

The metal heating and pouring process for making ductile iron pipe takes place at the American Cast Iron Pipe Company's north Birmingham plant.

FORGED IN THE FOUNDRY

Birmingham's legacy of iron and steel continues as the city and the industries evolve.

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The 1911 annual banquet of the Chamber of Commerce of the State in New York at the Waldorf-Astoria Hotel, where then-governor of Alabama Emmet O'Neal request investment in the state's development from northeastern industrialists. Notables at the table include Thomas Edison, J.P. Morgan and Andrew Carnegie.

It was supposed to be the “Meeting That Made Birmingham.” In May 1969, The Birmingham News ran a feature relating the events of a 1911 conference at New York's Waldorf-Astoria Hotel, where then-Gov. Emmet O'Neal gave a speech to the giants of northeastern business and technology, including Thomas Edison, J.P. Morgan and Andrew Carnegie, urging them to invest in Birmingham and the rest of Alabama's industrial growth. While skepticism remained, Morgan reportedly told O'Neal, “The money is on its way.”

Although that money didn't arrive until a post-World War II boom, today Birmingham's iron and steel companies are global brands. Names like O'Neal, American Cast Iron Pipe Company and McWane extend the city's economic and industrial reach throughout the U.S. and into Europe, Asia and South America. Although these industries no longer employ as many people as they did at their peak, the forces of industry that made the “Magic City” more than a century ago continue shaping Birmingham's development.

“Our company basically grew up with Birmingham,” says O'Neal Industries Chairman Craft O'Neal. O'Neal started as Southern Steel Works, when it was founded by Gov. O'Neal's son and Craft's grandfather Kirkman O'Neal in 1921.

The same could be said of Birmingham's other iron and steel companies — both past and present — which have experienced the ups and downs of economic change and social struggle alongside the city since its founding in 1871.

Geological Survey

Before Birmingham existed, there was a railway—or rather, a railway intersection. At the point where the South and North Alabama Railway met the Alabama and Chattanooga railroads, a group of 10 investors established the Elyton Land Company in 1870.

Karen Utz, curator and historian at Sloss Furnaces National Historic Landmark, explains that the land surrounding Birmingham is rich in deposits of coal, iron ore and limestone — all the ingredients necessary for pig iron — making the city a valuable site for industrial development. “There's a sea of red [iron] ore here that's unlike anywhere else in the world,” she says.



Ken Murphy, a manufacturing engineer at ACIPCO, stands among the rows of ductile iron pipe in the company's yard at the north Birmingham plant. ACIPCO has three production shops on location and moves product from there throughout the country.

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Not long after Elyton Land Company began its Birmingham project, John Withers Sloss founded Sloss Furnaces in 1883. He already had a profitable career in railways, having helped push for the extension of the L&N Railroad south, through Alabama to the Gulf of Mexico. Opening the furnace and producing pig iron meant capitalizing on the area's resources and making Birmingham an industrial hub.

Sloss's expansion into raw materials production added another facet to the city's already-profitable railway and mining industries. One of the values of an industrial economy, says Holman Head, CEO of O'Neal Steel, is that one industrial manufacturer will attract other businesses that work to support and further profit from ongoing industrial expansion and diversification. This is especially the case, he explains, when it comes to large and heavy products like metals, which are difficult and expensive to transport, making it more profitable to remain located near the material production site.

The establishment of Sloss Furnaces made Birmingham a producer of pig iron and later steel, setting the groundwork for the manufacture of pipes, valves, large machined parts and more. Sloss was joined by a series of competitors, including West Virginia-based Woodward Iron Company and the Pioneer Mining and Manufacturing Company out of Pennsylvania. Birmingham proved so attractive that the country's second-largest iron producer, Tennessee Coal, Iron and Railroad Company moved its headquarters here at the end of the 19th century. As Utz explains in a publication for Sloss Furnaces, during the 1880s, pig iron production in Alabama grew by 10 times, from nearly 69,000 gross tons to more than 700,000.

People as an Asset

Birmingham became a valuable site for industrial development not only because of accessible raw materials, but also because of the labor available in the postbellum South. While the industry might



Workers ram pipe flasks by hand at the original ACIPCO foundry early in the 20th century. Part of the laborious pit casting system used before mechanized casting was introduced in the late-1920s, molding sand had to be shoveled into the flask and tamped with log rods a bit at a time to fill the space between the flask and the metal.

have been new, some of the economic systems were not. Utz says that many of the furnace owners were former plantation owners. "They knew raw materials and cheap labor," she says. The companies often used convict labor in the coal mines. They additionally attracted sharecroppers into lower-skilled jobs, often housing them in quarters on the furnace grounds. Sloss and TCI had significant establishments of quarters for black workers until the 1950s (see page 97).

Beyond the quarters, Birmingham's early patchwork of neighborhoods additionally grew up around these companies. Ensley was largely developed by TCI, which became a subsidiary of Morgan's U.S. Steel in 1907. Likewise, Hueytown had its roots in Woodward Iron. This became an ongoing trend as the industry expanded. Pleasant Grove and Fairfield grew significantly with the expansion of TCI under

U.S. Steel. ACIPCO even has a neighborhood named after it — ACIPCO-Finley in northwest Birmingham. "Everyone who worked here used to live here," says Ken Murphy, a manufacturing engineer who has worked at ACIPCO for the last 38 years.

Jobs in industry also attracted a number of immigrants, many of whom preferred the warmer climate of the South. In the early-1980s the Birmingham Alliance for the Humanities and the National Endowment of the Humanities sponsored Birminghamfind, a research project that looked at the neighborhoods historically associated with the city's black, Greek, Italian, Lebanese and Jewish communities. They located a large number of different European immigrants attracted to TCI jobs in Wylam, which one English immigrant called "a wonderful place to come." An especially concentrated influx of Italians arrived between 1900 and 1910, many of them settling in Ensley and North Birmingham and working for TCI or Sloss. Lebanese immigrants profited from industry by starting as peddlers in the mining communities, later developing groceries on Birmingham's Southside.



The cover of "ACIPCO News" following the death of the company's first president John Eagan in April 1924. Eagan built the company with the aim of applying principles of Christian brotherhood to business. Today, ACIPCO continues to operate according to his emphasis on those principles.



Workers' children on the playgrounds in an early ACIPCO community. Birmingham's neighborhoods developed alongside the industrial plants, with Ensley, Hueytown and Finley among the many communities that became home to workers.

Clean Water and the "Golden Rule"

If mining, railroads and furnaces established Birmingham's industrial base, then the subsequent addition of iron pipe manufacturing in the early-20th century provided one of the city's most visible and continuous industrial legacies. "You just take it for granted that you turn on your faucet and you're going to have water," says Mickie Coggin, corporate communications director at McWane, Inc. She explains that Birmingham pipe companies,



Jim Stovall, a retired clerk at Sloss Furnaces, stands on the plant grounds where he began working in 1959. The plant started producing pig iron in the 1880s, and the oldest building at the preserved facility dates back to 1902. Having stopped production in 1971, its workers organized for its preservation and it became a national historic landmark in 1981.

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including ACIPCO, U.S. Pipe and McWane, have been integral to producing the iron and steel pipes and fixtures at work in modern potable water systems for the last century.

Of Birmingham's many industrialists, one of the most notable was John Eagan, who first invested in ACIPCO in 1905 and led the company until his death in 1924. A devout Christian, Eagan looked to develop industry according to the biblical "golden rule" of Matthew 7:12 — to do unto others as you would have done to you. As such, ACIPCO was one of the first companies to give all its workers, regardless of race, widespread benefits, including access to healthcare, sick leave, life insurance and affordable housing. Eagan's most radical act came after his death, when his will left the company to the employees in a charitable trust. The trust is still in effect today, making ACIPCO employee owned.

The company's emphasis on building clean water systems also added to the value of the often physically taxing work of manufacturing. Kendrick Clark, the employee assistance coordinator at ACIPCO and a second-generation employee, remembered hearing about Eagan's legacy as a child. When he started at the company as part of the clean-up crew in the factory, he says, "I wasn't just shoveling sand, I was making pipe so people could have clean water."

McWane, Inc. was born out of ACIPCO. James Ransom "J.R." McWane founded McWane Cast Iron Pipe Company in 1921 after he left ACIPCO. Both McWane and ACIPCO branched out from pipe manufacturing into other facets of potable water, including fire hydrants, valves and fixtures.

Where McWane looked to directly compete with ACIPCO, other companies grew into different avenues of the metals business. By 1935, Kirkman O'Neal added a new dimension to Southern Steel Works, opening one of the South's first metals service centers. The company began warehousing metals for customers who did not need to make high-tonnage purchases, offering distribution and parts fabrication. The expansion into service was timely, allowing the company to rebound as the U.S. economy recovered from the Great Depression.



Workers at Southern Steel Works pose with the company's first shipment of bombs during World War II, when several Birmingham industrialists expanded to produce weapons and other industrial parts.



Kirkman O'Neal (second from left) is pictured with servicemen and other executives from Southern Steel Works during World War II.

Family Wage

For the people employed in Birmingham's industrial jobs, the work offered the chance at a middle-class life.

Clark's father worked for ACIPCO with only a third-grade education. The job at ACIPCO, he says, "meant being able to afford to raise a family." His mother and father raised seven children on that income.

Jim Stovall, a retired clerk who started as Sloss in 1959, shares as similar sentiment. "It was a good job you could raise a family on," he says. "You didn't get rich, but you made a living."

The expansion of Birmingham's middle class also came with the growth of the U.S. economy during and following World War II. By 1942, Birmingham's manufacturers and service centers were directly contributing the Allied war effort. That year, ACIPCO began manufacturing tank parts and radial engine cylinders for the military. At the same time, Southern Steel began producing general-purpose bombs and superstructures for ships. The company became one of the largest producers of general-purpose bombs in the country.

The wartime growth also meant more women joined the industrial workforce. In 1944, ACIPCO had to add new bathrooms for women working in the plant. By war's end, ACIPCO and Southern Steel received the Army/Navy "E for Excellence" award because of their wartime contributions.

While the demand for munitions decreased after 1945, the market for U.S. industrial products continued to grow. After the war, Birmingham's industrialists looked for new opportunities in innovation and began expanding their geographical footprint beyond the Magic City. By 1949, Southern Steel became O'Neal Steel. Three years later the company established its first satellite district in Jackson, Miss.

ACIPCO began modernizing its facilities in the early 1950s, replacing the cupola melting equipment, adding the production of new fittings, adapting to a new casting process. They also began their first experimental production of ductile iron pipe — a new alloy that offered manufacturers greater tensile strength and could be made from recycled scrap metal. They also added the production of newly patented joints and gaskets.

Global Economy

The growth of the postwar economy also brought sea change in industrial regulation, global competition and technological innovation, forcing companies to either adapt or fall to the wayside. Sloss Furnaces was among the less fortunate manufacturers. The company merged with U.S. Pipe and Foundry in 1952, which allowed them to expand into North Birmingham. Their attempted growth faltered, however, as Japan and West Germany produced cheaper pig iron. What was more, with big customers like ACIPCO and McWane turning to ductile iron, demand for pig iron decreased so that Sloss gradually lost its place in the market.



Trucks departing O'Neal Steel Company, the new name of Southern Steel Works as of 1949.

Stovall saw the changes at Sloss firsthand. He moved from the downtown furnace to the North Birmingham facility in 1966. The original Sloss Furnace permanently closed five years later. In 1982, it was joined by the North Birmingham facility — among the last producers of pig iron in the eastern U.S. — and was torn down in 1985. While Stovall continued in industry until his retirement in 2003, working as a clerk for the Jefferson-Warrior Railroad, the changes he saw went well beyond the end of the industrial blast furnace in Birmingham.

"It hurts everybody," he says. Emphasizing that the loss of one manufacturer hurt the companies built to support and supply it, Stovall says, "It's a spectrum that's affected by it."

Companies less involved in raw materials production were better able to adapt to the changing global market. ACIPCO and McWane, for instance, benefitted from the addition of ductile iron and recycled scrap. TCI, however, shut its doors in 1952, and U.S. Steel diminished its operations in the Birmingham area to a single facility in Fairfield.

O'Neal Steel charted a different course by continuing to expand its service center operations. In the latter half of the 20th century, O'Neal added 40 facilities throughout the U.S.

Shirley Fagan, director of communications at O'Neal Industries, explains that as a service center, O'Neal began offering a variety of metal products under a single roof. "It's like a grocery store for metals," she says.

The Legacy Continues

While the size of Birmingham's metals industry has decreased, the city's manufacturers remain a fixture in the city's economy and culture.



Cassandra Brown, the first woman to operate the hydrotesting machinery on steel pipe at ACIPCO, has worked for the company for 21 years. She is also the second woman since 1974 to serve on the company's Board of Operatives, an elected body that represents workers interests as part of the company's leadership.

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After James W. Sloss sold the original Sloss Furnaces (pictured in 1936) to a group of financiers in 1886, it underwent a period of rapid expansion and was eventually reorganized as Sloss-Sheffield Steel and Iron in 1899.

Several times a year, ACIPCO's Murphy takes engineering lessons to elementary, middle and high school classrooms around Birmingham, miniaturizing the basic elements of the metals production process so that students can make their own tin castings and get a sense of the metals production processes. He says that this "Foundry-in-a-Box" program is intended to help a younger generation find value and interest in manufacturing jobs.

For Cassandra Brown, the first woman to operate the hydrotesting machinery on steel pipe at ACIPCO, work in manufacturing continues representing a better way of life for her and her family. She began work at ACIPCO 21 years ago as a single mother looking to better provide for her daughter. Now she is the only woman serving on the company's Board of Operatives, one of the ways that manufacturing employees contribute to the company's overall leadership. With 2,000 people, ACIPCO is now largest industrial manufacturing employer in Birmingham.

Not all of Birmingham's manufacturers have grown along these lines. McWane, though still in control of 25 facilities around the U.S. and operations in Europe and China, idled its pipe plant in Birmingham in 2010. The company encountered several challenges with worker safety and compliance with environmental

regulations, which were redressed before they shuttered the plant.

Head says that manufacturing is not on an altogether decline. As wages increase around the world, more manufacturing jobs are returning to the U.S. Alabama's auto manufacturers, for instance, continue creating jobs within their plants and through the supply companies created to support their operations.

"It is encouraging to know that we are competitive these days," says Head.

Perhaps the preservation of Sloss Furnaces serves as the most visible evidence of the metal industry's ongoing legacy in Birmingham. The site became a National Historic Landmark in 1981, and is one of only three industrial, mass production, blast furnaces being maintained and interpreted as a museum in the entire U.S.

Annie Spindle, who grew up in the Sloss workers quarters in the 1950s, says she is particularly glad for the preservation of the furnace. Otherwise, "it would be impossible to explain where you came from." ■



O'Neal Steel executives, including Kirkman O'Neal (third from left) and his son Emmet O'Neal (fourth from left), during the construction of the upper deck of Legion Field in 1961.



Steel and iron workers homes in the 1930s. Primarily constructed for black employees, industrial plants built housing near the grounds, cutting down on the challenges of accessing the plant, which many poorer workers had to do by foot.



Johnnie Mae Clark and Annie Spindle

Reared in the Workers' Quarters

Life in an industrial economy remained encumbered by Birmingham's racial segregation. Johnnie Mae Clark, her sister Annie Spindle and the other 10 children of John and Ethel Wesley grew up in a three-room "shotgun" cottage reserved for black workers in the Sloss quarters. Clark and Spindle's memories at Sloss blended often happy childhood experiences with the challenges of significant poverty.

To get by, residents cultivated vegetable gardens, and often kept chickens and sometimes pigs. The grounds included a commissary where they also purchased food, some clothing and other basic amenities. An infirmary offered an on-site doctor. The children attended elementary school within the quarters. While the system provided for residents' basic needs, it also often cut them off from the rest of the city, and ensured that much of their income went back into Sloss and the commissary.

These struggles were blended with more pleasant memories. Their parents bought them a little red wagon, and they would give each other rides through the quarters and play with the other children. On the rare occasion that it snowed, Spindle remembers their mother taking the snow and mixing it with milk and sugar to make a kind of ice cream.

"I cherish Sloss," says Clark. "It was peaceful. It was loving, and we had caring people."

Despite the challenges, Karen Utz, curator and historian at Sloss Furnaces National Historic Landmarks, says residence in the Sloss quarters offered families more opportunities for advancement than would have been available to them as sharecroppers.

"Industry and civil rights are all interconnected," Utz says. "You cannot compartmentalize." Sloss quarters closed in the late-1950s, as upkeep became too expensive for the company and workers moved into better housing in Birmingham's neighborhoods on their own. Their departure from the quarters was part of an increased sense of empowerment and confidence within the black community that grew out of industrial work, explains Utz.