



Midvale Steel and Ordnance Company motion picture films 1970.034

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Describing Archives: A Content Standard

Audiovisual Collections

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Summary Information

Repository:	Audiovisual Collections
Creator:	Midvale Steel and Ordnance Company
Source:	Richardson, George A., 1886-1976
Title:	Midvale Steel and Ordnance Company motion picture films
ID:	1970.034
Date:	circa 1919
Physical Description:	6 item(s)
Physical Description:	5 reels (400 ft) : si., b&w ; 28mm. 2 videocassettes (VHS). 1 film strip ; 35mm.
Language of the Material:	English .
Abstract:	The Midvale Steel Company manufactured steel parts and was known for casting, forging, and machining high-quality steels, including alloy steels, and precision steel products for a wide array of industries. Their primary business came from work related to railroad and ordnance manufacturing. This small collection consists of five reels of film that document operations at the Midvale Steel Plant in the Nicetown section of Philadelphia. While the reels are not dated, they are believed to be from 1919. The films document the various stages of production at the plant with a focus on the precision steel making processes for which Midvale was known.

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Historical Note

The Midvale Steel Company manufactured steel parts and was known for casting, forging, and machining high-quality steels, including alloy steels, and precision steel products for a wide array of industries. Their primary business came from work related to railroad and ordnance manufacturing. They had contracts for producing ordnance for the U.S government and making tools and products for private companies like the Pennsylvania Railroad and Baldwin Locomotive Works in Philadelphia.

The company was established in 1867 in the Nicetown area of Germantown, Philadelphia near the Reading Railroad line by English steel-maker William Butcher (circa 1791-1871). Upon his death

in 1871, the Butcher Steel Works became the Midvale Steel Works with engineer William Sellers (1824-1905) as president. They changed their name again in 1880 to the Midvale Steel Company.

Midvale Steel was notable for its early experimentation with alloy steels. In 1870, they produced a specialized chrome alloy for the Eads Bridge in St. Louis, considered among the largest practical applications of alloyed steel at the time. In 1879, they supplied steel for the construction of the Brooklyn Bridge.

In 1875, the company began the manufacture of naval guns and shells and became an important contractor for the U.S. government. Starting in 1900, they supplied the government with marine engines, gun carriages, and armor plates for U.S. Navy ships.

With the rapid expansion brought about by World War I, the company became the Midvale Steel and Ordnance Company in 1915, and owned plants in Johnstown and Coatesville, Pennsylvania, as well as the original works in Philadelphia. In 1917 Midvale ranked among the top twenty American corporations in revenue.

Frederick W. Taylor (1856-1915), esteemed efficiency expert, started his career at Midvale in the early 1880s working his way from a Store Room clerk to becoming their Chief Engineer. He left to work for the Bethlehem Steel Company in 1890.

Midvale began hiring African American workers starting in the 1890s. In an introduction by sociologist E. Digby Baltzell to the 1967 edition of W.E.B. DuBois' groundbreaking *The Philadelphia Negro*, he wrote:

"Clerks and white-collar jobs were, of course, unobtainable [for African Americans], but so were both skilled and unskilled jobs in industry. DuBois noted one exception to this at the Midvale Steel Works, where the manager, dubbed a 'crank' by many of his peers, had employed [in 1896] some 200 Negroes who worked along with white mechanics 'without friction or trouble.'"

With a major increase of ordnance production in 1917, Midvale employed nearly 4,000 African Americans out of a workforce estimated at 11,000 at their Nicetown plant.

In 1923, Midvale's Johnstown and Coatesville plants were acquired by the Bethlehem Steel Company. The company operated under the name Midvale Steel Company in its original location in Nicetown until 1955 when it merged with the Heppenstall Steel Company to become Midvale-Heppenstall Company. The Nicetown plant in Philadelphia closed in 1976.

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Scope and Content

This small collection consists of five reels of film that document operations at the Midvale Steel Plant in the Nicetown section of Philadelphia. While the reels are not dated, they are believed to be from 1919. The films document the various stages of production at the plant with a focus on the precision steel

making processes for which Midvale was known. The footage includes the production of ingots and bars and the steps towards finished products such as large caliber gun tube's (presumably for naval ships) as well as steel bars and rods.

Two of the five films include footage of African American workers alongside white workers. Both races appear to work the same jobs on the shop floor without any indication of a segregated workforce a practice at Midvale that dated back to the 1890s.

The collection was gifted to Hagley in 1970 by George Atwell Richardson (1886-1976), an engineer who worked in the steel industry in publicity and sales throughout his career. He worked for Midvale as their advertising manager during the making of this film. A photograph from Atwell's collection at Hagley includes an image from a booth at a trade show in Chicago. The booth in the 1919 photograph has a notice for a Midvale film that is believed to be the film described here. The photograph provides the circa date for the film and anecdotal evidence of how and where the company used it for promoting the business.

The collection also includes a film strip titled the Story of Iron and Steel produced by Bray Screen Products, Inc. New York City. A mailing address on the film can is to George A. Richardson when he worked for Bethlehem Steel Company (1923-1933).

The original film cans and storage box have been retained and are in Box 1.

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Administrative Information

Publication Statement

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Access Restrictions

This collection is open for research.

Film material is housed in cold storage and must reacclimate prior to viewing (Film Cans 1-5). Please contact the Audiovisual Collections and Digital Initiatives Department at least 48 hours in advance of research visit.

Please note that Hagley Library does not possess playback equipment for 28mm motion picture film.

Existence and Location of Copies

These films have been digitized. Preservation master files exist as DPX files. There are MPEG4 files available for access. View this collection online in the [Hagley Digital Archives](#).

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Related Materials

Related Material

Midvale Steel Company plant album (Accession 1974.362), Audiovisual Collections and Digital Initiatives Department, Hagley Museum and Library.

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Controlled Access Headings

- Steel industry and trade.
- Foundries.
- Iron and steel workers
- Black people in the trades
- Ordnance -- Manufacture
- Industrial films
- Steel-works
- Richardson, George A., 1886-1976

Collection Inventory

Title/Description	Instances
No. 1: Company, circa 1919 <u>Physical Description</u> : 1 reel (400 ft) : si., b&w ; 28mm. This film has been digitized [ID: FILM_1970034_FC01]	film Can 1

Scope and Contents

Summary: Introduction to the Midvale Steel facilities in Nicetown, Philadelphia, Pennsylvania with exterior pan

shots of the plant and adjacent Reading Railroad lines. The beginning of a series showing large ingot used to produce gun tubes.

Text from intertitles:

"Why Midvale Tool Steel Meet All Production Requirements"

"Our tool steel requirements are unusually varied, extensive and extracting. Located within the Nicetown Works, Philadelphia, are eight large machine shops and four manufacturing tool rooms operating one thousand two hundred and four machine tools."

"A view of part of the Nicetown Works of the Midvale Steel and Ordnance Company taken from the top of the main office building looking east..."

"Another view of the Nicetown Works looking west from Reading Railroad."

"Most of our products are machined from complex alloy steels of such texture as to render speed in manufacture most difficult of attainment. Many of the larger products require months to complete and their parts demand an exactness of fit as delicate as the adjustments of a watch. Maintaining production requirements in the machining of products varying in size from a 16 inch naval gun to the finest mechanism part under such exacting conditions necessitates the use of the best tools obtainable. A few examples of unusual machine tool operations which are a matter of everyday performance in our Nicetown Works follow:"

"Midvale Hot Die Steel used in forging 16 inch, 50 caliber gun tube from 63 inch octagonal ingot weighing 280,000 pounds approximately... "

"Pressing and cropping small armor plate ingot...Size 43 inches by 90 inches. Weight about 75 tons... 10,000 tons pressure between dies..."

No. 2: Corporation, circa 1919

film Can 2

Physical Description: 1 reel (400 ft) : si., b&w ; 28mm. This film has been digitized [ID: [FILM_1970034_FC02](#)]

Scope and Contents

Summary: Footage of the various steps to forge gun tubes and armor plates.

Text from intertitles:

"Pit planer. Thirty feet between housing, Moveable head and bed. Forty one foot stroke."

"Midvale Extra High Speed Hole hogging armor plate forging...."

"Midvale Extra High Speed Tool finished roughing...57 7/16 inch diameter gun hoop 220 1/2 inches long.."

"Midvale Special finishing Spring Tool finishing 16 inch gun tube..."

"Midvale Extra High Speed slicing blades. Sixteen blades operating on 18 inch octagon tire ingots."

"Midvale Extra High Speed slicing blade operating on die block ingot."

"Midvale Extra High Speed flat drill operating on forged plate, drilling eleven holes..."

"Midvale W.C.S. Special 14 3/4 inch point cutter prepared to bore from the solid 16 inch 50 caliber gun liner 69 feet long..."

"Midvale Special Finishing tapered reamer blades set in woos jacketed, head prepared for remaining 16 inch 50 caliber gun liner 69 feet long. Tolerance .0015 inch entire length of tube."

No. 3: Widener Building , circa 1919

film Can 3

Physical Description: 1 reel (400 ft) : si., b&w ; 28mm. This film has been digitized [ID: [FILM_1970034_FC03](#)]

Scope and Contents

Summary: A long tracking shot of a building interior containing large boring machines and finishing lathes; workers preparing and pouring molten steel into ingot molds.

Text from intertitles:

"View of finishing shop showing immense boring and finishing lathes etc."

"Midvale Extra High Speed Tool operating on fine mechanism part"

"Work of the characters shown in the foregoing pictures demands tool steels of such high quality and uniformity as can only be produced in the works. Midvale tool steels are a development of over 30 years of advanced practice within this plant. The extreme care and close attention to detail used in the manufacture of Midvale tool steel is clearly shown in the following pictures:"

"Shearing high quality muck bar for crucible melting. Weighing ingredients and packing crucibles"

"Placing ladle in position"

"Teeming the crucible to ladle to insure uniformity of mixture"

"Pouring the ingot molds. This method insures quick filling of all molds required. Test heats are taken to determine [the] quality of metal."

No. 4: Widener Building , circa 1919

film Can 4

Physical Description: 1 reel (400 ft) : si., b&w ; 28mm. This film has been digitized [ID: [FILM_1970034_FC04](#)]

Scope and Contents

Summary: Series of shots showing an integrated workforce on the shop floor working steel ingots and bars.

Text from Intertitles:

"Stripping ingots from molds."

"Cogging ingot to rough bar size."

"Grinding surface of rough bar to permit closest possible inspection."

"Inspecting billets for indications of possible defects."

"Finishing bar under hammer."

"15 inch mill rolling ingots."

"8 inch mill rolling finished bars."

"Stamping and straightening bars on cooling bed"

No. 5: Widener Building , circa 1919

film Can 5

Physical Description: 1 reel (400 ft) : si., b&w ; 28mm. This film has been digitized [ID: [FILM_1970034_FC05](#)]

Scope and Contents

Summary: Finishing work on steel pipes using an annealing process and inspecting the final product, shots of Midvale tool room and a worker testing a lathe tool.

Text from intertitles:

"Pipe annealing. Packing the pipes and preparing for the annealing operation."

"Accurate temperature control by use of potentiometer."

"Final inspection of finished bars. Investigation of surface with file. Cropping the end for examination of fracture."

"Partial view of one of our tool rooms"

"Experimental Lathe Tool Tests. Nothing is best except by comparison. We are continually testing tools made from experimental mixtures with a view to greater improvement of our brands."

"The same tool steels from which our tools are made are available for immediate shipments to the trade generally in warehouses located in Boston, New York, Philadelphia, Cleveland, Chicago and San Francisco."

"Midvale Alloy and Tool Steel Catalogue. Ask for a copy of our handbook entitled 'Midvale Alloy and Tool Steels.'"

"The Story of Iron and Steel" , circa 1919

box 1

Scope and Contents

Produced by Brayscreen Production.