

MONESSEN STEEL WORKS  
(Pittsburgh Steel Company, Monessen Works)  
On Monongahela River  
Monessen  
Westmoreland County  
Pennsylvania

HAER No. PA-253

HAER  
PA  
65-MONE,  
1-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record  
National Park Service  
Department of the Interior  
P.O. Box 37127  
Washington, D.C. 20013-7127

HISTORIC AMERICAN ENGINEERING RECORD

MONESSEN STEEL WORKS  
(Pittsburgh Steel Company, Monessen Works)

HAER  
PA  
65-MONE,  
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Location: On Monongahela River, Monessen, Westmoreland County, Pennsylvania

Date of Construction: 1901, 1916

Builder: Pittsburgh Steel Company

Present Owner: Sharon Steel Company

Present Use: Steel making

Significance: One of several large steel making complexes in the Monongahela River Valley in southwestern Pennsylvania, the Pittsburgh Steel Company's Monessen Works grew from a rod and wire mill to a fully integrated steel making facility with its own coke operations, open hearth furnaces, blast furnaces, blooming and billet mills and, most recently, continuous bloom caster. The firm has been a major manufacturer of seamless tubing.

Project Information: In February, 1987, the Historic American Engineering Record (HAER) and the Historic American Buildings Survey (HABS) began a multi-year historical and architectural documentation project in southwestern Pennsylvania. Carried out in conjunction with America's Industrial Heritage Project (AIHP), HAER undertook a comprehensive inventory of Westmoreland county to identify the region's surviving historic engineering works and industrial resources.

Compiler: Gray Fitzsimons and Kenneth Rose, Editors

**DESCRIPTION:** This large steel works is located at a bend in the Monongahela River, about forty miles by river from Pittsburgh. The works encompasses nearly 300 acres and extends more than two miles along the riverfront in Monessen. It includes fifty-six Koppers underjet-type by-product coke ovens, three blast furnaces, a basic-oxygen process shop, a five-strand bloom caster, a universal rail and structural rolling mill, shop facilities, and offices. Among the defunct operations are the blooming, billet, and bar mills, the rod mills, and the wire mills.

The older buildings appear to be at the upstream end of the works and include a number of large one-story brick buildings with interior steel frames, gable roofs, and monitors. The most architecturally ornate building is the three-and-one-half story office with arched windows, brick walls, and hipped roof. Two of the blast furnaces date from 1916, though they have probably been refurbished at least once since the time of their construction. The by-product coke plant, located downstream from the office, was constructed in the 1940s. The basic-oxygen-process shop contains two basic oxygen vessels and was built in the 1970s. Recent construction includes the universal rail and structural mill, erected through a grant from the Economic Redevelopment Agency in 1981, and the five-strand continuous bloom caster, built in 1983. These facilities are housed in large one-story steel frame buildings clad with corrugated metal.

**HISTORY:** In 1901 the Pittsburgh Steel Company bought a ninety-six-acre parcel of land from the East Side Land Company, a consortium of local Monessen investors. By 1902 Pittsburgh Steel had built a rod and wire mill on this property, and was producing 400 tons of wire and nails a day, with a work force of more than 3,000. Under Pittsburgh Steel's president, Wallace H. Rowe, the company established its own iron and steelmaking facilities between 1908 and 1916. During these years twelve open hearth furnaces, blooming mills, billet mills, and two blast furnaces were built next to the rod and wire mill, giving Pittsburgh Steel an annual capacity of 403,000 tons of pig iron and 694,000 tons of steel ingots.

The company enjoyed some of its most prosperous years during World War I, and by 1920 the Pittsburgh Steel complex sprawled over 160 acres and consisted of two rod mills, two wire-drawing mills, a barbed wire mill, a nail mill, three galvanizing plants, a welded fence factory, and a department specializing in "wire fabric" for strengthening concrete roads. During this period the firm established itself as a manufacturer of seamless tubing, selling this product to boiler manufacturers and to locomotive builders. Sales to the automobile industry were especially lucrative. In 1986 Wheeling-Pittsburgh declared bankruptcy and subsequently the Sharon Steel Corporation acquired the Monessen works. It currently produces coke and by-products, pig iron, steel ingots, blooms, and billets, rounds for seamless tubes, slabs, rails, and structural sections.

**Source:**

Magda, Matthew S. Monessen: Industrial Boomtown and Steel Community, 1898-1980. Harrisburg, PA: Pennsylvania Historical and Museum Commission, 1985.

ADDENDUM TO  
PITTSBURGH STEEL COMPANY,  
MONESSEN WORKS  
(Monessen Steel Works)  
(Wheeling-Pittsburgh Steel Corp.,  
Monessen Works)  
Donner Avenue  
Monessen  
Westmoreland County  
Pennsylvania

HAER No. PA-253

HAER  
PA  
65-MONE,  
1-

BLACK & WHITE PHOTOGRAPHS  
REDUCED COPIES OF MEASURED DRAWINGS  
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HISTORIC AMERICAN ENGINEERING RECORD

PITTSBURGH STEEL COMPANY, MONESSEN WORKS

Monessen Steel Works

Wheeling-Pittsburgh Steel Corporation, Monessen Works

Location: Donner Avenue, along the Monongahela River, Monessen, Pennsylvania

Dates of Construction: 1902 constructed, 1916 altered, 1940 altered

Fabricator: Pittsburgh Steel Company

Present Owner: Westmoreland County Industrial Redevelopment Corporation (Kopper's Industries owns the by-product coke works.

Present Use: Much of the plant has been dismantled. Of all the facilities only the by-product coke plant is in operation today.

Significance: The Pittsburgh Steel Company, a fully integrated steel mill, constructed state-of-the-art blast furnaces in 1913 that set production records in the World War I era. Both furnaces were demolished in 1995.

Project Information: The history of the Pittsburgh Steel Company, Monessen Works was produced in the summer of 1995 as part of a larger effort by the Historic American Engineering Record (HAER) to document the historic industries of southwestern Pennsylvania. A division of the National Park Service, U.S. Department of the Interior, the HAER program is administered by the Historic American Buildings Survey/Historic American

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PITTSBURGH STEEL COMPANY, MONESSEN WORKS  
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This paper is a history of Pittsburgh Steel Company's Monessen Works at Monessen, Pennsylvania. An integrated steel mill throughout most of its existence, the plant operated from 1901 until 1986. Since then, much of the plant has been dismantled. Only the coke plant, which continues to operate, a state-of-the-art rail mill, and a few office buildings will remain when demolition is completed. This paper is an overview history of the plant, an in-depth examination of open-hearth facilities and processes at Monessen, and some historical background on the development of this technology.

Perhaps no year was more pivotal in the development of the American steel industry than 1901. The clash of the titans of steel, Andrew Carnegie and J.P. Morgan, culminated in the founding of the United States Steel Corporation, the largest industrial combination in American history. Capitalized at over \$1.4 billion and controlling about fifty percent of the finished steel output in the nation, U.S. Steel soon dominated the industry. Another event of the first year of the twentieth century, with long-lasting significance, was the defeat of the Amalgamated Association of Iron, Steel, and Tin Workers of America.<sup>1</sup> Bloodied in the great Homestead lockout of 1892, the Amalgamated suffered severe losses of lodges and membership as the result of the failed strike of 1901. Although the union continued to play a limited role in labor/management relations among the small, independent mills in the Pittsburgh district until about 1910, its defeat in 1901 marked the onset of the nonunion era in the steel industry.<sup>2</sup>

As important as these events were, they were not the full story of steel in 1901. As John N. Ingham argues in Making Iron and Steel, the continuing development and establishment of small, independent mills that served specialized niche markets was nearly as important as the creation of "big steel," especially in the Pittsburgh area, where independents controlled nearly sixty

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<sup>1</sup>William T. Hogan, Economic History of the Iron and Steel Industry in the United States (Lexington, Massachusetts: Lexington Books, D.C. Heath and Company, 1971), Vol. 2, 467-73; Joseph Frazier Wall, Andrew Carnegie (Pittsburgh: University of Pittsburgh Press, 1989), 781-85.

<sup>2</sup>See David Brody, Steelworkers in America: The Nonunion Era (New York: Harper & Row, 1960), 59-69; John N. Ingham, Making Iron and Steel: Independent Mills in Pittsburgh, 1820-1920 (Columbus: Ohio State University Press, 1991), 152-156, claims that unionism survived among the independent mills in the Pittsburgh during the 1910s but, other than events at A.M. Byers Company, presents little evidence for this assertion.

percent of productive capacity in 1901. Moreover, as Ingham demonstrates, these Pittsburgh-area independents were controlled by upper-crust Pittsburgh families rather than the distant financial interests that owned U.S. Steel. These independent, locally-owned firms such as Jones & Laughlin, Crucible Steel, Allegheny Steel, A.M. Byers & Company, Sharon Steel Hoop, and McKeesport Tin Plate remained the most typical unit on the Pittsburgh scene until the depression of the 1930s.<sup>3</sup> While the creation of U.S. Steel captured headlines in 1901, hidden in the back pages of leading steel journals was the announcement of the organization of one of these independent, locally-owned firms: the Pittsburgh Steel Company.<sup>4</sup>

Ironically, the organization of Pittsburgh Steel was a consequence of the creation of U.S. Steel. In early June (three months after the merger) Wallace H. Rowe, manager of the American Steel & Wire Company's plants in Pennsylvania, announced his intention to leave the company, which had been taken-over by U.S. Steel.<sup>5</sup> Rowe, who was later described by a company historian as the "driving force behind Pittsburgh Steel Company," was born in St. Louis, Missouri, and entered the steel business in 1883 as a clerk in a wire mill at St. Louis. He rose quickly in the organization, and in 1886 came to Pittsburgh to serve as treasurer and general manager of the Braddock Wire Company, which had been organized by his St. Louis associates. In 1898, after Braddock Wire merged, first with the Consolidated Steel & Wire Company and then the American Steel & Wire Company, Rowe was elevated to the position of manager. His decision to leave the company after the U.S. Steel consolidation was based on his desire to establish his own steel company. Rowe joined with seven other Pittsburgh men and applied for a charter for the Pittsburgh Steel Company on June 24: he was named President and "active manager" of the company; Edwin Bindley of Bindley Hardware Company of Pittsburgh became Vice-President; W.C. Reitz, treasurer of the Pittsburgh Steel Hoop Company, was made Treasurer; and C.E. Beeson, Secretary. Also involved as investors were Emil Winter and John Bindley, also of Bindley Hardware. In addition to being an investor, Willis F. McCook was

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<sup>3</sup>Ingham, Making Iron and Steel, 140-151.

<sup>4</sup>Iron Trade Review Vol. 34, No. 23 (June 6, 1901), 36, carried the story of the formation of Pittsburgh Steel Company in its back pages among notes on the Pittsburgh District section.

<sup>5</sup>Ibid., 15.

the company's legal counsel. The company was capitalized at \$3 million and authorized to borrow up to \$1.5 million.<sup>6</sup>

The Pittsburgh Steel Company immediately purchased a sixty acre tract at Monessen, Pennsylvania, a newly-established town in Westmoreland County located thirty miles south of Pittsburgh along the Monongahela River. The company announced plans to take over the Pittsburgh Steel Hoop Company at Monessen, in which W.C. Reitz was the major stockholder. Established in 1899, Pittsburgh Steel Hoop produced steel hoops for beer barrels. The company also announced that it planned to build a rod mill, a wire-drawing mill, and install wire nail machines in order to manufacture wire nails at Monessen.<sup>7</sup>

The manufacture of wire nails was a booming business in 1901. High prices led to the establishment of several new mills that year: in addition to the Monessen Works, the Union Steel Company established a wire-nail mill at nearby Donora.<sup>8</sup> First manufactured in the United States in 1875 by a German pastor, Father Goebel, at Covington, Kentucky, steel wire nails were rapidly driving the traditional cut nail out of the market.<sup>9</sup> The great nail strike of 1885-86 in the Wheeling district had disrupted cut nail production and provided an opening for wire nail manufacturers. Wire nails offered advantages to both producers and consumers. They were cheaper to produce, more amenable to automated production technology, and because they did less damage to the wood and could be straightened if bent, they were also easier to use. By 1901 there were fifty-eight manufacturers of wire nails in the nation and production far surpassed that of cut nails.<sup>10</sup>

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<sup>6</sup>Ibid., 36; H.B. Collamore, "58 Years: A History of Pittsburgh Steel Company," The Management Institute No. 2 (Pittsburgh: Pittsburgh Steel Company, ca. 1959), 1-2, Records of Wheeling-Pittsburgh Steel Company, File: "Point of No Return."

<sup>7</sup>Iron Trade Review Vol. 34, No. 23 (June 6, 1901), 36.

<sup>8</sup>Iron Trade Review, Vol. 34, No. 39 (September 26, 1901), 35.

<sup>9</sup>"Iron and Steel Progress in the 19th Century," Iron Trade Review Vol. 35, No. 36 (September 5, 1901), 30. Father Goebel, who was in charge of the St. Augustine Catholic Church of Covington, imported wire nail machines from Germany. He incorporated the Kentucky Wire Nail Works in 1875 and served as president of the company.

<sup>10</sup>Amos J. Loveday, Jr., The Rise and Decline of the American Cut Nail Industry: A Study of the Interrelationships of

Why did the Pittsburgh Steel Company choose the Monessen site for the location of its mill? Neither the founders of the company nor the trade journals of the period offer an answer to this question, but it is clear that the town had much to offer any industrial enterprise. Like other towns surrounding Pittsburgh, such as McKeesport, Clairton, Glassport, and Donora, Monessen was an industrial boomtown. It was, however, a latecomer to the world of industry. According to historian Matthew Magda, whose Monessen: Industrial Boomtown and Steel Community, 1898-1980 tells the story of the town and its people, there were only eight farmhouses, two barns, one schoolhouse, and a narrow country road in the general area now called Monessen in 1893. The rapid transition of the area began in 1894 when a consortium of Pittsburgh industrialists and capitalists headed by Colonel James Schoonmaker, vice-president and general manager of the Pittsburgh and Lake Erie Railroad Company, and Philander C. Knox, future Attorney General and Secretary of State of the United States, purchased 211 acres of land along the Monongahela River about twenty-five miles south of Pittsburgh from farmers in Rostraver Township in Westmoreland County. Later incorporated as the East Side Land Company, the firm purchased additional acreage along the river over the next two years. The two-and-one-half miles long, narrow, flat area along the Monongahela was a prime site for future industrial development: it was near plentiful and relatively inexpensive natural resources -- coal, coke and gas -- as well as iron and steel supplies, with ample water supply and slack-water transportation. Another advantage as Schoonmaker recognized, were excellent rail connections. The Pittsburgh & Lake Erie Railroad (P & L E) had just completed its line from Brownsville to Pittsburgh, skirting the river and passing beside the company's holdings. As one of the promoters and major stockholders of the P & L E, Schoonmaker was interested in increasing tonnage on the railroad.<sup>11</sup>

Yet another advantage of the Monessen site, which it shared with other Pittsburgh area locations, was that it was situated within the Pittsburgh freight zone. This had important ramifications for the marketing of steel products. Since about

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Technology, Business Organization, and Management Techniques (Westport, Connecticut: Greenwood Press, 1983), 138-139; Hogan, Economic History, Vol. 1, 188-189, using figures from the American Iron and Steel Institute, sets production of cut nails in 1900 at 1,573,000 kegs and wire nails at 7,234,000 kegs.

<sup>11</sup>Matthew S. Magda, Monessen: Industrial Boomtown and Steel Community, 1898-1980 (Harrisburg: Pennsylvania Historical and Museum Commission, 1985), 4-5.

1898, and particularly after the formation of U.S. Steel in 1901, steel producers across the country had adopted a pricing system known as Pittsburgh Plus. Originating as a pooling arrangement to stabilize the industry and end the cut-throat competition that plagued the industry during the early 1890s, Pittsburgh Plus pricing meant that the delivered price of any steel product, regardless of its point of origin, was identical to that set by Pittsburgh District producers (usually U.S. Steel). For example, when Chicago steel mills sold to Chicago consumers, they were obligated to charge the same price as Pittsburgh mills: a charge which included a standardized freight charge from Pittsburgh to Chicago. The Chicago steel maker realized an added profit in so-called phantom freight, but was unable to undercut Pittsburgh producers. This system protected Pittsburgh from competition and spurred the growth of the region. It remained an asset until the World War I period, when the growth of the western market, the rising cost of transport and increased phantom freight, along with cheaper production costs, allowed western producers to increase their share of the market.<sup>12</sup>

The industrial development of the property of the East Side Land Company began in 1897, four years before the founding of Pittsburgh Steel. William H. Donner, the head of a tin plate company in Indiana, came to Pennsylvania seeking a better location for his operation. The gas fields in Indiana were near exhaustion and Donner sought a site near a permanent fuel supply. Donner met with Colonel Schoonmaker in Pittsburgh and visited the holdings of the East Side Land Company. Expecting the mill to induce settlers and other industrial firms to locate on the company's property, Schoonmaker offered Donner twenty acres of free land and a cash bonus of ten thousand dollars. It was an offer Donner could not refuse. In May ground was broken for the erection of the tin mill. Two months later, the East Side Land Company marked off part of its land for lots and settlers began to move into the area. As the town took shape, it received its name. Inspired by the possibility that it would become a great industrial metropolis like Essen, Germany, M.J. Alexander, the general manager of the land sale, conceived the name Monessen--Essen on the Monongahela. In September, 1898 Monessen was incorporated as a borough.<sup>13</sup>

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<sup>12</sup>George W. Stocking, Basing Point Pricing and Regional Development (Chapel Hill: The University of North Carolina Press, 1954), 3-8; Kenneth Warren, The American Steel Industry, 1850-1970: A Geographical Interpretation (Oxford: Clarendon Press, 1973), 196-206.

<sup>13</sup>Ibid., 5.

Donner's tin plate company was incorporated as the National Tin Plate Company in 1898 and began shipments in May of that year. The company developed an innovative production method known as the Monessen system, based on nonunion labor. An invention of Donner, who patented it in 1898, the Monessen system substantially reduced the amount of handling necessary to produce plate. Rather than men called "rollers" passing the plate through the rolls manually, each stand of rolls was connected in tandem so that a sheet going through the first roll was fed automatically into the others.<sup>14</sup> As the Iron Trade Review described it, this "system of working" was different from the "regular style" since it allowed each stand of rolls, as well as each set of workman, to be dedicated to a certain product. The Monessen system resulted in a larger production and less breakage of the plate. It also reduced the number of workmen necessary in production.<sup>15</sup> Such a system could have emerged only under nonunion conditions, since the Amalgamated with its rigid work rules refused to permit such innovations. When the American Tin Plate Company, a national combine that took over most of the tin plate mills in the nation, acquired the Monessen plant in 1899, it tried to introduce the Monessen system into its other mills. Those with Amalgamated lodges resisted, and the Monessen system was not introduced in the bulk of the mills of the American Tin Plate Company until late 1901--after the Amalgamated had been defeated. Shortly after the failed strike, the company announced an enlargement of the Monessen tin plate plant from twelve to twenty hot mills. The Iron Trade Review explained that the enlargement was the "direct result of the refusal of the workmen there to go on strike."<sup>16</sup> This nonunion tradition may have been yet another reason that the Pittsburgh Steel Company decided to locate in Monessen. Absorbed into U.S. Steel in 1901, Monessen's tin plate mill expanded so that by 1923 it had a capacity of one hundred seventy thousand boxes of tin plate a month and employed sixteen hundred employees.<sup>17</sup>

As Schoonmaker had hoped, the erection of the tin mill spurred further industrial development at Monessen. In September, 1898, construction of a hoop mill was initiated by the Monessen Steel Company. In April, 1899, the hoop mill was sold

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<sup>14</sup>Brody, Steelworkers in America, 13; Magda, Monessen, 5.

<sup>15</sup>Iron Trade Review, Vol. 34, No. 38 (September 19, 1901), 31.

<sup>16</sup>"The Monessen System for Tin Plate Mills," Iron Trade Review Vol. 34, No. 39 (September 26, 1901), 29.

<sup>17</sup>Magda, Monessen, 5-6.

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to the American Steel Hoop Company, a consolidation of nine concerns producing hoops, cotton ties, and steel billets and bars. In 1901 the Monessen mill had two continuous-charging, gas heating furnaces and two chains of rolls, with an annual capacity of forty thousand gross tons. In that year, the American Steel Hoop Company was absorbed into U.S. Steel and placed under the Carnegie group. The hoop mill continued production of steel hoops for beer barrels until national prohibition in 1919 reduced the demand. The plant, known as the Monessen Works, was closed in 1925.<sup>18</sup>

While the hoop mill was being built, a second steel firm moved into Monessen. Beginning construction in 1898, the Monessen Foundry and Machine Company, which produced iron and brass casting, sold its property to Pittsburgh Steel in 1901, and purchased four acres along the river at the east end of the borough. Here the company built a new iron and brass foundry, including a machine shop, pattern shop, and warehouses. The company produced by-product coke-oven equipment, rolling-mill machinery, and valves.<sup>19</sup>

Next to Pittsburgh Steel, the largest Monessen mill was the Page Woven Wire Fence Company. J. Walter Page of Rollin, Michigan, who invented the woven fence in 1883, started the company in the late 1880s. Until 1899, the company purchased wire for its fence making operations at Adrian, Michigan on the open market. Page sought a production site closer to sources of supply of raw materials. In 1899 the company purchased twenty-two acres of land at Monessen, and began construction of a rod and wire mill, and soon added open-hearth furnaces, a blooming mill, and additional rod and wire mills. The plant produced bright and annealed wire, galvanized wire, rope wire, welding wire, fencing, special-analysis wire, and wire nails. In 1920 the American Chain Company purchased the company and its Monessen plant. Known as Page Steel and Wire, the plant became a division of American Chain and Cable, Inc., a reorganization of American Chain, in 1936. The company discontinued production of farm

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<sup>18</sup>Hogan, Economic History of the Iron and Steel Industry, Vol. 1, 296-297; Vol. 2, 470-471; Vol. 3, 893; Magda, Monessen, 7, mistakenly associates the hoop mill with the American Sheet Steel Company in 1900 despite the fact that a captioned drawing presented on the previous page of his work entitled "Monessen, Pennsylvania, 1900," by T.M. Fowler correctly labels the plant the American Steel Hoop Company.

<sup>19</sup>Magda, Monessen, 7-8.

fence and nails in 1941, and concentrated on precision wire and industrial equipment. The plant closed in the 1950s.<sup>20</sup>

With the tin plate mill, two hoop mills, foundry, and fence mill, Monessen was already a burgeoning industrial center when Pittsburgh Steel Company announced its plans to locate there. By September, 1901 the company had awarded contracts for the erection of eighteen buildings for its plant.<sup>21</sup> Two months later on November 11, the Commonwealth of Pennsylvania approved the plan of the Pittsburgh Steel Company to merge with the Pittsburgh Steel Hoop Company. Since this date marked the onset of production at Monessen under the Pittsburgh Steel Company banner, company historians celebrate this as its birth date.<sup>22</sup> The buildings for the new mill were completed in 1902. The galvanizing and wire-fencing departments were completed in July and August. These two departments held zinc-coating and annealing lines and fifteen electric welding machines for producing a capacity of forty-five thousand tons of wire fence annually. In the same building were sixty barb-wire machines for making barb-wire fencing. In September, 1902 the No. 1 wire and nail mill came on line. The largest at the site, the mill was a steel-frame and brick-walled building with a slate roof. Here were 160 wire drawing blocks with a capacity of 112,000 gross tons of wire per year and 175 wire nail machines with an annual capacity of 1.3 million kegs. The rod mill was started on December 4, 1902 by President W.E. Rowe, who opened the throttle that set the machinery in motion. Housed in a steel-frame, brick-walled building 184' x 300' with a slate roof, the rod mill was powered by two 220 horsepower Corliss engines and one 225 horsepower Buckey engine. Considered by the Monessen Daily Independent the "most complete of its kind in the world," the rod mill had one 16-inch, one 14-inch, and three 10-inch mills, and an annual capacity of 130,000 gross tons. The plant also included a steam making plant equipped with twenty-four 250 horsepower, coal-fired Cahall boilers; a gas-making plant for creating producer gas for the heating and annealing furnaces; and an electric plant to furnish current for the welding machines

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<sup>20</sup>Hogan, Economic History of the Iron and Steel Industry, Vol. 1, 337-338; Iron Trade Review, Vol. 35, No. 3 (January 17, 1901), 22; Magda, Monessen, 8-9.

<sup>21</sup>Iron Trade Review Vol. 34, No. 36 (September 5, 1901), 36.

<sup>22</sup>H.B. Collamore, 58 Years: A History of Pittsburgh Steel Company."

used in making wire fencing. By December, 1902 the plant employed about three thousand men and boys.<sup>23</sup>

Even before all of these facilities were in full production, the company announced plans for further expansion. On December 4, 1902 at the opening of the rod mill, President Rowe announced future plans to erect blast furnaces.<sup>24</sup> Due mainly to the efforts of financier John Bindley, the company had paid for its 1902 construction in a little over a year. In order to secure its coal supplies, in 1903 the company acquired the Monessen Coal & Coke Company, with mines in Westmoreland County.<sup>25</sup>

The expansion of the plant into an integrated mill took a number of years, however. The first step was taken in 1907 during a financial panic. At a Board of Directors meeting on February 18, Rowe told the directors that the company had been handicapped by the lack of its own iron and steel making facilities. The company had purchased most of its steel from the Carnegie mills of U.S. Steel and though prices remained fairly stable, it was sometimes difficult to obtain supplies when needed. Rowe had done his homework, and at the meeting he presented full engineering drawings of a \$2.5 million open hearth shop. Rowe also proposed the construction of a new rod mill and blooming mill. Believing like Carnegie that the best time to make capital improvements was during a recession when labor and materials were cheap, the board approved the expenditure.<sup>26</sup>

On March 18, 1907 ground was broken for the new facilities. A total of four hundred immigrants, mostly Italians, were imported by Gerry Brothers employment company to work on the construction project. The blooming mill, according to the Monessen Daily Independent the "largest mill of its kind," was completed in August at cost of four million dollars. General engineers were Garrett and Cromwell, while MacKintosh, Hemphill & Company built the mill stands (three-high, 48"), tables, and

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<sup>23</sup>"Monessen Illustrated," special edition of Monessen News, October, 1902; "Rod Mill Started," Monessen Daily Independent, December 5, 1902; "Pittsburgh Steel Company Milestones," N.A., ca. 1953, files of Ray Johnson; Magda, Monessen, 8.

<sup>24</sup>"Rod Mill Started," Monessen Daily Independent, December 5, 1902.

<sup>25</sup>"58 Years: A History of Pittsburgh Steel Company," 2-3.

<sup>26</sup>H.B. Collamore, "58 Years: A History of Pittsburgh Steel Company," 3; "Ground broken early this morning," Monessen Daily Independent, March 18, 1907.

manipulators.<sup>27</sup> The rod mill, which doubled the production of the nail mill and the fencing departments, was completed and fully operational by January 1, 1909. The Monessen Daily Independent, reporting the comments of "experts," described the new mill as "one of the most perfectly constructed and best equipped mills in the world from end to end."

The first four of eight 95-ton, basic open-hearth furnaces were completed in July, 1908; the remainder were operational by January 1, 1909. The furnaces were housed in a 1,055 feet by 280 feet steel frame, metal-clad building situated just north of the new rod mill. Gas for firing the open hearths was provided by thirty-six Hughes gas producers, which burned high volatile coal from mines of the company's subsidiary, the Monessen Coal & Coke Company.<sup>28</sup>

In essence, open-hearth steel making is a variation of the iron puddling process. In puddling, pig iron is converted to wrought iron in a refractory furnace. The excess carbon and other impurities in the pig iron "bath" are removed by the heat and the stirring of the puddler. In the open-hearth process, there is no need for a puddler. The high temperatures developed by the open-hearth furnace itself are sufficient to remove the carbon and other impurities from the charge and convert it to steel.<sup>29</sup>

Open-hearth furnaces are so-named because the charge is transformed to steel in a shallow dish-shaped "hearth" and is exposed or "open" to a sweep of flames emanating from opposite ends of the furnace alternatively. The high temperatures developed in the furnace are achieved through regeneration, a technology in which the heat of spent exhaust gases is captured and recycled. Each open-hearth furnace is equipped with two parallel inlet-and-exhaust passages consisting of brick checker-work, one of which is always being heated by hot exhaust gases. When the operator of the furnace reverses the direction of air and gas flowing through the checker chambers, making the exhaust passage the inlet passage and vice versa, the resulting hot

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<sup>27</sup>"Big Mill is a Great Success," Monessen Daily Independent, August 8, 1908; Magda, Monessen, 13.

<sup>28</sup>"Pittsburgh Steel will Start," Monessen Daily Independent, July 28, 1908; "Pittsburgh Steel increases Activity," Monessen Daily Independent, August 4, 1908.

<sup>29</sup>Thomas J. Misa, A Nation of Steel (Baltimore and London: John Hopkins University Press, 1995), 77; Mark M. Brown, "Technology And the Homestead Steel Works: 1879-1945," Canal History and Technology Proceedings, Vol. 11 (March 14, 1992), 187.

checker-work pre-heats the incoming fuel and air (in separate chambers) to a temperature of about 1,200 C. Pre-heated air and gas mix in the furnace and ignite, reaching a temperature of approximately 2,000 C. The flames then sweep across the open hearth, transforming the charge to steel.<sup>30</sup>

The principle of regeneration was discovered and patented in 1816 by Rev. Dr. Stirling of England. Stirling observed that a heated current of air passed through a compartment fitted with a sieve of wire gauze heated the metal, which in turn heated a current of cold air sent through the compartment in the reverse direction. Stirling touted the discovery as a means of saving fuel. Nothing came of it, however, until the 1840s, when Sir William (Carl Wilhelm) Siemens began his experiments. Born in Hanover, Germany in 1823, Siemens studied at the University of Göttingen before he came to England in 1843. After inventing a steam engine using regeneration in 1847, Siemens and his brother, Frederick, applied the principle to furnaces. In 1856--the same year that Bessemer announced the discovery of the steel converter--the two brothers patented their regenerative furnace and built an experimental furnace embodying the principle the following year. Overcoming the difficulty of obtaining a refractory brick capable of withstanding high temperatures, the brothers built their first successful regenerative furnace in 1861 in Birmingham for a glass works. The first successful trial of the Siemens furnace for steel making was made in France in 1864. In 1867 Siemens established the Landore Siemens Steel Company in South Wales for the manufacture of open-hearth steel on a large scale. By 1873 this company had become one of the largest steelworks in existence, producing one thousand tons of steel per week.<sup>31</sup>

As they had with many other European inventions and technologies, Americans adopted the open-hearth furnace with alacrity. The first open hearth in America was installed in Pittsburgh in 1868 by Cooper, Hewitt & Company of Trenton, New Jersey, which had purchased the Siemens' patent rights. This five-ton furnace operated for a year or two, but was not a commercial success. The distinction of the first firm operating an open hearth successfully went to the Bay State Iron Company of South Boston. Completed in 1870, the Bay State open-hearth plant

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<sup>30</sup>American Iron and Steel Institute, The Making of Steel (Washington, D.C.: AISI, n.d.), 35; Misa, A Nation of Steel, 72.

<sup>31</sup>W.H. Dennis, Foundations of Iron and Steel Metallurgy (Amsterdam, London, New York: Elsevier Publishing Co., Ltd., 1967), 165-170.

also was based on the Siemens' patent. It consisted of a five-ton furnace lined with clay firebrick.<sup>32</sup>

The most difficult problem faced by open-hearth pioneers during the development period in the 1870s and 1880s related to the lining of the hearth of the furnace. During the oxidation process, molten metal chemically reacts with the furnace lining, producing a slag and affecting the final composition of the steel. Silica bricks used in the first open-hearth furnaces produced an acidic slag and, more importantly, did not remove phosphorus and sulphur from the molten metal. Since phosphorus makes steel brittle, the "acid process" required a low-phosphorus iron ore, which was generally in short supply. The development of the basic process, which produced a basic slag and neutralized phosphorus, was first undertaken in connection with the Bessemer converter by Sidney Thomas and Percy Gilchrist of England in 1877. Thomas and Gilchrist found that a lining of basic refractory brick--dolomite or magnesia--along with the addition of limestone, neutralized phosphorous in the Bessemer converter. However, it was not until 1886 that Samuel T. Wellman became the first steel maker to use these materials successfully in an open-hearth furnace in the United States, when he employed magnesite to line a furnace at the Otis Iron and Steel Works in Cleveland. After Wellman's trial, steel makers were quick to make the transition from the acid to basic process. The installation of the first basic open hearths at the Homestead works of the Carnegie Steel Company in 1888 marked the full emergence of the technology.<sup>33</sup>

According to Thomas J. Misa, the impetus for the rapid adoption of the technology was the widely recognized need for a high-quality structural steel, something which the Bessemer process was incapable of producing. The open-hearth furnace could remove phosphorus from pig iron, enabling steel makers to produce high quality steel with high-phosphorus ore. Just as important, the open hearth allowed for a much greater control over the chemistry of the steel than the Bessemer. While the Bessemer made steel in a short period of about fifteen minutes, in which there was no opportunity for testing, the open hearth took from six to twelve hours to "cook" the charge, allowing for

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<sup>32</sup>S.T. Wellman, "Early History of the Open Hearth Steel Furnace," in Victor Windett, The Open Hearth: Its Relation to the Steel Industry, Its Design and Operation (New York: U.P.C. Book Company, Inc., 1920), 29-47.

<sup>33</sup>Misa, A Nation of Steel, 78-79; Dennis, Foundations of Iron and Steel Metallurgy, 158-164; Brown, "Technology and the Homestead Works," 187.

sampling and adjustments to produce a steel to exact specifications. While quality was paramount, the open-hearth had another advantage: it permitted the use of a large percentage of scrap. While the Bessemer used at most ten percent scrap, the open hearth could take up to ninety percent of its charge in scrap. A ratio of about fifty percent scrap to fifty percent pig iron was more typical, however. Thus, the open hearth enabled steel makers to remelt old steel--including plant scrap--and convert it to new products. For these fundamental reasons, the open hearth process caught on quickly among U.S. steel men. By 1908--the year in which the new installation at Monessen was built--the open hearth had become the leading means of steel manufacture, surpassing the Bessemer in production for the first time, 8.7 million to 6.8 million net tons.<sup>34</sup>

As would be the case with most of the technological changes made by Pittsburgh Steel Company at its Monessen Works throughout its history, the company was neither at the forefront nor far behind its competition when it installed open-hearth furnaces in 1908. The open hearth represented the mainstream of technology among the nation's steel makers. It appears, however, that the company's incentive to adopt the technology was not a desire to produce high-quality structural steel--as Misa contended for other steel makers when the open hearth was adopted in the 1880s and 1890s. Pittsburgh Steel's product line was steel wire products--wire nails, hoops, and bands, as well as galvanized fencing, "Pittsburgh Perfect Fence" (electrically welded fence) and barbed wire. Although the adjacent Page Woven Wire Fence Company used open-hearth steel to produce a similar product line, these products required only a plain carbon steel, which could be produced with the Bessemer technology. The decision to install open hearths was probably related to an anticipated expansion of the company's product line. In 1909 the Pittsburgh Steel Company, through a closely allied company, Pittsburgh Steel Products Company, entered the seamless tube business by taking over the Seamless Tubing Company of America. Operating in Monessen since 1904, the latter had manufactured locomotive and boiler tubing. Since open-hearth steel is preferable to Bessemer in seamless tube manufacture, it would appear that the company went with the open-hearth technology with this in mind.<sup>35</sup>

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<sup>34</sup>Hogan, Economic History of the Iron and Steel Industry, Vol. 2, 402-404.

<sup>35</sup>J.M. Camp and C.B. Francis, The Making, Shaping and Treating of Steel (Pittsburgh and Chicago: Carnegie-Illinois Steel Corporation, 1940), 1329.

In considering the transition from Bessemer to open-hearth technology in the steel industry, it is interesting to compare it with a broader change in American industrial technology during this period. As David Hounshell demonstrated in From the American System to Mass Production, the overall trend in American industry in the nineteenth and twentieth centuries was toward standardized, high-volume, low-cost, continuous-flow production.<sup>36</sup> This was the path blazed not only by Henry Ford, as Hounshell relates, but also by Andrew Carnegie. In steel, it was the Bessemer--rather than the open hearth--that most clearly represented this trend. It was much faster, used less fuel, and required slightly less labor. The open hearth went against the grain: its triumph was based on the quality of product rather than the efficiency of operation.

In the first four years of operation of the open-hearth plant the Pittsburgh Steel Company purchased iron ingots from the Carnegie Steel Company mills of U.S. Steel in the Monongahela Valley for remelting and conversion into steel. The company had already expressed its intention to erect blast furnaces at the site, but the lack of capital prevented it from taking this step. This final step to full integration was undertaken in 1912, after President Rowe announced that the company would increase its capital stock from six to fourteen million dollars in 1911. On March 11, 1912 ground was broken for the construction of two blast furnaces. Blown-in in August, 1913, the two furnaces were identical and shared a common cast house. With a hearth diameter of nineteen feet and bosh diameter of twenty-two feet, seven inches and a daily capacity of five hundred tons each, Nos. 1 & 2 were of average size for the period.<sup>37</sup>

The blast furnace plant at Monessen reflected twenty years of advances in design in raw materials delivery, hot blast generation, and gas cleaning in the American steel industry. Nos. 1 and 2 were equipped with four regenerative hot blast stoves each and shared a powerful turbo blower to provide hot blast for enhanced production, a system developed by Carnegie Steel Company at its Edgar Thomson Works in the late 1870s and

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<sup>36</sup>David A. Hounshell, From the American System to Mass Production, 1800-1932: The Development of Manufacturing Technology in the United States (Baltimore: John Hopkins Press, 1984).

<sup>37</sup>H.B. Collamore, "58 Years: A History of Pittsburgh Steel Company," 3; "Jim Cooper tells about the First-Fifty," in The Keystone of Pittsburgh Steel Company (July, 1951), 50th Anniversary Issue, 15; "Pittsburgh Steel Company's Monessen and Allenport Works," Blast Furnace and Steel Plant Magazine (October, 1968), 895-896.

early 1880s and the basis for the so-called "hard driving" of a furnace. With a Hulett moving car dumper, large capacity ore yard and ore bridge for raw materials delivery, and a skip hoist and skip car system for continuous charging of ore, coke, and limestone, the blast furnace plant reflected innovations in raw materials handling developed at Duquesne Works of Carnegie Steel in the 1890s. Together known as the "Duquesne revolution," these innovations increased pig iron production. A third feature of the Monessen blast furnace plant, which reflected recent innovations, was its blast furnace gas cleaning system. In addition to a dust catcher, the system included two wet gas scrubbers. Wet gas cleaning was developed in 1909 at Duquesne in order to eliminate a higher percentage of flue dust from the blast furnace gas, which was used to preheat the blast furnace stoves and, thereby, produce the hot blast. Dirty gas clogged the blast furnace stoves, lowered hot blast temperatures, and forced managers to shut down stoves periodically for cleaning. The wet gas cleaning system overcame these problems and resulted in an increase in output.<sup>38</sup>

With the completion of the blast furnace in 1913, the Pittsburgh Steel Company's Monessen works became an integrated mill, and the company entered a period of time of high production, big profits, and expansion in employment and facilities that lasted until the early 1920s. The two blast furnaces, built to supply 500 tons of pig iron per day, frequently made from 650 to 700 tons in twenty-four hours. According to a commemorative history written on the occasion of the company's 50th anniversary, No. 1 furnace briefly held the world's record for both daily and monthly production. Annual pig iron capacity was 403,000 tons in 1914, while Monessen's open hearth furnaces produced 694,000 tons of steel ingots in the same year. The surplus of steel over iron tonnage is explained by the use of imported scrap in the open hearth steel making process. Following the pattern of other integrated mills, the company used its additional capital to purchase holdings in ore mines in Michigan and Minnesota to secure its ore supply. It also started its own on-site railroad company, the Monessen and Southwestern Railroad, to handle all materials in and out of the plant.<sup>39</sup>

The onset of World War I and the resultant increase in the demand for steel led to boom conditions in the industry during

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<sup>38</sup>Ibid.; Joel Sabadasz, "Duquesne Works: Overview History," Unpublished manuscript for Historic American Buildings Survey/Historic American Engineering Record, National Park Service, 5-9.

<sup>39</sup>"Jim Cooper tells about the First-Fifty," 15.

the 1915 to 1919 period. According to a company historian, Pittsburgh Steel Company entered "one of the most dynamic periods of its existence." As America raced to arm itself, the company found a ready market for all the steel it could make. Rather than finished products, the company sold much of its steel in the form of ingots. This resulted in a level of profits lower than what it could have been had the same volume of steel been converted and sold as wire, tubes, or other products. This was not a critical problem during the boom years. Profits increased from less than \$1 million in 1915 to over \$4.5 million in 1916. However, after business began to taper off after the Armistice on November 11, 1918, the problem of an imbalance of iron and steel making with finishing facilities became manifest.<sup>40</sup>

The company did make an attempt to deal with the excess of steel production over finishing facilities during the war period. Through the Pittsburgh Steel Products Company, ground was broken for the construction of a new seamless pipe mill in February, 1917. By this time, the Monessen Works covered 160 acres and stretched 2.3 miles along the Monongahela River. Since there was little land at Monessen available for expansion, the company built the new mill at Allenport, located about six miles south of Monessen on the opposite (west) bank of the Monongahela River. By 1920 the Allenport mill consisted of a two-stand, seven-pass continuous rolling mill, piercing mill, coal-fired piercing mill furnace, cold draw benches, pickling house, annealing furnaces, and gas producers.

An expansion in steelmaking capacity also took place during the war years. In 1918 four basic, 120-ton open-hearth furnaces were added to the plant, and the eight existing furnaces were enlarged from 95 to 120 tons.<sup>41</sup> With this expansion and other improvements, the open-hearth steelmaking plant assumed the basic form that it would retain until 1953. Thus, it is appropriate to provide a description of open-hearth facilities at this time.<sup>42</sup>

The plan or layout of the steel plant is an important factor in its efficiency. A steel plant should be situated in close proximity to both its source of raw materials (blast furnaces and stock yards) and the point where its product is processed

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<sup>40</sup>H.B. Collamore, "58 Years: A History of Pittsburgh Steel Company," 6.

<sup>41</sup>Ibid.; "Pittsburgh Steel Company Milestones," in The Keystone of Pittsburgh Steel Company (July, 1951), 20.

<sup>42</sup>Site Plan - A, produced by HABS/HAER architects for the Pittsburgh Steel Company drawing package, depicts the Monessen Works in 1923.

(rolling mills). Moreover, buildings and facilities should be positioned for convenient transportation so that "through-put" or a continuous flow of materials is maintained. Such a rational, planned layout was first attained at the Edgar Thomson Bessemer steel works at Braddock, Pennsylvania in 1873 by Alexander Holley.<sup>43</sup> As Mark M. Brown has shown with study of the Homestead steel works, this rational layout was impossible at older works such as Homestead, where facilities often had to be "shoe-horned."<sup>44</sup> Despite the fact that both the open-hearth and blast furnace plants at Monessen were added years after the company's first facilities were put on-line, they were well laid-out. Situated adjacent to the river, the open-hearth plant was sandwiched conveniently between the blast furnace plant and blooming and billet mill. Hot metal from the blast furnaces was transferred on rail "torpedo" cars via an elevated tramway a short distance to the facility, and ingots, after cooling in an adjacent yard, were stripped and transported on rail cars a short distance to the soaking pits near the blooming and billet mill.

Like the blast furnaces, the open-hearth plant at Monessen reflected advances in design made during the previous twenty years in the American steel industry. By the time the Monessen plant was built (1908) and expanded (1918), the design of open-hearth facilities had become standardized, variations in the details of construction remained. Certainly, a characteristic architecture and spatial arrangement had emerged.<sup>45</sup> Like most open-hearth facilities of this period, those at Monessen were enclosed in an immense steel-frame building divided longitudinally into charging and teeming (or pouring) aisles or sides. The thirty-six Hughes gas producers were situated in a separate, attached building. Coal was delivered to hoppers above the producers via a skip hoist and conveyor system from the adjacent stock yard, which held coal and scrap. The twelve furnaces were arranged end to end in a long row along the center. The charging floor, situated between the furnaces and the gas

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<sup>43</sup>Misa, A Nation of Steel, 25-26.

<sup>44</sup>Mark M. Brown, "The Architecture of Steel: Site Planning and Building Type in the Nineteenth-Century American Bessemer Steel Industry," Ph. D. diss, University of Pittsburgh (1995), 70-73.

<sup>45</sup>According to Brown, "The Architecture of Steel," 245, the design of American open hearth buildings had become "remarkably uniform" by 1905; see Victor Windett, The Open Hearth: Its Relation to the Steel Industry, Its Design and Operation (New York: U.P.C. Book Company, Inc., 1920) for an illustrated description of standard open-hearth facilities and practice in about 1920.

producers, was elevated about eighteen feet above the level of the teeming floor. A narrow gauge track for conveying scap, ore, and limestone to the furnace, was located on the charging floor. Also on this floor and next to the furnace was a wide gauge track with a spread of about twenty feet upon which charging machines ran. The space above this floor and the furnaces was spanned by two overhead traveling cranes, used for charging the furnaces with hot metal. Prominent features of the teeming floor were teeming platforms, each about eight feet wide and eight feet high, from which the molten steel was directed from ladles into ingots mounted on railroad cars. A 600-ton mixer and a pig casting machine were located at the end of the building adjacent to the blast furnace plant.

The open-hearth furnace is a rectangular brick structure set on a concrete foundation and supported on the sides and ends by steel steel channels or slabs. The most common furnace size in 1920 ran from 35 to 75 tons capacity; at 120 tons those at Monessen were large by industry standards. The characteristic feature of the furnace is a shallow, dish-shaped hearth upon which the steel is made. The brick walls are vertical and each furnace is covered by an arched refractory brick roof. Charging doors for the introduction of raw materials are set into the brick walls on the charging side. The taphole is located on the other side, arranged so that molten seel can rush by gravity through a spout into a large ladle on the pouring floor. A considerable portion of the open-hearth furnace is not visible. Brick regeneration chambers or "checker-work" are located at both ends of the furnace below the level of the charging floor. The bricks in these chambers are arranged with numerous passages through which hot waste gases, as well as fuel and combustion air, pass alternatively.<sup>46</sup>

The open-hearth plant at Monessen included three important features that had become standard equipment by about 1900. Developed in 1880s and 1890s, the hot metal mixer, traveling crane and charging machine had revolutionalized steelmaking when they were introduced. The hot metal mixer was developed by William R. (Captain) Jones at the Edgar Thomson Bessemer steel works in 1887. Consisting of a firebrick-lined vessel holding about one hundred tons, the mixer held and mixed together molten pig iron from the blast furnaces. Periodically, charges were tapped from the mixer for use in the converters. The chief advantages of the mixer were that it eliminated the need for a cupola furnace to melt pig iron and greatly limited irregularities

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<sup>46</sup>Camp and Francis, The Making, Shaping and Treating of Steel, 395-399.

in the chemical composition of the pig iron.<sup>47</sup> Soon, mixers were standard equipment in Bessemer steel works, and, when open-hearth facilities were built, incorporated into their design. The 600-ton mixer at Monessen was about average capacity for the industry in 1920.<sup>48</sup> Since the mixer building housing them was not a part of the original layout of the open-hearth plant, it appears that the mixer was added sometime between 1908 and 1923. Situated at the head of the open-hearth building near the blast furnaces, the mixer received hot metal from the blast furnaces via "torpedo" cars running on an elevated tramway.

The electric, traveling overhead crane was developed in the 1880s and had become standard equipment at most steel plants by 1900. The crane greatly facilitated materials handling, making large-volume steel production possible.<sup>49</sup> At Monessen and elsewhere cranes were used in charging and teeming. They transferred ladles of pig iron to the furnaces, then poured ladles of molten steel into ingot molds. The charging machine, developed by Samuel Wellman in the 1890s, automated the charging process. Positioned on a wide gauge track atop the charging floor, the charging machine attended a battery of furnaces. At Monessen, two Wellman charging machines served the twelve furnaces. The machine itself consists of a bottom truck with flanged wheels upon which is mounted a carriage fitted with a charging bar. The charging bar is shaped so that it can fit the socket of a charging box, which is filled with scrap, ore, or limestone. In practice, charging boxes were moved into position in front of the furnaces on buggies running on the narrow gauge rail line. The charging machine locked onto the charging box, raised it, then transferred it through the charging door to the hearth of the furnace.<sup>50</sup>

Besides the furnaces themselves, charging machines, cranes, and hot metal mixer, the open-hearth plant at Monessen--like others in the industry--included additional equipment: ladles for containing molten metal, molds for ingots, dinkeys or electric engines for hauling materials, and a stripper for removing molds from the ingots. The plant at Monessen had an unusual feature, a pig-casting machine, which was unrelated to

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<sup>47</sup>Misa, A Nation of Steel, 26-28.

<sup>48</sup>Windett, The Open Hearth, 197.

<sup>49</sup>Brown, "The Architecture of Steel," 248.

<sup>50</sup>Brown, "Technology and the Homestead Steel Works," 205; Windett, The Open Hearth, 261-276; Camp and Francis, The Making, Shaping and Treating of Steel, 392-393.

steelmaking. Typically a part of a blast furnace plant and located in or near the cast house, a pig machine is for casting pig iron. It replaced the old method of casting the metal in beds of sand. It consists of a an endless chain carrying a series of parallel molds, into which the metal is poured. Located in the mixer building, the pig machine at Monessen probably received hot metal from both the blast furnace plant as well as any excess from the mixer. Although the pig machine may have received wide use prior to the modernization of the open-hearth plant in 1953, it was used only intermittently afterward.<sup>51</sup>

Like its facilities, the open-hearth steelmaking process utilized at Monessen was fairly typical of the industry. Each operating furnace was attended by three men: a first helper, a second helper, and a cinder pit man (or third helper). Supervising the work was a foreman--melter foreman or simply melter--who was in charge of the operation of all of the furnaces. The first helper was in charge of the furnace, except when the heat was tapped. The duty of the first helper was to work the heat: direct the work of the second helper and cinder pit man; inform them, along with the charging machine operator, how much ore, pig iron, scrap, and other materials were to be added to the furnace; run off the slag; and direct any repairs necessary during the operation. The main responsibility of the first helper was to tap the heat, direct the repair of the bottom, and clean the steel spout. The second helper had the most difficult job: he had the responsibility of keeping supplies of dolomite (for "making bottom" and performing repairs of the furnace as the heat worked), as well as ladle additives on hand. This was done manually--with shovel and wheelbarrow--at Monessen. The second helper helped work the heat, dug the plug out of the tapping hole when the heat was ready to tap, plugged the tapping hole after the heat, relined the steel spout after the heat, and cleaned-up around the furnace. The cinder pit man cleaned the cinder pit and assisted in "making bottom" at the furnace. The melter foreman had overall direction of the furnaces. At Monessen, six to ten of the twelve furnaces were in service at one time, while the rest remained on standby. The melter also made sure that the heat met the specifications of the order, took charge of any furnace when difficulty arose, directed the tapping of the heat and any ladle additions, and inspected the bottom of the furnace after the heat was tapped.

From information obtained through interviews with former workers at Monessen, it is clear that this work--especially that of the second helper and cinder pit man--was laborious, hot,

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<sup>51</sup>Interview of Ernie Reppert by author and Cassandra Vivian, July 11, 1995.

dirty, and dangerous. With its hazards and rigid chain of command, the situation was comparable to "being in the [military] service."<sup>52</sup> Accidents were not uncommon. In fact, the worst accident in the history of the Monessen plant occurred at the open-hearth plant on July 29, 1953, when a "dinkey" jumped the tracks on the trestle of the line leading from the blast furnace plant. The structure collapsed, severing a steam line and sending tons of debris on top of a group of men eating lunch below. Five steelworkers died and five others were seriously injured.<sup>53</sup>

The first step in the process of making steel in an open-hearth furnace was "making bottom." As described earlier in the paper, the chemical reaction of the basic lining of the furnace with the charge, which eliminated phosphorous and sulphur, was one of the most important functions of the open hearth. Such a reaction naturally eroded the magnesite brick lining the bottom of the furnace. To protect the bottom lining and provide an additional source of basic material for steelmaking, the open-hearth crew had to "make bottom" before the furnace was charged. After an inspection of the furnace by the melter, the open-hearth crew went to work, performing one of the hottest and dirtiest jobs in the mill. The first step was to rabble (or rake out) the steel and slag that were not removed during the tapping process. This exposed any holes in the bottom. If a large hole was found, the furnace was allowed to cool and the bottom was built up with magnesite brick. Typically, however, only small holes were found. These were filled with burnt dolomite, the second helper and cinder pit man shoveling the material into place through the charging door. Dolomite was also shoveled into place along the sides or banks of the furnace. The last step was to seal the tapping hole, first with dolomite then with a plug of clay.

After the furnace was prepared, it was charged with raw materials. The two principal ingredients were steel scrap and hot metal (pig iron). In addition, smaller quantities of limestone, which acted as a flux, and iron ore, which provided oxygen to oxidize carbon and impurities, were added. From interviews, it appears the a greater percentage of hot metal over scrap was used at Monessen than in many other plants. While a fifty-fifty percentage was standard for the industry, a proportion of about sixty percent hot metal and forty percent

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<sup>52</sup>Interview of Ray Johnson, Ernie Reppert, and Andrew Zrenchak, by author and Cassandra Vivian, July 9, 1995.

<sup>53</sup>Monessen Daily Independent, July 29, July 30, July 31, 1953.

scrap was typical at Monessen. The large iron production capacity at Monessen probably accounts for this mix.

The first three materials to be charged in the furnace were placed there by the charging machine. The first was limestone--about five to eight percent of the total charge. Next, a small quantity of iron ore--probably less than one percent of the charge--was placed atop the limestone. Steel scrap was then placed atop this mixture before the gas, which had been set at low, was turned up to full and the first or melting stage of the process begun. This stage typically lasted about two hours.

After most of the solid materials were melted, the molten metal was introduced. At Monessen, hot metal was poured from the mixer into a ladle, then transferred to the furnace by a crane. The timing of this step, which was determined by the temperature of the solid charge, was very important. If added too late--after the solid materials had melted and partially oxidized--the charge would erupt into a violent boil; if too early, the hot metal would be chilled by the solids, delaying the heat. With this addition, the purification of the metal began.

Two types of chemical reactions, relating to the removal of carbon, phosphorous, sulphur, manganese and silicon, took place during the purification process: oxidation and neutralization. The first reaction liberated the impurities, while the second bonded them to the limestone flux so that they could be removed as slag. These reactions took place in three stages, known as the ore boil, the lime boil, and the working period. During the ore boil, lasting about three hours, most of the oxidation of impurities, except for carbon, occurred, resulting in the evolution of carbon dioxide that bubbled through the bath. Some neutralization occurred as well and, as a result, slag formed on top of the bath. To tap this slag, the slag hole was cleared of dolomite and the excess slag allowed to flow through the cinder spout into the cinder pit below. This tapping was known as the runoff. The second stage of the purification process, lasting about one hour and a half, was the lime boil. During this period, the lime rose to the surface of the bath and calcinated, resulting in the neutralization of impurities and their incorporation in slag. During the calcining process, carbon dioxide was released from the limestone, causing the bath to boil violently.

After the lime boil had subsided, the working or refining period began. Lasting from two and one-half to three hours, this was the period when the remaining carbon content of the heat was adjusted and the temperature of the bath raised to a point that allowed for proper tapping and casting into ingots. This was the most important period in the purification process, the time when the skill and experience of the melter and his crew were brought to bear. The working period required an increase in temperature

in the furnace, achieved by increasing the volume of gas flowing into the furnace, as well as by reversing the flow of fuel and air through the checkers more frequently. The carbon content of the bath was the most critical factor in the production of steel. Depending on its purpose, the carbon content of steel as cast varied from 1.00 percent to 0.02 percent. Since alloying compounds such as ferromanganese, added near the end of the heat or in the ladle, contained carbon, it was standard practice at Monessen to reduce the carbon in the bath to a point slightly lower than the final content desired to allow for these additions. The carbon content was reduced through the addition of an oxidizing agent--usually iron ore. To monitor the carbon, the steel was tested frequently by the first helper, who obtained a small spoonful from the furnace, poured it into a mold, and allowed it to solidify. After cooling with water, the steel was removed from the mold and broken with a small sledge hammer. While it was possible to determine the range of carbon through an inspection of the fracture, a carbometer, which determined the exact content of the steel through its magnetic properties, typically was used. When the desired carbon level was attained, the steel was finished in the furnace. Depending upon the type and grade of steel being made, alloying compounds such as ferromanganese, molybdenum, and chromium were added and additional tests made.

After about ten hours in the furnace, the steel was ready to tap. The second helper began the procedure by digging out the rear of the mud plug and most of the dolomite used to close the tapping hole. Then, the hole was opened by driving the remaining dolomite outwards with a tapping rod, which was inserted through the charging door in front of the furnace. The steel then flowed through the hole out of the furnace and down a spout into a ladle, a fireclay-lined steel vessel large enough to hold the entire contents of the furnace. Ladle additions such as silicon or vanadium were made at this point, usually by throwing the compounds in the stream of the steel as it passed into the ladle. Since the tapping spout and ladle were placed so as to direct the stream of steel a little to the side of center, a swirling motion was created that mixed the additives with the steel.

As soon as the stream from the furnace no longer contained any steel, the spout was removed, and the ladle lifted by the crane and carried to the pouring or teeming platform. Here the steel was poured into ingot molds, which rested on small rail cars. At Monessen the ingot molds were fitted with hot tops, a refractory-lined cap placed atop the mold that delayed solidification of the top part of the ingot. It was also common practice at Monessen to "kill" or deoxidize the steel in the mold by adding a small amount of aluminum. This addition suppressed gases that otherwise evolved from the ingot while it solidified,

causing deformities in its structure. After teeming, the ingots were rolled into the nearby yard for chilling, then transported to the stripper, where the molds were removed. From here a crane moved the ingots to the soaking pits, where the rolling process began.<sup>54</sup>

With the Pittsburgh Steel Company's plant, along with the tube mill of the Pittsburgh Steel Products Company, the U.S. Steel tin plate mill, Page Steel Works and the Monessen Foundry, Monessen emerged as a bustling industrial city. By 1920 Monessen was the leading industrial town in Westmoreland County in terms of the value of all products, number of works, and capital invested. Monessen ranked fourteenth among all Pennsylvania cities in total capital invested.<sup>55</sup>

This large complex of industrial firms in Monessen attracted a rapid influx of people. From less than 200 in 1898, the population grew to 11,775 in 1910 and 18,179 in 1920. These people came from highly diverse backgrounds. Some were native Pennsylvanians of Scotch-Irish, English, Irish, and German backgrounds, but most were immigrants and second-generation eastern and southern Europeans who came to Monessen in successive waves. In 1910 the foreign-born, along with American-born sons and daughters of immigrant families, comprised seventy-one percent of the city's population. Although the number of immigrants dropped somewhat during the 1910s, immigrants and their progeny still constituted seventy-one percent of the city's residents. The largest ethnic groups in the city were Italians, Slovaks, Poles, Croatians, Hungarians, Greeks and Ukrainians.<sup>56</sup>

Blacks came to Monessen to work in the mills as well, but not in such large numbers. The first blacks arrived in Monessen in 1902, when thirty-two wire-drawers were brought from Joliet, Illinois. By 1907, according to Richard Wright, about 150 worked

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<sup>54</sup>This discussion of the open-hearth process was based on interviews of Ray Johnson, Ernie Reppert, and Andrew Zrenchak, by author and Cassandra Vivian, July 9, 1995; Camp and Francis, The Making, Shaping and Treating of Steel, 408-425; and Windett, The Open Hearth, 61-82.

<sup>55</sup>Magda, Monessen, 9-10.

<sup>56</sup>Ibid., 10-11; William Keyes, editor, with contributions by Terry Necciai, Brian Butko, Carolyn Stemple, and Carrie Stanny, Historic Site Survey of the Greater Monongahela River Valley (Pittsburgh: Historical Society of Western Pennsylvania, 1991), 113.

for Pittsburgh Steel,<sup>57</sup> and three years later, the city of Monessen had 232 blacks (1.9 percent of the population); by 1920, their numbers increased to 588 and 3.2 percent of town's population. Some blacks arrived at Monessen during the World War I boom, when wages were high, while others were imported during the 1919 strike to act as strikebreakers. Pittsburgh Steel Company had 200 black employees in 1923, 118 in 1924 and 157 in 1925.<sup>58</sup>

The arrival of vast numbers of immigrants led to ethnic and racial divisions in Monessen that spilled over into the workplace. The native and "old immigrant" stock formed the town's middle and upper classes. They filled most of the skilled and supervisory jobs in the mills, and held most of the city's political offices (as Republicans) until the late 1930s. The recent immigrants, along with the blacks, were positioned at the bottom of the social ladder. They held the lower-paying, unskilled and often more dangerous jobs in the mills.<sup>59</sup> For example, the 150 blacks who worked at Pittsburgh Steel in 1907 filled the dangerous and low-paying jobs of wire-drawer, firemen, boiler tender, and laborer.<sup>60</sup>

Efforts to assimilate the large ethnic population at Monessen were made both from "above" by civic and governmental agencies and from "below" by the immigrants themselves. These efforts met with some success in naturalizing immigrants. In fact, an article in the Pittsburgh Sun in 1919 lauded the town as the "biggest melting pot of the entire nation."<sup>61</sup> However, it was not until the 1930s, when the second generation of new arrivals matured and the union finally succeeded, that the ethnic population was truly integrated and accorded an equal status with natives. Until then, immigrants and their families lacked the political power and access to economic opportunities that natives took for granted.

The tension between natives and recent immigrants in Monessen became more evident during the nationwide strike of

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<sup>57</sup>Richard R. Wright, Jr., The Negro in Pennsylvania: A Study in Economic History (New York, 1969), 226-227.

<sup>58</sup>Dennis C. Dickerson, Out of the Crucible: Black Steelworkers in Western Pennsylvania, 1875-1980 (Albany: State University of New York Press, 1986), 39, 65, 85-100.

<sup>59</sup>Magda, Monessen, 10.

<sup>60</sup>Wright, The Negro in Pennsylvania, 226-227.

<sup>61</sup>Reported in Monessen Daily Independent, May 7, 1919.

1919. Although the Amalgamated Association of Iron and Steel Workers had become nearly powerless after 1901, it made a renewed organizing effort in 1918 and 1919. Under its auspices, a National Committee for Organizing the Iron and Steel Workers was formed in August, 1918 under the leadership of syndicalist William Z. Foster. Following a successful drive to organize steelworkers, the National Committee, with the cooperation of lodges of the Amalgamated Association, launched a national strike on September 22, 1919. The strikers demanded union recognition, the eight-hour day, higher wages, and abolition of company unions.<sup>62</sup>

As was the case nationwide, the strike of 1919 was an abysmal failure at Monessen. The strikers returned to work without gaining any of their goals. With the National Committee defeated, their local organization soon withered. The strike failed for several reasons: the split in the ranks of labor between natives and immigrants, the failure of organized labor to adequately provide for the strikers, and most of all, the repressive, red-baiting strategy of government and business interests. The strike left divisions and hardship in its aftermath. With their leaders blackballed or, in the case of the Russians, arrested by federal agents as subversives, the solidarity of many ethnic groups was shattered. Some of the strikers were forced to leave Monessen. Those who did return to work were forced to undergo the humiliations of defeat. They were forced to re-apply for their jobs and take a pledge to maintain the laws of the commonwealth and country. Often, they were given jobs even more dangerous and dirty than those they held before the strike.<sup>63</sup>

Despite the strike victory, Pittsburgh Steel Company failed to expand or realize large profits during the "prosperity decade" of the 1920s. According to its official historian, the company missed its opportunity because of two developments: the deaths of the three of the six founders and the inability of the company to balance its large iron and steel making capacity with the appropriate finishing facilities. The "driving force" of the company, Wallace Rowe, died on February 1, 1919, his plans for expansion of finishing facilities following him to the grave. Then, in quick succession John Bindley and Willis McCook, who had succeeded Rowe as company presidents, passed on in 1921 and 1923, respectively. More important in the general decline of the company was the slackening of the demand for steel, especially

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<sup>62</sup>One of the best accounts of the 1919 strike is Brody, Steelworkers in America, 231-262.

<sup>63</sup>Magda, Monessen, 50; Brody, Steelworkers in America, 257-262.

after the recession of 1922. Profits dwindled, providing little for the investments needed to correct the company's two major weaknesses--insufficient ownership of ore supplies and the imbalance of steel making with finishing facilities.<sup>64</sup>

The only measures taken by Pittsburgh Steel during the 1920s to make itself more competitive involved improvements in the production and delivery of oil country tubing. The discovery of large oil pools in Texas and Oklahoma after the war created an increased demand for pipe to be used in the wells and in transmission lines. With the new seamless tube mill at Allenport, Pittsburgh Steel was poised to exploit this growing market. To exert a larger control over the plant and cut managerial costs, Pittsburgh Steel took over the Pittsburgh Steel Products Company, the subsidiary which operated the Allenport mill, in September, 1925 and renamed it the Tubular Division. Since oil men were demanding pipe in larger diameters, the company installed a Mannesman Pilger mill at the Allenport plant in 1926. A type of rolling mill for making large diameter tubing, the Pilger mill enabled the company to produce seamless steel tubing in long lengths up to 12'-1/2" outside diameter.<sup>65</sup>

The company also took steps to reduce transportation costs and improve the delivery of its oil country products. The growth of western steel centers, along with the abolition of Pittsburgh Plus pricing and the adoption of a multiple basing point system in 1924, meant that Pittsburgh producers had to make large freight absorptions in order to compete in the west.<sup>66</sup> To reduce freight costs as much as one-half, the company turned from rail to water transport. To this end, the company constructed wharfs at both its Allenport and Monessen sites in 1919. The Allenport wharf was designed to ship oil country tubing to distribution points along the Mississippi River, while the Monessen wharf was built to receive raw materials, particularly coal and coke.<sup>67</sup> In 1926 the company established a large pipe storage yard on the Mississippi River at Memphis, Tennessee and sales offices at

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<sup>64</sup>"58 Years: A History of Pittsburgh Steel Company," 3-4.

<sup>65</sup>Ibid., "Pittsburgh Steel Company Milestones," 20; Untitled Press Release, August, 1926 in file, "Point of No Return," Wheeling-Pittsburgh Steel Company archives, Wheeling, West Virginia.

<sup>66</sup>Warren, The American Steel Industry, 206-210.

<sup>67</sup>Monessen Daily Independent, January 18, 1919; Monessen News, December 30, 1919.

Houston, Texas and Tulsa, Oklahoma.<sup>68</sup> The same year, the company transported about forty thousand tons of finished steel by water.<sup>69</sup>

With the onset of the Great Depression in 1930, the downward slide of Pittsburgh Steel Company continued at an accelerated pace. In December, 1930 the dividend on common stock was eliminated to conserve assets. Preferred stock dividends were eliminated six months later. For the next five years, Pittsburgh Steel operated in the red and the company's credit rating slipped precipitously. The company eliminated nearly three-fourths of its maintenance spending, and capital equipment expenditures dropped ninety-four percent in the years from 1929 to 1934. To save cash, the company closed its Glassport hoop mill, liquidated the Monessen Coal and Coke Company in 1932, and discontinued small diameter pipe production at the Monessen Works, except for certain finishing operations. The cuts in maintenance and new equipment purchases made it more difficult for Pittsburgh Steel to compete with the more efficient, better integrated mills.<sup>70</sup>

With disaster looming, Pittsburgh Steel Company was revived in 1936 by the entry of new financial interests. Financial setbacks had reduced its stock to bargain prices, so when a revival of the steel industry appeared imminent in 1936, investors recognized the profit potential of the company. Through the purchase of shares held by Emil Winter, one of the company's founders, J.H. Hillman, Jr. acquired an interest in the company and was named a director on January 13, 1936. At the same time, the Sharon Steel Company, with an integrated mill at Sharon, Pennsylvania, purchased a large block of Pittsburgh Steel stock. Sharon was similar to Pittsburgh Steel in size and product mix. Organized in 1899, Sharon had iron and steel making facilities, as well as a rod mill, wire plant, wire nail works, and a tin plate mill. Sharon's purchase constituted a near-takeover of Pittsburgh Steel. Henry A. Roemer, president and chairman of its board of directors, was named director and president of Pittsburgh Steel in January, 1936. The two companies functioned together closely and shared several of the same officers. An actual merger was considered, but forestalled

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<sup>68</sup>Untitled Press Release, August, 1926 in file, "Point of No Return," Wheeling-Pittsburgh Steel Company archives, Wheeling, West Virginia.

<sup>69</sup>Warren, The American Steel Industry, 204.

<sup>70</sup>"58 Years: A History of Pittsburgh Steel Company, 4-7; Monessen Daily Independent, October 14, 1936.

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by the threat of an anti-trust investigation by the Justice Department in 1936.<sup>71</sup>

With Hillman and the Sharon interests on the board of directors, Pittsburgh Steel initiated a financial recovery program in 1936. In May action was taken by the board of directors to obtain capital funds to rehabilitate and modernize the mill. Over one hundred thousand shares of stock were offered, and by October, 1936 \$1.03 million was raised for expenditures at the Monessen and Allenport plants. The next year, twenty-six modernization projects were undertaken: the two largest were the installation of continuous, variable-speed wire blocks in the wire mill and the remodeling of the No. 1 rod mill to make larger rods.<sup>72</sup> By 1936 the company had a pig iron capacity of 480,000 tons and a steel ingot capacity of 720,000 tons. This latter figure capacity represented 1.1 percent of the nation's total ingot capacity. In order of tonnage marketed, its chief products were seamless tubing, plain wire, wire nails, galvanized wire, wire fence, wire fabric, and rods. The company employed 5,200 at the Monessen Works and 2,000 at its Allenport plant.<sup>73</sup>

The rehabilitation measures taken in 1936 and 1937 were, merely stop-gap measures--replacements of out-moded machinery--that allowed the company to continue its traditional product line. Although no investments were made for much-needed new finishing facilities, the company's performance improved, nonetheless, as profits were realized in 1936 and 1937 and, despite a loss of half a million dollars in 1938, in 1939 and 1940.<sup>74</sup>

The financial recovery of Pittsburgh Steel Company was not, however, the main development in the company's history during the late 1930s. Without doubt, the successful unionization of steelworkers by the Steel Workers Organizing Committee (SWOC)

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<sup>71</sup>"58 Years: A History of Pittsburgh Steel Company," 7; Hogan, Economic History of the Iron and Steel Industry, Vol. 2, 485; Monessen Daily Independent, January 10, 1936; January 11, 1936; January 14, 1936; January 22, 1936; February 28, 1936.

<sup>72</sup>"58 Years: A History of Pittsburgh Steel Company," 7; Monessen Daily Independent, June 3, 1936; October 10, 1936.

<sup>73</sup>Duncan Burn, The Steel Industry, 1939-1959: A Study in Competition and Planning (Cambridge University Press, 1961), 495; Monessen Daily Independent, October 14, 1936; November 5, 1936.

<sup>74</sup>"58 Years: A History of Pittsburgh Steel Company," 7.

against the company's fierce resistance was the main story of the late 1930s.

With the problem of labor organization solved and the company once again upon solid financial ground, the years from 1939 to 1946 were some of Pittsburgh Steel's most productive and profitable. The war led to a tremendous increase in the demand for steel, which was needed in such large quantities that the company could sell every pound that it made. To an extent, the company re-tooled its finishing departments to produce a variety of products for wartime applications: shells, armor piercing shots and bullets, rockets, wire-mesh for roads and landing strips, and barbed wire. However, the largest part of the steel produced in the open hearths at Monessen was sold in ingot form. Reheated and shaped into a host of products by other steel companies and fabricators, the steel made at Monessen attained a reputation for high quality. Its sale in ingot rather than finished form reduced the company's profits, however.<sup>75</sup>

Pittsburgh Steel accepted the admonitions of the federal government to expand during the war and added two major production facilities. A Koppers sixty-oven by-product coke plant, financed entirely by the company, was erected at Monessen in 1942. Since the company had purchased its coke on the open market following the liquidation of Monessen Coal & Coke in 1932, the plant was a big cost-saver. The second major addition was a third blast furnace. In 1945 the Defense Plant Corporation, an agency of the federal government that sought to increase the capacity of steel mills across the country (it built fourteen blast furnaces), financed the construction of the furnace. With a hearth diameter of 28 feet, No. 3 furnace had a daily production capacity of 2,200 tons--more than double that of No. 1 or No. 2. No. 3 furnace (renamed "Jane" in 1966) was not completed until after the war, however. In 1947 the furnace was acquired at no cost by Pittsburgh Steel Company from the War Assets Administration, the federal agency responsible for liquidating the government's wartime investments in steel making. It was blown-in in May, 1948.<sup>76</sup>

The war period was also significant as the high-tide of labor-management cooperation at the Monessen plant and other steel mills. The "get-together spirit" was in the air; animated by patriotic fervor, workers and managers worked together as

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<sup>75</sup>H.B. Collamore, "58 Years: The History of Pittsburgh Steel Company," 9; "Pittsburgh Steel Went to War," Keystone (November, 1945), 4-5.

<sup>76</sup>H.B. Collamore, "58 Years: A History of Pittsburgh Steel Company," 9.

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never before to produce more and better steel to win the war. In March, 1943 the company received the Army-Navy "E" for excellence award for its production record. Employees also purchased thousands of dollars of war bonds (and flew the Minuteman Flag representing their purchases); 1,675 from the Monessen and Allenport plants served in the armed forces. A number of women took the places of the fighting men. Although most worked in offices and labs, some filled production jobs, particularly in the newly-constructed coke plant. With a few exceptions, the women returned to the domestic sphere when the war was over.<sup>77</sup> It was during the war years that the company began publication of its magazine, The Keystone of Pittsburgh Steel. The magazine disseminated information about new facilities or production techniques, promoted safety, and provided a forum for news about employees and the communities in which they lived. It encouraged the cooperative spirit by referring to both management and labor as part of the "Pittsburgh Steel family."<sup>78</sup>

The cooperative spirit of labor and management barely outlasted the war. Even before many of the veterans returned--in November, 1945--750,000 steelworkers, combined in the largest union in the country, the United Steel Workers of America, voted to authorize a strike when their contract ended in January, 1946. With the cessation of wartime price and wage controls imminent, steelworkers demanded a twenty-five cent an hour raise. The steel companies, still locked into low, wartime prices set by the Truman administration, balked. On January 20, 1946 steelworkers walked off their jobs in the largest single strike in American history. The strike forced Truman to abandon his attempt to control steel prices and inflation. In February, 1946, the president authorized a \$5.00 increase in steel prices, after which the union and the industry agreed to a wage increase of eighteen and one-half cents an hour. The strike ended in February, and workers were back on the job by the eighteenth. The strike heralded a new era in labor-management relations. Although the days of outright repression and violence were over, a spirit of conflict and struggle between labor and management remained. Unable to establish a mechanism to settle differences over wages, benefits, and work rules, the strike became the only means of resolution. Strikes occurred with alarming frequency:

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<sup>77</sup>Keystone (November, 1943), passim.

<sup>78</sup>It is unclear when publication of Keystone began. The earliest issue located by the author was April, 1943. Although it was published irregularly during the war, the magazine became a quarterly afterward. The magazine was discontinued in 1968, after the merger with Wheeling Steel.

there were significant work stoppages in 1949, 1952, 1956, and 1959. Although they resulted in economic gains for steelworkers, the settlements raised labor costs and weakened the industry financially. With federal policy makers from Truman to Kennedy exercising price control (often through "jawboning"), steel companies were unable to finance the capital improvements necessary to expand and modernize their mills, which in turn led to deterioration of the industry's global competitiveness.<sup>79</sup>

As it reminded its employees in Keystone, Pittsburgh Steel was hurt financially by the strikes and increased labor costs of the 1940s and 1950s. In the strike year of 1946 the company ended the year with a net profit of less than \$50,000. Even the boom years of 1947 and 1948 failed to generate profits large enough to finance the extensive modernization of facilities long-desired by company planners.<sup>80</sup> With the exception of its entry into the materials handling business, where the company introduced the steel wire "cargotainer," the company's product line remained virtually the same.<sup>81</sup> It was able to purchase the Johnson Steel & Wire Company of Worchester, Massachusetts, a small specialty wire producer, in 1947. In 1948 the company explained to its employees how the record income of that year was spent. With sales of nearly \$103 million, profits amounted to \$5,484,090. After payments for its mortgage, dividends, and a contingency fund, the company had only \$4,239,138 available for expenditures on improvements. Moreover, despite payments of dividends to preferred stockholders, the company was unable to meet its obligation to common stockholders, who had not received a dividend since 1930.<sup>82</sup>

In 1950 the management of Pittsburgh Steel decided to take radical steps to expand and modernize its facilities in order to become more competitive. Its first move in rebuilding the corporation was to reach outside to hire a new president, Avery C. Adams. Adams had wide experience in the steel industry, serving in various managerial positions with Republic Steel, Inland Steel, and U.S. Steel. He was also familiar with the burgeoning sheet steel business, working as manager of sheet

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<sup>79</sup>Tiffany, The Decline of American Steel, 45-47.

<sup>80</sup>H.B. Collamore, "58 Years: A History of Pittsburgh Steel," 9.

<sup>81</sup>"Pittsburgh Steel Company Goes After Material Handling Business," Keystone (Spring, 1948), 8.

<sup>82</sup>"Here Is How Pittsburgh Steel Company 1948 Income Was Used," Keystone (Spring, 1949), 8.

sales for U.S. Steel. After taking the job in the spring of 1950, Adams worked out a plan of action to correct four major problems. First, the company's production costs were too high, mainly because of outdated facilities. Second, there was a deficiency of finishing facilities. The company produced wire--a product that was declining in the percentage of sales--and tubes, which were gaining in the market, but very slowly. Third, the company had an unprofitable product mix, with nearly one-third of its steel sales, ingots, a product that could be sold profitably only in a booming market. Fourth, as a result of poor performance in the past, the company had not expanded its production facilities.

To deal with these interrelated problems, Adams announced Pittsburgh Steel's "Program of Progress." The goal of the program was to increase finished product capacity by eighty-two percent and ingot capacity by forty-eight percent. But, before the plan could be put into place, there was a need to put the company's financial house in order. Adams simplified the company's financial structure. One class of preferred stock was eliminated, and the debt on another class was retired, thereby freeing more of the profits for common stock dividends. The goal was to make common stock more attractive to investors. Cash from increased stock sales was hardly sufficient to make the type of investments the company needed, however. To finance the improvements, the company borrowed: a total of two million dollars from the Metropolitan Life Insurance Company, five million from five different banks, eight million from Chrysler Corporation, and two million from Packard Automobile Company. The company also obtained capital through the federal government's accelerated depreciation program, which was initiated to promote expansion during the Korean War. Altogether, the company invested sixty-five million dollars--a sum equal to its total assets--on capital improvements in the period from 1950 to 1955.<sup>83</sup>

The cornerstone of the "Program of Progress" was entry into the sheet steel business. Since 1920 flat-rolled steel products had increased from thirteen to thirty-one percent of the total domestic steel market and the trend was expected to continue. Rather than building its own facilities, the company at first attempted to merge with or purchase other companies which possessed flat-rolling capacity. In 1951 Pittsburgh Steel acquired the Thomas Steel Company of Warren, Ohio, which made

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<sup>83</sup>"Our New Team," Keystone (Spring, 1950), 3; "Pittsburgh Steel Branches Out for Steady Growing," Business Week (July 25, 1953), 6-13; H.B. Collamore, "58 Years: A History of Pittsburgh Steel Company," 10-11.

thin, plated sheet steel for the specialty market. It also initiated merger negotiations with the Allegheny-Ludlum Steel Corporation, a semi-integrated company which produced flat-rolled products and had no iron or steel making capacity. After negotiations failed, the company announced that it would build a twenty-five million dollar hot- and cold-rolled strip mill at Allenport. Completed in 1954, the mills covered an area of fifteen acres, and were the largest rolling installation to be built in the Pittsburgh district in over a decade. The continuous, 66-inch, state of the art mill produced coils of sheet steel used for automobiles and appliances. The main market for this sheet was Chrysler Corporation, which had provided the eight million dollar loan for this purpose.

To increase its ingot capacity, the company also modernized its Monessen plant. All three blast furnaces were relined and No. 1 received a new control system. Two new turboblowers were purchased and installed. The bottleneck in rolling was broken with the installation of a eight million dollar, 66-inch blooming-slabbing mill. In addition, five new soaking pits were added. The twelve open hearth furnaces were rebuilt and enlarged from 120-ton to 250-ton capacity. New 250-ton cranes, ladle stands, slag pots, as well as a new ingot stripper building and stripping crane, were added to the open hearth department. In addition, the open hearth gas producers were abandoned and the furnaces equipped to be fired with coke oven gas, fuel oil, and pitch. Another major change in the open-hearth plant was the installation of oxygen lances at four of the furnaces. Positioned in the roofs of the furnaces, the lances delivered gaseous oxygen which combined with the fuel gas to increase temperatures in the furnace, speeding the completion of a heat by about one hour. Less dramatic changes in the open-hearth plant in the 1950s were the result of the utilization of a special pneumatic patching gun that sprayed dolomite into place during the process of making bottom, and the use of "torpedoes," an explosive charge, to open the tap hole prior to tapping. The expansion program was largely completed by 1954. With the new facilities, the historical weaknesses of the company, a lack of finishing facilities to match its steel making capacity, had been corrected. Adams proclaimed that Pittsburgh Steel had become a "new steel company."<sup>84</sup>

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<sup>84</sup>"Steel: How Firms Plan for Profits," Iron Age Vol. 171 (February 26, 1953), 456-457; "Pittsburgh Steel Branches Out for Steady Growing," Business Week (July 25, 1953), 6-13; H.B. Collamore, "58 Years: A History of Pittsburgh Steel Company," 10-11; Monessen Daily Independent, June 2, 1953.

With the new facilities and the revival of the market, the period of Adams's presidency was one of the most dynamic in Pittsburgh Steel's history. Profits rose and peaked at a record \$7.5 million in 1955. Just before he retired from Pittsburgh Steel, Adams appeared before the New York Society of Security Analysts to herald the success of the "Program of Progress." He boasted that sales had increased by 122 percent since 1949. Moreover, the new diversified product line, with flat rolled products making up 56.4 percent of sales, provided the company with an opportunity to further expand its sales volume. Adams concluded with a note of caution, however. Noting that the return on investment for Pittsburgh Steel and other steel companies was well below that of other industries, he warned that the steel industry would soon be in deep trouble if prices were not increased.<sup>85</sup>

Adams left Pittsburgh Steel and accepted the position of president of Jones & Laughlin Steel Corporation on October 1, 1956. He was succeeded by a man of equal ability if somewhat different temper of mind. Allison R. Maxwell, Jr. brought to the presidency of the company a sales background and a broad understanding of labor and governmental issues. Educated at Princeton University, Maxwell had worked as a salesman for Pittsburgh Steel since 1935. He was named the director of sales programs in 1952 and was responsible for the "unrelenting sales campaign" that had generated the record profits of the mid-1950s. Maxwell's understanding of political issues came from serving on five different steel industry advisory committees to the federal government in the late 1940s and early 1950s.<sup>86</sup>

Maxwell sought to continue the modernization program initiated in 1950 by Adams, but he faced a more difficult series of challenges than his predecessor. The root of the company's difficulties was that the steel industry's lush post-war decade came to a crashing halt in 1957. Sales, profits, and operating capacity plummeted. Operating at only a sixty percent capacity between 1958 and 1962, Pittsburgh Steel lost over two million dollars.<sup>87</sup> The performance of U.S. Steel and the other large

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<sup>85</sup>Avery C. Adams, "Pittsburgh Steel Company: A Progress Report," April 12, 1956, reprint in Wheeling-Pittsburgh Steel Company Archives, File "Point of No Return."

<sup>86</sup>"New Team Holds Bright Future," Keystone Vol. 3, No. 5 (1956), 1-2.

<sup>87</sup>"Pittsburgh Steel's Program for Profits," Allison R. Maxwell, Jr., transcript of a speech presented to the New York Society of Security Analysts," May 10, 1962, Wheeling-Pittsburgh Steel Company

companies was somewhat better, but well below the earning levels of the early 1950s. Although the substitution of plastic, aluminum and other materials for steel and the overexpansion of the industry during the 1950s were important reasons for the decline, steel company spokesman most often cited high labor costs and foreign imports as principal causes. As Maxwell pointed out in a speech before the Pennsylvania Economic League, wages had increased 222 percent from 1940 to 1957 without commensurate increases in worker productivity. Moreover, strikes and illegal work stoppages--424 in the industry and 30 at Pittsburgh Steel since 1956--had cut productivity also so that his firm found it nearly impossible to remain competitive.<sup>88</sup> Although foreign competition did not erode Pittsburgh Steel's markets, situated largely in the Pittsburgh area, the Midwest, and Southwest until after the opening of the St. Lawrence Seaway in 1959, it had begun adversely to affect the steel industry by the mid-1950s. With large infusions of American aid, European, Japanese and Third World nations had rebuilt their steel industries in the postwar period. With more modern plants and lower labor costs, these off-shore producers began to export to the United States in the 1950s in large volumes. By 1959 foreign imports surpassed American exports for the first time in the twentieth century.<sup>89</sup>

Working in the context of this overall decline, Maxwell made cutting costs and building a more competitive company his first objective. He completed the modernization program initiated by Adams. At Monessen a new battery of nineteen Koppers-Becker coke ovens were installed in 1955-1956. Nos. 1 and 2 blast furnaces were relined and modernized in 1958-1959; this renovation included a changeover in the stoves from a three- to a two-pass design. Six of the open hearth furnaces were provided with new instrumentation, and a new charging machine was purchased. Finally, a 30-inch billet mill was built to provide rounds for the tube mills.<sup>90</sup>

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Archives, File "Point of No Return."

<sup>88</sup>"A New Kind of Climate," Allison R. Maxwell, Jr., Address before the annual meeting of the Pennsylvania Economy League, Westmoreland County Branch, October 22, 1958, Wheeling-Pittsburgh Steel Company Archives, File "Point of No Return."

<sup>89</sup>Tiffany, The Decline of American Steel, 178-184.

<sup>90</sup>"News Release from Pittsburgh Steel Company," September 23, 1955, from a file of Pittsburgh Steel Company Press Releases found at the Monessen plant; "Maxwell Outlines Challenges," Keystone Vol.

New and more efficient production facilities were only a part of Maxwell's overall cost-containment plan. Another important focus was on increasing employee productivity--developing the company's "human resources." With his background in sales, Maxwell knew the importance of planning, education and public relations. His first step as president was to hire a professional consultant to do a opinion survey of management personnel to discern what they thought of the company. Maxwell found out that front-line supervisors regarded themselves as poorly-informed, and that not all of its management people knew or understood the company's goals. Pittsburgh Steel was seen as a "goal-less company." In response to the survey, Maxwell ordered a restructuring of management and the initiation of a company-wide education program.<sup>91</sup> An overall planning agency, the planning and administration department, was set up, along with a market research and product development department. The functions of the production planning department, which Maxwell had established in 1955 as sales director, were expanded. This department was responsible for coordinating sales and operations so that the company operated at its most efficient level.<sup>92</sup>

The new planning agencies were only a part of Maxwell's management initiative. Plans and objectives were of little value unless the company's salaried and hourly employees understood and internalized them. As Maxwell put it "somehow, we must communicate with our people--persuade them that the company's problems really are theirs, too." For the purpose of employee education, the management institute, composed of selected upper management personnel, was set up in 1958. After a period of research and preparation, which included the compilation of a history of the company by chairman of the board H.B. Collamore, the program got underway.<sup>93</sup> In small and large group sessions, members of the institute explained the history, operation,

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5, No. 1 (1958), 1-2.

<sup>91</sup>"Steel laggard bids to get in running," Business Week (December 2, 1961), n.p., reprint in Wheeling-Pittsburgh Steel Company Archives, File "Point of No Return."

<sup>92</sup>"Pittsburgh Steel Company Bulletin," Number 1, September 28, 1955 from a file of Pittsburgh Steel Company Press Releases found at the Monessen plant.

<sup>93</sup>Collamore was responsible for preparing "58 Years: A History of the Pittsburgh Steel Company," which has been cited in this study; "Company Launches Management Institute," Keystone Vol. 5, No. 3 (1958), 5.

current problems, and "comeback" strategy of the company to its seven hundred middle and lower management employees.

The basic message of the management institute was that significant progress had been made in the 1950s in correcting the company's historical problems--a deficiency of finishing facilities and antiquated equipment--but it still faced a crisis because of high production costs and stiff competition. The company ranked fifteenth in size in the steel industry with an ingot capacity of 1.1 percent of total industry capacity, making it part of a group of companies known as "Little Steel." Yet, the company did not compete with small companies such as Allegheny Ludlum, Crucible, Sharon, and Wheeling because they were mainly producers of specialty products. Instead, it faced competition from the large integrated firms, especially U.S. Steel. The problem was that Pittsburgh Steel operated at a distinct disadvantage in this market. It had higher production costs as well as a lower average selling price for its products. Why? Pittsburgh Steel executives were not sure why its average selling price was lower, but they reasoned that its production cost disadvantage arose from 1) higher raw material costs, a result of buying ore, coal, and coke on the open market; 2) higher inbound and outbound transportation costs, an inevitable consequence of the Monessen location; 3) insufficient blast furnace capacity during periods of peak operation, leading to dependence on the purchase of high-priced scrap in steel making; and 4) higher labor costs, a result of the uneven impact of incentive pay bonuses negotiated in the 1956 contract.<sup>94</sup>

Later formulated by Maxwell as the "Program for Profits," the comeback strategy was a four-phased program which included 1) reduction of labor costs; 2) reduction of raw materials costs; 3) strengthening the company's market position; and 4) reduction of steelmaking costs.<sup>95</sup>

The containment of labor costs, particularly equalization of incentive pay, was the top priority. The company decided to use the management institute to educate its hourly employees on the need to correct the labor cost problem. The educational program was barely underway when the industry was hit by the 116-day strike of 1959. Pittsburgh Steel told USWA negotiators that it had to have a contract which equalized incentive pay. This

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<sup>94</sup>"Steel laggard bids to get in running," n.p.; Allison R. Maxwell, Jr., "A New Kind of Climate," n.p.; Untitled manuscript of management institute, 10-13, in Wheeling-Pittsburgh Steel Company Archive, File "Point of No Return."

<sup>95</sup>Allison R. Maxwell, "Pittsburgh Steel's Program for Profits,"  
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demand got them nowhere, so they initiated a public relations campaign. The company placed advertisements in Monessen area newspapers describing its financial situation and arguing for equalization. It used its newly-trained executives to argue its case in public addresses and other publicity campaigns, including a radio forum. After the invocation of the Taft-Hartley Act forced a vote on the contract, the company sent two-man teams to the homes of its hourly workers in order to "sell" its program. Over 6,000 of the 7,700 employees were interviewed. The campaign was not enough, however, to convince steelworkers to accept the company's offer. They rejected it by a sixty-six to thirty-four percent margin. The company responded by shutting down its plants. The lockout brought results; a deal was worked out whereby high-incentive pay workers agreed to forfeit two raises called for in the 1960 contract. Thus, Pittsburgh Steel equalized its labor costs by wringing concessions from its employees.<sup>96</sup>

While it was persuading its hourly people to take concessions, Pittsburgh Steel embarked on negotiations with several banks and its stock holders to raise money for its Program for Profits capital expenditures campaign. Despite its record of losses since 1957 and the fact that its stock was selling for \$10 to \$12 when its book value was \$40, the company convinced financiers and stockholders to provide it with \$44 million for capital expenditures. The company's success in the negotiating concessions from its employees was cited by Business Week as one of the reasons it was able to obtain the new financing. An additional sum of six million dollars was later added to provide a total of fifty million for the Program for Profits.<sup>97</sup>

The company's first investments from this capital improvements fund were used to cut raw material costs. The company controlled only twenty-two percent of its raw materials in 1959, purchasing the remainder at premium prices on the open market. In that year, the company purchased an option on part ownership in the Wabush Iron Company, Ltd, which was developing ore lands in Labrador, Canada. The company also began negotiations to secure a source of metallurgical coking coal, something it had lacked since it divested itself of the Monessen

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<sup>96</sup>"Steel laggard bids to get in running," Business Week, n.p.; The entire issue of Keystone Vol. 6, No. 4 (1959) was devoted to contract issues; "Contract Benefits Both Sides," Keystone Vol. 7, No. 1 (1960), 2-4.

<sup>97</sup>"\$50 Million in New Facilities Improving Outlook for Profits," Keystone Vol. 13, No. 1 (1966), 3.

Coal & Coke Company in the 1930s. In 1962 it acquired a 22.5 percent interest in the Gateway Coal Company as part of a joint venture with Jones & Laughlin Steel Company and Pittsburgh Coke and Chemical Company. With these two acquisitions, the company controlled close to seventy percent of the raw materials used in production.<sup>98</sup> Another step toward lower raw material costs was taken in 1964 with the completion of a \$4.8 million sintering plant at the Monessen site. The plant processed blast furnace fines, obtained from the blast furnace gas cleaning operations, into an iron-rich sinter which was re-used in the furnaces.<sup>99</sup>

To strengthen the company's market position, Pittsburgh Steel earmarked twelve million dollars for investments in finishing facilities. Because of the growth potential of sheet, the company decided to spend two-thirds on improvements at the Allenport sheet mill. Construction of new annealing equipment and the addition of two new rolling stands to the four-stand finishing train of the hot rolled mill were completed by 1966.<sup>100</sup>

Investments to reduce ingot costs took the lion's share of fifty million dollar capital fund. The most important expenditure was the construction of a basic oxygen furnace (BOF) plant at Monessen in 1964. The eighteen million dollar plant consisted of a fourteen-story building housing two 150-ton steelmaking vessels equipped with lances that could deliver 18,000 cubic feet per minute of oxygen. It was equipped with a two million dollar electrostatic precipitator to clean furnace gas. The BOF was much more efficient than the old open hearths, which were mothballed and placed on standby. Not only did the BOF produce steel much faster--a 150-ton heat of steel in less than 50 minutes--but it also used far less scrap, which was more costly than hot metal.<sup>101</sup>

The "Program for Profits" was completed in 1966 with the renovation of blast furnace No. 1, including the installation of

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<sup>98</sup>Ibid.; Allison R. Maxwell, Jr., "Pittsburgh Steel's Program for Profits," 5-7; "Iron Ore Supply Strengthened," Keystone Vol. 7, No. 1 (1960), 7-9; "New Coal Partnership Will Supply Plant Needs Below Market Prices," Keystone Vol. 9, No. 1 (1960), 6.

<sup>99</sup>"\$50 Million in New Facilities Improving Outlook for Profits," Keystone Vol. 13, No. 1 (1966), 3.

<sup>100</sup>Allison R. Maxwell, Jr., "Pittsburgh Steel's Program for Profits," 11-13; "\$50 Million in New Facilities Improving Outlook for Profits."

<sup>101</sup>Ibid.; "The Story of Pittsburgh Steel's Basic Oxygen Furnace," pamphlet at Wheeling-Pittsburgh Steel Company Archive.

a twelve-ton ore bridge, and the rebuilding of No. 3 blast furnace. After being relit by Jane Maxwell, wife of the president of the company, it was renamed "Jane." The first results of the six-year capital improvements program were realized during the second half of 1966. In comparing the company's performance to the same period in 1965, President Maxwell noted that net income was up, despite a smaller sales volume. This improvement, he asserted, was a result of savings gained from the "integration of raw materials sources, from new iron and steelmaking facilities, and from finishing mill improvements."<sup>102</sup>

The good news about the company's improved performance in 1966 was tempered with the announcement on June 21 that the rod, wire and wire products divisions at Monessen would be phased-out. The step, which resulted in the complete closure of the division in 1972, was taken because foreign imports of rods and wire products had disrupted the domestic market. Since 1955 sales of imported rods and wire products--mainly nails, barbed wire, wire rods, and reinforcing bars--had increased by over 750 percent in the United States.<sup>103</sup> Off-shore producers had literally invaded the U.S. market, selling their wares at prices twenty to thirty percent below those of American firms. Since rod and wire products were the first to make a large impact on the U.S. market, Pittsburgh Steel, with its traditional reliance on this product line, was one of the first companies in the nation to feel the pressure of foreign competition.<sup>104</sup> Hit harder and earlier than other U.S. companies, Pittsburgh Steel became one of the leaders in the political battle against imports in the 1960s.

The campaign against foreign imports began in 1960, when Pittsburgh Steel joined with other members of the American Iron and Steel Institute (AISI) in a campaign to promote the use of American steel. The companies developed a trademark, the "Steemark," to be placed on all American-made consumer products to identify them as such. The "Steemark" logo, a circle enclosing three stars and the word "Steel," was imprinted on a tag which provided consumers with information on the quality and

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<sup>102</sup>"Second Quarter Earnings Show First Results of Program for Profits," Keystone Vol. 12, No. 1 (1966), 4.

<sup>103</sup>"Phase-out of Rod and Wire Mills Forced by Foreign Competition," Keystone Vol. 13, No. 1 (1966), 14-17.

<sup>104</sup>William T. Hogan, The 1970s: Critical Years for Steel (Lexington, Massachusetts: D.C. Heath and Company, 1972), 46-47.

durability of the article, advising them to "look for products made of steel when you shop." Its primary purpose, according to an article in Keystone, was to "help preserve steel's markets."<sup>105</sup>

In the following year, Pittsburgh Steel sent two metallurgists to visit steel plants in eight European nations to gather information on production processes and costs. The two returned with nothing but praise for the competition, particularly the Germans and Austrians. The Europeans had "good, up-to-date" facilities, their operations were well synchronized and efficient, and they employed the most advanced technologies, including BOF steelmaking and direct-rolling for tube rounds. According to the metallurgists, they produced a product equal to or superior to American steelmakers. Their biggest edge, however, was in labor costs. Not only did they produce their products with fewer manhours than American mills, but their hourly wage rate was far less than in America. For example, the top rate in Germany--assistant roller--was about one dollar an hour. The Spanish rate was only about forty cents per hour. Overall, European labor costs were about one-third of those in the United States.<sup>106</sup>

In 1962 Pittsburgh Steel joined with seven other domestic producers to charge European and Japanese steelmakers with dumping hot-rolled carbon steel rods. A Treasury Department Customs Bureau investigation established that rods from Belgium, Luxembourg, West Germany, and France were being dumped (sold for prices below those in their home markets), but cleared Japanese rod makers because of insufficient evidence. The case then advanced to the Tariff Commission, which had the responsibility of deciding whether the American steel industry had been harmed. To the surprise of U.S. steelmakers, the Tariff Commission ruled against them. Although individual companies, such as Pittsburgh Steel, had been injured, according to the commission, the industry as a whole had not. An infuriated Pittsburgh Steel executive, Robert E. Lauterbach, vice president of sales, called the ruling the "greatest injustice that's ever been rendered by the Commission." Company officials vowed to continue their battle against the "foreign menace."<sup>107</sup>

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<sup>105</sup>"If You Make Your Living in Steel, You Should Read These Pages," Keystone Vol. 7, No. 2 (1960), 8-10.

<sup>106</sup>"Inside European Steel Mills," Keystone Vol. 8, No. 2 (1961), 3-5.

<sup>107</sup>"What Dumping is All About," Keystone, Vol. 10, No. 1 (1963), 16-17.

To obtain protection from imports, Pittsburgh Steel turned increasingly to the political arena. After 1964, when imports of flat-rolled products began to make a dent in the American market, the company, with nearly seventy percent of its total sales in this product line, stepped-up its lobbying and public relations campaign. The company participated in the lobbying effort of AISI. In 1966 AISI's Public Affairs Conference met in Washington, calling the attention of Congress to the import problem. At first AISI asked for a temporary tariff, but after hearings in Congress in 1967, the organization backed a quota. Pittsburgh Steel found a champion in Congressman John H. Dent, who represented Pennsylvania's twenty-first district. Dent, a native of Jeannette in Westmoreland County, visited the Monessen plant and sponsored hearings in Congress. He invited five companies, including Pittsburgh Steel, to participate in hearings before the House Subcommittee on Labor. In the 1967 hearings, Kenneth F. Maxcy, Jr, director of market development for Pittsburgh Steel, told the committee that unfair competition had been the principal reason for the company's phase-out of its rod and wire divisions and the layoffs of 1,500 men. After the hearings Congressman Dent sponsored a bill that would expand the president's power to raise tariffs or impose quotas on foreign imports that were produced at wage levels below the U.S. minimum wage.<sup>108</sup>

Pittsburgh Steel actively supported the Congressional initiatives. After Congressman Dent's hearings, President Maxwell sent letters to all senators and congressman representing districts in which the company had plants, as well as to its employees and the USWA, calling for passage of federal legislation. Employees of the company initiated a petition drive calling for quotas. With this prodding from Pittsburgh Steel and other companies, the steelworkers union finally committed itself to quota restrictions in 1967. To obtain grassroots support, Pittsburgh Steel officials made repeated presentations to local community groups such as the Lions Club, which universally support the crusade.<sup>109</sup>

The quota issue came to a head in 1968. The broad support for quota legislation became evident in June, when I.W. Abel, president of the USWA, testified in favor of a bill before the Senate Committee on Finance and the House Committee of Ways and

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<sup>108</sup>Hogan, The 1970s, 52; "Congressman Dent Visits BOF," Keystone, Vol. 14, No. 1 (1967), 12; "Imported Steel Flood Continues," Keystone, Vol. 14, No. 3 (1967), 3.

<sup>109</sup>"Hope Sparked for Import Curb," Keystone, Vol. 14, No. 4 (1967), 3.

Means. But, before Congress could act, both the Germans and Japanese made a dramatic move. Cognizant of the public support for Congressional action, the two nations told the Congressional committees that they would place voluntary restrictions on their steel exports to the United States. Moreover, they pledged to make an effort to induce other countries to join them. An agreement was reached and the hearings were brought to a close. Subsequently, the two countries obtained the assent of all of the nations of the European Coal and Steel Community (but not the United Kingdom) to the two-year agreement, known as the Voluntary Restraint Agreement (VRA). The nations agreed to limit the importation of steel products to fourteen million tons, four million less than in 1968. The nation's steelmakers now had some protection against imports.<sup>110</sup>

Pittsburgh Steel's "Program for Profits" and its drive to stem imports were only part of the company's overall effort in the 1960s to remain competitive in an increasingly tough market. The most significant event of the decade was the merger with Wheeling Steel Corporation in 1968. In light of the eventual outcome of the move--the closure of the Monessen plant--it is ironic that the initiative for the merger came from Pittsburgh rather than Wheeling.

The Wheeling Steel Corporation was formed in 1920 from three companies: the Wheeling Steel and Iron Company, the Whitaker-Glessner Company, and the La Belle Iron Works. The company soon became a technological pioneer in the production of sheet steel for tinplate. Until the 1920s, tinplate was produced through hot rolling, the coils then being reheated and rolled to thinner gauge on hand mills. Several experiments with a continuous, cold-reduction process were undertaken in the 1920s. The most successful was that of Wheeling Steel. In 1929 the company put into operation a four-high tandem mill which produced a uniformly thin and ductile strip which was ideal for plating. By the 1960s Wheeling Steel had expanded its product line to include tinplate, galvanized plate, corrugated sheets, hot and cold rolled sheets and plate, and pipe at its plants near Wheeling and near Steubenville, Ohio.<sup>111</sup>

Like Pittsburgh Steel and other small steel companies, Wheeling Steel came upon hard financial times in the 1960s. In 1963 the company initiated a modernization plan that included the

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<sup>110</sup>Hogan, The 1970s, 52-58.

<sup>111</sup>Hogan, Economic History of the Iron and Steel Industry, Vol. 3, 1157-1158; Earl Chapin May, Principio to Wheeling 1715-1945, A Pageant of Iron and Steel (New York: Harper & Brothers, 1945), 262-268.

installation of a basic oxygen furnace plant, a new 80-inch wide hot strip mill, and a new 60-inch wide galvanizing line. Completed in 1966, these improvements were undertaken with \$140 million in loans from insurance companies and banks. The new facilities did not solve the company's financial problems. From \$4.6 million in 1965, Wheeling Steel's net loss increased to \$7.8 million in 1966. The 1966 losses came as a result of heavy start-up expenses of the 80-inch hot strip mill and an inadequate supply of semifinished steel. To realize the full potential of these improvements, the company needed a new slabbing mill to provide a steady supply of slabs to feed its new hot strip mill, as well as a new 80-inch cold reduction mill. These facilities would cost an additional \$150 million.<sup>112</sup>

While Wheeling Steel was incurring heavy losses in 1965 and 1966, Pittsburgh Steel's financial picture was improving. After a slight profit in 1966, the company reported a net profit of \$2.2 million in 1967.<sup>113</sup> When Wheeling Steel's lenders pressed for changes in its management in early 1967, Pittsburgh Steel was prepared to act. On April 18, 1967 Pittsburgh Steel purchased 77,350 shares of Wheeling Steel stock from Hunt Foods. Immediately after the sale, the president of Wheeling Steel and three of its five directors resigned. Allison R. Maxwell, president of Pittsburgh Steel, was named chairman of the board of Wheeling Steel, and Donald C. Duvall, executive vice president of Pittsburgh Steel, took over as president. On December 28, 1967 Pittsburgh Steel acquired an additional 100,000 shares of Wheeling Steel stock. In April, 1968 the board of directors of both companies set up merger committees to negotiate a union. On September 25, 1968 the board of directors approved the merger. After being approved by the stockholders, the merger became effective on December 5, 1968. The board of directors of the new company, which was elected the following day, consisted principally of officers from Pittsburgh Steel.<sup>114</sup> Despite the fact that the merger was tantamount to a takeover by Pittsburgh Steel, the new company was named Wheeling-Pittsburgh Steel Corporation, ostensibly because Wheeling was the larger of the two parent firms.

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<sup>112</sup>William T. Hogan, The 1970s: Critical Years for Steel (Lexington, Mass.: Lexington Books, 1972), 23-25.

<sup>113</sup>"Company Reports 53% Earnings Rise in Fourth Quarter of 1967," Keystone, Vol. 15, No. 1 (1968), 4.

<sup>114</sup>"Directors Approve Certain Terms for Wheeling-Pittsburgh Steel," Keystone, Vol. 15, No. 3 (1968), 10; Hogan, The 1970s, 24-25.

As a consequence of the merger, Wheeling-Pittsburgh moved into ninth place among the steel companies of the nation. With modern BOF shops in both Steubenville and Monessen, the company had a raw steelmaking capacity of 4.3 million tons. The product lines of two parent companies complemented each other to a large degree. While Pittsburgh specialized in hot- and cold-rolled strip (mainly for the auto market), country seamless oil casing, drill pipe and tubing, Wheeling produced galvanized sheet, tin plate, and standard black and galvanized pipe.<sup>115</sup>

It was clear from the beginning that the major beneficiary of the merger was Wheeling Steel. While Pittsburgh Steel had completed its modernization program, Wheeling had not. As Donald Duvall stated, Pittsburgh Steel had survived the dislocation caused by the breaking-in of new facilities. Now, the company's experience would be "useful in bringing Wheeling's [modernization] program to a successful conclusion." Wheeling's lack of an 80-inch cold reduction mill would be overcome through the use of Allenport's facilities. Just as important, Pittsburgh Steel's experience and technical expertise would be available to "help Wheeling during its inevitable period of dislocation." Moreover, Duvall noted that "Pittsburgh's facilities can be used to keep Wheeling's customers supplied in unavoidable periods of downtime during construction." The Keystone article heralding the merger expressed the hope that it would prove beneficial to each of the parent companies.<sup>116</sup> But the new company was composed of two integrated steel plants. When hard times came and downsizing was needed, it was clear that one would have to be shut down. As events unfolded in the 1970s and early 1980s, it became apparent that Pittsburgh Steel had, in fact, taken in a Trojan Horse.

The honeymoon years of the Wheeling-Pittsburgh merger lasted from 1968 to 1974. The company completed its modernization program at Wheeling, and profits, if not large, were respectable.<sup>117</sup> The Voluntary Restraint Agreement, renewed for two more years in 1971, provided some protection against imports. However, the real boost to steel came from the Vietnam War, which, along with a world-wide increase in demand, increased

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<sup>115</sup>Hogan, The 1970s, 27; "Pittsburgh, Wheeling Steel Linked," Keystone, Vol. 14, No. 2 (1967), 8-9.

<sup>116</sup>"Pittsburgh, Wheeling Steel Linked," Keystone, Vol. 14, No. 2 (1967), 8-9.

<sup>117</sup>Dennis J. Carney, "Our Heritage in Steel," June 21, 1978, copy of an address to Mon Valley Community Leaders in Wheeling-Pittsburgh Steel Corporation, Archives, Wheeling, W.V.

prices and strained the capacity of U.S. mills. An additional advantage came from the devaluation of the dollar, which, in effect, made foreign steel more expensive.<sup>118</sup> Even more heartening to steel's prospects was the signing of an innovative labor pact with the USWA in 1973, the Experimental Negotiating Agreement (ENA). Under ENA steelworkers and management agreed to forsake the strike and lockout and submit their differences in upcoming negotiations to arbitration. ENA guaranteed at least one year of uninterrupted operation, eliminated the de-stabilizing practice of hedge-buying, and promised to bring peace to a strike-prone industry.<sup>119</sup>

Yet another piece of good news for Wheeling-Pittsburgh and the steel industry came in 1974, when the Cost of Living Council eliminated price controls on steel. For over a decade, steel executives, including former Wheeling-Pittsburgh president Allison Maxwell, had criticized federal cost controls--Nixon's outright regulation or "jaw-boning"--as a primary cause of the industry's weak competitive position. In 1964 Maxwell had warned that controlled prices, along with rising labor costs and imports, would strangle profits and prevent the industry from making the investments necessary to remain competitive.<sup>120</sup> Heralding the change in federal policy, R. E. Lauterback, Wheeling-Pittsburgh's chairman, explained, "Now we're breathing clean air. This is the really the first time since 1962 we don't have some form of price control."<sup>121</sup> Immediately, Wheeling-Pittsburgh, along with National and Armco, announced plans for expansion/modernization projects. Wheeling-Pitt disclosed that it had secured \$108 million in financing for modernization, \$60 million of which the company planned on spending on a new battery of Koppers coke ovens at Follansbee, West Virginia.<sup>122</sup>

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<sup>118</sup>William Scheuerman, The Steel Crisis: The Economics and Politics of a Declining Industry (New York: Praeger, 1986), 71-72.

<sup>119</sup>John Hoerr, And The Wolf Finally Came: The Decline of the American Steel Industry (University of Pittsburgh Press, 1988), 112.

<sup>120</sup>Maxwell's 1964 statement was alluded to by Dennis Carney in his 1978 address, "Our Heritage in Steel."

<sup>121</sup>"Steel: Smiles break through frowns," Iron Age Vol. 213 (June 3, 1974), 28.

<sup>122</sup>"Steel expansion closely tied to price relief," Iron Age Vol. 213 (February 18, 1974), 26.

With full order books and pricing freedom, optimism was higher among steel men in 1974 than it had been in years. Yet, the anticipated prosperity and plant modernization did not take place. A global recession, triggered by OPEC-imposed increases in oil prices, began in 1975, shrinking the steel market, freezing prices, and leading to a revival of the import problem.<sup>123</sup> Despite a profitable showing in 1975, the eight major steel companies reported combined losses totalling \$230 million in 1976. It was the first time since the depression years of the 1930s that the industry had dropped into the red. Pittsburgh Steel's performance followed this trend. After reaping a small profit in 1975, the company lost \$25.6 million in 1977. The problem was not sales volume, which remained constant, but higher costs. According to its new President and Chairman of the Board, Dennis J. Carney, the company was caught in a cost-price squeeze. In a public presentation before "Mon Valley Community Leaders," Carney, who had come to the corporation from U.S. Steel in 1974, outlined the steps the company had taken to combat increasing costs. It had reduced employment costs by decreasing the work force from 18,000 in 1972 to 14,500 in 1977, improved productivity per manhour to a level above that of the industry as a whole, and eliminated high-cost, non-profitable operations, such as the rod and wire mill at Monessen. Yet, these measures were not enough to offset rising costs caused by severe weather, coal and ore strikes, and unanticipated expenditures for environmental quality control. As a result, the company's costs had increased in 1977 by twelve percent, while prices--held down by imports and the flat market--had increased by only seven percent.<sup>124</sup>

In the talk Carney was particularly vocal in his criticism of state and federal environmental regulations. The company had recently averted a shut-down of the Monessen plant because of violations of air pollution regulations. On March 22, 1978 it reached an agreement with the Pennsylvania Department of Environmental Resources to settle the agency's forty million dollar suit. The agreement provided schedules for the installation of air pollution controls at Monessen costing \$28.5 million, but it was contingent upon the company receiving federal

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<sup>123</sup>Scheuerman, The Steel Crisis, 138-139.

<sup>124</sup>Dennis J. Carney, "Our Heritage in Steel," transcript of a talk to Mon Valley Community Leaders, June 21, 1978, Archives of Wheeling-Pittsburgh Steel Corporation, 3.

loans for the investment.<sup>125</sup> According to Carney, these expenditures increased costs and diverted money from "productive and profitable investment into non-productive facilities that are costly to maintain and operate." Since 1974, the company had spent nearly one-half of its total capital expenditures--\$103 million--for pollution-abatement facilities. In these same four years, the company's gross profit was only \$51.6 million. "Yet, we are told that's not enough," complained Carney. What the company needed were additional agreements with federal and state authorities to provide a "stretch-out" in spending for environmental installations.<sup>126</sup>

Carney was even more critical of government policy in regard to capital formation in the steel industry. Steel was a capital intensive industry, and government price controls, along with foreign competition, had made it impossible to accumulate capital. His company needed a massive infusion of capital, but without profits it was impossible to attract investments. Moreover, the depreciation allowances set by the federal government were not adequate to replace worn-out equipment. The situation appeared even more difficult when compared with that of foreign competitors. In Western Europe and Japan, governments offered guaranteed loans and even grants for modernization and expansion. Steel makers in the United States not only lacked government support of this nature, but found their tax dollars (nearly five billion) being contributed through foreign aid and loans to the expansion of their foreign competition. Now, the products of these foreign mills were being imported, reducing the size of the domestic market and causing unemployment. Carney summed up the situation:

We are like a boxer with one arm tied behind us (lack of capital), while our opponent is fighting us with both hands. And under the rules, he can hit us below the belt (dumped imports), but we can't hit him back the same way. Even the world's greatest champion can't win a fight with odds like that fixed against him.<sup>127</sup>

Carney still thought it possible to continue the bout, however. He outlined a plan to rehabilitate the company. Interestingly, each of the five steps envisioned in the plan

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<sup>125</sup>Press Release, Wheeling-Pittsburgh Steel Corporation, March 22, 1978, Monessen plant papers.

<sup>126</sup>Ibid., 10.

<sup>127</sup>Ibid., 10-11.

would entail some form of political action. First, the company would diversify its products by installing a new rail mill at Monessen. Also, it would obtain a "stretch-out" in environmental spending for additional facilities. To improve the cost-price relationship for sheet products, the company would increase sheet prices "in accordance with free market competition and with less government interference." The fourth and fifth steps involved lobbying and direct political action. The company would continue its efforts to reduce unfair competition from imports and apply pressure on Washington to discontinue foreign aid; and it would work to mobilize support for elected officials who would represent the company and the steel industry in coping with environmental problems, price controls, foreign competition, and gaining government loans.<sup>128</sup>

Like Allison Maxwell, whose "Program for Profits" program rehabilitated Pittsburgh Steel in the 1960s through employee concessions, Carney realized that such an ambitious plan would have to start at home. In an effort to raise capital and give employees a personal stake in Wheeling-Pittsburgh, the company offered a sale of preferred stock to each of its approximately ten thousand employees in April, 1978. By April 24, seventy percent of the workforce had signed payroll deduction authorizations or made lump-sum payments to purchase \$8.6 million of the stock issue. In a press release, Carney called the response an "overwhelming demonstration of ... loyalty and dedication." He stated that the sale would provide reassurance to other stockholders, customers, the financial community, and government officials that the company would "resolve its problems and regain profitability."<sup>129</sup>

With the support of employees, Carney launched a broad-based program to make the company profitable once again. He repeatedly pled his case before community groups, USWA officials, and federal and state government officials. After consolidating the Monessen and Allenport plants under a single management in September, 1978,<sup>130</sup> Carney convinced Allenport employees and District 15 USWA officials to accept deferrals of "runaway"

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<sup>128</sup>Ibid., 12.

<sup>129</sup>Press Release, Wheeling-Pittsburgh Steel Corporation, April 3, 1978; April 24, 1978, Monessen plant files.

<sup>130</sup>Press Release, Wheeling Pittsburgh Steel Corporation, September 5, 1978, Monessen plant files.

incentives at the Allenport plant in 1979 and 1980.<sup>131</sup> Carney enlisted the support of Senator John Heinz and Congressman Joseph M. Gaydos in a campaign to cut foreign aid and obtain federal loans for steel industry modernization.<sup>132</sup> Although little was accomplished in regard to foreign aid, Carney scored a major coup in 1978 by securing from the Department of Commerce's Economic Development Administration (EDA) and the Farmers Home Loan Administration a guarantee for ninety percent of a \$150 million loan. Part of a Carter administration plan to prop-up the ailing steel industry, the EDA loan guarantee was the largest in its fifteen years of existence. It was to be used for the installation of a rail mill and the rebuilding of two batteries of coke ovens which had become inoperable because of pollution problems.<sup>133</sup>

The new rail mill and coke ovens were seen as the economic salvation of the company, as well as the Monessen community. The coke ovens, rebuilt from the pad up, were completed in 1979 and 1980. As the rail mill neared completion, Carney exuded optimism, asserting that the company's "next ten years will be better than the last. We have a great potential to make one hell of a lot of money ... ." Based, in part, on Japanese technology, the new mill was one of the finest in the world. It was the first rail mill built in the United States since 1921. It incorporated two new technologies: the universal rolling process, in which all four sides of the rail are shaped simultaneously, and a computer-controlled production line. Once in production, it would diversify the company's product mix, shifting about twelve percent of its steel production into

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<sup>131</sup>According to Ernie Reppert, President of Local 1229, USWA, workers at Allenport slowed down the pace of production before incentive payments were worked-out, then picked up the pace afterward, a practice which resulted in large worker bonuses. Cassandra Vivian and Michael E. Workman, "Interview of Ernie Reppert," July 11, 1995; Mike Fuoco, "Decisive Decade Lies Ahead for America," article for Valley Independent placed in the Congressional Record by Senator John Heinz, "Reindustrialization of the Steel Industry," December 9, 1980, Senate 15977-84.

<sup>132</sup>Press release from Congressman Joseph M. Gaydos, June 21, 1978; press release, Wheeling-Pittsburgh Steel Corporation, June 29, 1978, Plant files.

<sup>133</sup>Mike Fuoco, "Decisive Decade Lies Ahead for America;" "Wheeling Steel: Rising Interest," New York Times, May 12, 1981.

rails.<sup>134</sup> With some new construction and retrofitting, the rail mill could be modified to produce structurals. Carney felt that the country would soon have to rebuild its infrastructure--its railroads, bridges, dams, and highways--and that Wheeling-Pitt would be well positioned to take advantage of the demand for rails and structurals. With these investments and an improved earning performance since 1979, the company's stock doubled from 1980 to 1981. Carney announced that the company would spend \$155 million for two continuous casters, one at the Monessen plant to produce blooms for the rail mill, as well as for the seamless pipe mill at Allenport, and the other at the Steubenville plant to produce slabs for the hot-strip mill. The company purchased the casters from the Mitsubishi Corporation, which also financed the venture. Wall Street analysts announced that they were "bullish" on Wheeling-Pittsburgh, and one expert declared that Carney's modernization program would "soon thrust Wheeling-Pittsburgh ahead of a number of its competitors in the integrated steel business." Another analysis noted that the company had the "most leverage" of any of the major steel companies.<sup>135</sup>

The rail mill and continuous caster at Monessen were completed in 1981. The rail mill had a capacity to produce 400,000 tons of high-quality rails in lengths up to eighty-two feet. At the time of its completion, it was one of four in the United States producing rails; the others were CF&I Steel's plant at Pueblo, Colorado, Bethlehem's plant at Steelton, Pennsylvania, and U.S. Steel's plant at Gary, Indiana (which closed in April, 1984). These four mills had an aggregate capacity in excess of 1.5 million tons. This was more than enough capacity to produce the 907,000 tons of rails required by the railroad industry in 1981. This excess capacity in rails would soon threaten the successful operation of Wheeling-Pittsburgh's Monessen plant.<sup>136</sup>

Designed and installed by Mitsubishi, the continuous casters at Monessen and Steubenville reflected the effort of Wheeling-Pittsburgh to duplicate Japanese practices. Carney claimed that

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<sup>134</sup>Wheeling-Pittsburgh's product mix was hot and cold rolled sheet and strip, forty-three percent; tubular, fourteen percent; tin mill products, thirteen percent; fabricated items, thirteen percent; and other products, seventeen percent. "Wheeling Steel: Rising Interest," New York Times, May 12, 1981.

<sup>135</sup>Ibid.

<sup>136</sup>William T. Hogan, Steel in the United States: Restructuring to Compete (Lexington, Mass.: Lexington Books, 1984), 79-80.

they were "as good or better" than those of the Japanese.<sup>137</sup> With approximately eighty percent of its production continuously cast in 1982, Japan led the world in the use of this post-World War II technology. Casters have several advantages over the conventional ingot-mold method. In the continuous-casting process, the steel is tapped from the furnace into a ladle, then poured directly into the caster. It solidifies as it passes through and emerges as a slab, billet, or bloom. The process bypasses several steps in the conventional production of steel, eliminating the pouring of steel into ingot molds, stripping the molds, placing the ingots in soaking pits, and, most importantly, rolling the ingot into semifinished form. The elimination of these steps cuts labor and energy costs, and improves the yield from the raw steel by about ten percent. Since only twenty percent of American steel was produced with casters in 1980, the installation of casters at Monessen and Steubenville placed Wheeling-Pittsburgh at the forefront in American steelmaking technology.<sup>138</sup>

These technological improvements would have little impact on the company's financial performance, however, because of the monumental crash of the steel industry in the early 1980s. According to John P. Hoerr, whose And The Wolf Finally Came documents the decline of the steel industry in the Pittsburgh region, this was the most devastating business slump since the Great Depression. Due to a worldwide drop in demand and the financial policies of the Reagan administration, which produced a rapid rise in the value of the dollar and a commensurate decline in the price of imports, steel prices dropped nearly ten percent between 1982 and 1985. American steelmakers found themselves losing money and holding excess steelmaking capacity. As a result, the industry contracted nationwide. Steelmaking capacity was reduced by over twenty-one million tons between 1981 and 1984. Corresponding reductions in employment took place: from 509,000 in 1973, the peak year, the number of employees in the industry shrank to 243,000 in 1983.<sup>139</sup> This dramatic collapse had the most pronounced impact on communities in the Upper Ohio and Monongahela valleys. Youngstown, Ohio lost virtually its entire steel industry. The closure of J&L's Pittsburgh Works and U.S. Steel's Homestead, Duquesne, National, and Donora plants in the early 1980s devastated the Pittsburgh region, transforming it

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<sup>137</sup> Andrea Rock, "Carney sets steel pace," Pittsburgh Business Times, Vol. 2, No. 24 (February 7-13, 1983), 1-14.

<sup>138</sup> Hogan, Steel in the United States, 125-126.

<sup>139</sup> Hogan, Steel in the United States, 119.

from the nation's leading steel center to a industrial graveyard.<sup>140</sup> In light of this permanent loss of plants and jobs, Hoerr's assertion that the 1980s depression was the most devastating since the Great Depression should be modified. In fact, the 1980s depression was the most devastating in the entire history of the American steel industry.

As the depression set in, steel companies looked to labor for relief. Wheeling-Pittsburgh led the nation's major steel companies in the effort to gain concessions from organized labor. The company's aggressive modernization program left it with a \$359 million debt, and it was having trouble making interest payments. The company's precedent-setting departure from industry-wide bargaining actually began in 1980, when it was expelled from the Coordinating Committee of Steel Companies (CCSC). Formed in 1956 and composed of the nation's major steel companies, CCSC had negotiated industry-wide wage agreements with the USWA. The group ejected Wheeling-Pittsburgh because it negotiated an allegedly substandard agreement with the USWA, the deferral of "runaway" incentives at the Allenport plant.<sup>141</sup> In January, 1982 Wheeling-Pittsburgh negotiator, Joseph L. Scalise, began meetings with USWA officials, Jim Smith of District 15 (Monessen and Allenport) and Paul D. Rusen of District 23 (Wheeling area) to consider concessions. Although McLouth Steel and Penn-Dixie Steel had previously gained concessions from the USWA, these two small companies were in bankruptcy. If the union agreed to accept the company's "take-aways," it would set a precedent. As would be the case in subsequent negotiations, the union decided to rescue the firm and save as many jobs as possible. In April an agreement was announced. To reduce a scheduled increase in labor costs by thirty million dollars, the union gave up two weeks of vacation and thirteen paid holidays over a nineteen month period, as well as a twenty-three cent per hour wage increase scheduled to take effect August 1. Since Wheeling-Pittsburgh labor costs had been about one dollar per hour higher than other steel companies, these reductions--which totalled about one dollar per hour--did not give the firm a competitive advantage. In this agreement, the USWA introduced a

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<sup>140</sup>John P. Hoerr, And The Wolf Finally Came: The Decline of the American Steel Industry (University of Pittsburgh Press, 1988), 567-569.

<sup>141</sup>According to Hoerr, And the Wolf Finally Came, 229-234, former USWA and Wheeling-Pittsburgh officials denied CCSC charges that the Allenport agreement was "substandard." Wheeling-Pittsburgh officials claimed that they had the right to make such changes at the plant level.

new concept, proposed by Smith. To represent the wage cuts as "investments" on the part of workers, the company agreed to give each worker preferred stock equal in value to the wage and benefit "give-backs." This meant that each employee would receive about four thousand dollars in preferred stock. The ownership idea was backed by a new worker-participation program which would give the worker-owners more of a say in production decisions.<sup>142</sup>

The innovative efforts of Carney and Wheeling-Pittsburgh to modernize its facilities and save the company did not escape the notice of industry analysts. In 1983 the Pittsburgh Business Times announced that Wheeling-Pittsburgh was one of two winners of its first annual Enterprise Awards, which were given to Pittsburgh area companies which "believe in the vision of the entrepreneur and the building of a fine company through hard work, team spirit, and the desire to contribute to the betterment of our community." The award was based on the company's achievements in getting the new rail mill, its successful negotiation with the UMWA for concessions, and its employee stock ownership plan. Carney accepted the award for Wheeling-Pittsburgh, and noted that the company had been successful because it was not afraid to do things differently than other steel companies. The success with the USWA came because his company opened its books to union officials, fostering workers' willingness to moderate labor costs. Workers were willing to take cuts because they knew that Wheeling-Pittsburgh was devoted to its steel operations: it would not use its savings to invest in other industries as had U.S. Steel when it acquired Marathon Oil in 1982. Stressing the uniqueness of his company's approach to labor, Carney termed the expulsion of Wheeling-Pittsburgh from the CCSC as the "best favor they ever did me." Carney also presented himself as an industrial statesman, announcing that his "next big project" was to "get the government to do something of a protectionist nature for steel, auto, electronics--a lot of industries now in danger."<sup>143</sup>

In 1983 Carney got another cost-cutting agreement with the USWA. On December 30, 1983 Wheeling-Pittsburgh employees ratified a settlement reducing labor costs by \$2.85 an hour, including a \$1.53 wage cut. Wheeling-Pittsburgh's hourly employment costs went down to \$20.65, or \$3 to \$5 below the

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<sup>142</sup>Hoerr, And the Wolf Finally Came, 59-64; 211-212.

<sup>143</sup>Gray Communications, a unit of Sargent Electric Company, was the second winner of the award. Andrea Rock, "Carney sets steel pace," Pittsburgh Business Times Vol. 2, No. 24 (February 7-13, 1983), 1, 13-14.

industry average. The company agreed to put ninety cents an hour into a fund to help the unemployed. It also guaranteed that "any saving resulting from a moderation of its labor costs will stay in the steel industry."<sup>144</sup>

Meanwhile, in an effort to repair the company's finances and continue the modernization effort, Carney had initiated negotiations with several off-shore steel companies. In 1983 he approached Siderbras, the Brazilian steel-holding company, to purchase several hundred thousand tons of slabs on an annual basis in return for a major investment in Wheeling-Pittsburgh. Negotiations were discontinued, however, mainly because of USWA opposition.<sup>145</sup> Carney's talks with Nisshin Steel of Japan, the smallest integrated company in that country, for a cooperative venture were more fruitful. On February 7, 1984 he announced that an agreement had been reached whereby each company would purchase the other's stock and engage in a joint venture. They would build a fifty million dollar steel-coating plant in Follansbee, West Virginia to serve the automobile and appliance industries. This venture capped-off the company's modernization effort and provided it with much needed working capital.<sup>146</sup>

Despite the agreement with Nisshin, by 1985 Wheeling-Pittsburgh was a troubled steel company. Since Carney had become president in 1974, the company had spent \$806 million for new equipment and facilities, yet it had also reduced its workforce from 18,300 to 8,600. Rather than strengthening the company the expenditures had weakened it. Nearly all of the money had been borrowed, and due to the continuing downturn in the industry, it was growing more difficult to repay investors. In 1985 Wheeling-Pittsburgh had a long-term debt of \$509 million. As a result of the debt, one analyst called Wheeling-Pittsburgh "one of the most leveraged steel companies in the United States." Paine Webber called the company "particularly weak" and "quite close to bankruptcy."<sup>147</sup>

The most eventful year in the history of Wheeling-Pittsburgh Steel Corporation, and its antecedent, the Pittsburgh Steel Company, was undoubtedly 1985. Not only was the company forced into bankruptcy, but it also underwent a ninety-eight day

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<sup>144</sup>Hoerr, And the Wolf Finally Came, 363.

<sup>145</sup>"W-P Steel 'just getting to know' Brazilians," Pittsburgh Post-Gazette, July 30, 1983.

<sup>146</sup>Ibid.

<sup>147</sup>Jim McKay, "Wheeling-Pittsburgh gamble proved to be risky," Pittsburgh Post-Gazette, March 19, 1985.

strike/lockout--the first in the industry since 1959--and shut-down the Monessen plant, ending its campaign as an integrated steel mill. For Wheeling-Pittsburgh--and particularly the Monessen plant--1985 was the year in which the "wolf finally came." Utilized by John Hoerr in his important work on the decline of the American steel industry, this phrase characterizes one of the principal causes of the 1980s debacle--distrust between labor and management.<sup>148</sup> In the book, Hoerr uses the events at Wheeling-Pittsburgh in 1986 to illustrate how such distrust exacerbated the economic collapse and led to disaster. In analyzing the strike at Monessen in July of 1985, Hoerr asked why union employees had struck the company while it was in bankruptcy proceedings. It appeared senseless because the workers had no guarantee the company would survive the strike. Hoerr believed that the answer lay in the tactics employed by Dennis Carney. In gaining the approval of a bankruptcy court to nullify an existing labor agreement and impose an eighteen percent cut in pay and benefits, Carney had tried to "make people do things by management decree."<sup>149</sup>

Only a brief outline of the events which led to the closure of the Monessen plant can be provided in this paper.<sup>150</sup> On January 10, 1985 "concession negotiations" were opened between union and management officials to save the company from imminent collapse. Paul Rusen, Director of District 23, and Andrew "Lefty" Palm of District 15 headed the USWA team while Joseph L. Scalise was management's negotiator. Both union and company negotiators recognized that the company needed financial relief in order to survive, but could not agree on how to provide it. Rather than taking the large concessions requested by management, the union proposed the creation of an escrow account funded by the contributions of workers which the company could draw upon if needed. Management rejected this offer. Then, in April an agreement was reached on a \$19.50 labor rate--a concession of nearly \$1 an hour. This accord was shattered later in the month,

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<sup>148</sup>Hoerr coined the phrase for the title of his book from a statement by Joseph Odorcich, Vice-President, USWA: "One of the problems in the mills is that no union man would trust any of the companies. To the average union man, they're always crying wolf. . . ."

<sup>149</sup>Hoerr, And the Wolf Finally Came, 448-449.

<sup>150</sup>Information for this account of the strike and bankruptcy was taken from Ray Johnson, "Wheeling-Pittsburgh: Chapter 11 and Strike, A Chronological History," a fifteen-page unpublished manuscript.

after Wheeling-Pittsburgh filed for a reorganization of the corporation under chapter 11 of the federal bankruptcy laws on April 16. Wheeling-Pittsburgh officials announced a first quarter loss of \$25.7 million.

On May 8 management officials made what was apparently their last offer: a \$15.20 total hourly rate and a five-year contract. USWA officials balked. Citing high costs, inefficient operation, and the lack of demand, management temporarily shut down the Monessen plant on May 29, though the rail mine continued to operate. The union received another shock on May 31, when management filed a motion with the bankruptcy court to reject the existing collective bargaining agreement with the USWA. Carney intended to impose an eighteen percent cut in pay and benefits in order to save the company. This move alienated many employees who had been sympathetic to the company's plight. To gain support from employees and the community, management began a public relations campaign, issuing bulletins explaining why the motion was filed and what impact their proposal would have on pension and health benefits, holding community meetings and sponsoring television spots with company spokesman Jack Fry. Both management and union officials went before bankruptcy Judge Bentz during June to argue their cases. On July 17, Bentz ruled that Wheeling-Pittsburgh had the right to reject the collective bargaining agreement. On the same day, management presented a new proposal for a \$17.50 per hour package, but it was rejected by USWA officials. A strike was now imminent.

At 12:01 a.m. on July 21, 1985 Wheeling-Pittsburgh's hourly employees at its Monessen, Allenport, Steubenville, Mingo Junction, Yorkville, Follansbee, and Beech Bottom plants went on strike. It was the first in the steel industry since 1959. Management "locked-in" supervisory personnel, hoping to continue limited operations at the plants with skeleton crews. The strike proved to be rancorous. Strikers at Monessen blamed Carney for the impasse; picketers carried signs which read "If you like Hitler, you'll like Carney" and "Carney Must Go." Throughout the next three months picketing continued at the plants, and several violent confrontations occurred. The USWA held numerous "solidarity rallies," including one on August 26 at the union's Pittsburgh headquarters. At the rally Paul Rusen said that "removing Carney is the key to a settlement. Dennis the Menace has got to go."<sup>151</sup>

Despite persistent attempts by the Federal Mediation and Conciliation Service to get the two parties back to the bargaining table, the strike continued through September. A

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<sup>151</sup>Mitchell R. Steen, "Wheeling Interests Beginning of End," Tribune Review, January 4, 1987.

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break came on September 20, when key members of the board of Wheeling-Pittsburgh resigned. For their resignations Carney and two key officials, Joseph Scalise and George Raynovich, received "golden parachutes." They were paid a total of \$2.3 million for their resignations; Carney received nearly \$1.5 million and the two others \$400,000 each. Allen E. Paulson was elected as the company's new chairman, and George A. Ferris was named chief negotiator. With this change in management, negotiations soon got underway; on September 24 Ferris met with USWA negotiators and Federal Mediation and Conciliation service officials. Several meetings followed over the next month, and on October 15 a tentative strike settlement agreement was reached. After Judge Bentz upheld the right of the management and the union to enter into the agreement without court approval on October 25, the strike was ended on October 26, when steelworkers ratified the agreement by a vote of 5,924 to 789.

The terms of the contract, the third concession package since 1982, indicate that steelworkers sacrificed to reach agreement. The contract slashed wages from a pre-strike level of \$21.40 an hour to \$18 per hour and benefits from \$12 per hour to \$10.05 per hour. Workers lost one week of vacation and the possibility of raises through the cost of living adjustment provision. There were, however, provisions which were favorable to labor. It was agreed that if steel prices rose by five percent, steelworkers would get an additional \$1 per hour. It also set aside \$1.05 for the troubled pension plan. But what was truly innovative in the contract was a "cooperative partnership" plan which involved the union in the active management of the company. Through this provision, a union official would become a voting member of the board of directors. Overall planning and direction for operations would be provided by a Joint Strategic Decisions Board, consisting of four management and four union representatives. In addition, each plant would have a Board of Production composed of union and management officials which would make operational decisions on a plant-wide basis. This cooperative management arrangement was lauded by Senator Jay Rockefeller of West Virginia in a speech on the Senate floor on November 19. Later, it was included in agreements between USWA and other steel companies.<sup>152</sup>

With this agreement, the company's plants went back into operation. "Jane" blast furnace at Monessen was blown-in on November 4, 1985, and all operations were resumed. This campaign was short-lived, however, because on December 14, 1986 "Jane" was

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<sup>152</sup>"Workers Ratify Wheeling-Pittsburgh Contract," Tribune-Review, October 27, 1985; "On Target," Pittsburgh Post-Gazette, March 16, 1986.

banked, and all operations except for the rail mill were halted. Later in the month, management and union officials met to consider proposals for the Monessen plant. Bank creditors were included in later meetings. The bankers, it was later learned, urged officials to "do something about the Monessen facility" because it was a "money-losing operation." On January 21, 1986 the decision was made to close permanently the 46", 30", and 18" rolling mills and sintering plant at Monessen, along with the hot strip mill and tube division at Allenport and some facilities at Steubenville. The remainder of the Monessen plant operated at limited capacity until June, when it was shut down temporarily, idling the remaining 870 employees working there. Company officials explained that the inventory of steel was sufficient to supply the rail mill, which was scheduled to reopen in August, for the remainder of the year. Ernie Reppert, president of local 1229 of Monessen, announced that USWA would present a proposal to management for the installation of an electric furnace to replace the unprofitable iron and steelmaking facilities. Reppert said that without an electric furnace, "it is possible [the plant] will never open." Later, a feasibility study for the installation was conducted, but nothing ever came of it. On June 4, the company announced the permanent closure of the blast furnace and BOF at Monessen and laid off six hundred steelworkers. Because of the ninety-day notification period required by the union, the official shut-down date was September 2. With the temporary closure order in effect, the company was able to close the metal shops earlier, however. The iron and steel furnaces at Monessen shut down cold on June 28, 1986.<sup>153</sup>

Despite the closure of the hot metal facilities, Wheeling-Pittsburgh still had plans to operate the rail mill and coke ovens at Monessen when market conditions improved. The rail mill was slated for start-up in August, and the ovens were kept warm so they could be restarted. More bad news came in the following months, however. In August, the headquarters of the company, which had been in Pittsburgh, was moved to Wheeling, mainly because of the "sweetheart" tax and incentive package put together by Governor Arch Moore. With the Wheeling area plants operating at nearly full capacity, this move was seen as part of a "West Virginia domination."<sup>154</sup> It was later alleged that Paul Rusen, the former president of District 23 who was given a seat

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<sup>153</sup>Johnson, "Wheeling-Pittsburgh, Chapter 11 and Strike," 13-15; Jim McKay, "Wheeling-Pittsburgh: Shutdown is permanent," Pittsburgh Post-Gazette, June 5, 1986.

<sup>154</sup>"Wheeling-Pittsburgh to move headquarters to Wheeling," Pittsburgh Post-Gazette, August 23, 1986.

on the board of directors, had led the effort to make Wheeling the center of the company.<sup>155</sup> With the glut in the rail market, the rail mill was operated intermittently during the remainder of the year. It was permanently shut down in March, 1987 and turned over to the Economic Development Administration, which had a \$65 million lien. Subsequently, EDA put the mill up for sale. The two major bidders were the Monongahela Valley Metals Retention and Reuse Committee, a local group which wanted to reopen it, and Bethlehem Steel Corporation, which regarded the mill as potential competition to its Steelton plant. After a period of negotiation, Bethlehem purchased the rail mill and a fifty-acre parcel nearby (where shops and finishing facilities stood) for twenty million dollars; the deal was approved by Judge Bentz and finalized on December 30, 1988. Since the purchase, Bethlehem has made no attempt to restart the mill.<sup>156</sup>

The Monongahela Valley Metals Retention and Reuse Committee also made an effort to acquire the remainder of the mill. Based in Donora, this group was formed by, and under the aegis of, the Monongahela Valley Progress Council, which had provided a ten million dollar loan for the construction of the rail mill. This group wanted to reopen the plant. They commissioned a study to examine this possibility. Without the restraints of debt and bankruptcy and with a world-class rail mill and coke plant, the experts they hired believed that the mill could still be operated at a profit.<sup>157</sup> The group secured financial commitments of nearly one hundred million dollars from federal, state, and private investors for the purchase. The effort fizzled after the sale of the rail mill, however, in part because of uncooperative EDA officials.<sup>158</sup>

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<sup>155</sup>"Demise of Wheeling-Pittsburgh: A Tragic Story," Mitchell R. Steen, Tribune-Review, January 11, 1987.

<sup>156</sup>"Rail mill is closed in Monessen," Pittsburgh Press, March 20, 1987; "Foreclosing of Wheeling-Pittsburgh Mill Ok'd," Tribune-Review, June 2, 1987; "Steel-loan defaults hard lesson for U.S.," Pittsburgh Press, March 6, 1988; "Bethlehem's purchase of rail mill concluded," Tribune-Review, December 31, 1988. The March 6, 1988 article concluded that the EDA's steel loan program, which provided \$365 million in government guaranteed loans, was a failure because all five companies which borrowed defaulted.

<sup>157</sup>Mitchell R. Steen, "Local study offers hope for Monessen plant," Tribune-Review, April 12, 1987.

<sup>158</sup>Mitchell R. Steen, "Committee chief dismayed at barriers to reviving Wheeling-Pittsburgh mill," Tribune-Review, May 8, 1988.

The Monessen plant was destined to be sold in bits and pieces rather than a single unit. Rebuilt in 1980, the coke ovens remained a viable facility. After the shutdown in 1986, they were kept warm to avoid damage, the cost being shared by Wheeling-Pittsburgh, one of the creditors, and a prospective buyer.<sup>159</sup> In April, 1988 Sharon Steel Corporation, which was itself in chapter eleven bankruptcy proceedings, expressed an interest in the coke ovens, as well as the remaining hot metal plant, particularly the continuous caster. The company intended to remove the caster for reuse at its plant in Farrell, Pennsylvania, but it would operate the coke ovens. The company offered \$18.1 million and purchased the facilities and a sixty-eight acre parcel in mid-April. Sharon set up a new company, Monessen, Inc., to operate the ovens. However, the Environmental Protection Agency would not allow the ovens to operate because of excessive emissions from the quencher.<sup>160</sup> After the installation of a scrubbing system, the coke ovens were restarted in February, 1989. They were operated only for a short period, however, because of another environmental problem. The ovens leaked gas into the atmosphere, a condition known as bleeding. Sharon was unable to repair the ovens, and in 1995 sold them to Koppers Industries, Inc. With the help of a grant from the Commonwealth of Pennsylvania, Koppers made the necessary repairs and put the ovens back into production in late 1995.

The remainder of the mill property was eventually purchased by the Westmoreland County Industrial Development Corporation (WIDC). In January, 1992 Bethlehem announced that it would sell the rail mill, which it had never operated, and the fifty-plus acre parcel surrounding it. In June, 1994 WIDC reached agreement with Bethlehem to purchase the parcel, but not the rail mill. In October, 1994, WIDC purchased Sharon Steel's sixty-eight acres of mill property for \$1.1 million.<sup>161</sup> At this juncture, WIDC owned all of the mill property except for the rail mill and coke works. Based on a 1993 study by Mullin and Lonergan,

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<sup>159</sup>Christopher Buckley, "Wheeling-Pittsburgh gets reprieve on coke site gas," Valley-Independent, February 5, 1988.

<sup>160</sup>Ron DaParma, "Ruling due Monday on fate of Wheeling-Pittsburgh Monessen facilities," Tribune-Review, April 8, 1988.

<sup>161</sup>Christopher Buckley, "Bethlehem Steel puts Monessen mill up for sale," Valley-Independent, November 20, 1993; Christopher Buckley, "County buys part of Bethlehem rail site," Valley-Independent, March 8, 1994; Christopher Buckley, "County agrees to buy more of Monessen's mill property," Valley-Independent, October 7, 1994.

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Associates, WIDC planned to demolish most of the mill structures and turn the property into a riverfront industrial park. Some of the existing buildings, particularly the brick shops and office buildings, were slated for rehabilitation and reuse as business incubators. After the award of a \$5.5 million grant from the state in November, 1994, demolition for the project began in March, 1995. As the first phase of demolition began on March 10, 1995, the Valley-Independent noted that this was "history in the making."<sup>162</sup> Indeed, a significant chapter of Monessen's history had drawn to a close.

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<sup>162</sup>Elizabeth Horne, "History in the making," Valley-Independent, March 10, 1995.

APPENDIX 1  
LABOR UNREST AT MONESSEN

Unsettled conditions faced workers at Monessen even before a war was declared. The end of the war had brought a decline in the number of steel orders, and layoffs occurred at the town's mills. Pittsburgh Steel's No. 1 blast furnace was shut down for the first time in seven years for relining; Pittsburgh Steel Products shut down its tube mill in August, 1919.<sup>163</sup> As veterans returned, they were given their old jobs, displacing those--many of them blacks--who had been hired during the war.<sup>164</sup> With transoceanic travel restrictions lifted and the mills either down or operating at reduced levels, many immigrants returned to their homes abroad. For example, five hundred Greeks and Italians departed from Monessen in May, 1919.<sup>165</sup> Adding to the general distress, prohibition arrived on May 1, 1919, depriving many immigrants of an important element of their culture.<sup>166</sup>

In Monessen a great deal of unrest and some violence occurred during the strike period. Monessen had a nonunion tradition that dated to the 1901 strike. Mill owners and managers joined with Monessen's old-stock political leadership in an attempt to prevent the National Committee from organizing mill workers in the town. Chief burgess W.B. Stewart issued ordinances denying union organizers the right to hold meetings in the town.<sup>167</sup> However, a "Flying Squadron" led by B.L. Beaghen, head of the Pittsburgh Bricklayers' Union, took direct action in order to open the mill town. An organizational meeting was announced to take place in the streets of Monessen on April 1, 1919. Along with the steelworkers, thousands of miners from the surrounding coal country marched into town led by uniformed ex-service men, and congregated in the streets in defiance of the order. The burgess was forced to acquiesce, and the right to hold organizational meetings was established. As a result, a large (but indefinite) number of Monessen's steelworkers were organized by the National Committee during the spring and summer

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<sup>163</sup>Monessen Daily Independent, May 2, 1919; August 11, 1919.

<sup>164</sup>Ibid., February 5, 1919; February 18, 1919.

<sup>165</sup>Ibid., May 28, 1919.

<sup>166</sup>Ibid., April 8, 1919.

<sup>167</sup>Magda, Monessen, 50.

of 1919. Most of those organized were the immigrant laborers; natives and blacks "lined up with the bosses."<sup>168</sup>

By September the National Committee claimed to have 150,000 men organized. Unable to get the steel companies to the bargaining table and pushed by rank and file militants, the National Committee called for a nationwide strike on 22 September.<sup>169</sup> To forestall trouble and to rob the unionists of a strike victory, Pittsburgh Steel shut down its Monessen plant three days earlier.<sup>170</sup> With the plant closed on September 22, Monessen's strikers claimed victory, and celebrated with a parade through the town.<sup>171</sup> Along with Donora, Monessen was the steel center in the Monongahela Valley most affected by the walkout.<sup>172</sup> Strikers in the two towns drew strength from each other, staging marches along the new river road which connected them.<sup>173</sup> After reports of riots in Donora, Chief Burgess W.B. Stewart issued a proclamation forbidding all unauthorized meetings and parades and closing all clubs, the fraternal organizations that were the hotbeds of the unionism in the town. Stewart deputized five hundred Monessen citizens, many World War I veterans and some blacks, announced that a Citizens Protective League would be formed, and called-in the Commonwealth's Coal and Iron Police.<sup>174</sup> The town was divided on the strike along ethnic lines. Led by the Poles, Ukrainians, Russians, Finlanders, and Italians,

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<sup>168</sup>Brody, Steelworkers in America, 214-233.

<sup>169</sup>Monessen Daily Independent, September 11, 1919.

<sup>170</sup>Ibid., September 19, 1919.

<sup>171</sup>Ibid., September 22, 1919.

<sup>172</sup>Brody, Steelworkers in America, 242.

<sup>173</sup>The river road which ran from Donora through Webster to Monessen was dedicated on September 12, 1919, Monessen Daily Independent, September 12, 1919. The first march on this road took place on September 23, 1919, Monessen Daily Independent, September 23, 1919.

<sup>174</sup>Magda, Monessen, 50; Monessen Daily Independent, September 24, 1919; September 25, 1919.

immigrants, for the most part, supported the strike, while the native upper and middle class, the "bluebloods," along with the blacks, sought to quash it.<sup>175</sup>

On September 24 the inevitable confrontation between strikers and authorities occurred. About one thousand strikers and their sympathizers decided to march from Donora to Monessen on the river road at about midnight. Monessen's make-shift defensive force, composed mainly of loyal mill workers and the town's businessmen, led by sixteen mounted Coal and Iron Police, assembled, armed itself, and moved to the north side of town to stop them. With the mounted police at the front, they set up a defensive line at the town's boundary. When the marchers appeared on the river road, the mounted police ordered them to disperse or face arrest. Awed by the large armed force, the marchers retreated and violence was averted.<sup>176</sup>

Rid of the threat from Donora, Monessen's authorities concentrated on purging subversives from the town. The Coal and Iron Police, known by the many of the strikers as "Cossacks," rounded-up twenty-nine foreigners who owned weapons. The Citizens' Protective League, a paramilitary force, patrolled the city to stop any gatherings, searching any "foreigners" they encountered for weapons or Bolshevistic propaganda. On September 26 a Servian striker was shot by a black deputy for brandishing a weapon after he was caught tearing down a flyer stating the town's anti-assembly proclamation.<sup>177</sup>

As news that other mills, including those at Donora, were resuming operation, Pittsburgh Steel officials decided to reopen the Monessen Works on October 7--two weeks after the strike began. An undisclosed number of black and Mexican strikebreakers had been brought into the town. Housed in barracks on the southern end of the plant, they would take the places of those who refused to work.<sup>178</sup> As the mill reopened, hundreds of

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<sup>175</sup>Magda, Monessen, Interview of John Czelen, 52-54; Interview of Stephen Wisyanski, 58.

<sup>176</sup>Magda, Monessen, 50, Interview of Eduardo Furio, 60-61; Monessen Daily Independent, September 25, 1919.

<sup>177</sup>Magda, Monessen, 50, Interview of Stephen Wisyanski, 55; Monessen Daily Independent, September 25, 1919; September 26, 1919.

<sup>178</sup>Magda, Monessen, Interview of Stephen Wisyanski, 56; several incidents involving white steelworkers and black deputies and strikebreakers at Monessen are reported in Dickerson, Out of the Crucible, 89-92.

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steelworkers crossed picket lines and returned to work. There were several incidents and about twenty arrests, including that involving a foreign woman who threw black pepper at the eyes of a trooper. Despite a radical speech by Mary "Mother" Jones at nearby Charleroi, there were, however, no major confrontations or riots at Monessen. The two Monessen newspapers, the Monessen News and Daily Independent echoed the sentiments of mill officials as they urged the strikers to go back to work and declared that the strikers had been "duped by radical factions, and ... misled to strike."<sup>179</sup>

The back to work movement quickly gained momentum. The National Committee failed to provide adequate relief for strikers, and what little that was sent to Monessen could not be adequately distributed because of the city's ban on assembly. By the third week in October, the strikers were on the verge of starvation. Unable to feed their families or pay their mortgages, most returned to work. Strike leaders, however, were blacklisted and forced to leave the town.<sup>180</sup> By October 20, the Monessen Works, though undermanned, was once again in production; U.S. Steel's tin plate and steel hoop mills were set for reopening on the following day.<sup>181</sup> However, peace did not return to the Monongahela Valley for another two weeks. A strike among coal miners of the area, organized under the banner of the United Mine Workers of America, led to another round of violent incidents, arrests, and confrontations. It was not until the end of the coal strike on November 11 that Monessen and its steel mills resumed normal operations.<sup>182</sup>

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<sup>179</sup>Monessen News, October 7, 1919; Monessen Daily Independent, October 6, 1919; October 7, 1919.

<sup>180</sup>Magda, Monessen, interview of John Czelen, 51, 54.

<sup>181</sup>Monessen Daily Independent, October 21, 1919.

<sup>182</sup>The coal strike brought federal troops into the Monessen area. For more information, see Monessen Daily Independent, October 22 - November 12, 1919.

APPENDIX 2  
THE ORGANIZATION OF STEELWORKERS AT MONESSEN DURING THE NEW DEAL

Despite the failure of the 1919 strike, the conditions of labor had improved somewhat during the 1920s and early 1930s. In 1923 the long hours worked by blast furnace and other steel mill laborers (seven days per week, twelve-hour shifts) were shortened and the eight-hour day adopted. Although wages did not rise appreciably in the 1920s and declined in the early 1930s, safety and sanitary conditions improved in the mills. Moreover, a larger number of southern and eastern European immigrants found better paying jobs with higher levels of responsibility in the 1920s, a direct result of Americanization efforts undertaken by the second generation of immigrant families.<sup>183</sup> Yet, labor still lacked an independent and collective voice with which it could bargain on equal terms with management. However, with the election of Franklin D. Roosevelt to the presidency in 1932 and the passage of the National Industrial Recovery Act (NIRA) in 1933, labor's prospects looked much brighter. The intent of NIRA's Section 7(a) was to give workers the right to organize and bargain collectively. Although coal miners and other workers achieved this goal, steelworkers were thwarted. Instead of recognizing an industry-wide union, the steel companies set up company unions after the passage of NIRA. Following the example of U.S. Steel, the steel companies established employee representation plans (ERP's) in 1933 and 1934. Pittsburgh Steel Company introduced its ERP in June of 1933. Under this arrangement, the employees of a particular company elected a number of their peers to serve as representatives to the company. Representatives had little power when it came to substantive issues such as wages or work rules, but they often were able to gain favorable results on individual grievances and improvements in working conditions.<sup>184</sup> For example, at Monessen the ERP was able to get new water fountains and wash houses.<sup>185</sup>

In 1935 the "loophole" in the NIRA which permitted company unions was plugged with the passage of the National Labor Relations Act, introduced by Senator Robert Wagner of New York. The Wagner Act created a National Labor Relations Board (NLRB) to

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<sup>183</sup>Paul A. Tiffany, The Decline of American Steel: How Management, Labor, and Government Went Wrong, (New York: Oxford University Press, 1988), 13.

<sup>184</sup>Irving Bernstein, A History of the American Worker, 1933-1941 (Boston: Houghton Mifflin Company, 1970), 455.

<sup>185</sup>Monessen Daily Independent, January 10, 1936.

preside over labor-management relations and enable unions to engage in collective bargaining with federal support. Its key provision decreed that whenever the majority of a company's workers voted for a union to represent them, management would be compelled to negotiate with the union on all matters of wages, hours, and working conditions. For John L. Lewis, president of the United Mine Workers of America, the most powerful union in the nation, the passage of the Wagner Act presented an opportunity to organize the millions of industrial workers in the steel, automobile, rubber, and other mass-production industries. Rebuffed in this endeavor by the more conservative American Federation of Labor, which sought organization of workers along craft rather than industrial lines, Lewis formed the Committee on Industrial Organization (CIO) and broke with the AFL in 1935. To take full advantage of the Wagner Act, Lewis formed the Steel Workers Organizing Committee (SWOC) in June, 1936 to organize steelworkers. Meanwhile, the Amalgamated, with a small level of support from the AFL, made an attempt to organize steelworkers as well.<sup>186</sup>

The reaction of many of steel companies, including Pittsburgh Steel, to the passage of the Wagner Act was to challenge the legislation. When the Pittsburgh Regional Labor Board of NLRB, in response to a request from the Amalgamated, held hearings in January, 1936 to determine if Pittsburgh Steel should hold an employees representation election at its Monessen and Allenport plants, Pittsburgh Steel balked. Since it manufactured products and bargained with employees only in Pennsylvania, the company claimed that it did not engage in interstate commerce and, therefore, was not covered by the Wagner Act. However, a witness from the P&LE railroad told the board that Pittsburgh Steel imported its raw materials and shipped products outside the state. Pittsburgh Steel also argued against elections on the grounds that its company union constituted a legitimate, freely-elected, bargaining agent for its employees.<sup>187</sup> An official of the Monessen union testified that three-fourths of the men were happy with the company union. On the other hand, a representative from the Amalgamated claimed that Pittsburgh Steel had set up its ERP initially without an election, and had printed ballots and notices for subsequent elections in direct violation of the Wagner Act.<sup>188</sup>

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<sup>186</sup>Bernstein, Turbulent Years, 318-351.

<sup>187</sup>Monessen Daily Independent, January 7, 1936.

<sup>188</sup>Ibid., January 10, 1936.

In February, 1936 the NLRB rendered its decision on the Pittsburgh Steel case. The board stated that the company did engage in interstate commerce and was covered by the Wagner Act. Noting that on two occasions--in July of 1934 and April of 1935--representatives from Pittsburgh Steel's ERP had tried but failed to act as bargaining agents, the board said that the evidence was unconvincing that collective bargaining in the normal sense existed at Pittsburgh Steel. The NLRB ordered Pittsburgh Steel to hold employee elections at its Monessen and Allenport plants on March 5 to March 12. Steelworkers would choose between the Amalgamated, the ERP, or other parties for their bargaining agent.<sup>189</sup>

Like the nation's other steel companies, Pittsburgh Steel refused to allow the NLRB to dictate its labor policy. The company filed a petition in the U.S. Circuit Court of Appeals in Philadelphia claiming that the Wagner Act was unconstitutional and the order of NLRB illegal. On March 2 the court granted the company a restraining order canceling the scheduled elections. Judge Joseph Buffington said that his court had rescinded the NLRB order because it needed time to go into the facts and legal propositions of the case. With the restraining order, Pittsburgh Steel had won round one of its bout with organized labor.<sup>190</sup> Its case against the constitutionality of the Wagner Act was later incorporated into a group of similar cases and argued before the U.S. Supreme Court as NLRB v. Jones & Laughlin Steel Company.

Labor's fight was far from over. In June, 1936 Lewis announced the formation of SWOC, named Philip Murray as its head, and pledged that fifty organizers would soon be in the field. Recognizing that many of the company unions (including Monessen's) were growing more independent from management, Lewis made a special plea to their members for support. The strategy of SWOC was to capture the company unions by convincing steelworkers to elect "real union men" in place of "company stooges." SWOC adopted two other strategies in its campaign. It made a special appeal to the ethnic groups which were important in the steel labor force. The union tried to work with the fraternal and religious organizations of the foreign-born--hotbeds of unionism during the 1919 strike. In August SWOC held a special conference at Pittsburgh to explain its goals to these groups. The third strategy of SWOC was to use the Wagner Act and other federal legislation, as well as Congressional and Presidential support, to elicit support and defeat the steel companies. Following the example of the successful UMWA campaign

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<sup>189</sup>Ibid., February 25, 1936.

<sup>190</sup>Ibid., March 3, 1936.

of 1933, SWOC leaders berated workers with the message: "The President Wants You to Join the Union." The union leaders failed to specify whether they were referring to President Lewis or President Roosevelt, something the steel companies vehemently protested.<sup>191</sup>

In early July SWOC appointed organizers in nine steel centers in the Pittsburgh district; Monessen was one of the nine. John Mayo of Monessen was named organizer for Monessen, Donora, Charleroi, and Allenport. Lewis pledged to wage a "peaceful war" in the organizing campaign.<sup>192</sup> During the remainder of the year, Mayo and SWOC held a series of meetings of steelworkers at Monessen to garner support for their cause. Many of the meetings were held in fraternal halls such as the one at the Polish Hall on September 4. There is some evidence to suggest that the steelworkers were less than enthusiastic in embracing the new industrial union. At the September 4 meeting only seventy-five attended. Despite such poor attendance, Mayo announced: "We are not discouraged. ... We are going to stay." Responding to criticism by Pittsburgh Steel officials and town business interests that SWOC was comprised of "outside agitators," Mayo added "we are not outsiders."<sup>193</sup>

The lackluster results of the SWOC organizing drive were mainly a result of the staunch opposition of the Pittsburgh Steel Company. As in 1919 the company joined with the business interests of the town to oppose unionization. This time, however, under the watchful eye of federal authorities--NLRB, the courts, and Congress--the company used the carrot of welfare capitalism rather than stick of repression in its campaign. Beginning in June, as news of Lewis' SWOC campaign spread, Pittsburgh Steel Company adopted a series of measures designed to gain the good will of its employees. On June 2 the company announced a vacation plan in which all employees with at least one year of service would receive paid vacations. Since it required only a single year rather than U.S. Steel's five years of service, the plan was heralded by the Daily Independent as the "most liberal yet adopted by any large steel corporation."<sup>194</sup> Announcement of the vacation plan was followed shortly by elections for the ERP at Monessen. Since casting a ballot was

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<sup>191</sup>Bernstein, Turbulent Years, 454-457; Monessen Daily Independent, June 16, 1936.

<sup>192</sup>Monessen Daily Independent, July 1, 1936; July 6, 1936.

<sup>193</sup>Ibid., September 5, 1936.

<sup>194</sup>Ibid., June 3, 1936.

seen by many as tantamount to supporting the company's labor policy, the company was pleased that 86.22 percent of its employees at Monessen and Allenport voted in the election.<sup>195</sup> On November 5, the day after Roosevelt was re-elected and following a similar move by U.S. Steel, Pittsburgh Steel Company announced a ten percent increase of wages. This was followed by yet an even larger raise in March, 1937. In November the company announced that it was developing an insurance plan to provide sickness and accident benefits for its employees, and that it would initiate the 40-hour week.<sup>196</sup>

Pittsburgh Steel Company's anti-union campaign might have worked had it not been for developments on the national arena. On March 1, 1937 Myron C. Taylor, Chairman of the Board of U.S. Steel, announced that he would sit down with John L. Lewis and SWOC and negotiate a contract.<sup>197</sup> If this news did not shock Pittsburgh Steel, then that of the following month certainly did. On April 12, the U.S. Supreme Court rendered its decision in NLRB v. Jones & Laughlin Steel Company. The court upheld the Wagner act on the ground that it was an legal application of the Interstate Commerce clause of the Constitution. Now, there was no question whether the steel industry was subject to federal regulation. All of the provisions of the Wagner Act and the rulings of NLRB, including those against Pittsburgh Steel's company unions, were legitimized.<sup>198</sup> Yet, even with the Supreme Court's decision, Pittsburgh Steel did not relent. It appealed to the U.S. Circuit Court of Appeals once again to ask for dismissal of the February, 1936 NLRB order to hold elections at Monessen. Arguing that the original complainant, the Amalgamated local, had been disbanded and replaced by a new group, and that a large amount of testimony which might have reversed the board's decision was not admitted, the company's lawyer argued for a reconsideration of the case. The court took the brief of

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<sup>195</sup>Ibid., June 22, 1936.

<sup>196</sup>Ibid., November 5, 1936; March 2, 1937; March 9, 1937; March 15, 1937.

<sup>197</sup>Bernstein, Turbulent Years, 472-473.

<sup>198</sup>Jerold S. Auerbach, editor, American Labor: The Twentieth Century (Indianapolis: Bobbs-Merrill Company, 1969), 369-372; Bernstein, Turbulent Years, 474; Monessen Daily Independent, April 12, 1937.

Pittsburgh Steel for review and promised a decision on the rehearing soon.<sup>199</sup>

Sensing that the tide was turning against it, Pittsburgh Steel began negotiations with SWOC in May, 1937. When negotiations stalled, SWOC called a strike at the company's Monessen and Allenport plants on May 13. The result was a two-day strike, the first in the town since 1919. Although they were happy with wages, steelworkers asserted that they would not work without recognition of SWOC. With the help of Philip Murray and the mayor of Monessen, James Gold, the two parties came to an agreement on May 15 recognizing SWOC. On May 24 Pittsburgh Steel dropped its case against the NLRB. The fifteen-month battle was over; steelworkers finally had their union.<sup>200</sup>

The triumph of SWOC, which was soon renamed the United Steel Workers of America (USWA), brought a change in power relationships in the mill. Along with this change came a transformation in city politics. A once staunchly Republican town in which power was held by old-stock natives, Monessen became a Democratic bastion where politics was controlled by children of eastern and southern European immigrants. An unbroken succession of Democratic mayors--James Gold (1934-1942), Joseph Lescanac (1942-1946), and Hugo Parente (1946-1971)--held power in the town, promoting the aspirations of people of Italian, Greek, and Slavic backgrounds. In fact, Parente, with his contacts in the state and national Democratic party, emerged as the dominant figure in Westmoreland County politics.<sup>201</sup>

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<sup>199</sup>Monessen Daily Independent, May 7, 1937.

<sup>200</sup>Ibid., May 13, 1937; May 14, 1937; May 15, 1937; May 25, 1937.

<sup>201</sup>Magda, Monessen, 139; Cassandra Vivian, personal communication, July 29, 1995.

ADDENDUM TO  
MONESSEN STEEL WORKS  
(Pittsburgh Steel Company, Monessen Works)  
Along Monongahela River  
Monessen  
Westmoreland County  
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(Wheeling-Pittsburgh Steel Corporation, Monessen Works)  
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Westmoreland County  
Pennsylvania

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