydroelectric power.

The next smelter project was at Shawinigan Falls, Québec in 1901 by harnessing the power of the local falls and rapids of the same name.

Then Massena began operations in August 1903, supplied hydroelectric power from The St. Lawrence Power Company, Ltd.

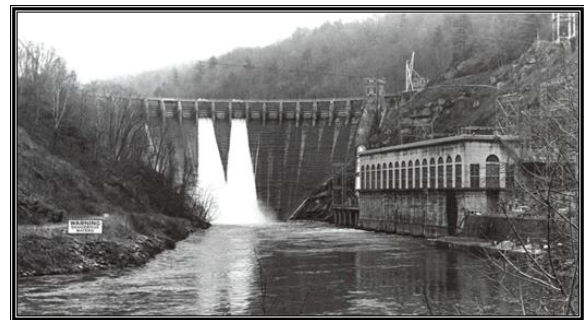
In 1906 the Pittsburgh Reduction Company bought the power company and soon began to expand its generation capability. This cast the die for the Aluminum Company of America, A.C.O.A. Between 1907 and 1952 the company pursued only self-generated, hydroelectric power and became a major producer of electrical power in the United States.

Between 1906 and 1912 the company had intentions of harnessing the power of the Long Sault Rapids of the St. Lawrence River. Obtaining the land plus approvals at the state, provincial and national levels proved to be an insurmountable task. A.C.O.A. had also begun to look elsewhere for opportunity.

By 1909, land along the path of the Little Tennessee River was being purchased prior to construction of the Cheoah dam in 1910. This project was overseen by Mr. Isaac Glidden Calderwood. Before becoming A.C.O.A.'s Chief Engineer, he had been the Superintendent of Dredging for the St. Lawrence River Power Company in Massena during his early 30's.

In 1907 the Pittsburgh Reduction Company had changed its name to the Aluminum Company of America, or A.C.O.A. The new corporate name soon took on another meaning. The work camp for over 1000 people opened a post office in 1912. The place then needed a proper name.

Amy Calderwood, née Amy O. Swan of Burlington, VT, suggested the name "Alcoa" as an abbreviation for the new name of the company that her husband, "Ike" worked for. The name stuck.



Cheoah Hydroelectric Dam - Robbinsville, NC

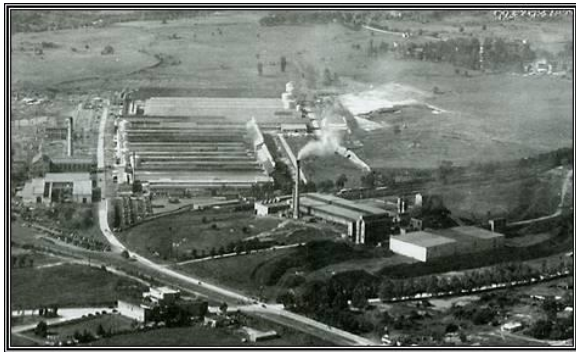
At 225 ft., the Cheoah dam became the tallest overflow dam and most powerful hydroelectric station in the world. This same dam was also used in the 1993 film, "The Fugitive".

In 1913 construction began for a new smelter in north Maryville, TN, 23 miles from the dam, as the crow flies. The new mayor of Maryville, Samuel Everett, had influenced the purchase of 750 acres for the project, beating out other



regional contenders, such as Knoxville. Many residents of Maryville were opposed to “rapid community growth” and threatened the mayor with tar and feathers and being ridden out of town on a rail. Nonetheless, the smelter was built and began operations in March 1914.

In 1917 the company built 150 homes for employees near the smelter, much like the Pine Grove in Massena. The new community officially adopted the name Alcoa on July 1, 1919. The former work camp was renamed to Calderwood, for the engineer from Massena.



ALCOA – Tennessee Operations in the early 1920's

Tennessee Operations became the largest producer of aluminum in the United States in the 1920's, a distinction that it held until the 1950's. It was self-sufficient for hydroelectric power needs until 1972 when its 2nd P-225 potline required power purchases from TVA.

Tennessee Operations operated for 95 years. It closed in 2009. A total of four dams were built between 1910 and 1957 and all of these remain in operation to this day.

Thanks to Amy Swan Calderwood a construction camp post office was named, that then became the name of a city, that eventually became the name of a company, Alcoa Inc. in January 1999.

by Stephen J. Lindsay

1970's Major Upgrade at Massena

In 1972 the company announced plans to modernize the Massena smelter. Fifty years ago, in 1974, construction was at a fever pitch.

In 1973 Massena had one of the busiest years in its' 70-year history of operations. Production records were set, employment was stable at about 3200 site wide, and revenues for Massena were improving.

By 1974, the \$60 million plus modernization and expansion was well underway and included the new potline including the A-398 fume removal process, that is still considered to be the best in the world, two large alumina storage tanks, a new bath crushing facility, expansion of the ingot plant, anode baking furnaces and rodding operations, two oil-fired boilers to replace coal-burning units. These new units were quickly adapted to primarily gas fired due to mid-1970's fuel shortages.

Construction workers averaged 700 with a peak of 1000 workers spread over a dozen contractors and subcontractors.

On August 14, 1975, the first section of the new P-225 Potline 6 was energized by Governor Hugh L. Carey. At that time, it was the longest and most advanced potline in the world. It used Alcoa's newest technology, with the ability to adjust anode positions in pairs. This same technology had also been installed on two potlines at Tennessee Operations between 1969 and 1972. Line 6 at Massena Operations continues to be competitive to this day.

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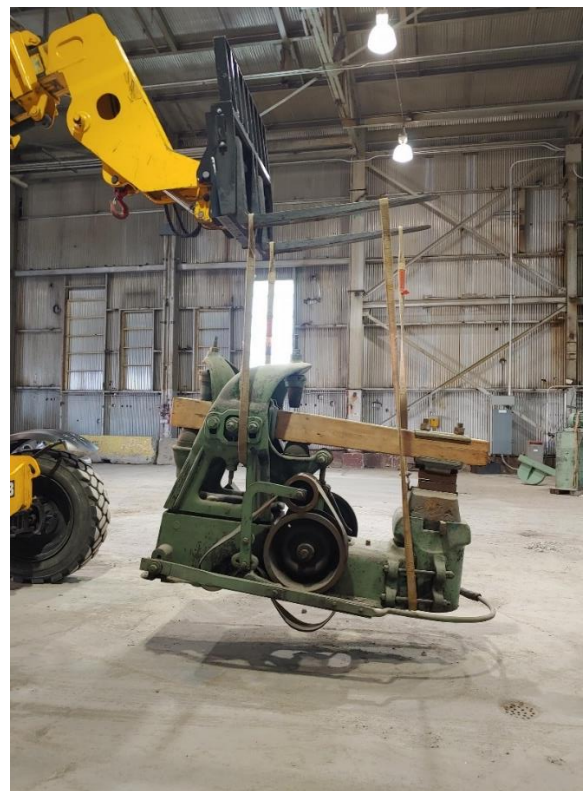
Article based on 1974 Massena Alcoa

Forge Hammer Donated by NAPHA & Arconic

While preparing to demolish the former blacksmith shop, Arconic personnel noted a Bradley Hammer in good condition. The unit was set aside and eventually donated to the St. Lawrence Power & Equipment Museum located in Madrid NY. This rubber cushioned helve trip hammer made by Bradley Mfg. Co. of Syracuse was used in the forging and shaping of metal parts at Alcoa plant in Massena. The design dates to

1875. Its rubber cushions and elastic helve (wooden handle) reduced wear on the hammer's moving parts. National Aluminum Production Heritage Assoc. (NAPHA) arranged the transfer and Arconic Corp. approved the move.

by Kevin Kitzman





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